

Rocket Trajectory Nomograms

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Model rockets, A-C

Model rockets D-E

Mid Power, F-G

Small High Power, H-I

2inch High Power, I-J

3inch High Power, I-J

4inch High Power, J-K

6inch High Power, K-L

7.5inch High Power

Large rockets

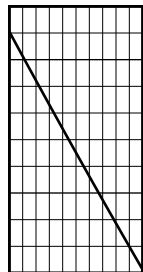
A-C	D-E	F-G	H-I	2", I-J	3", I-J	4", J-K	6", K-L	7.5"	X
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Estes

A8

$I_{tot} = 2.3 \text{ Ns}$
 $F_{avg} = 3.2 \text{ N}$
 $t_{burn} = 0.73 \text{ s}$
 $d = 18 \text{ mm}$

Data source:
<http://www.thrustcurve.org>

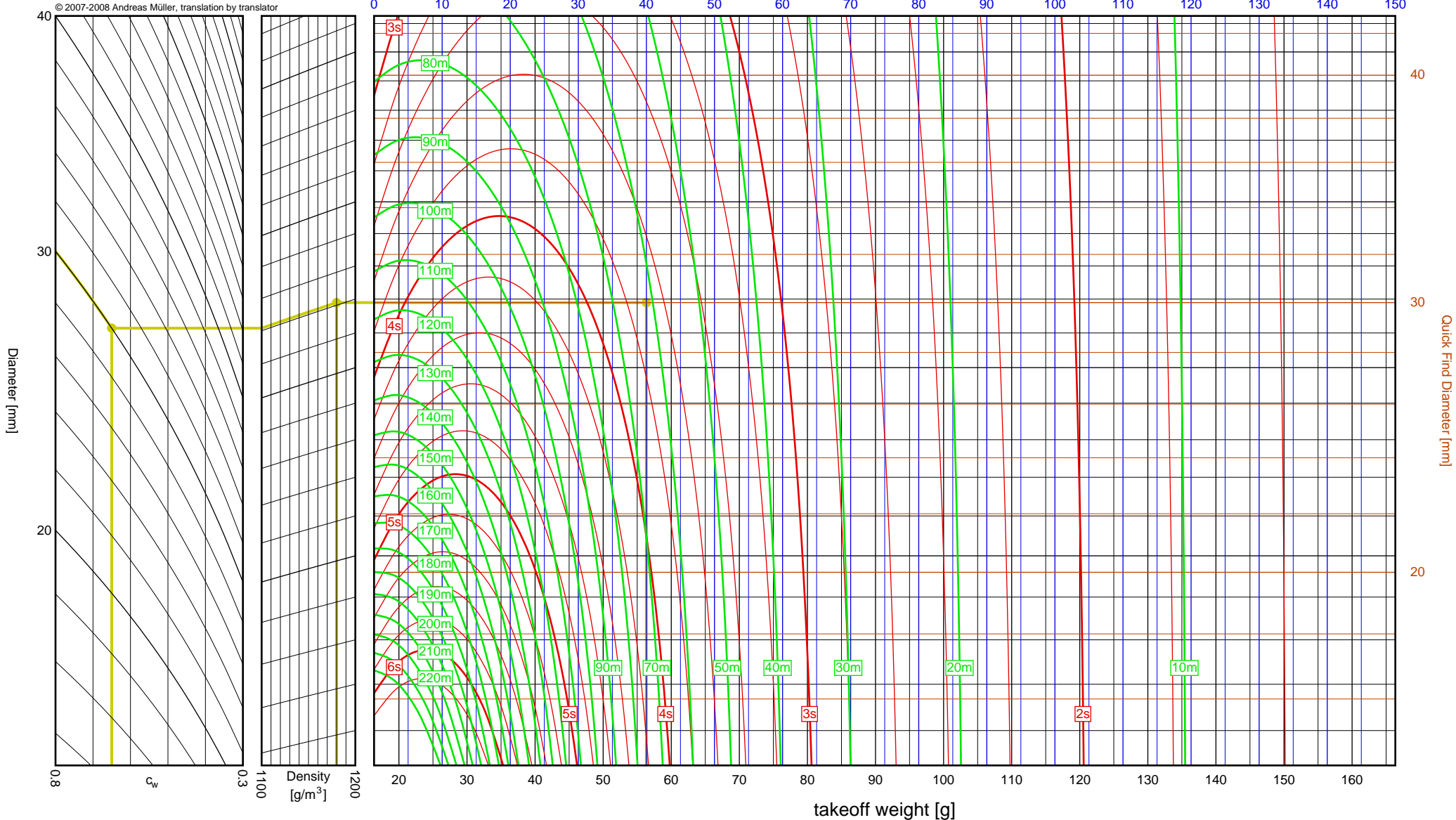


Launch site altitude [m ASL]

1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 30mm, drag = 0.65, density = 1180 g/m³, weight = 0.056kg
 Results: time to apogee: 3.7s, expected altitude: 62m

empty weight [g]



Quick Find Diameter [mm]

20

30

40

A8

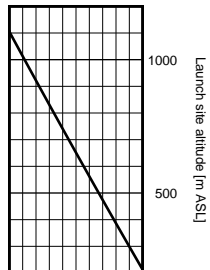
A-C

A8

Estes B4

I_{tot} = 4.3 Ns
 F_{avg} = 4.2 N
 t_{burn} = 1.03 s
 d = 18 mm

Data source:
<http://www.thrustcurve.org>

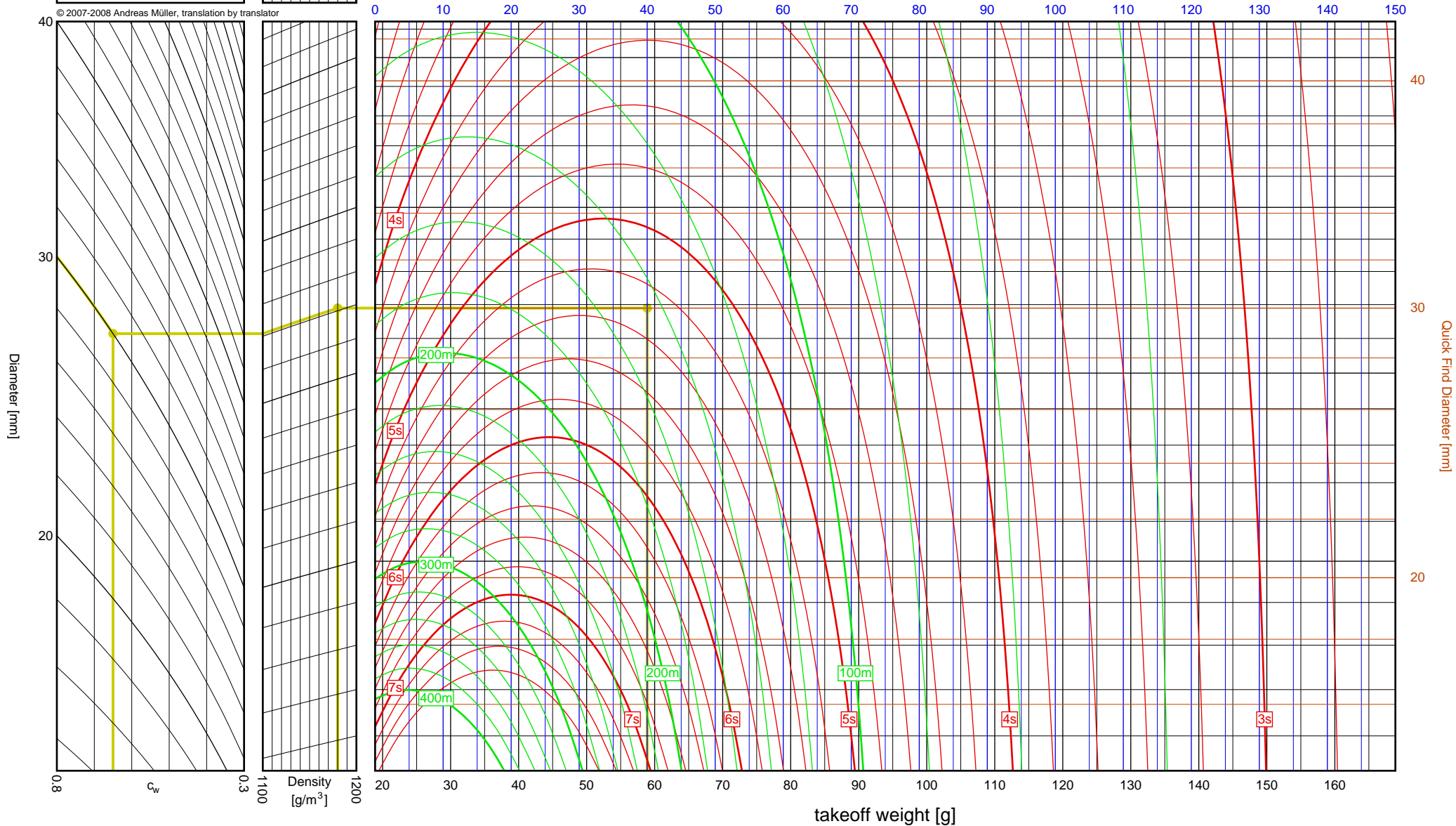


1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 30mm, drag = 0.65, density = 1180 g/m³, weight = 0.059kg

Results: time to apogee: 5.3s, expected altitude: 145m

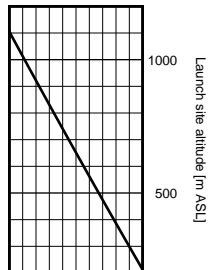
empty weight [g]



Estes C6

$I_{tot} = 8.8 \text{ Ns}$
 $F_{avg} = 4.7 \text{ N}$
 $t_{burn} = 1.86 \text{ s}$
 $d = 18 \text{ mm}$

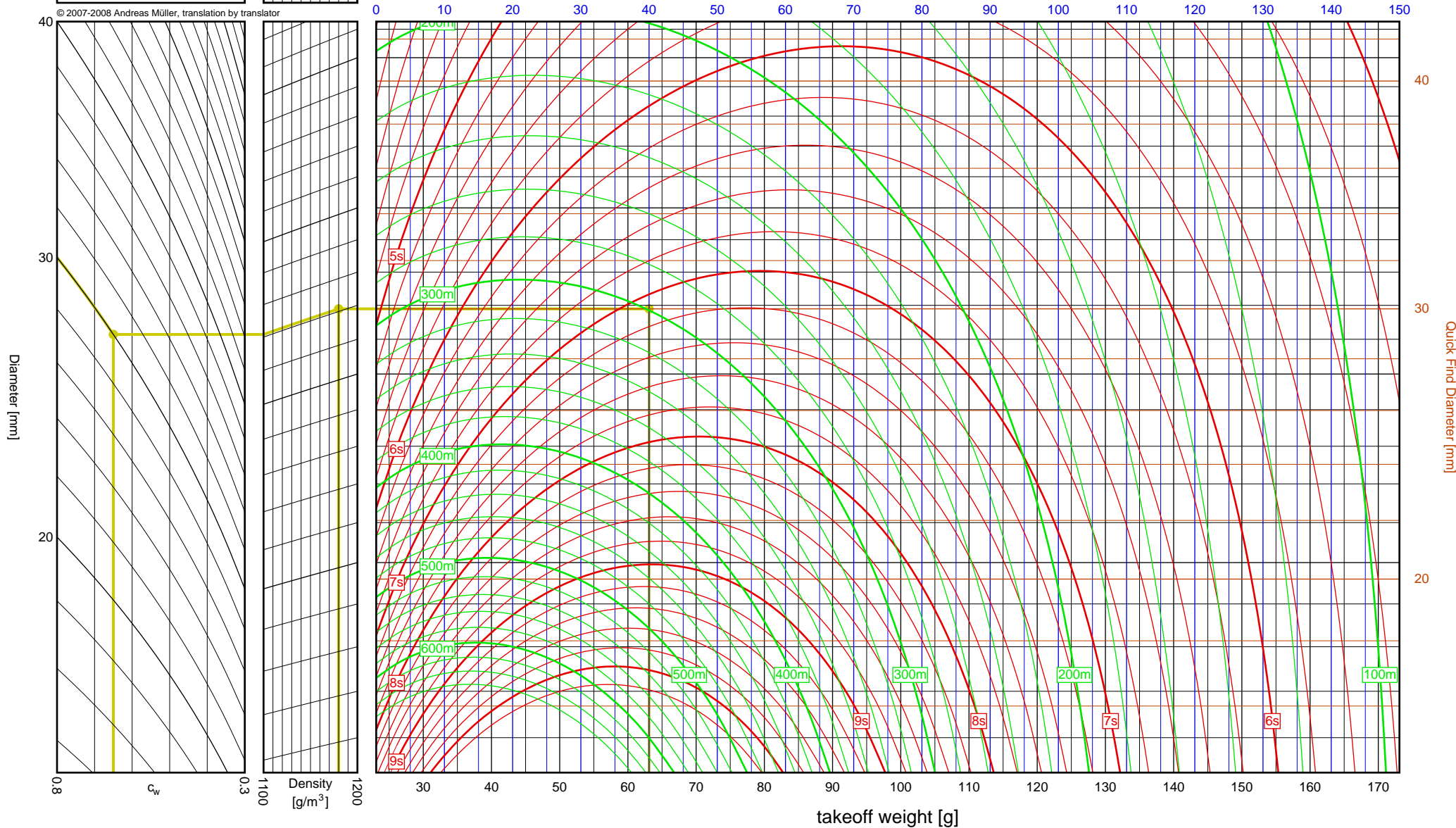
Data source:
<http://www.thrustcurve.org>



1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 30mm, drag = 0.65, density = 1180 g/m^3 , weight = 0.063kg
 Results: time to apogee: 7.1s, expected altitude: 300m

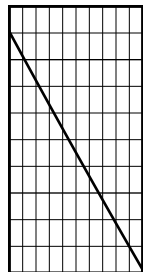
empty weight [g]



Estes D12

I_{tot} = 16.8 Ns
 F_{avg} = 10.2 N
 t_{burn} = 1.65 s
 d = 24 mm

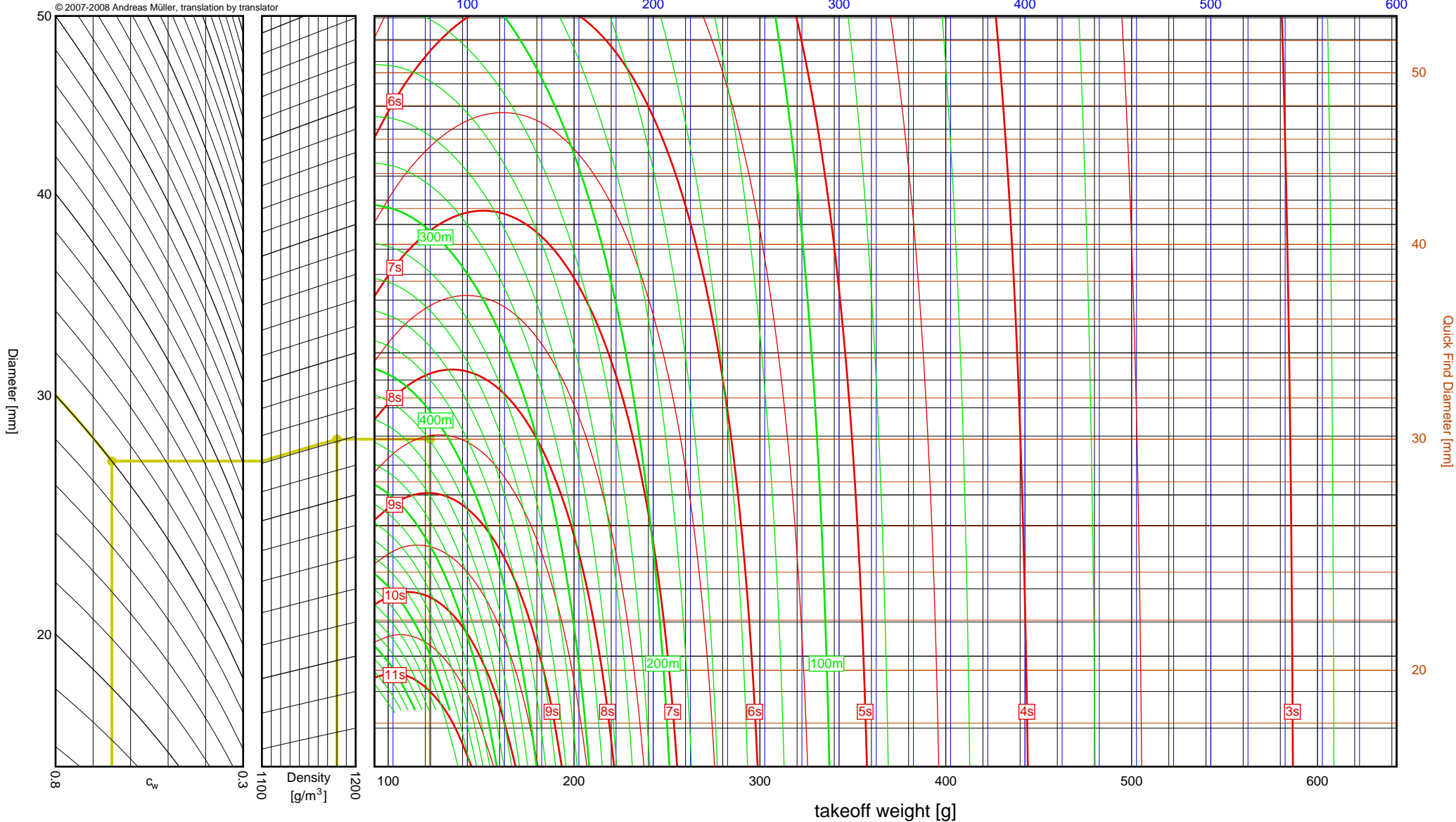
Data source:
<http://www.thrustcurve.org>



1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 30mm, drag = 0.65, density = 1180 g/m³, weight = 0.123kg
 Results: time to apogee: 8.5s, expected altitude: 419m

empty weight [g]



D-E

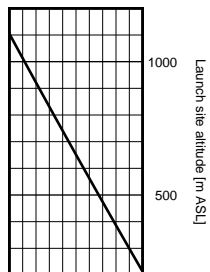
2

D12

Aerotech D24T

I_{tot} = 18.0 Ns
 F_{avg} = 14.8 N
 t_{burn} = 1.22 s
 d = 18 mm

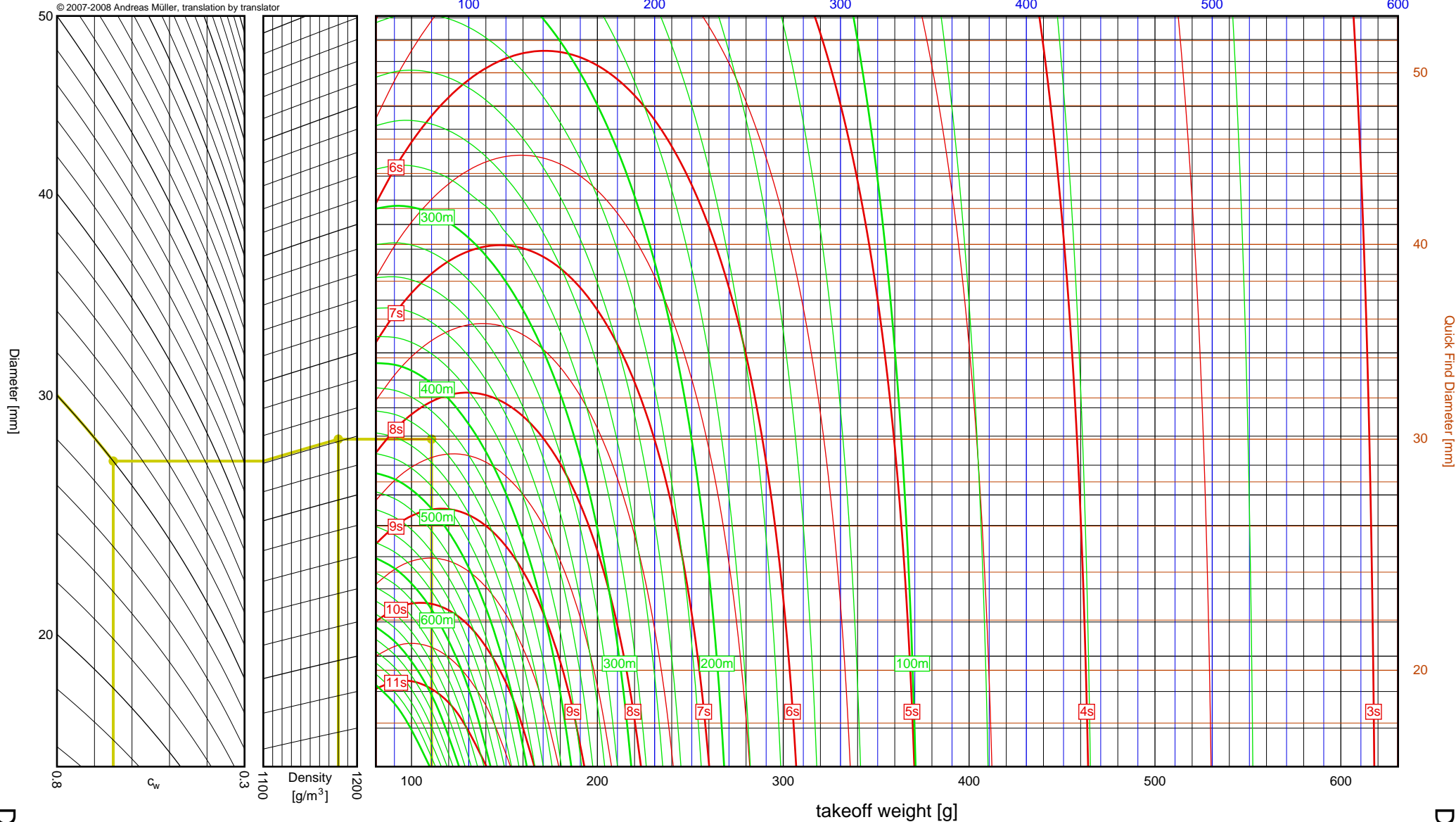
Data source:
Aerotech



1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 30mm, drag = 0.65, density = 1180 g/m³, weight = 0.111kg
 Results: time to apogee: 8.3s, expected altitude: 442m

empty weight [g]



D-E

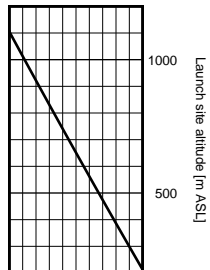
2

D24T

Aerotech D7-RC

I_{tot} = 18.5 Ns
 F_{avg} = 6.5 N
 t_{burn} = 2.87 s
 d = 24 mm

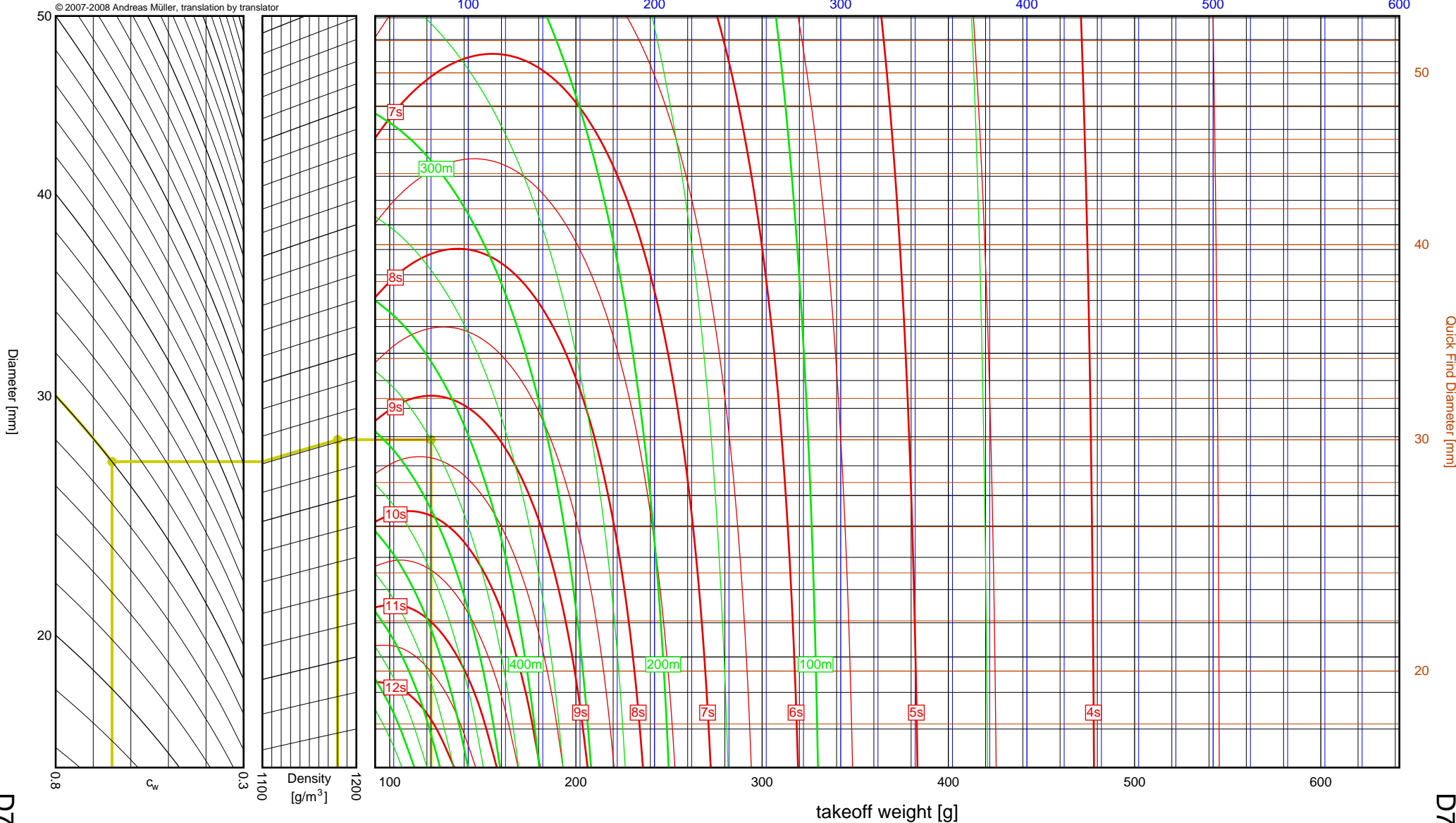
Data source:
Aerotech



1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 30mm, drag = 0.65, density = 1180 g/m³, weight = 0.122kg
 Results: time to apogee: 9.4s, expected altitude: 450m

empty weight [g]



D-E

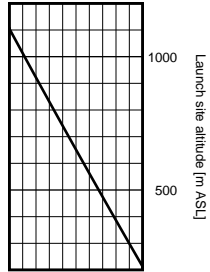
2

D7-RC

Aerotech D9W

I_{tot} = 18.8 Ns
 F_{avg} = 10.0 N
 t_{burn} = 1.88 s
 d = 24 mm

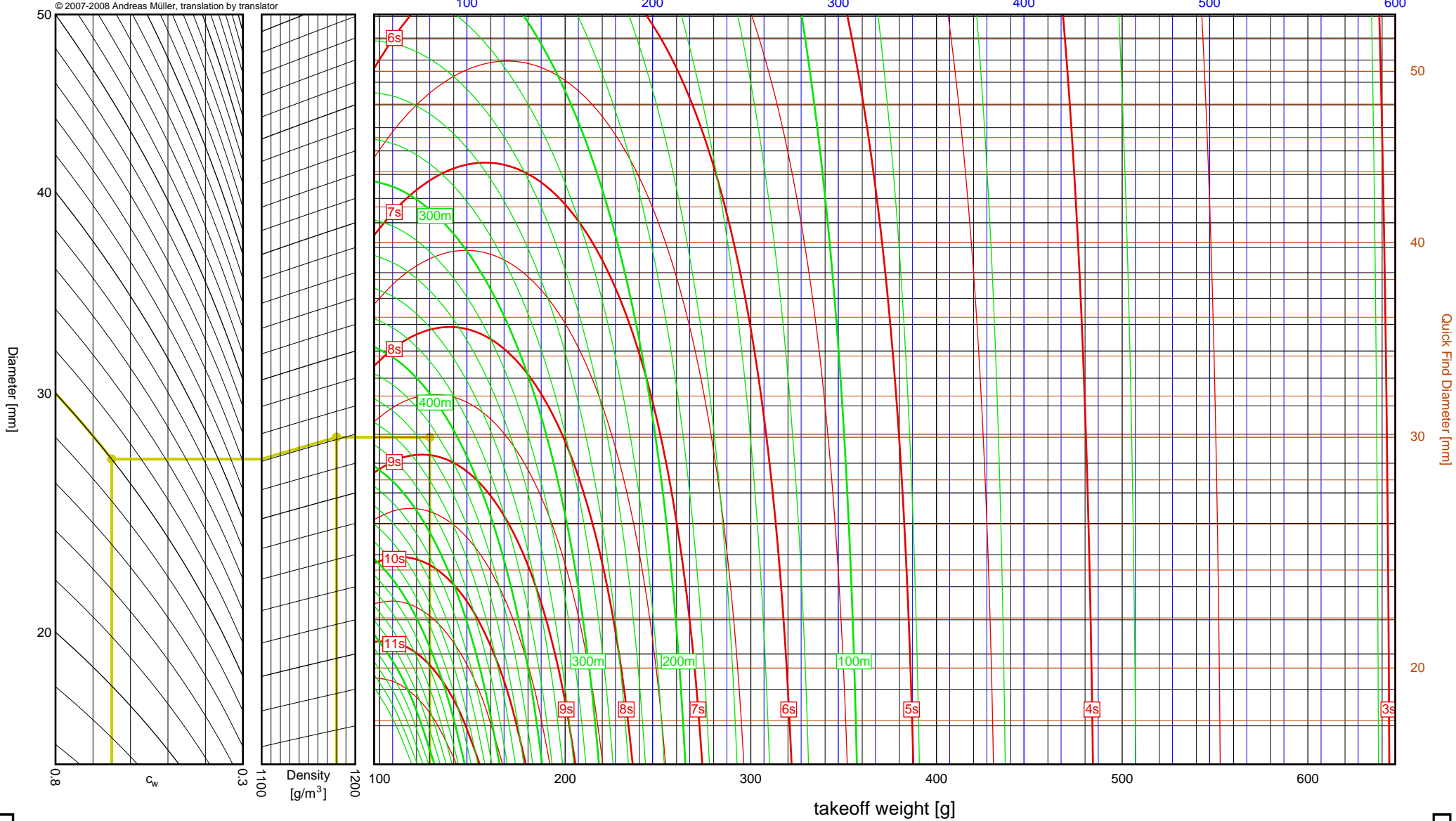
Data source:
Aerotech



1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 30mm, drag = 0.65, density = 1180 g/m³, weight = 0.127kg
 Results: time to apogee: 8.9s, expected altitude: 429m

empty weight [g]



D-E

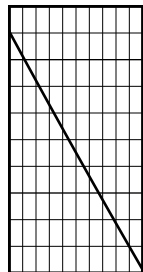
2

D9W

Aerotech D13W

I_{tot} = 19.2 Ns
 F_{avg} = 11.3 N
 t_{burn} = 1.70 s
 d = 18 mm

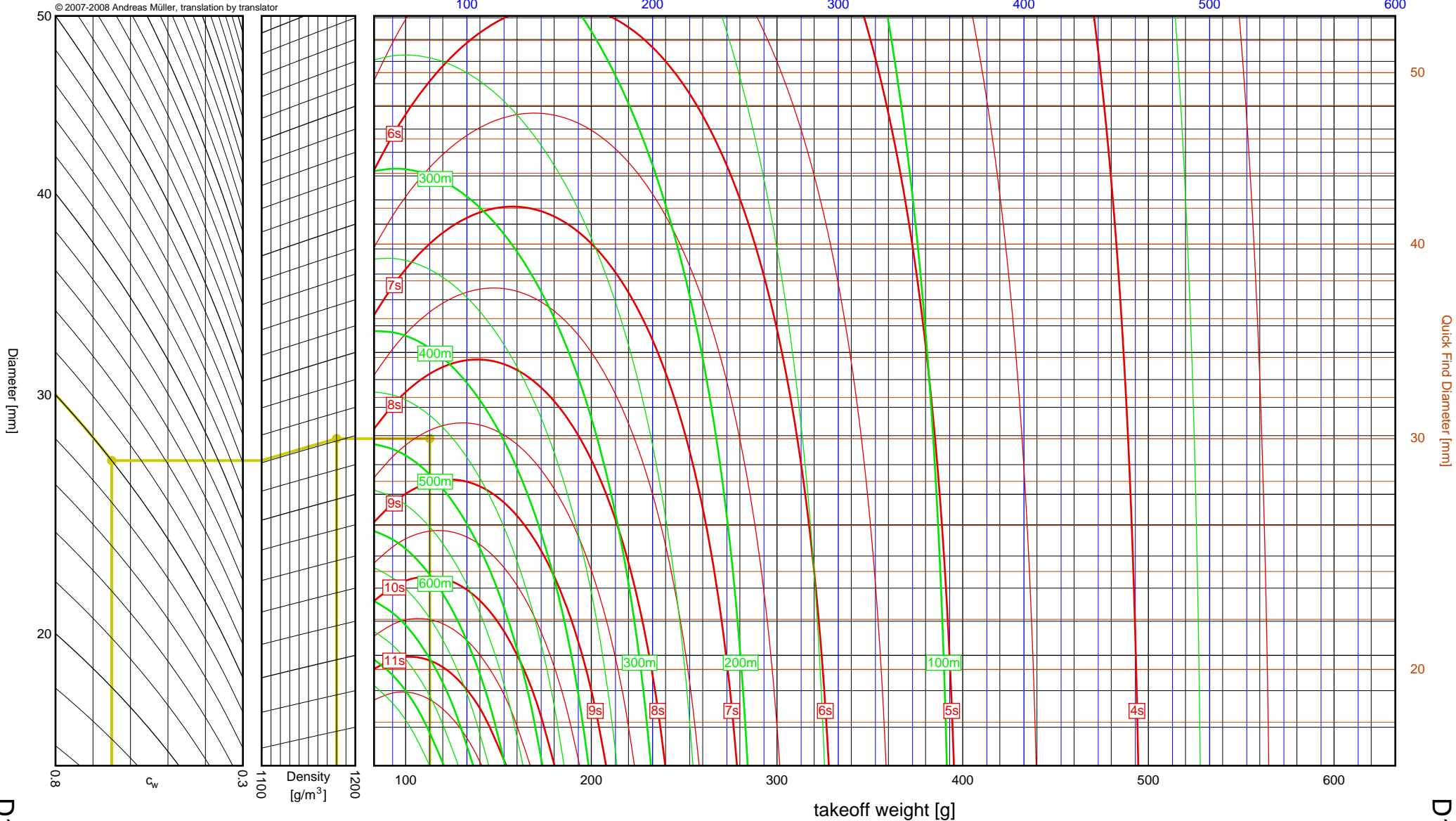
Data source:
Aerotech



1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 30mm, drag = 0.65, density = 1180 g/m³, weight = 0.113kg
 Results: time to apogee: 8.6s, expected altitude: 469m

empty weight [g]



D-E

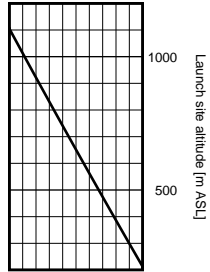
2

D13W

Aerotech D21T

I_{tot} = 19.6 Ns
 F_{avg} = 20.8 N
 t_{burn} = 0.94 s
 d = 18 mm

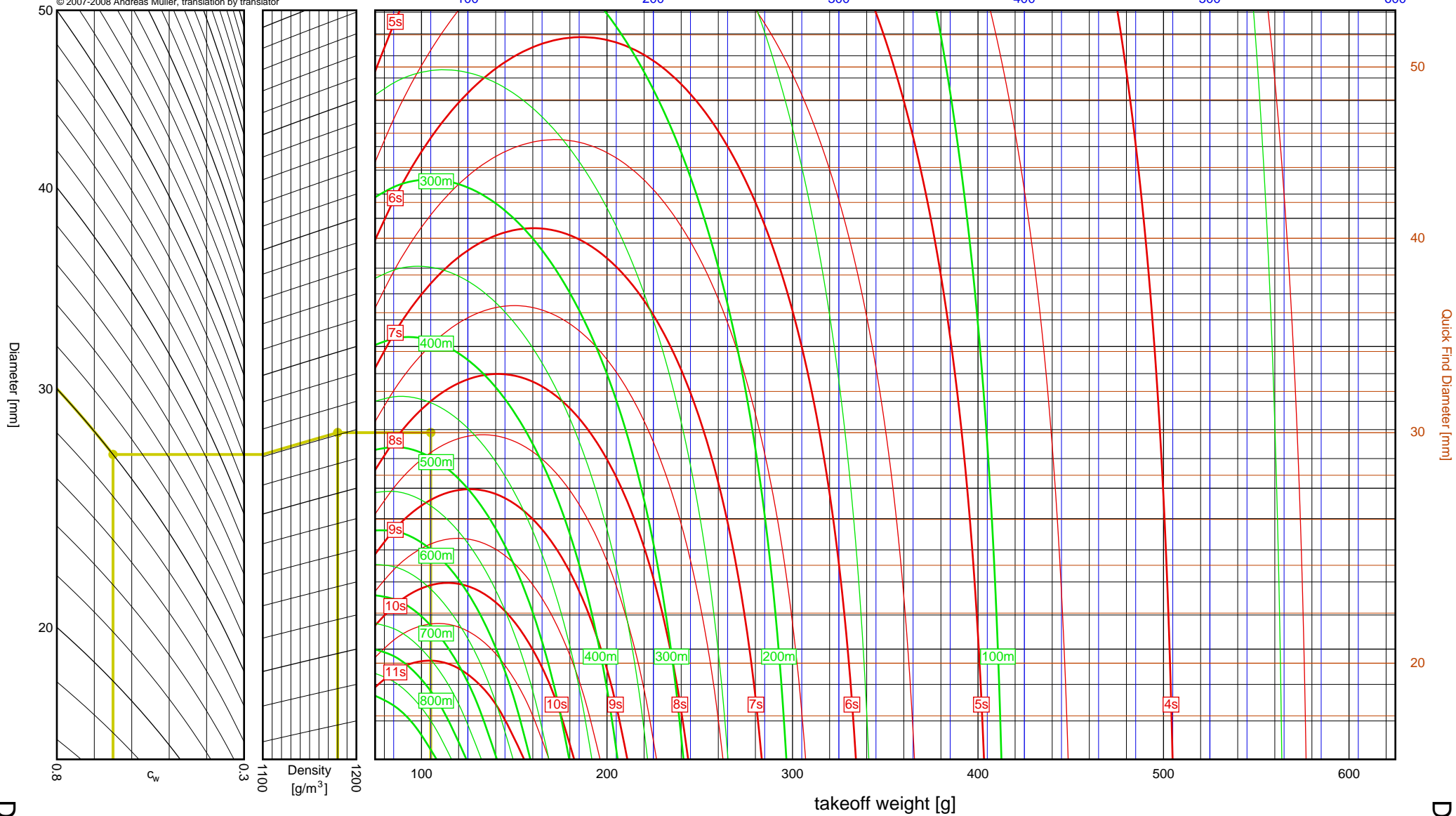
Data source:
Aerotech



1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 30mm, drag = 0.65, density = 1180 g/m³, weight = 0.105kg
 Results: time to apogee: 8.3s, expected altitude: 477m

empty weight [g]



D-E

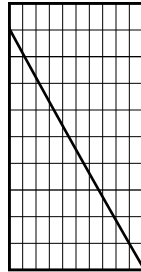
2

D21T

Aerotech D15T

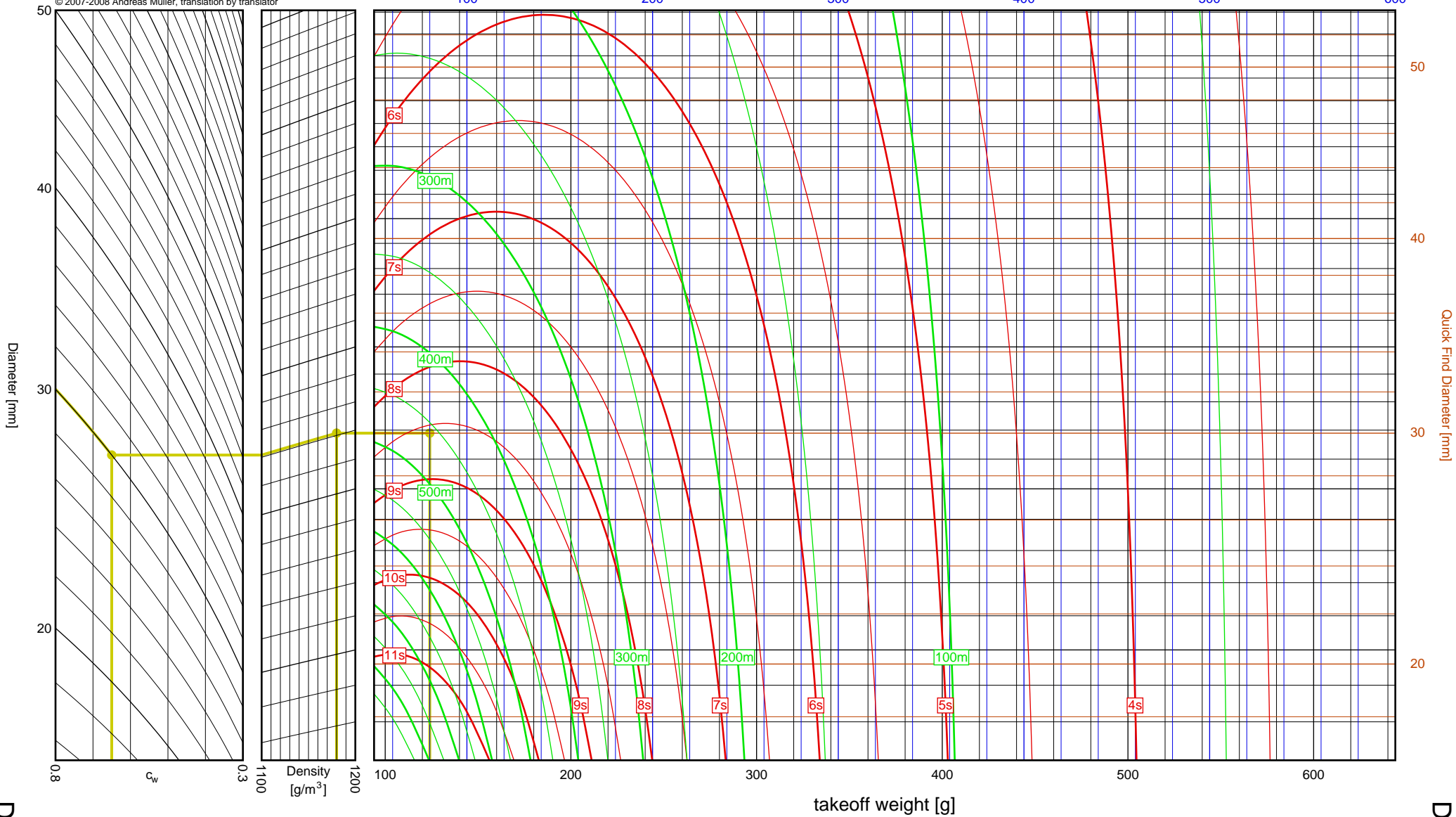
I_{tot} = 19.6 Ns
 F_{avg} = 14.0 N
 t_{burn} = 1.40 s
 d = 24 mm

Data source:
Aerotech



1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
 2. Move along horizontal to left border of density scale
 3. Move up slanted line to vertical line matching density at launch site
 4. From intersection point move horizontally to vertical line matching rocket mass
 5. Read off expected time to apogee from red curves, altitude from green curves
- Sample: diameter = 30mm, drag = 0.65, density = 1180 g/m³, weight = 0.124kg
 Results: time to apogee: 8.6s, expected altitude: 459m

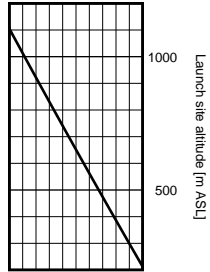
empty weight [g]



Aerotech E11J

I_{tot} = 32.9 Ns
 F_{avg} = 11.6 N
 t_{burn} = 2.83 s
 d = 24 mm

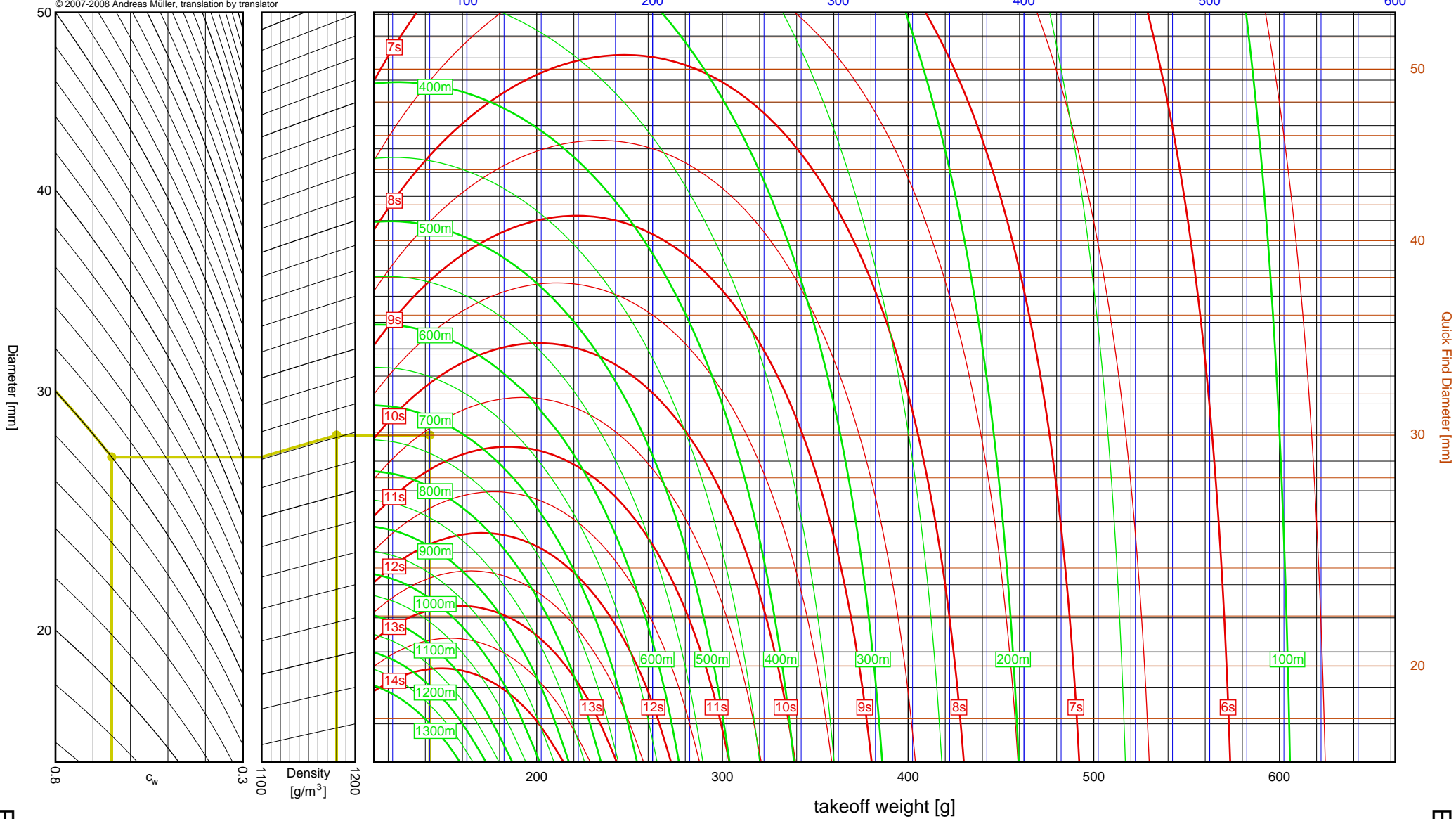
Data source:
Aerotech



1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 30mm, drag = 0.65, density = 1180 g/m³, weight = 0.142kg
 Results: time to apogee: 10.6s, expected altitude: 725m

empty weight [g]



D-E

2

E11J

2-9

E12J-RC

Aerotech

E12J-RC

I_{tot}

=

34.2 Ns

F_{avg}

=

11.2 N

t_{burn}

=

3.05 s

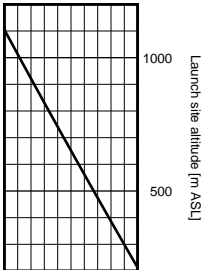
d

=

24 mm

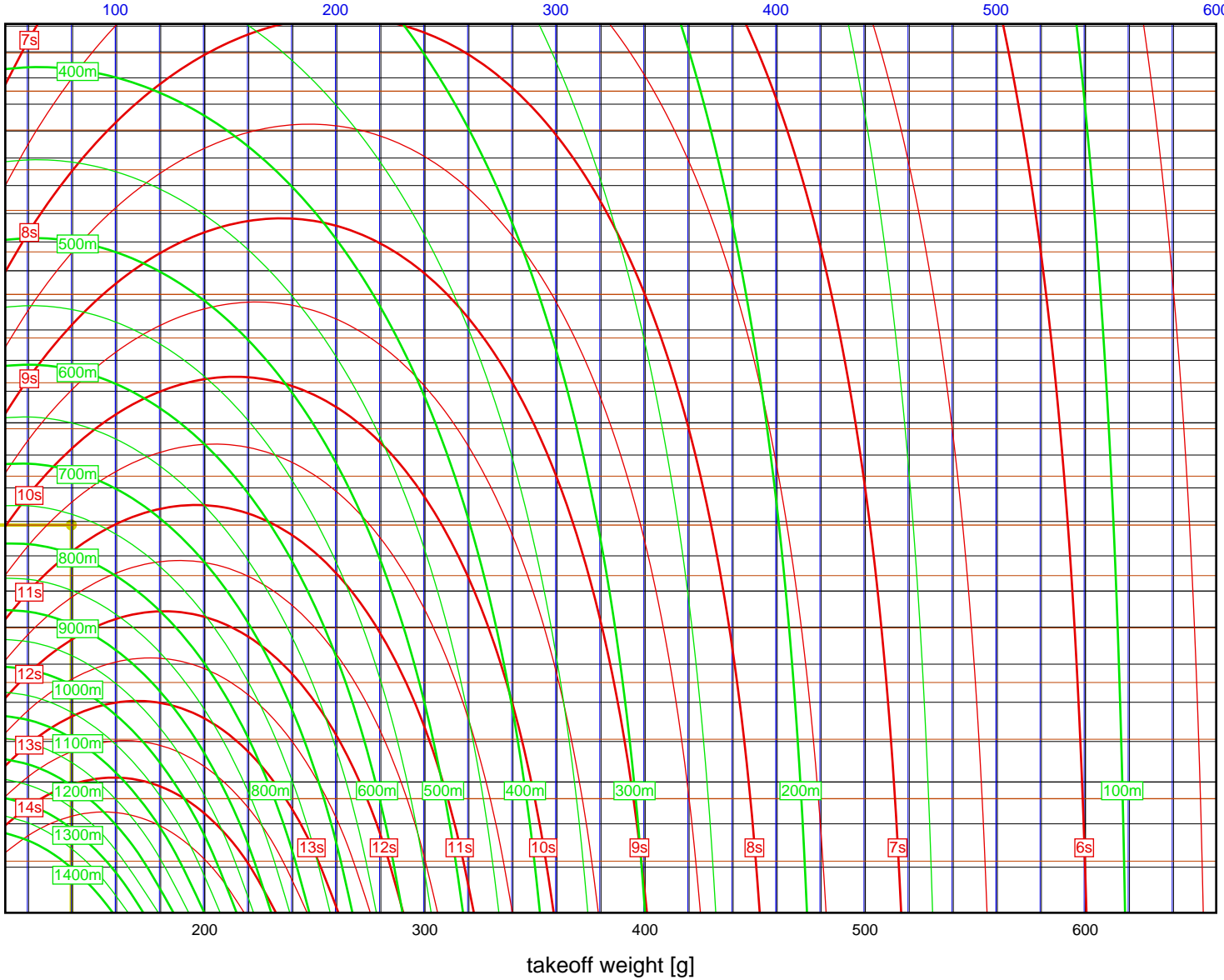
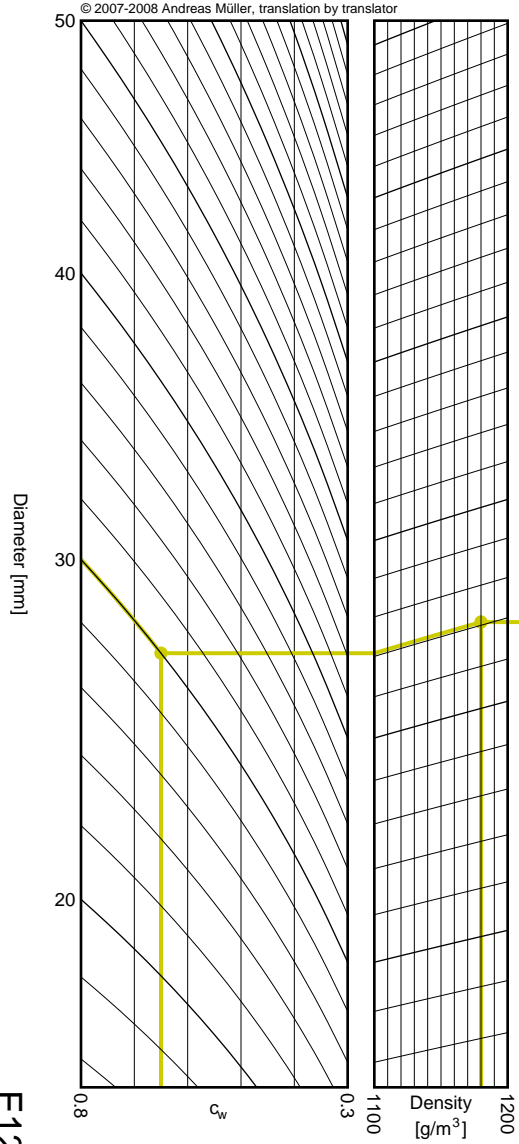
Data source:

Aerotech



1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
 2. Move along horizontal to left border of density scale
 3. Move up slanted line to vertical line matching density at launch site
 4. From intersection point move horizontally to vertical line matching rocket mass
 5. Read off expected time to apogee from red curves, altitude from green curves
- Sample: diameter = 30mm, drag = 0.65, density = 1180 g/m³, weight = 0.139kg
- Results: time to apogee: 10.7s, expected altitude: 764m

empty weight [g]



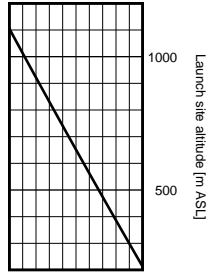
Quick Find Diameter [mm]

E12J-RC

Aerotech E23T

I_{tot} = 35.3 Ns
 F_{avg} = 22.5 N
 t_{burn} = 1.57 s
 d = 29 mm

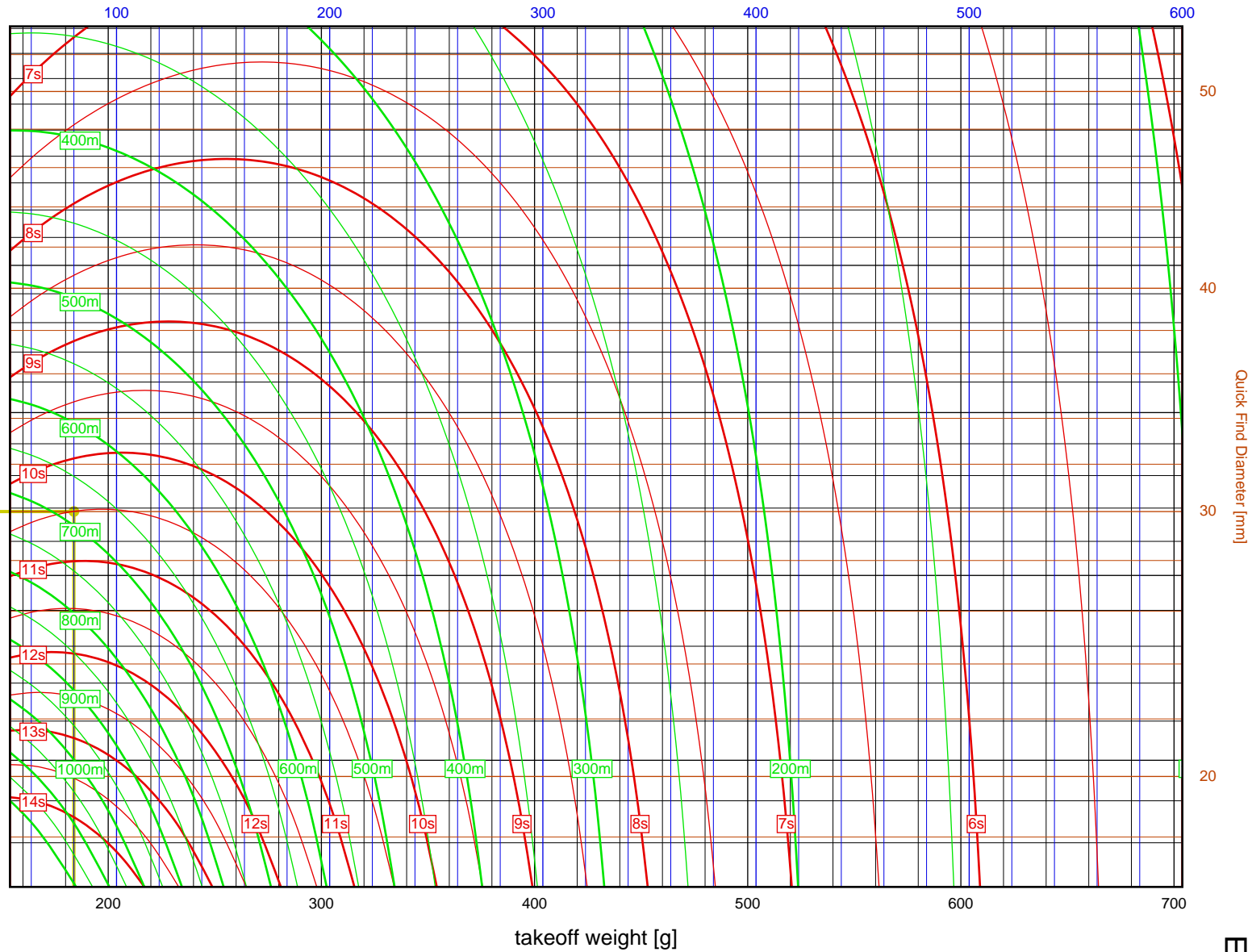
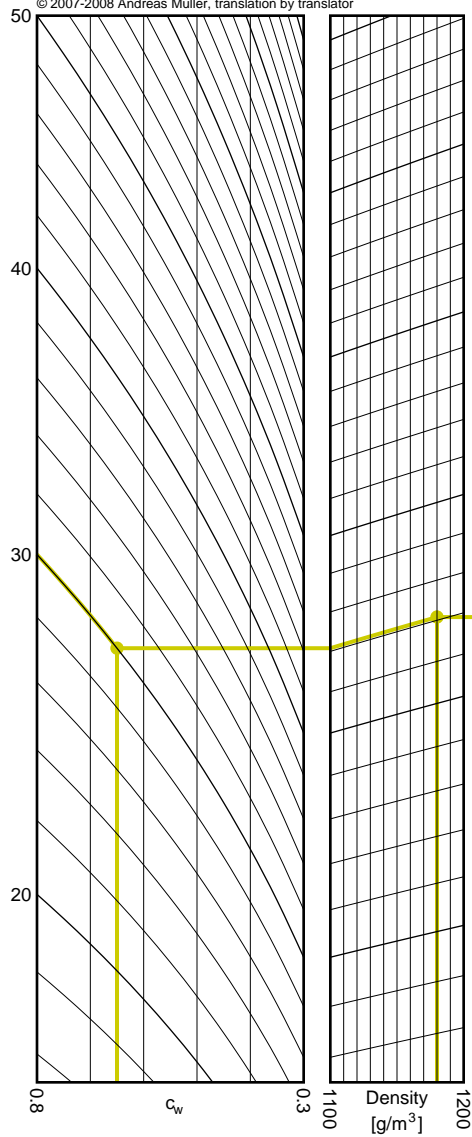
Data source:
Aerotech



1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 30mm, drag = 0.65, density = 1180 g/m³, weight = 0.184kg
 Results: time to apogee: 10.5s, expected altitude: 686m

empty weight [g]



D-E

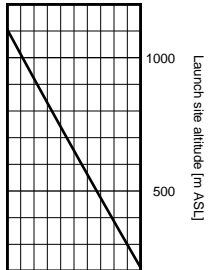
2

E23T

Aerotech E16W

I_{tot} = 38.4 Ns
 F_{avg} = 14.1 N
 t_{burn} = 2.72 s
 d = 29 mm

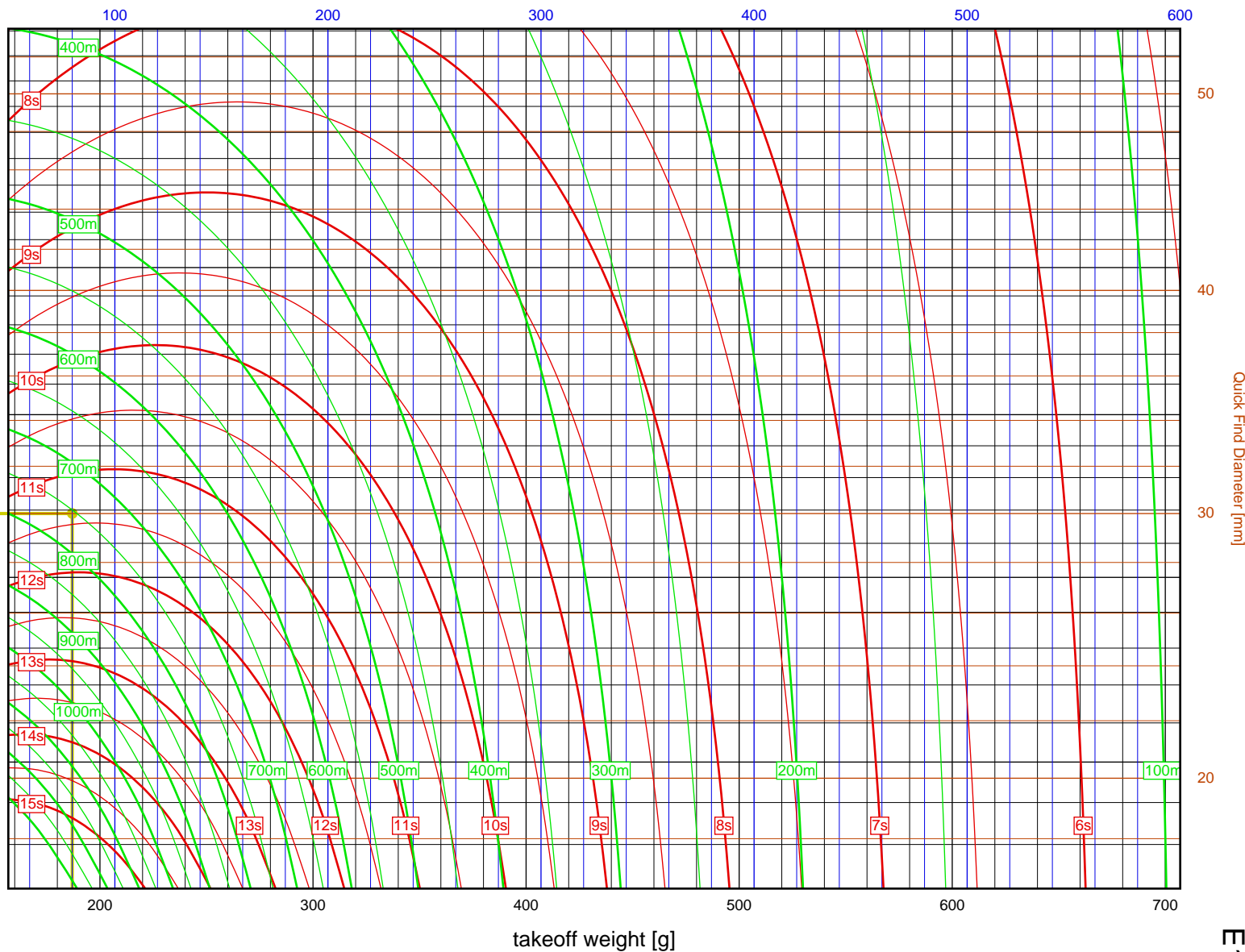
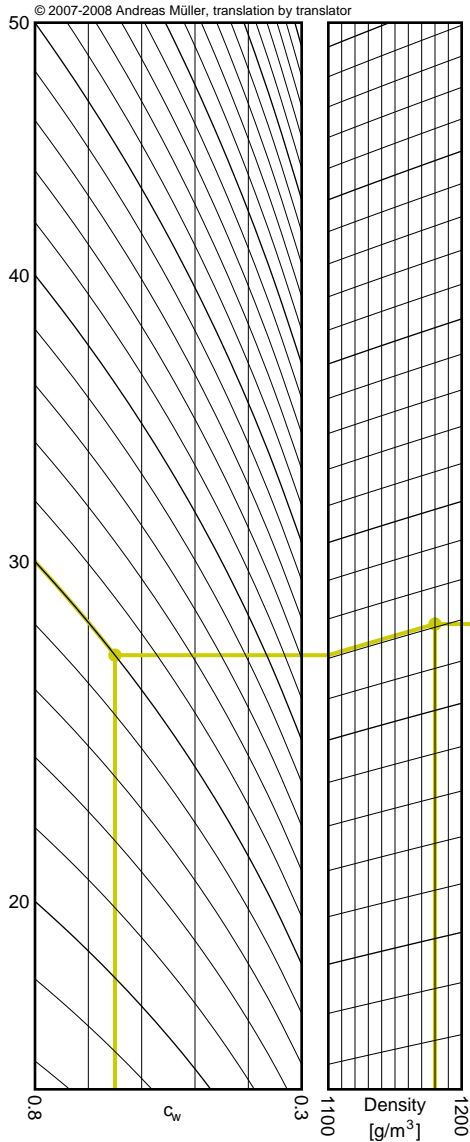
Data source:
Aerotech



1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 30mm, drag = 0.65, density = 1180 g/m³, weight = 0.187kg
 Results: time to apogee: 11.4s, expected altitude: 754m

empty weight [g]



D-E

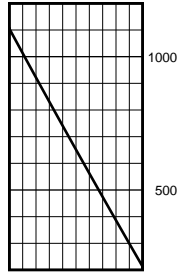
2

E16W

Aerotech E30T

I_{tot} = 39.5 Ns
 F_{avg} = 32.4 N
 t_{burn} = 1.22 s
 d = 24 mm

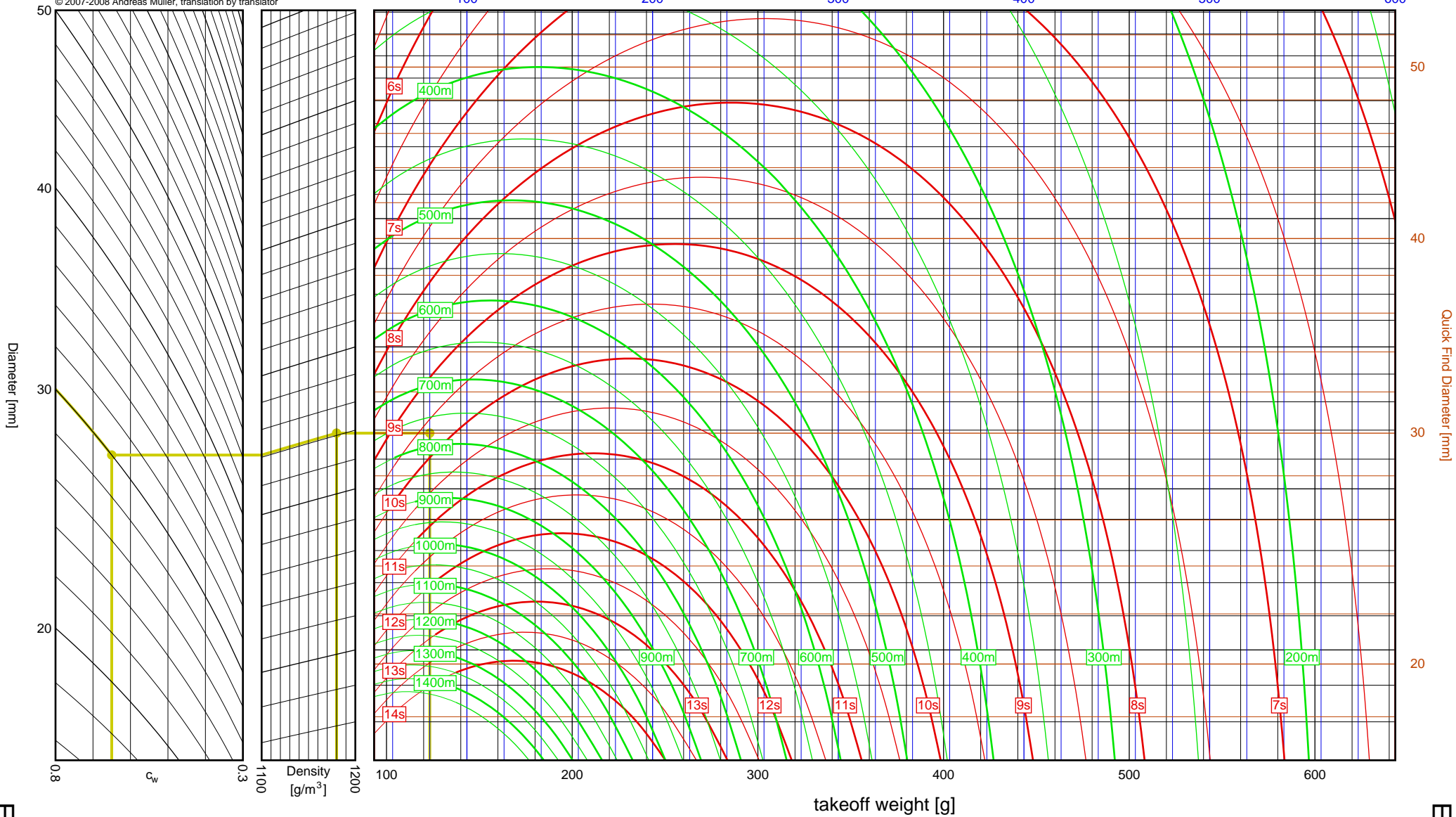
Data source:
Aerotech



1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 30mm, drag = 0.65, density = 1180 g/m³, weight = 0.123kg
 Results: time to apogee: 9.7s, expected altitude: 777m

empty weight [g]



D-E

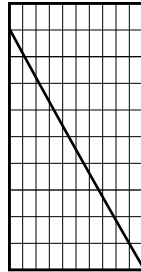
2

E30T

Aerotech E28T

I_{tot} = 39.7 Ns
 F_{avg} = 32.5 N
 t_{burn} = 1.22 s
 d = 24 mm

Data source:
Aerotech



1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 30mm, drag = 0.65, density = 1180 g/m³, weight = 0.135kg
 Results: time to apogee: 10.0s, expected altitude: 785m

empty weight [g]

100 200 300 400 500 600

50

40

30

20

0.8

c_w

0.3

Density [g/m³]

1100

1200

200

300

400

500

600

takeoff weight [g]

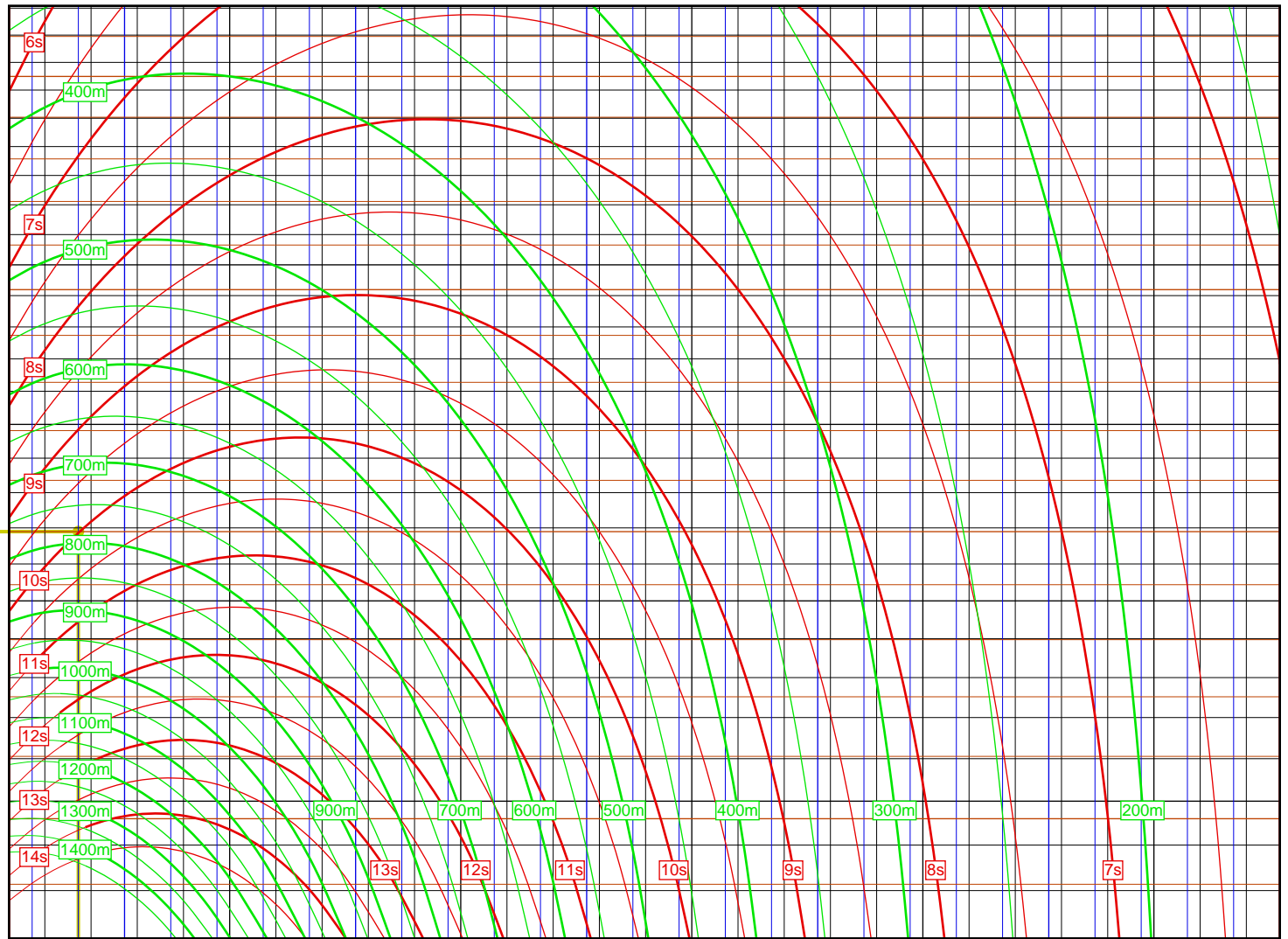
50

40

30

20

Quick Find Diameter [mm]



D-E

2

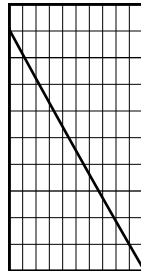
E28T

E28T

Aerotech E15W

I_{tot} = 39.8 Ns
 F_{avg} = 15.1 N
 t_{burn} = 2.64 s
 d = 24 mm

Data source:
Aerotech



Launch site altitude [m ASL]

1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 30mm, drag = 0.65, density = 1180 g/m³, weight = 0.130kg
 Results: time to apogee: 10.7s, expected altitude: 843m

empty weight [g]

100 200 300 400 500 600

50

40

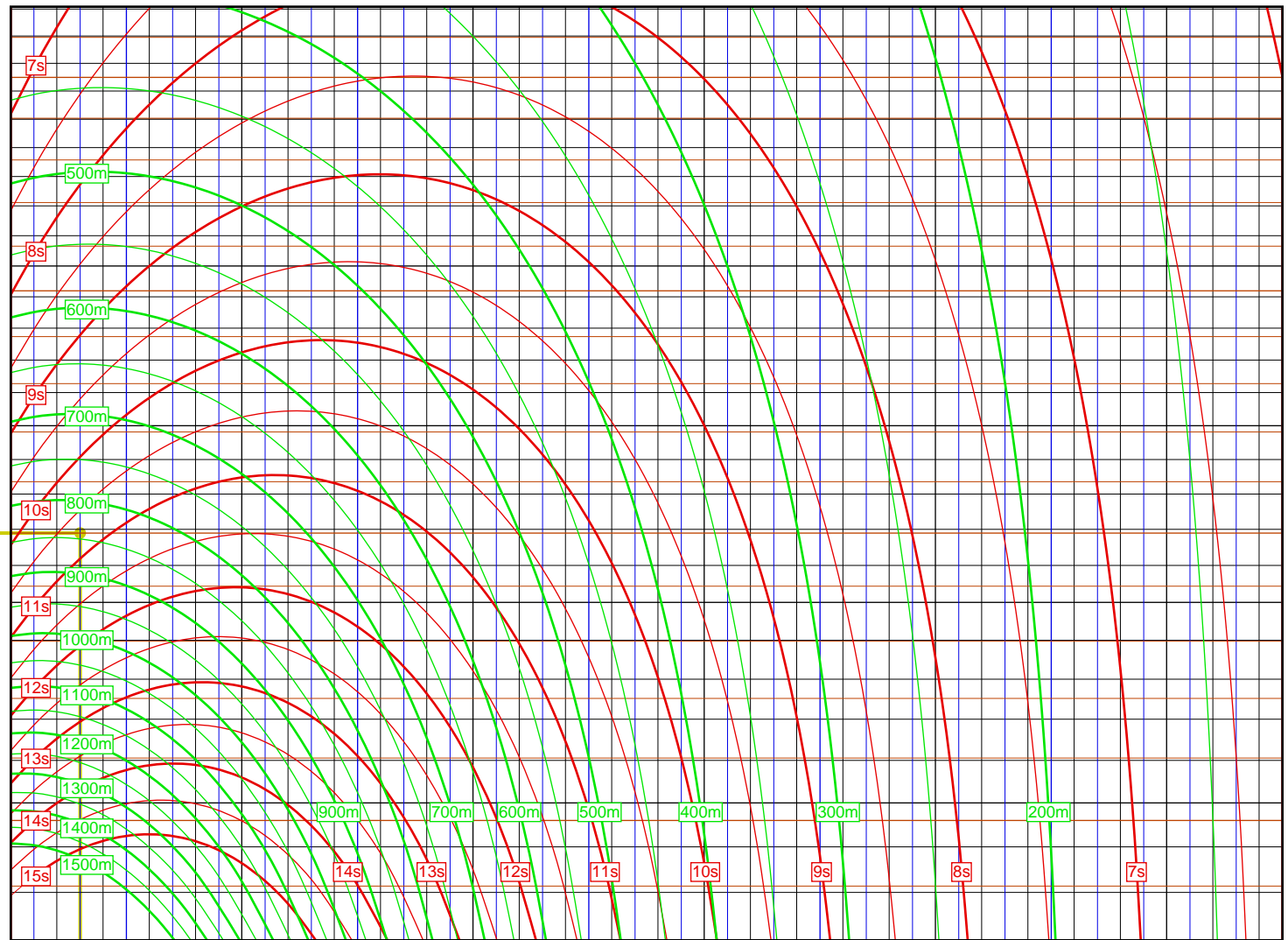
30

20

Diameter [mm]

c_w

Density [g/m³]



takeoff weight [g]

Quick Find Diameter [mm]

20

E15W

D-E

2

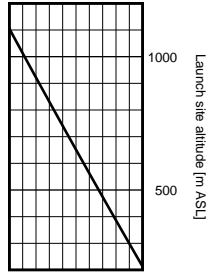
2-14

E15W

Aerotech E18W

I_{tot} = 39.8 Ns
 F_{avg} = 18.1 N
 t_{burn} = 2.20 s
 d = 24 mm

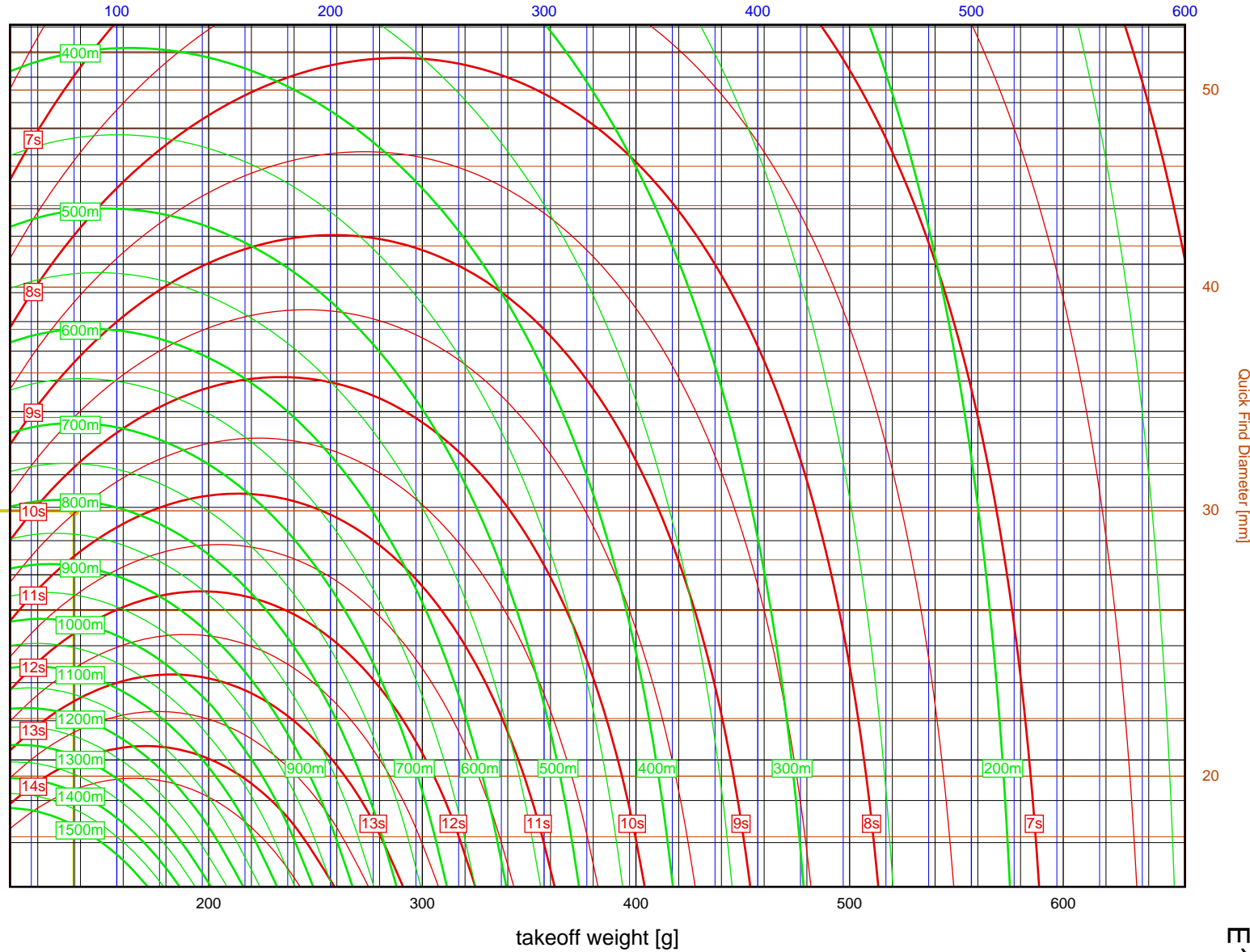
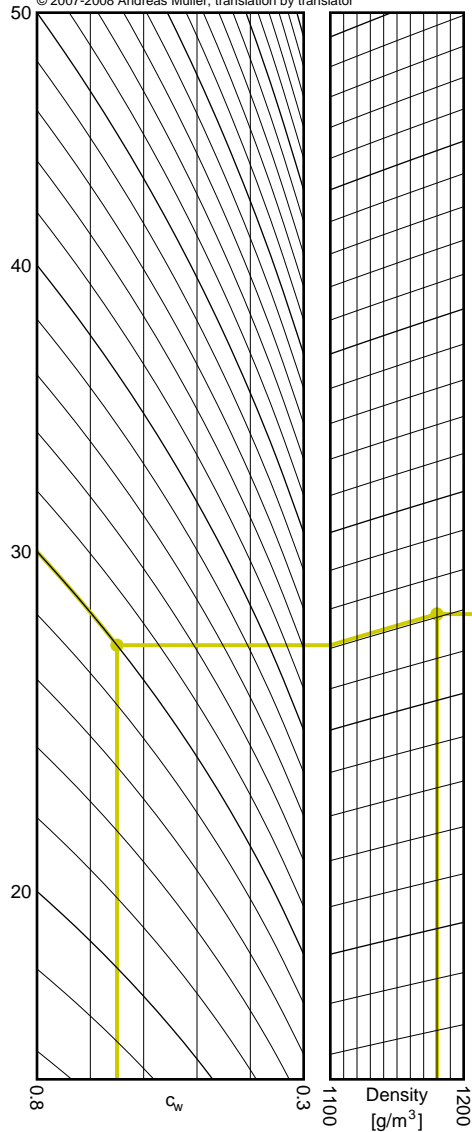
Data source:
Aerotech



1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 30mm, drag = 0.65, density = 1180 g/m³, weight = 0.137kg
 Results: time to apogee: 10.5s, expected altitude: 816m

empty weight [g]



D-E

2

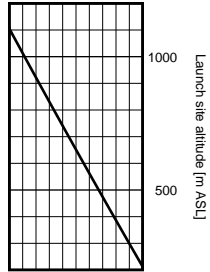
Quick Find Diameter [mm]

E18W

Aerotech F12J

I_{tot} = 43.2 Ns
 F_{avg} = 14.7 N
 t_{burn} = 2.93 s
 d = 24 mm

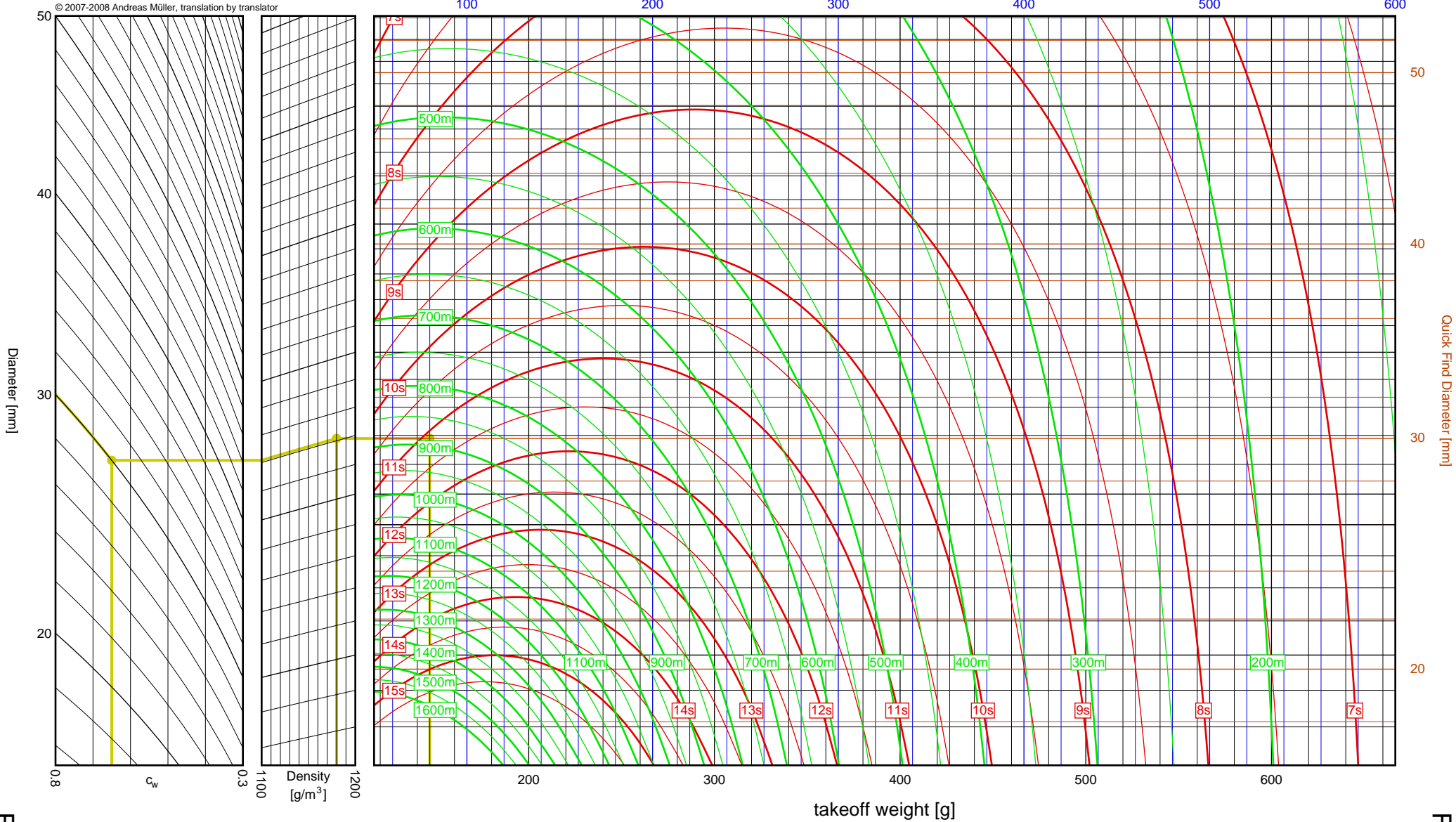
Data source:
Aerotech



1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

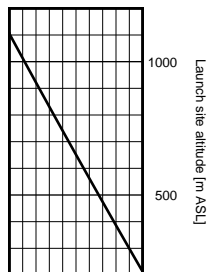
Sample: diameter = 30mm, drag = 0.65, density = 1180 g/m³, weight = 0.147kg
 Results: time to apogee: 11.1s, expected altitude: 887m

empty weight [g]



I_{tot}	=	46.2 Ns
F_{avg}	=	46.2 N
t_{burn}	=	1.00 s
d	=	29 mm

Data source:
Aerotech

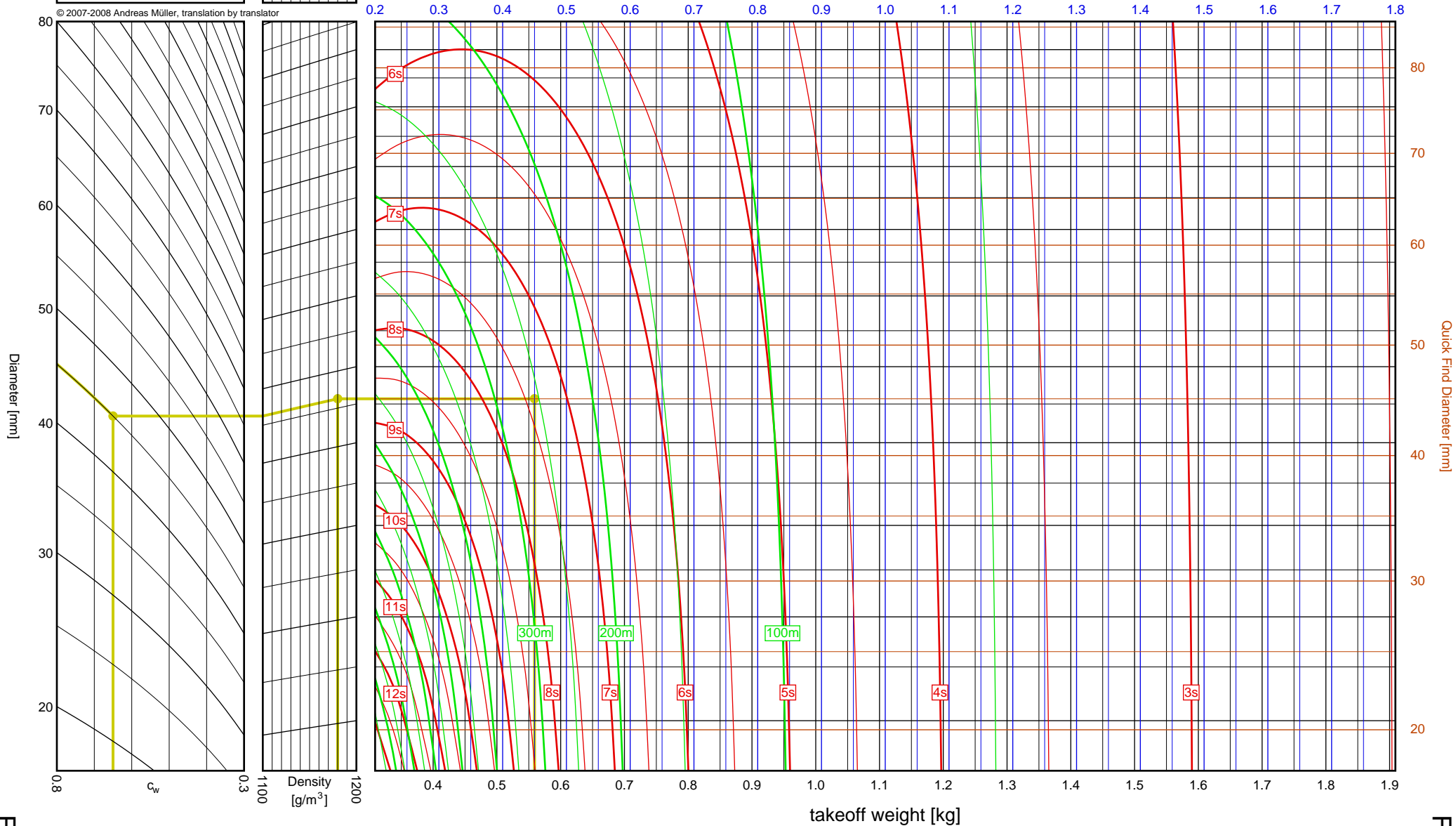


1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 45mm, drag = 0.65, density = 1180 g/m³, weight = 0.559kg

Results: time to apogee: 7.4s, expected altitude: 255m

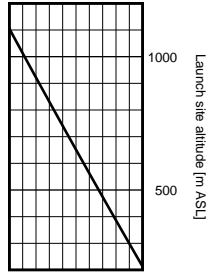
empty weight [kg]



Aerotech F24W

I_{tot} = 47.3 Ns
 F_{avg} = 22.2 N
 t_{burn} = 2.13 s
 d = 24 mm

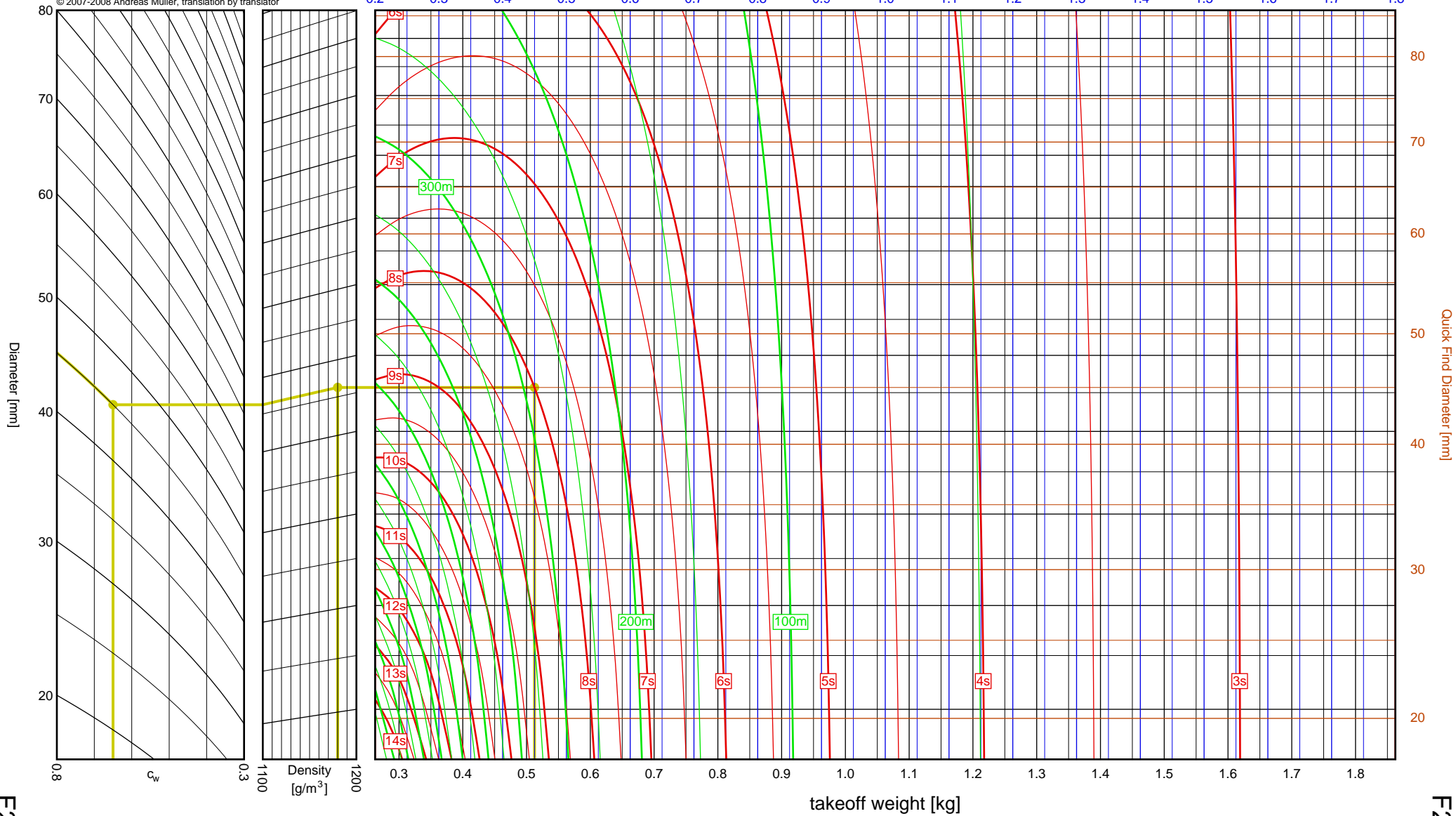
Data source:
Aerotech



1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 45mm, drag = 0.65, density = 1180 g/m³, weight = 0.512kg
 Results: time to apogee: 8.0s, expected altitude: 286m

empty weight [kg]



F-G

Quick Find Diameter [mm]

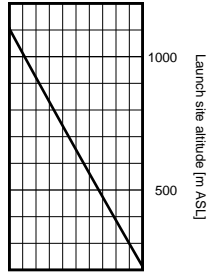
F24W

F24W

Aerotech F27R

I_{tot} = 49.5 Ns
 F_{avg} = 20.4 N
 t_{burn} = 2.42 s
 d = 29 mm

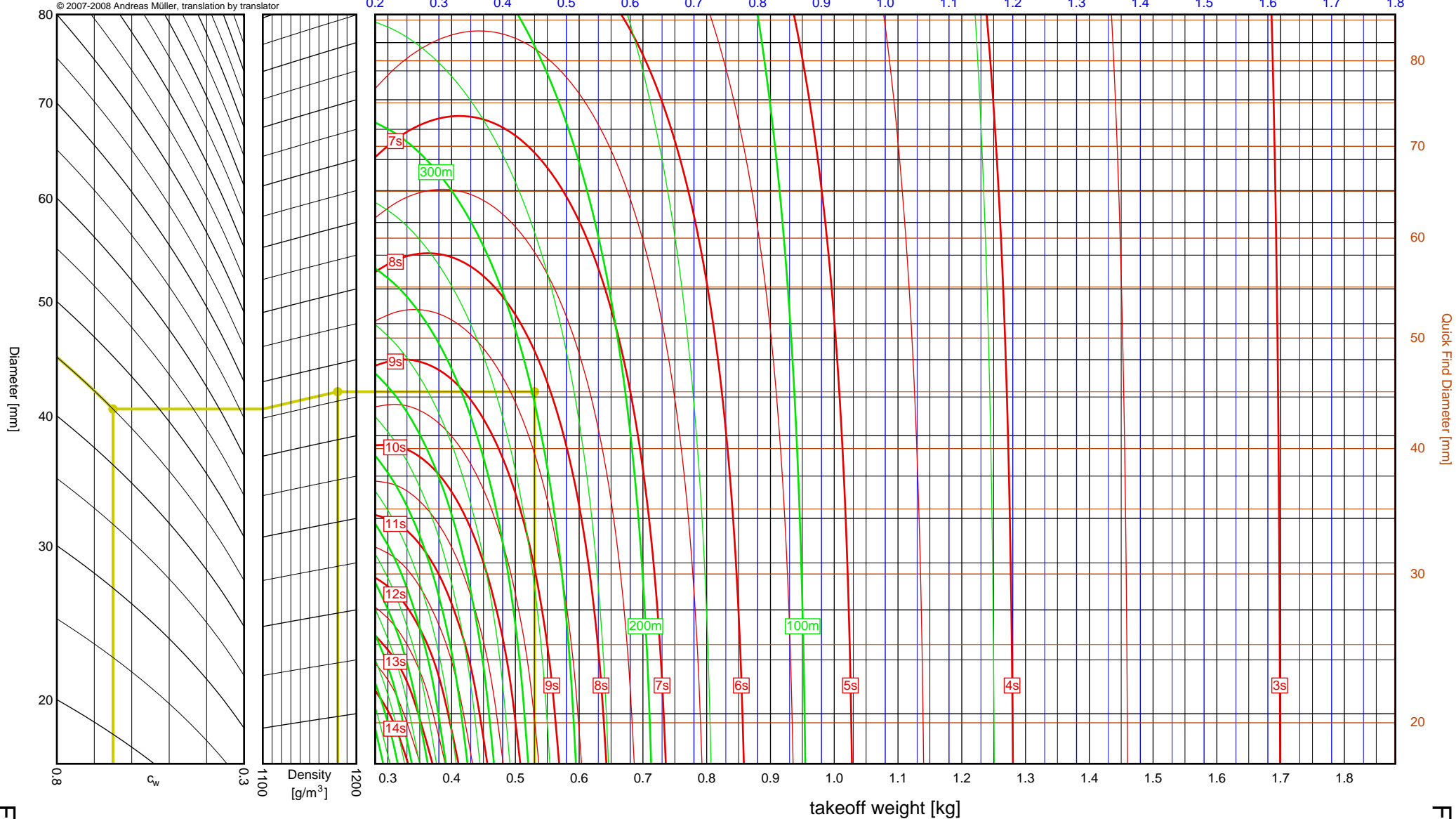
Data source:
Aerotech



1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 45mm, drag = 0.65, density = 1180 g/m³, weight = 0.530kg
 Results: time to apogee: 8.2s, expected altitude: 297m

empty weight [kg]



F-G

3

F27R

Quick Find Diameter [mm]

20

30

40

50

60

70

80

F27R

Diameter [mm]

3-3

c_w

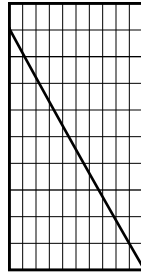
Density [g/m³]

takeoff weight [kg]

Aerotech F39T

I_{tot} = 49.7 Ns
 F_{avg} = 37.3 N
 t_{burn} = 1.33 s
 d = 24 mm

Data source:
Aerotech

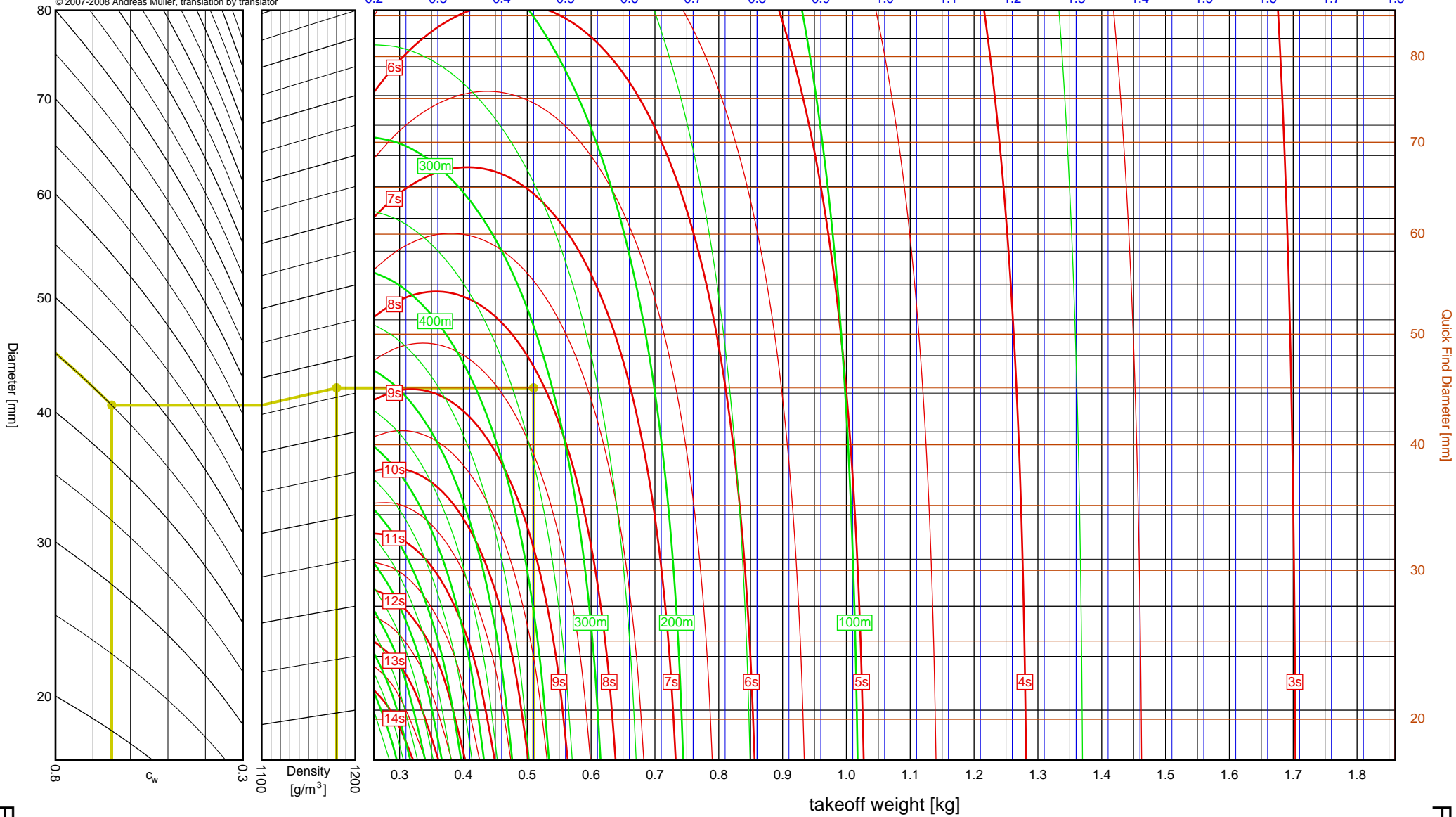


Launch site altitude [m ASL]

1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 45mm, drag = 0.65, density = 1180 g/m³, weight = 0.510kg
 Results: time to apogee: 8.1s, expected altitude: 323m

empty weight [kg]



F-G

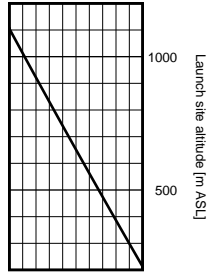
3

F39T

Aerotech F37W

I_{tot} = 50.7 Ns
 F_{avg} = 31.7 N
 t_{burn} = 1.60 s
 d = 29 mm

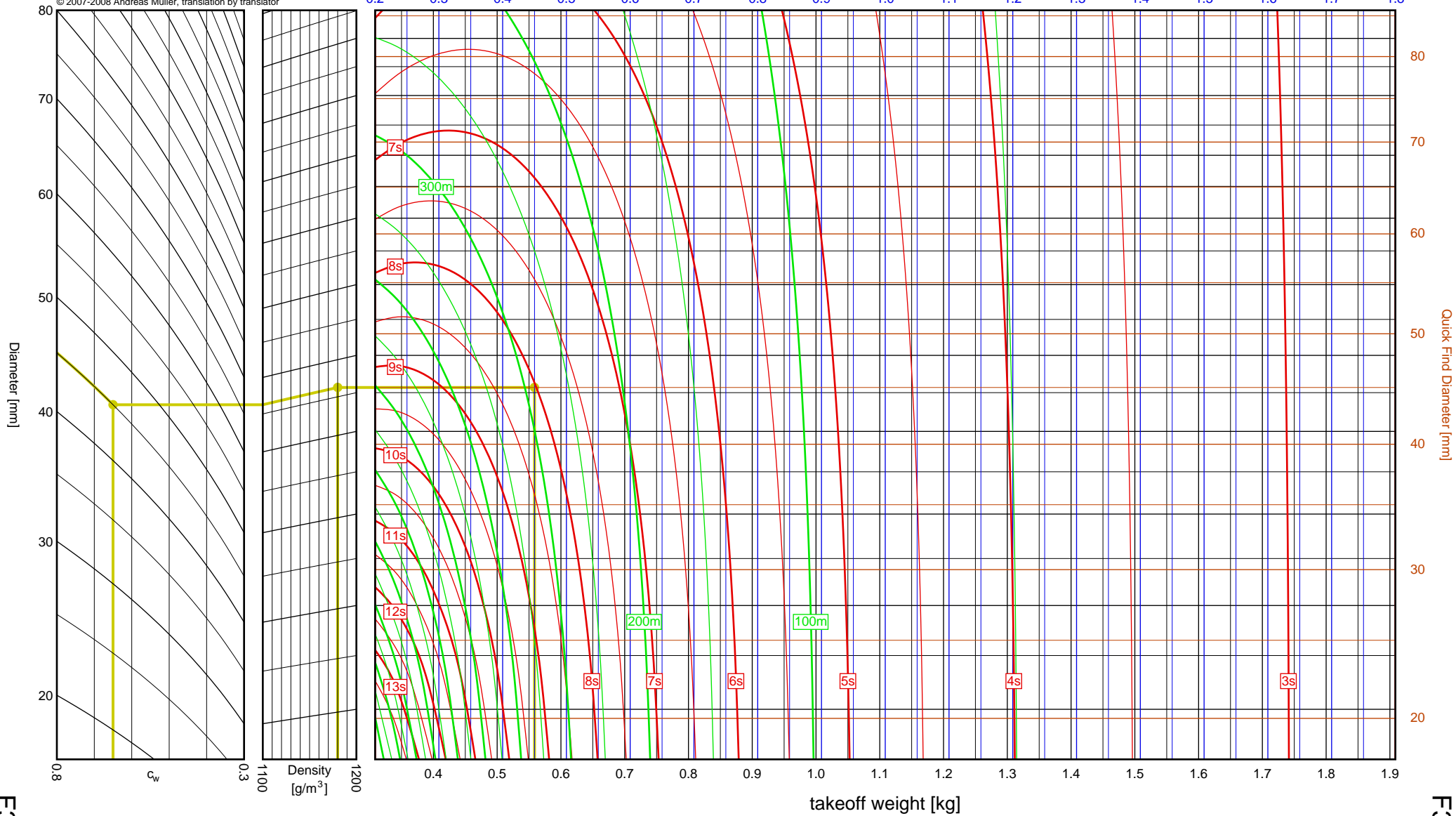
Data source:
Aerotech



1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 45mm, drag = 0.65, density = 1180 g/m³, weight = 0.559kg
 Results: time to apogee: 8.0s, expected altitude: 288m

empty weight [kg]



F-G

3

Quick Find Diameter [mm]

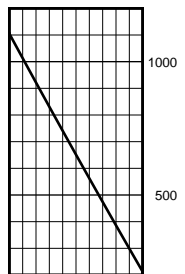
F37W

F37W

Aerotech F23FJ

I_{tot} = 52.8 Ns
 F_{avg} = 23.8 N
 t_{burn} = 2.22 s
 d = 29 mm

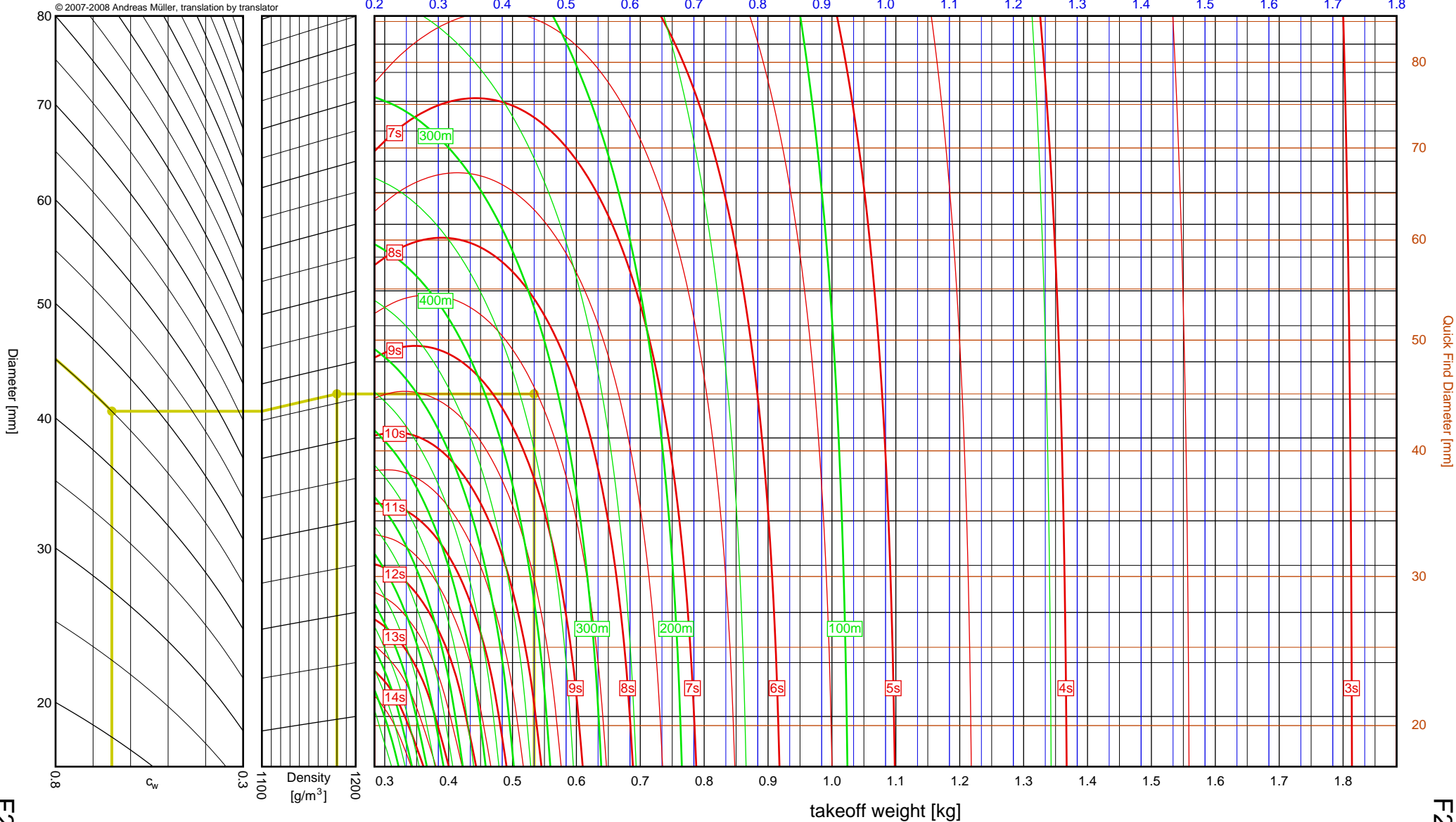
Data source:
Aerotech



1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 45mm, drag = 0.65, density = 1180 g/m³, weight = 0.534kg
 Results: time to apogee: 8.5s, expected altitude: 331m

empty weight [kg]



F-G

3

F23FJ

Quick Find Diameter [mm]

20

30

40

50

60

70

80

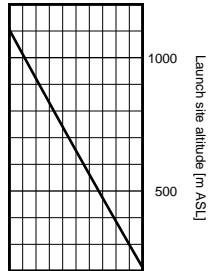
3-6

F23FJ

Aerotech F21W

I_{tot} = 55.8 Ns
 F_{avg} = 22.2 N
 t_{burn} = 2.52 s
 d = 24 mm

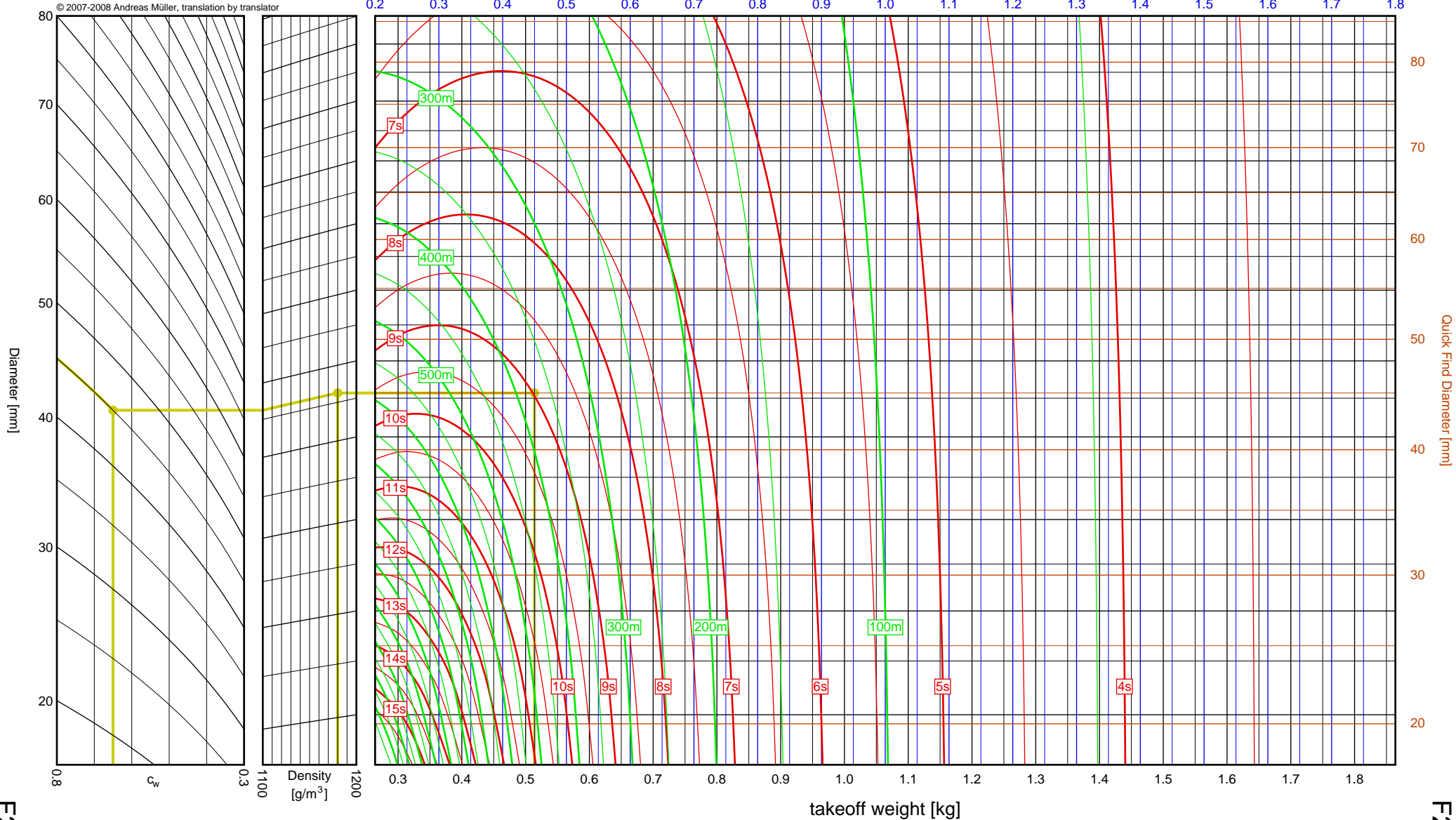
Data source:
Aerotech



1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 45mm, drag = 0.65, density = 1180 g/m³, weight = 0.514kg
 Results: time to apogee: 9.0s, expected altitude: 373m

empty weight [kg]



F-G

3

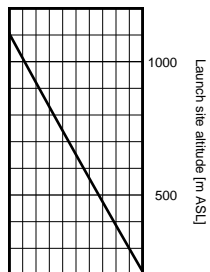
Quick Find Diameter [mm]

F21W

F21W

I_{tot}	=	55.9 Ns
F_{avg}	=	38.0 N
t_{burn}	=	1.47 s
d	=	29 mm

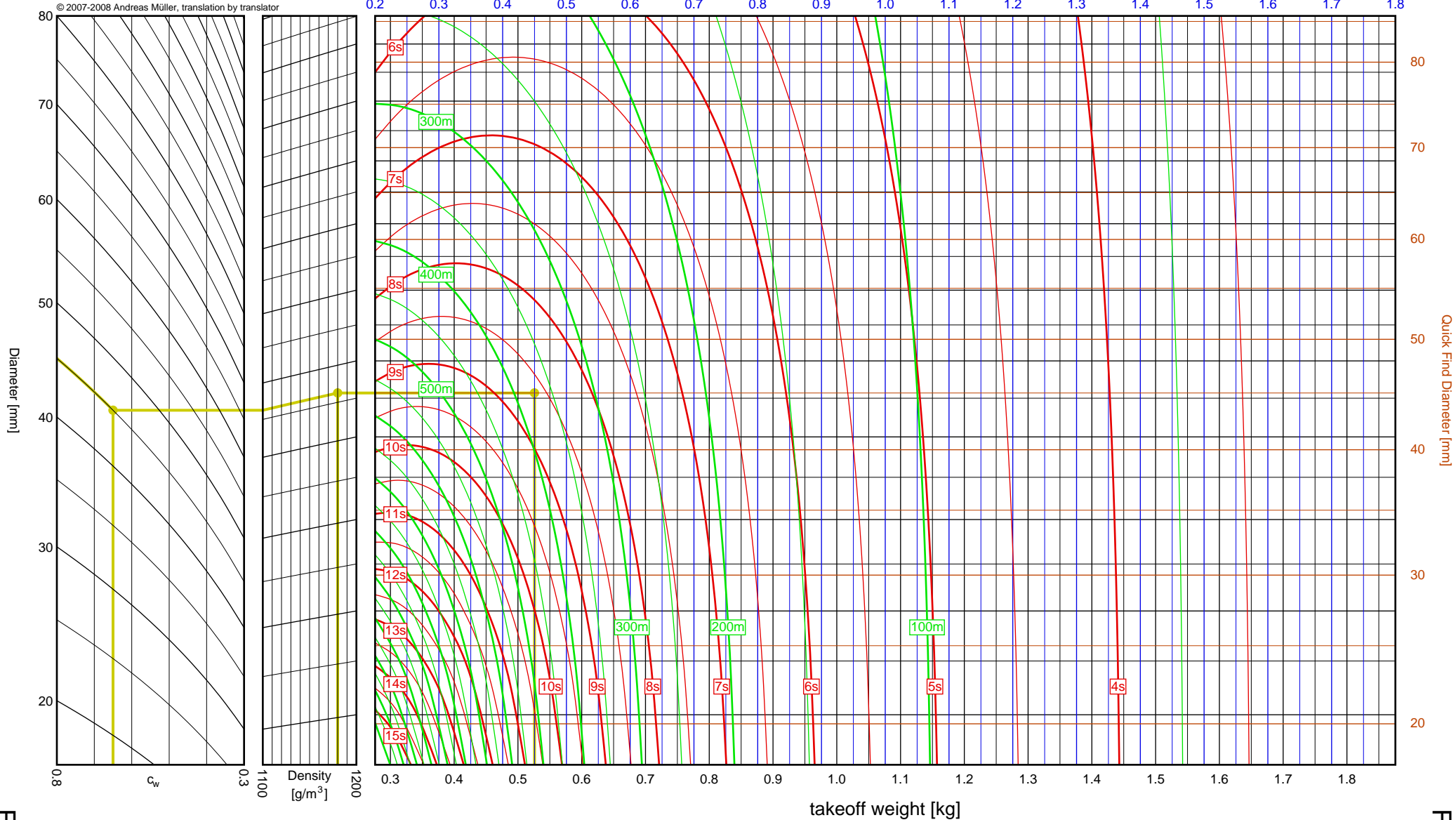
Data source:
Aerotech



1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 45mm, drag = 0.65, density = 1180 g/m³, weight = 0.526kg
Results: time to apogee: 8.6s, expected altitude: 373m

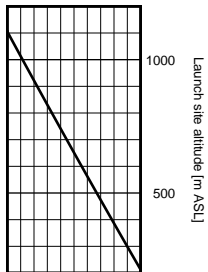
empty weight [kg]



Aerotech F35W

I_{tot} = 57.6 Ns
 F_{avg} = 36.0 N
 t_{burn} = 1.60 s
 d = 24 mm

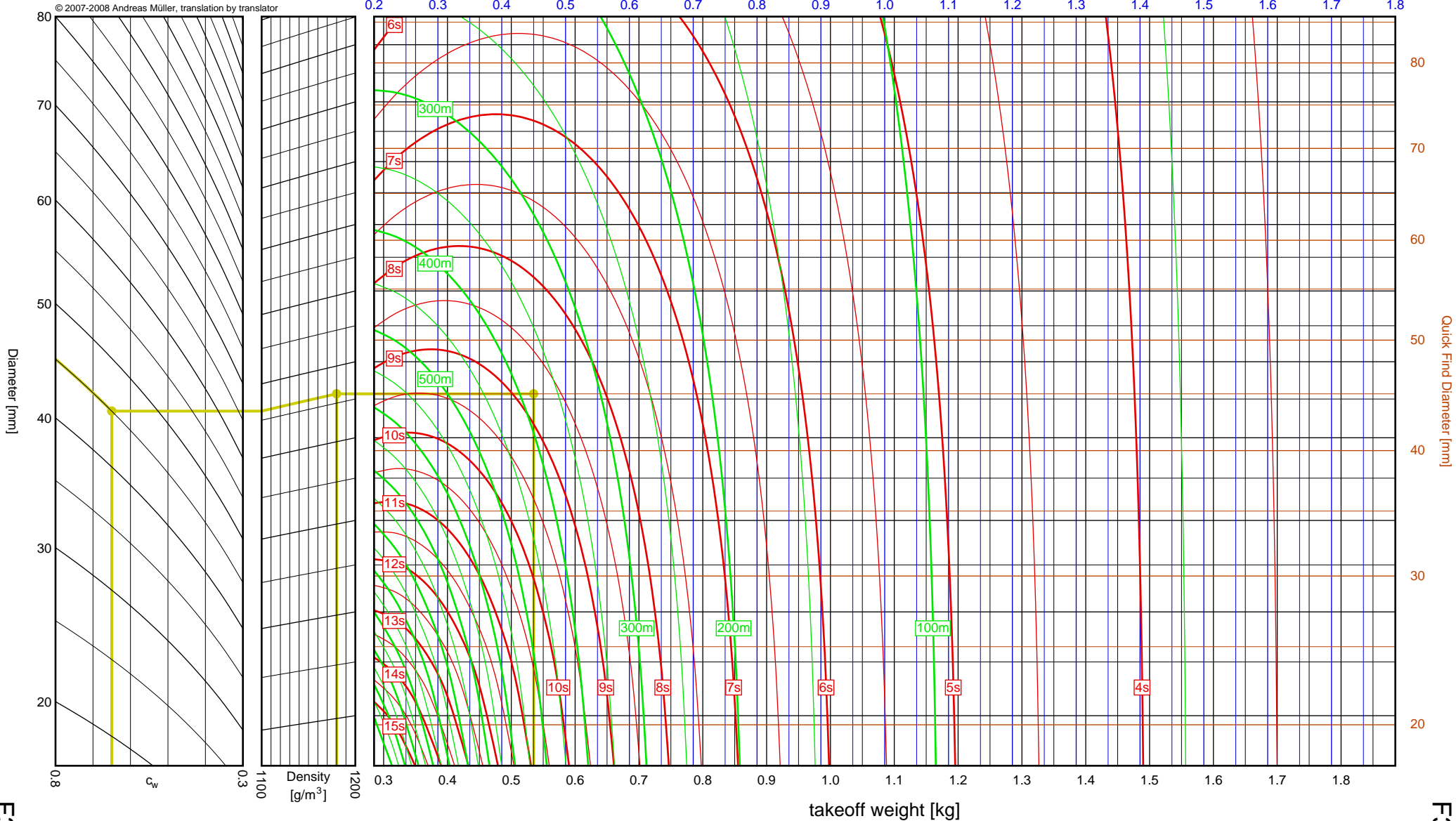
Data source:
Aerotech



1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 45mm, drag = 0.65, density = 1180 g/m³, weight = 0.535kg
 Results: time to apogee: 8.8s, expected altitude: 381m

empty weight [kg]



F-G

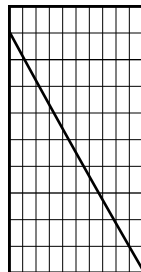
3

F35W

Aerotech F20W

I_{tot} = 60.6 Ns
 F_{avg} = 22.6 N
 t_{burn} = 2.68 s
 d = 29 mm

Data source:
Aerotech

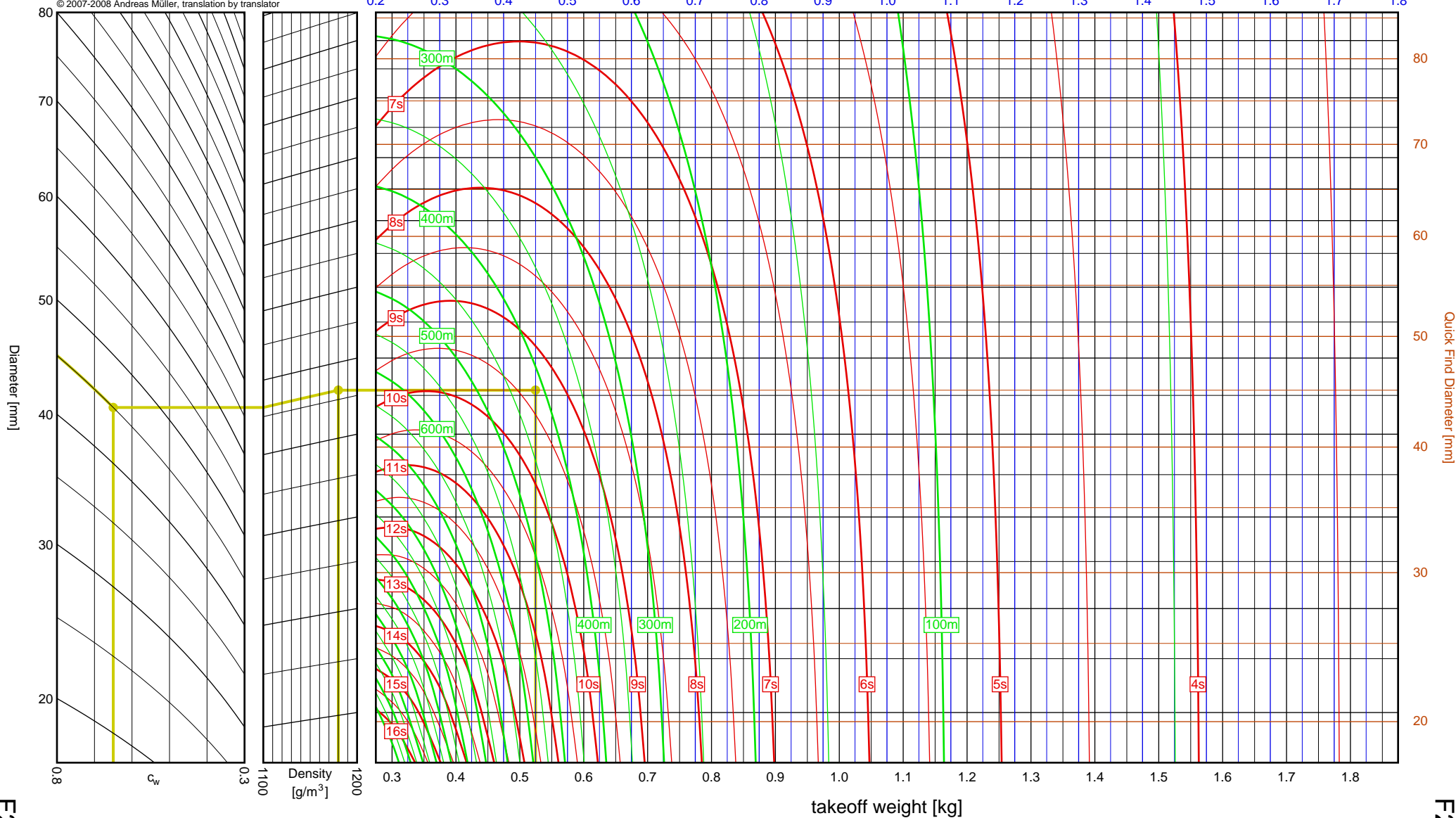


Launch site altitude [m ASL]

1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 45mm, drag = 0.65, density = 1180 g/m³, weight = 0.525kg
 Results: time to apogee: 9.3s, expected altitude: 413m

empty weight [kg]



F-G

3

F20W

Quick Find Diameter [mm]

F20W

-3-10

Diameter [mm]

c_w

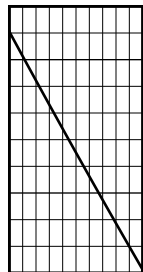
Density [g/m³]

takeoff weight [kg]

Aerotech F26FJ

I_{tot} = 62.5 Ns
 F_{avg} = 23.9 N
 t_{burn} = 2.61 s
 d = 29 mm

Data source:
Aerotech

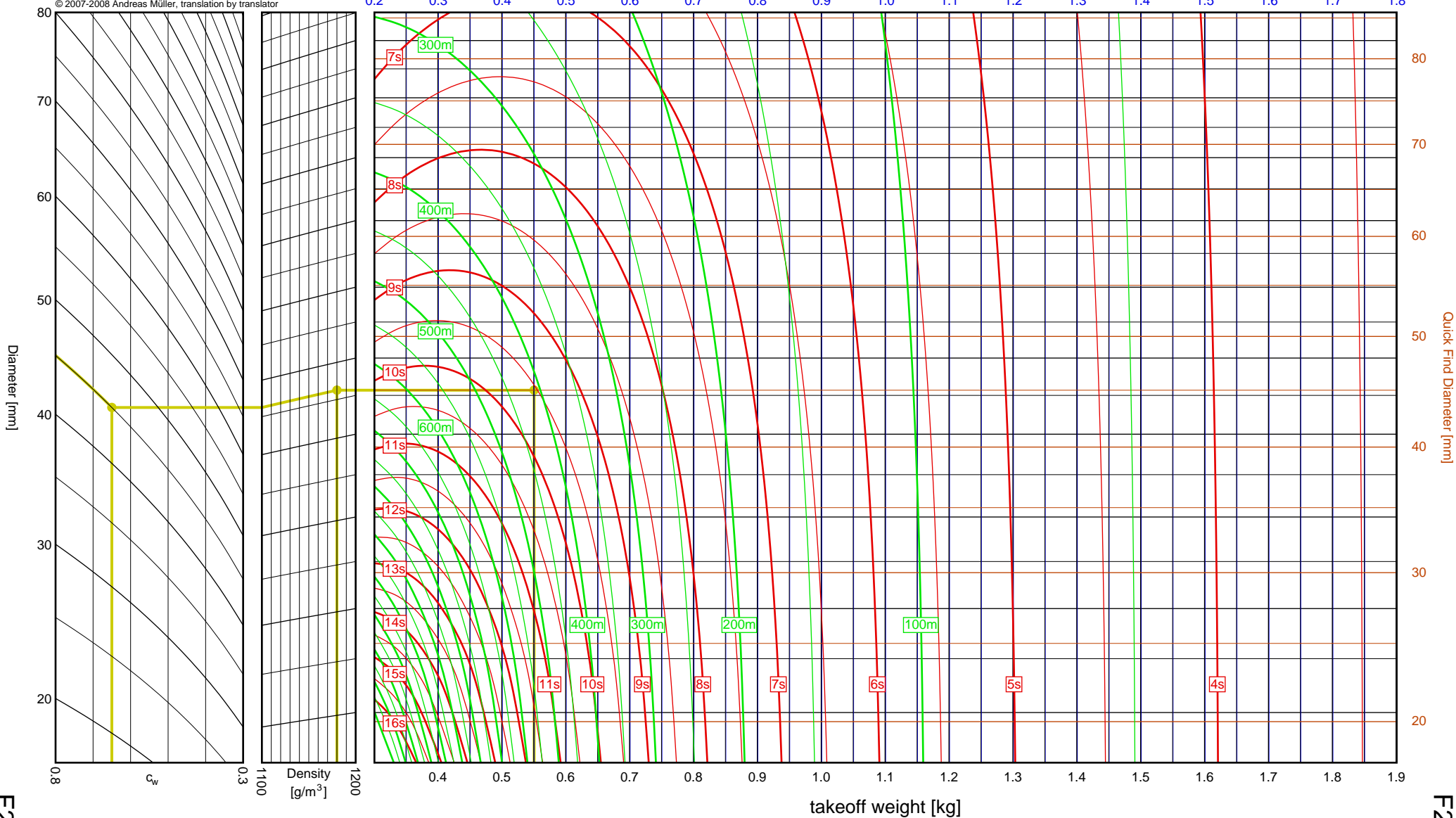


Launch site altitude [m ASL]

1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 45mm, drag = 0.65, density = 1180 g/m³, weight = 0.551kg
 Results: time to apogee: 9.5s, expected altitude: 409m

empty weight [kg]



F-G

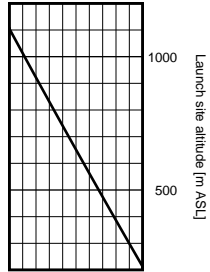
3

F26FJ

Aerotech F22J

I_{tot} = 65.0 Ns
 F_{avg} = 19.6 N
 t_{burn} = 3.31 s
 d = 29 mm

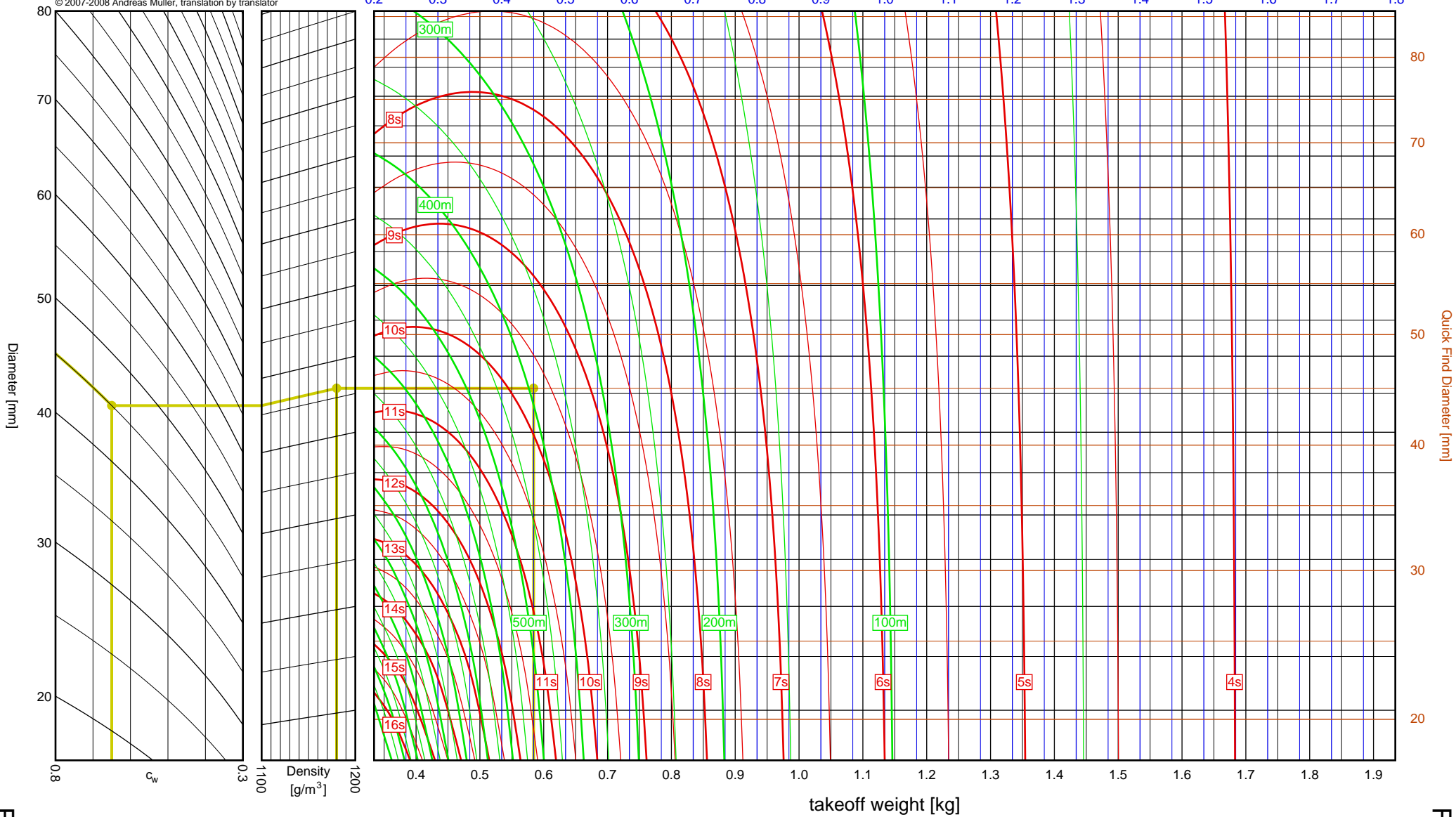
Data source:
Aerotech



1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 45mm, drag = 0.65, density = 1180 g/m³, weight = 0.584kg
 Results: time to apogee: 9.7s, expected altitude: 393m

empty weight [kg]



F-G

3

Quick Find Diameter [mm]

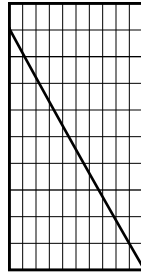
F22J

F22J

Aerotech F50T

I_{tot} = 68.7 Ns
 F_{avg} = 48.1 N
 t_{burn} = 1.43 s
 d = 29 mm

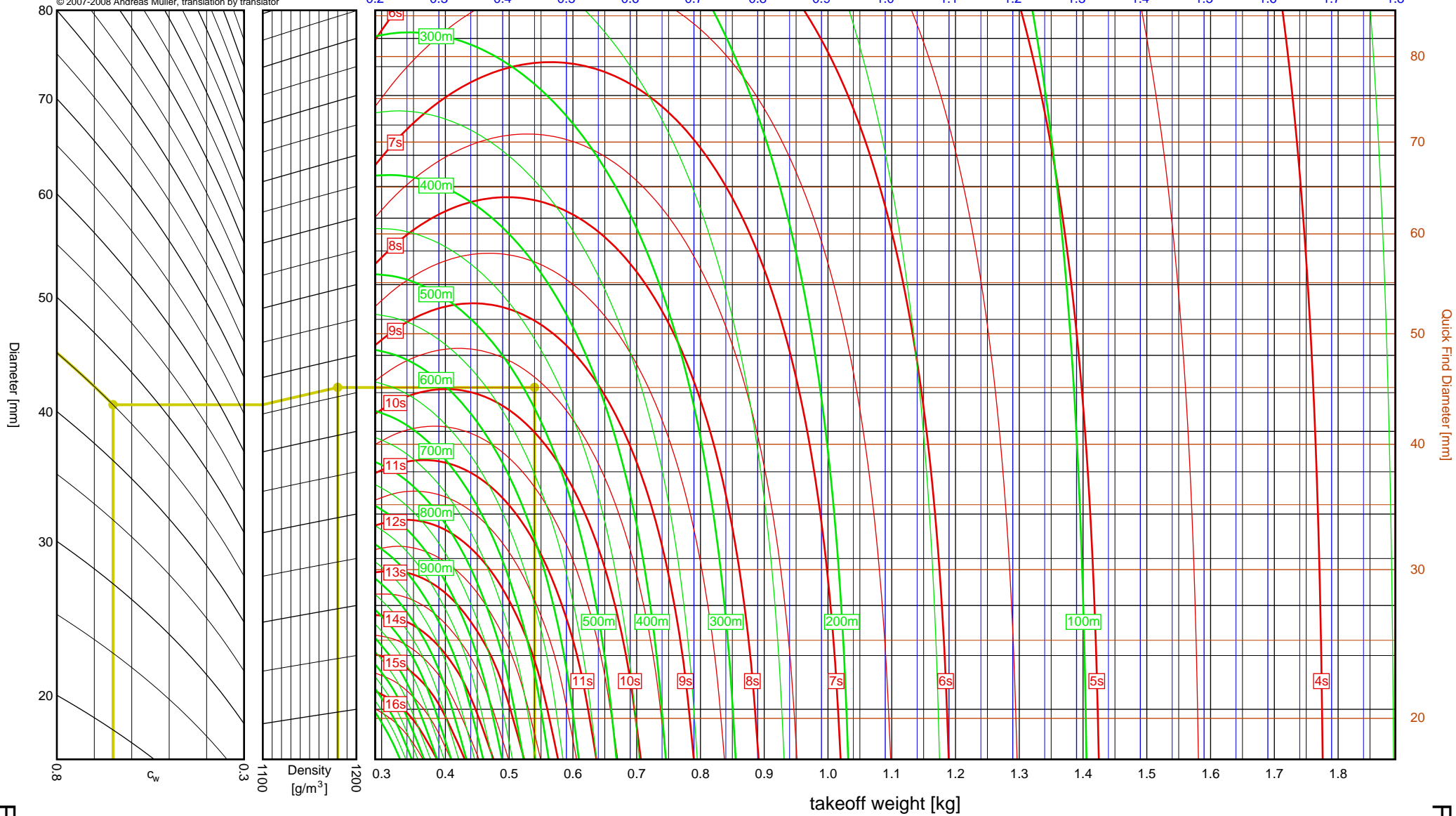
Data source:
Aerotech



1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 45mm, drag = 0.65, density = 1180 g/m³, weight = 0.540kg
 Results: time to apogee: 9.6s, expected altitude: 485m

empty weight [kg]



F-G

3

F50T

Quick Find Diameter [mm]

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70

80

90

100

110

120

130

140

150

160

170

180

190

200

210

220

230

240

250

260

270

280

290

300

310

320

330

340

350

360

370

380

390

400

410

420

430

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510

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550

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580

590

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630

640

650

660

670

680

690

700

710

720

730

740

750

760

770

780

790

800

810

820

830

840

850

860

870

880

890

900

910

920

930

940

950

960

970

980

990

1000

1010

1020

1030

1040

1050

1060

1070

1080

1090

1100

1110

1120

1130

1140

1150

1160

1170

1180

1190

1200

1210

1220

1230

1240

1250

1260

1270

1280

1290

1300

1310

1320

1330

1340

1350

1360

1370

1380

1390

1400

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1470

1480

1490

1500

1510

1520

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1540

1550

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1570

1580

1590

1600

1610

1620

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2100

2110

2120

2130

2140

2150

2160

2170

2180

2190

2200

2210

2220

2230

2240

2250

2260

2270

2280

2290

2300

2310

2320

2330

2340

2350

2360

2370

2380

2390

2400

2410

2420

2430

2440

2450

2460

2470

2480

2490

2500

2510

2520

2530

2540

2550

2560

2570

2580

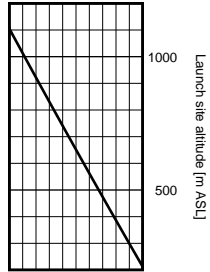
2590

2600

Aerotech F25W

I_{tot} = 70.8 Ns
 F_{avg} = 26.3 N
 t_{burn} = 2.69 s
 d = 29 mm

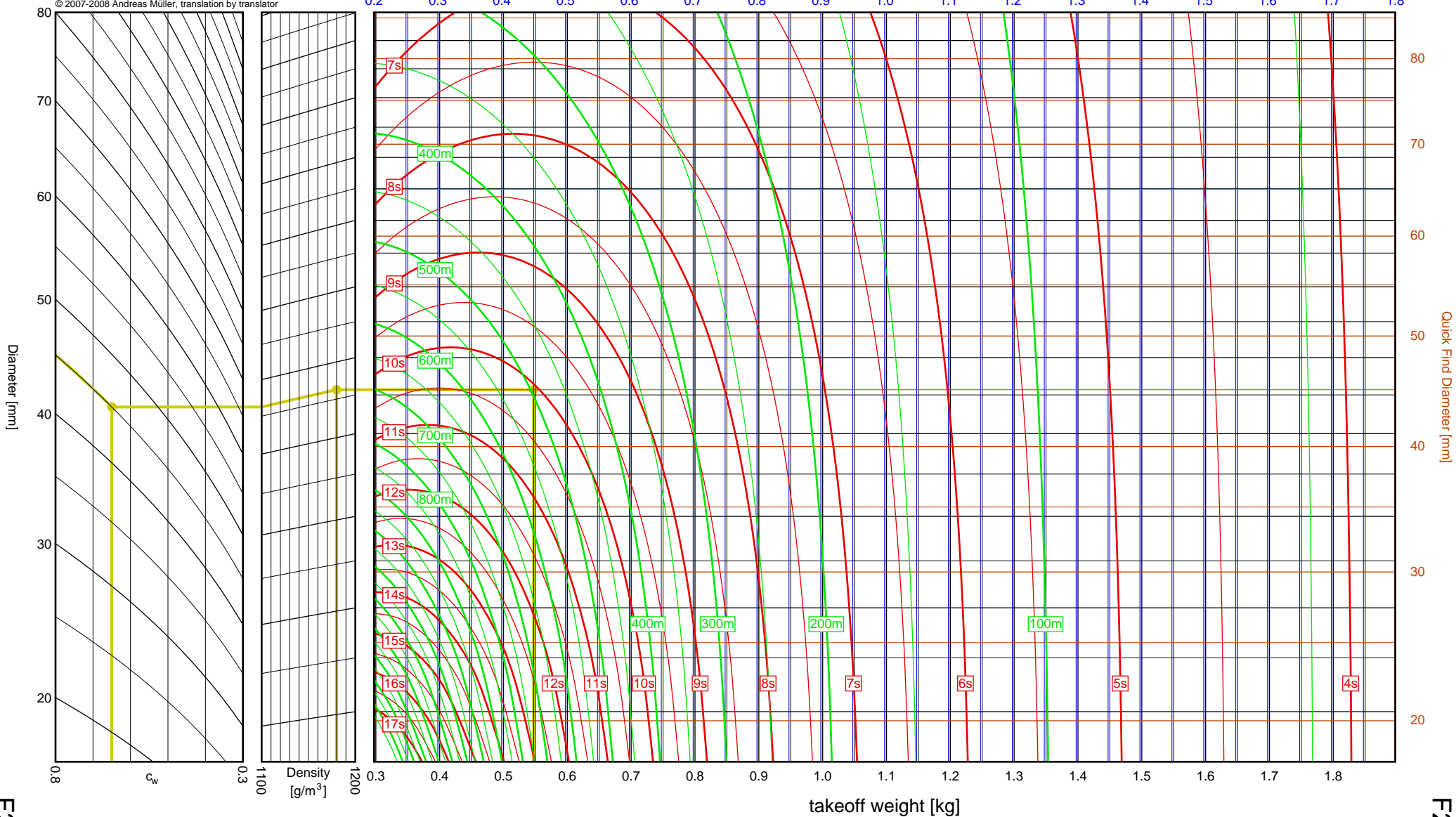
Data source:
Aerotech



1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 45mm, drag = 0.65, density = 1180 g/m³, weight = 0.547kg
 Results: time to apogee: 10.1s, expected altitude: 496m

empty weight [kg]



F-G

3

Quick Find Diameter [mm]

F25W

F25W

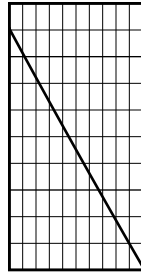
3-14

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Aerotech F52T

I_{tot} = 73.0 Ns
 F_{avg} = 51.4 N
 t_{burn} = 1.42 s
 d = 29 mm

Data source:
Aerotech

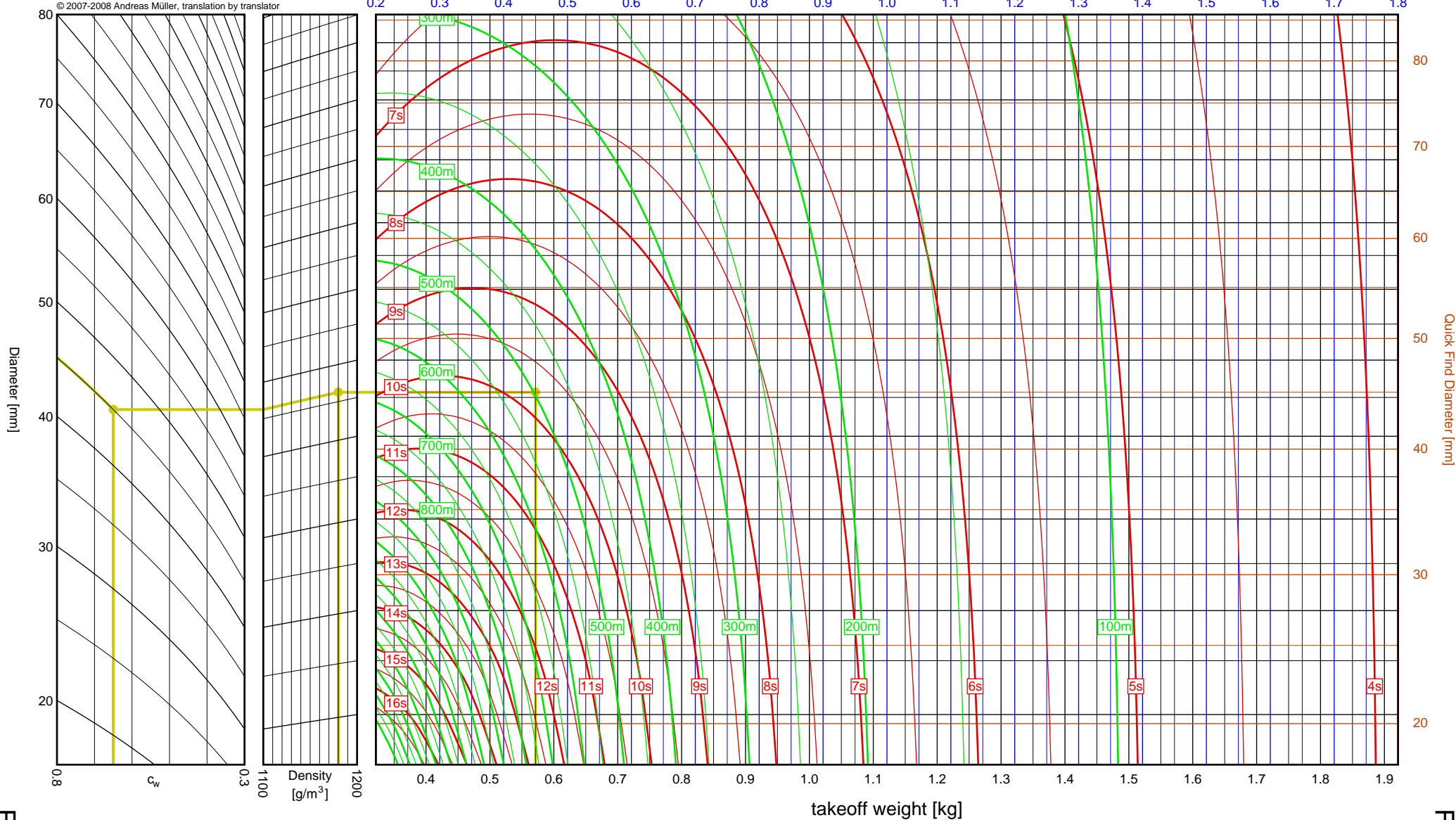


Launch site altitude [m ASL]

1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 45mm, drag = 0.65, density = 1180 g/m³, weight = 0.571kg
 Results: time to apogee: 9.8s, expected altitude: 498m

empty weight [kg]



F-G

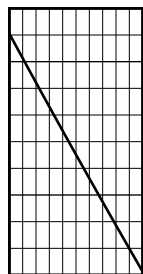
3

F52T

Aerotech G104T

I_{tot} = 76.9 Ns
 F_{avg} = 85.5 N
 t_{burn} = 0.90 s
 d = 29 mm

Data source:
Aerotech

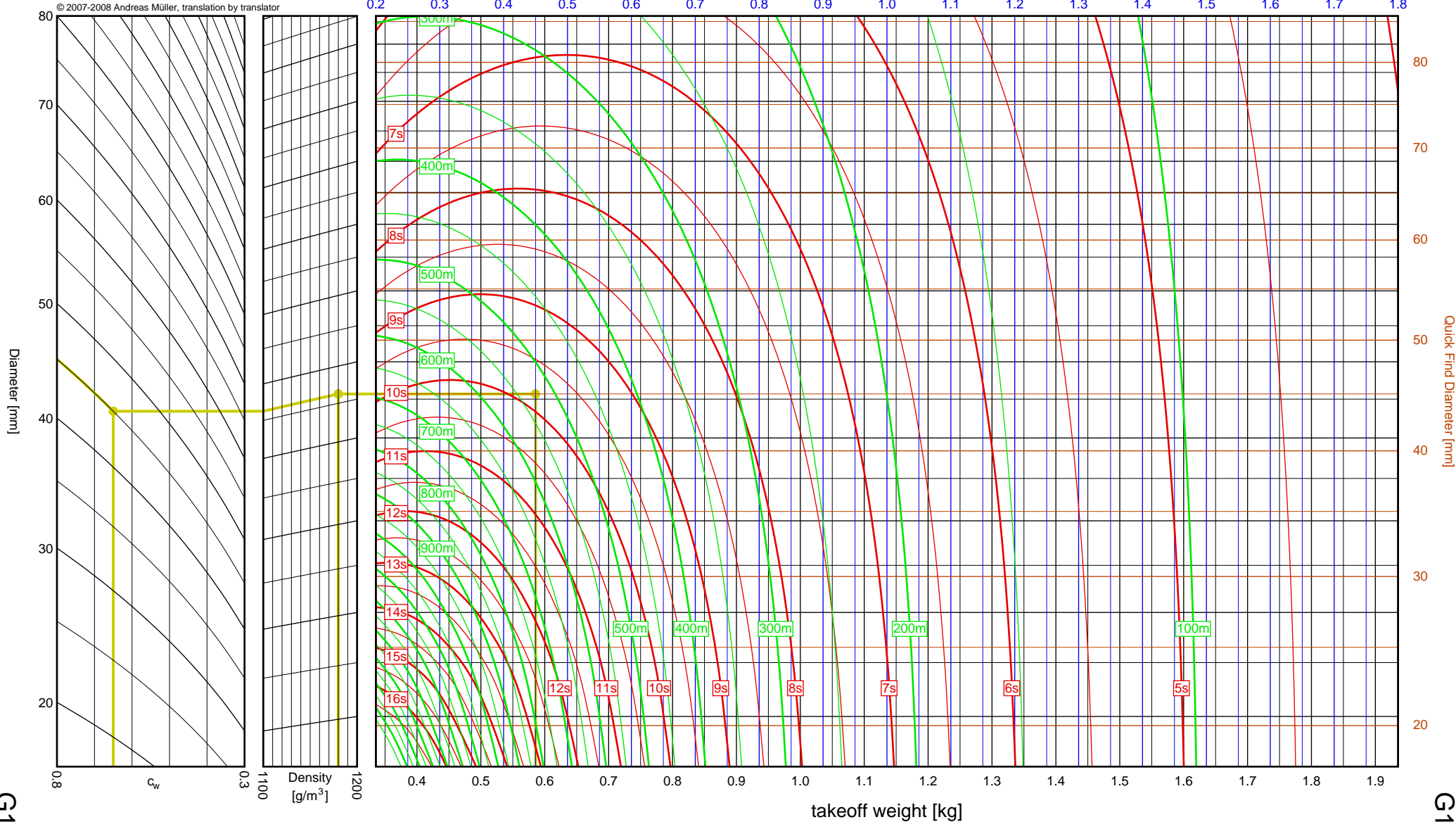


Launch site altitude [m ASL]

1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 45mm, drag = 0.65, density = 1180 g/m³, weight = 0.586kg
 Results: time to apogee: 9.8s, expected altitude: 526m

empty weight [kg]



F-G

3

G104T

Quick Find Diameter [mm]

G104T

-3-16

Diameter [mm]

c_w

Density [g/m³]

takeoff weight [kg]

20

30

40

50

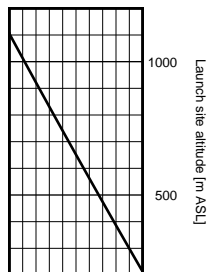
60

70

80

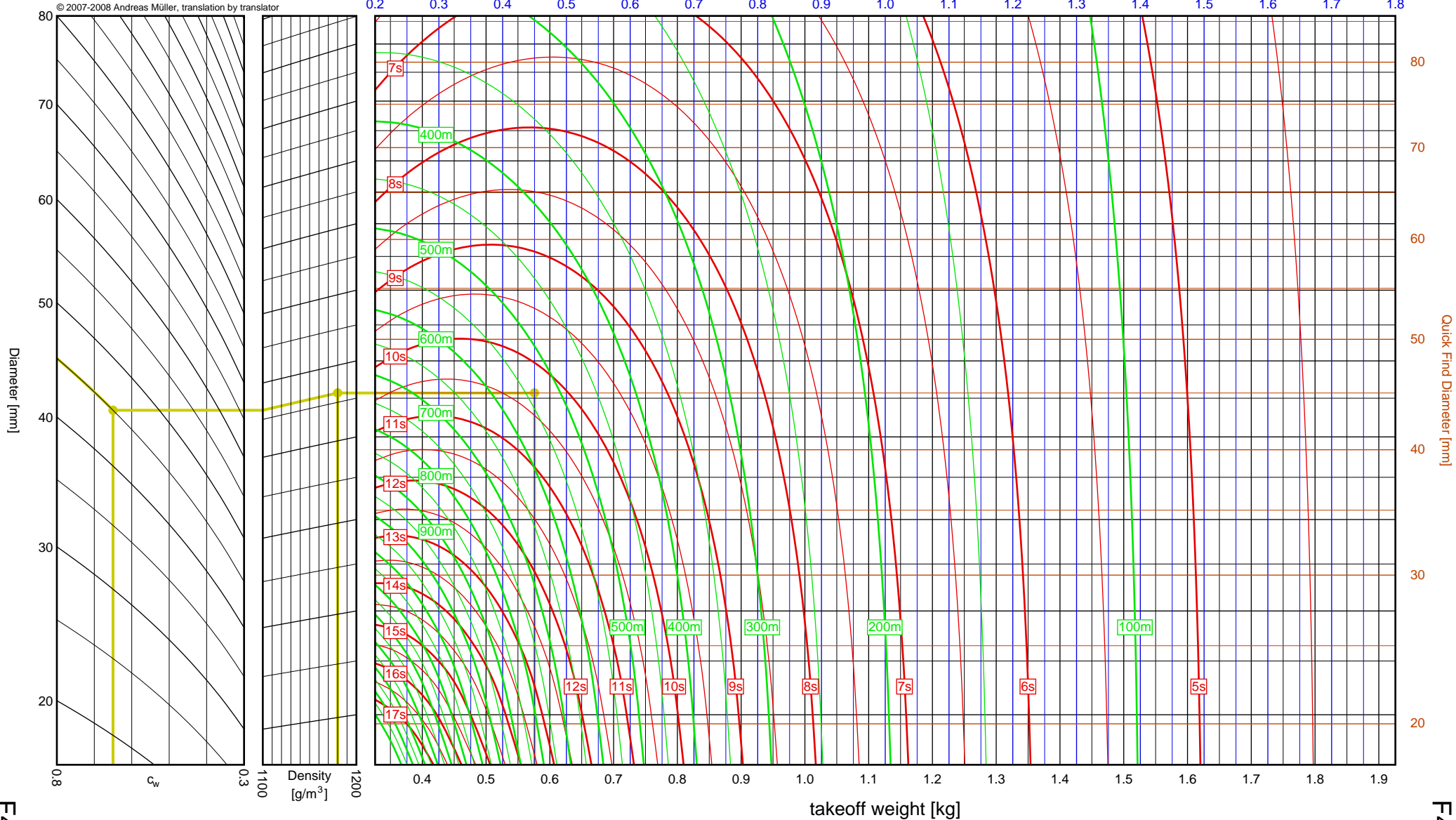
I_{tot}	=	78.1 Ns
F_{avg}	=	37.9 N
t_{burn}	=	2.06 s
d	=	29 mm

Data source:
Aerotech



- Sample: diameter = 45mm, drag = 0.65, density = 1180 g/m³, weight = 0.576kg
Results: time to apogee: 10.3s, expected altitude: 537m

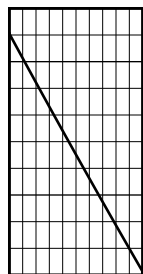
empty weight [kg]



Aerotech G54W

I_{tot} = 81.1 Ns
 F_{avg} = 53.7 N
 t_{burn} = 1.51 s
 d = 29 mm

Data source:
Aerotech

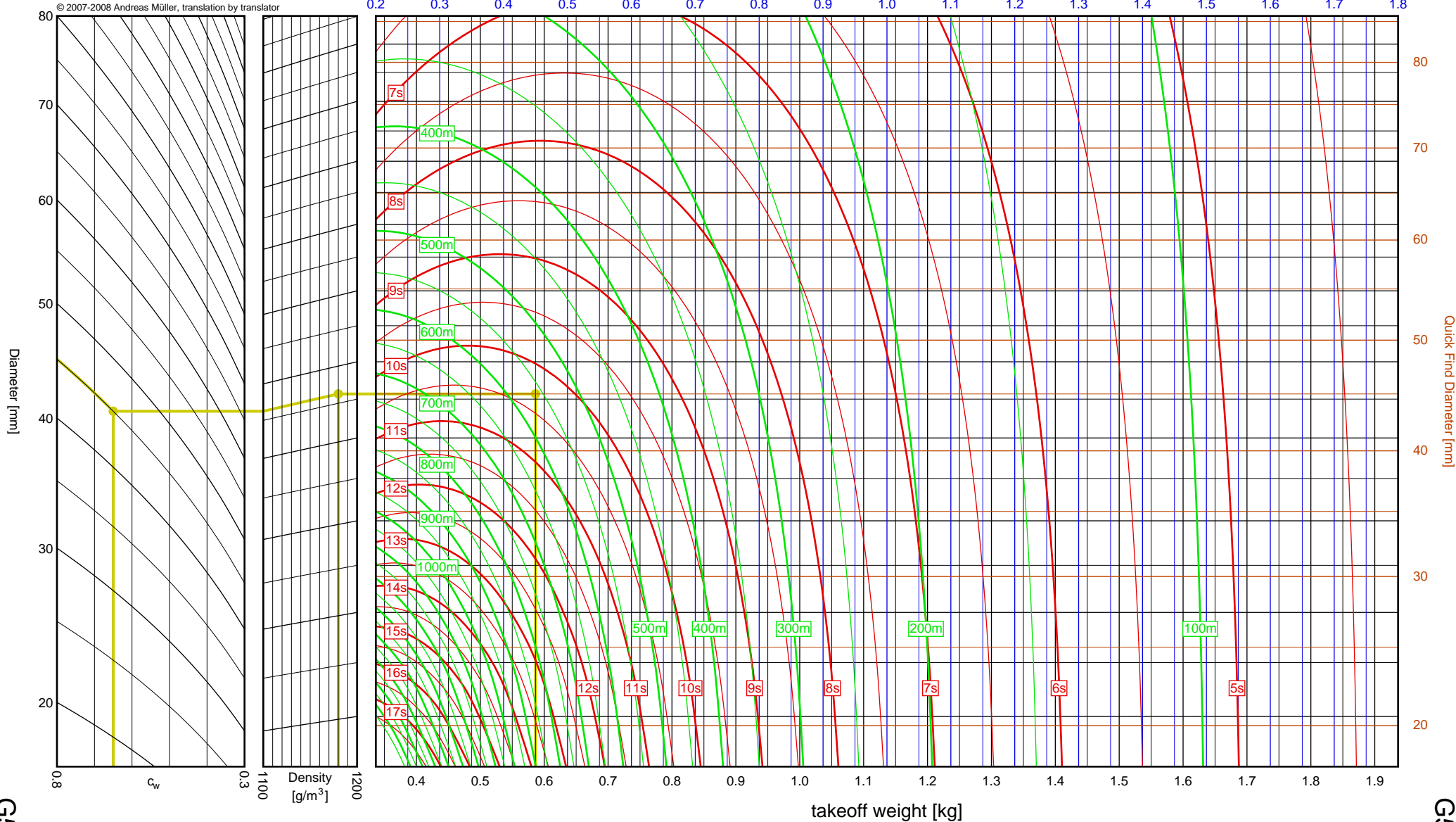


Launch site altitude [m ASL]

1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 45mm, drag = 0.65, density = 1180 g/m³, weight = 0.587kg
 Results: time to apogee: 10.3s, expected altitude: 561m

empty weight [kg]



F-G

3

G54W

Quick Find Diameter [mm]

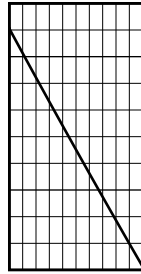
G54W

-3-18

Aerotech G142

I_{tot} = 84.6 Ns
 F_{avg} = 93.9 N
 t_{burn} = 0.90 s
 d = 29 mm

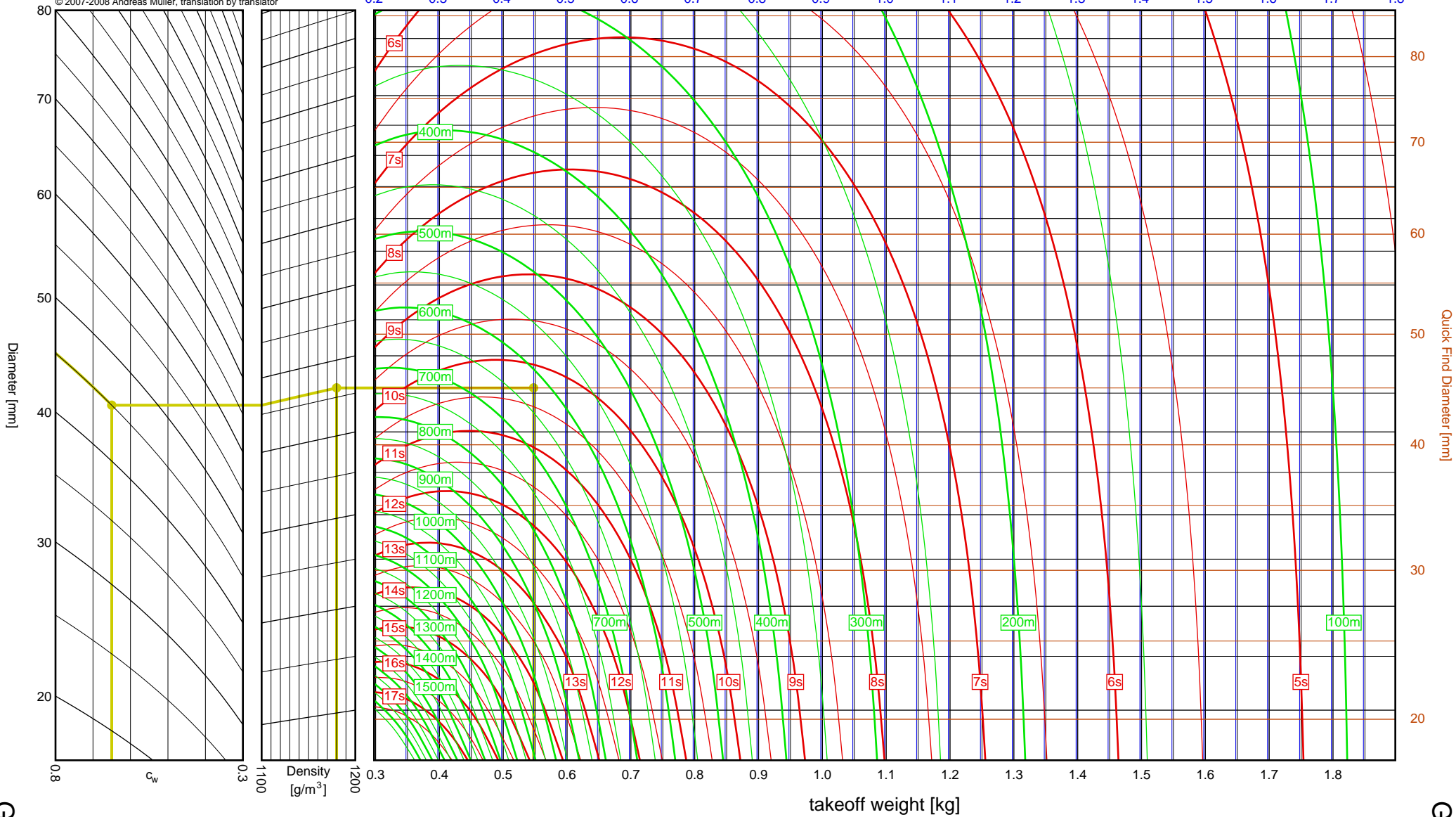
Data source:
Aerotech



1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 45mm, drag = 0.65, density = 1180 g/m³, weight = 0.548kg
 Results: time to apogee: 10.3s, expected altitude: 621m

empty weight [kg]



F-G

3

G142

Quick Find Diameter [mm]

Diameter [mm]

c_w

Density [g/m³]

takeoff weight [kg]

20

30

40

50

60

70

80

20

30

40

50

60

70

80

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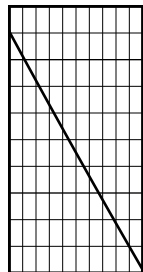
-3-19

G142

Aerotech G53FJ

I_{tot} = 92.1 Ns
 F_{avg} = 49.8 N
 t_{burn} = 1.85 s
 d = 29 mm

Data source:
Aerotech

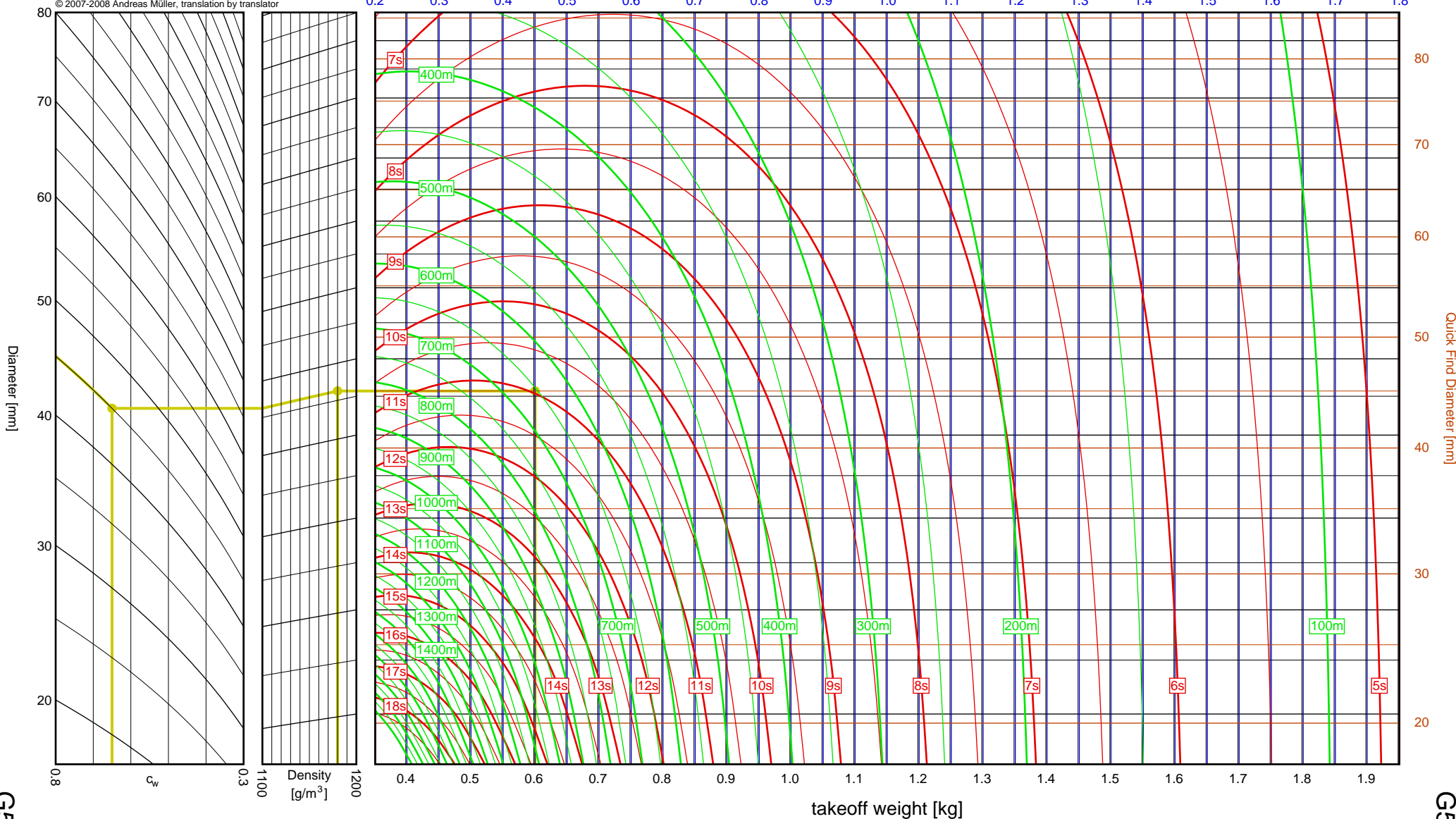


Launch site altitude [m ASL]

1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 45mm, drag = 0.65, density = 1180 g/m³, weight = 0.602kg
 Results: time to apogee: 11.0s, expected altitude: 654m

empty weight [kg]



F-G

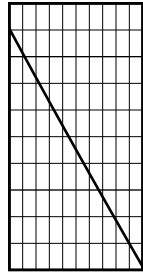
3

G53FJ

Aerotech G33J

I_{tot} = 98.4 Ns
 F_{avg} = 30.1 N
 t_{burn} = 3.27 s
 d = 29 mm

Data source:
Aerotech

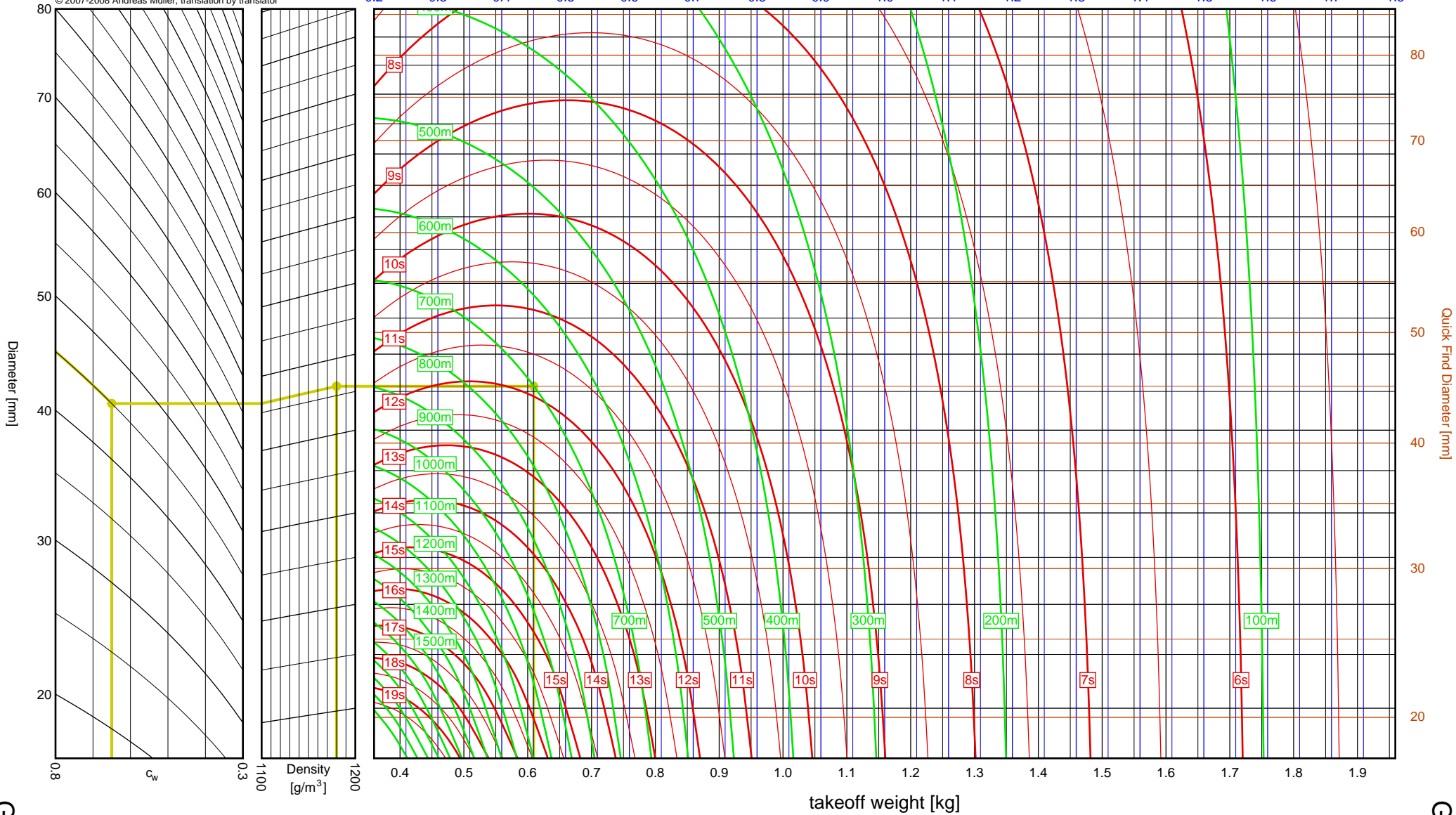


Launch site altitude [m ASL]

1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 45mm, drag = 0.65, density = 1180 g/m³, weight = 0.609kg
 Results: time to apogee: 11.9s, expected altitude: 701m

empty weight [kg]



F-G

3

Quick Find Diameter [mm]

G33J

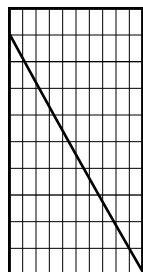
G33J

3-22

Aerotech G40W

I_{tot} = 99.0 Ns
 F_{avg} = 43.1 N
 t_{burn} = 2.30 s
 d = 29 mm

Data source:
Aerotech

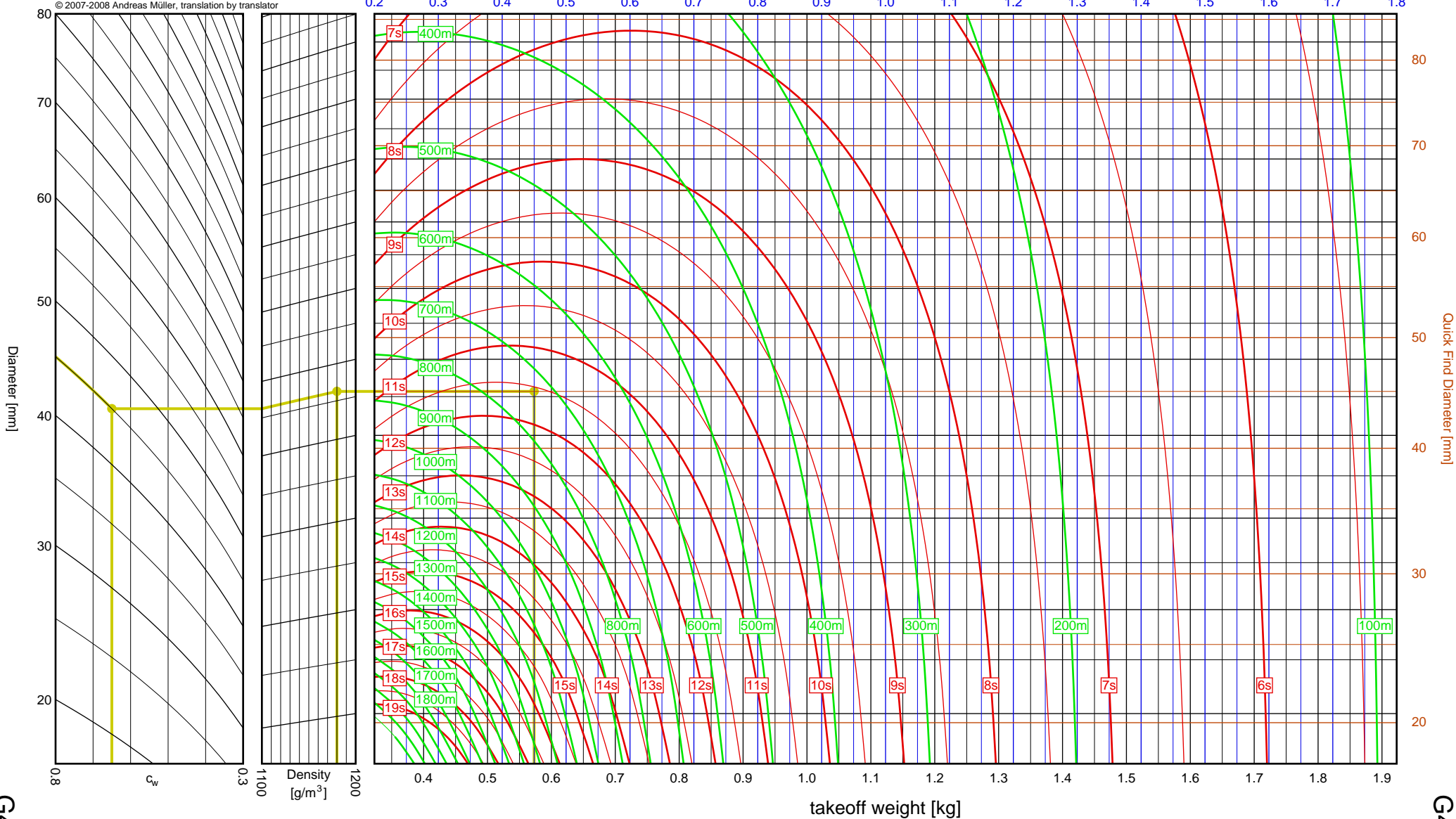


Launch site altitude [m ASL]

1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 45mm, drag = 0.65, density = 1180 g/m³, weight = 0.573kg
 Results: time to apogee: 11.6s, expected altitude: 731m

empty weight [kg]



F-G

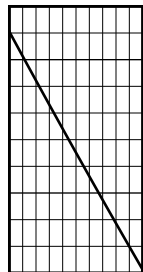
3

G40W

Aerotech G35EJ

I_{tot} = 101.0 Ns
 F_{avg} = 34.7 N
 t_{burn} = 2.91 s
 d = 29 mm

Data source:
Aerotech

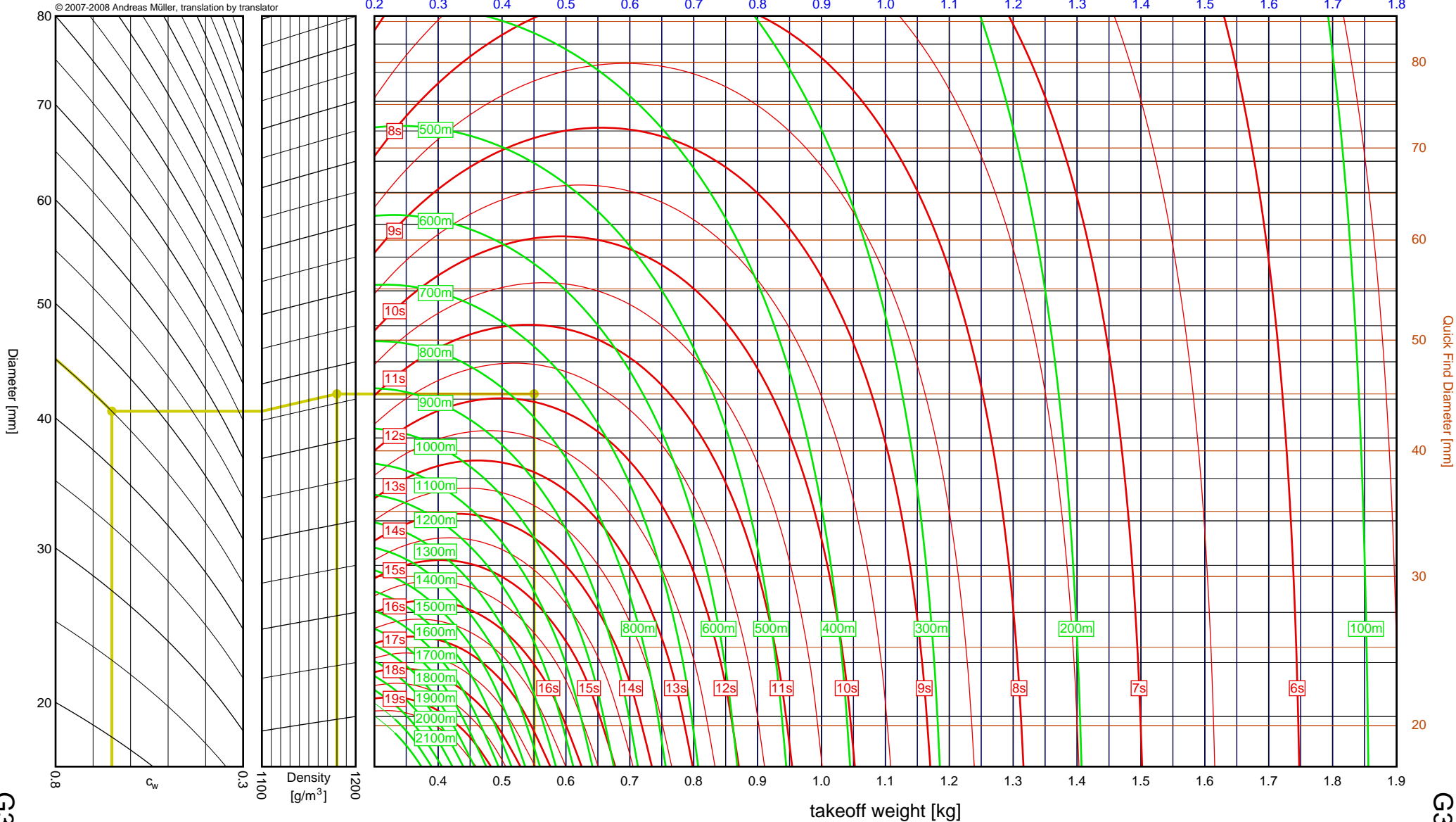


Launch site altitude [m ASL]

1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 45mm, drag = 0.65, density = 1180 g/m³, weight = 0.551kg
 Results: time to apogee: 11.9s, expected altitude: 766m

empty weight [kg]



F-G

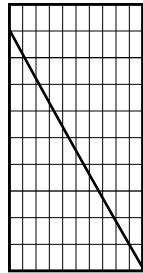
3

G35EJ

Aerotech G77R

I_{tot} = 101.7 Ns
 F_{avg} = 79.6 N
 t_{burn} = 1.28 s
 d = 29 mm

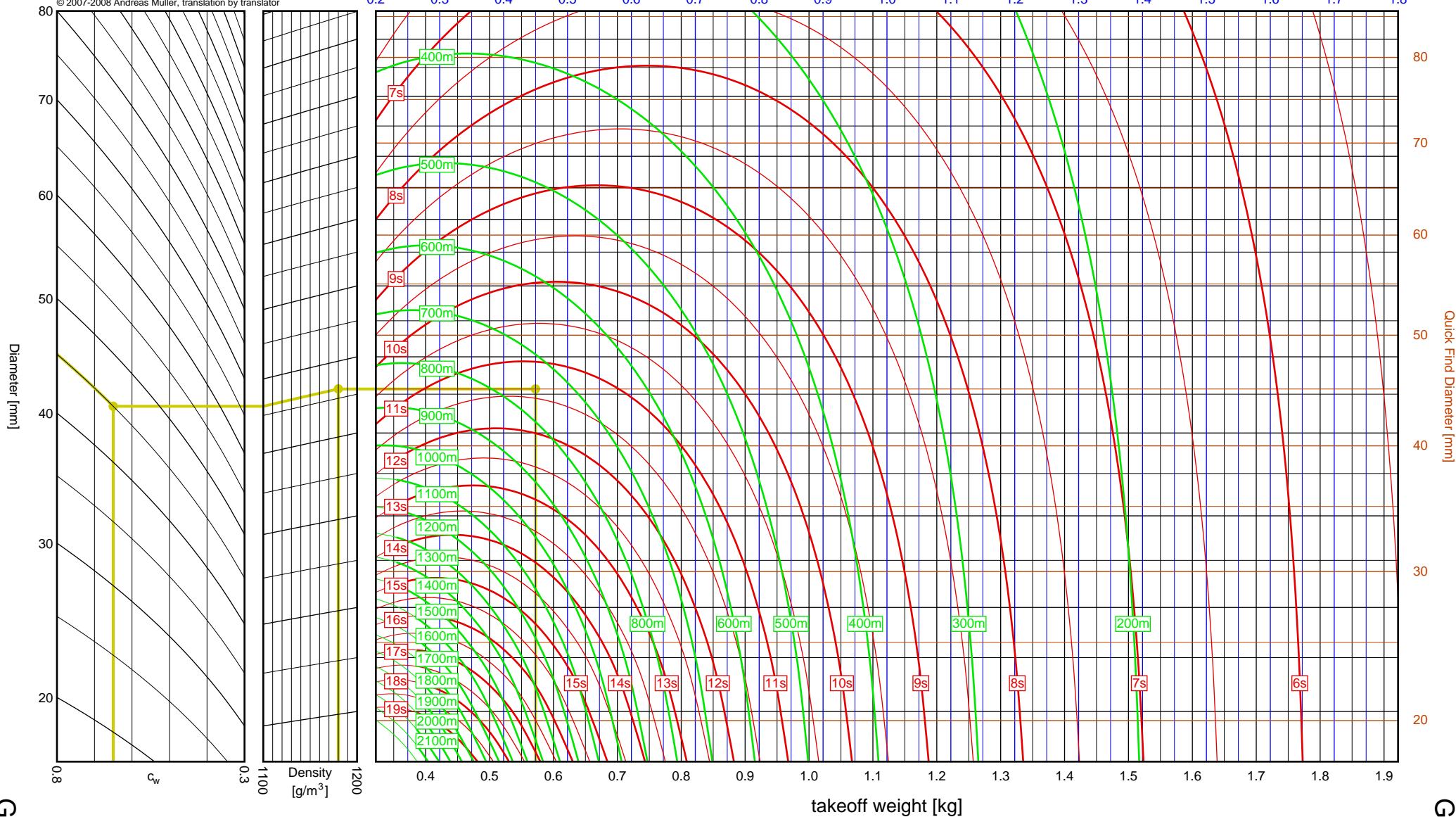
Data source:
Aerotech



1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 45mm, drag = 0.65, density = 1180 g/m³, weight = 0.572kg
 Results: time to apogee: 11.4s, expected altitude: 750m

empty weight [kg]



F-G

3

G77R

Quick Find Diameter [mm]

G77R

Diameter [mm]

c_w

Density
[g/m³]

takeoff weight [kg]

20

30

40

50

60

70

80

200m

300m

400m

500m

600m

700m

800m

900m

1000m

1100m

1200m

1300m

1400m

1500m

1600m

1700m

1800m

1900m

2000m

2100m

19s

18s

17s

16s

15s

14s

13s

12s

11s

10s

9s

8s

7s

6s

500m

600m

700m

800m

900m

1000m

1100m

1200m

1300m

1400m

1500m

1600m

1700m

1800m

1900m

2000m

2100m

19s

18s

17s

16s

15s

14s

13s

12s

11s

10s

9s

8s

7s

6s

500m

600m

700m

800m

900m

1000m

1100m

1200m

1300m

1400m

1500m

1600m

1700m

1800m

1900m

2000m

2100m

19s

18s

17s

16s

15s

14s

13s

12s

11s

10s

9s

8s

7s

6s

500m

600m

700m

800m

900m

1000m

1100m

1200m

1300m

1400m

1500m

1600m

1700m

1800m

1900m

2000m

2100m

19s

18s

17s

16s

15s

14s

13s

12s

11s

10s

9s

8s

7s

6s

500m

600m

700m

800m

900m

1000m

1100m

1200m

1300m

1400m

1500m

1600m

1700m

1800m

1900m

2000m

2100m

19s

18s

17s

16s

15s

14s

13s

12s

11s

10s

9s

8s

7s

6s

500m

600m

700m

800m

900m

1000m

1100m

1200m

1300m

1400m

1500m

1600m

1700m

1800m

1900m

2000m

2100m

19s

18s

17s

16s

15s

14s

13s

12s

11s

10s

9s

8s

7s

6s

500m

600m

700m

800m

900m

1000m

1100m

1200m

1300m

1400m

1500m

1600m

1700m

1800m

1900m

2000m

2100m

19s

18s

17s

16s

15s

14s

13s

12s

11s

10s

9s

8s

7s

6s

500m

600m

700m

800m

900m

1000m

1100m

1200m

1300m

1400m

1500m

1600m

1700m

1800m

1900m

2000m

2100m

19s

18s

17s

16s

15s

14s

13s

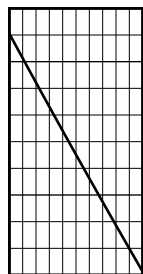
12s

11s</

Aerotech G79W

I_{tot} = 106.4 Ns
 F_{avg} = 55.2 N
 t_{burn} = 1.93 s
 d = 29 mm

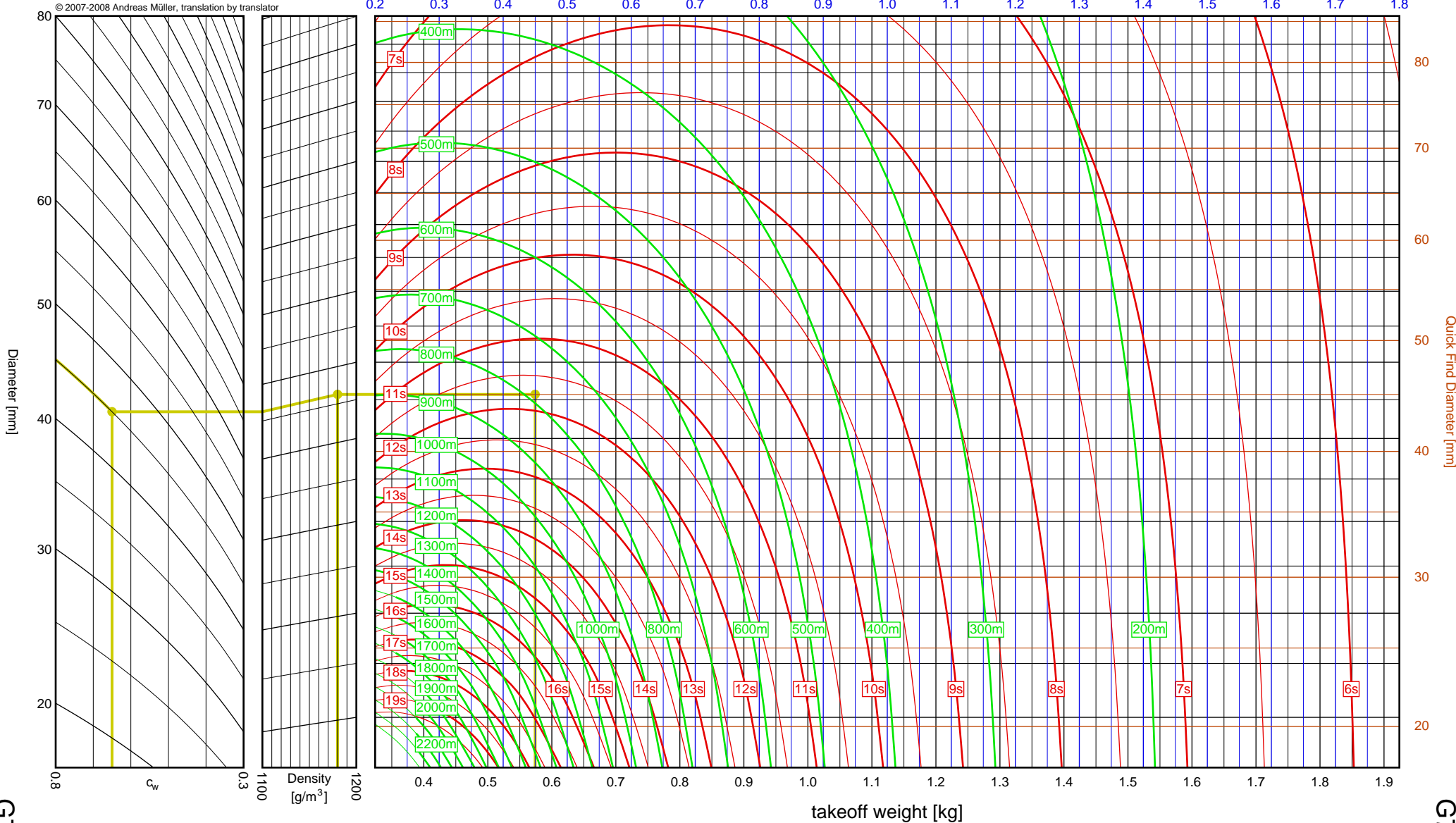
Data source:
Aerotech



1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 45mm, drag = 0.65, density = 1180 g/m³, weight = 0.574kg
 Results: time to apogee: 11.8s, expected altitude: 787m

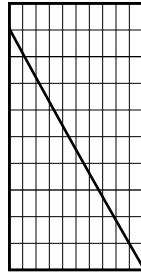
empty weight [kg]



Aerotech G71R

I_{tot} = 106.9 Ns
 F_{avg} = 62.9 N
 t_{burn} = 1.70 s
 d = 29 mm

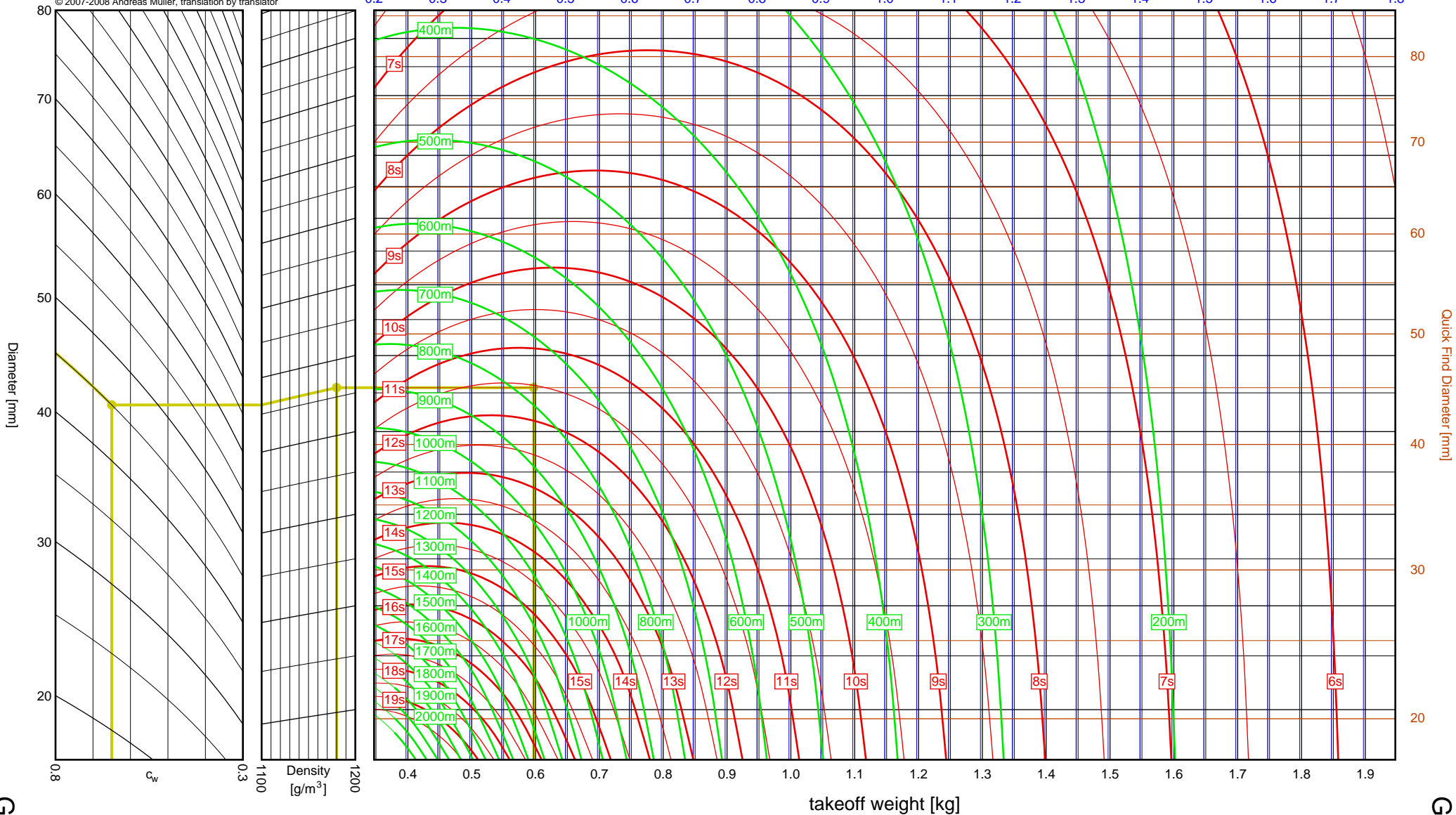
Data source:
Aerotech



1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 45mm, drag = 0.65, density = 1180 g/m³, weight = 0.597kg
 Results: time to apogee: 11.5s, expected altitude: 774m

empty weight [kg]



F-G

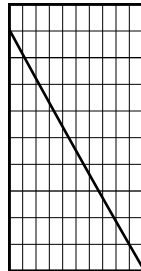
3

G71R

Aerotech G67R

I_{tot} = 109.5 Ns
 F_{avg} = 68.5 N
 t_{burn} = 1.60 s
 d = 38 mm

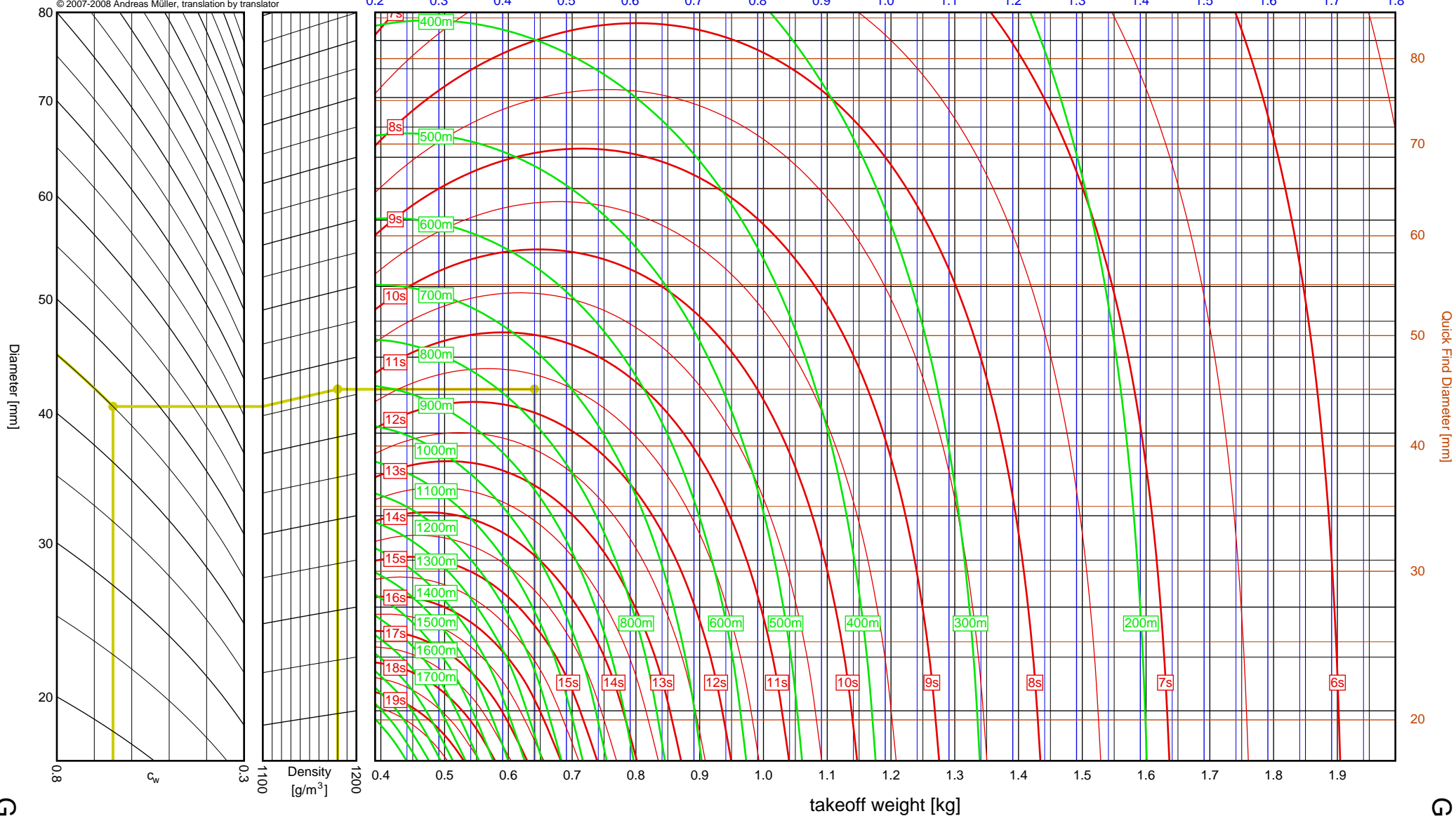
Data source:
Aerotech



1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 45mm, drag = 0.65, density = 1180 g/m³, weight = 0.641kg
 Results: time to apogee: 11.7s, expected altitude: 752m

empty weight [kg]



F-G

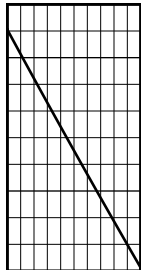
3

G67R

Aerotech G78G

I_{tot} = 109.8 Ns
 F_{avg} = 74.6 N
 t_{burn} = 1.47 s
 d = 29 mm

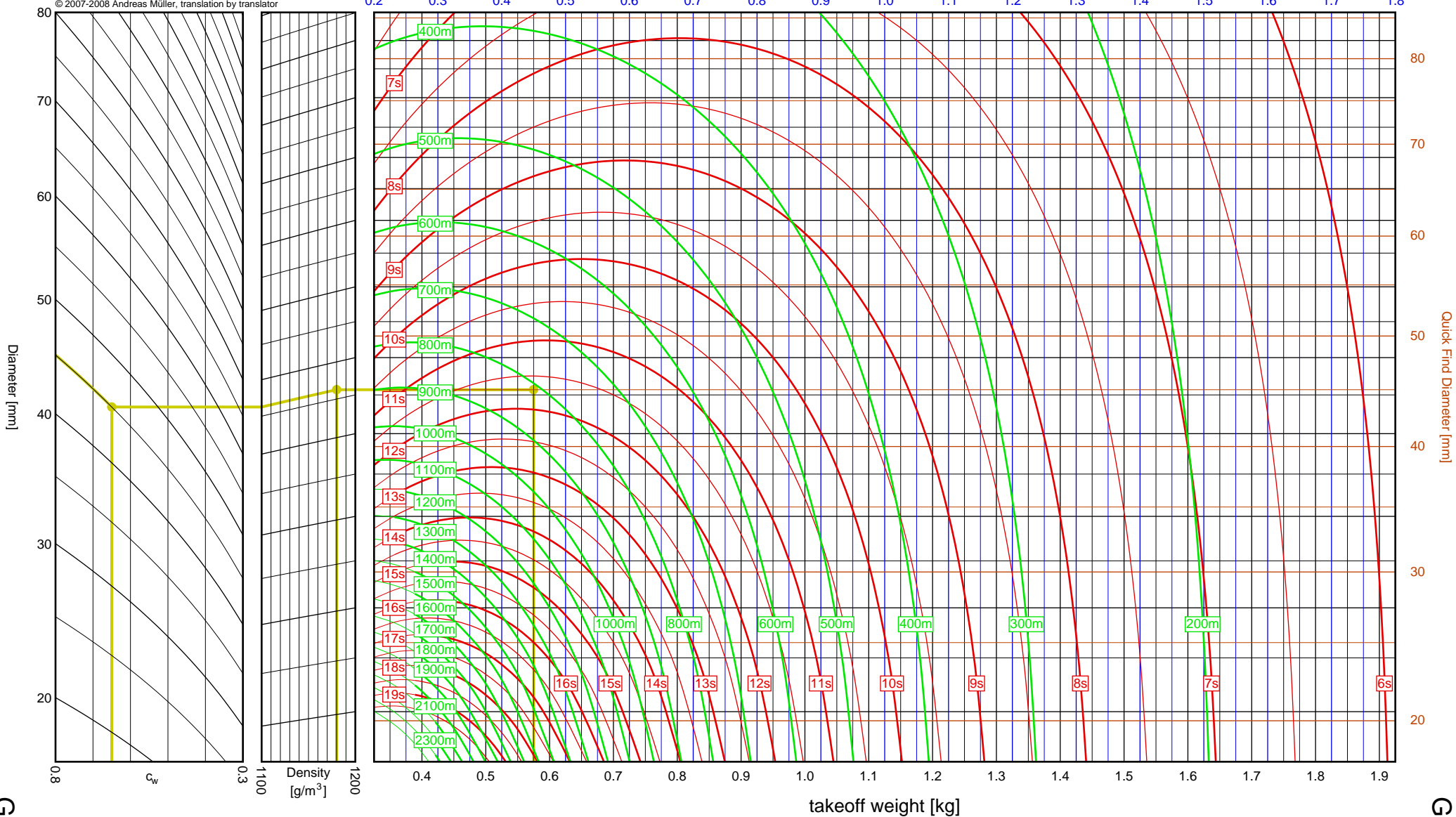
Data source:
Aerotech



1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 45mm, drag = 0.65, density = 1180 g/m³, weight = 0.575kg
 Results: time to apogee: 11.7s, expected altitude: 811m

empty weight [kg]



F-G

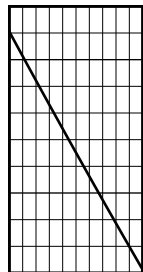
3

G78G

Aerotech G61W

I_{tot} = 110.8 Ns
 F_{avg} = 54.3 N
 t_{burn} = 2.04 s
 d = 38 mm

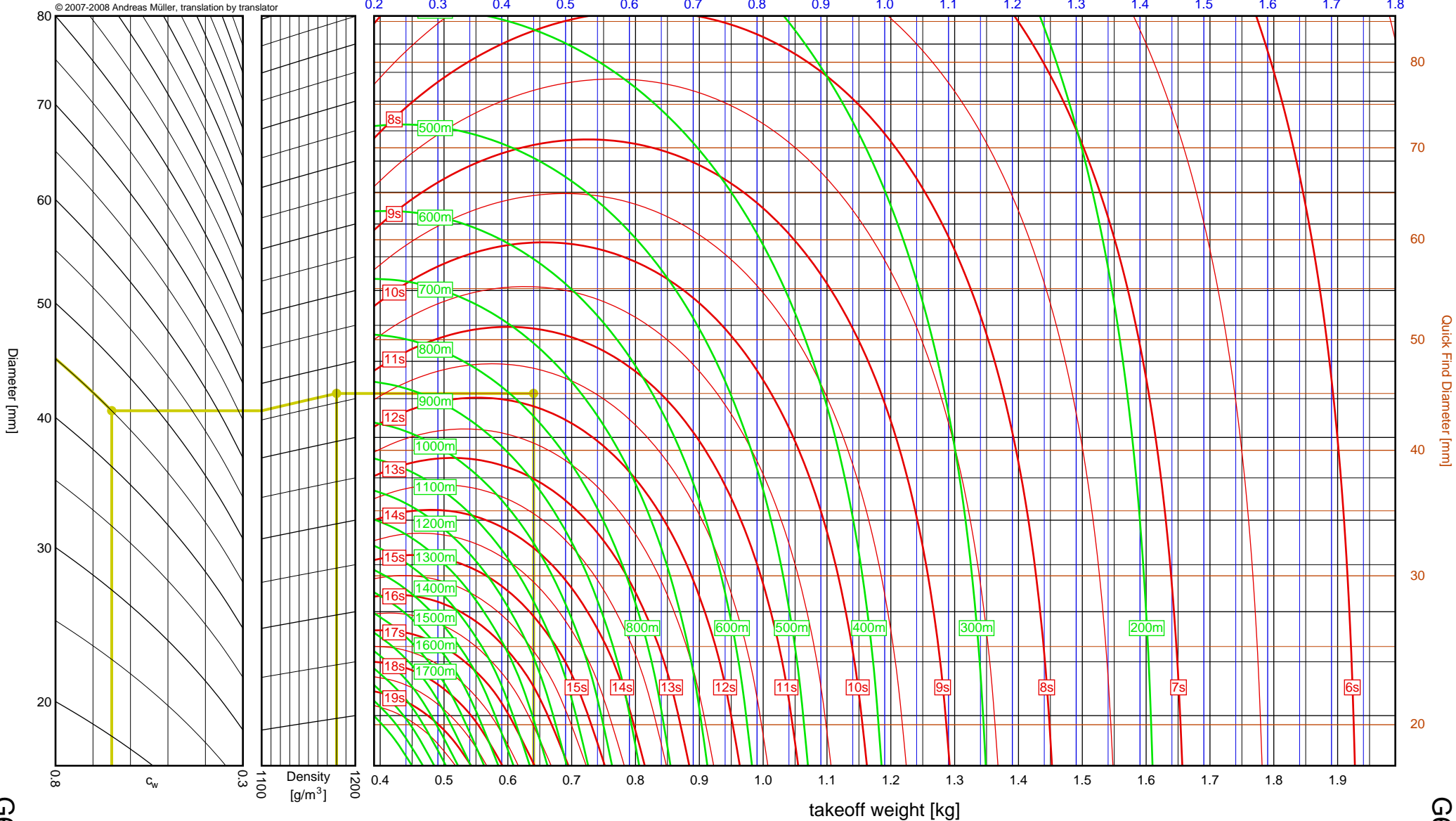
Data source:
Aerotech



1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 45mm, drag = 0.65, density = 1180 g/m³, weight = 0.640kg
 Results: time to apogee: 11.8s, expected altitude: 768m

empty weight [kg]



F-G

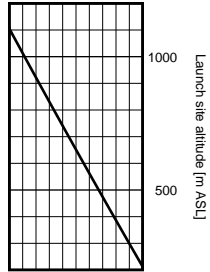
3

G61W

Aerotech G339N

I_{tot} = 112.1 Ns
 F_{avg} = 312.2 N
 t_{burn} = 0.36 s
 d = 38 mm

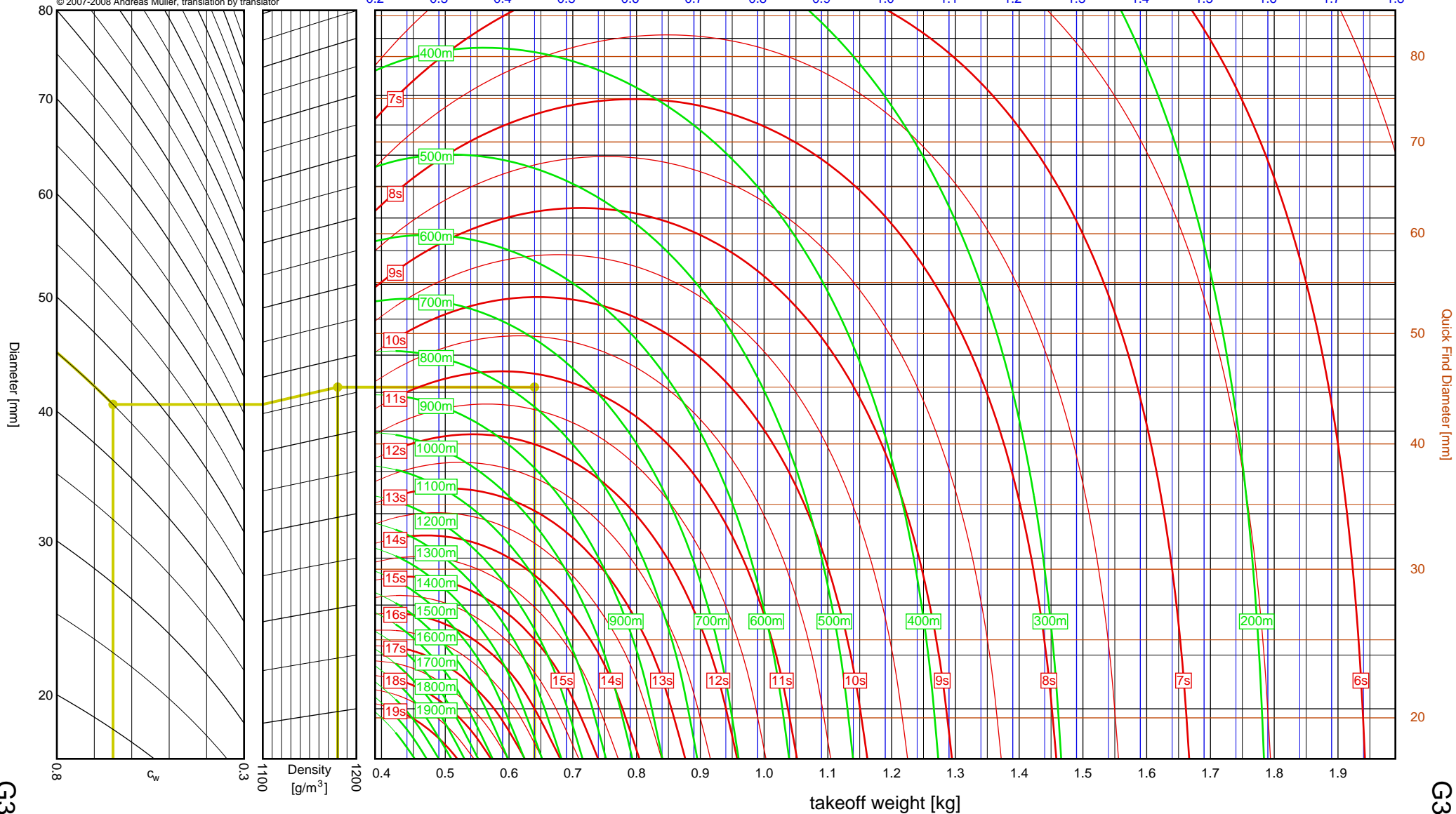
Data source:
Aerotech



1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 45mm, drag = 0.65, density = 1180 g/m³, weight = 0.640kg
 Results: time to apogee: 11.2s, expected altitude: 770m

empty weight [kg]



F-G

3

Quick Find Diameter [mm]

G339N

3-31

20

30

40

50

60

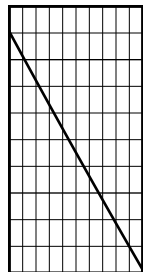
70

80

Aerotech G76G

I_{tot} = 114.5 Ns
 F_{avg} = 57.2 N
 t_{burn} = 2.00 s
 d = 29 mm

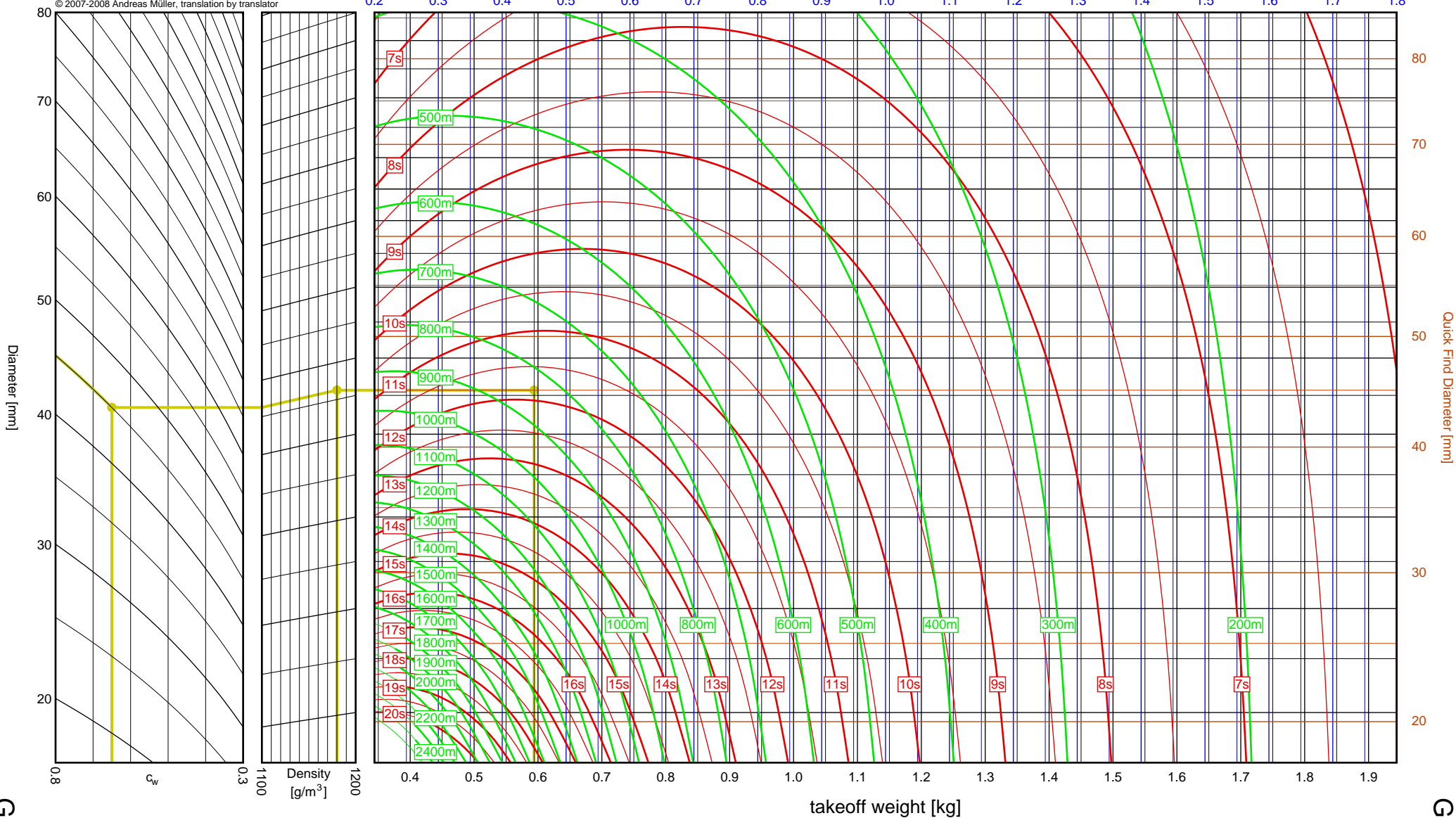
Data source:
Aerotech



1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 45mm, drag = 0.65, density = 1180 g/m³, weight = 0.594kg
 Results: time to apogee: 11.9s, expected altitude: 839m

empty weight [kg]



F-G

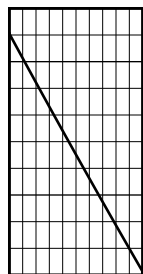
3

G76G

Aerotech G64W

I_{tot} = 118.8 Ns
 F_{avg} = 56.8 N
 t_{burn} = 2.09 s
 d = 29 mm

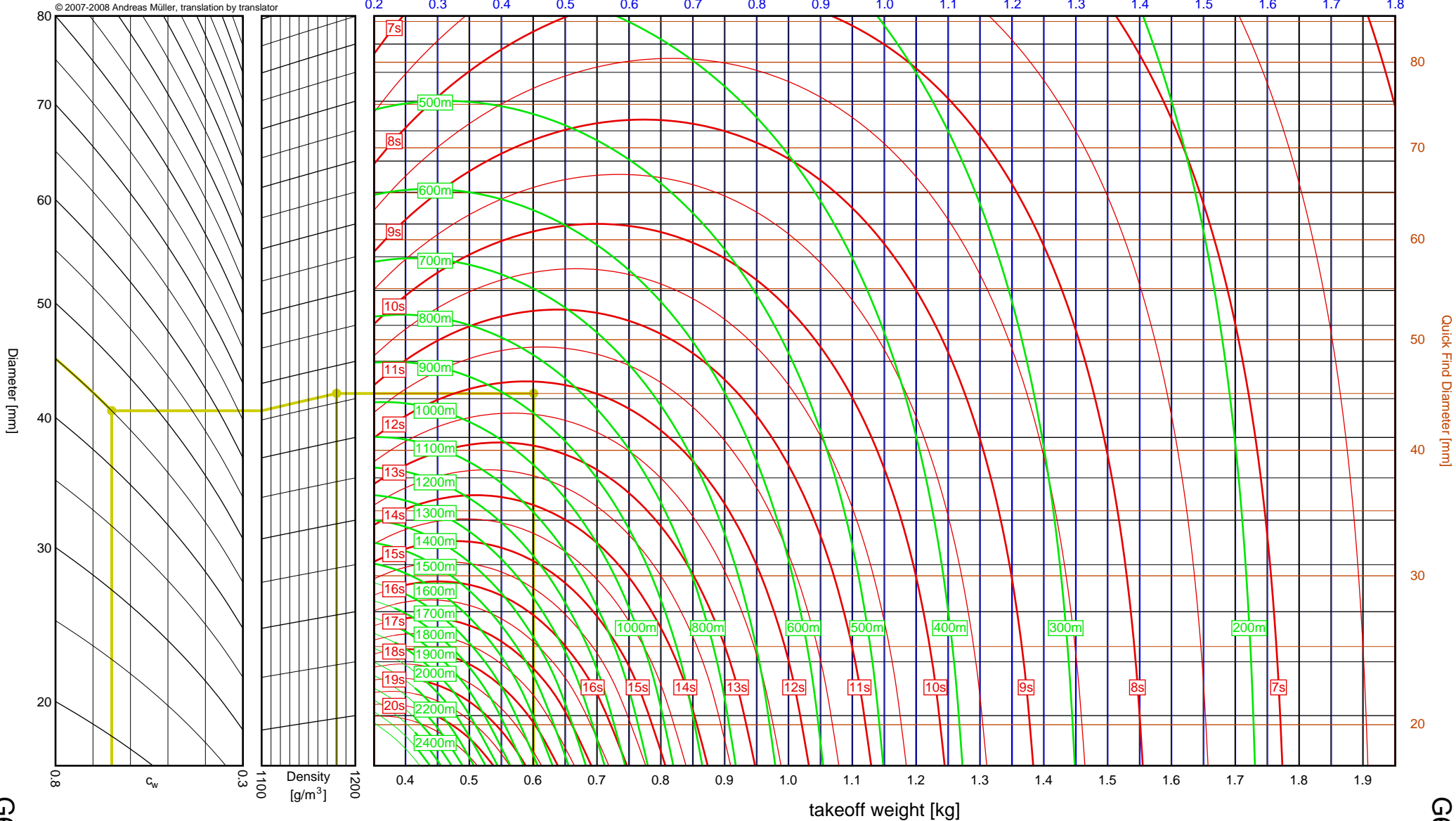
Data source:
Aerotech



1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 45mm, drag = 0.65, density = 1180 g/m³, weight = 0.601kg
 Results: time to apogee: 12.2s, expected altitude: 865m

empty weight [kg]



F-G

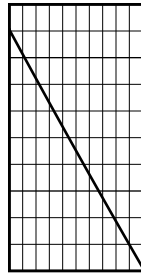
3

G64W

Aerotech G69N

I_{tot} = 136.3 Ns
 F_{avg} = 68.2 N
 t_{burn} = 2.00 s
 d = 38 mm

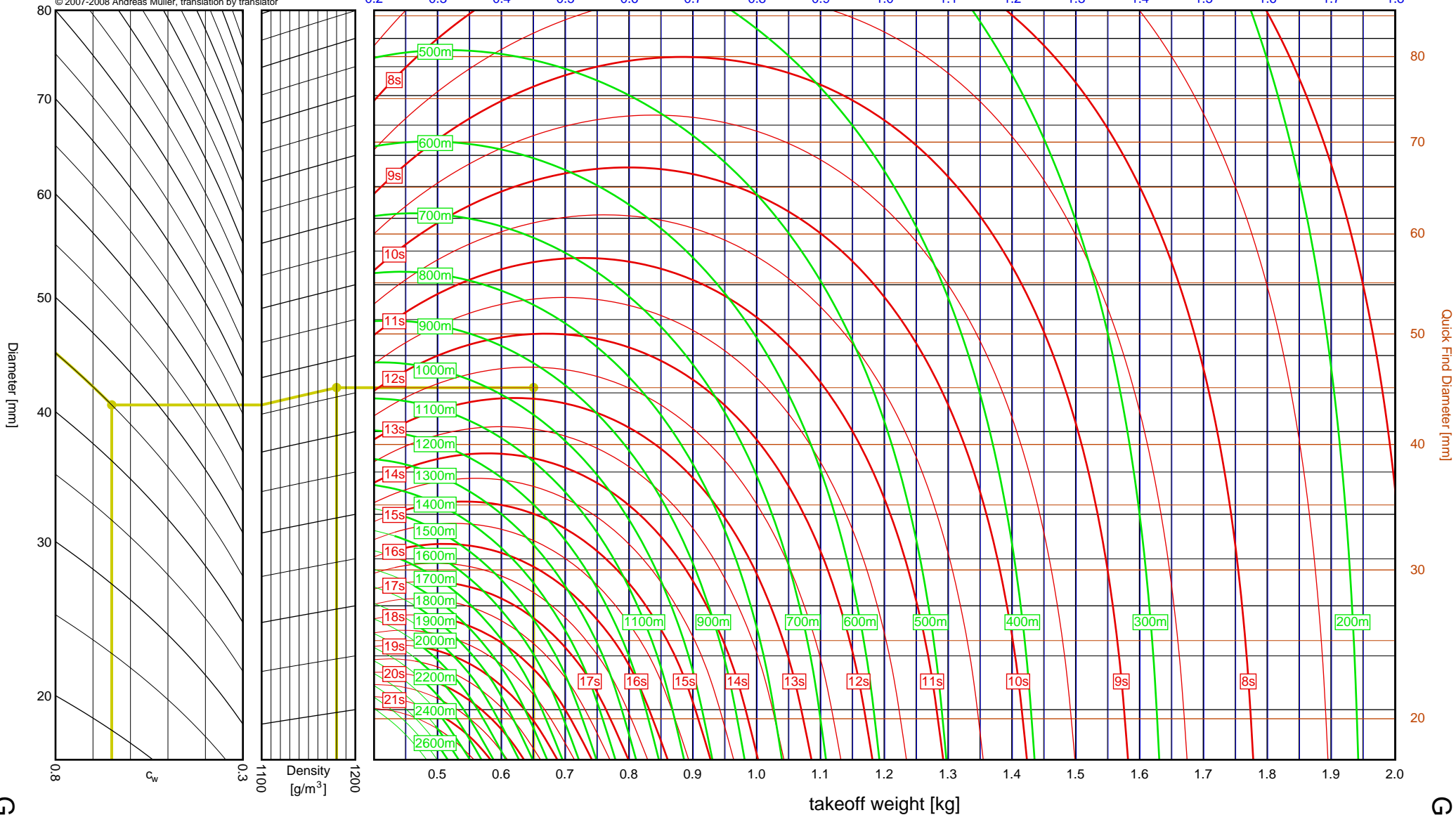
Data source:
Aerotech



1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 45mm, drag = 0.65, density = 1180 g/m³, weight = 0.651kg
 Results: time to apogee: 12.8s, expected altitude: 947m

empty weight [kg]



F-G

3

G69N

Quick Find Diameter [mm]

Diameter [mm]

c_w

Density
[g/m³]

takeoff weight [kg]

20

30

40

50

60

70

80

0.2

0.3

0.4

0.5

0.6

0.7

0.8

0.9

1.0

1.1

1.2

1.3

1.4

1.5

1.6

1.7

1.8

1.9

2.0

80

70

60

50

40

30

20

1000

500

0.8

0.3

1100

1200

1300

1400

1500

1600

1700

1800

1900

2000

2100

2200

2300

2400

2500

2600

2700

2800

2900

3000

3100

3200

3300

3400

3500

3600

3700

3800

3900

4000

4100

4200

4300

4400

4500

4600

4700

4800

4900

5000

5100

5200

5300

5400

5500

5600

5700

5800

5900

6000

6100

6200

6300

6400

6500

6600

6700

6800

6900

7000

7100

7200

7300

7400

7500

7600

7700

7800

7900

8000

8100

8200

8300

8400

8500

8600

8700

8800

8900

9000

9100

9200

9300

9400

9500

9600

9700

9800

9900

10000

10100

10200

10300

10400

10500

10600

10700

10800

10900

11000

11100

11200

11300

11400

11500

11600

11700

11800

11900

12000

12100

12200

12300

12400

12500

12600

12700

12800

12900

13000

13100

13200

13300

13400

13500

13600

13700

13800

13900

14000

14100

14200

14300

14400

14500

14600

14700

14800

14900

15000

15100

15200

15300

15400

15500

15600

15700

15800

15900

16000

16100

16200

16300

16400

16500

16600

16700

16800

16900

17000

17100

17200

17300

17400

17500

17600

17700

17800

17900

18000

18100

18200

18300

18400

18500

18600

18700

18800

18900

19000

19100

19200

19300

19400

19500

19600

19700

19800

19900

20000

20100

20200

20300

20400

20500

20600

20700

20800

20900

21000

21100

21200

21300

21400

21500

21600

21700

21800

21900

22000

22100

22200

22300

22400

22500

22600

22700

22800

22900

23000

23100

23200

23300

23400

23500

23600

23700

23800

23900

24000

24100

24200

24300

24400

24500

24600

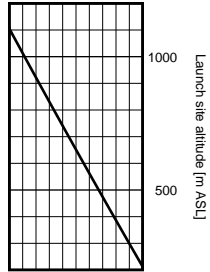
24700

24800

Aerotech G75J

I_{tot} = 161.4 Ns
 F_{avg} = 73.4 N
 t_{burn} = 2.20 s
 d = 29 mm

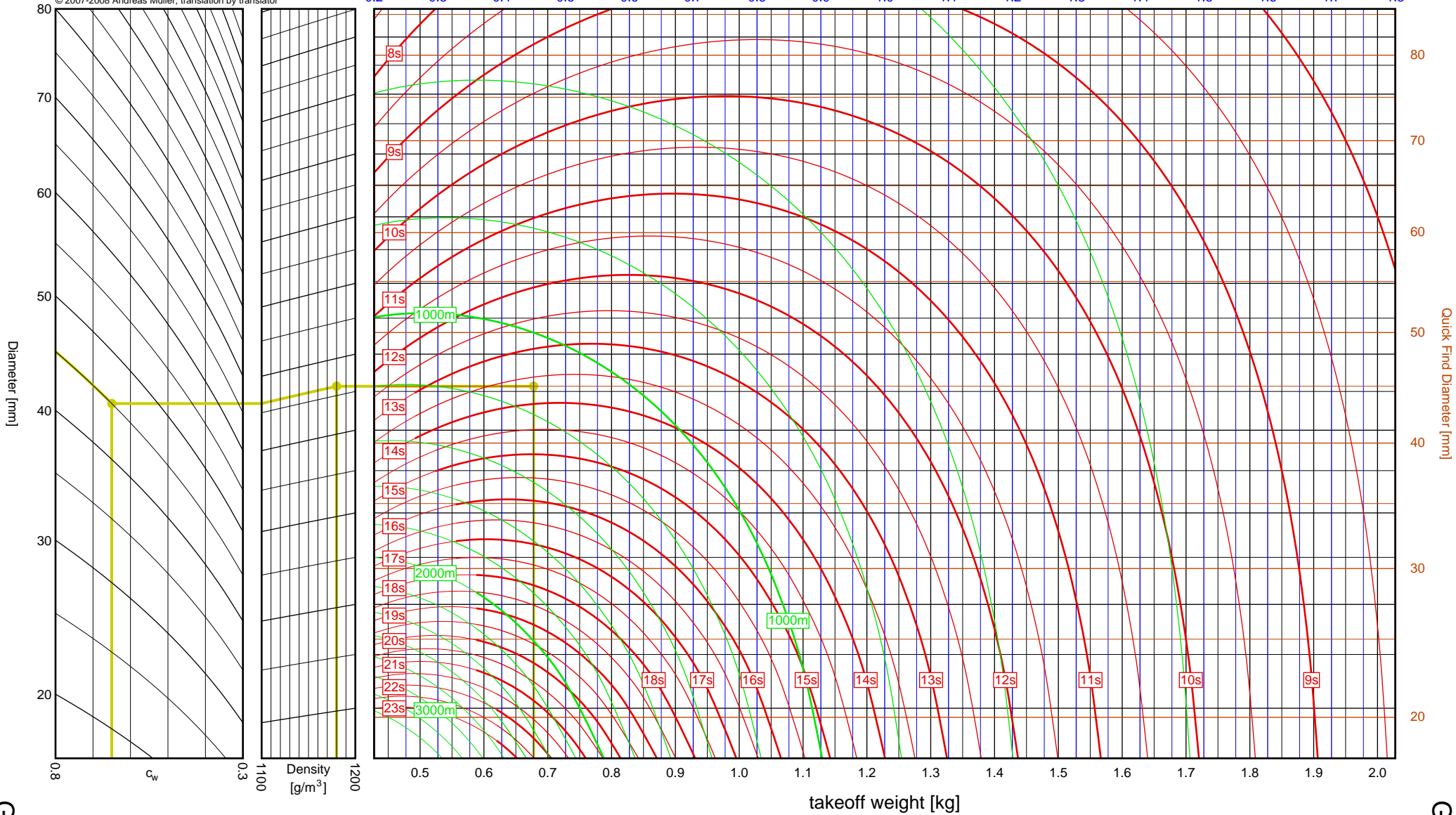
Data source:
Aerotech



1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 45mm, drag = 0.65, density = 1180 g/m³, weight = 0.678kg
 Results: time to apogee: 13.7s, expected altitude: 1127m

empty weight [kg]



F-G

3

G75J

Quick Find Diameter [mm]

Diameter [mm]

C_w

Density
[g/m³]

takeoff weight [kg]

20

30

40

50

60

70

80

Quick Find Diameter [mm]

20

30

40

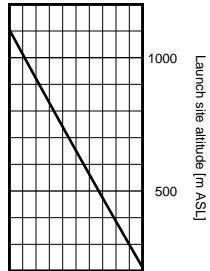
50

60

70

80

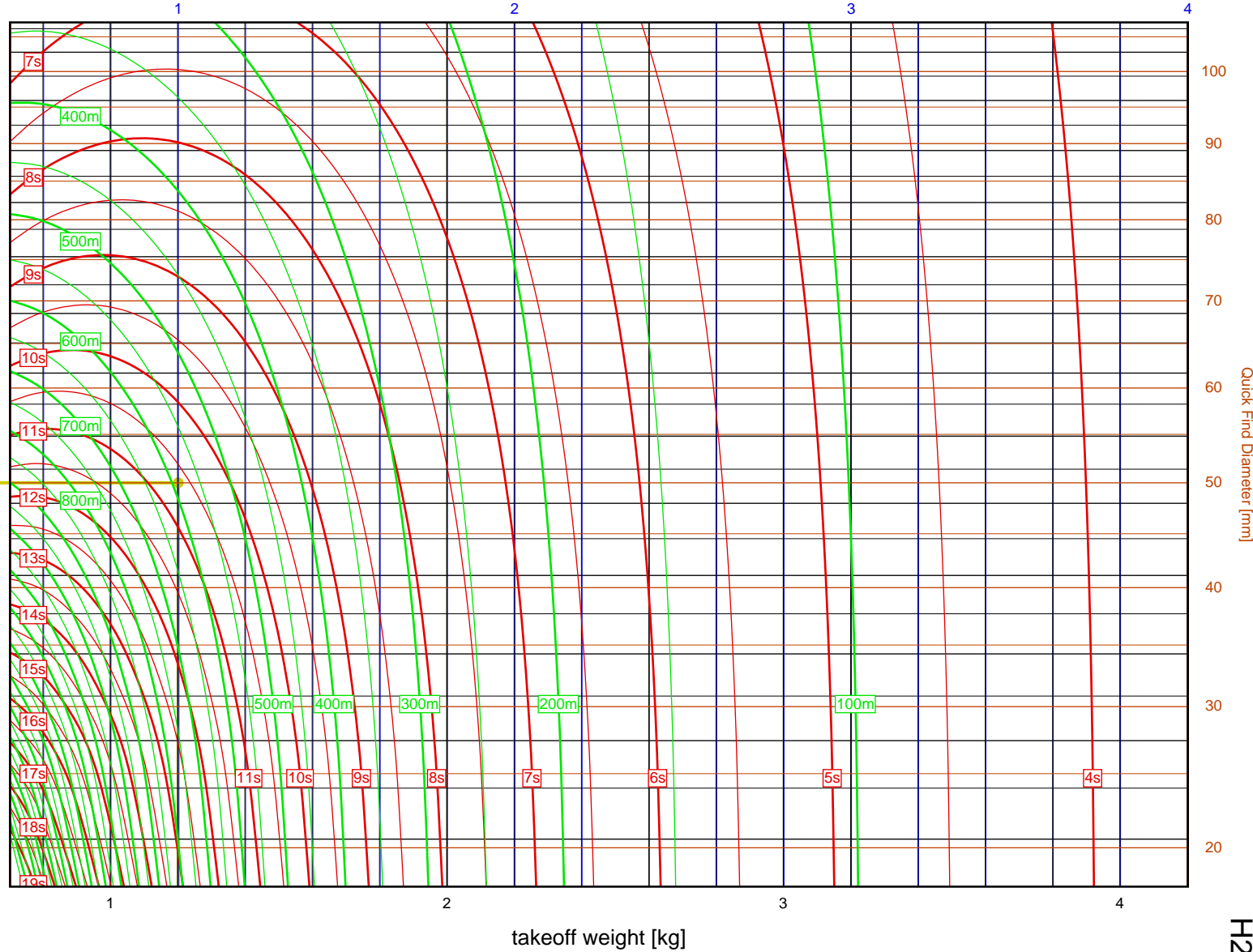
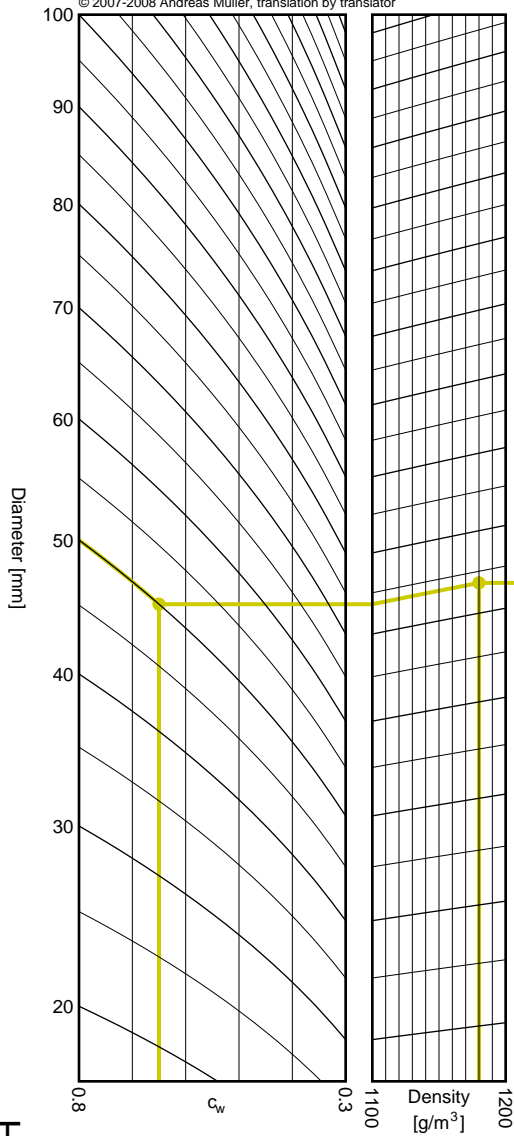
Aerotech	
H238T	
I_{tot}	= 151.2 Ns
F_{avg}	= 189.1 N
t_{burn}	= 0.80 s
d	= 29 mm
Data source: Aerotech	



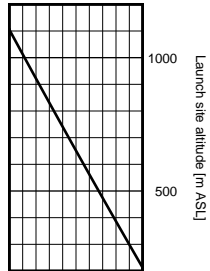
1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 50mm, drag = 0.65, density = 1180 g/m³, weight = 1.202kg
 Results: time to apogee: 10.6s, expected altitude: 589m

empty weight [kg]



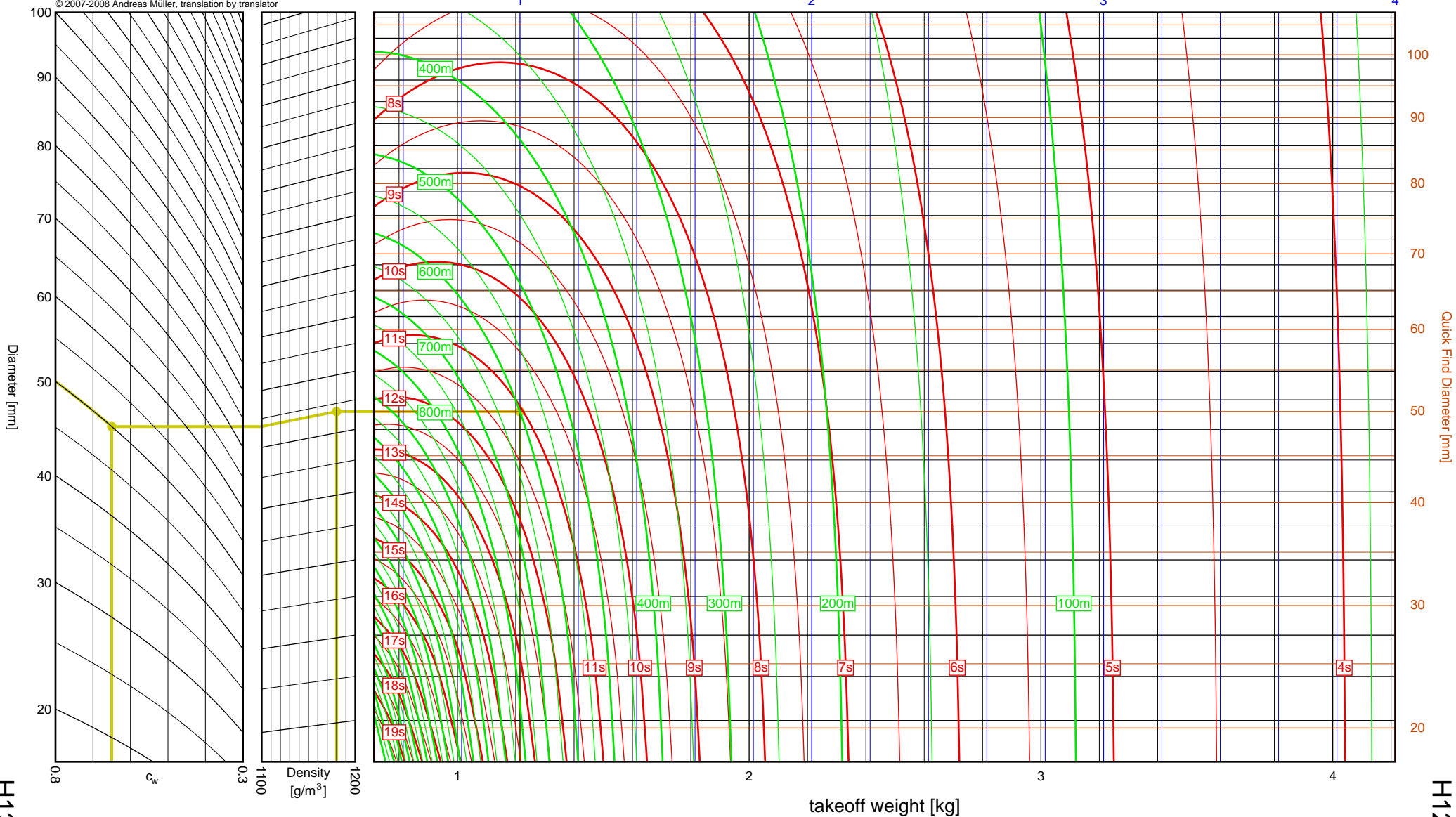
Aerotech H128W	
I_{tot}	= 155.8 Ns
F_{avg}	= 103.8 N
t_{burn}	= 1.50 s
d	= 29 mm
Data source: Aerotech	



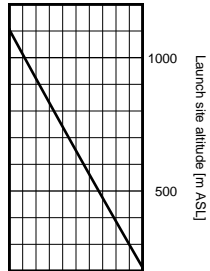
1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 50mm, drag = 0.65, density = 1180 g/m³, weight = 1.215kg
 Results: time to apogee: 11.1s, expected altitude: 600m

empty weight [kg]



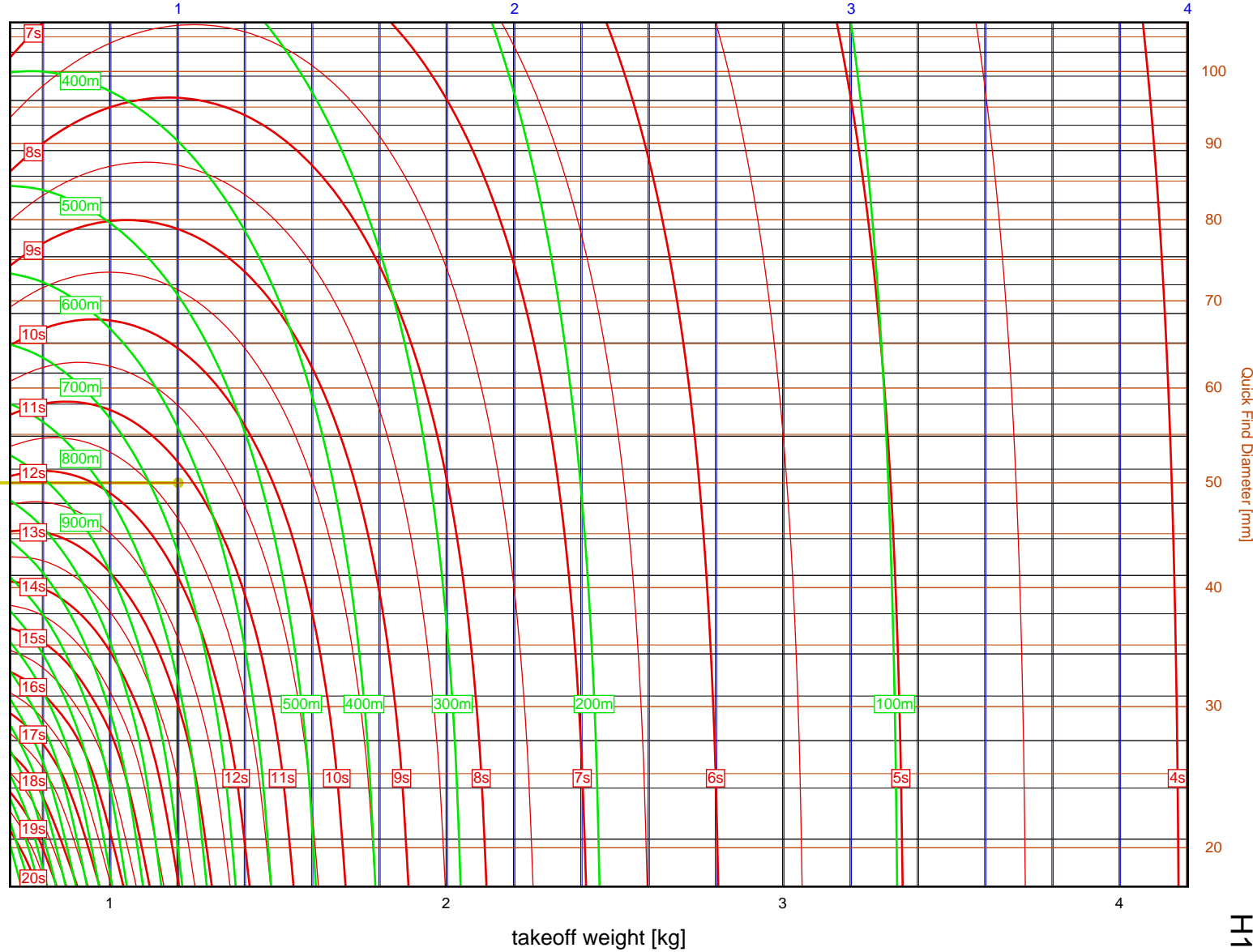
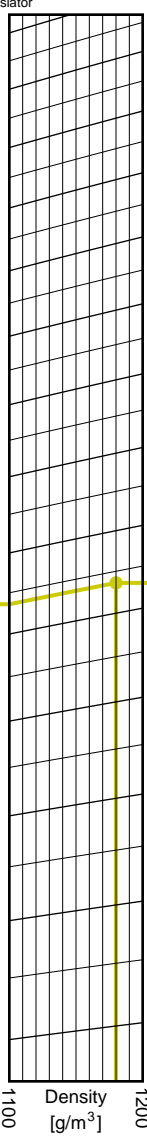
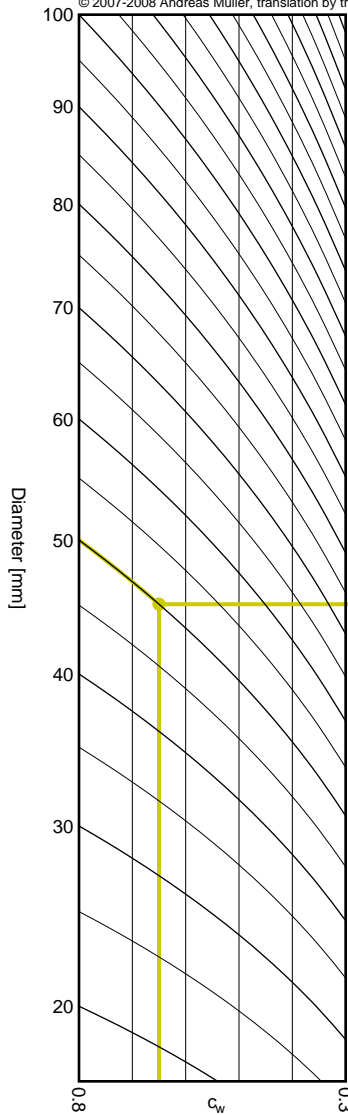
Aerotech H165R	
I_{tot}	= 160.9 Ns
F_{avg}	= 153.2 N
t_{burn}	= 1.05 s
d	= 29 mm
Data source: Aerotech	



1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 50mm, drag = 0.65, density = 1180 g/m³, weight = 1.204kg
 Results: time to apogee: 11.2s, expected altitude: 644m

empty weight [kg]

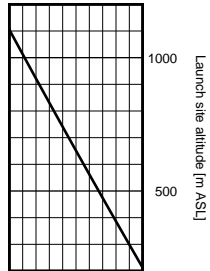


H-I

4

H165R

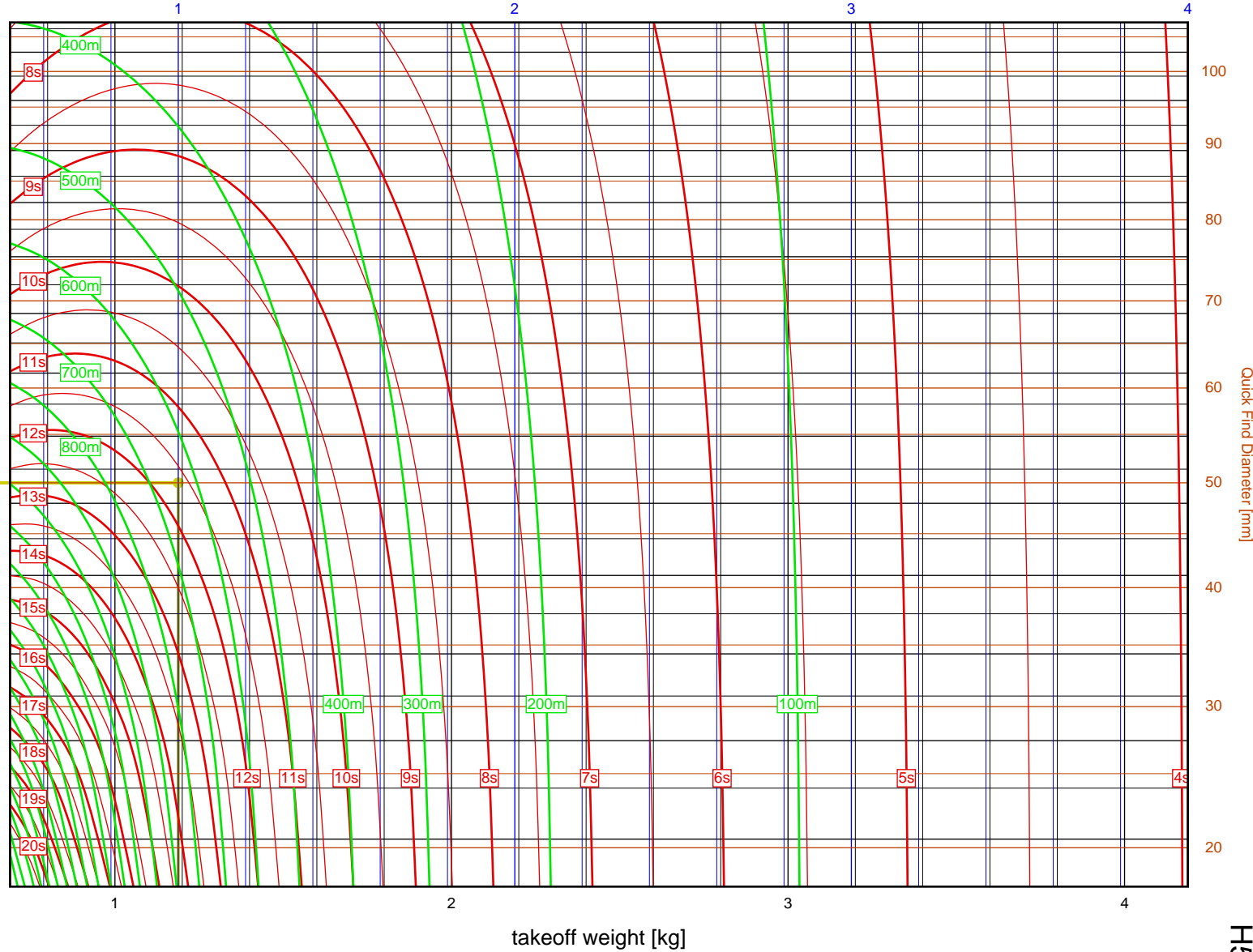
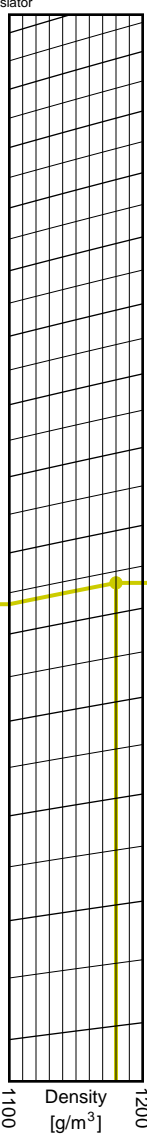
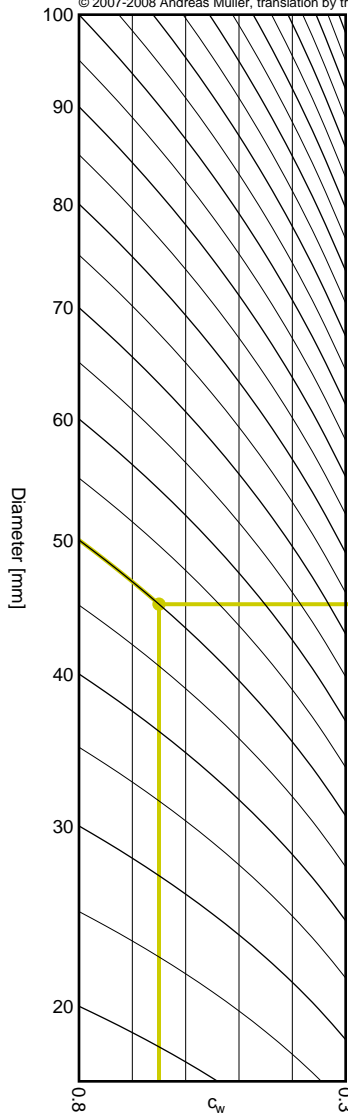
Aerotech	
H55W	
I_{tot}	= 161.2 Ns
F_{avg}	= 58.7 N
t_{burn}	= 2.75 s
d	= 29 mm
Data source: Aerotech	



1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 50mm, drag = 0.65, density = 1180 g/m³, weight = 1.188kg
 Results: time to apogee: 11.6s, expected altitude: 638m

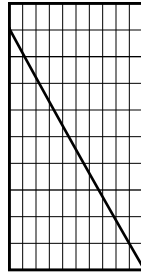
empty weight [kg]



Aerotech H73J

I_{tot} = 162.7 Ns
 F_{avg} = 46.5 N
 t_{burn} = 3.50 s
 d = 38 mm

Data source:
Aerotech

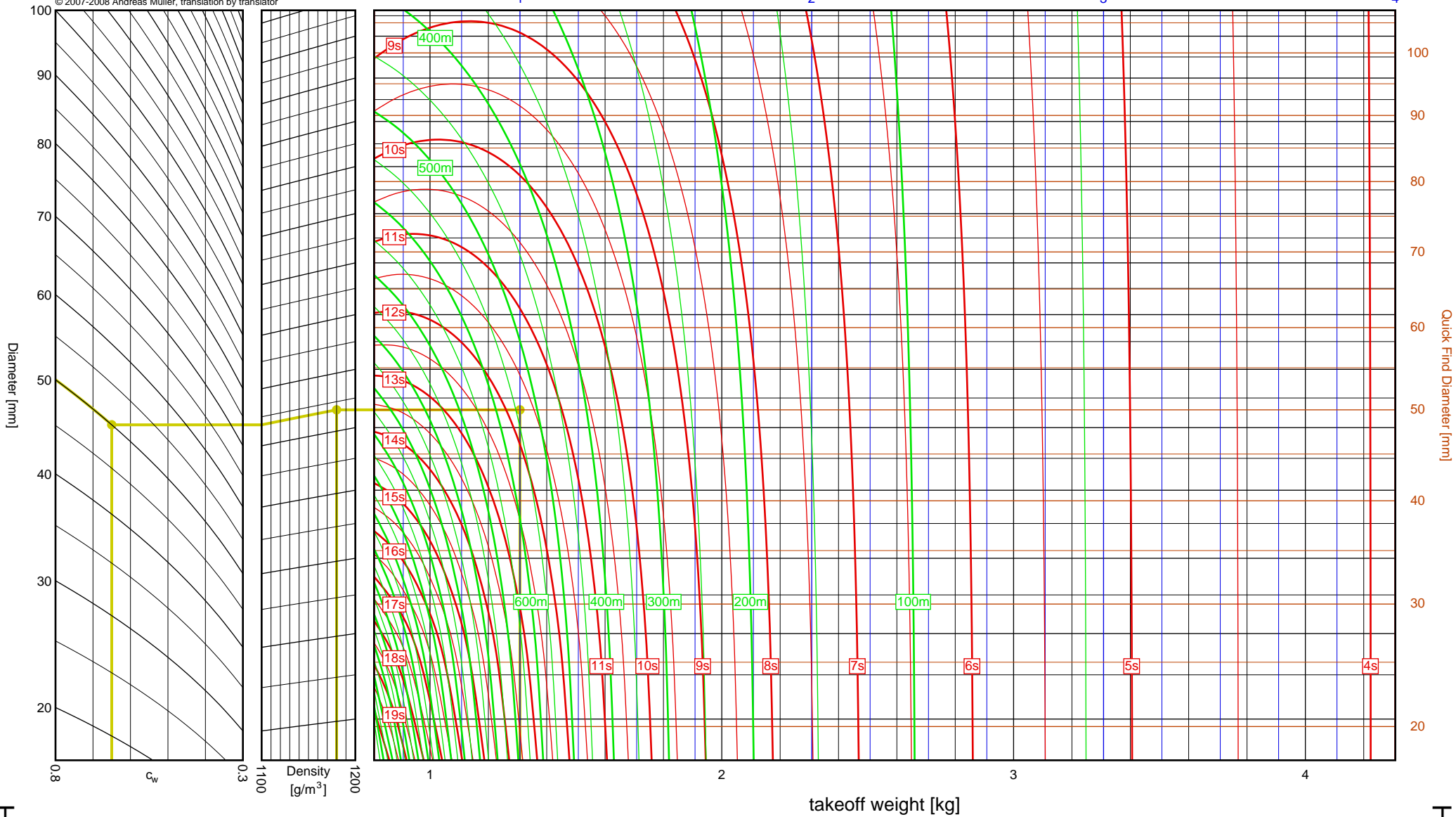


Launch site altitude [m ASL]

1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 50mm, drag = 0.65, density = 1180 g/m³, weight = 1.308kg
 Results: time to apogee: 11.8s, expected altitude: 540m

empty weight [kg]



H-I

4

H73J

Quick Find Diameter [mm]

Diameter [mm]

c_w

Density [g/m³]

takeoff weight [kg]

100
90
80
70
60
50
40
30
20

4

3

2

1

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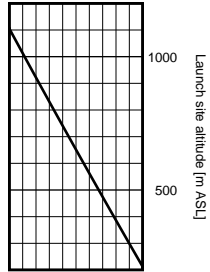
4-5

H73J

Aerotech H97J

I_{tot} = 179.4 Ns
 F_{avg} = 112.1 N
 t_{burn} = 1.60 s
 d = 29 mm

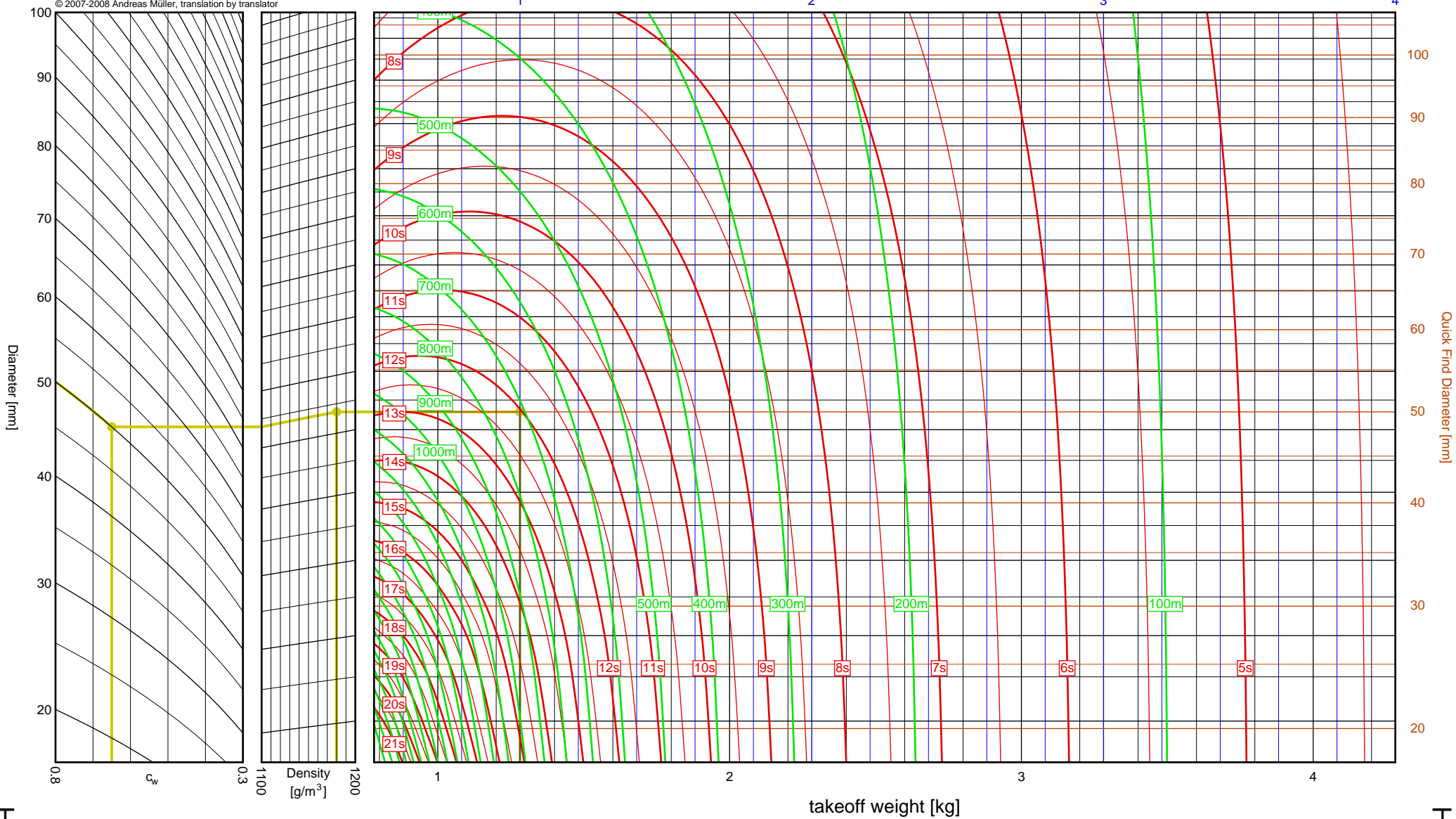
Data source:
Aerotech



1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 50mm, drag = 0.65, density = 1180 g/m³, weight = 1.282kg
 Results: time to apogee: 12.0s, expected altitude: 712m

empty weight [kg]

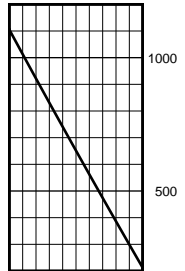


H-I

4

H97J

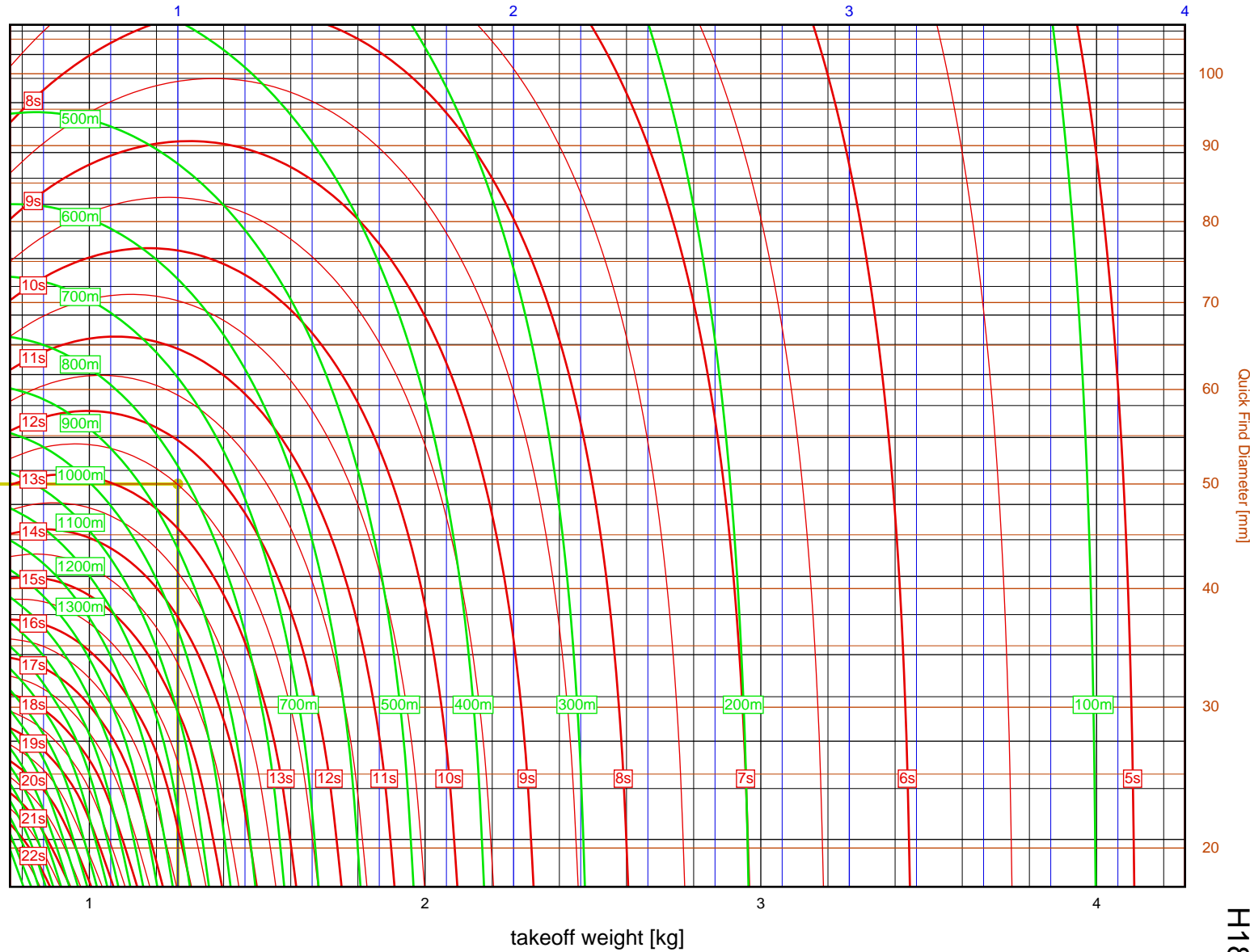
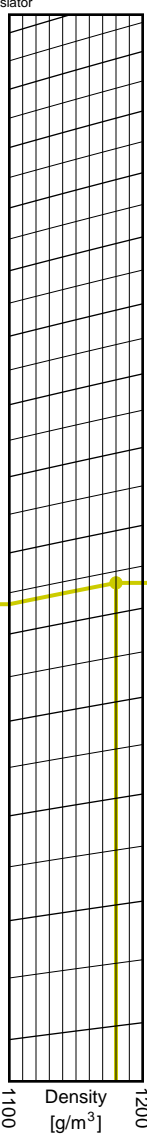
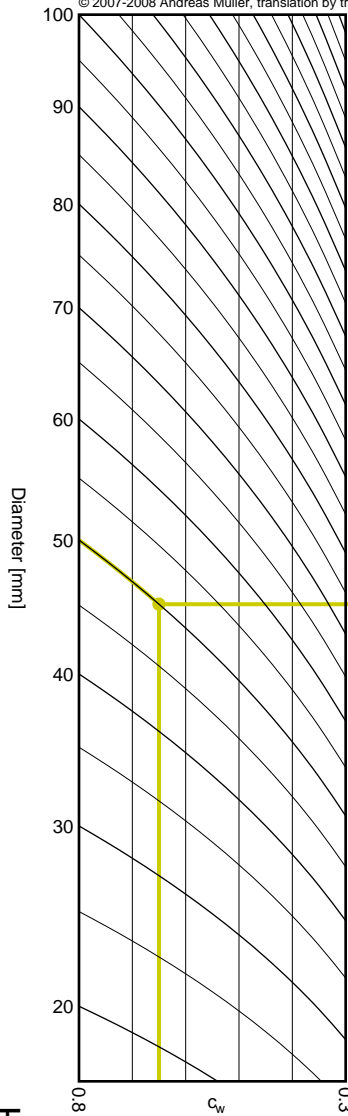
Aerotech	
H180W	
I_{tot}	= 196.8 Ns
F_{avg}	= 140.5 N
t_{burn}	= 1.40 s
d	= 29 mm
Data source: Aerotech	



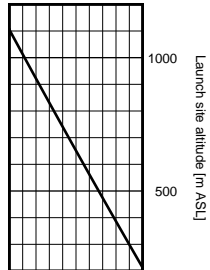
1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 50mm, drag = 0.65, density = 1180 g/m³, weight = 1.264kg
 Results: time to apogee: 12.5s, expected altitude: 822m

empty weight [kg]



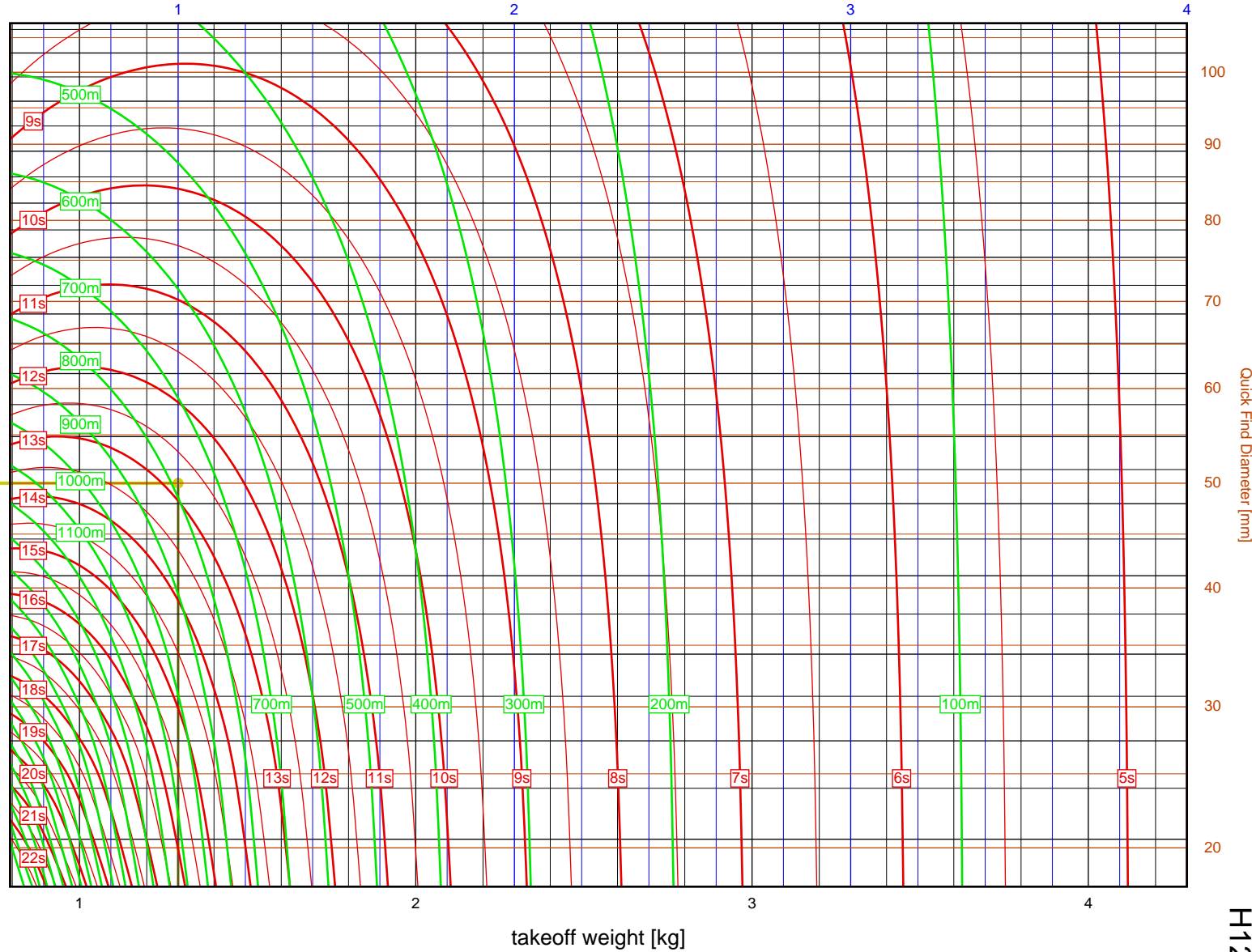
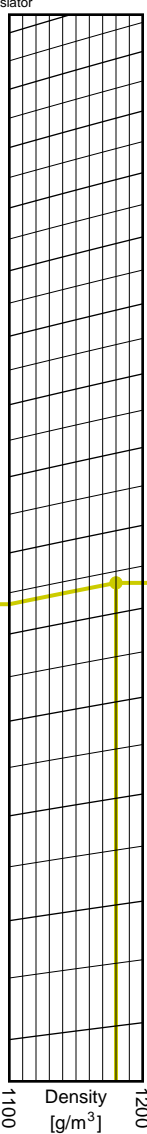
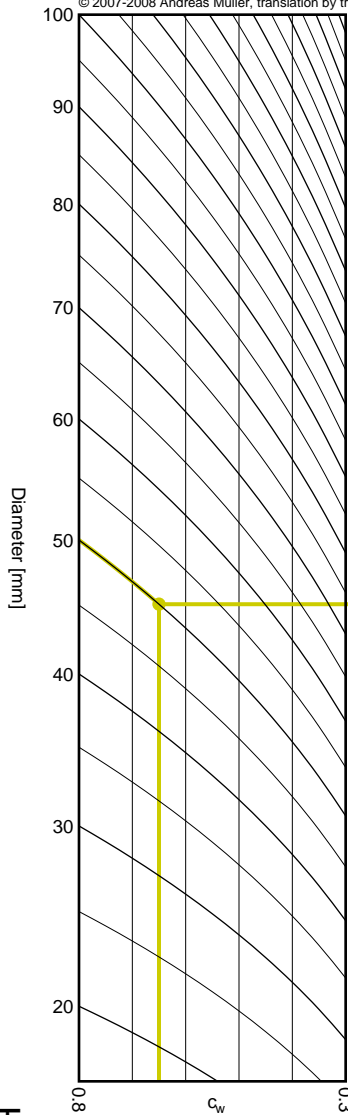
Aerotech H123W	
I_{tot}	= 197.6 Ns
F_{avg}	= 76.0 N
t_{burn}	= 2.60 s
d	= 38 mm
Data source: Aerotech	



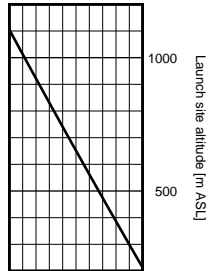
1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 50mm, drag = 0.65, density = 1180 g/m³, weight = 1.293kg
 Results: time to apogee: 12.8s, expected altitude: 786m

empty weight [kg]



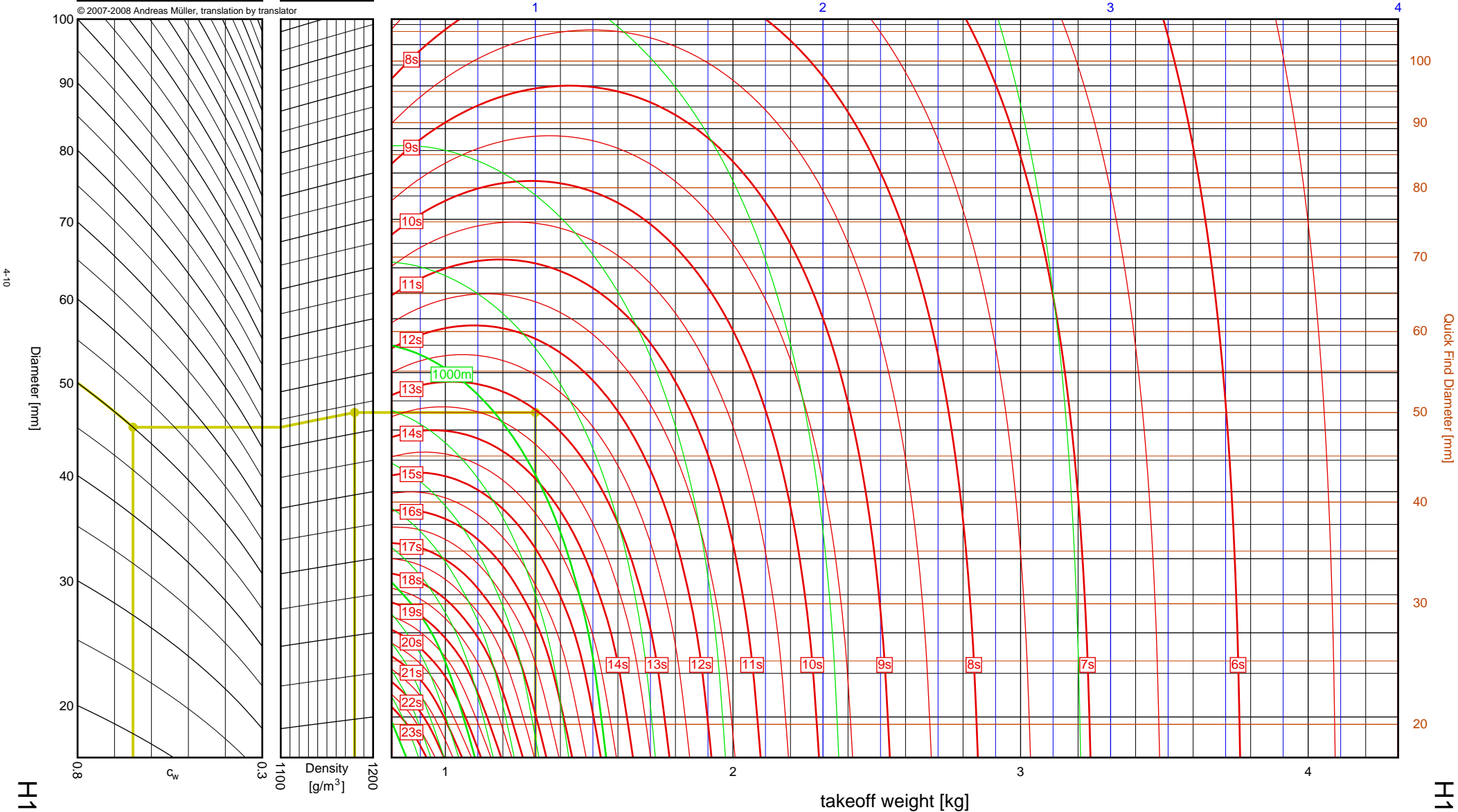
Aerotech	
H148R	
I_{tot}	= 214.2 Ns
F_{avg}	= 142.8 N
t_{burn}	= 1.50 s
d	= 38 mm
Data source: Aerotech	



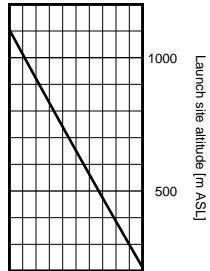
1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 50mm, drag = 0.65, density = 1180 g/m³, weight = 1.313kg
 Results: time to apogee: 13.0s, expected altitude: 899m

empty weight [kg]



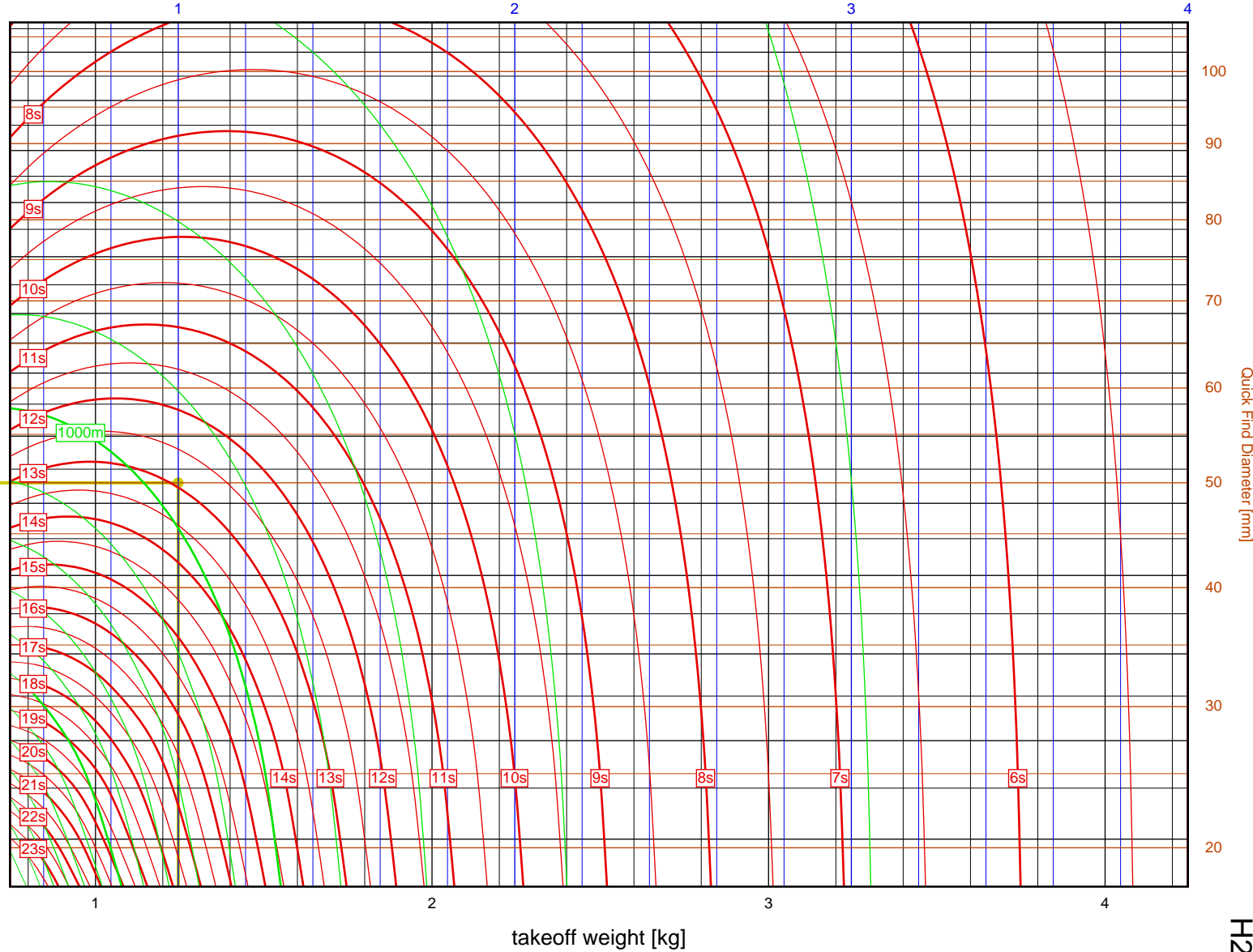
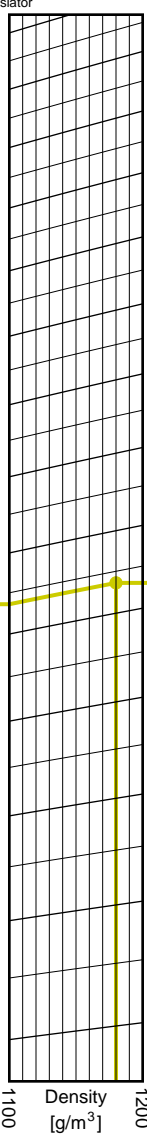
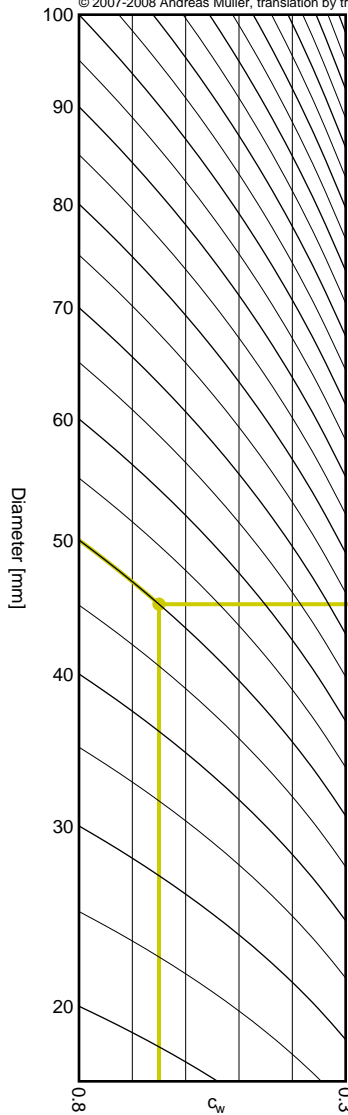
Aerotech H220T	
I_{tot}	= 215.4 Ns
F_{avg}	= 215.4 N
t_{burn}	= 1.00 s
d	= 29 mm
Data source: Aerotech	



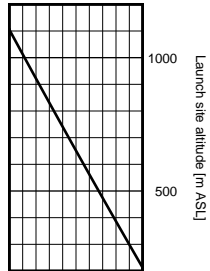
1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 50mm, drag = 0.65, density = 1180 g/m³, weight = 1.246kg
 Results: time to apogee: 12.9s, expected altitude: 931m

empty weight [kg]



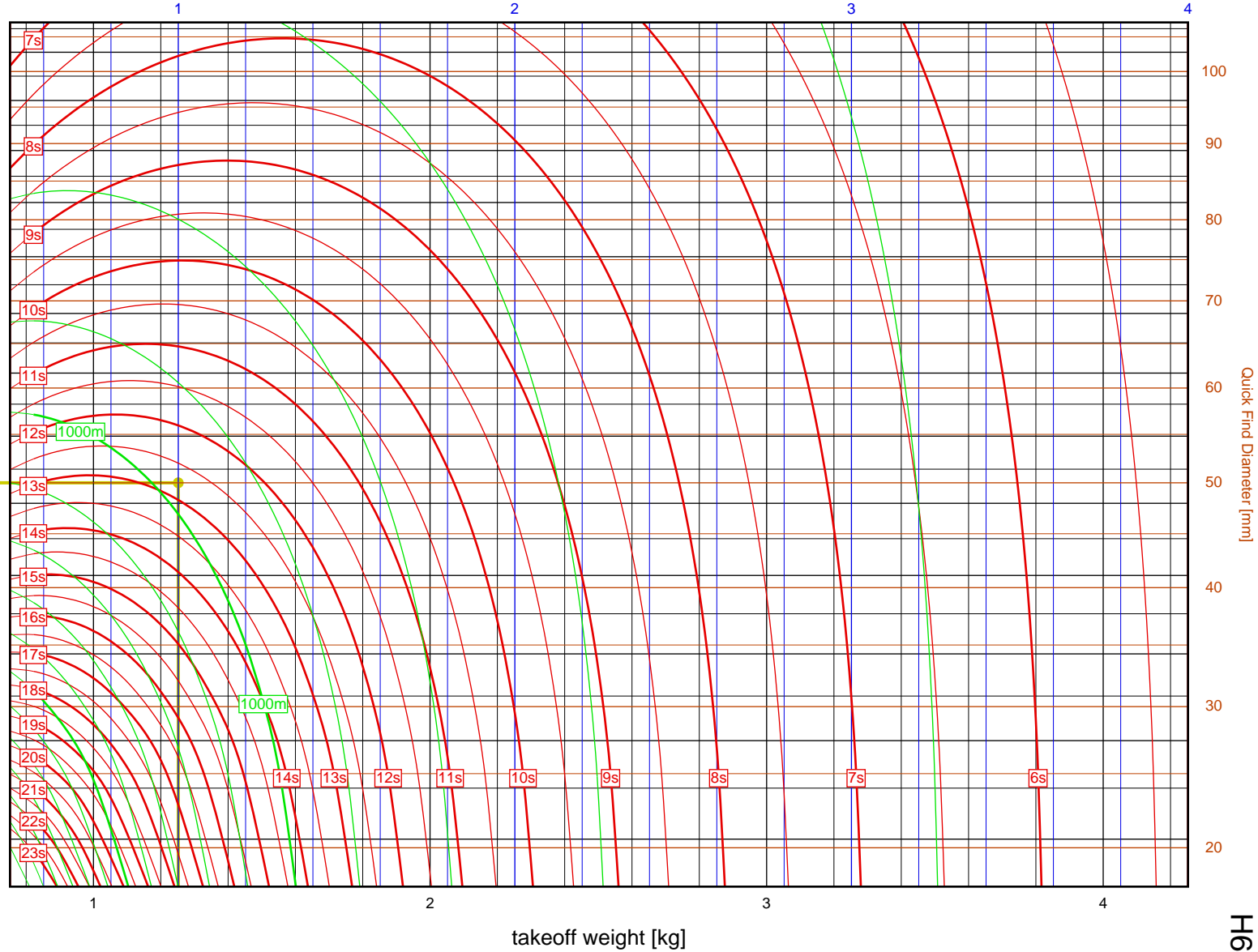
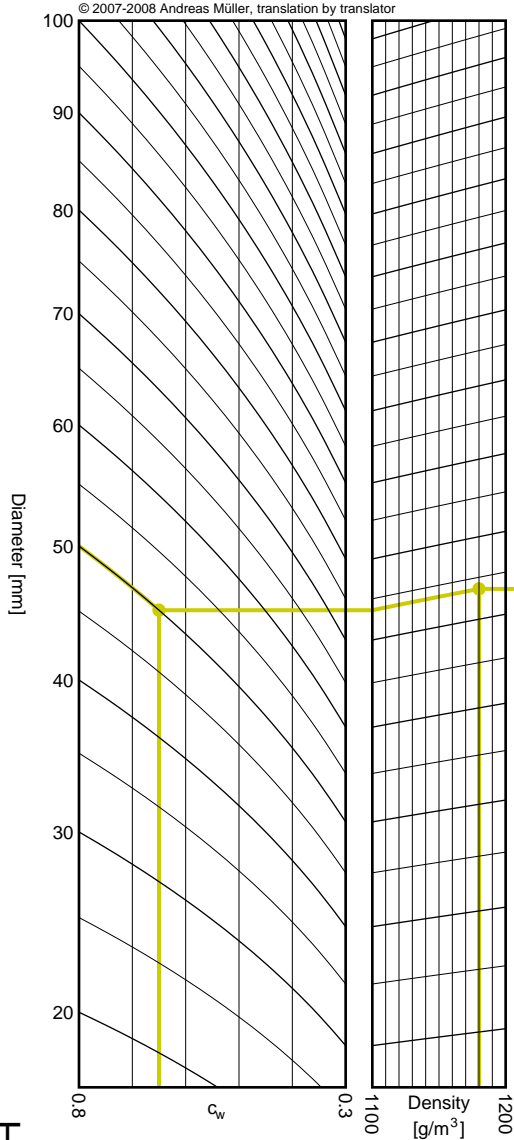
Aerotech	
H669N	
I_{tot}	= 219.7 Ns
F_{avg}	= 667.9 N
t_{burn}	= 0.33 s
d	= 38 mm
Data source: Aerotech	



1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 50mm, drag = 0.65, density = 1180 g/m³, weight = 1.252kg
 Results: time to apogee: 12.8s, expected altitude: 950m

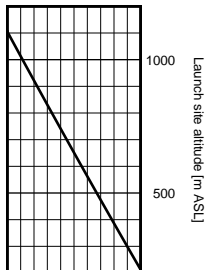
empty weight [kg]



<p style="text-align: center;">Aerotech</p> <h1 style="text-align: center;">H242T</h1>	
I_{tot} F_{avg} t_{burn} d	<p>= 219.9 Ns</p> <p>= 183.3 N</p> <p>= 1.20 s</p> <p>= 38 mm</p>
<p>Data source:</p> <p>Aerotech</p>	

$$\begin{aligned} I_{\text{tot}} &= 219.9 \text{ Ns} \\ F_{\text{avg}} &= 183.3 \text{ N} \\ t_{\text{burn}} &= 1.20 \text{ s} \\ d &= 38 \text{ mm} \end{aligned}$$

Data source:
Aerotech

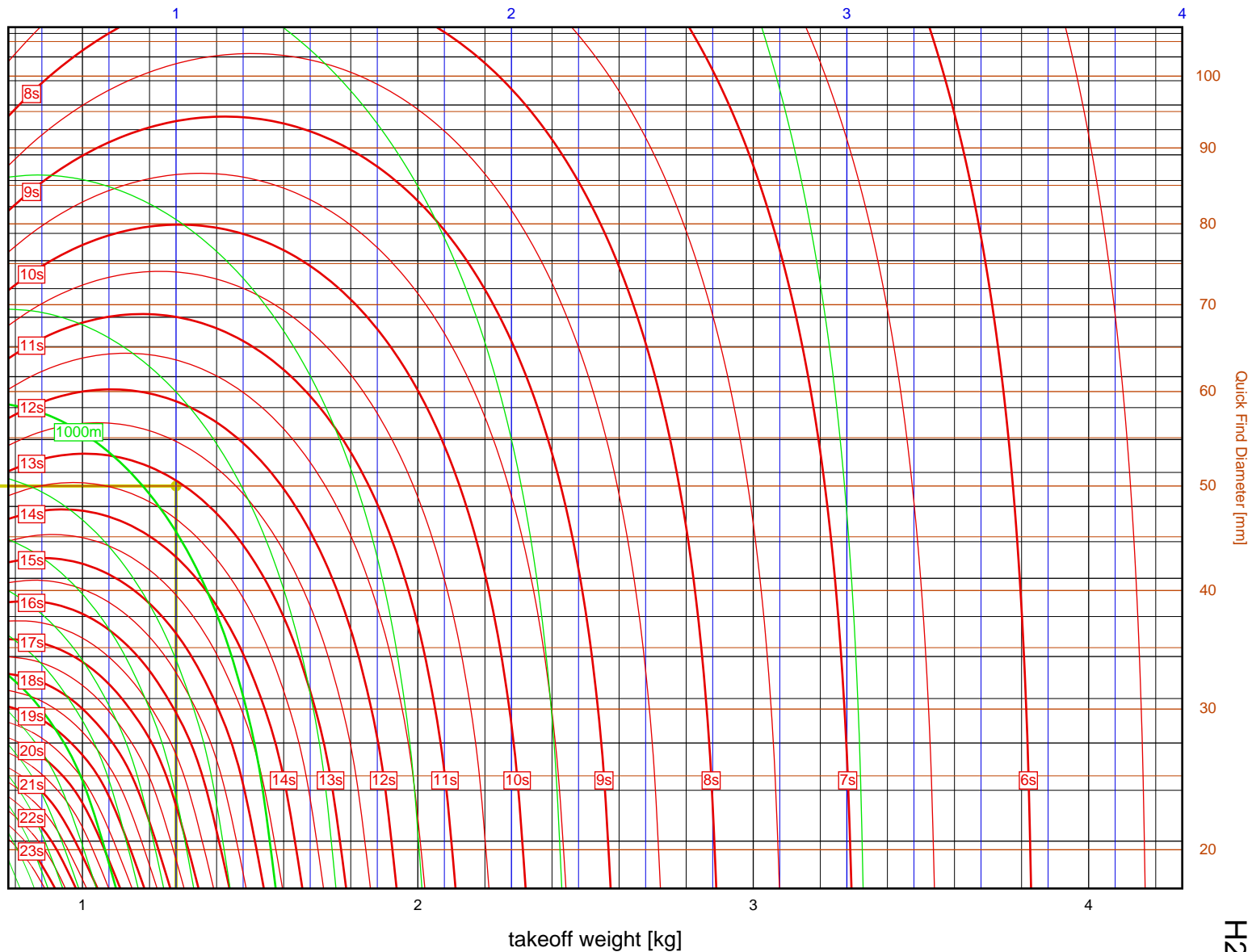
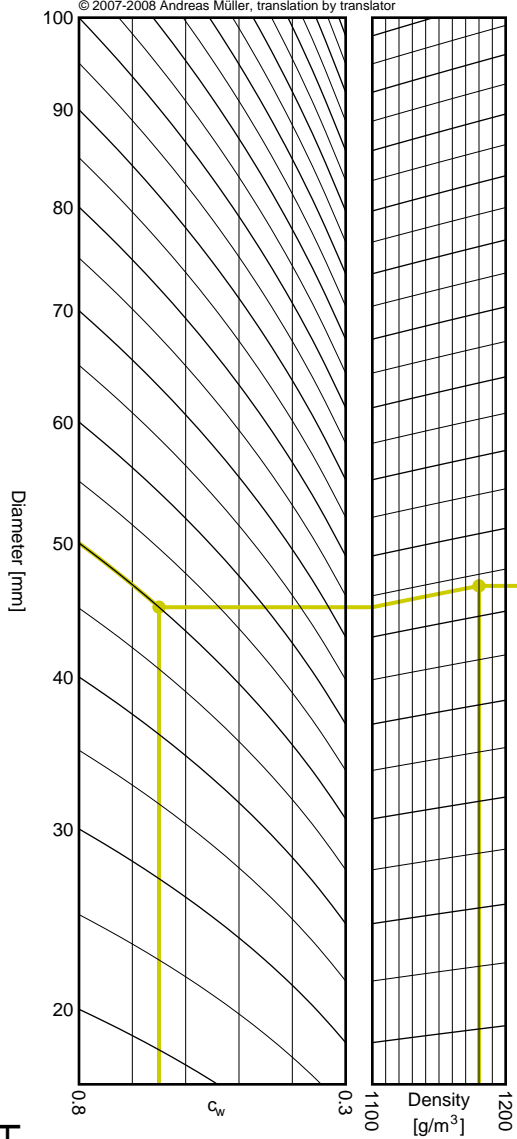


1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

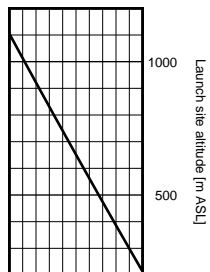
Sample: diameter = 50mm, drag = 0.65, density = 1180 g/m³, weight = 1.279kg
Results: time to apogee: 13.1s, expected altitude: 932m

empty weight [kg]

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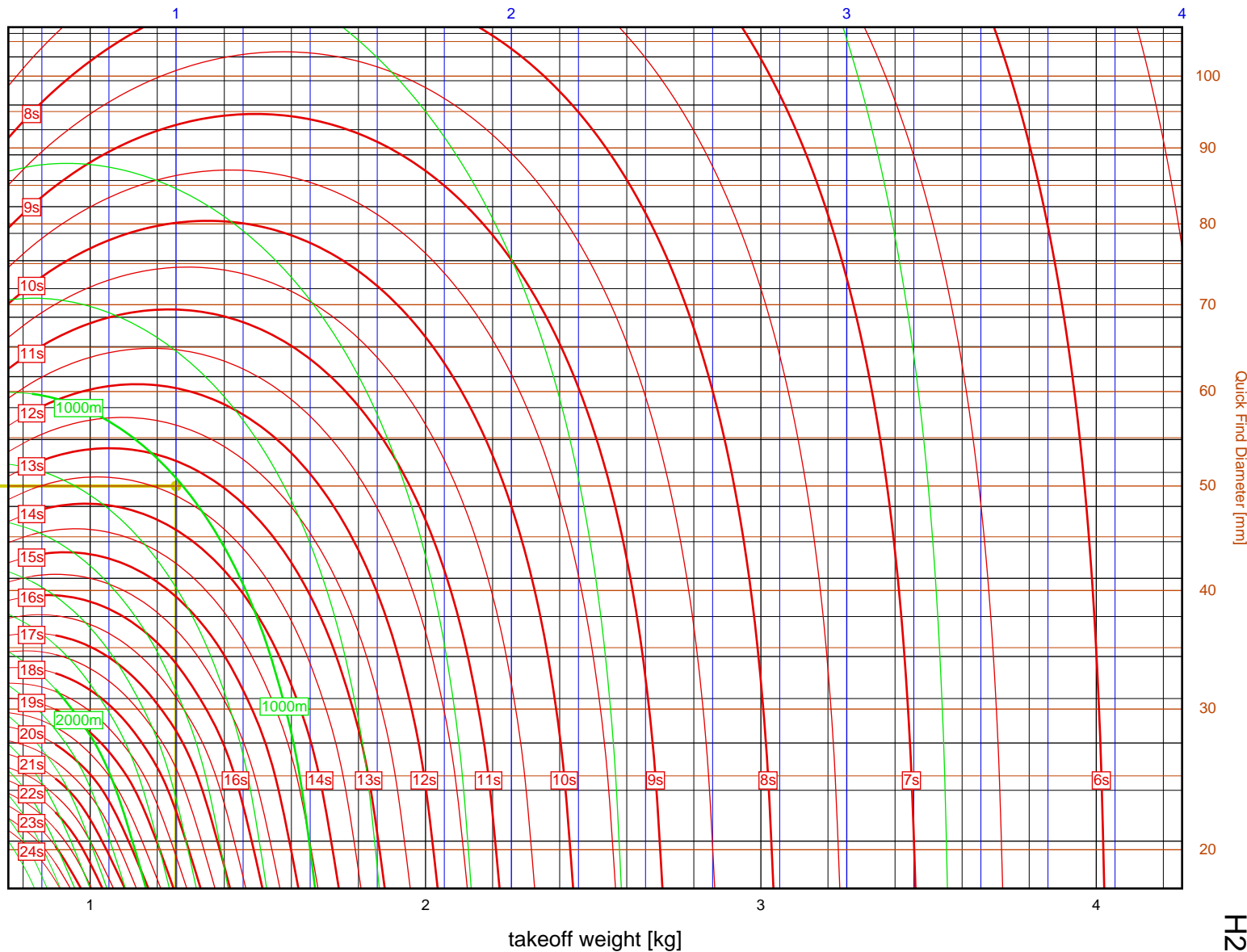
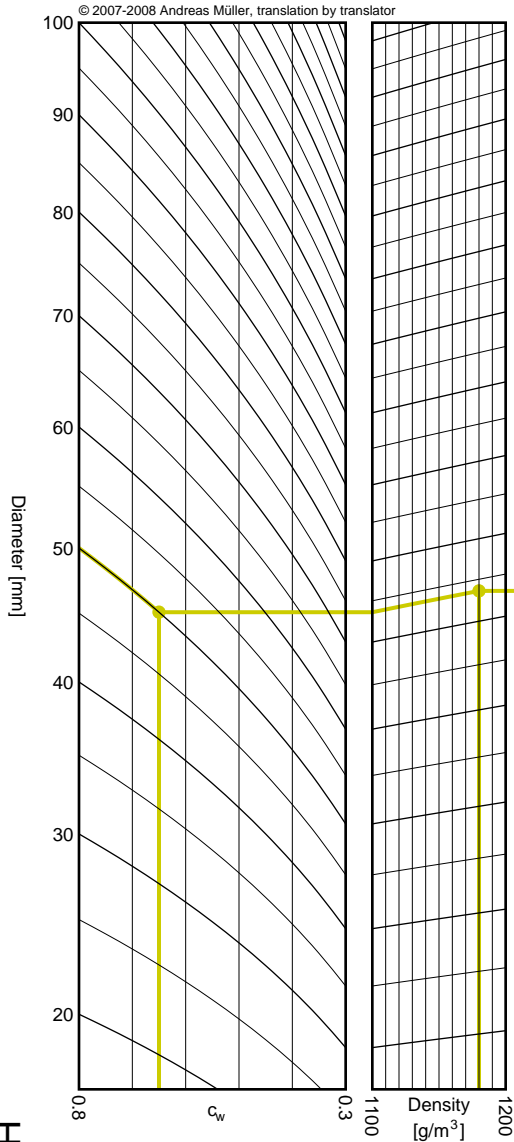
Aerotech	
H250G	
I_{tot}	= 231.0 Ns
F_{avg}	= 251.1 N
t_{burn}	= 0.92 s
d	= 29 mm
Data source: Aerotech	



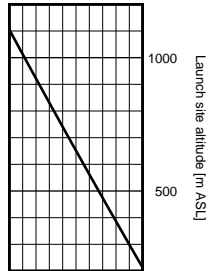
1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 50mm, drag = 0.65, density = 1180 g/m³, weight = 1.256kg
 Results: time to apogee: 13.4s, expected altitude: 1014m

empty weight [kg]



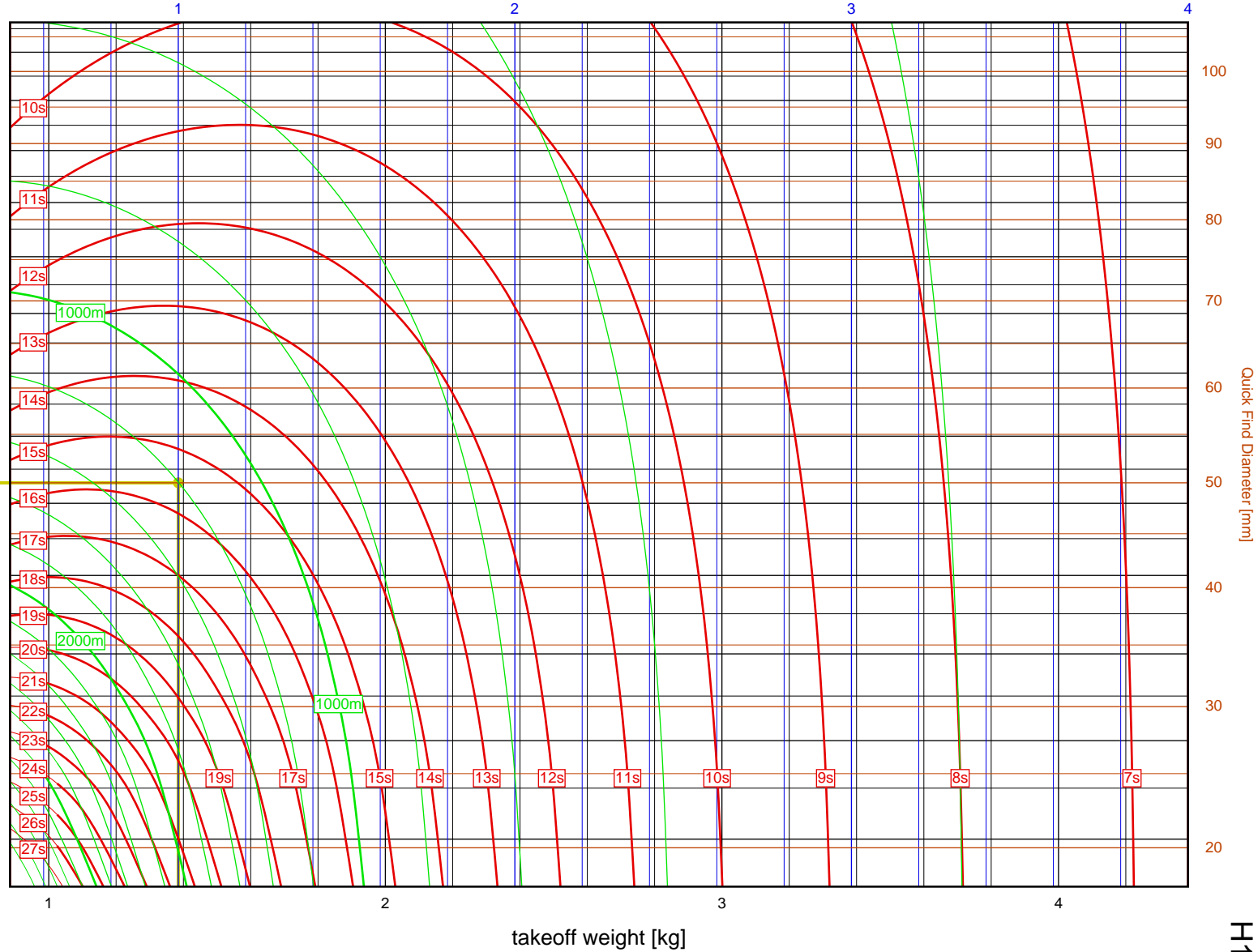
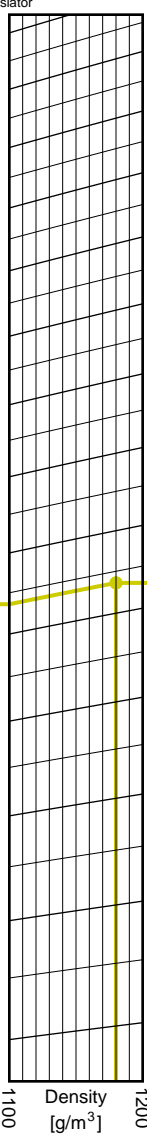
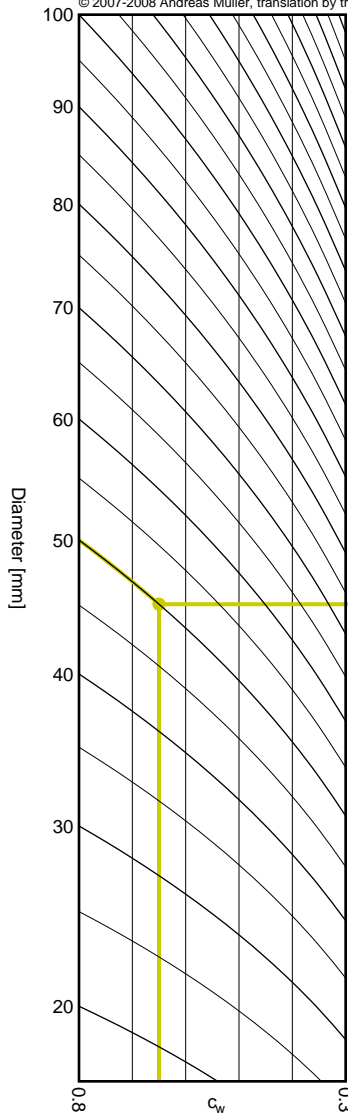
Aerotech H112J	
I_{tot}	= 280.7 Ns
F_{avg}	= 82.6 N
t_{burn}	= 3.40 s
d	= 38 mm
Data source: Aerotech	



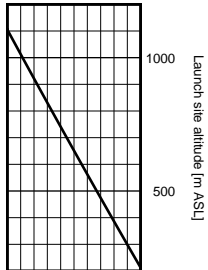
1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 50mm, drag = 0.65, density = 1180 g/m³, weight = 1.385kg
 Results: time to apogee: 15.5s, expected altitude: 1202m

empty weight [kg]



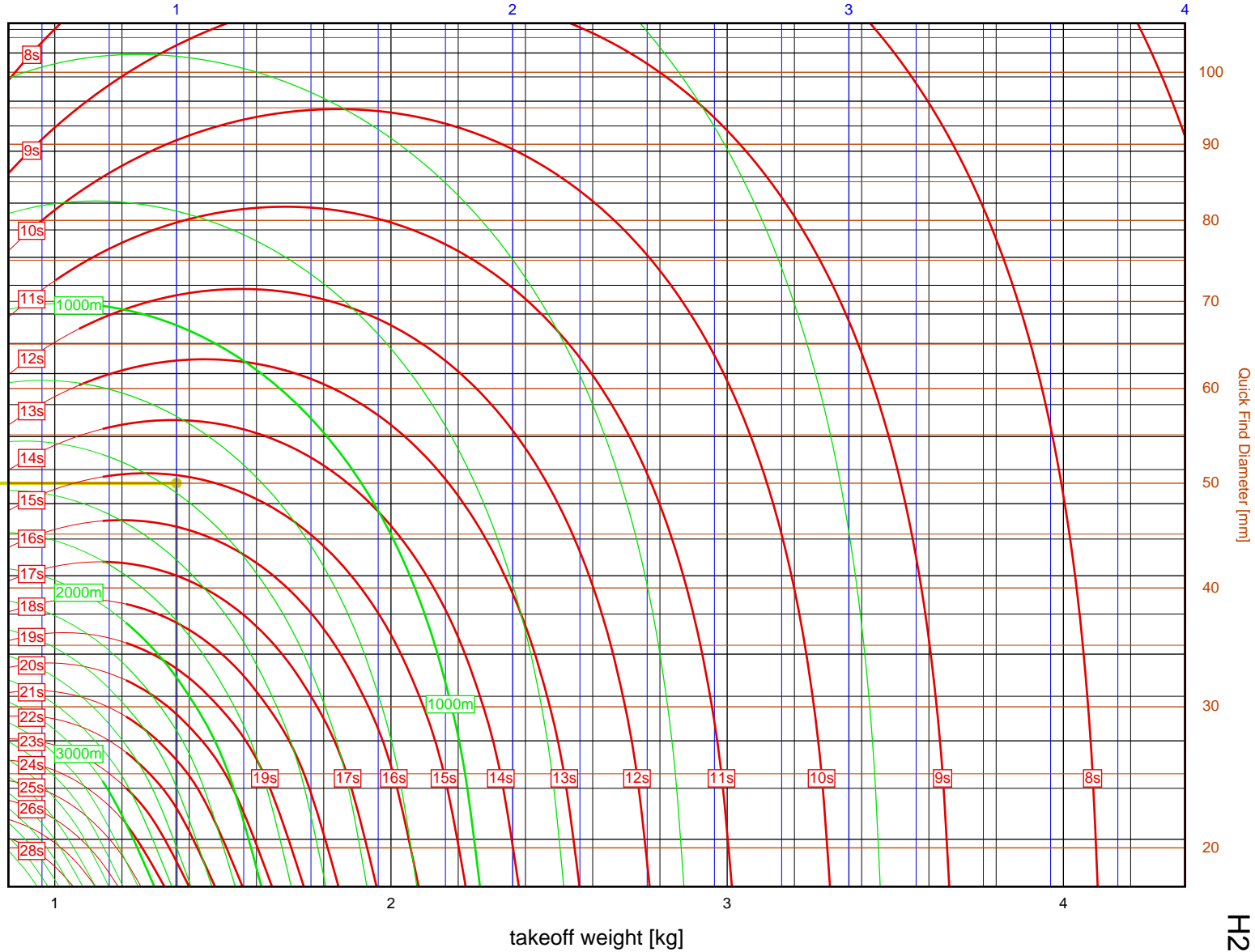
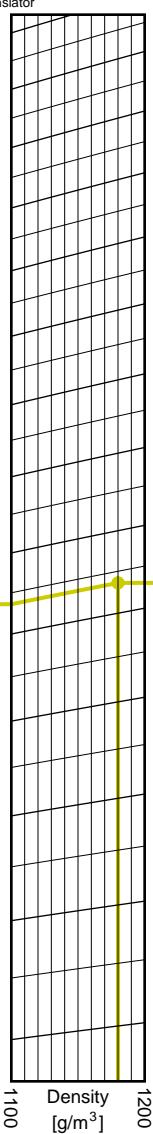
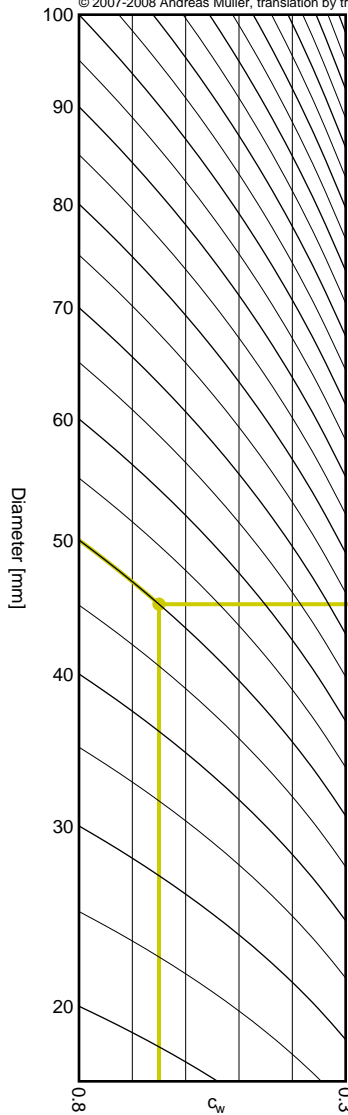
Aerotech H268R	
I_{tot}	= 309.7 Ns
F_{avg}	= 262.5 N
t_{burn}	= 1.18 s
d	= 29 mm
Data source: Aerotech	



1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 50mm, drag = 0.65, density = 1180 g/m³, weight = 1.362kg
 Results: time to apogee: 15.2s, expected altitude: 1374m

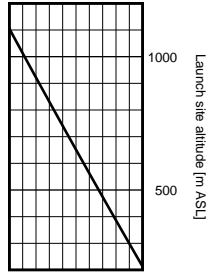
empty weight [kg]



Aerotech I357T

I_{tot} = 317.7 Ns
 F_{avg} = 288.8 N
 t_{burn} = 1.10 s
 d = 38 mm

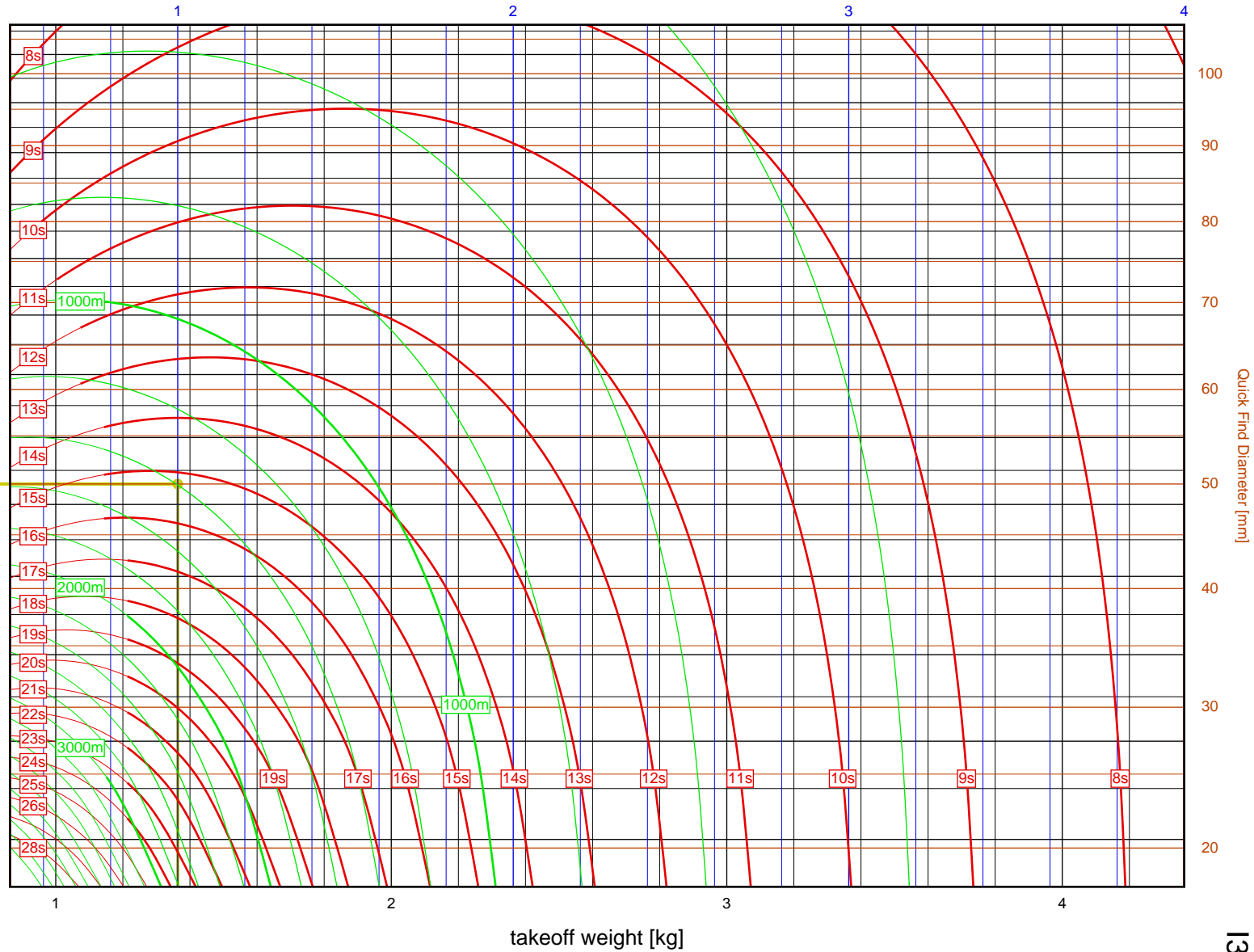
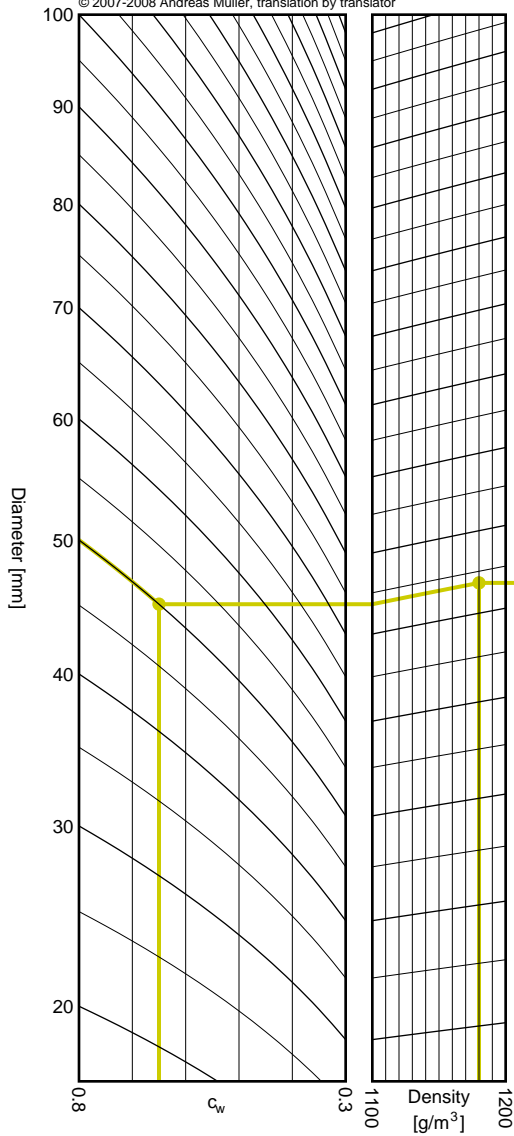
Data source:
Aerotech



1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 50mm, drag = 0.65, density = 1180 g/m³, weight = 1.363kg
 Results: time to apogee: 15.2s, expected altitude: 1398m

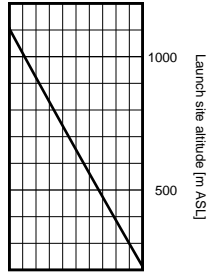
empty weight [kg]



Aerotech I218R

I_{tot} = 317.9 Ns
 F_{avg} = 211.9 N
 t_{burn} = 1.50 s
 d = 38 mm

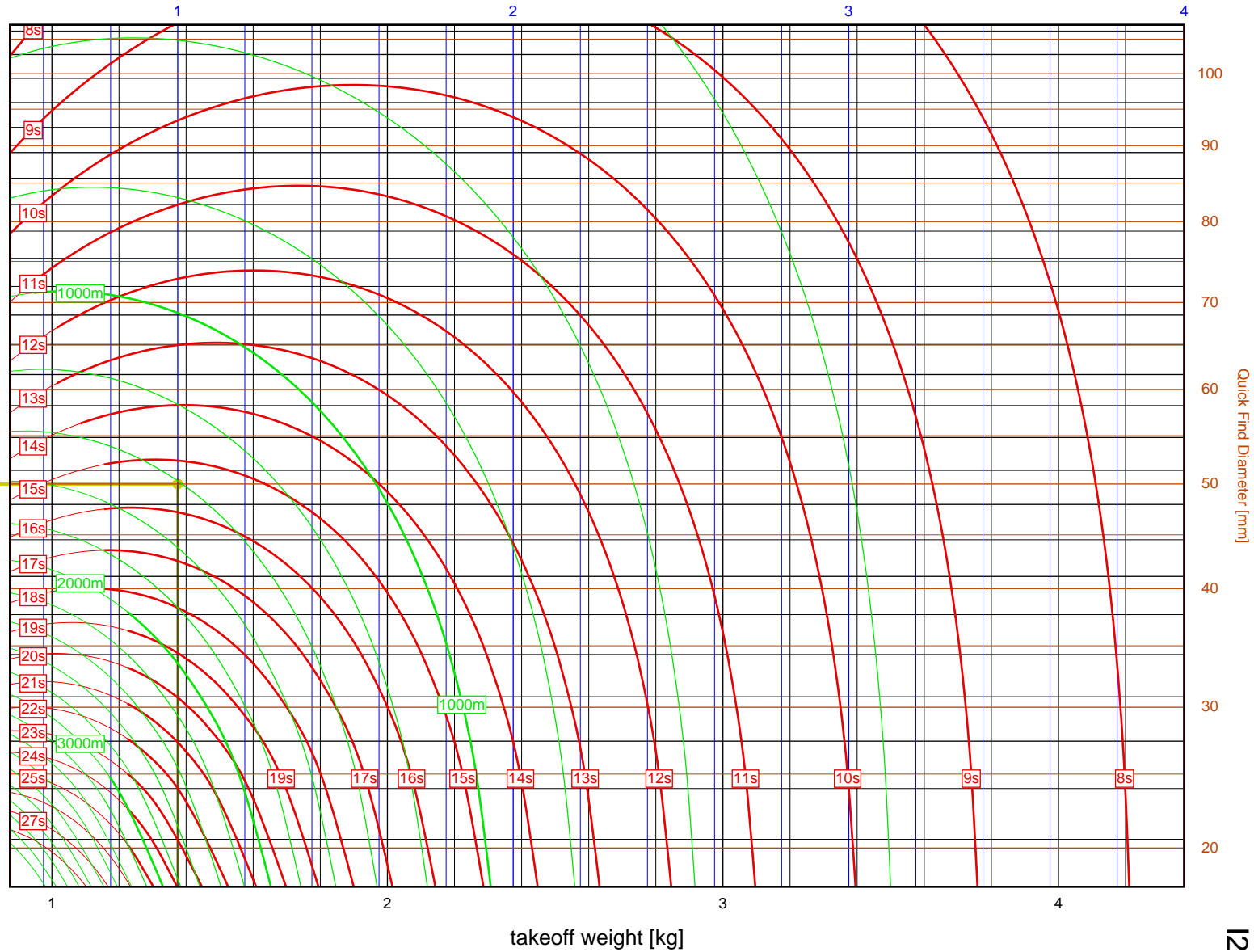
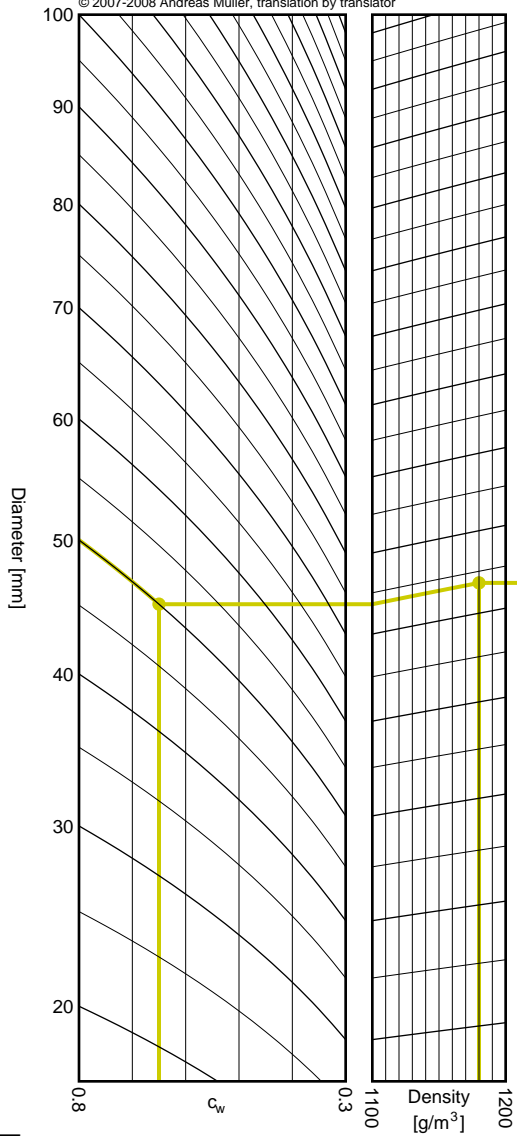
Data source:
Aerotech



1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 50mm, drag = 0.65, density = 1180 g/m³, weight = 1.375kg
 Results: time to apogee: 15.5s, expected altitude: 1410m

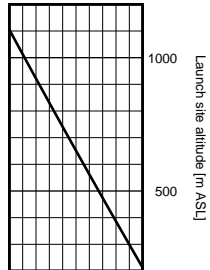
empty weight [kg]



Aerotech H999N

I_{tot} = 320.0 Ns
 F_{avg} = 972.6 N
 t_{burn} = 0.33 s
 d = 38 mm

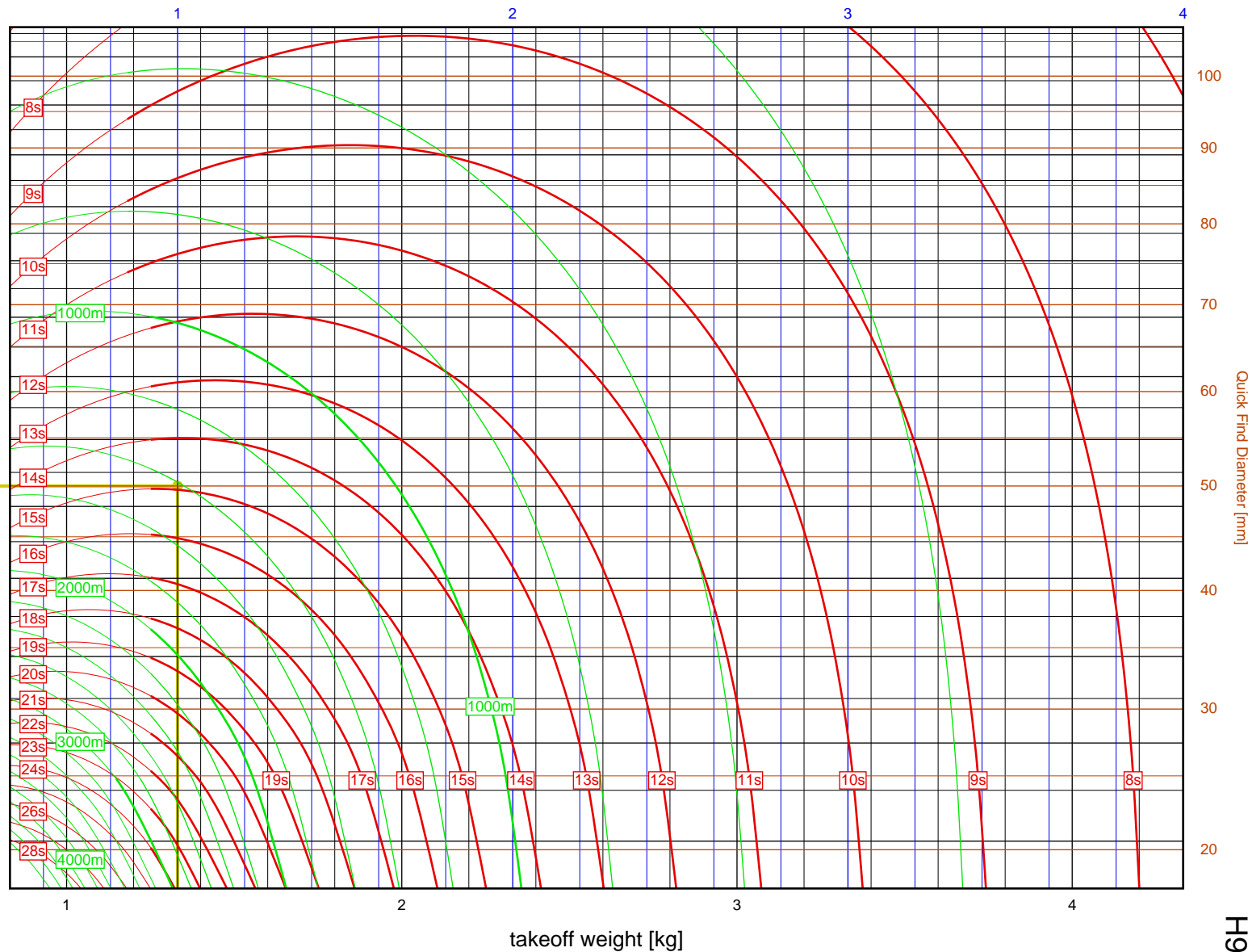
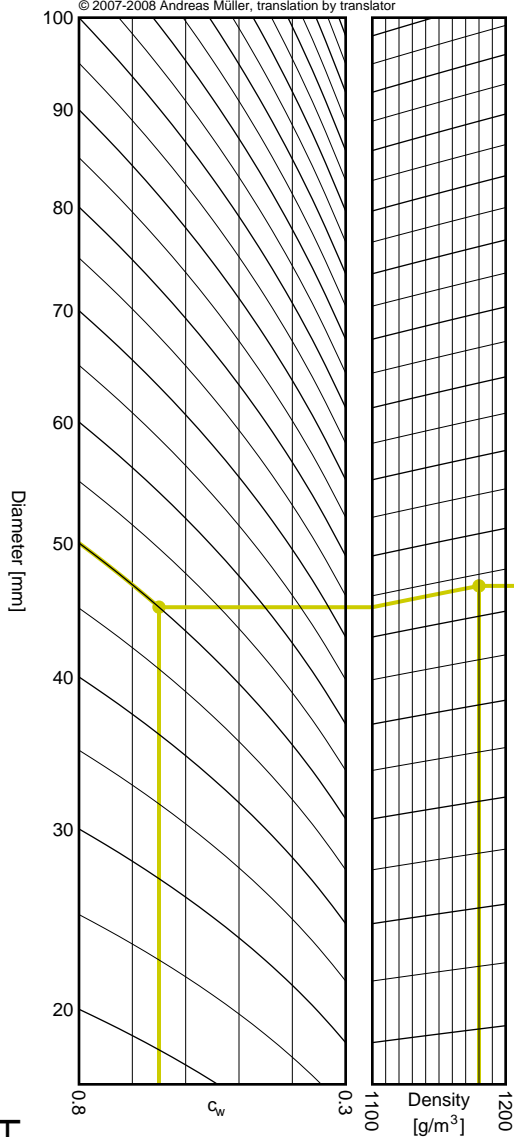
Data source:
Aerotech



1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 50mm, drag = 0.65, density = 1180 g/m³, weight = 1.331kg
 Results: time to apogee: 14.9s, expected altitude: 1413m

empty weight [kg]

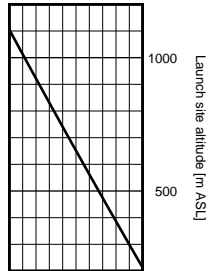


H-I

4

H999N

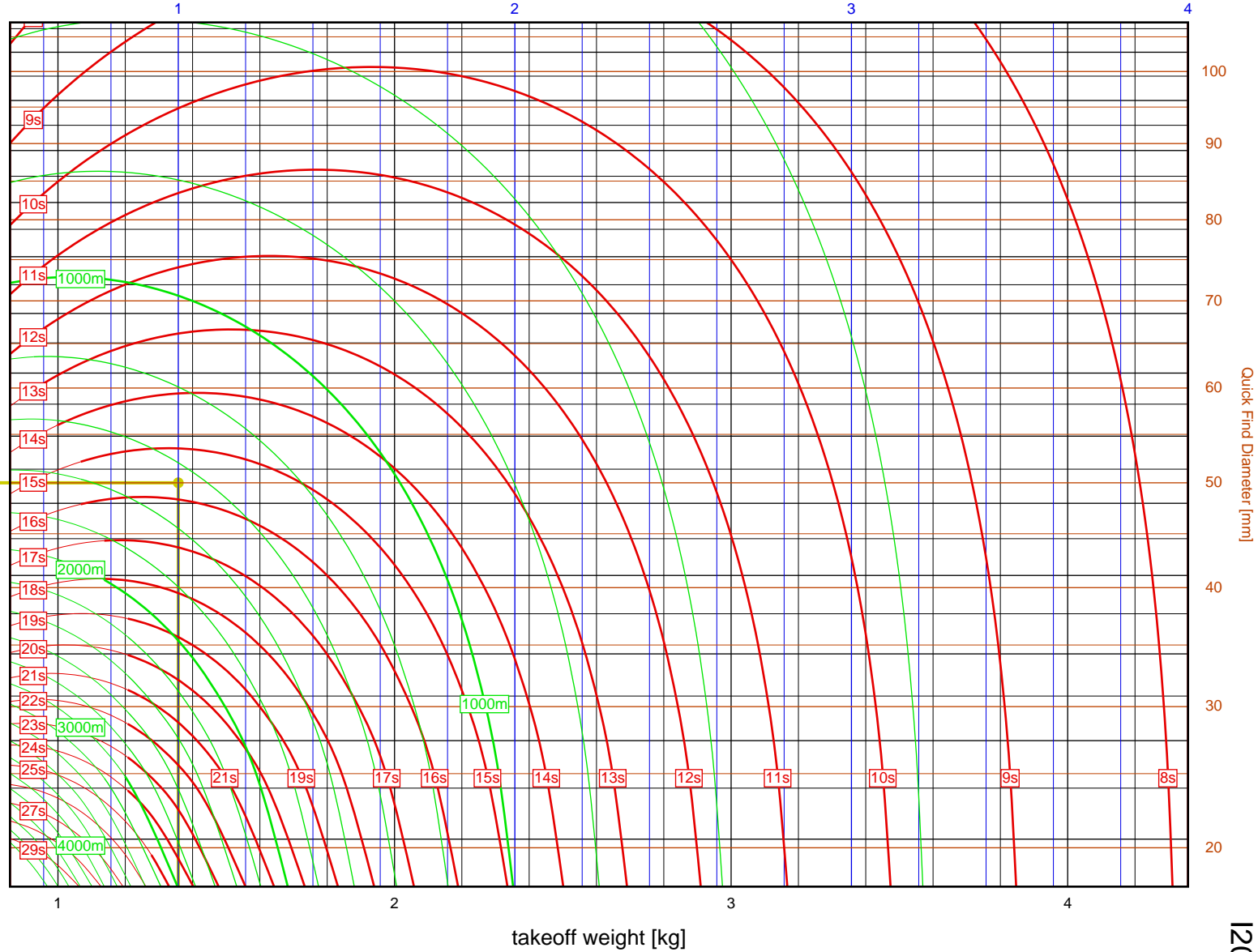
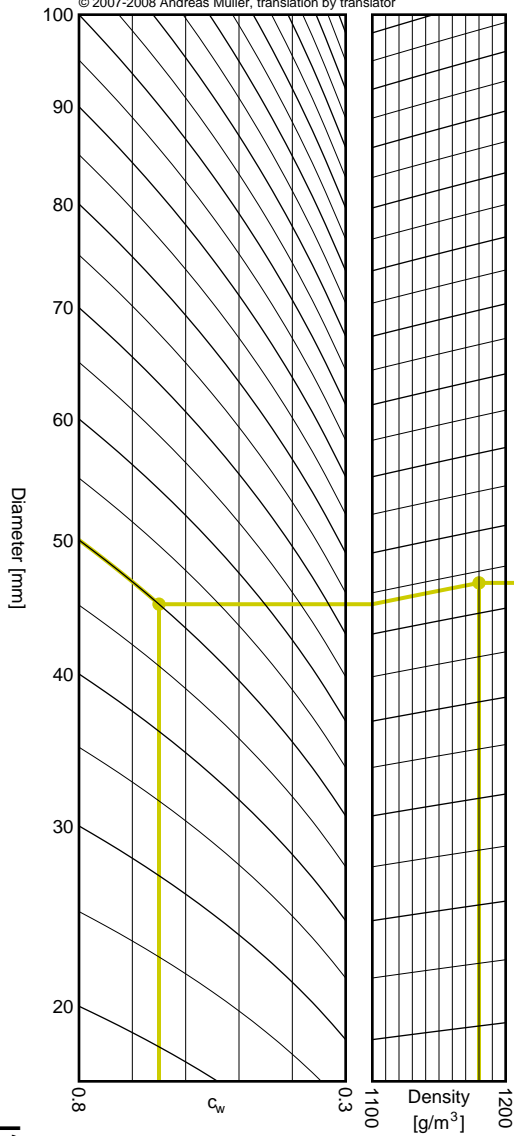
Aerotech	
I200W	
I_{tot}	= 326.8 Ns
F_{avg}	= 181.2 N
t_{burn}	= 1.80 s
d	= 29 mm
Data source: Aerotech	



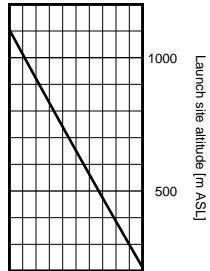
1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 50mm, drag = 0.65, density = 1180 g/m³, weight = 1.358kg
 Results: time to apogee: 15.7s, expected altitude: 1459m

empty weight [kg]



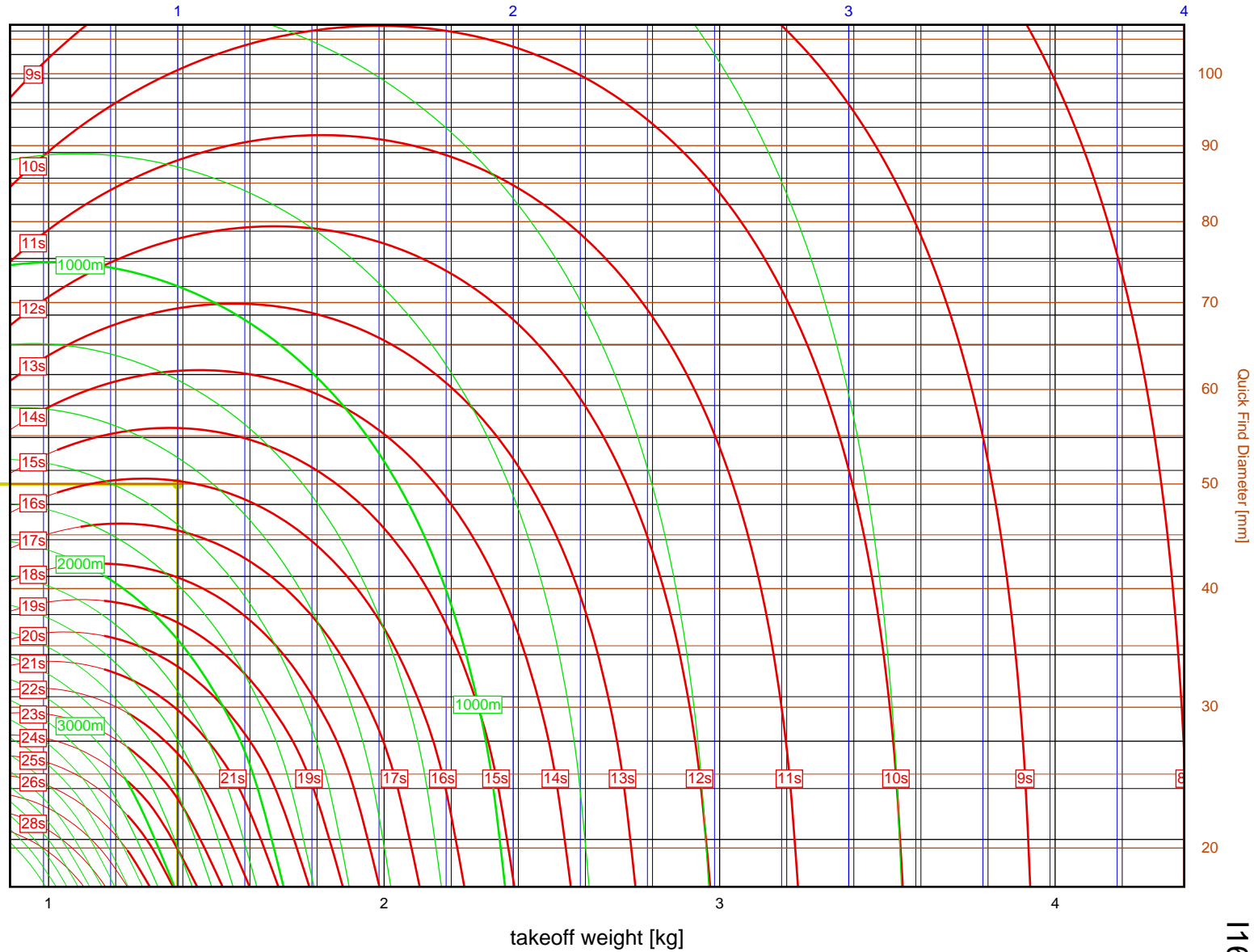
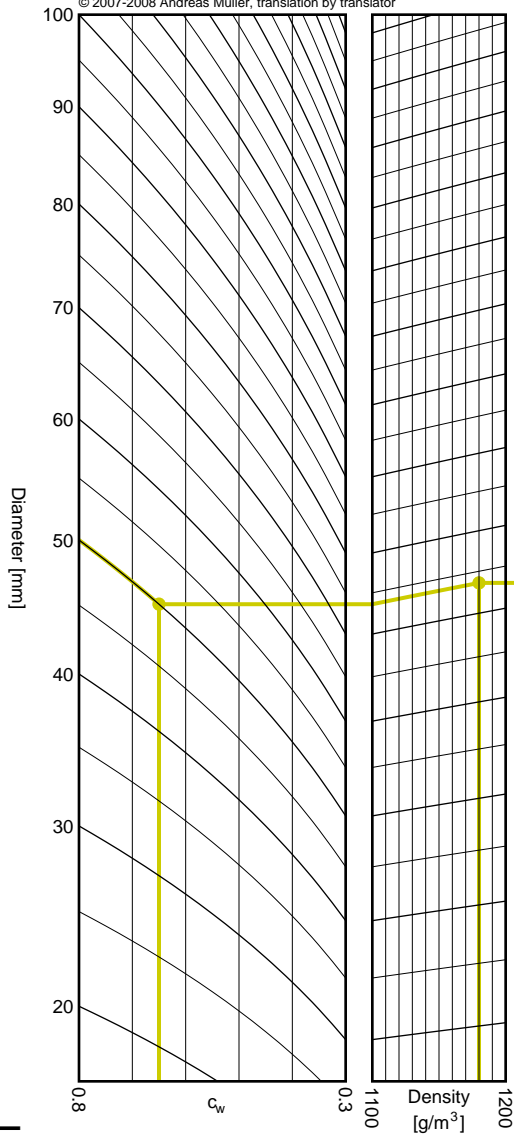
Aerotech	
I161W	
I_{tot}	= 333.5 Ns
F_{avg}	= 145.0 N
t_{burn}	= 2.30 s
d	= 38 mm
Data source: Aerotech	



1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 50mm, drag = 0.65, density = 1180 g/m³, weight = 1.385kg
 Results: time to apogee: 16.1s, expected altitude: 1477m

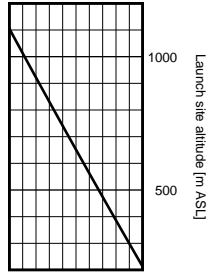
empty weight [kg]



Aerotech I245G

I_{tot} = 350.5 Ns
 F_{avg} = 239.5 N
 t_{burn} = 1.46 s
 d = 38 mm

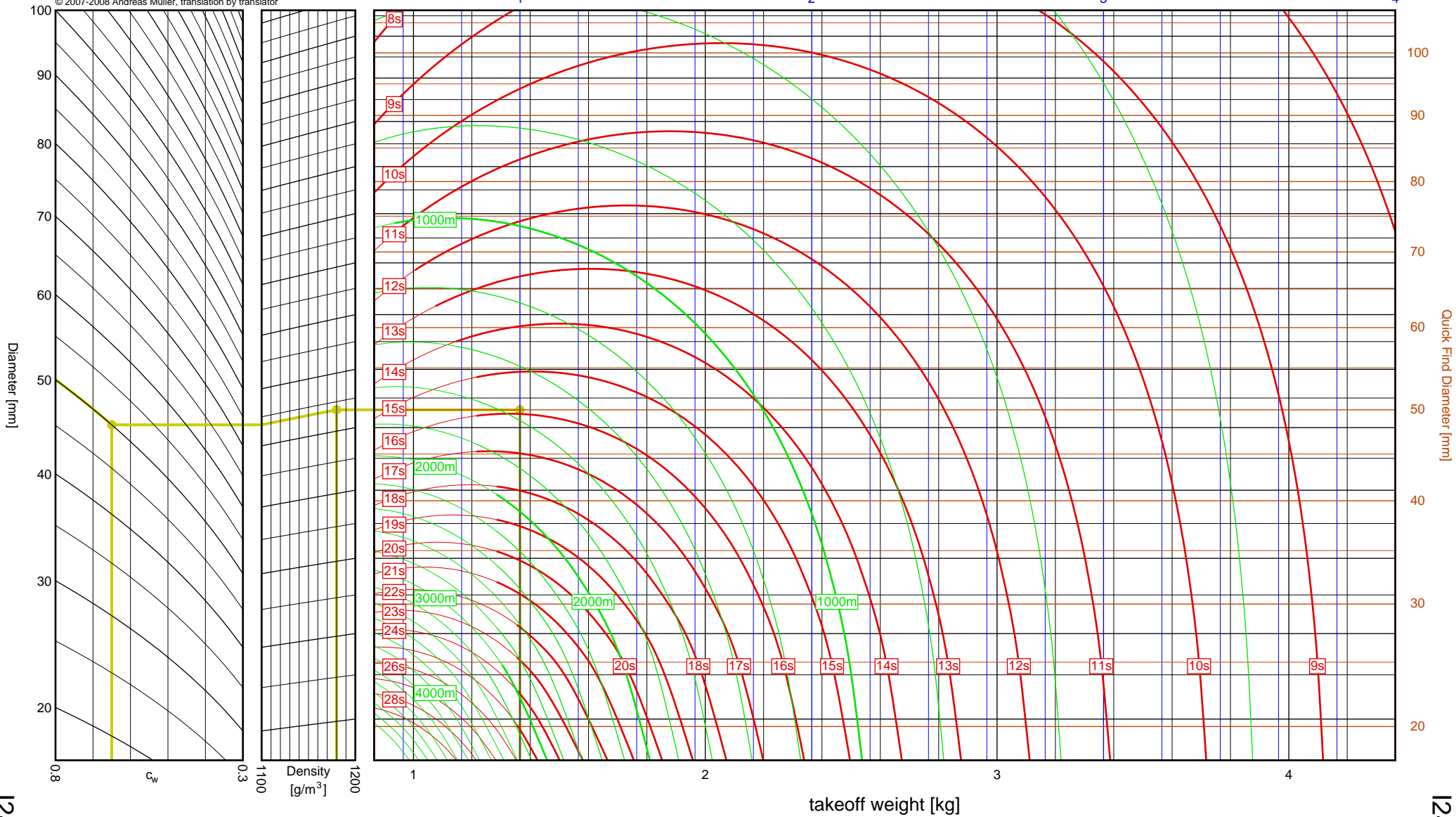
Data source:
Aerotech



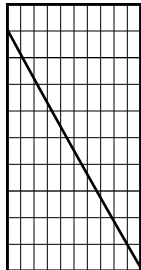
1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 50mm, drag = 0.65, density = 1180 g/m³, weight = 1.365kg
 Results: time to apogee: 15.9s, expected altitude: 1560m

empty weight [kg]



Aerotech	
I225FJ	
I_{tot}	= 371.3 Ns
F_{avg}	= 206.3 N
t_{burn}	= 1.80 s
d	= 38 mm
Data source: Aerotech	

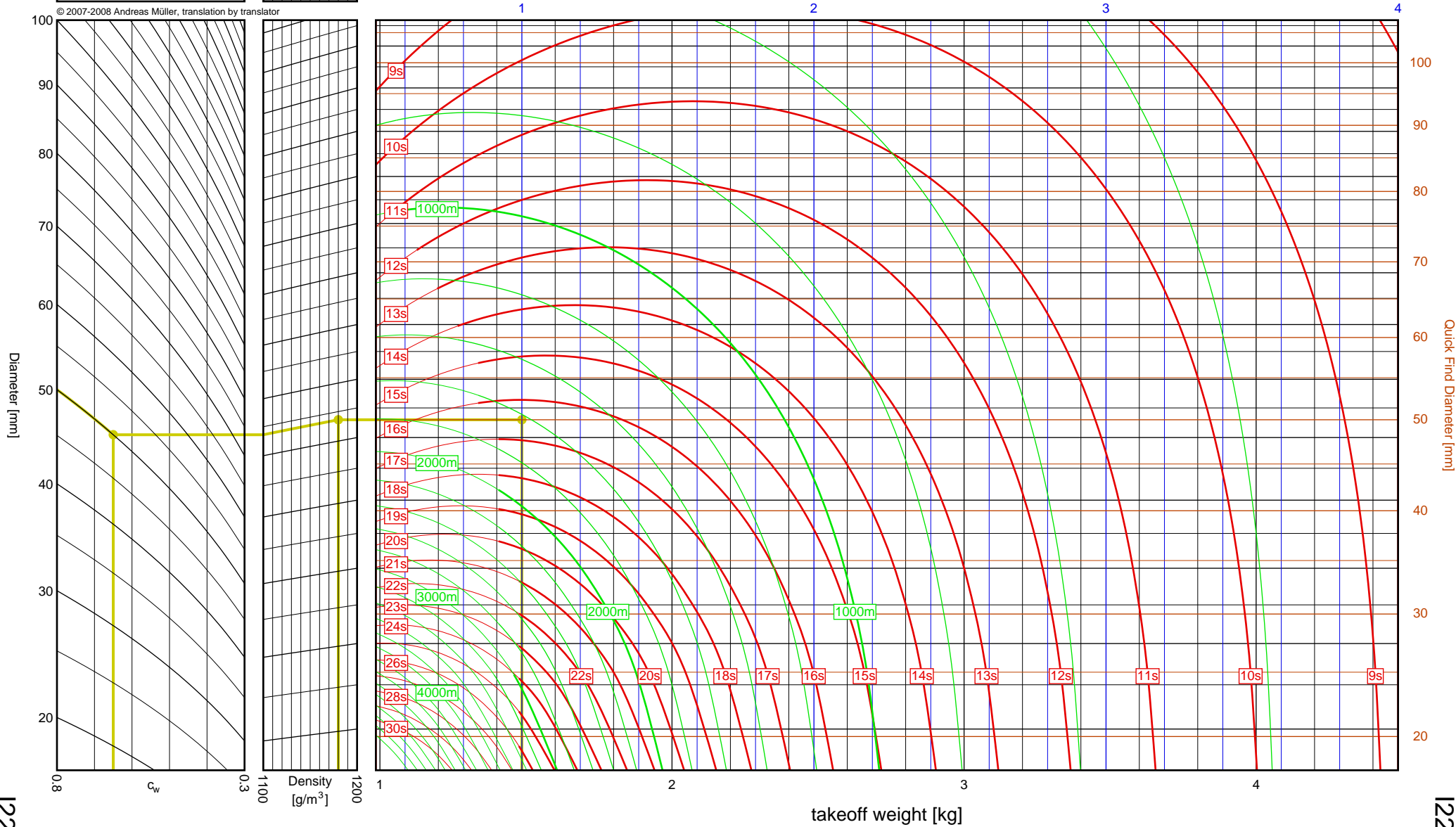


Launch site altitude [m ASL]

1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 50mm, drag = 0.65, density = 1180 g/m³, weight = 1.486kg
 Results: time to apogee: 16.5s, expected altitude: 1622m

empty weight [kg]



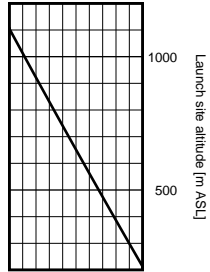
I225FJ

I225FJ

Aerotech I154J

I_{tot} = 375.4 Ns
 F_{avg} = 104.3 N
 t_{burn} = 3.60 s
 d = 38 mm

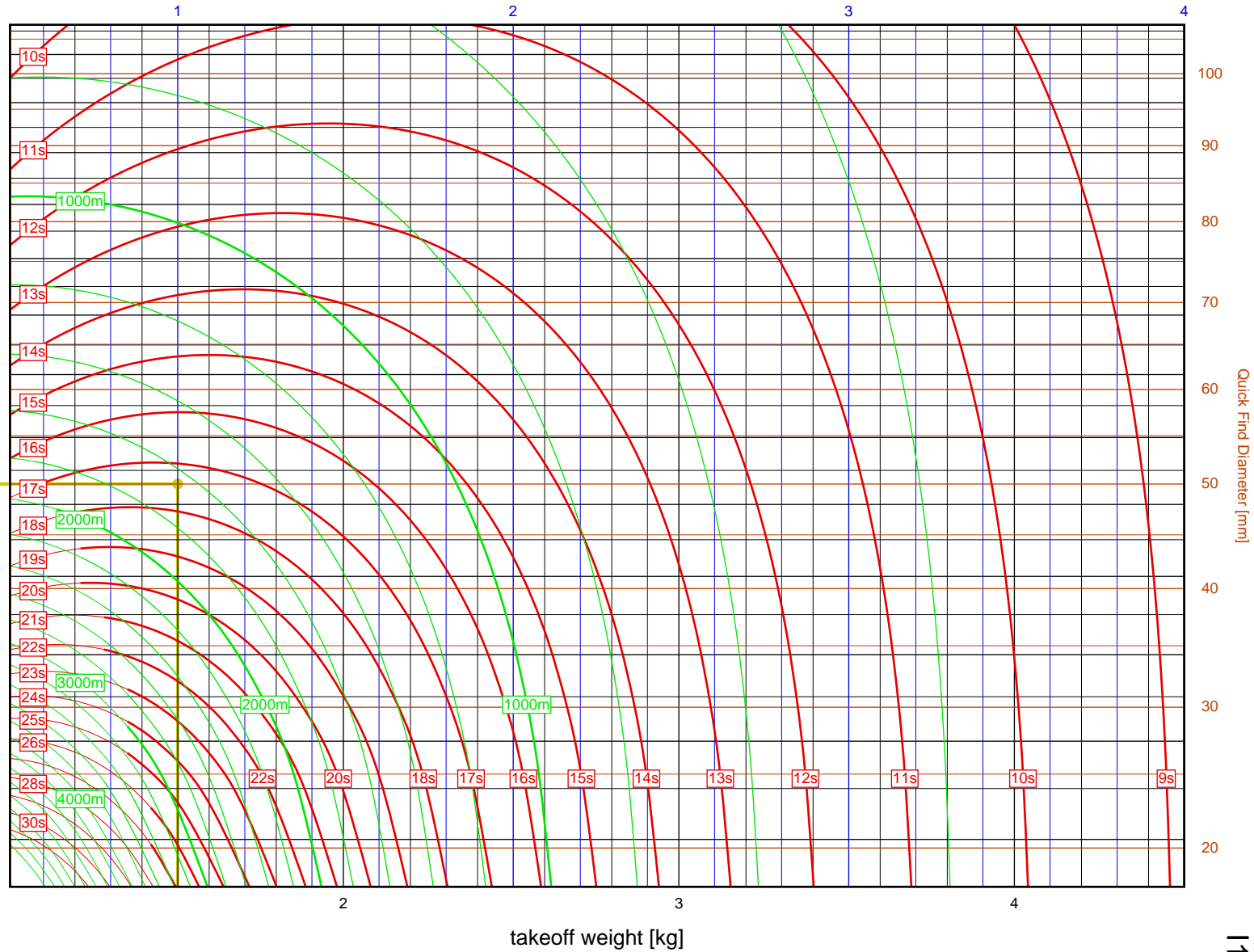
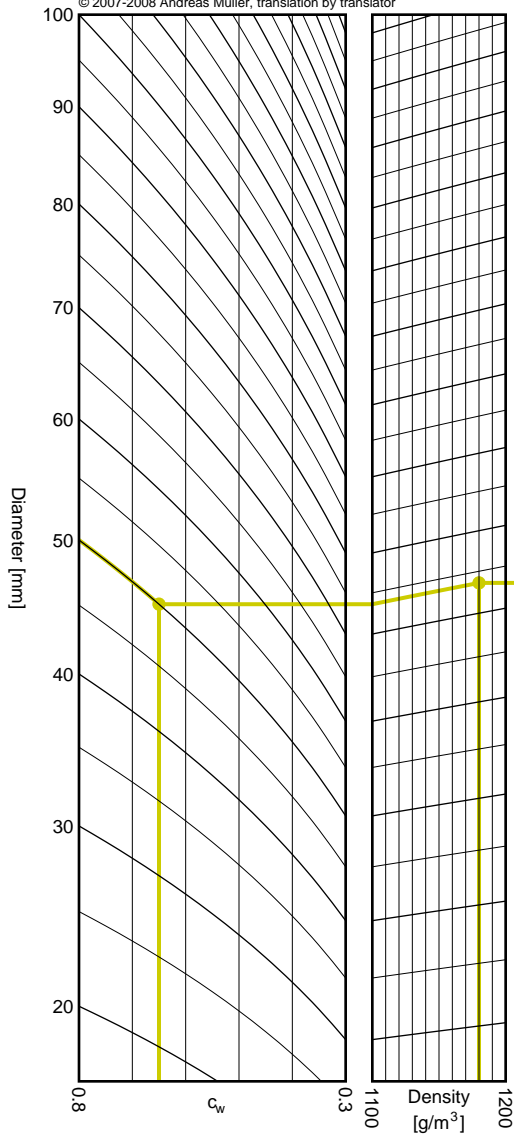
Data source:
Aerotech



1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 50mm, drag = 0.65, density = 1180 g/m³, weight = 1.506kg
 Results: time to apogee: 17.4s, expected altitude: 1651m

empty weight [kg]



H-I

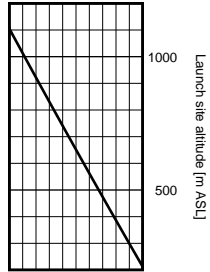
4

I154J

Aerotech I357T

I_{tot} = 317.7 Ns
 F_{avg} = 288.8 N
 t_{burn} = 1.10 s
 d = 38 mm

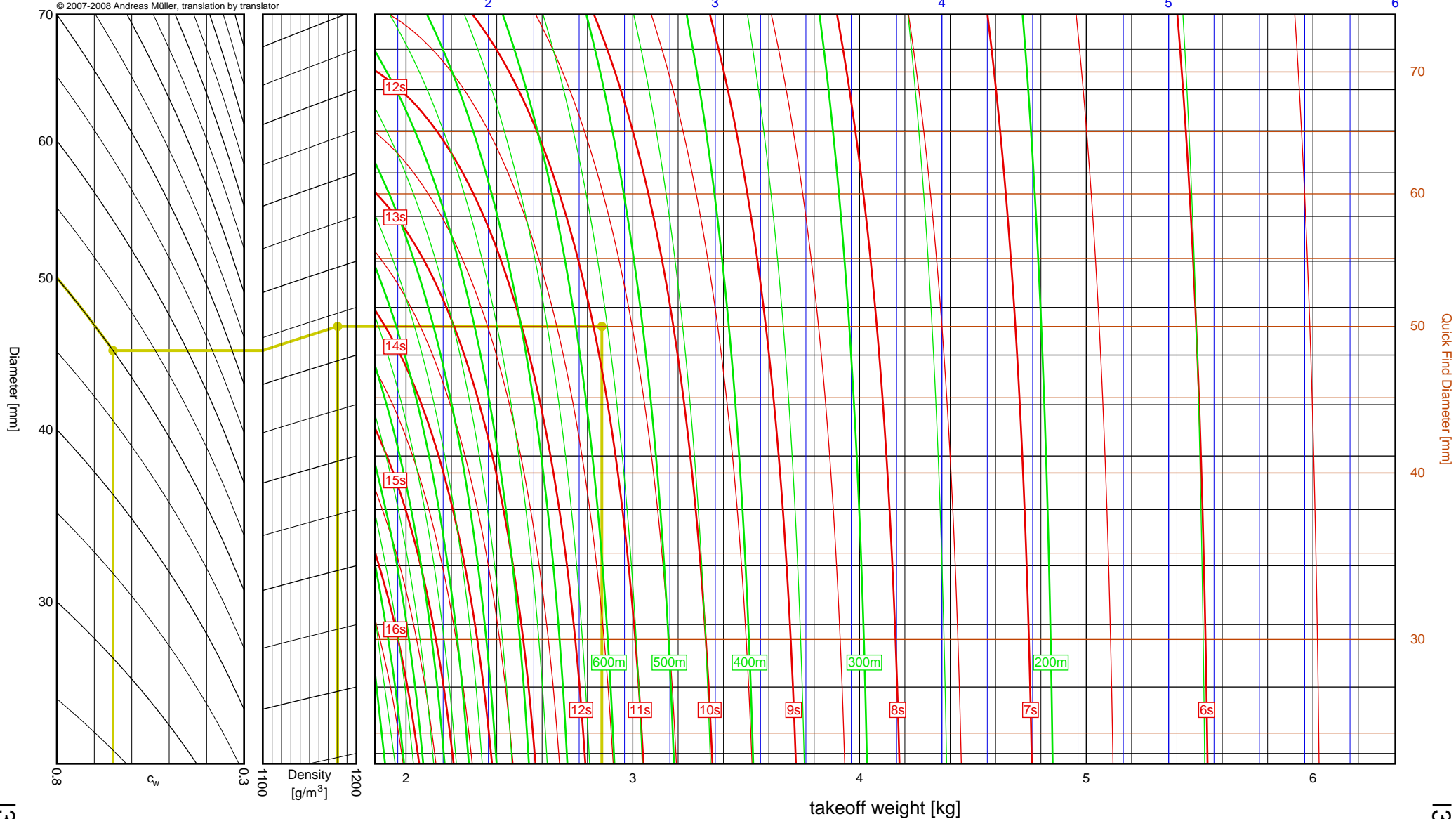
Data source:
Aerotech



1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 50mm, drag = 0.65, density = 1180 g/m³, weight = 2.863kg
 Results: time to apogee: 10.9s, expected altitude: 559m

empty weight [kg]



2", I-J

Quick-Find Diameter [mm]

takeoff weight [kg]

Diameter [mm]

c_w

Density [g/m³]

I357T

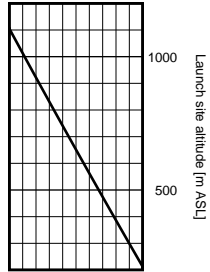
I357T

50

Aerotech I218R

I_{tot} = 317.9 Ns
 F_{avg} = 211.9 N
 t_{burn} = 1.50 s
 d = 38 mm

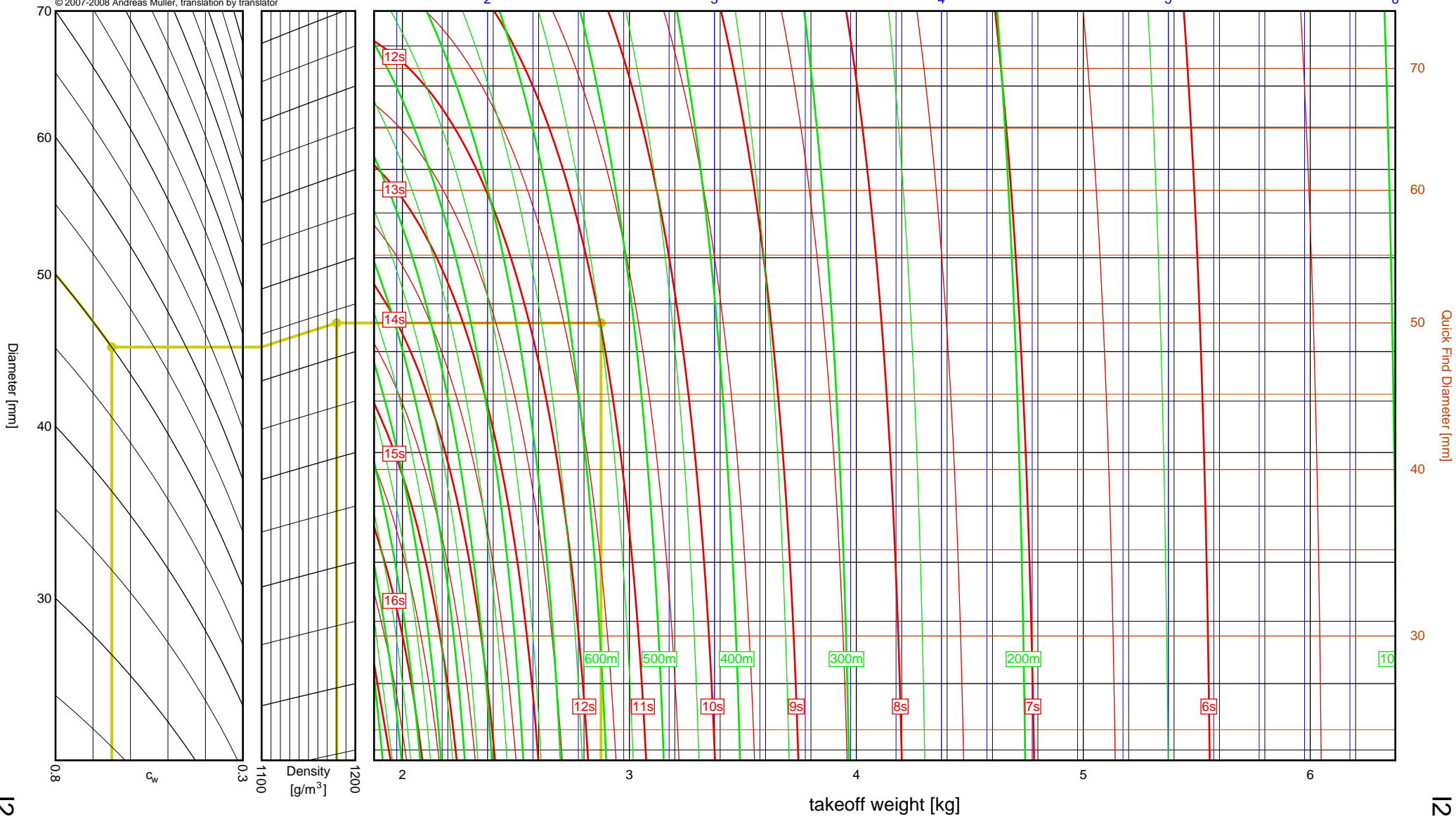
Data source:
Aerotech



1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 50mm, drag = 0.65, density = 1180 g/m³, weight = 2.875kg
 Results: time to apogee: 11.0s, expected altitude: 548m

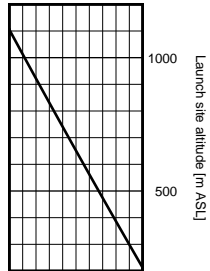
empty weight [kg]



2", I-J

I218R

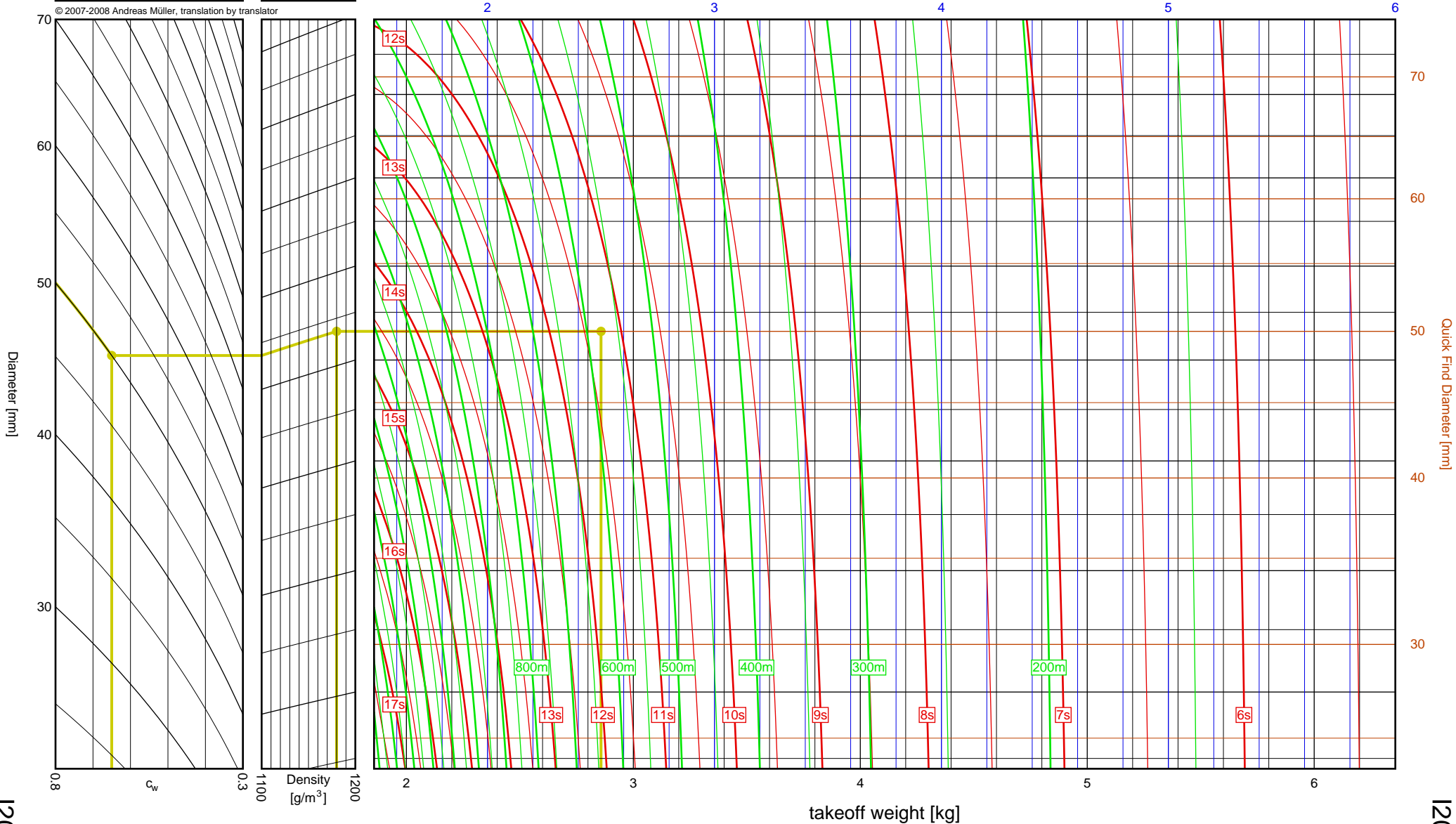
Aerotech	
I200W	
I_{tot}	= 326.8 Ns
F_{avg}	= 181.2 N
t_{burn}	= 1.80 s
d	= 29 mm
Data source: Aerotech	



1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 50mm, drag = 0.65, density = 1180 g/m³, weight = 2.858kg
 Results: time to apogee: 11.3s, expected altitude: 577m

empty weight [kg]



2", I-J

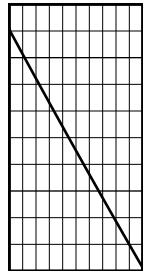
Quick-Find Diameter [mm]

takeoff weight [kg]

I200W

I200W

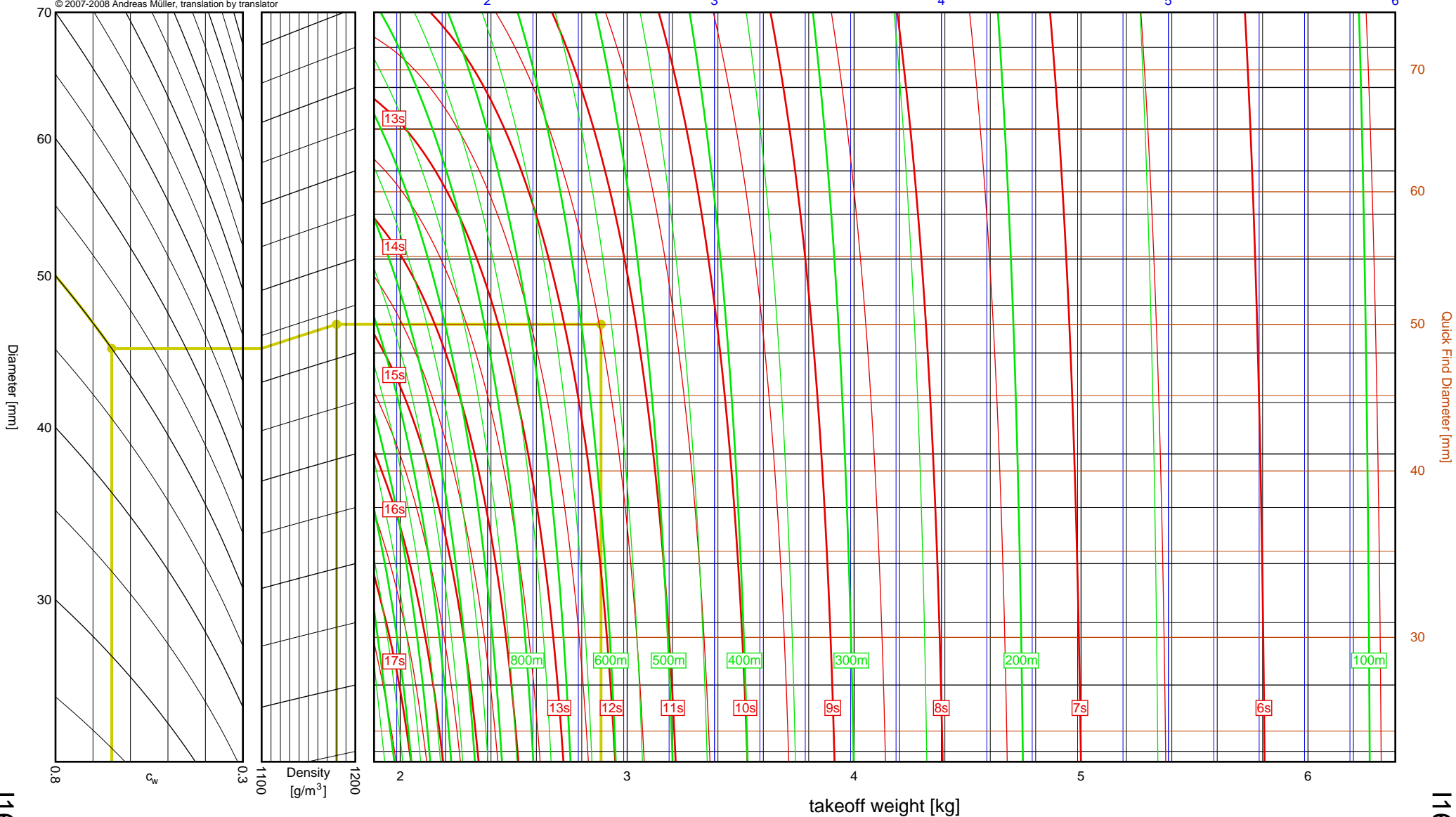
Aerotech	
I161W	
I_{tot}	= 333.5 Ns
F_{avg}	= 145.0 N
t_{burn}	= 2.30 s
d	= 38 mm
Data source: Aerotech	



1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 50mm, drag = 0.65, density = 1180 g/m³, weight = 2.885kg
 Results: time to apogee: 11.5s, expected altitude: 567m

empty weight [kg]



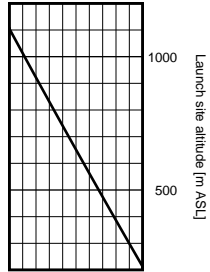
2", I-J

I161W

Aerotech I245G

I_{tot} = 350.5 Ns
 F_{avg} = 239.5 N
 t_{burn} = 1.46 s
 d = 38 mm

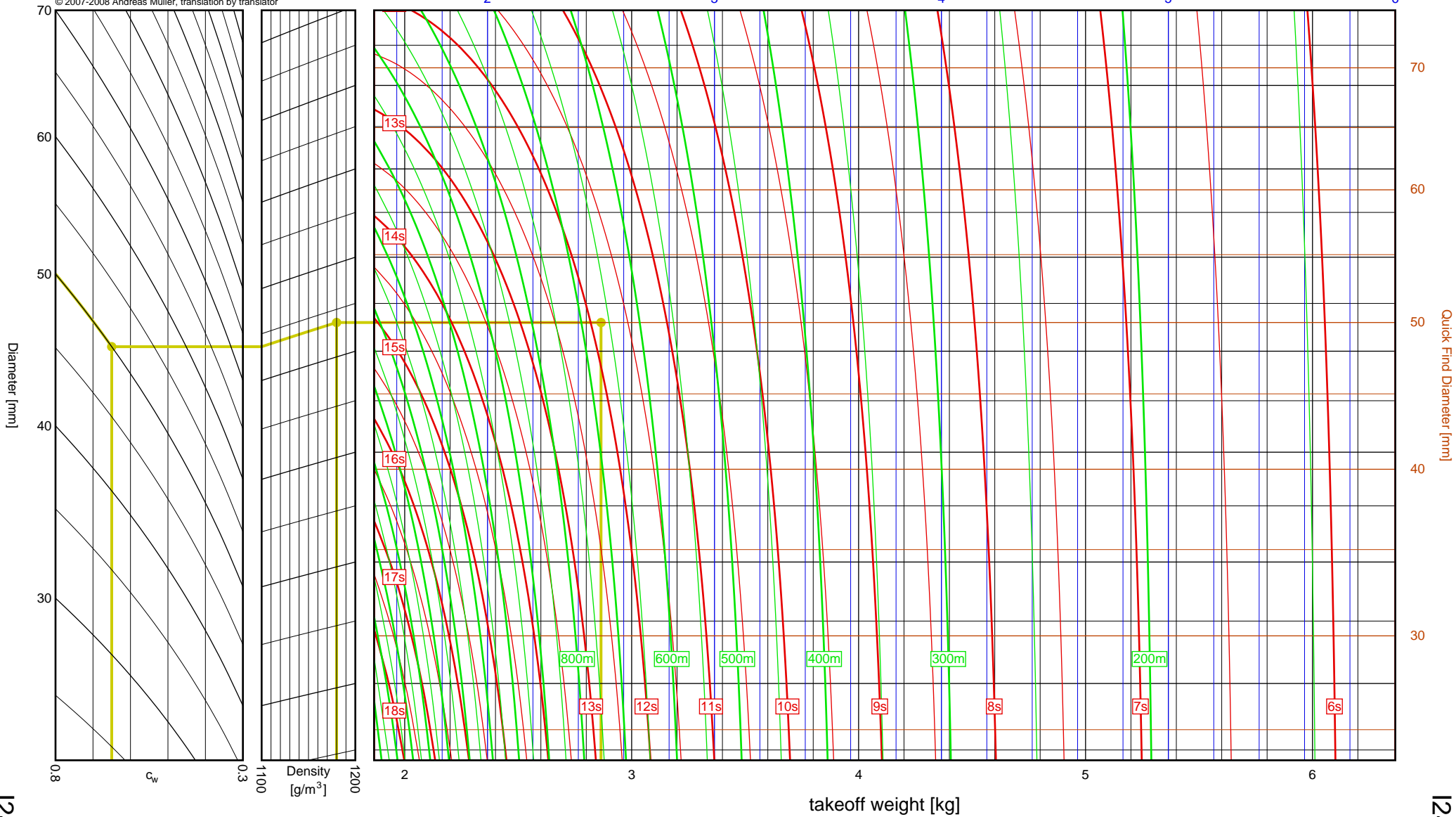
Data source:
Aerotech



1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 50mm, drag = 0.65, density = 1180 g/m³, weight = 2.865kg
 Results: time to apogee: 11.9s, expected altitude: 664m

empty weight [kg]

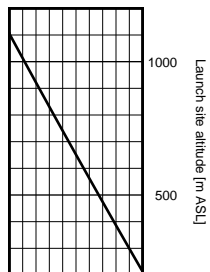


I245G

Aerotech I225FJ

I_{tot} = 371.3 Ns
 F_{avg} = 206.3 N
 t_{burn} = 1.80 s
 d = 38 mm

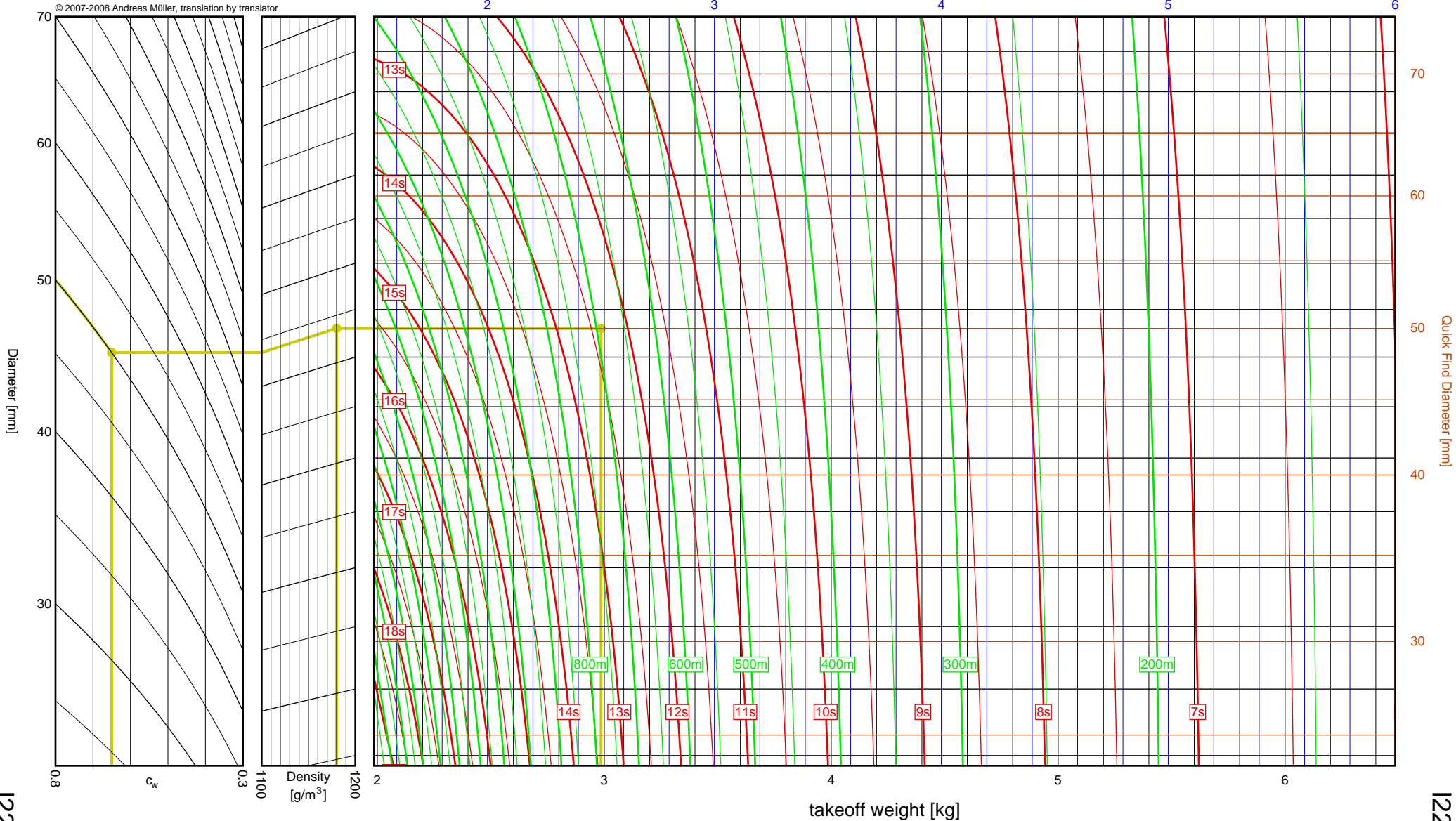
Data source:
Aerotech



1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 50mm, drag = 0.65, density = 1180 g/m³, weight = 2.986kg
 Results: time to apogee: 12.4s, expected altitude: 692m

empty weight [kg]

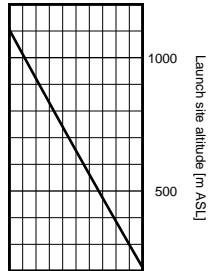


I225FJ

Aerotech I154J

I_{tot} = 375.4 Ns
 F_{avg} = 104.3 N
 t_{burn} = 3.60 s
 d = 38 mm

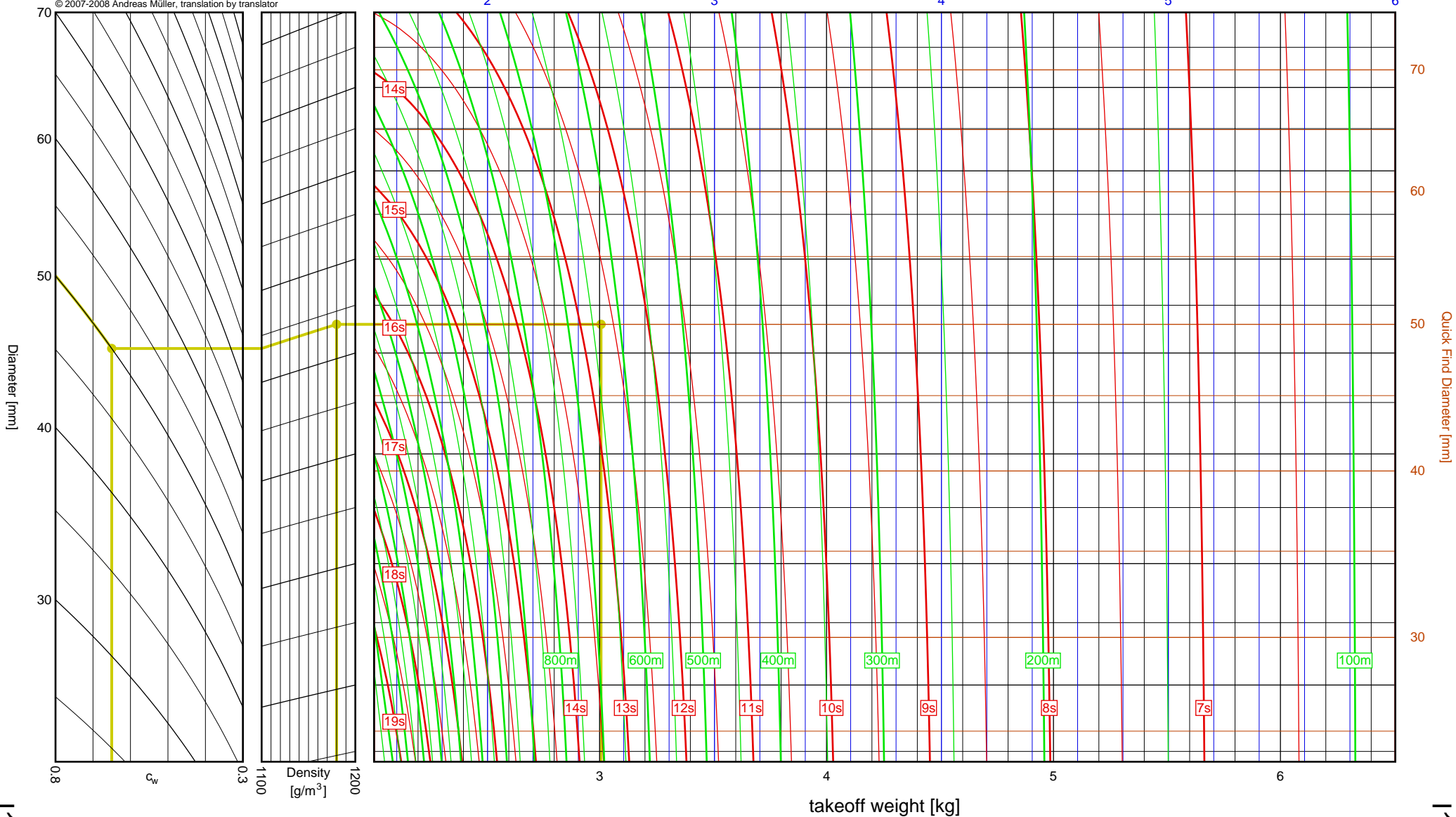
Data source:
Aerotech



1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 50mm, drag = 0.65, density = 1180 g/m³, weight = 3.006kg
 Results: time to apogee: 12.7s, expected altitude: 634m

empty weight [kg]



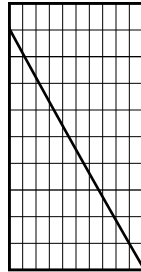
2", I-J

I154J

Aerotech I300T

I_{tot} = 413.1 Ns
 F_{avg} = 258.2 N
 t_{burn} = 1.60 s
 d = 38 mm

Data source:
Aerotech

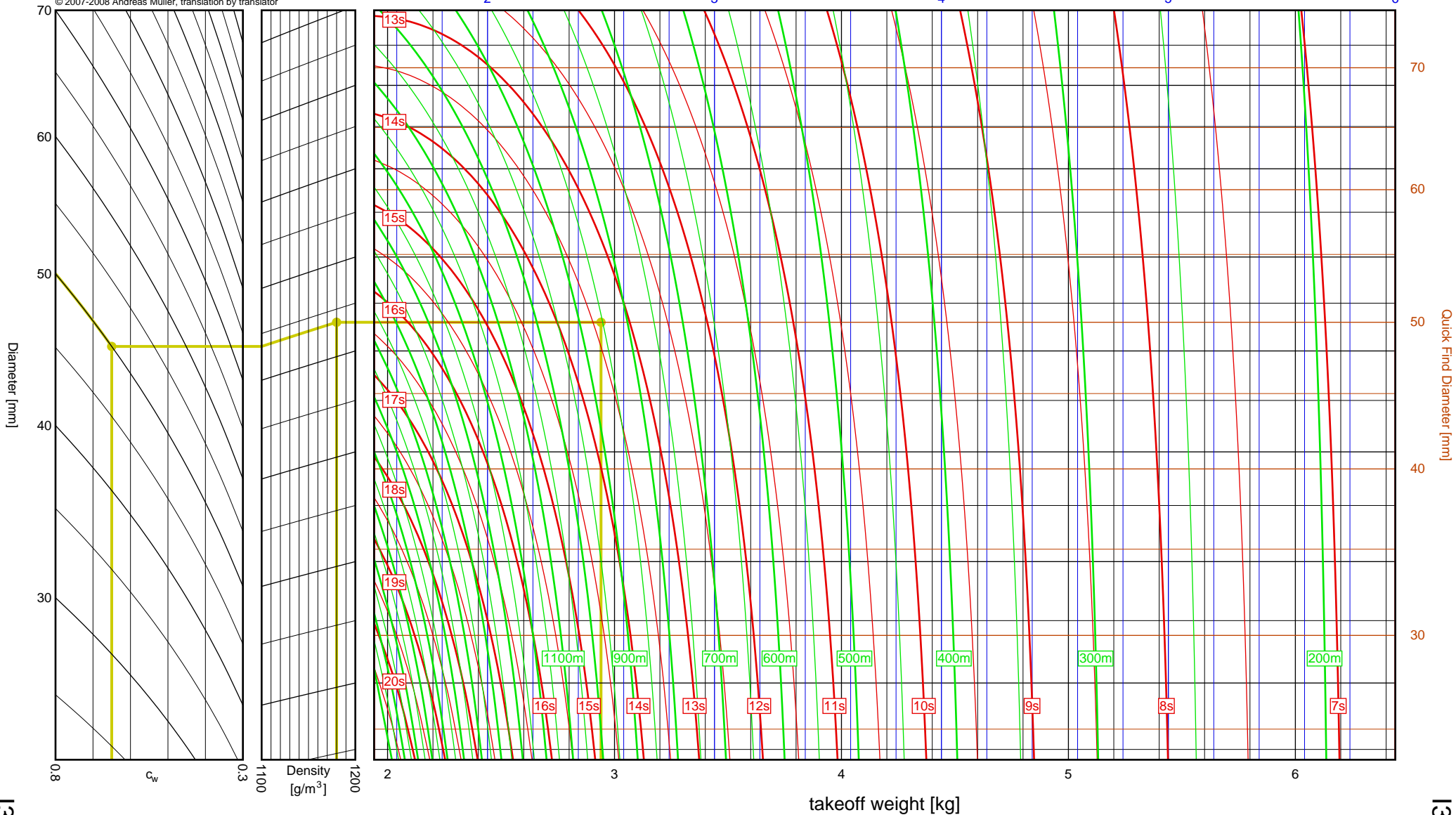


Launch site altitude [m ASL]

1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 50mm, drag = 0.65, density = 1180 g/m³, weight = 2.941kg
 Results: time to apogee: 13.4s, expected altitude: 854m

empty weight [kg]



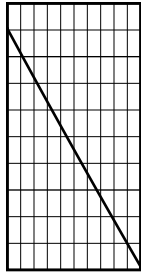
2", I-J

I300T

Aerotech I285R

I_{tot} = 415.0 Ns
 F_{avg} = 276.6 N
 t_{burn} = 1.50 s
 d = 38 mm

Data source:
Aerotech

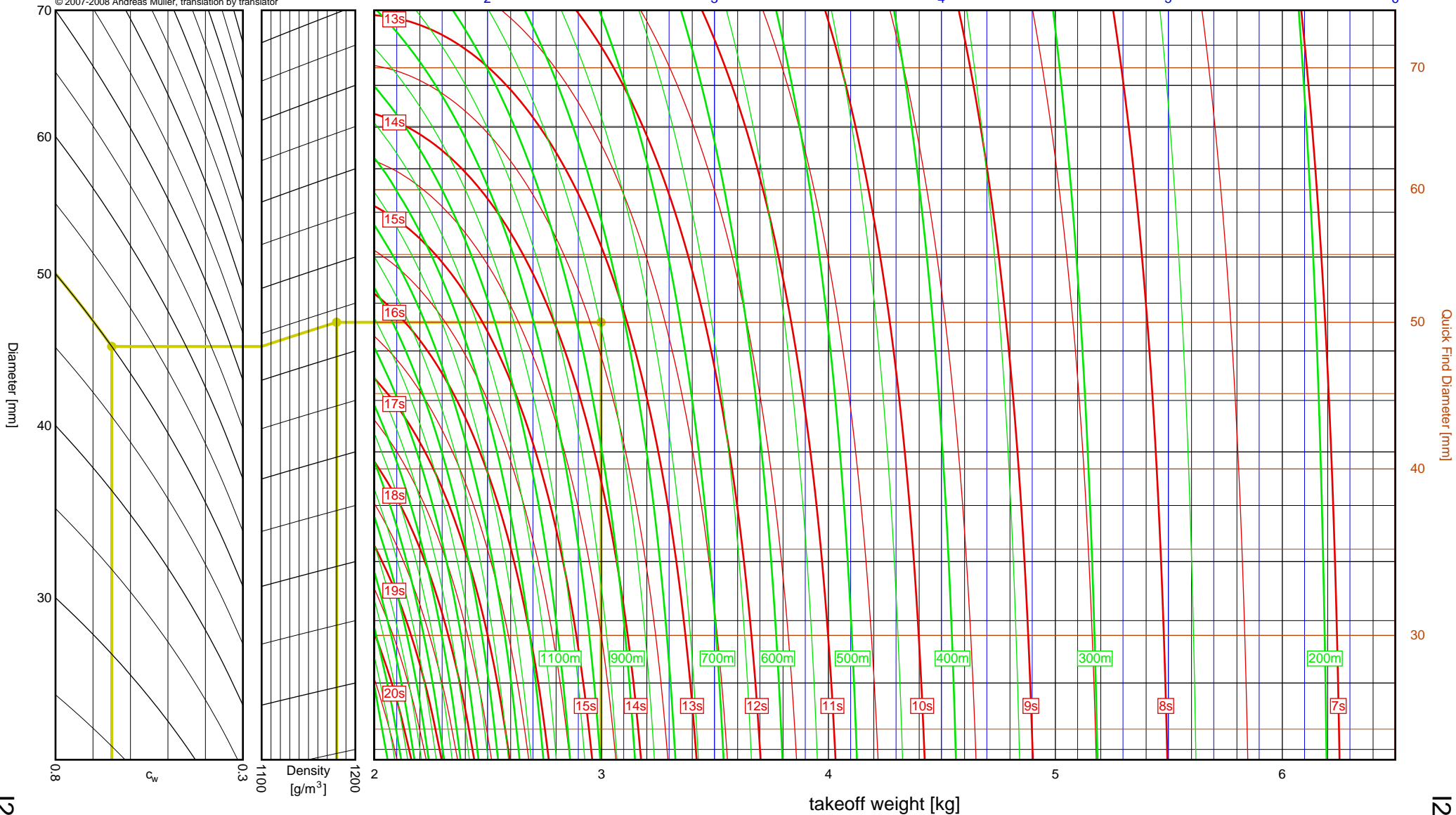


Launch site altitude [m ASL]

1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 50mm, drag = 0.65, density = 1180 g/m³, weight = 2.998kg
 Results: time to apogee: 13.4s, expected altitude: 848m

empty weight [kg]



2", I-J

Quick-Find Diameter [mm]

30

40

50

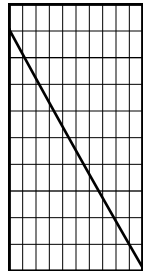
60

70

I285R

I285R

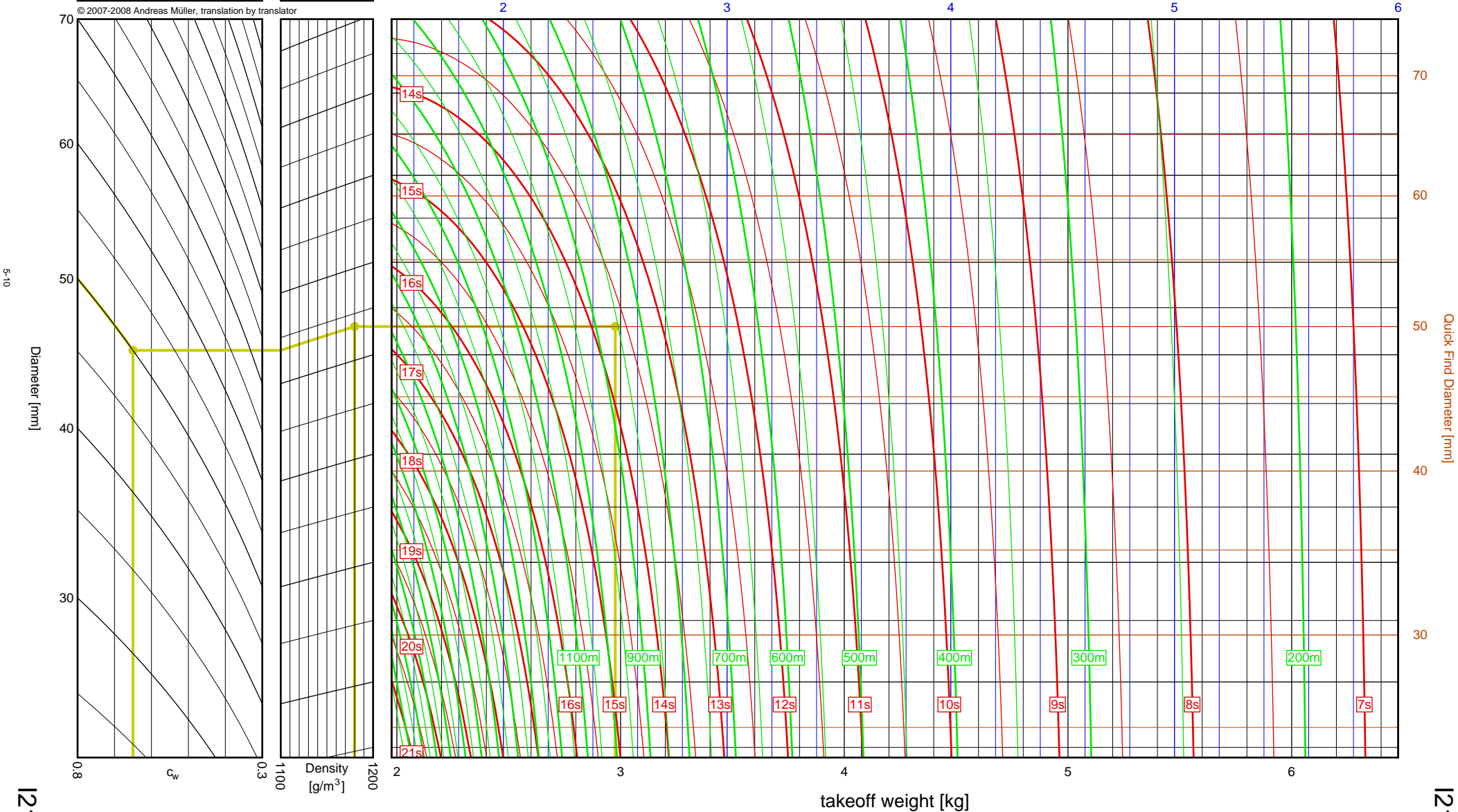
Aerotech	
I211W	
I_{tot}	= 421.2 Ns
F_{avg}	= 191.4 N
t_{burn}	= 2.20 s
d	= 38 mm
Data source: Aerotech	



1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 50mm, drag = 0.65, density = 1180 g/m³, weight = 2.976kg
 Results: time to apogee: 13.7s, expected altitude: 856m

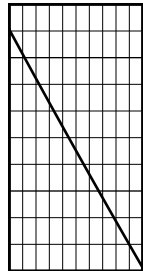
empty weight [kg]



2", I-J

I211W

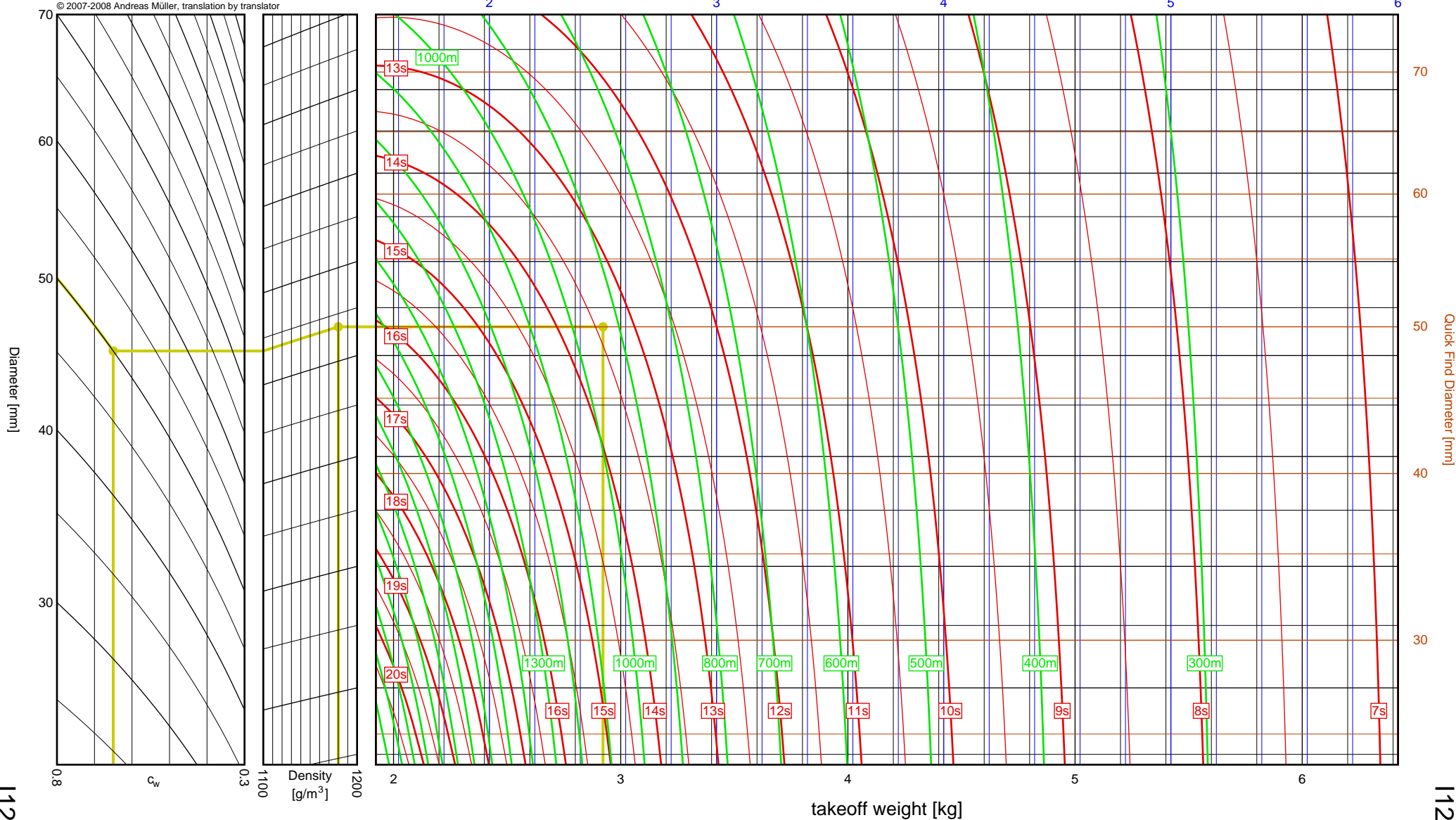
Aerotech	
I1299N	
I_{tot}	= 424.4 Ns
F_{avg}	= 1248.4 N
t_{burn}	= 0.34 s
d	= 38 mm
Data source: Aerotech	



1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 50mm, drag = 0.65, density = 1180 g/m³, weight = 2.922kg
 Results: time to apogee: 13.4s, expected altitude: 933m

empty weight [kg]



2", I-J

Quick Find Diameter [mm]

takeoff weight [kg]

Diameter [mm]

c_w

Density [g/m³]

I1299N

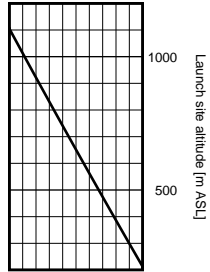
I1299N

50

Aerotech I195J

I_{tot} = 443.0 Ns
 F_{avg} = 156.5 N
 t_{burn} = 2.83 s
 d = 38 mm

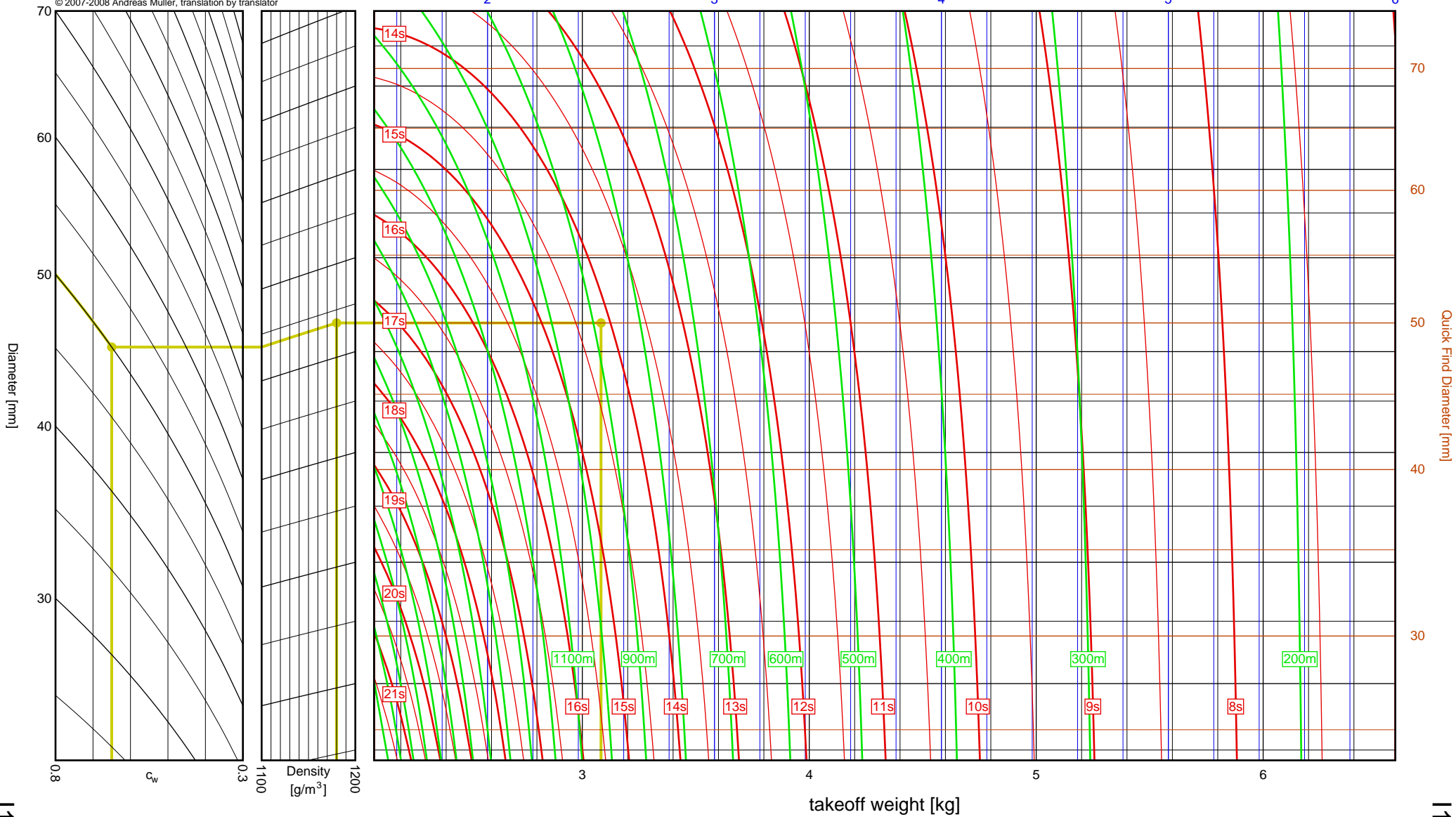
Data source:
Aerotech



1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 50mm, drag = 0.65, density = 1180 g/m³, weight = 3.082kg
 Results: time to apogee: 14.1s, expected altitude: 883m

empty weight [kg]



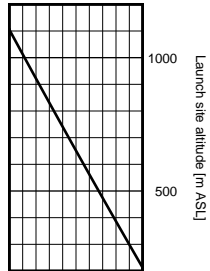
2", I-J

Quick Find Diameter [mm]

I195J

I195J

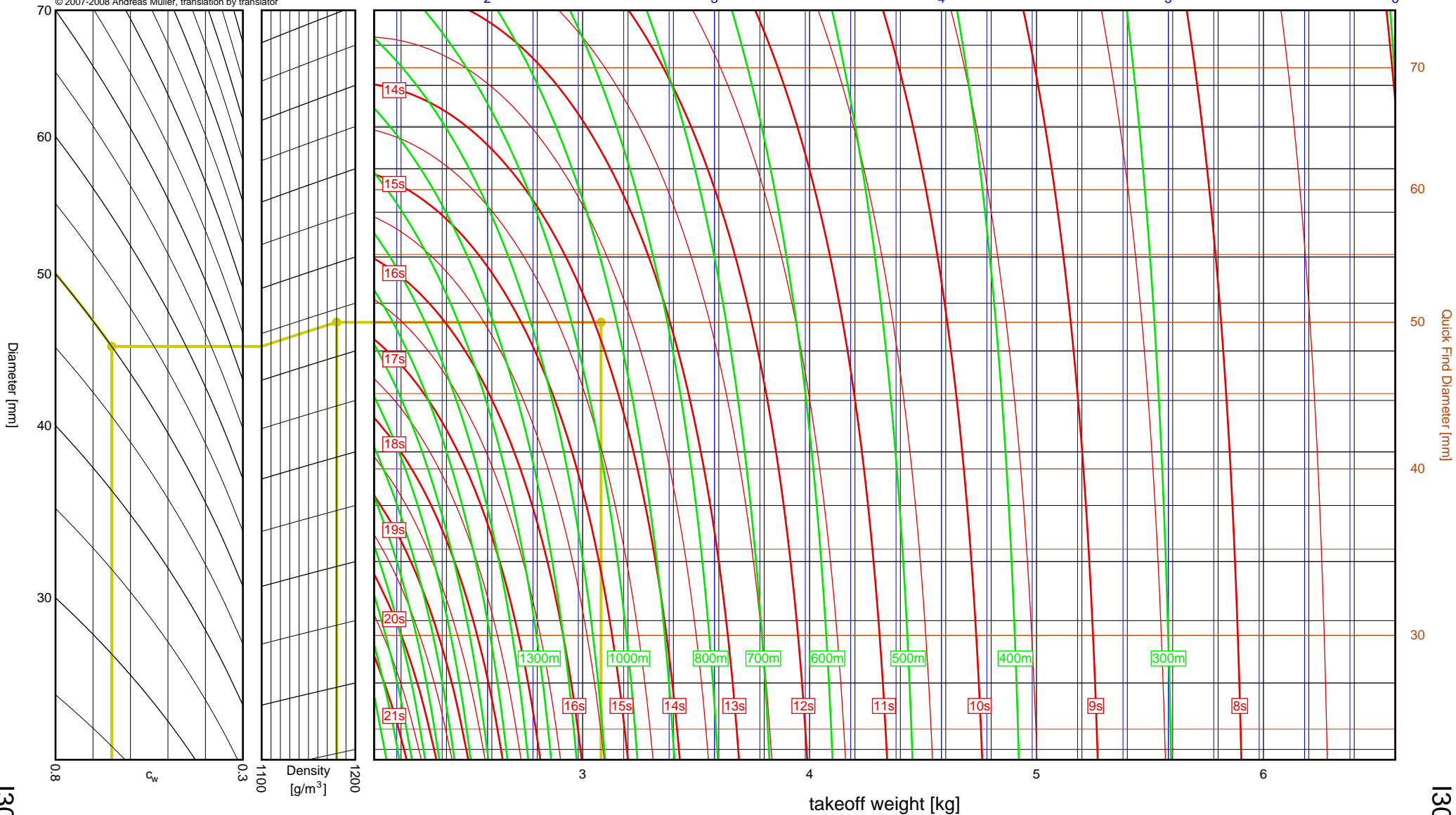
Aerotech	
I305FJ	
I_{tot}	= 443.9 Ns
F_{avg}	= 277.4 N
t_{burn}	= 1.60 s
d	= 38 mm
Data source: Aerotech	



1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 50mm, drag = 0.65, density = 1180 g/m³, weight = 3.081kg
 Results: time to apogee: 13.9s, expected altitude: 933m

empty weight [kg]



2", I-J

Quick Find Diameter [mm]

takeoff weight [kg]

Diameter [mm]

c_w

Density [g/m³]

I305FJ

I305FJ

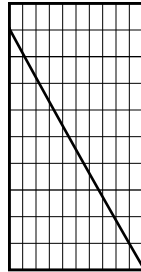
5

Aerotech

I435T

I_{tot} = 517.4 Ns
 F_{avg} = 369.6 N
 t_{burn} = 1.40 s
 d = 38 mm

Data source:
Aerotech

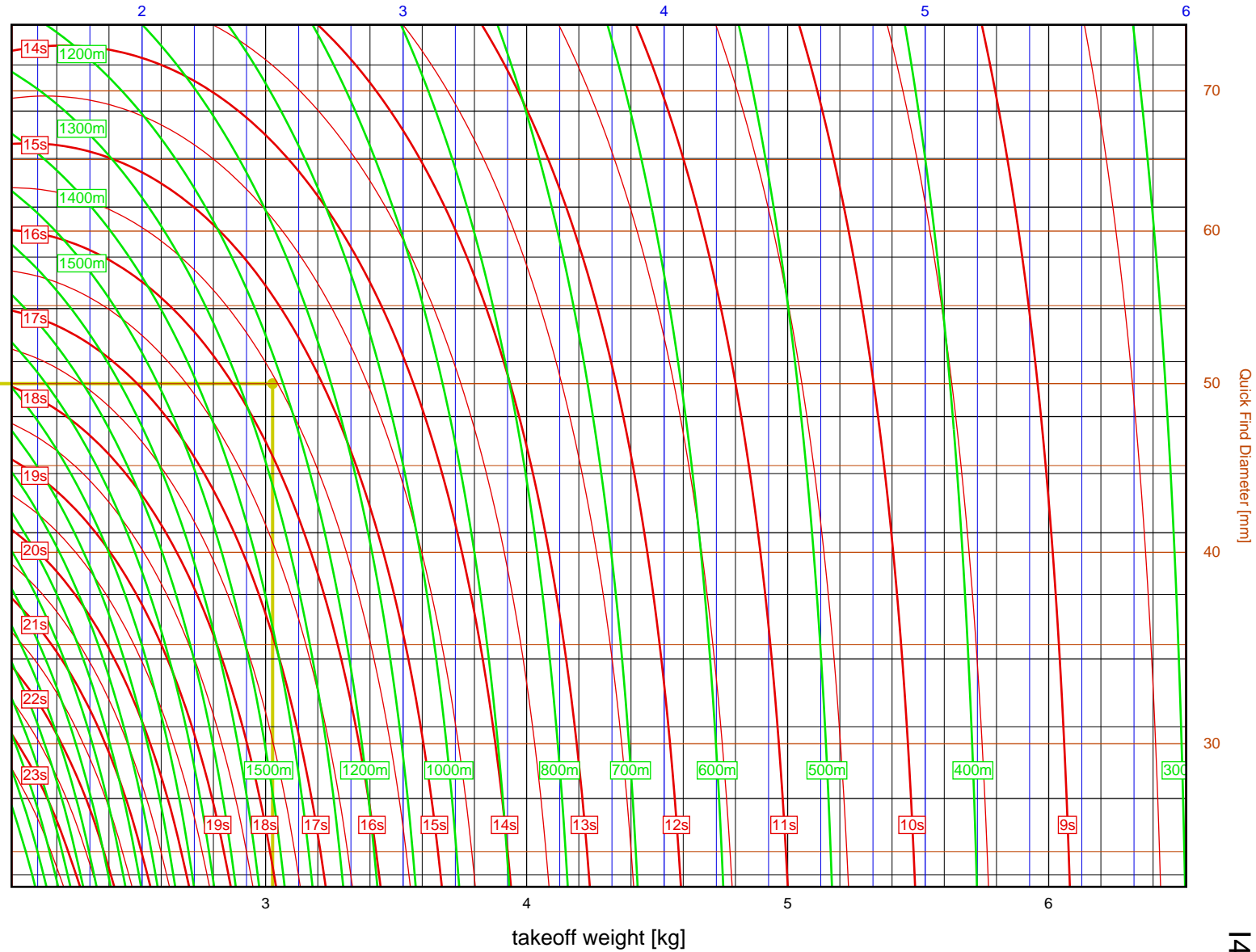
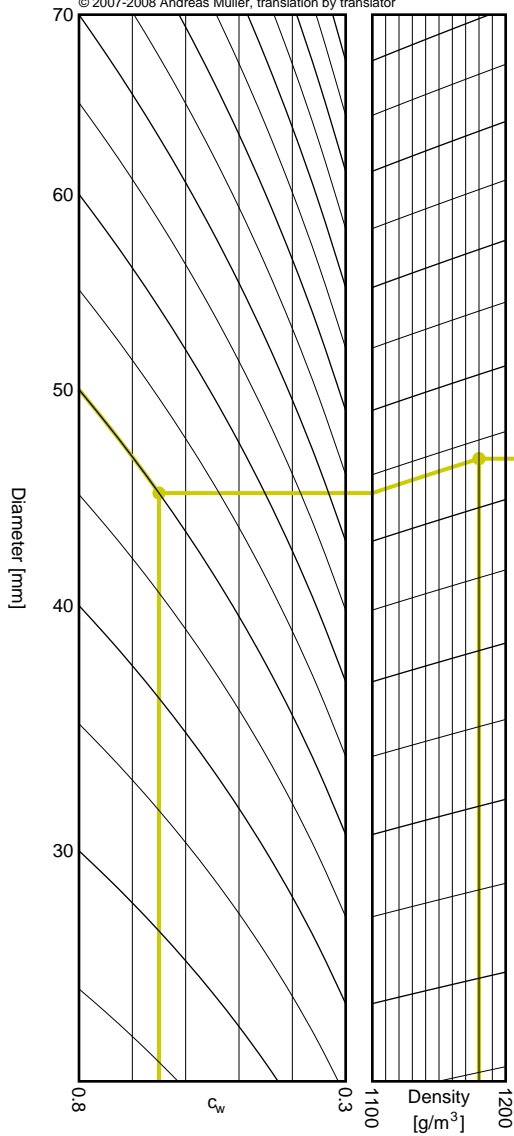


Launch site altitude [m ASL]

1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 50mm, drag = 0.65, density = 1180 g/m³, weight = 3.027kg
Results: time to apogee: 15.6s, expected altitude: 1223m

empty weight [kg]



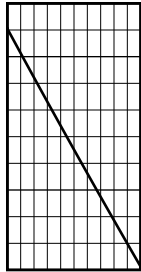
2", I-J

Quick Find Diameter [mm]

I435T

I435T

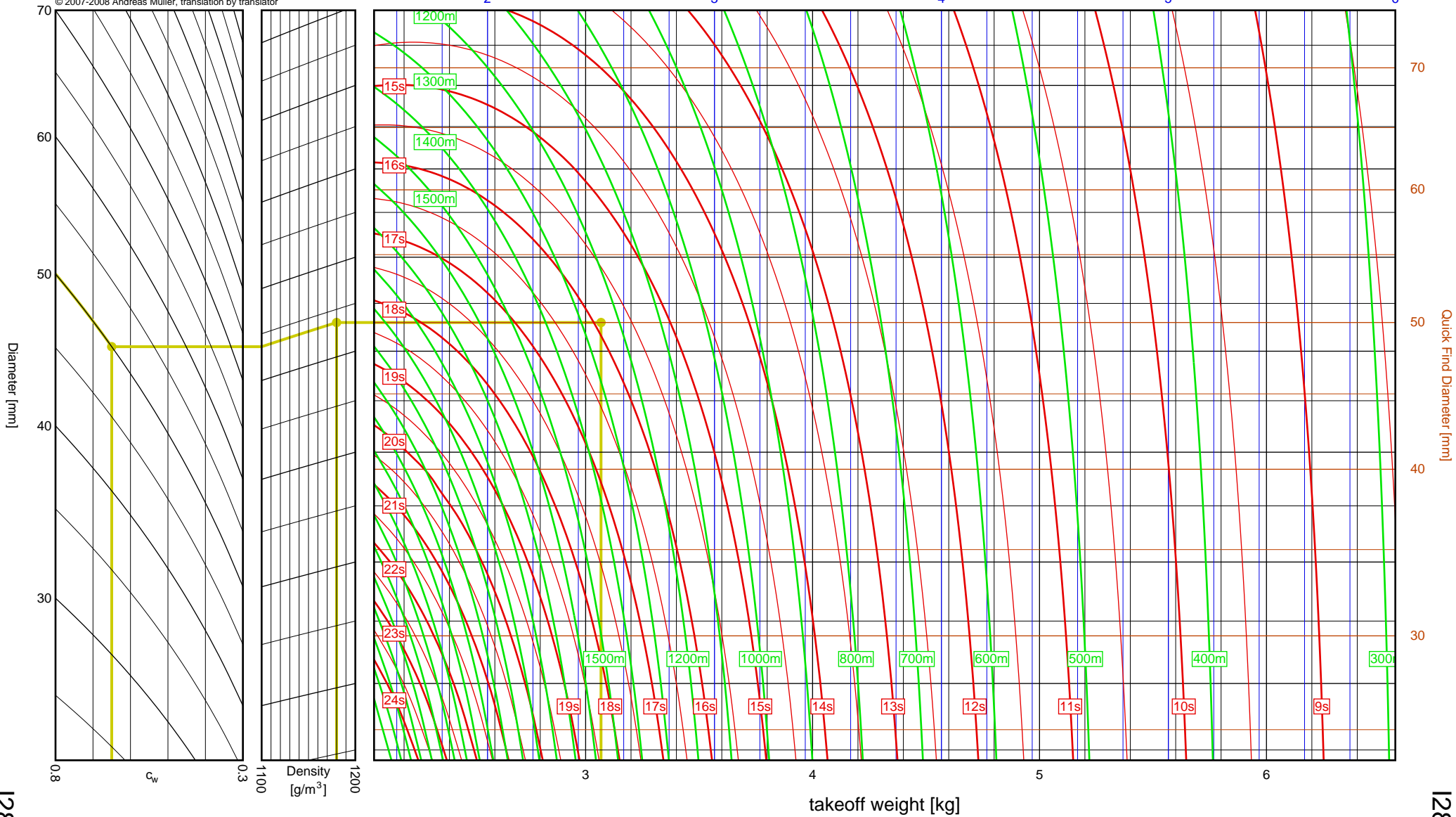
Aerotech	
I284W	
I_{tot}	= 529.8 Ns
F_{avg}	= 294.4 N
t_{burn}	= 1.80 s
d	= 38 mm
Data source: Aerotech	



1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 50mm, drag = 0.65, density = 1180 g/m³, weight = 3.068kg
 Results: time to apogee: 15.9s, expected altitude: 1248m

empty weight [kg]



2", I-J

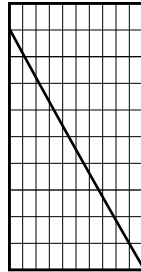
I284W

I284W

Aerotech I366R

I_{tot} = 537.1 Ns
 F_{avg} = 358.0 N
 t_{burn} = 1.50 s
 d = 38 mm

Data source:
Aerotech

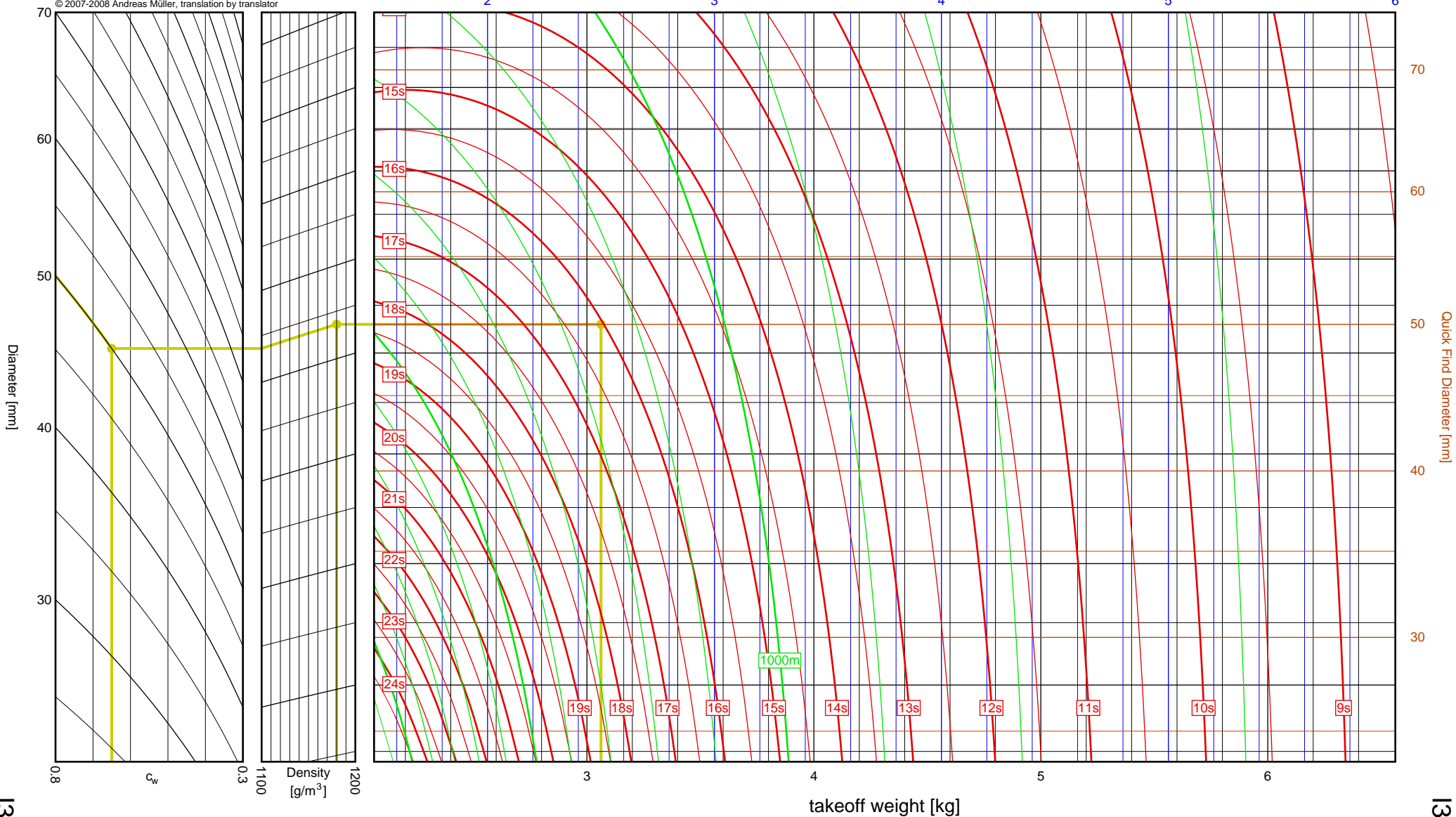


Launch site altitude [m ASL]

1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 50mm, drag = 0.65, density = 1180 g/m³, weight = 3.062kg
 Results: time to apogee: 16.0s, expected altitude: 1291m

empty weight [kg]



2", I-J

Quick Find Diameter [mm]

takeoff weight [kg]

Diameter [mm]

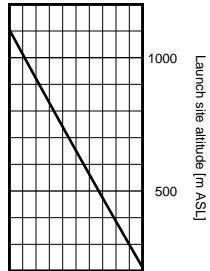
c_w

Density
[g/m³]

I366R

I366R

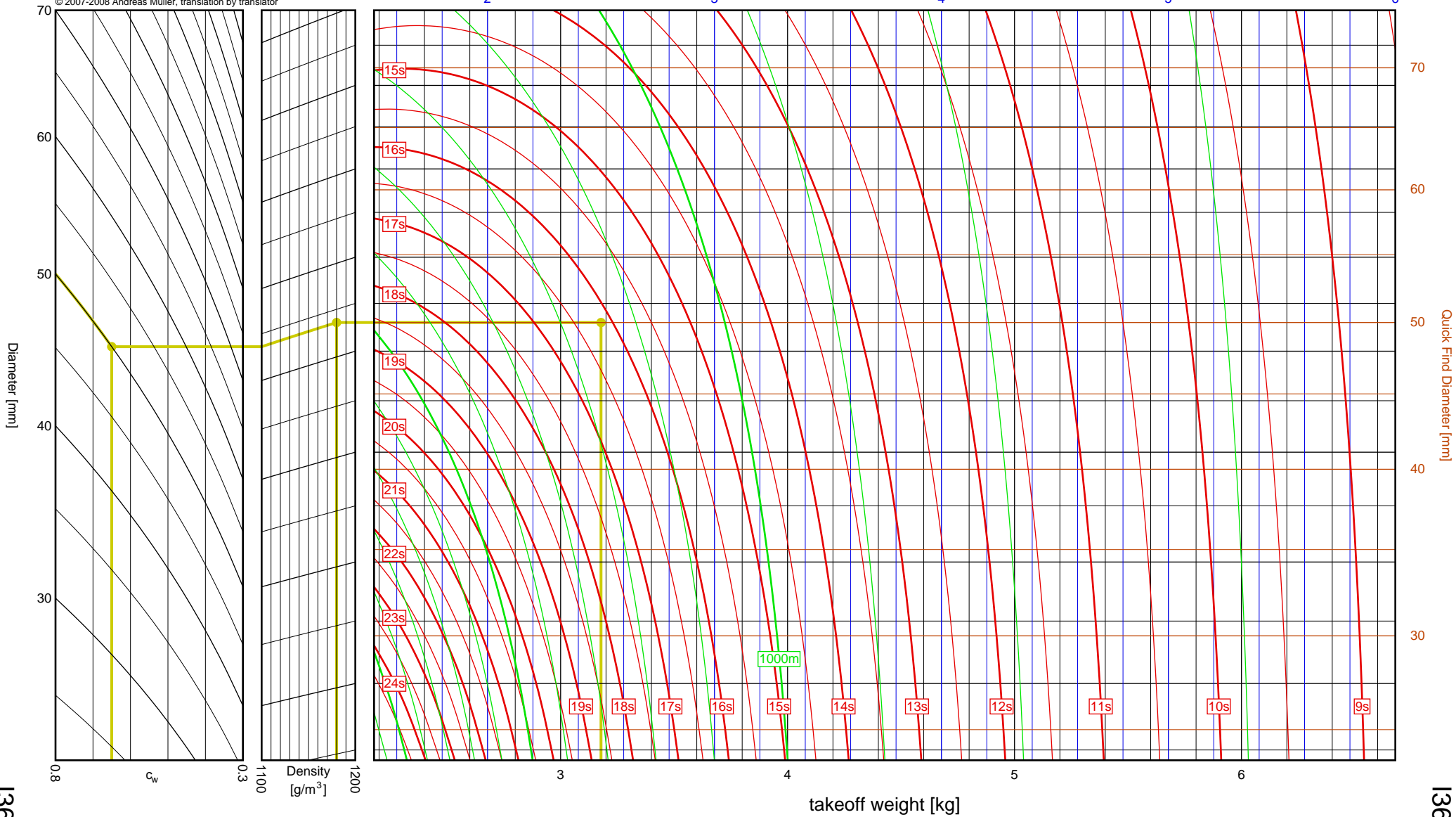
Aerotech	
I364FJ	
I_{tot}	= 551.2 Ns
F_{avg}	= 324.2 N
t_{burn}	= 1.70 s
d	= 38 mm
Data source: Aerotech	



1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 50mm, drag = 0.65, density = 1180 g/m³, weight = 3.178kg
 Results: time to apogee: 16.2s, expected altitude: 1289m

empty weight [kg]



2", I-J

Quick Find Diameter [mm]

takeoff weight [kg]

Diameter [mm]

c_w

Density
[g/m³]

I364FJ

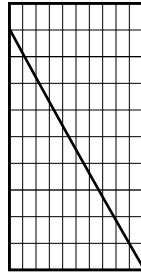
I364FJ

5

Aerotech I65W

I_{tot} = 630.5 Ns
 F_{avg} = 76.3 N
 t_{burn} = 8.26 s
 d = 54 mm

Data source:
Aerotech

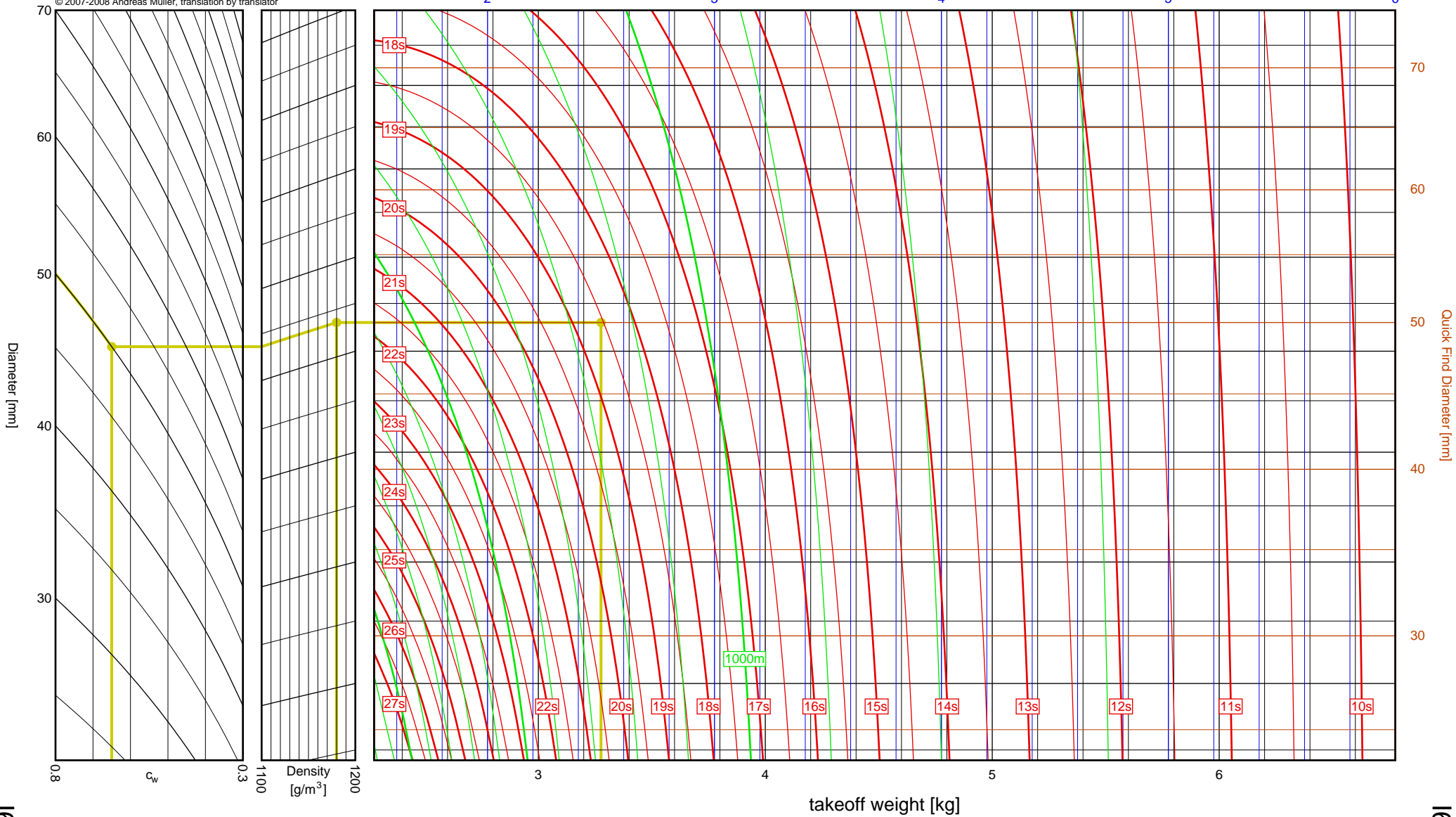


Launch site altitude [m ASL]

1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 50mm, drag = 0.65, density = 1180 g/m³, weight = 3.276kg
 Results: time to apogee: 18.5s, expected altitude: 1297m

empty weight [kg]



2", I-J

Quick Find Diameter [mm]

takeoff weight [kg]

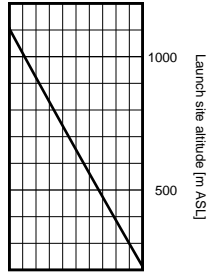
I65W

I65W

Aerotech I600R

I_{tot} = 640.1 Ns
 F_{avg} = 542.5 N
 t_{burn} = 1.18 s
 d = 38 mm

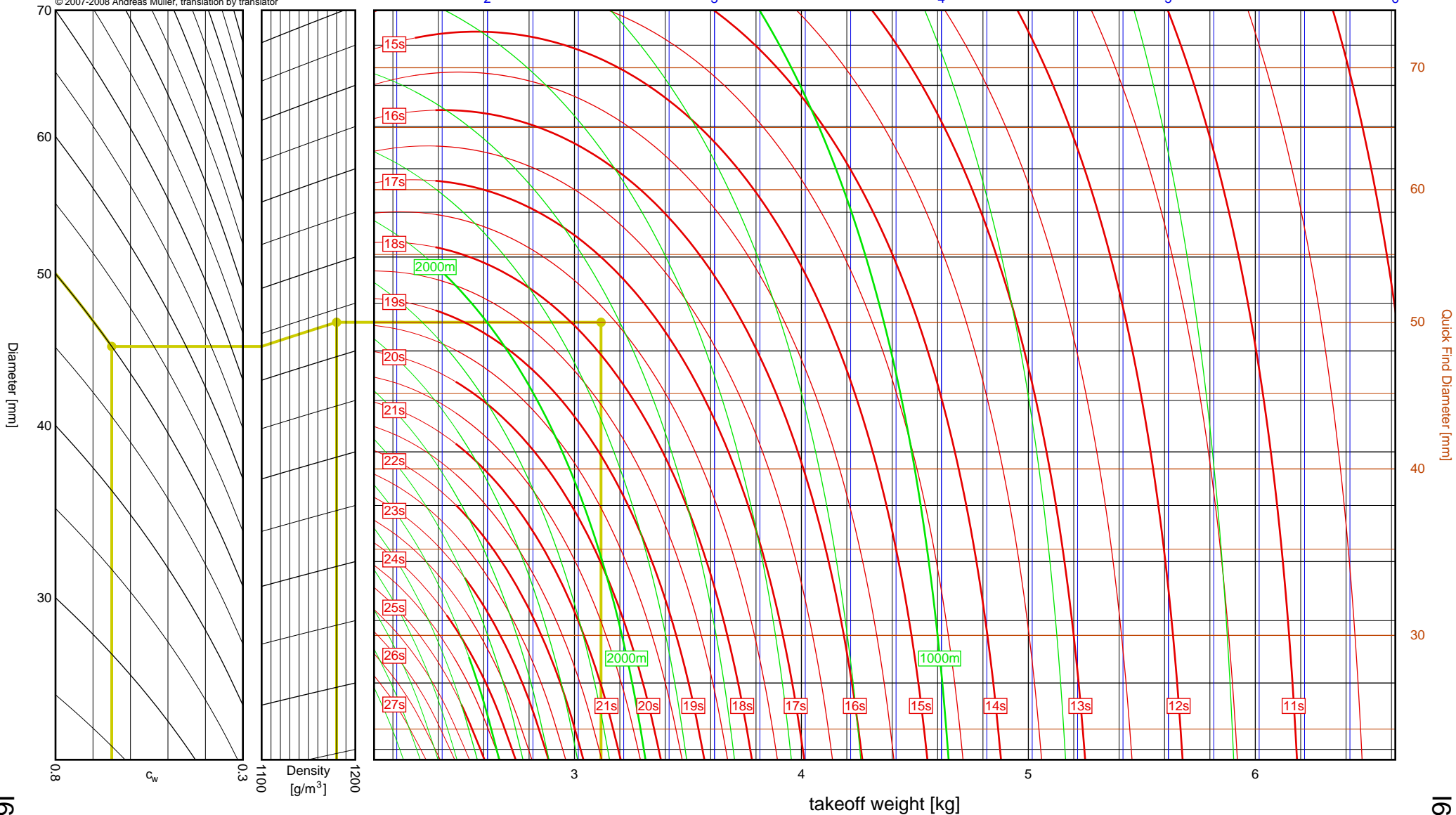
Data source:
Aerotech



1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 50mm, drag = 0.65, density = 1180 g/m³, weight = 3.117kg
 Results: time to apogee: 17.7s, expected altitude: 1654m

empty weight [kg]



2", I-J

Quick Find Diameter [mm]

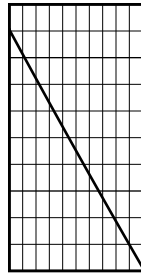
I600R

I600R

Aerotech J350W.5

I_{tot} = 649.6 Ns
 F_{avg} = 433.0 N
 t_{burn} = 1.50 s
 d = 38 mm

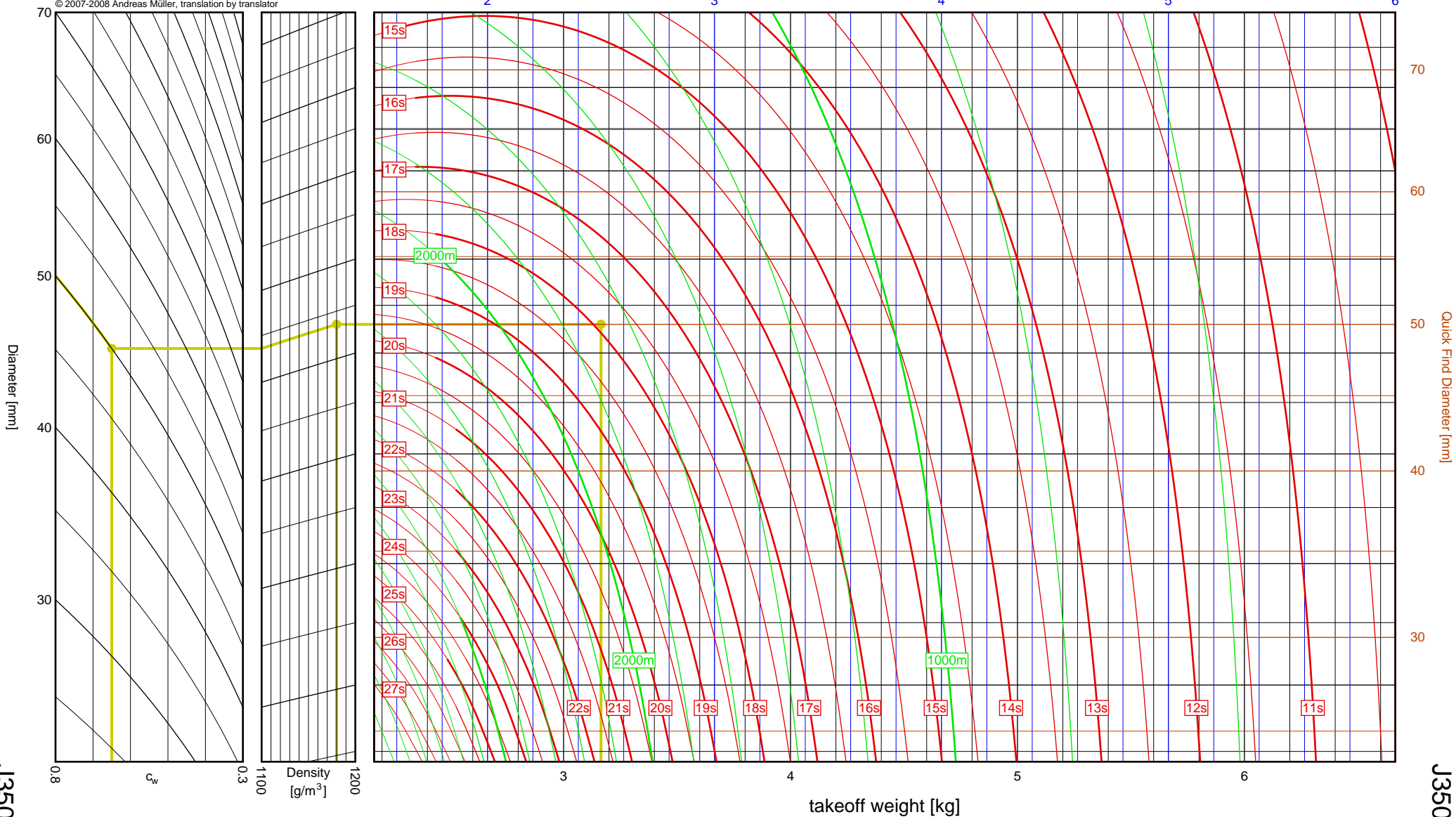
Data source:
Aerotech



1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 50mm, drag = 0.65, density = 1180 g/m³, weight = 3.165kg
 Results: time to apogee: 17.9s, expected altitude: 1684m

empty weight [kg]



2", I-J

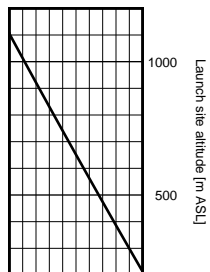
J350W.5

J350W.5

Aerotech J420R

I_{tot} = 651.0 Ns
 F_{avg} = 404.3 N
 t_{burn} = 1.61 s
 d = 38 mm

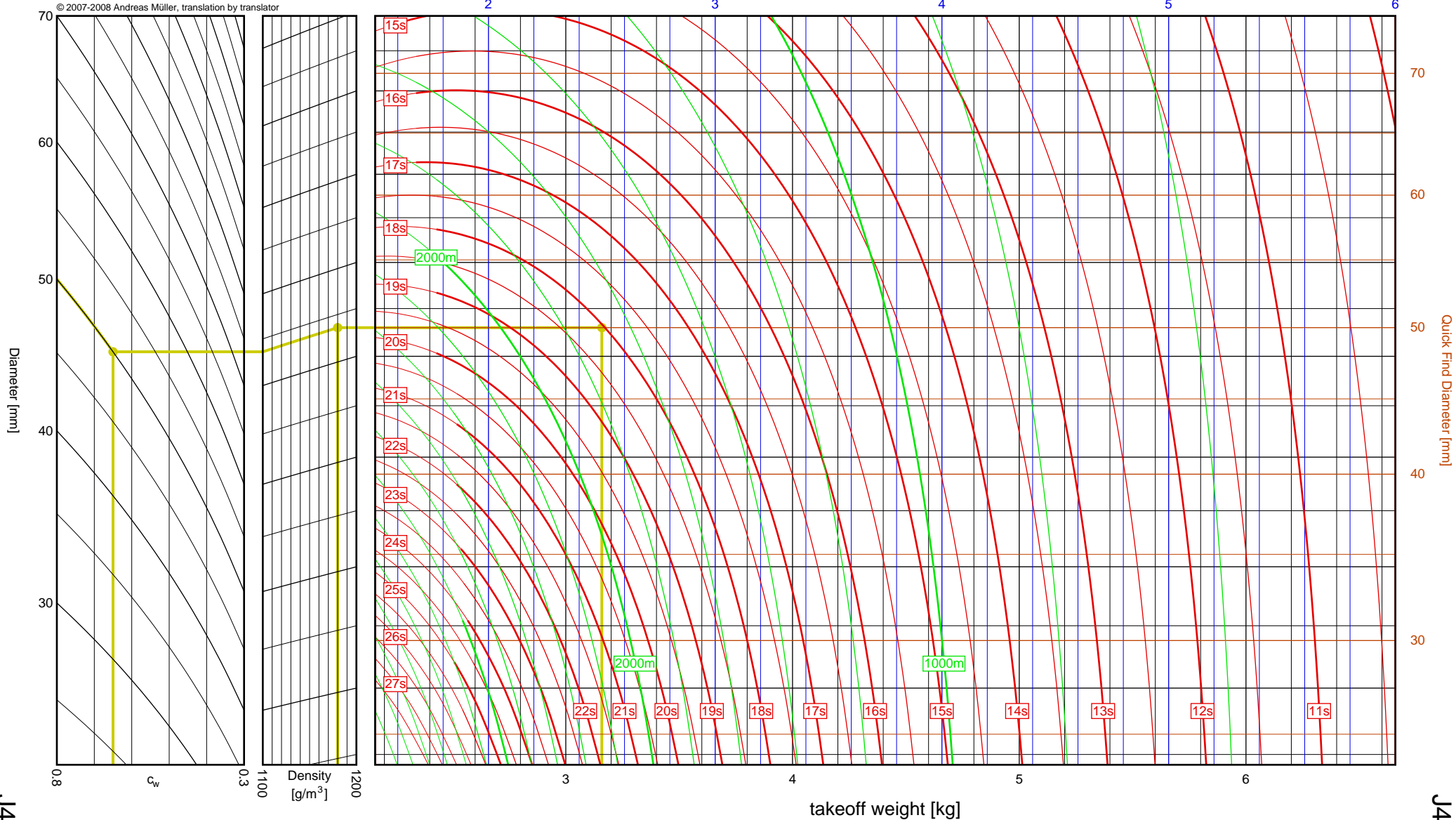
Data source:
Aerotech



1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 50mm, drag = 0.65, density = 1180 g/m³, weight = 3.159kg
 Results: time to apogee: 18.0s, expected altitude: 1685m

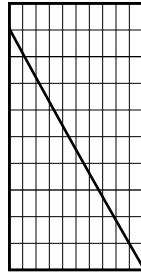
empty weight [kg]



Aerotech J350W

I_{tot} = 665.0 Ns
 F_{avg} = 350.0 N
 t_{burn} = 1.90 s
 d = 38 mm

Data source:
Aerotech

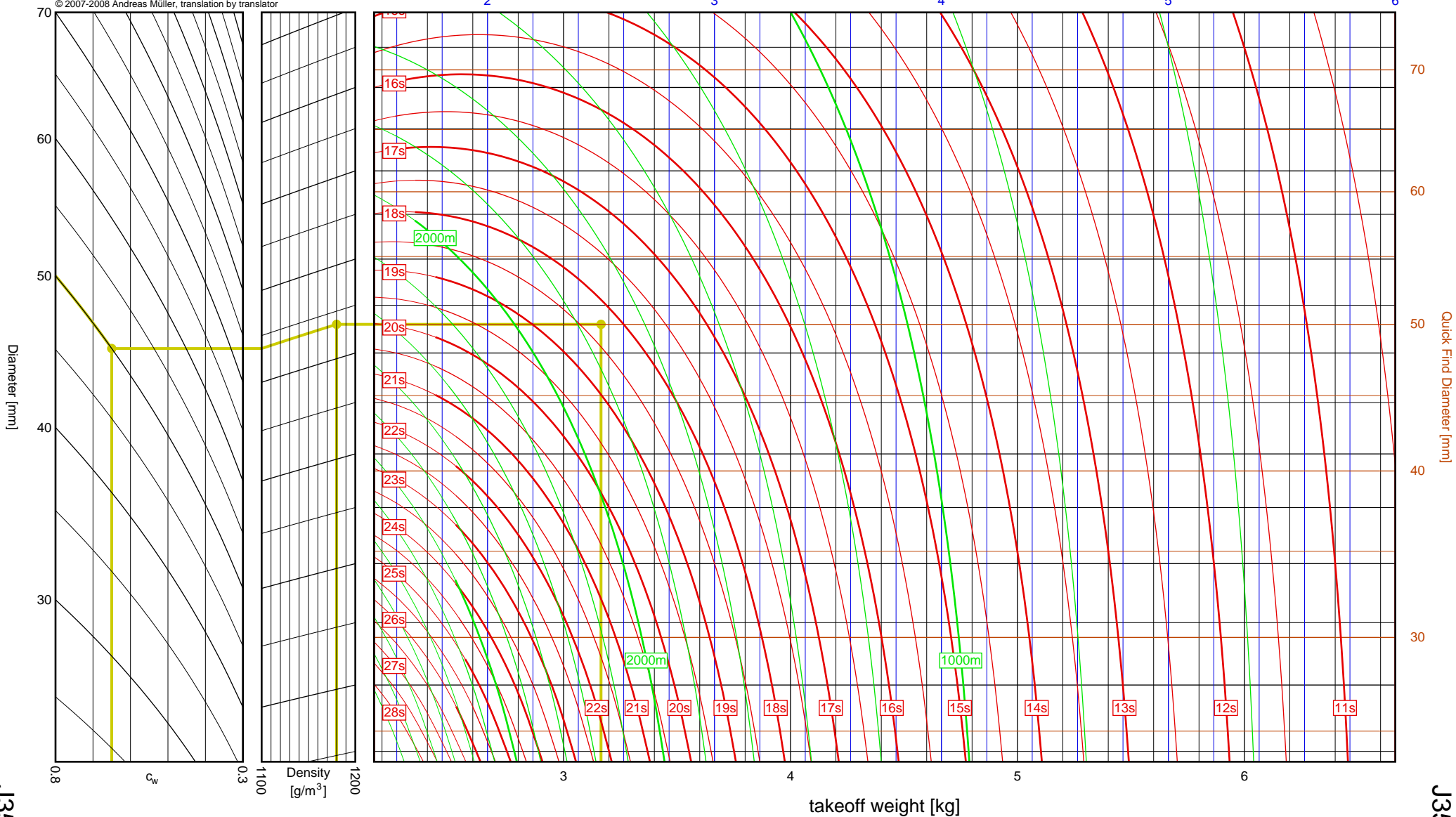


Launch site altitude [m ASL]

1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 50mm, drag = 0.65, density = 1180 g/m³, weight = 3.165kg
 Results: time to apogee: 18.3s, expected altitude: 1729m

empty weight [kg]



2", I-J

Quick Find Diameter [mm]

J350W

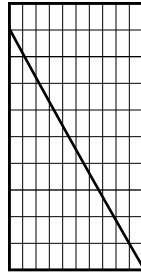
J350W

Aerotech

I357T

I_{tot} = 317.7 Ns
 F_{avg} = 288.8 N
 t_{burn} = 1.10 s
 d = 38 mm

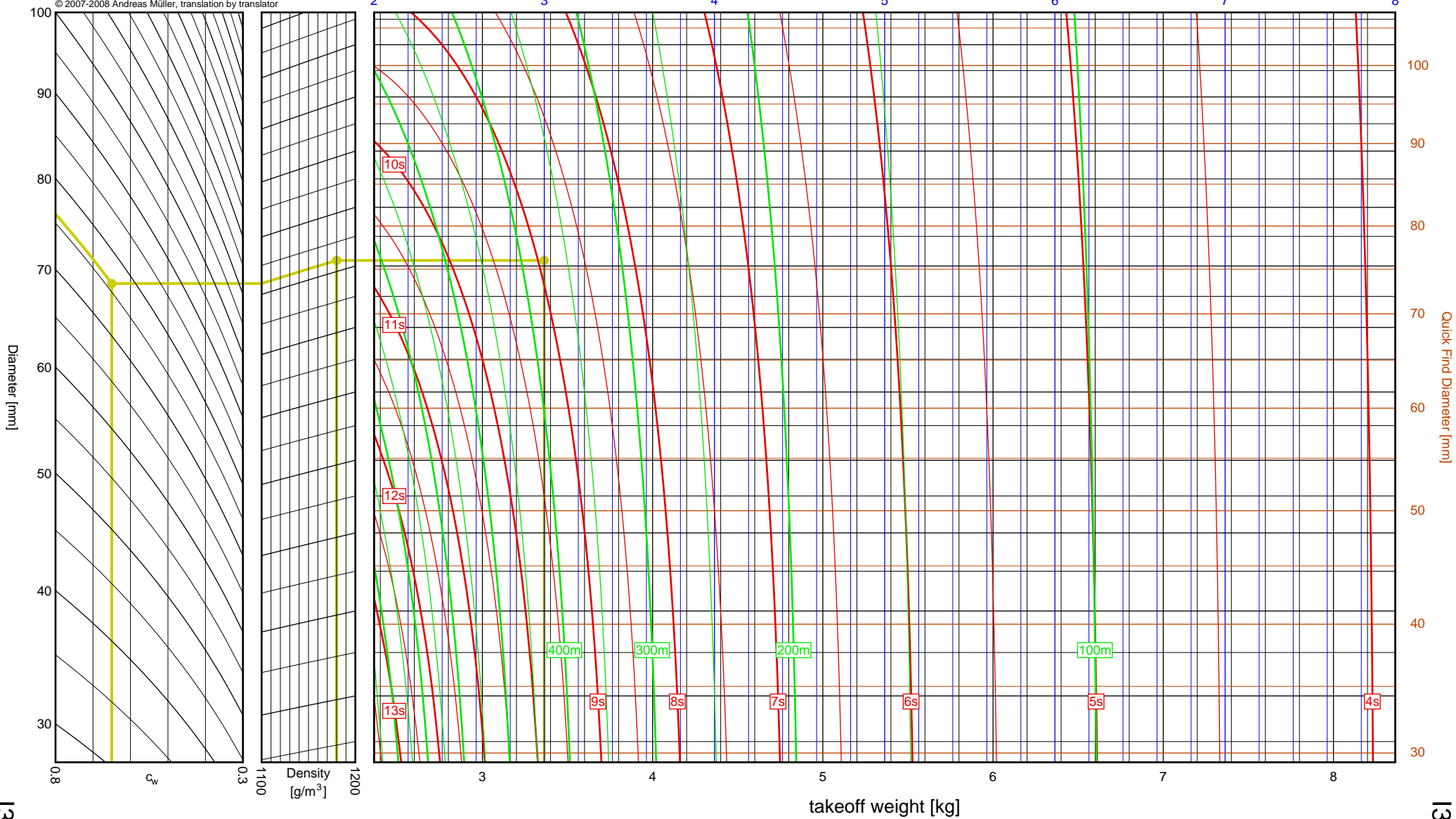
Data source:
Aerotech



1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 76mm, drag = 0.65, density = 1180 g/m³, weight = 3.363kg
Results: time to apogee: 8.9s, expected altitude: 374m

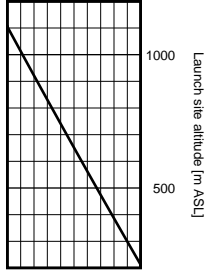
empty weight [kg]



Aerotech I218R

I_{tot} = 317.9 Ns
 F_{avg} = 211.9 N
 t_{burn} = 1.50 s
 d = 38 mm

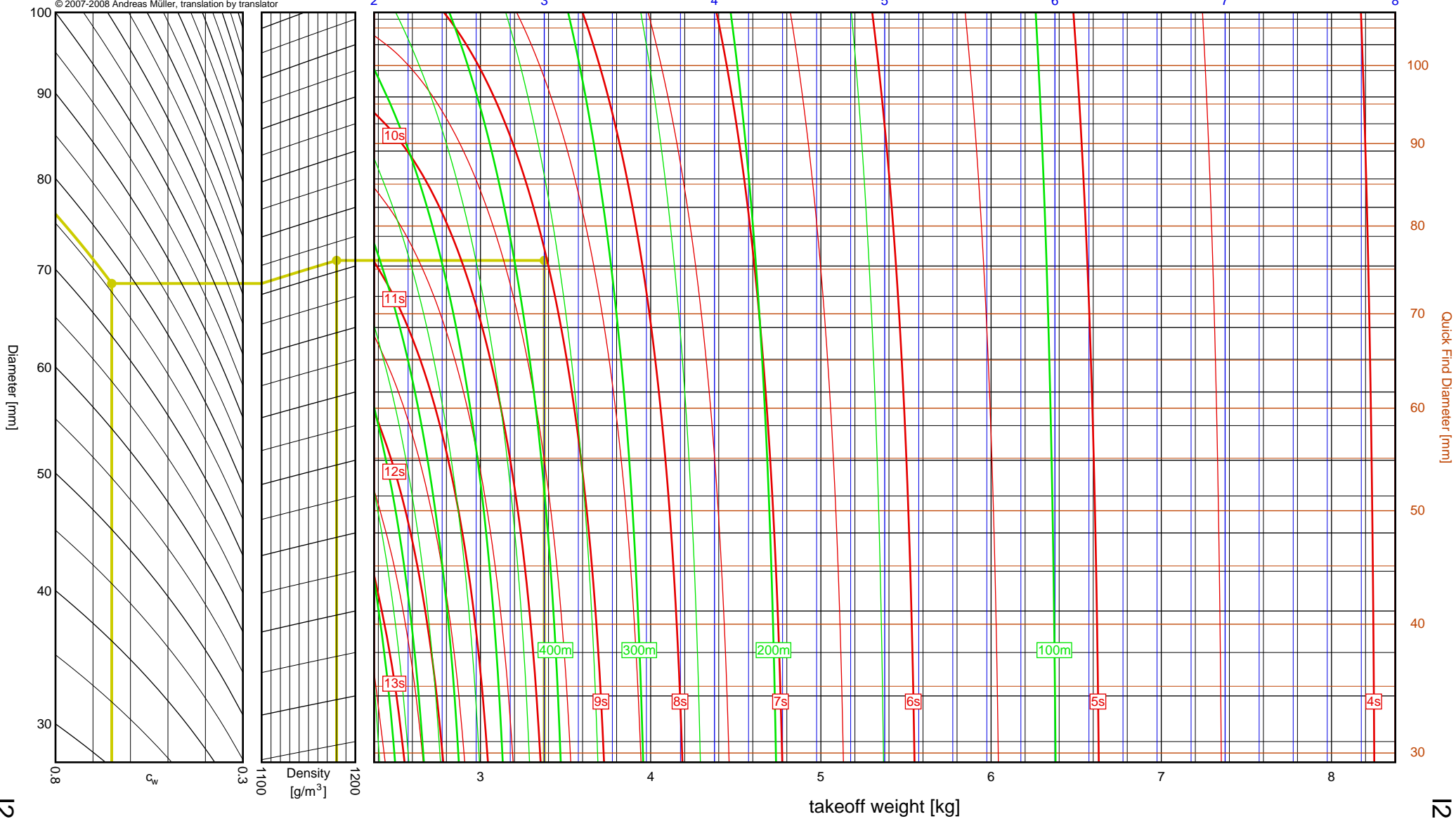
Data source:
Aerotech



1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 76mm, drag = 0.65, density = 1180 g/m³, weight = 3.375kg
 Results: time to apogee: 9.0s, expected altitude: 365m

empty weight [kg]

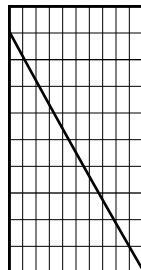


Aerotech

I161W

I_{tot} = 333.5 Ns
 F_{avg} = 145.0 N
 t_{burn} = 2.30 s
 d = 38 mm

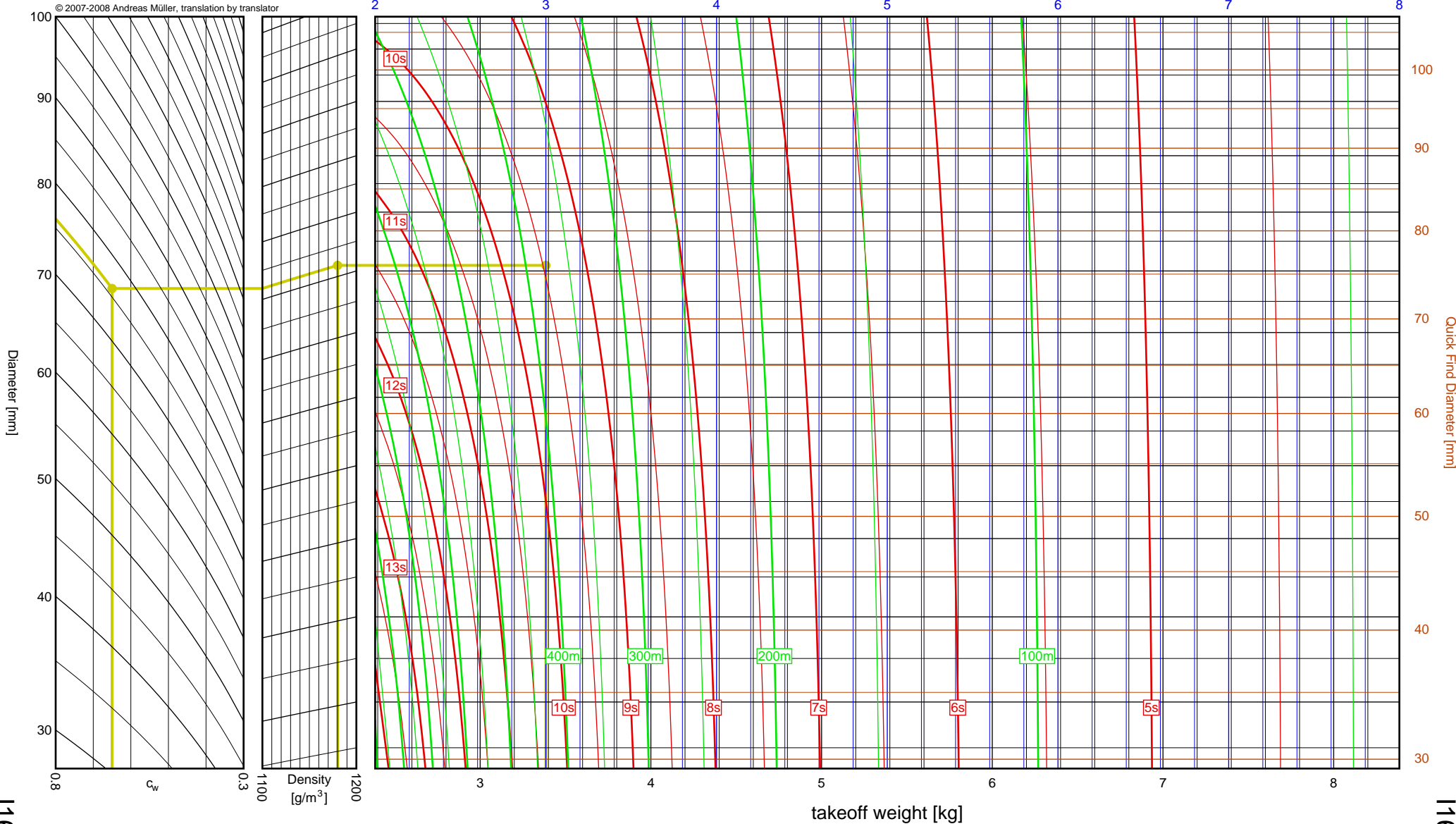
Data source:
Aerotech



1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 76mm, drag = 0.65, density = 1180 g/m³, weight = 3.385kg
Results: time to apogee: 9.5s, expected altitude: 376m

empty weight [kg]



3", I-J

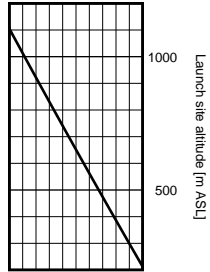
6

I161W

Aerotech I245G

I_{tot} = 350.5 Ns
 F_{avg} = 239.5 N
 t_{burn} = 1.46 s
 d = 38 mm

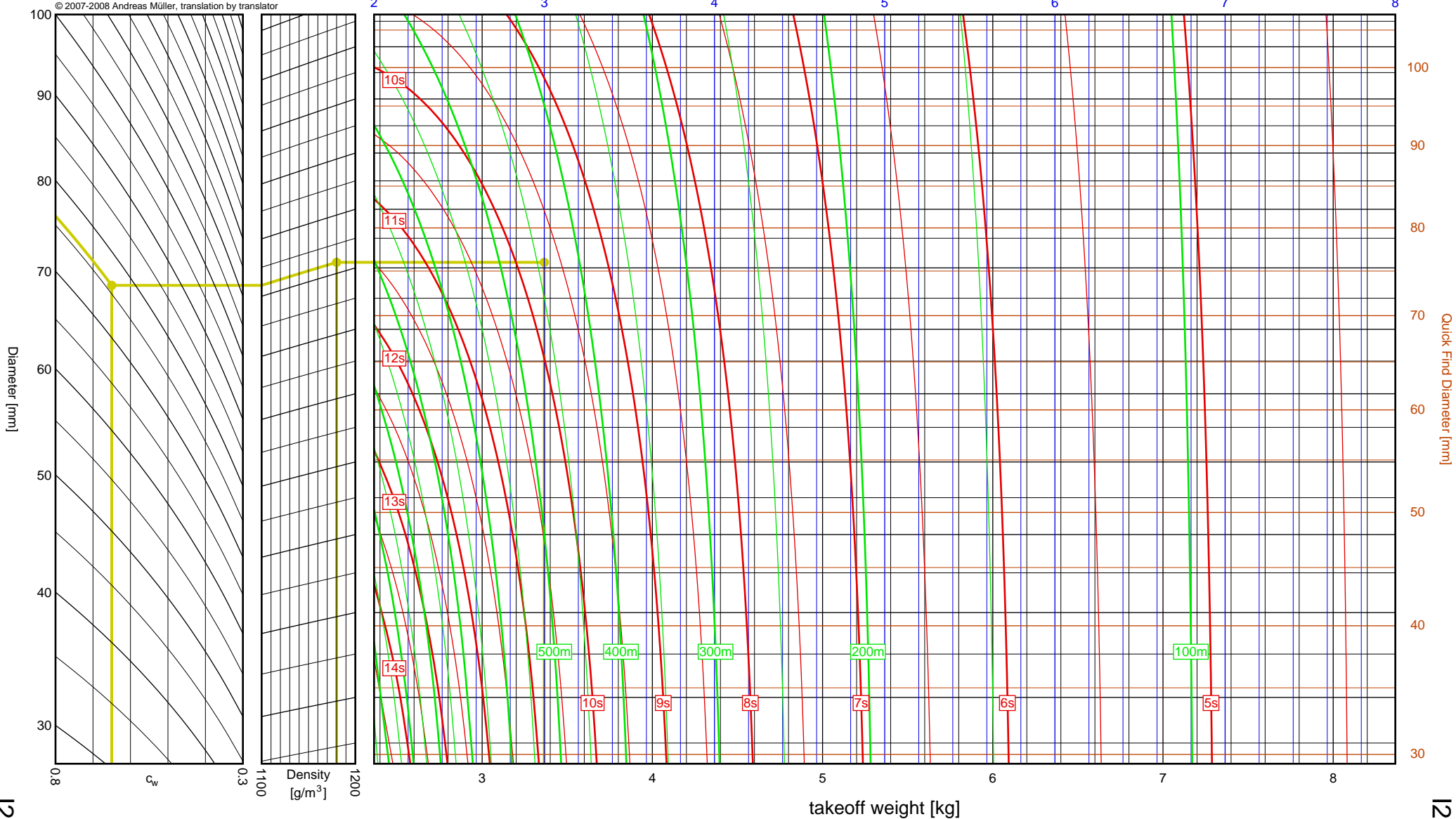
Data source:
Aerotech



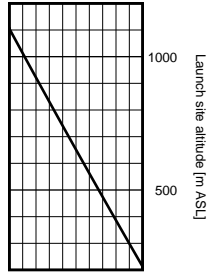
1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 76mm, drag = 0.65, density = 1180 g/m³, weight = 3.365kg
 Results: time to apogee: 9.7s, expected altitude: 441m

empty weight [kg]



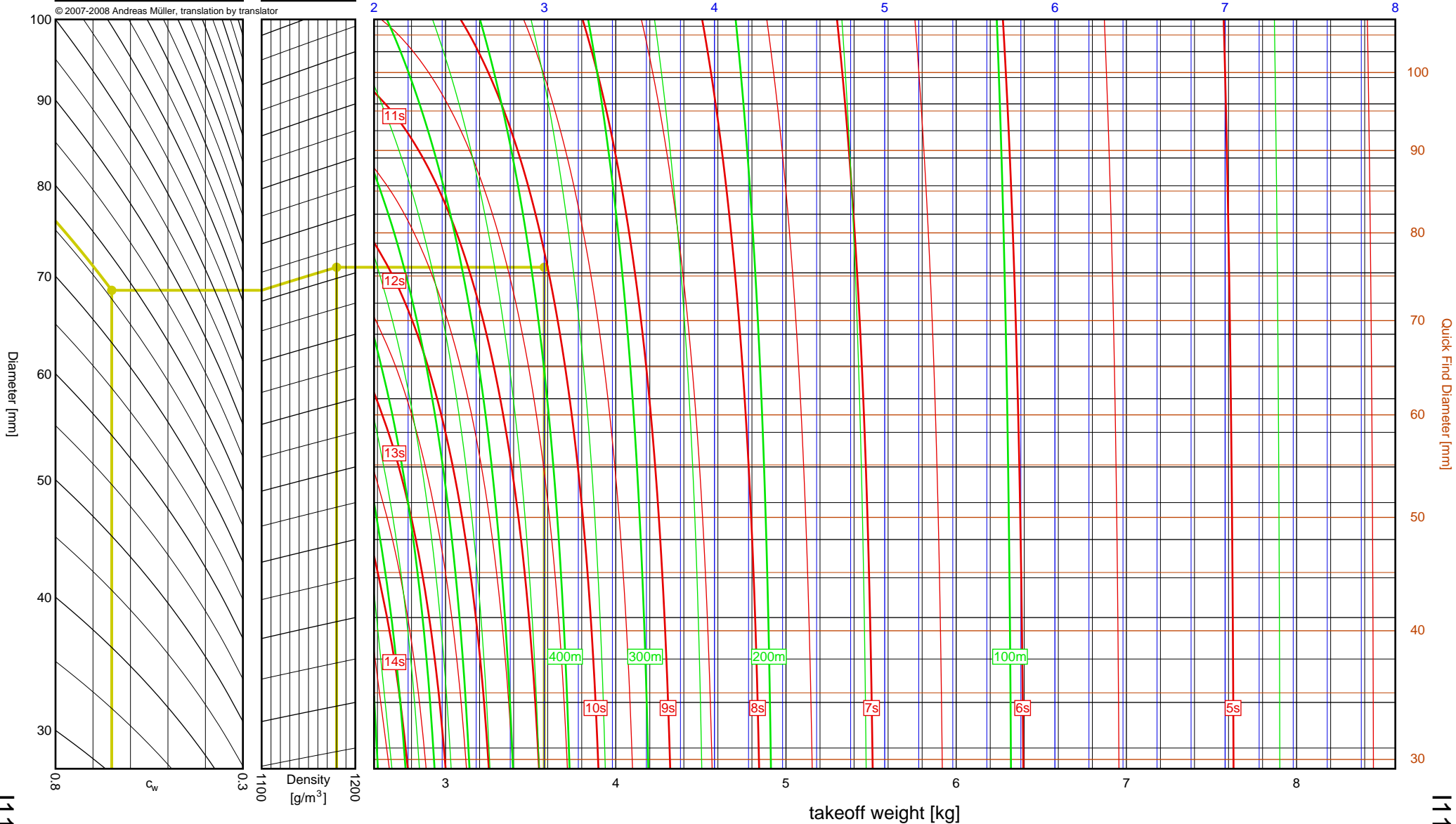
Aerotech	
I117FJ	
I_{tot}	= 365.5 Ns
F_{avg}	= 130.3 N
t_{burn}	= 2.81 s
d	= 54 mm
Data source: Aerotech	



1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 76mm, drag = 0.65, density = 1180 g/m³, weight = 3.580kg
 Results: time to apogee: 10.0s, expected altitude: 384m

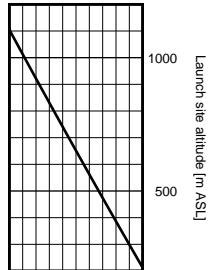
empty weight [kg]



Aerotech I225FJ

I_{tot} = 371.3 Ns
 F_{avg} = 206.3 N
 t_{burn} = 1.80 s
 d = 38 mm

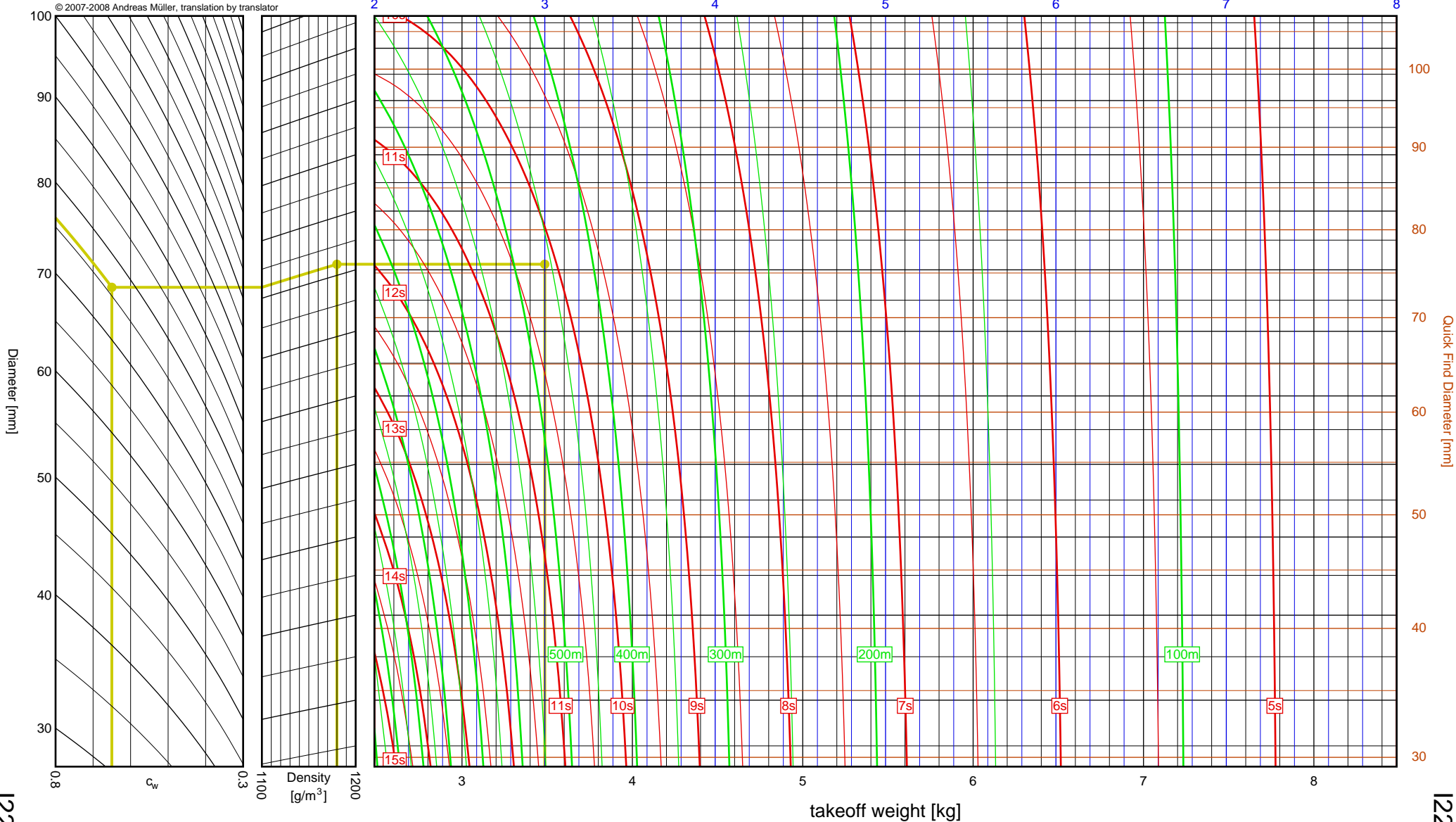
Data source:
Aerotech



1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 76mm, drag = 0.65, density = 1180 g/m³, weight = 3.486kg
 Results: time to apogee: 10.1s, expected altitude: 458m

empty weight [kg]

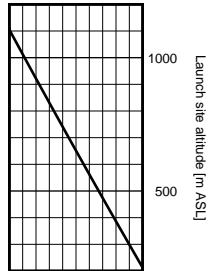


Aerotech

I154J

I_{tot} = 375.4 Ns
 F_{avg} = 104.3 N
 t_{burn} = 3.60 s
 d = 38 mm

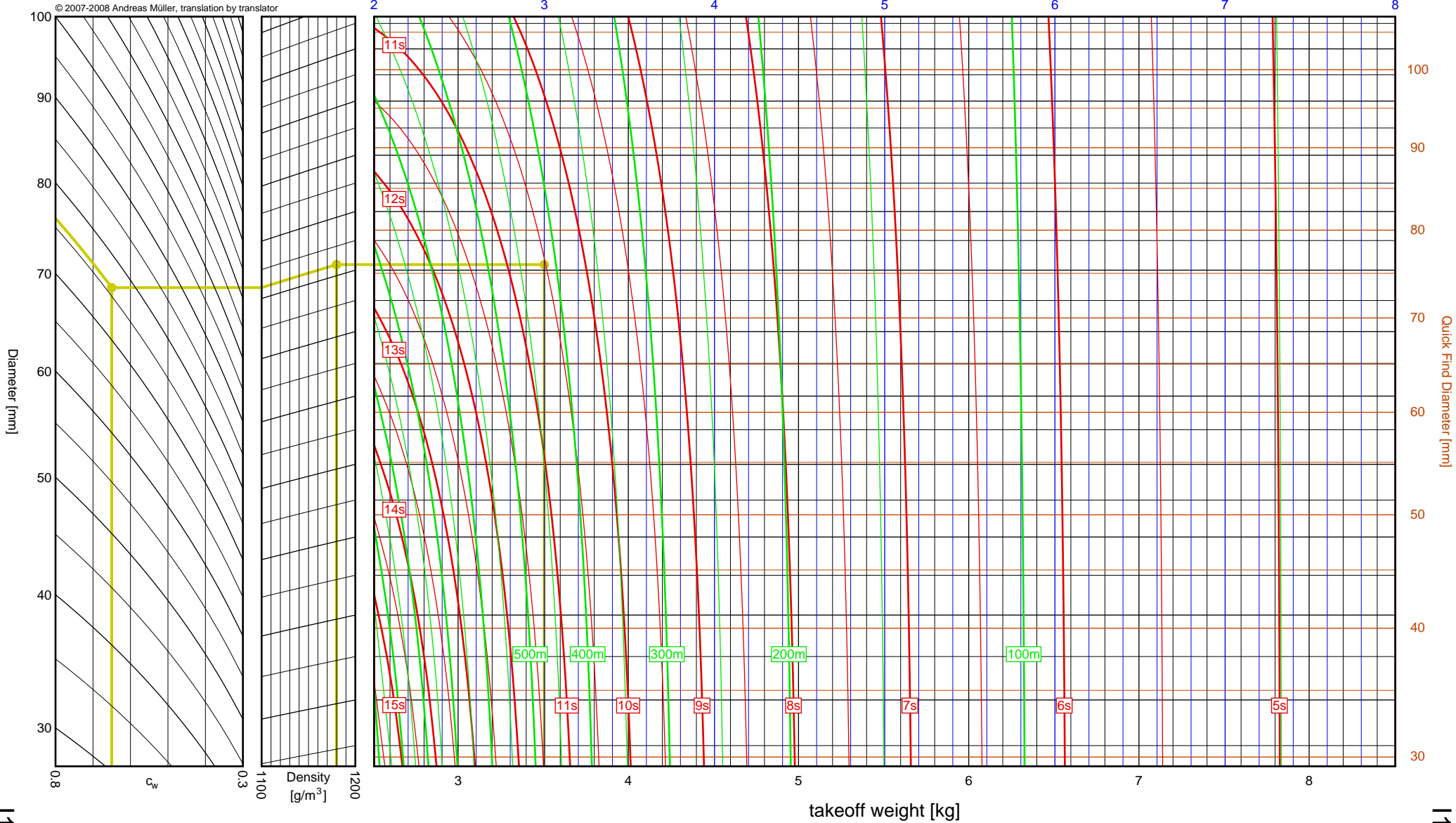
Data source:
Aerotech



1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 76mm, drag = 0.65, density = 1180 g/m³, weight = 3.506kg
 Results: time to apogee: 10.5s, expected altitude: 416m

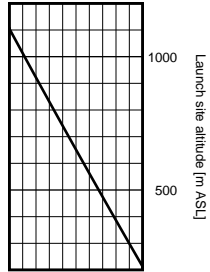
empty weight [kg]



Aerotech I215R

I_{tot} = 396.9 Ns
 F_{avg} = 213.5 N
 t_{burn} = 1.86 s
 d = 54 mm

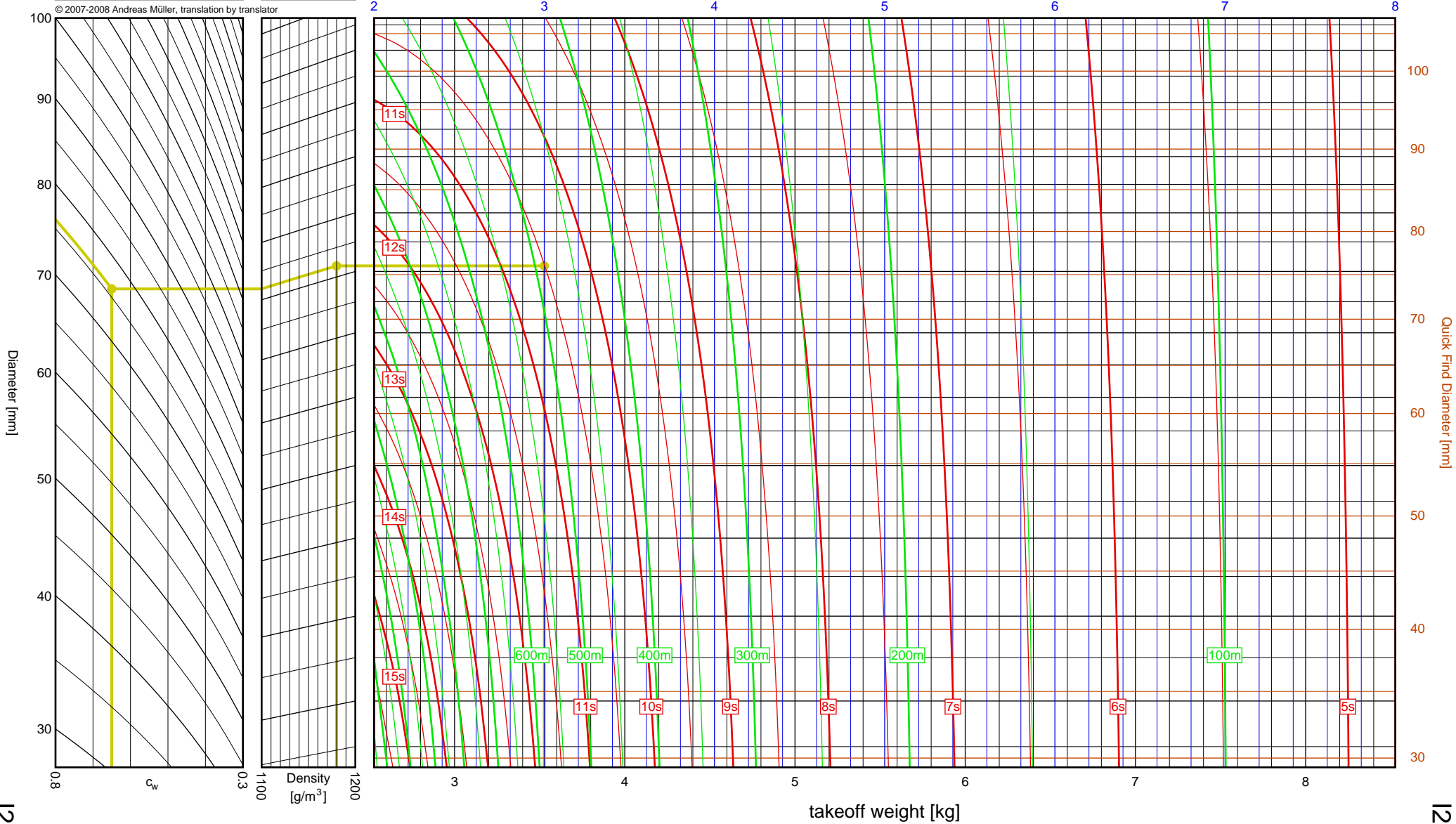
Data source:
Aerotech



1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 76mm, drag = 0.65, density = 1180 g/m³, weight = 3.527kg
 Results: time to apogee: 10.5s, expected altitude: 488m

empty weight [kg]

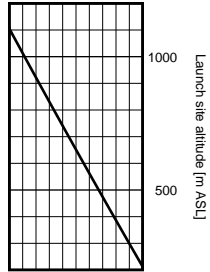


1215R

Aerotech I599N

I_{tot} = 404.7 Ns
 F_{avg} = 649.6 N
 t_{burn} = 0.62 s
 d = 54 mm

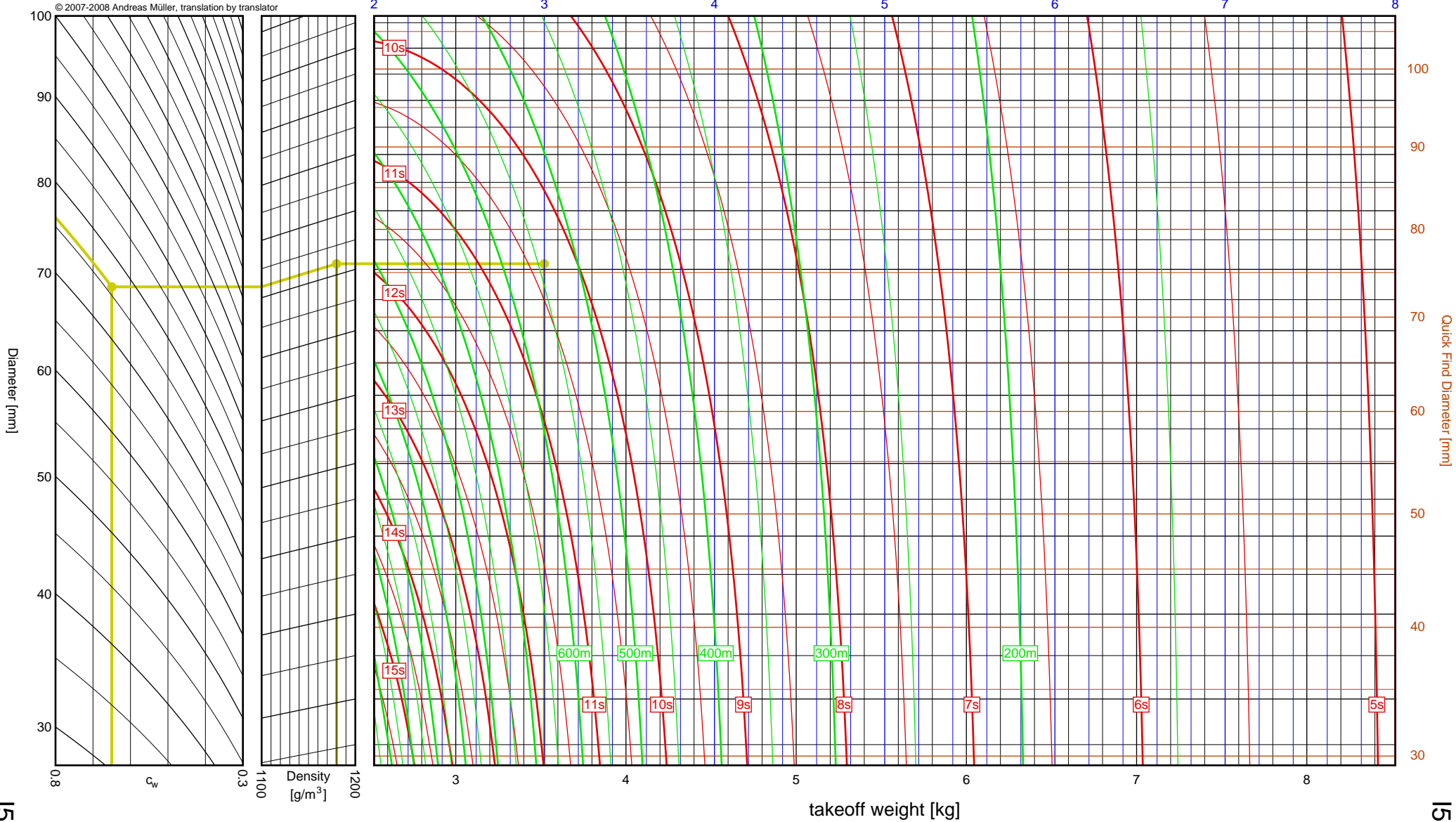
Data source:
Aerotech



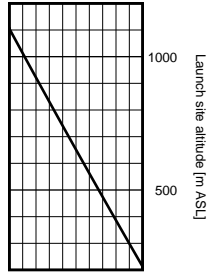
1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 76mm, drag = 0.65, density = 1180 g/m³, weight = 3.520kg
 Results: time to apogee: 10.3s, expected altitude: 542m

empty weight [kg]



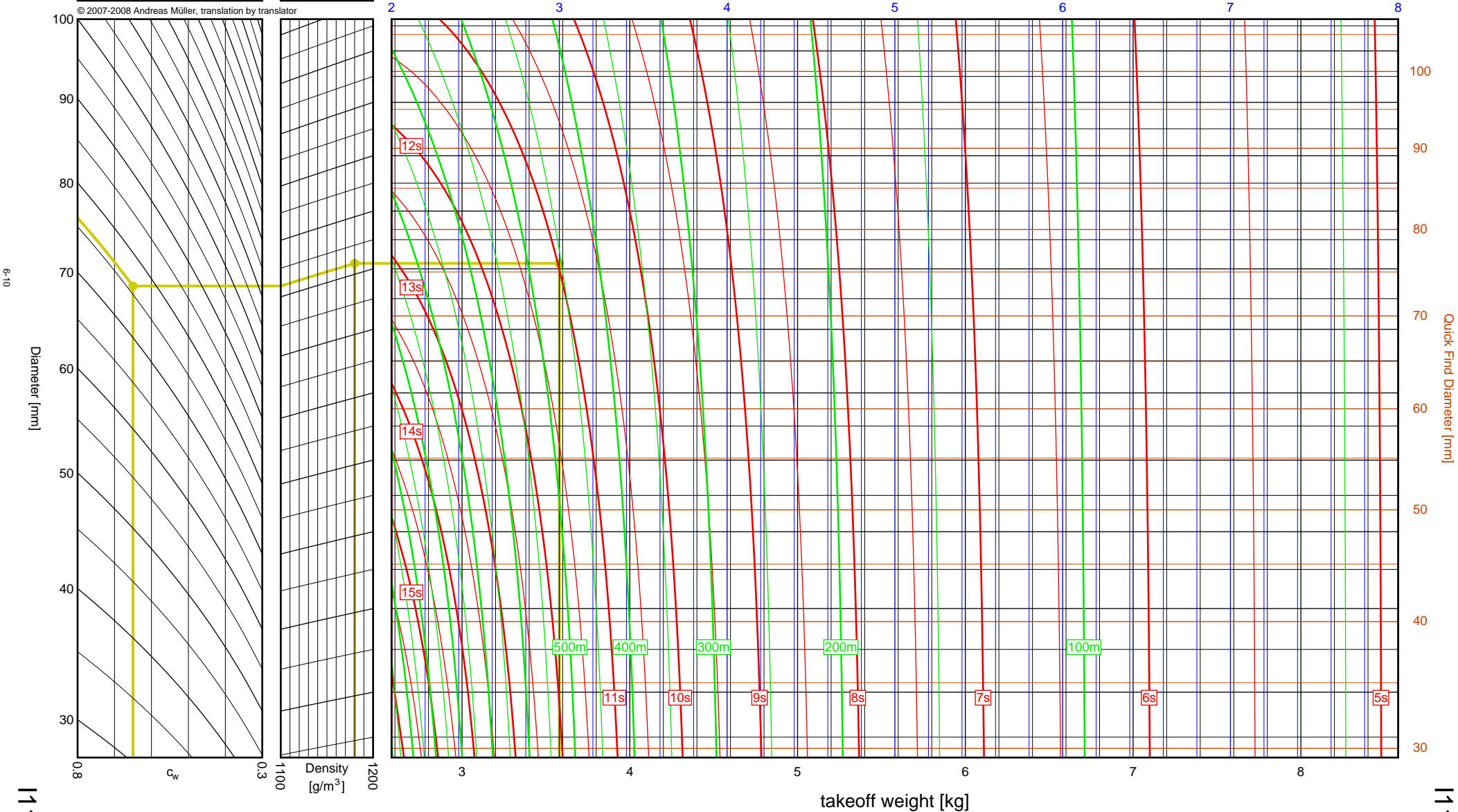
Aerotech	
I115W	
I_{tot}	= 408.8 Ns
F_{avg}	= 116.3 N
t_{burn}	= 3.51 s
d	= 54 mm
Data source: Aerotech	



1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 76mm, drag = 0.65, density = 1180 g/m³, weight = 3.580kg
 Results: time to apogee: 11.0s, expected altitude: 453m

empty weight [kg]

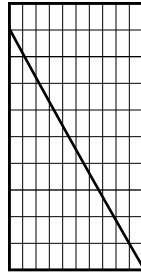


Aerotech

I300T

I_{tot} = 413.1 Ns
 F_{avg} = 258.2 N
 t_{burn} = 1.60 s
 d = 38 mm

Data source:
Aerotech

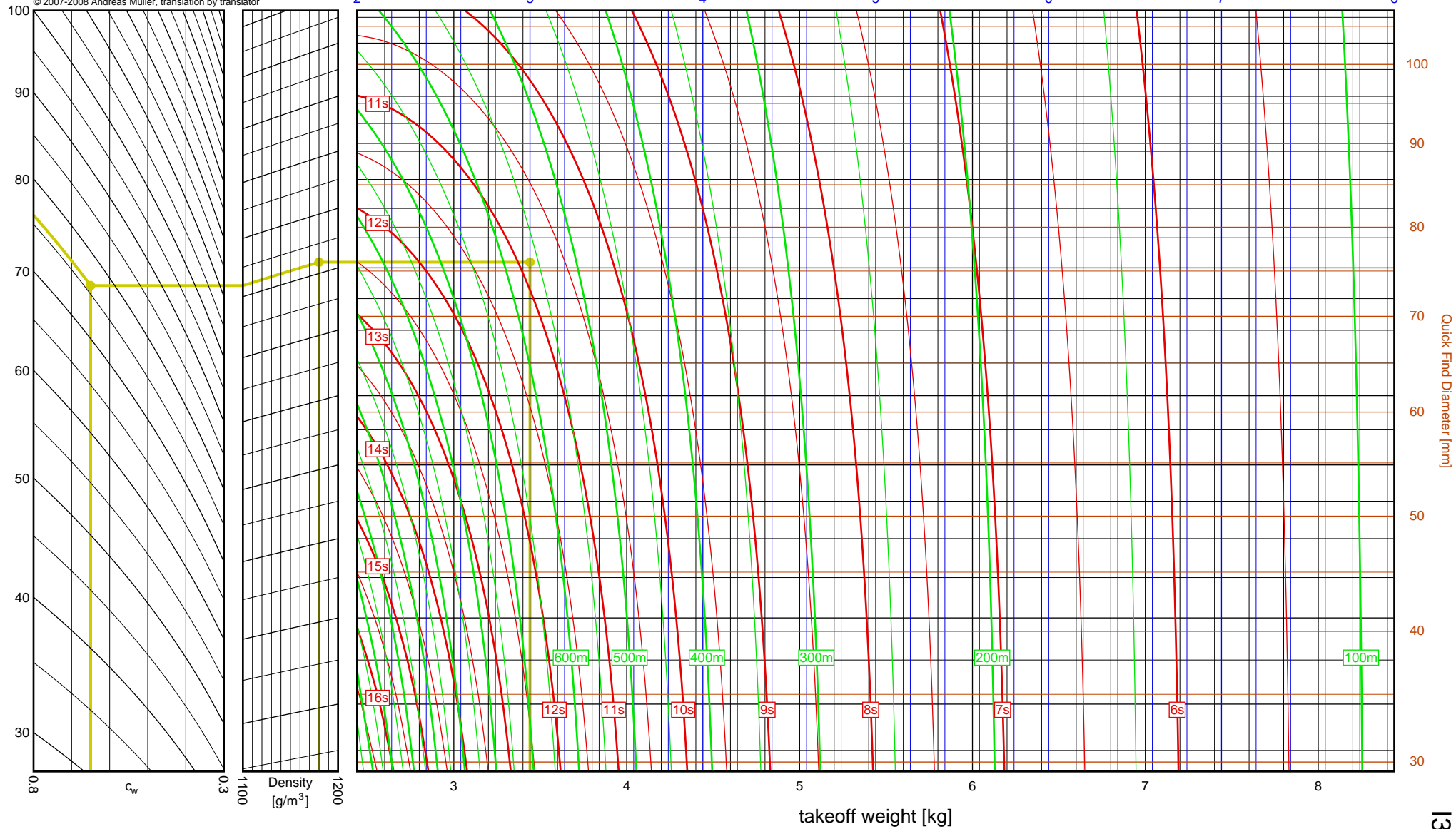


Launch site altitude [m ASL]

1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 76mm, drag = 0.65, density = 1180 g/m³, weight = 3.441kg
Results: time to apogee: 10.9s, expected altitude: 562m

empty weight [kg]

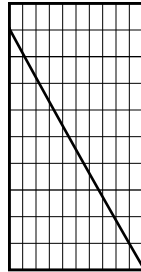


Aerotech

I229T

I_{tot} = 413.7 Ns
 F_{avg} = 239.1 N
 t_{burn} = 1.73 s
 d = 54 mm

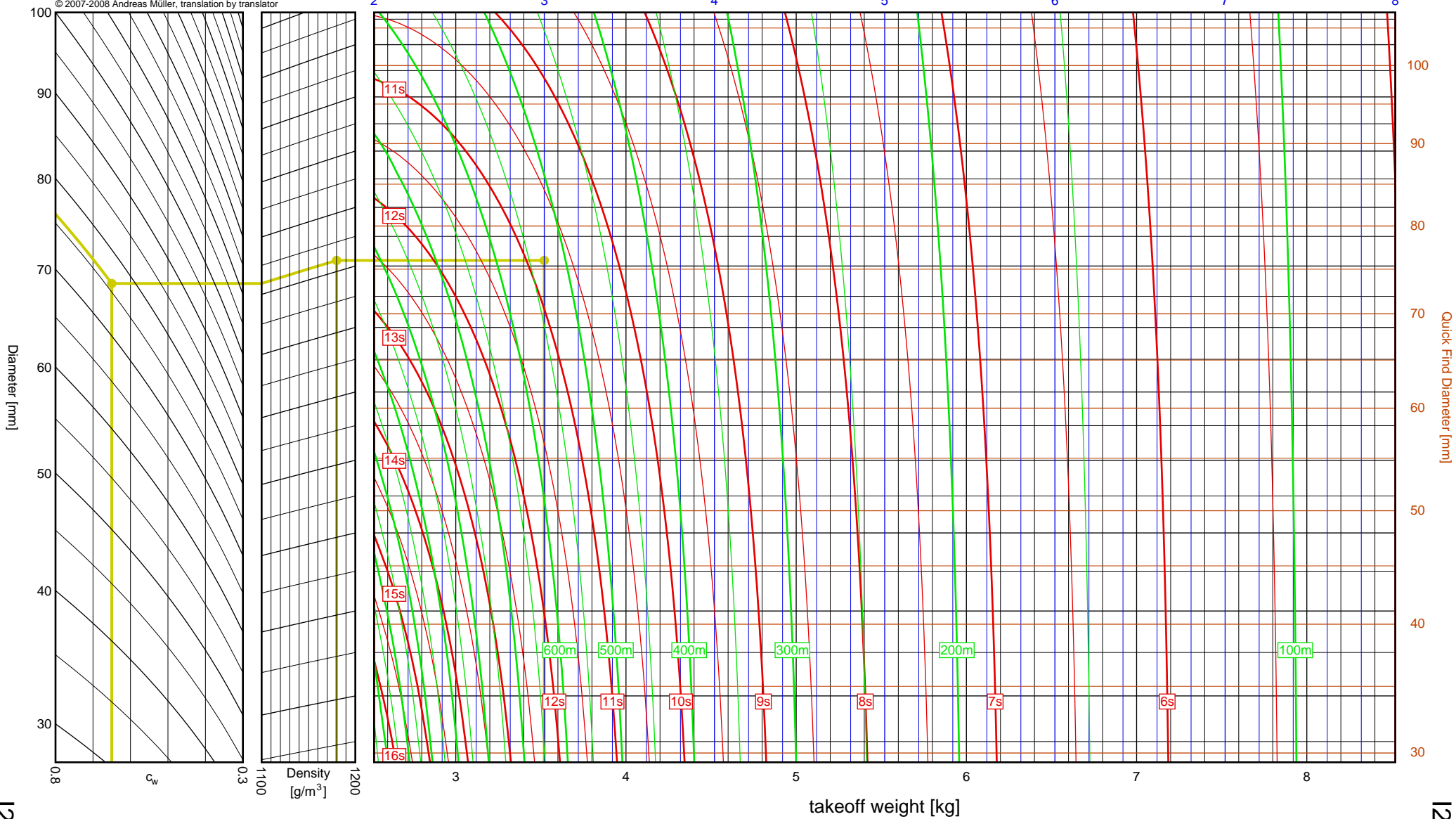
Data source:
Aerotech



1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 76mm, drag = 0.65, density = 1180 g/m³, weight = 3.520kg
Results: time to apogee: 10.8s, expected altitude: 529m

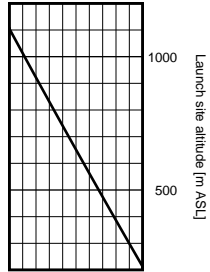
empty weight [kg]



Aerotech I285R

I_{tot} = 415.0 Ns
 F_{avg} = 276.6 N
 t_{burn} = 1.50 s
 d = 38 mm

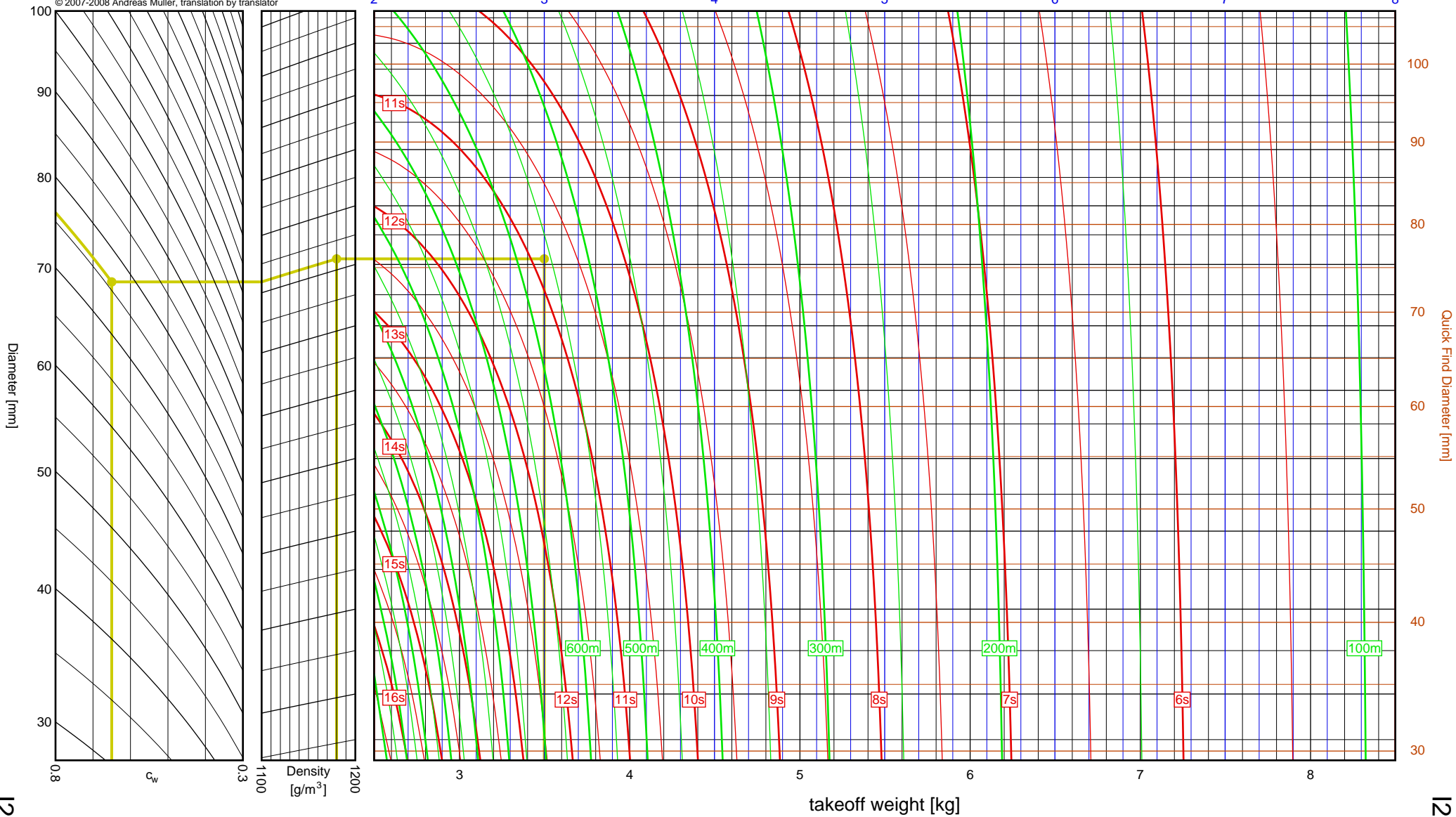
Data source:
Aerotech



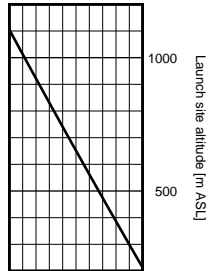
1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 76mm, drag = 0.65, density = 1180 g/m³, weight = 3.498kg
 Results: time to apogee: 10.9s, expected altitude: 560m

empty weight [kg]



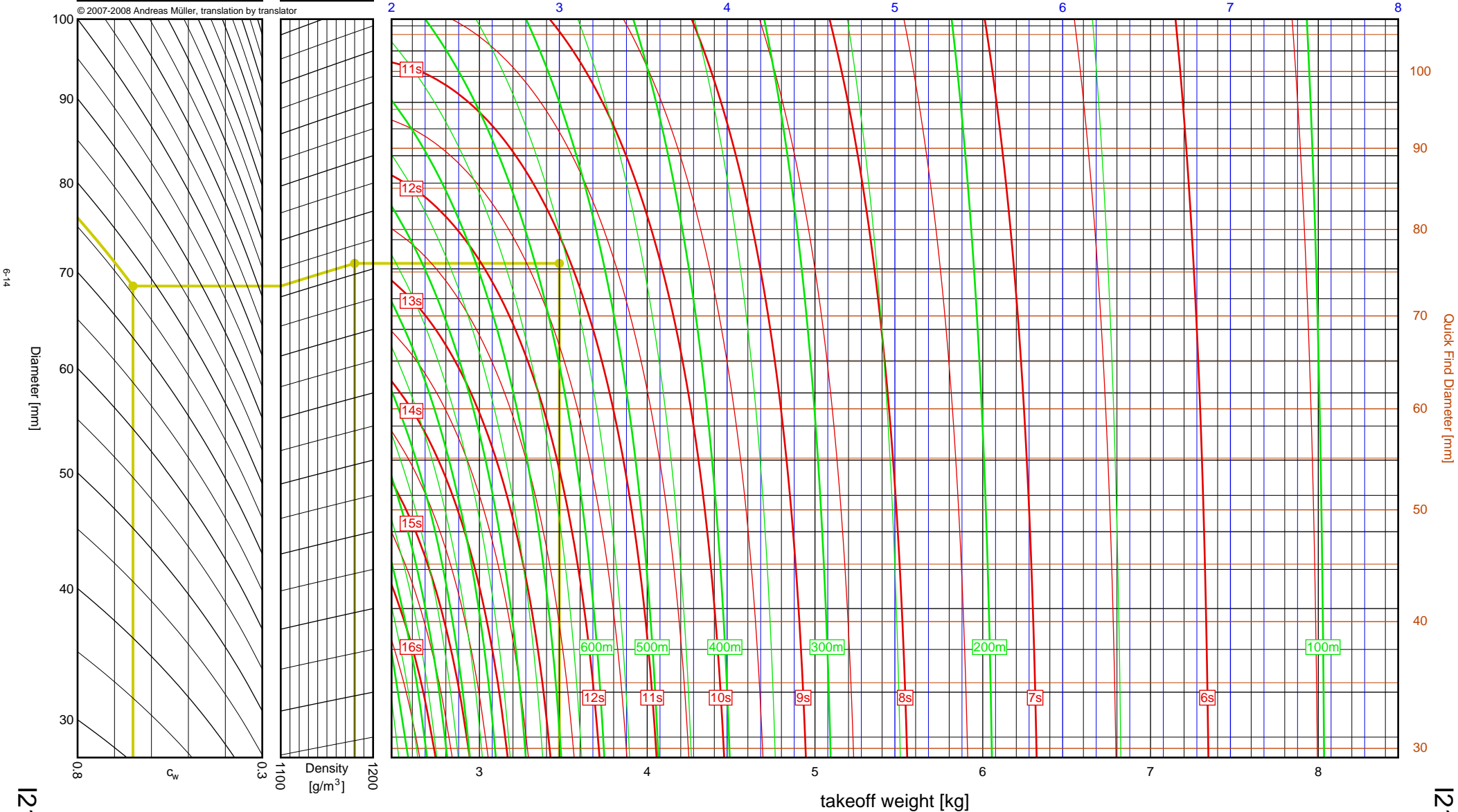
Aerotech	
I211W	
I_{tot}	= 421.2 Ns
F_{avg}	= 191.4 N
t_{burn}	= 2.20 s
d	= 38 mm
Data source: Aerotech	



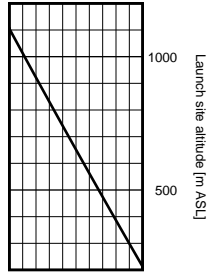
1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 76mm, drag = 0.65, density = 1180 g/m³, weight = 3.476kg
 Results: time to apogee: 11.1s, expected altitude: 563m

empty weight [kg]



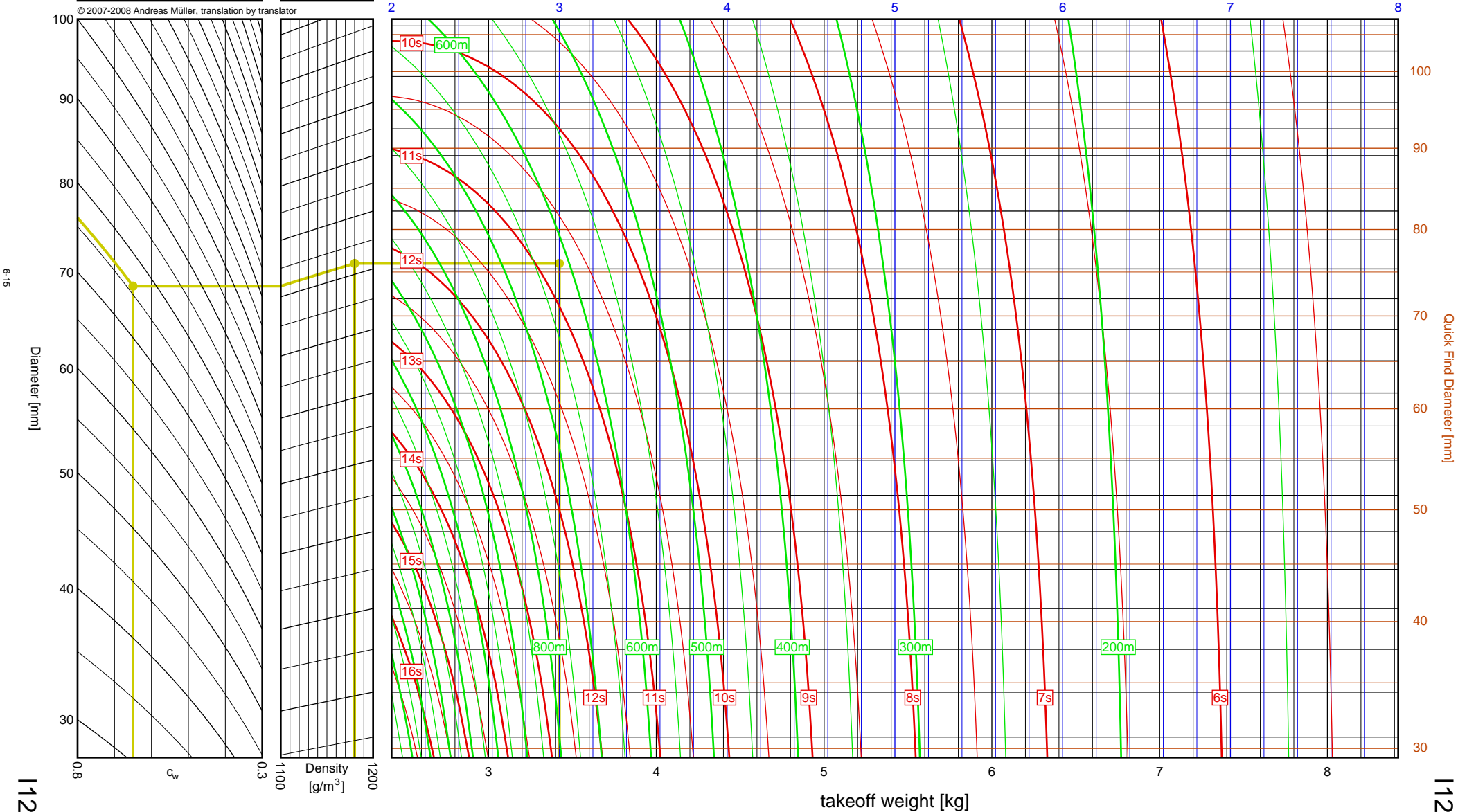
Aerotech	
I1299N	
I_{tot}	= 424.4 Ns
F_{avg}	= 1248.4 N
t_{burn}	= 0.34 s
d	= 38 mm
Data source: Aerotech	



1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 76mm, drag = 0.65, density = 1180 g/m³, weight = 3.422kg
 Results: time to apogee: 10.8s, expected altitude: 614m

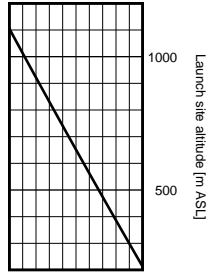
empty weight [kg]



Aerotech I195J

I_{tot} = 443.0 Ns
 F_{avg} = 156.5 N
 t_{burn} = 2.83 s
 d = 38 mm

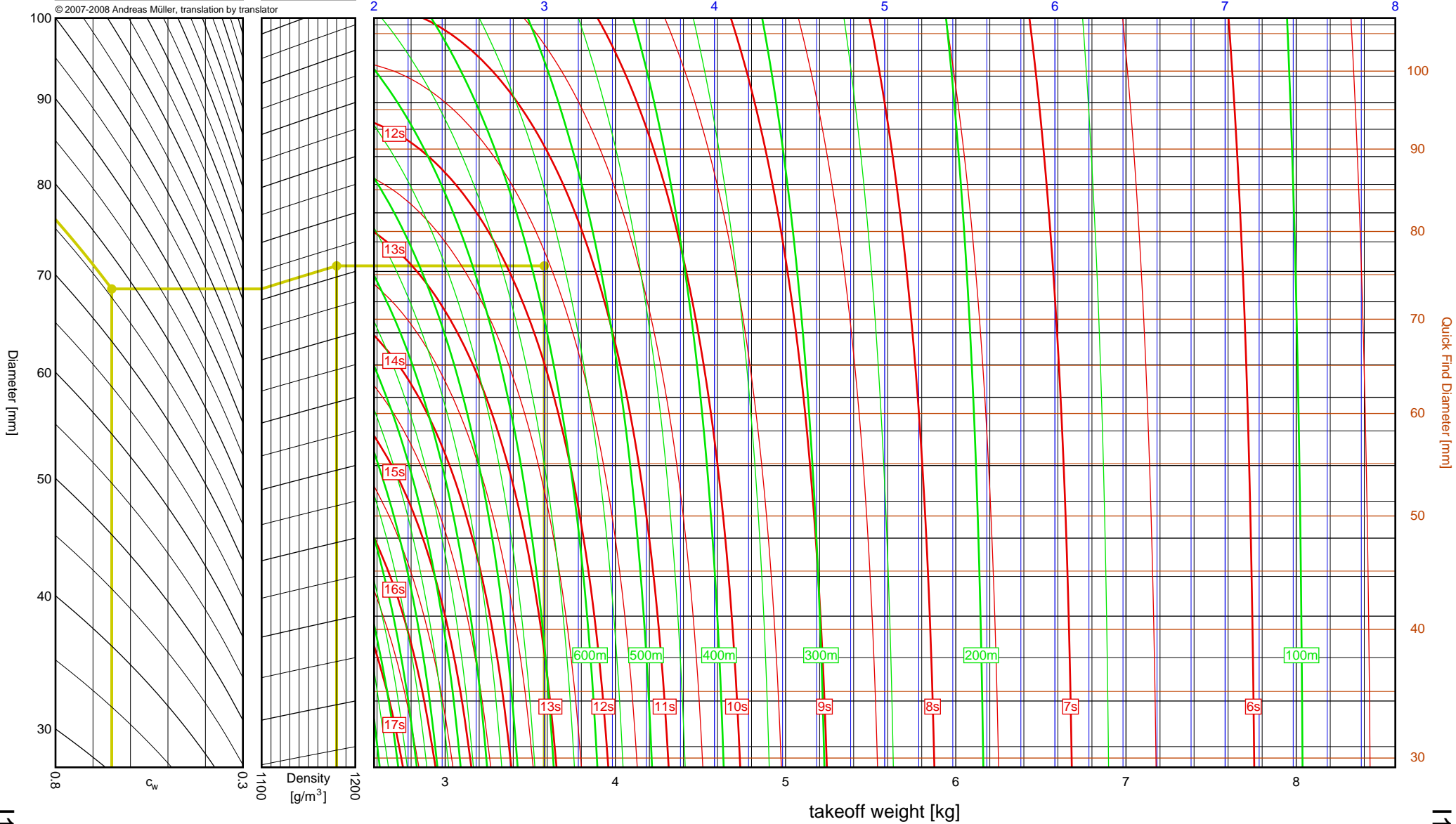
Data source:
Aerotech



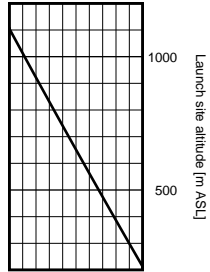
1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 76mm, drag = 0.65, density = 1180 g/m³, weight = 3.582kg
 Results: time to apogee: 11.6s, expected altitude: 580m

empty weight [kg]



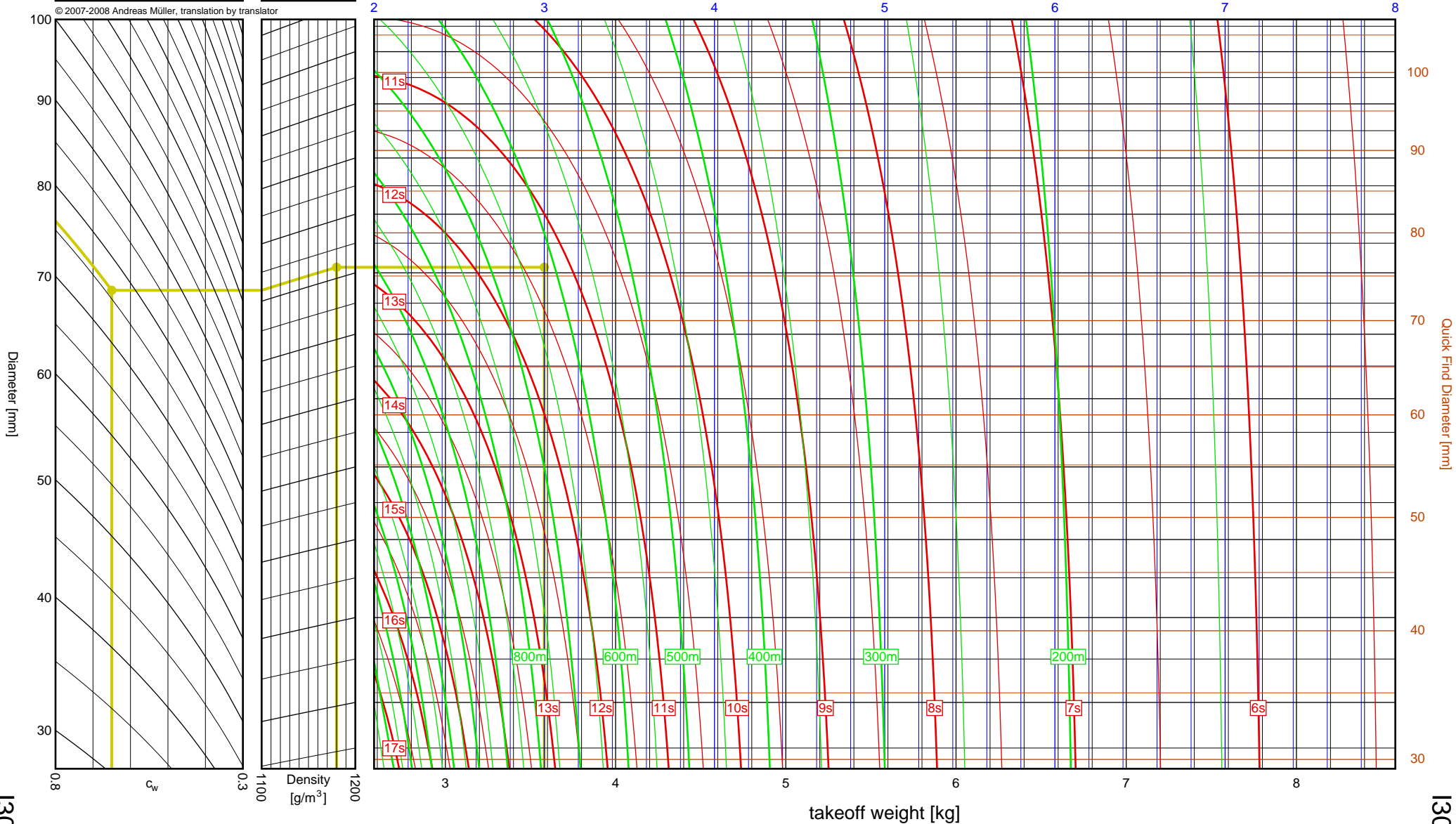
Aerotech	
I305FJ	
I_{tot}	= 443.9 Ns
F_{avg}	= 277.4 N
t_{burn}	= 1.60 s
d	= 38 mm
Data source: Aerotech	



1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 76mm, drag = 0.65, density = 1180 g/m³, weight = 3.581kg
 Results: time to apogee: 11.3s, expected altitude: 615m

empty weight [kg]

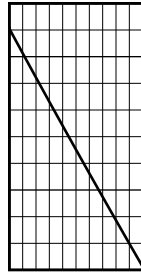


Aerotech

I435T

I_{tot} = 517.4 Ns
 F_{avg} = 369.6 N
 t_{burn} = 1.40 s
 d = 38 mm

Data source:
Aerotech

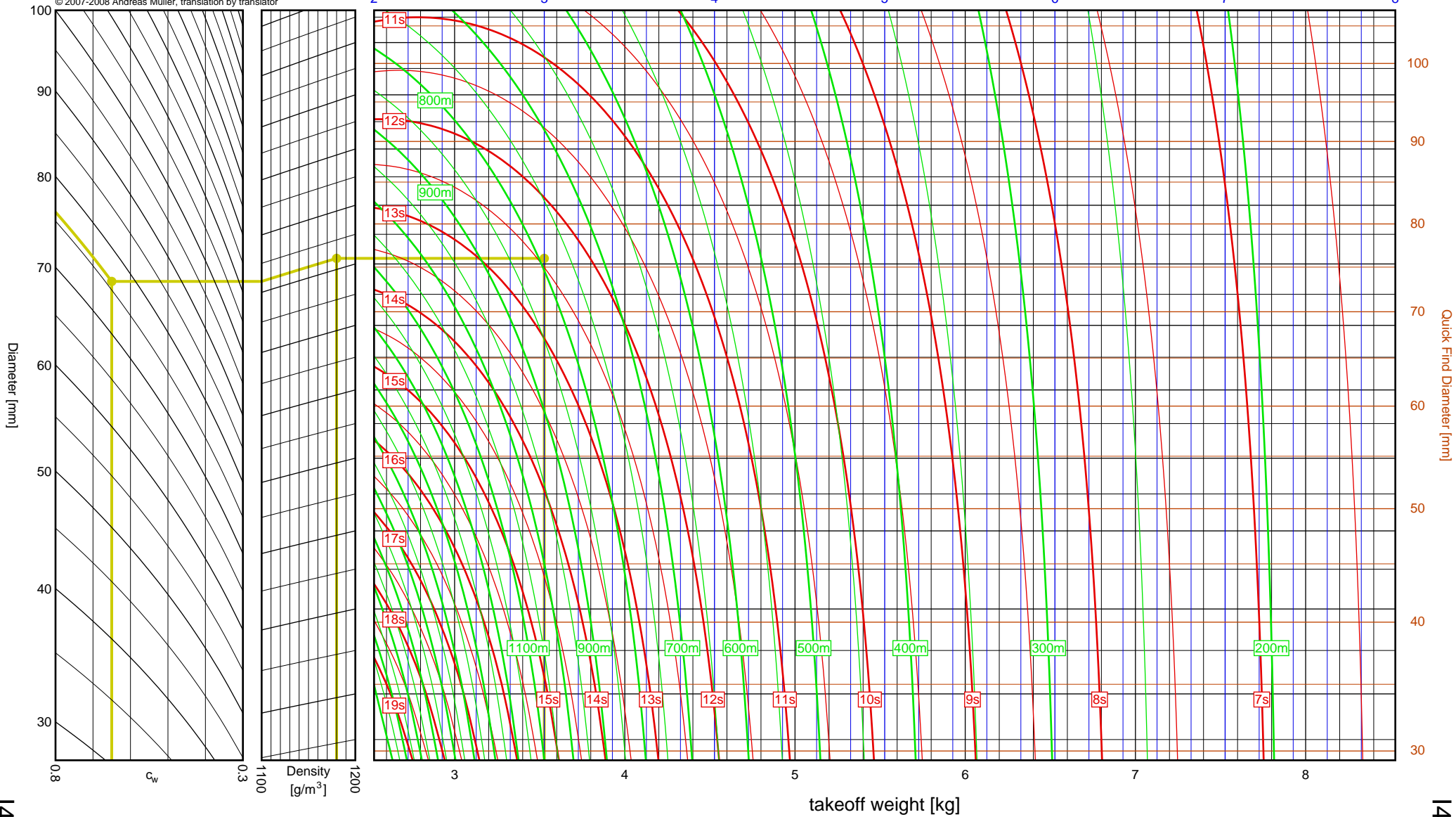


Launch site altitude [m ASL]
1000
500

1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 76mm, drag = 0.65, density = 1180 g/m³, weight = 3.527kg
Results: time to apogee: 12.4s, expected altitude: 792m

empty weight [kg]

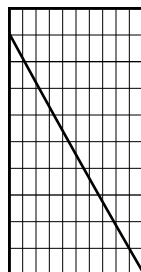


Aerotech

I284W

$I_{tot} = 529.8 \text{ Ns}$
 $F_{avg} = 294.4 \text{ N}$
 $t_{burn} = 1.80 \text{ s}$
 $d = 38 \text{ mm}$

Data source:
Aerotech

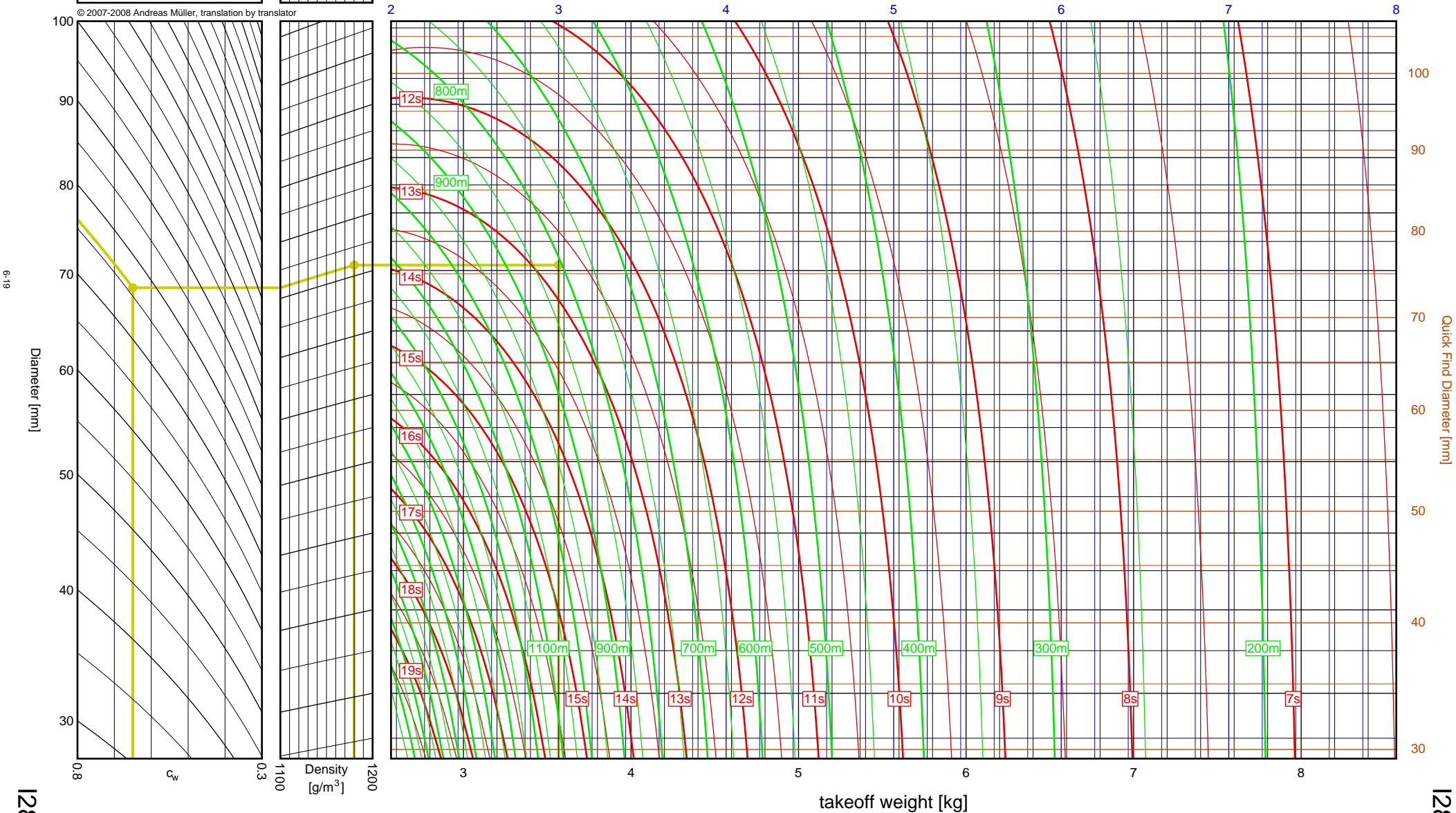


Launch site altitude [m ASL]

1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 76mm, drag = 0.65, density = 1180 g/m³, weight = 3.568kg
Results: time to apogee: 12.7s, expected altitude: 806m

empty weight [kg]



3", I-J

6

I284W

Quick Find Diameter [mm]

Diameter [mm]

c_w

Density [g/m³]

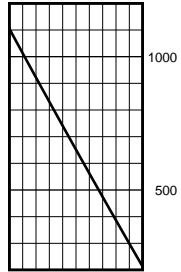
takeoff weight [kg]

I284W

Aerotech I366R

I_{tot} = 537.1 Ns
 F_{avg} = 358.0 N
 t_{burn} = 1.50 s
 d = 38 mm

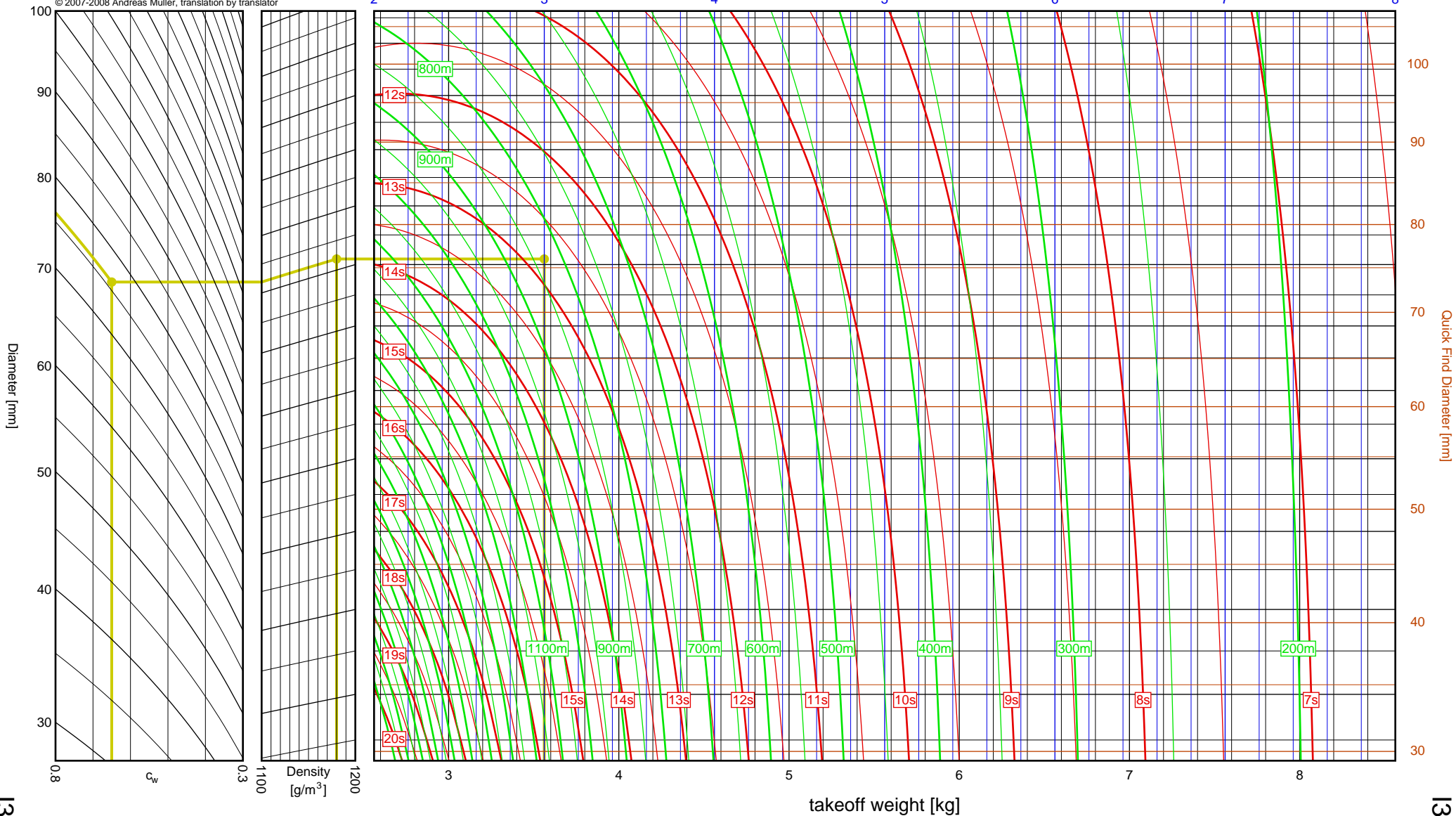
Data source:
Aerotech



1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 76mm, drag = 0.65, density = 1180 g/m³, weight = 3.562kg
 Results: time to apogee: 12.8s, expected altitude: 831m

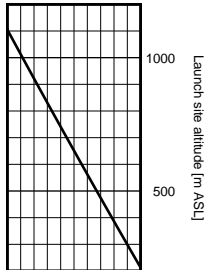
empty weight [kg]



Aerotech
I364FJ

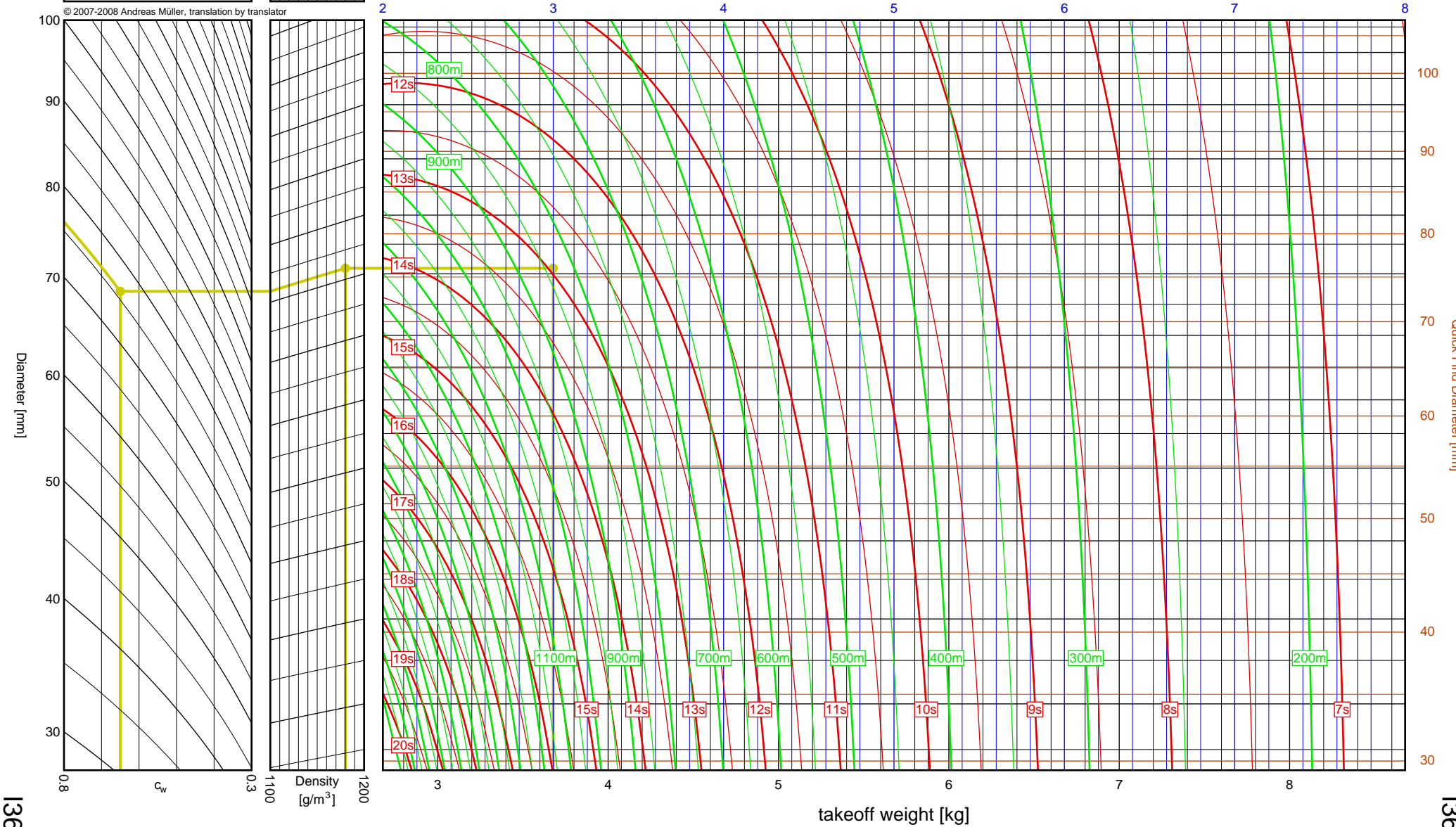
I_{tot} = 551.2 Ns
 F_{avg} = 324.2 N
 t_{burn} = 1.70 s
 d = 38 mm

Data source:
Aerotech



- From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
 - Move along horizontal to left border of density scale
 - Move up slanted line to vertical line matching density at launch site
 - From intersection point move horizontally to vertical line matching rocket mass
 - Read off expected time to apogee from red curves, altitude from green curves
- Sample: diameter = 76mm, drag = 0.65, density = 1180 g/m³, weight = 3.678kg
Results: time to apogee: 13.0s, expected altitude: 836m

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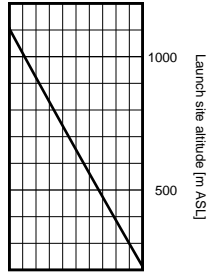
I364FJ

I364FJ

Aerotech I600R

I_{tot} = 640.1 Ns
 F_{avg} = 542.5 N
 t_{burn} = 1.18 s
 d = 38 mm

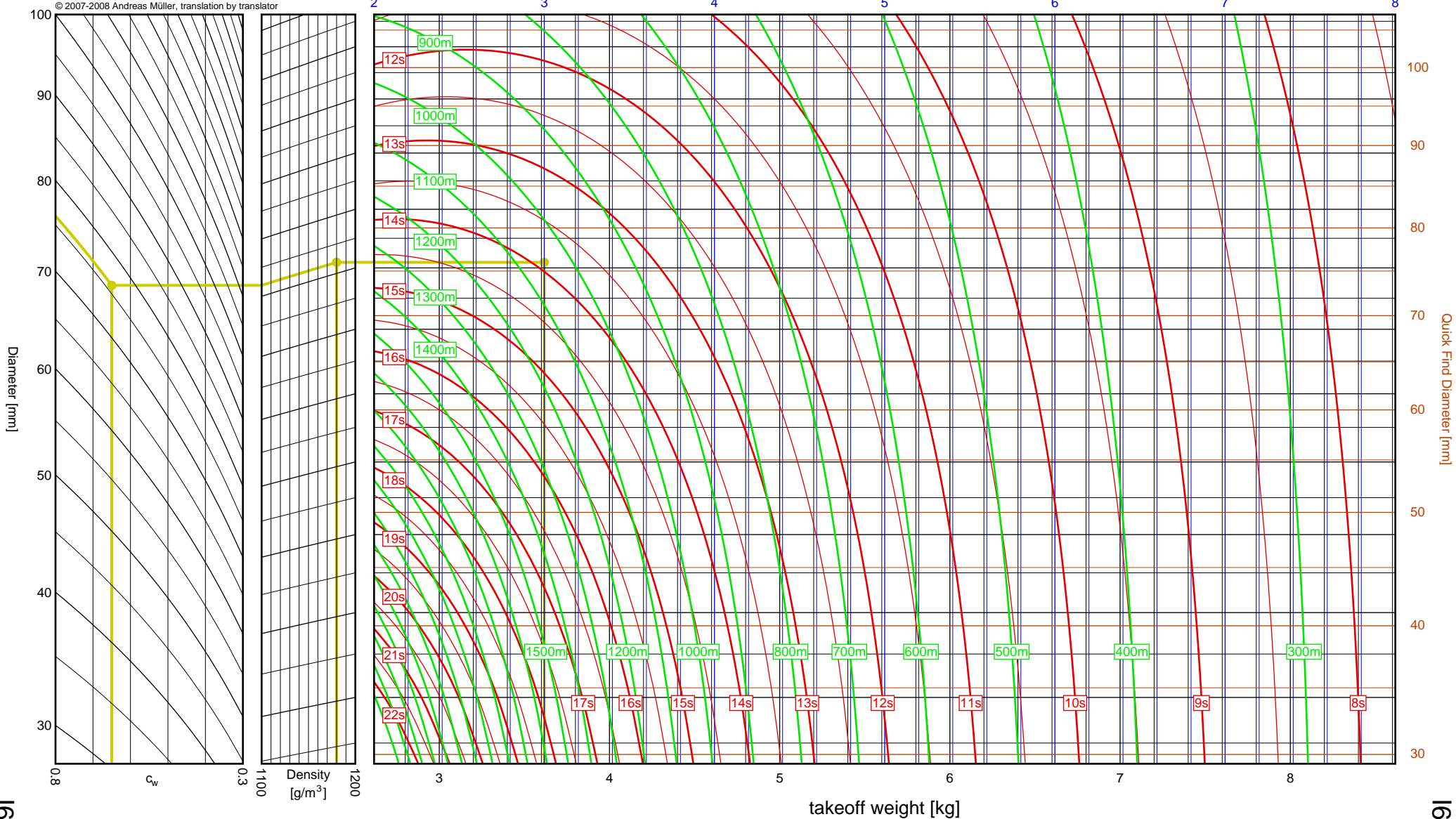
Data source:
Aerotech



1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 76mm, drag = 0.65, density = 1180 g/m³, weight = 3.617kg
 Results: time to apogee: 13.9s, expected altitude: 1050m

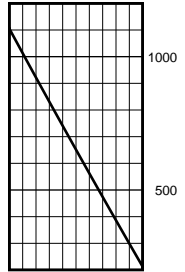
empty weight [kg]



Aerotech J350W.5

I_{tot} = 649.6 Ns
 F_{avg} = 433.0 N
 t_{burn} = 1.50 s
 d = 38 mm

Data source:
Aerotech

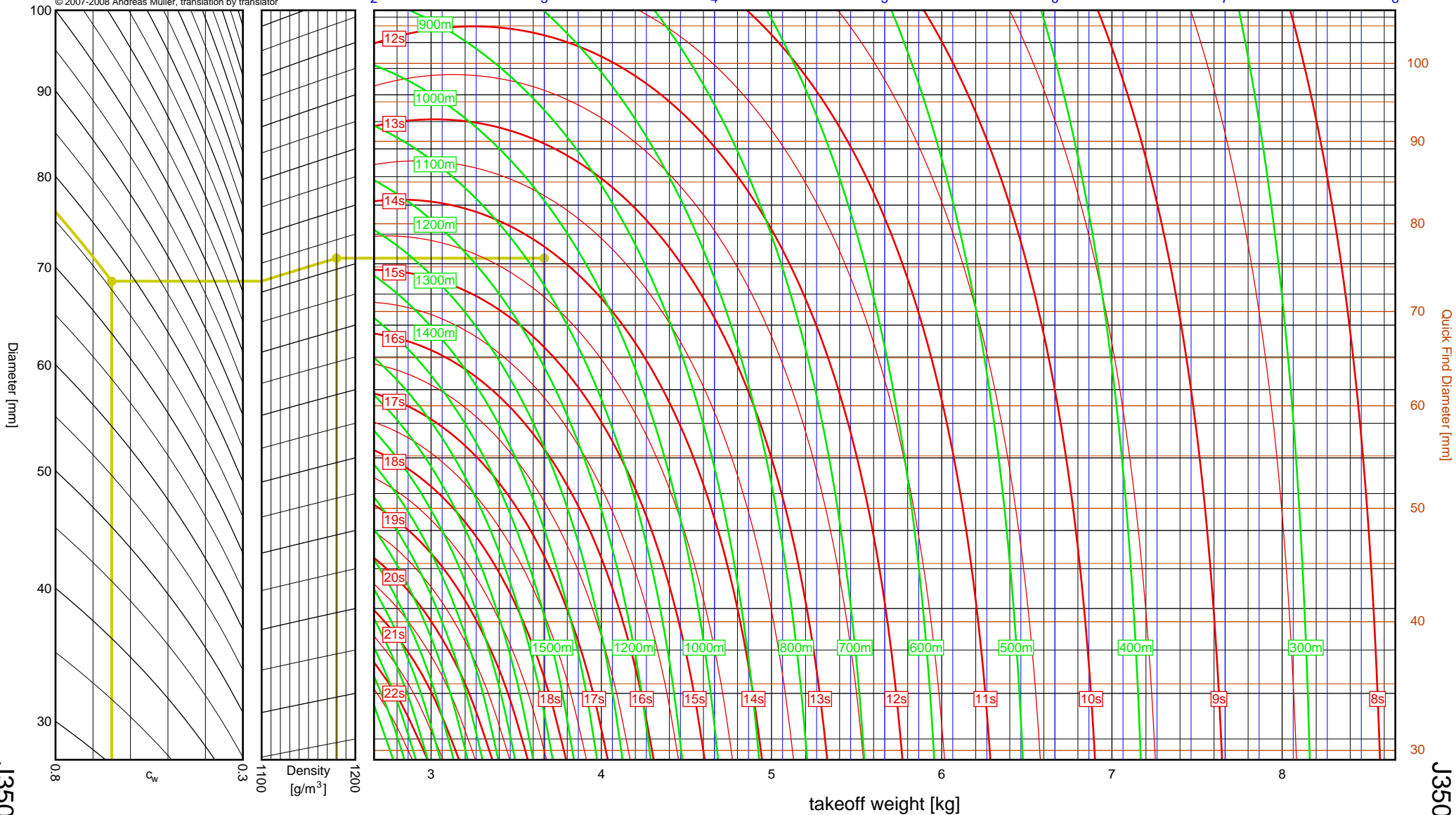


Launch site altitude [m ASL]

1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 76mm, drag = 0.65, density = 1180 g/m³, weight = 3.665kg
 Results: time to apogee: 14.1s, expected altitude: 1068m

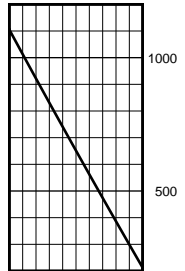
empty weight [kg]



Aerotech J420R

I_{tot} = 651.0 Ns
 F_{avg} = 404.3 N
 t_{burn} = 1.61 s
 d = 38 mm

Data source:
Aerotech

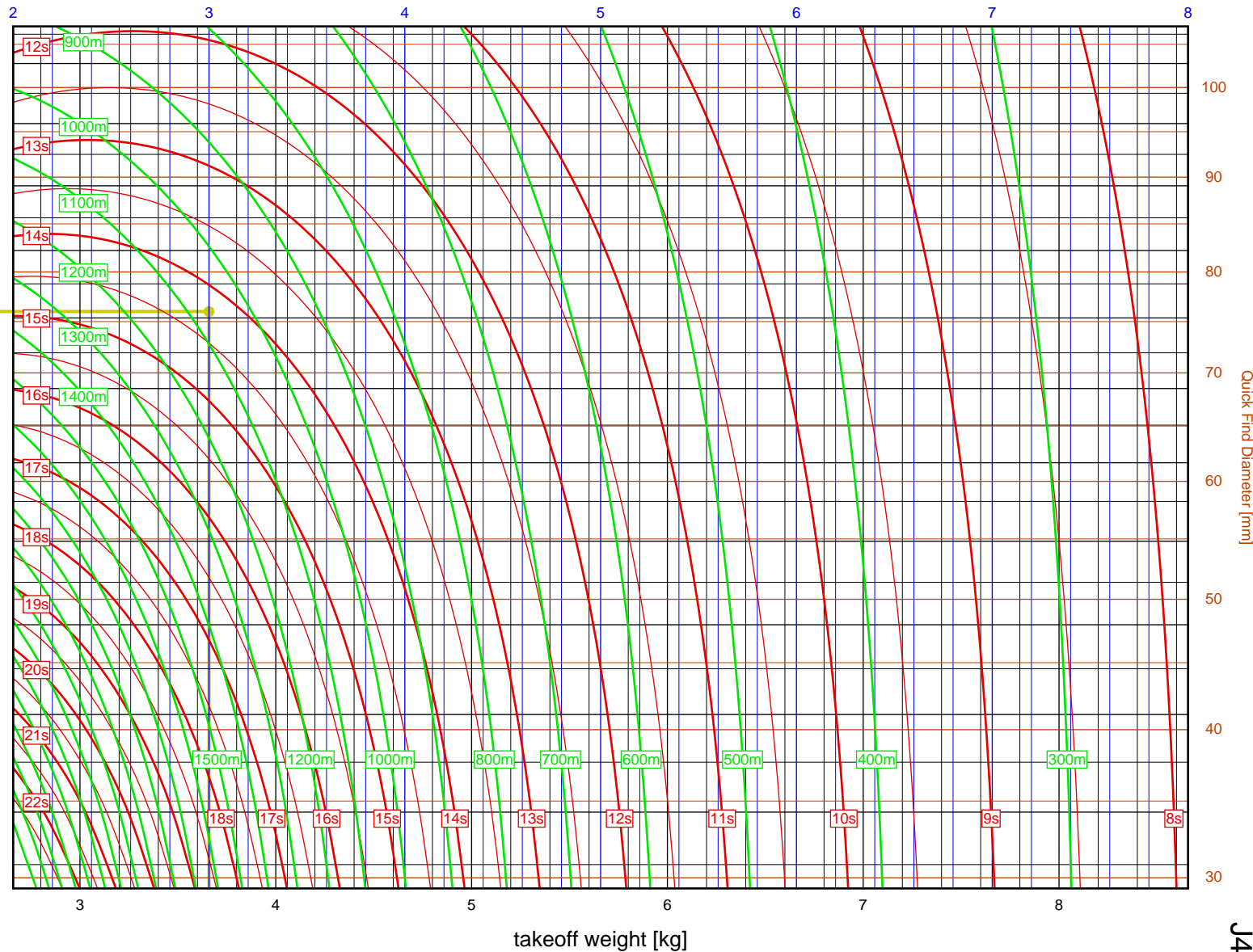
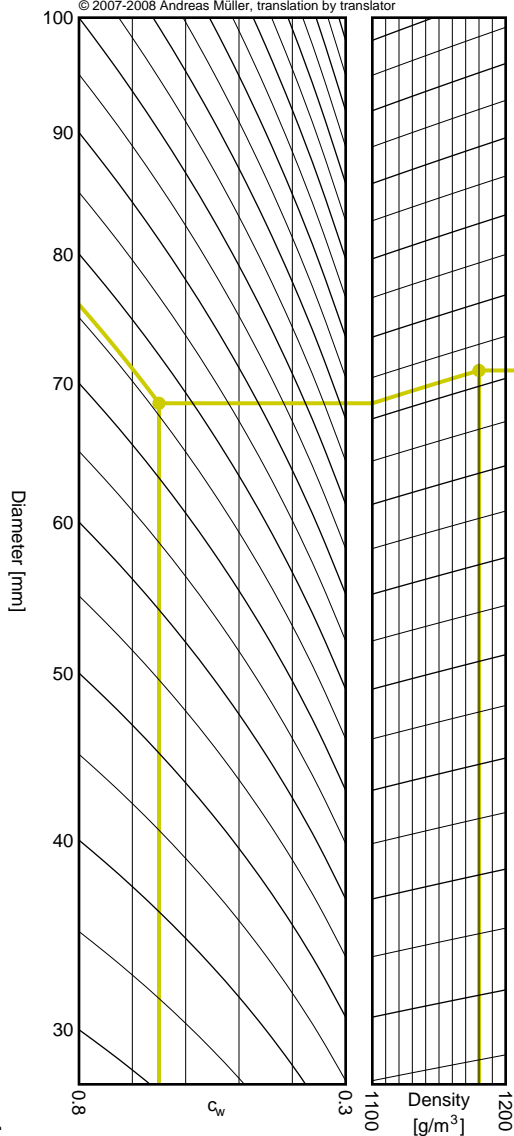


Launch site altitude [m ASL]

1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 76mm, drag = 0.65, density = 1180 g/m³, weight = 3.659kg
 Results: time to apogee: 14.2s, expected altitude: 1067m

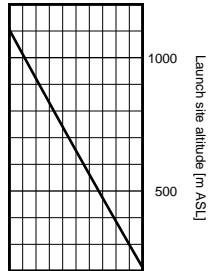
empty weight [kg]



Aerotech J350W

I_{tot} = 665.0 Ns
 F_{avg} = 350.0 N
 t_{burn} = 1.90 s
 d = 38 mm

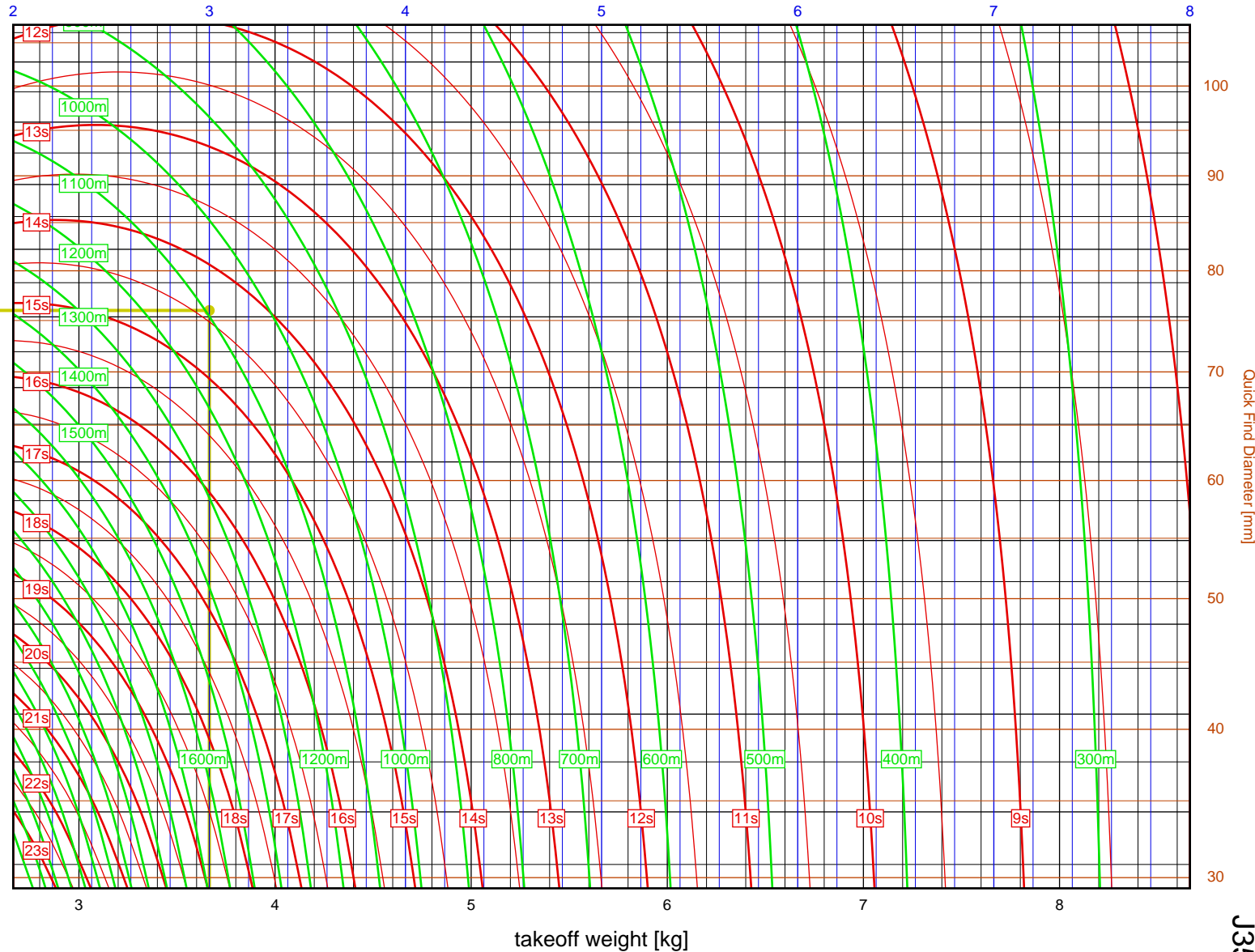
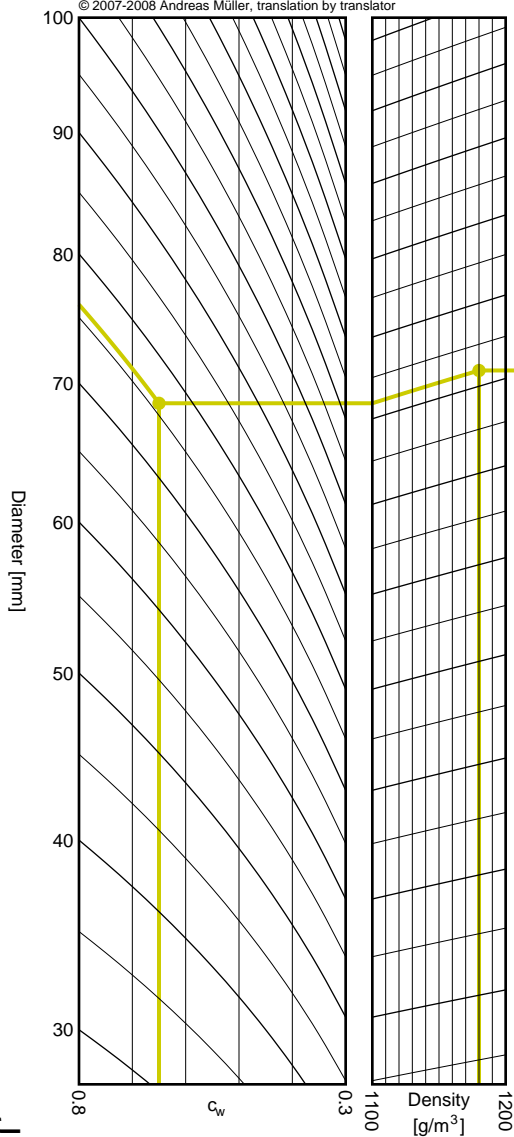
Data source:
Aerotech



1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 76mm, drag = 0.65, density = 1180 g/m³, weight = 3.665kg
 Results: time to apogee: 14.4s, expected altitude: 1094m

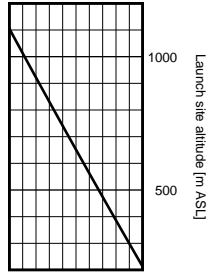
empty weight [kg]



Aerotech J90W

I_{tot} = 681.3 Ns
 F_{avg} = 90.8 N
 t_{burn} = 7.50 s
 d = 54 mm

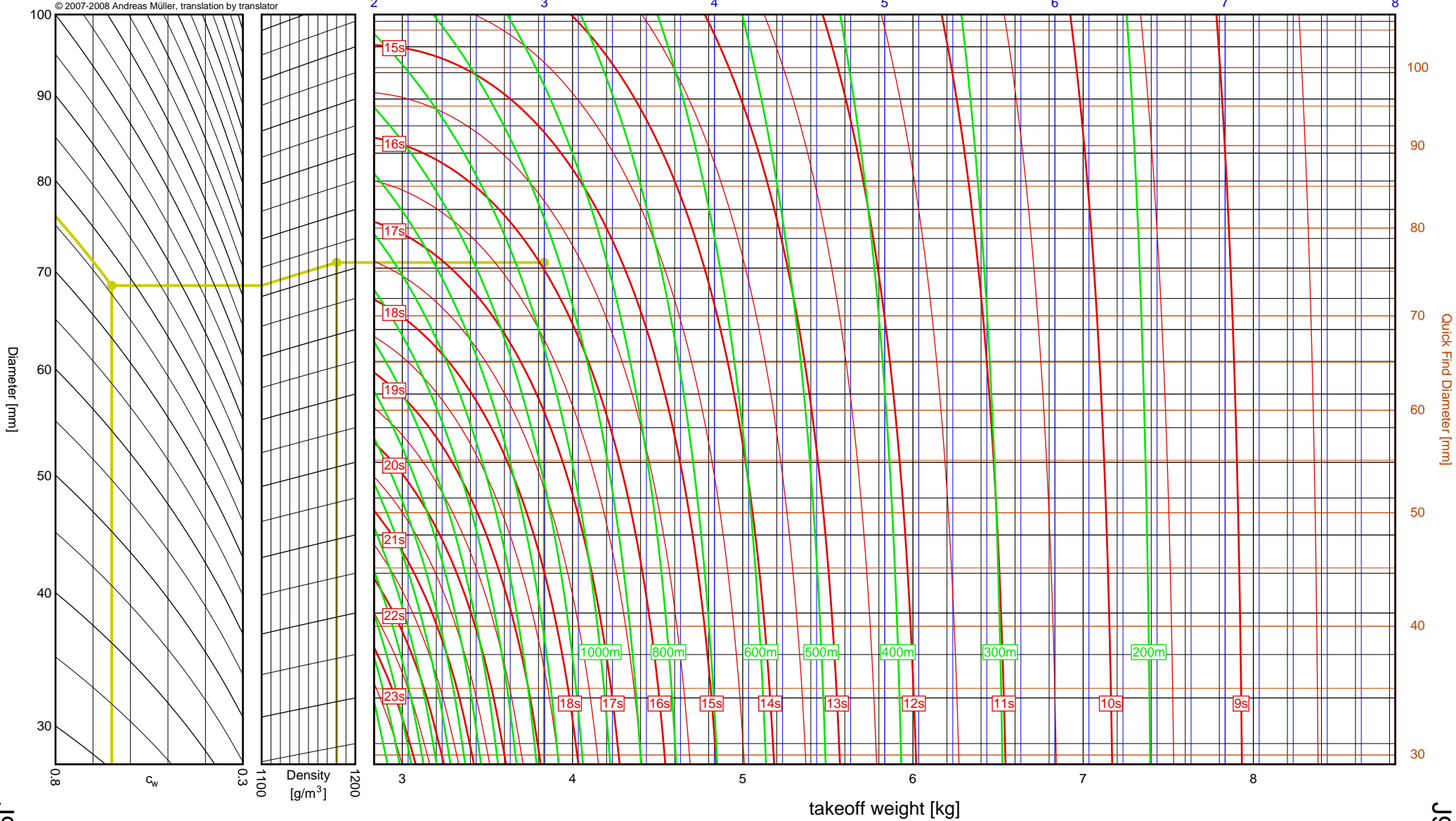
Data source:
Aerotech



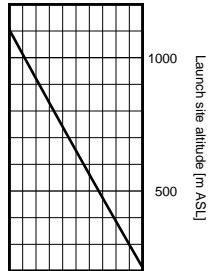
1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 76mm, drag = 0.65, density = 1180 g/m³, weight = 3.834kg
 Results: time to apogee: 15.9s, expected altitude: 934m

empty weight [kg]



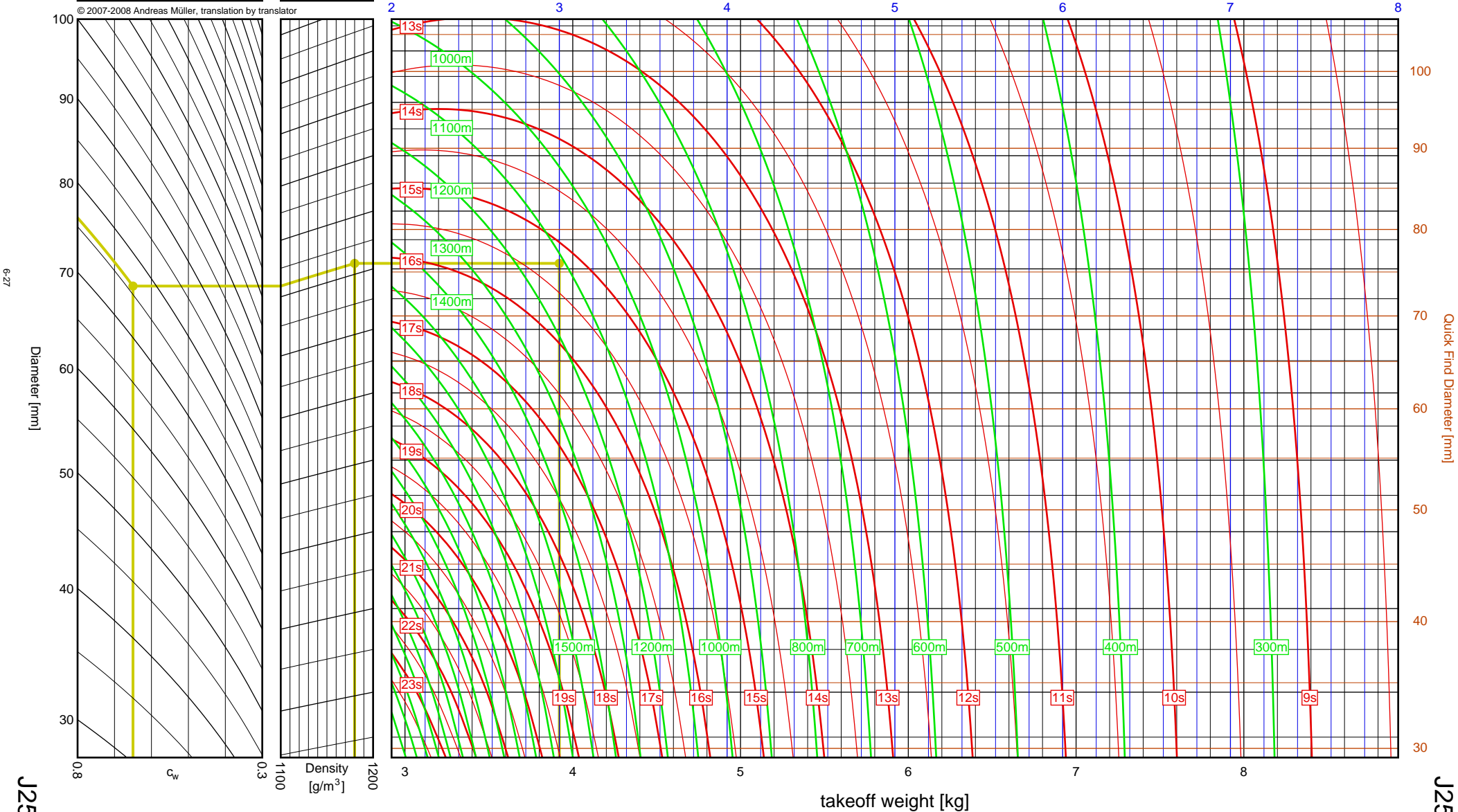
Aerotech	
J250FJ	
I_{tot}	= 707.2 Ns
F_{avg}	= 252.9 N
t_{burn}	= 2.80 s
d	= 54 mm
Data source: Aerotech	



1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 76mm, drag = 0.65, density = 1180 g/m³, weight = 3.920kg
 Results: time to apogee: 15.2s, expected altitude: 1112m

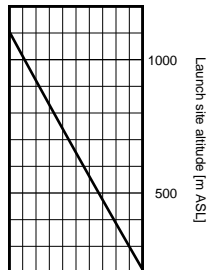
empty weight [kg]



Aerotech J500G

$I_{tot} = 722.7 \text{ Ns}$
 $F_{avg} = 498.4 \text{ N}$
 $t_{burn} = 1.45 \text{ s}$
 $d = 38 \text{ mm}$

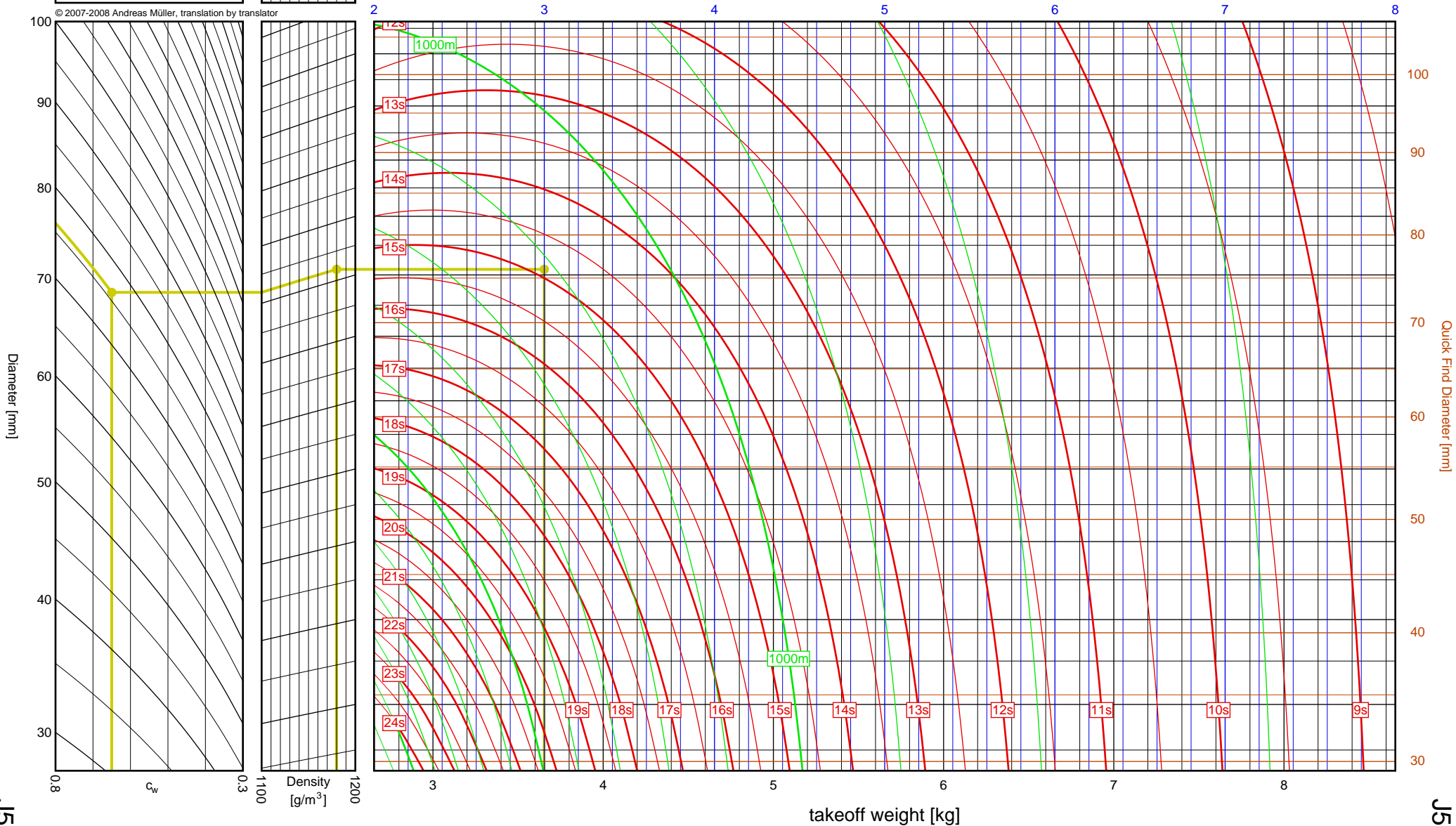
Data source:
Aerotech



1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 76mm, drag = 0.65, density = 1180 g/m³, weight = 3.654kg
 Results: time to apogee: 14.9s, expected altitude: 1221m

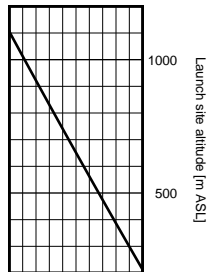
empty weight [kg]



Aerotech J315R

I_{tot} = 757.1 Ns
 F_{avg} = 291.2 N
 t_{burn} = 2.60 s
 d = 54 mm

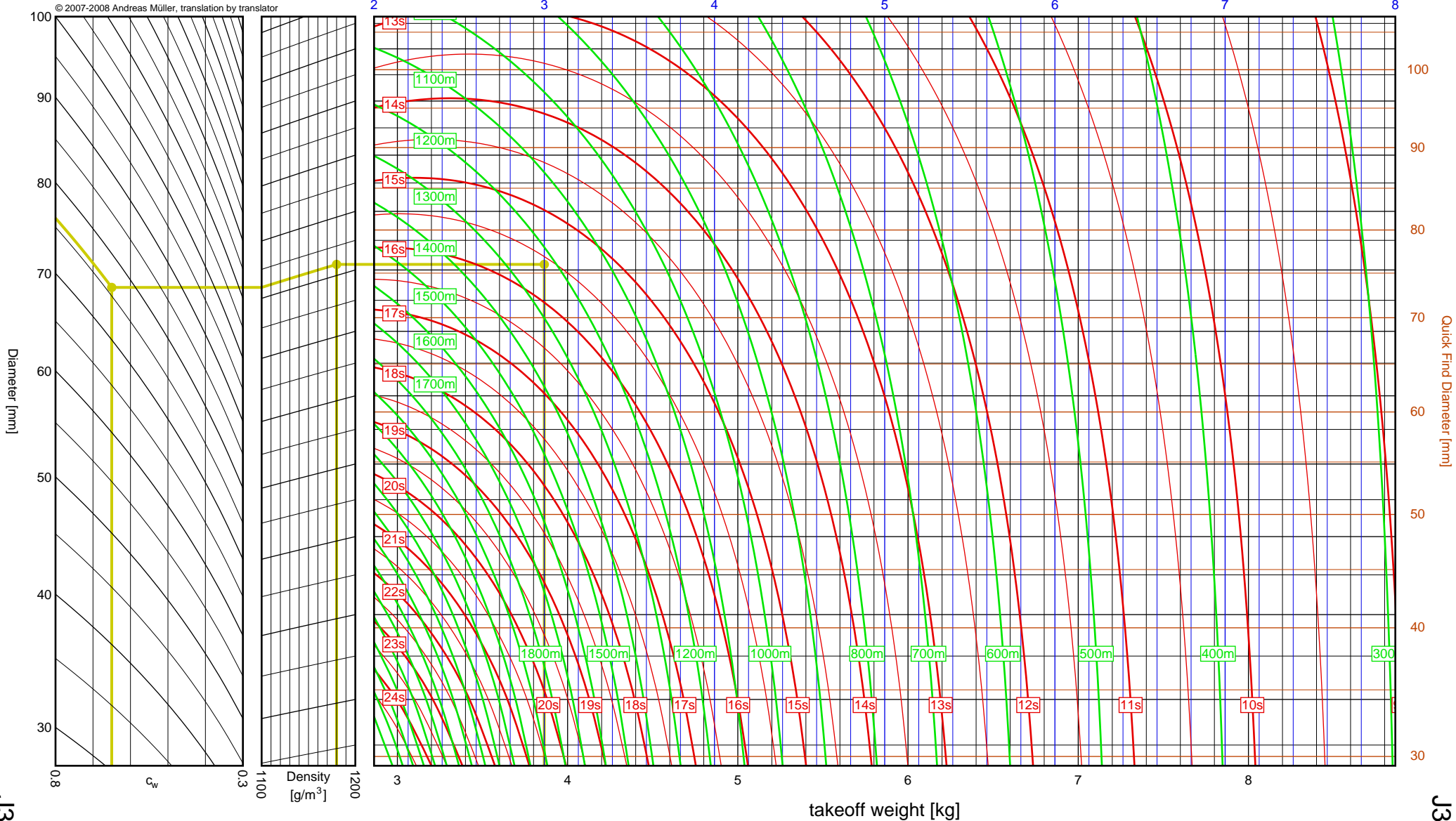
Data source:
Aerotech



1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 76mm, drag = 0.65, density = 1180 g/m³, weight = 3.863kg
 Results: time to apogee: 15.6s, expected altitude: 1224m

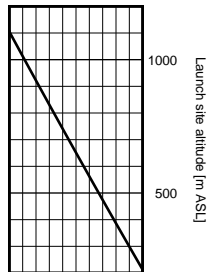
empty weight [kg]



Aerotech J460T

I_{tot} = 783.5 Ns
 F_{avg} = 412.4 N
 t_{burn} = 1.90 s
 d = 54 mm

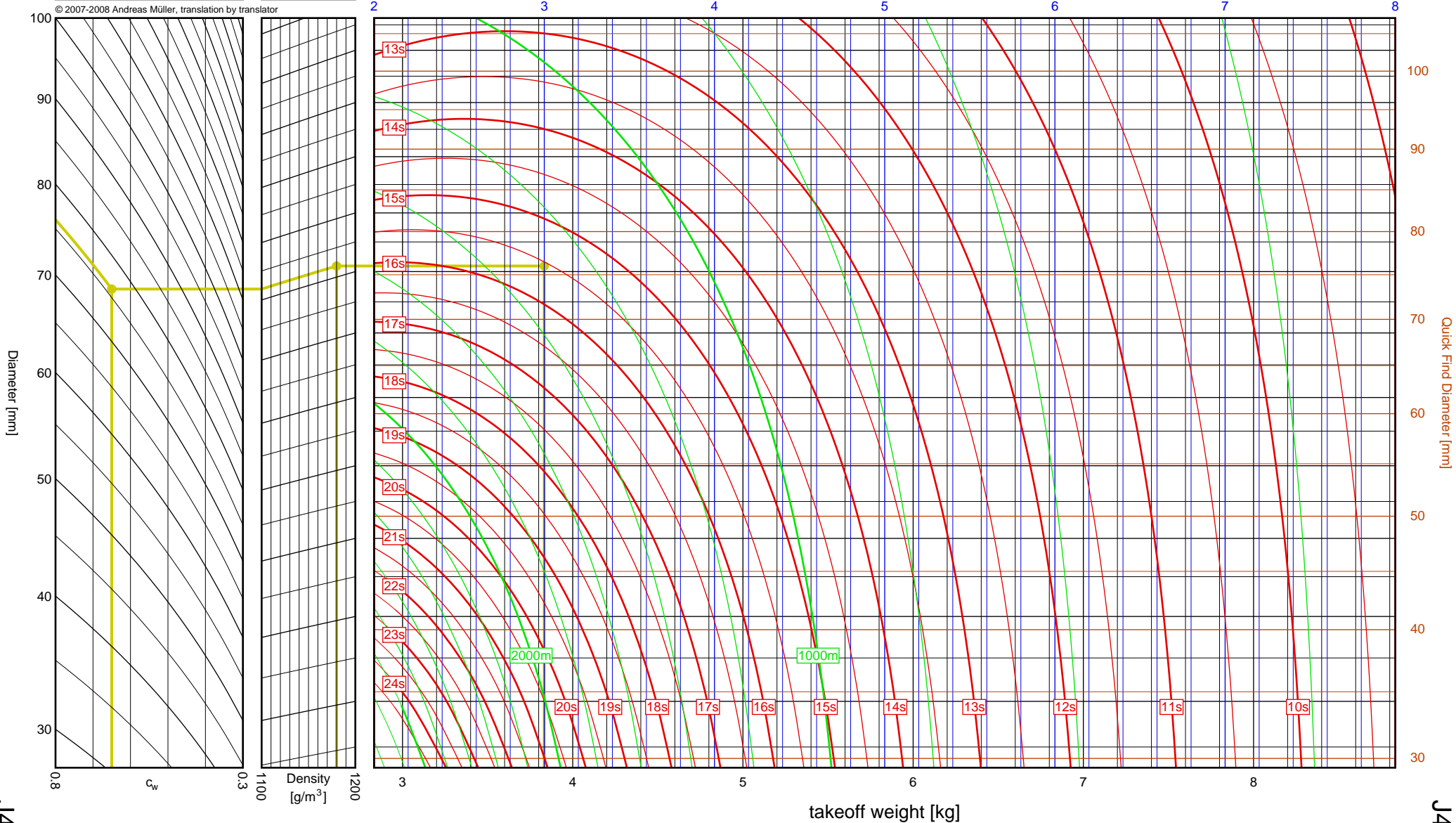
Data source:
Aerotech



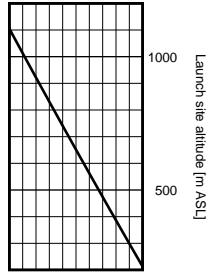
1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 76mm, drag = 0.65, density = 1180 g/m³, weight = 3.833kg
 Results: time to apogee: 15.6s, expected altitude: 1290m

empty weight [kg]



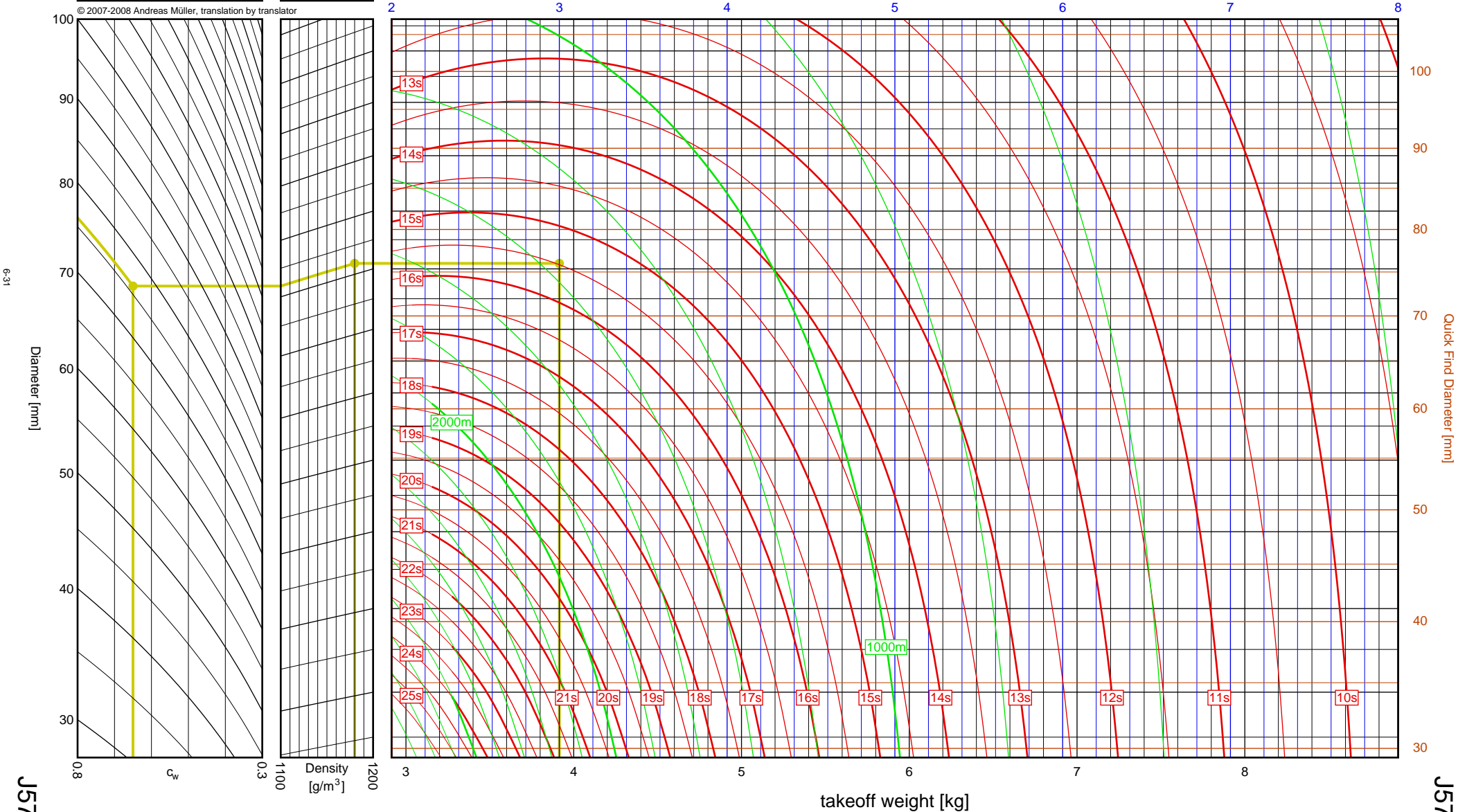
Aerotech	
J575FJ	
I_{tot}	= 800.6 Ns
F_{avg}	= 597.4 N
t_{burn}	= 1.34 s
d	= 38 mm
Data source: Aerotech	



1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 76mm, drag = 0.65, density = 1180 g/m³, weight = 3.914kg
 Results: time to apogee: 15.5s, expected altitude: 1366m

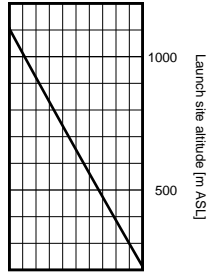
empty weight [kg]



Aerotech J275W

I_{tot} = 818.7 Ns
 F_{avg} = 255.8 N
 t_{burn} = 3.20 s
 d = 54 mm

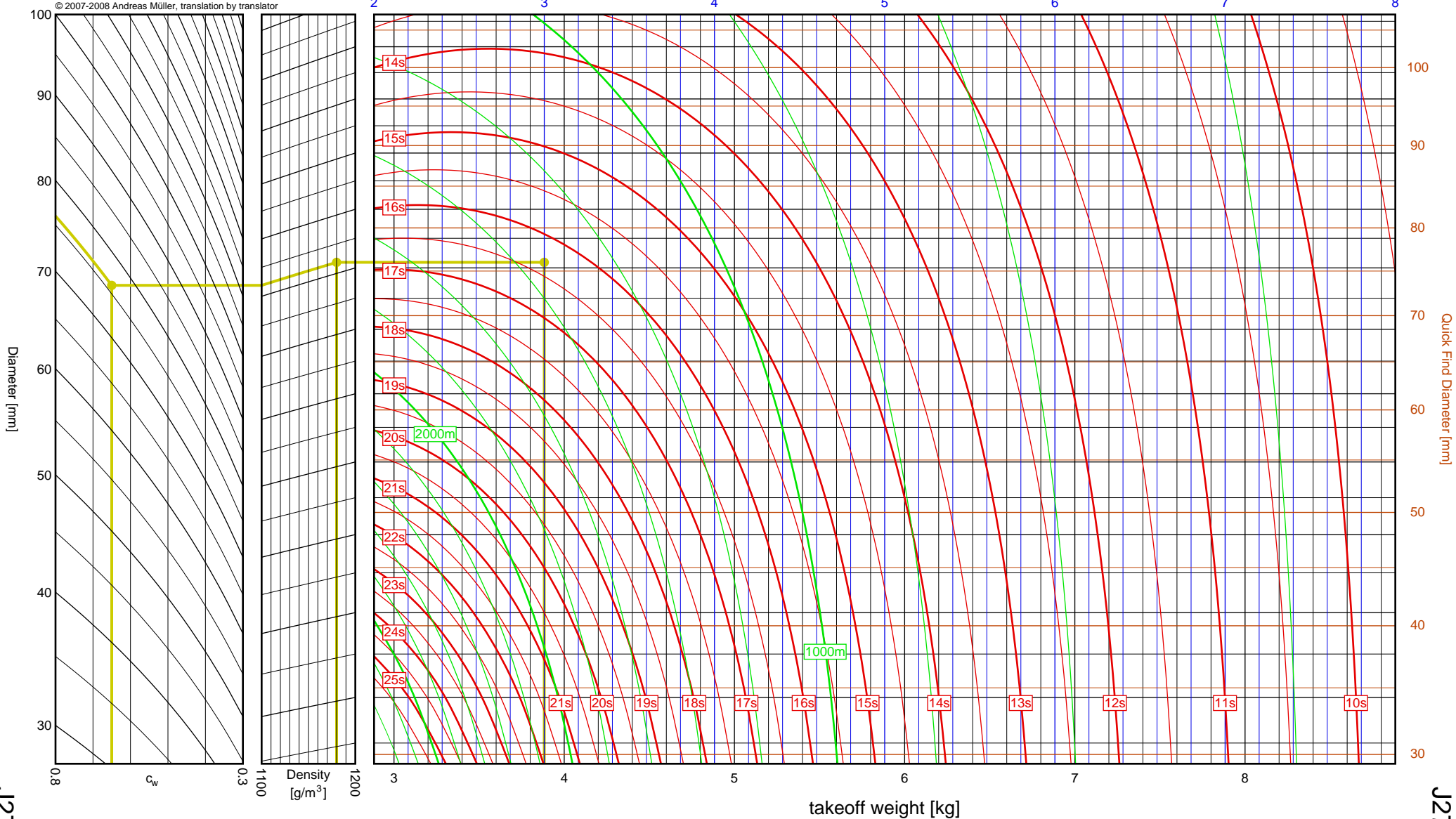
Data source:
Aerotech



1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 76mm, drag = 0.65, density = 1180 g/m³, weight = 3.883kg
 Results: time to apogee: 16.3s, expected altitude: 1342m

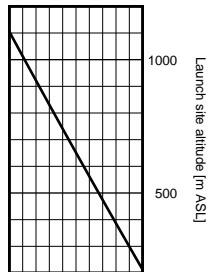
empty weight [kg]



Aerotech J145H

I_{tot} = 821.6 Ns
 F_{avg} = 141.7 N
 t_{burn} = 5.80 s
 d = 54 mm

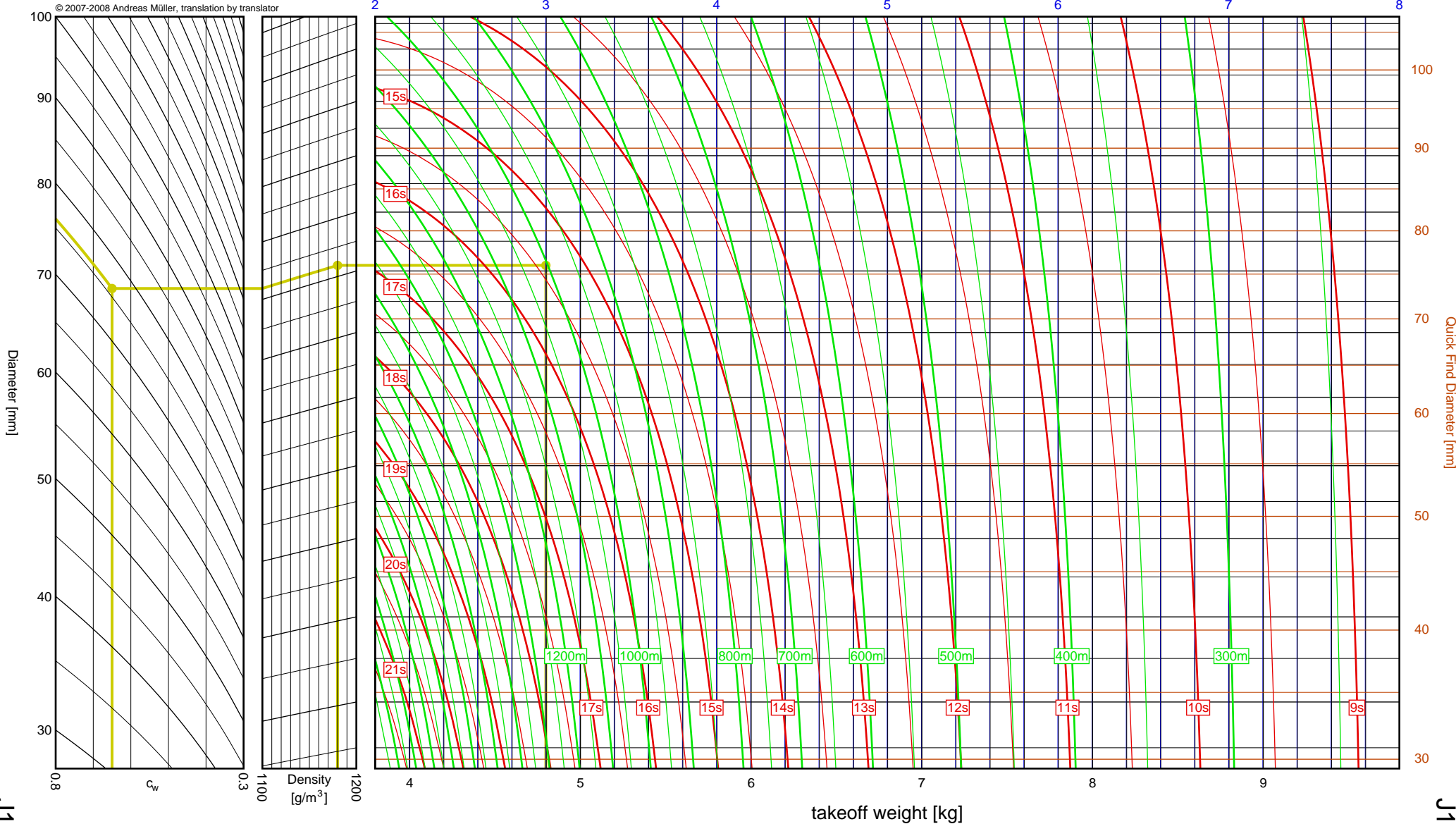
Data source:
Aerotech



1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 76mm, drag = 0.65, density = 1180 g/m³, weight = 4.797kg
 Results: time to apogee: 15.4s, expected altitude: 1004m

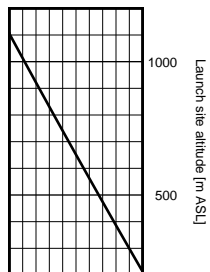
empty weight [kg]



Aerotech J180T

I_{tot} = 825.8 Ns
 F_{avg} = 183.5 N
 t_{burn} = 4.50 s
 d = 54 mm

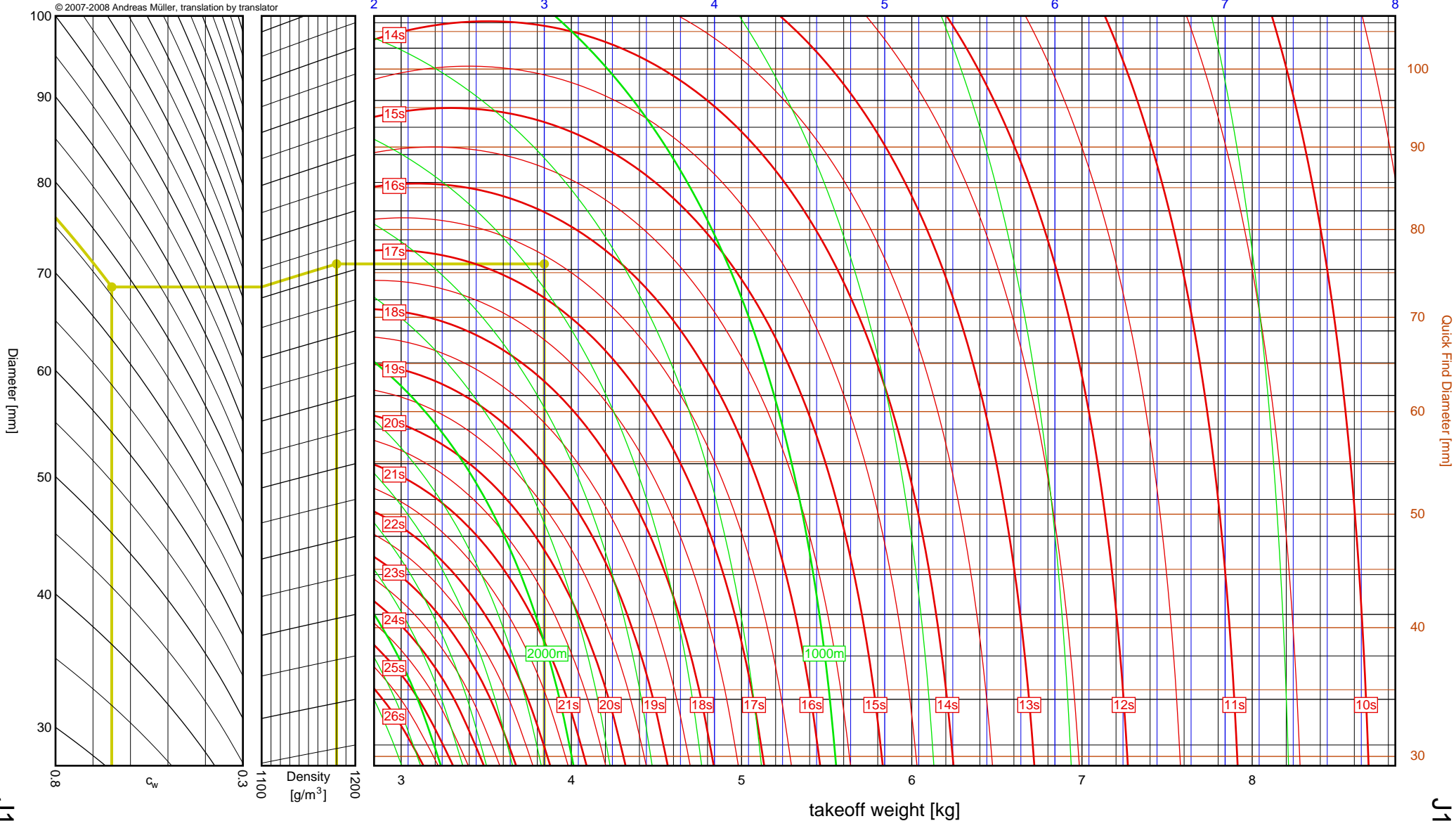
Data source:
Aerotech



1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 76mm, drag = 0.65, density = 1180 g/m³, weight = 3.841kg
 Results: time to apogee: 16.6s, expected altitude: 1361m

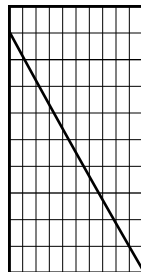
empty weight [kg]



Aerotech J210H

I_{tot} = 853.8 Ns
 F_{avg} = 213.5 N
 t_{burn} = 4.00 s
 d = 54 mm

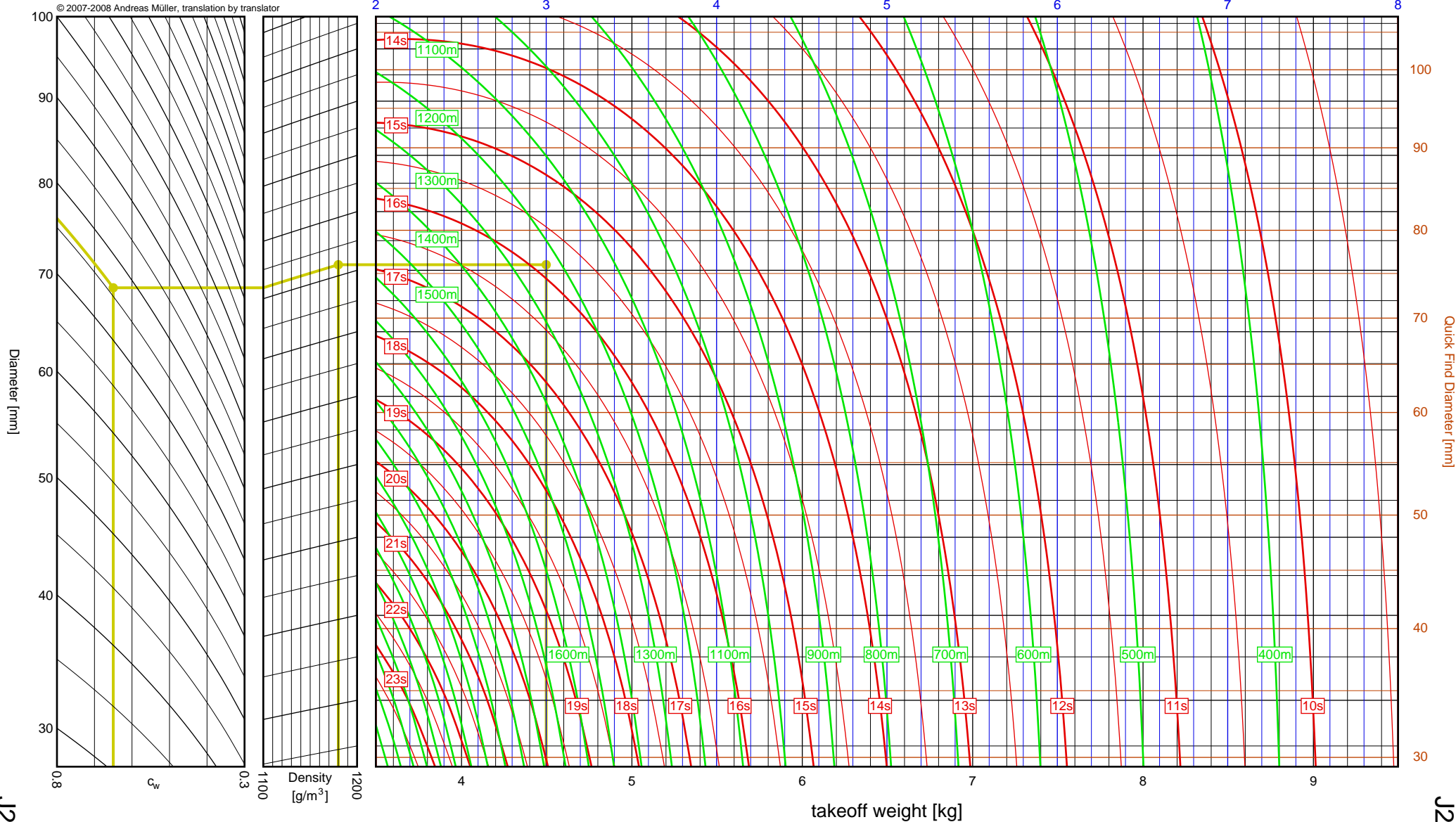
Data source:
Aerotech



1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 76mm, drag = 0.65, density = 1180 g/m³, weight = 4.497kg
 Results: time to apogee: 15.9s, expected altitude: 1230m

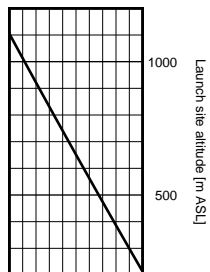
empty weight [kg]



Aerotech J825R

I_{tot} = 928.0 Ns
 F_{avg} = 786.4 N
 t_{burn} = 1.18 s
 d = 38 mm

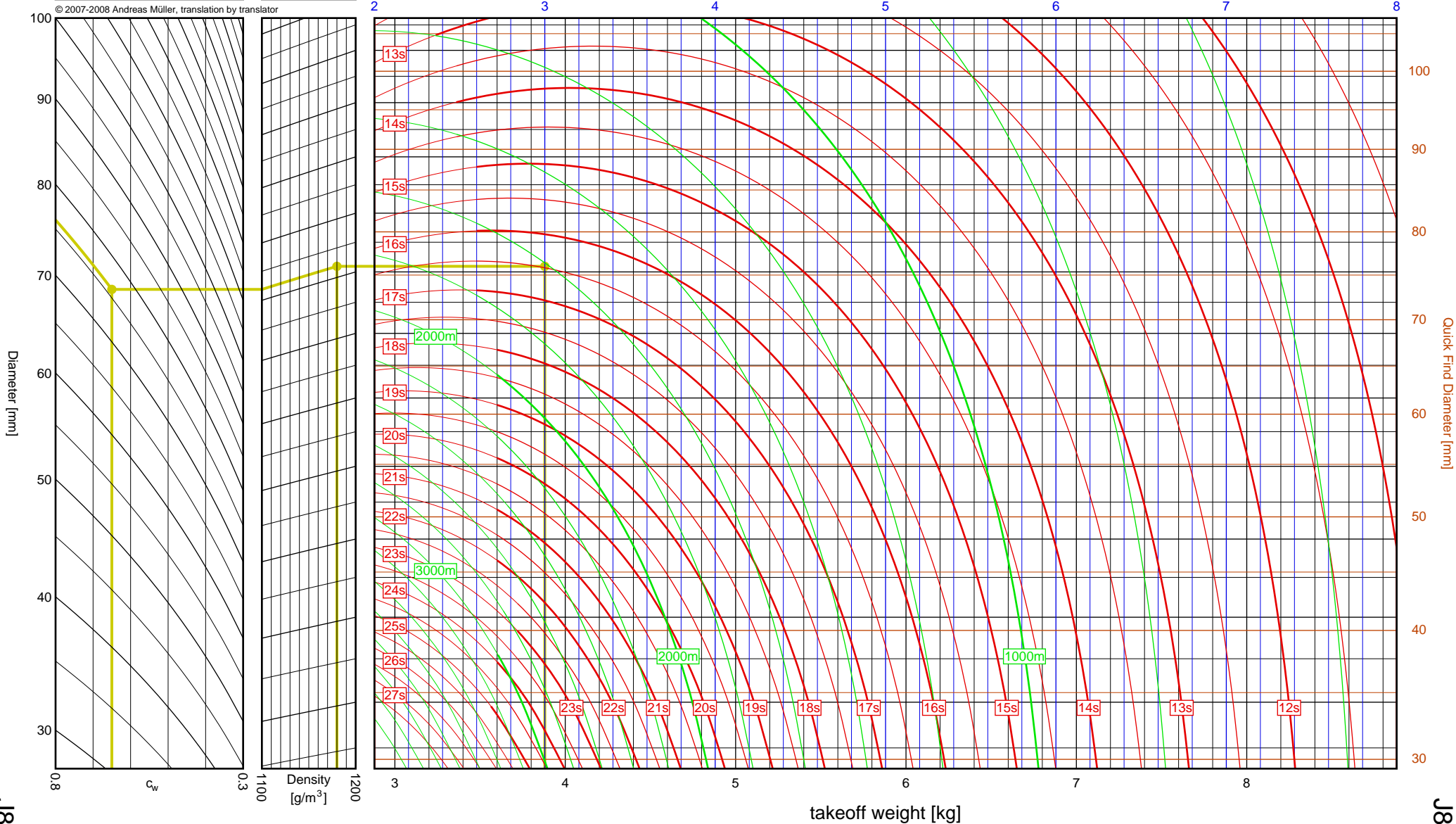
Data source:
Aerotech



1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 76mm, drag = 0.65, density = 1180 g/m³, weight = 3.880kg
 Results: time to apogee: 16.5s, expected altitude: 1609m

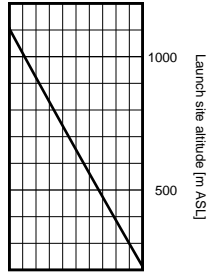
empty weight [kg]



Aerotech J135W

I_{tot} = 989.2 Ns
 F_{avg} = 141.3 N
 t_{burn} = 7.00 s
 d = 54 mm

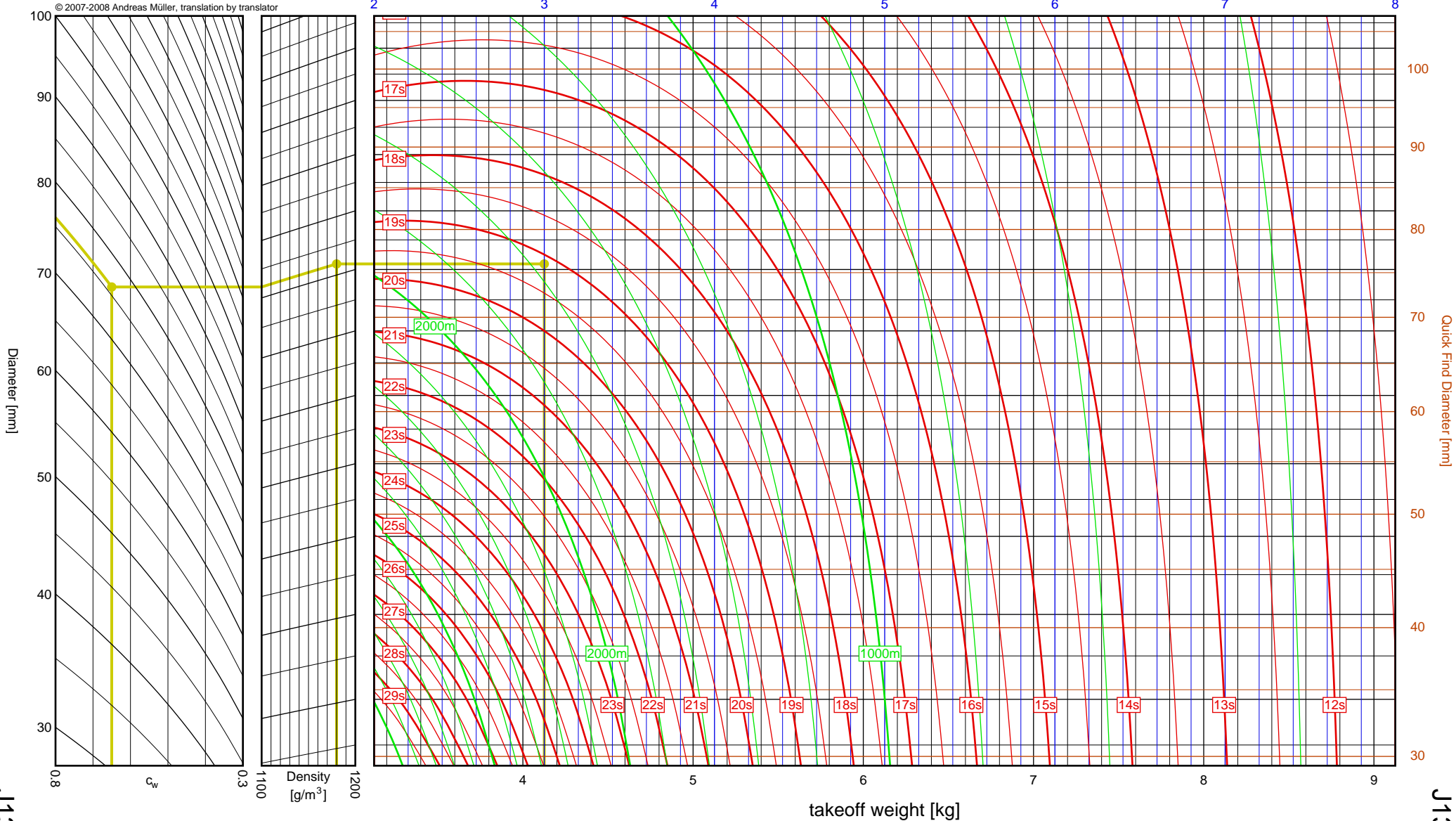
Data source:
Aerotech



1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 76mm, drag = 0.65, density = 1180 g/m³, weight = 4.126kg
 Results: time to apogee: 19.1s, expected altitude: 1567m

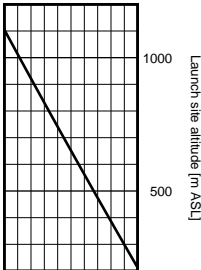
empty weight [kg]



Aerotech
J1999N

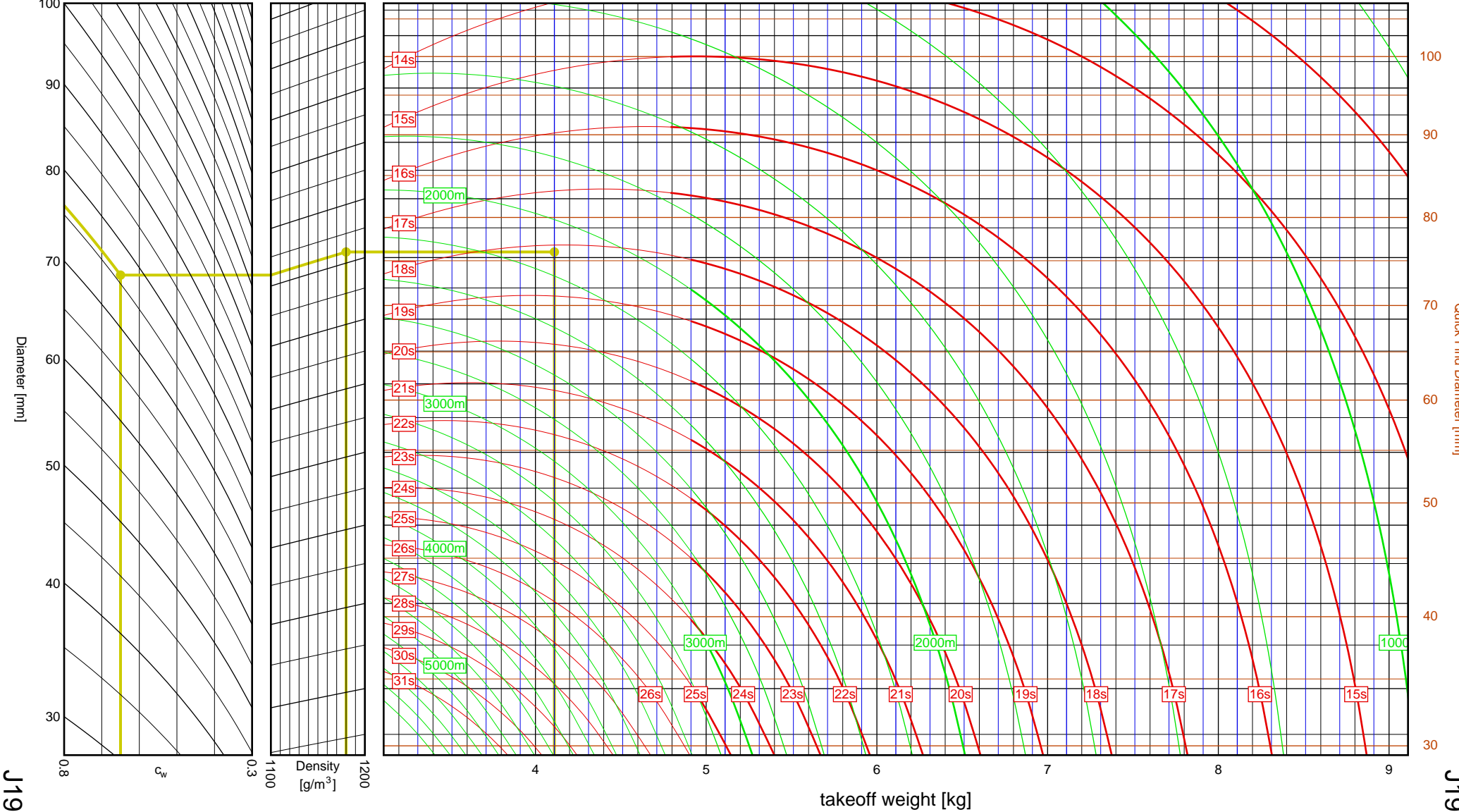
I_{tot} = 1250.3 Ns
 F_{avg} = 1866.2 N
 t_{burn} = 0.67 s
 d = 54 mm

Data source:
Aerotech



- From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
 - Move along horizontal to left border of density scale
 - Move up slanted line to vertical line matching density at launch site
 - From intersection point move horizontally to vertical line matching rocket mass
 - Read off expected time to apogee from red curves, altitude from green curves
- Sample: diameter = 76mm, drag = 0.65, density = 1180 g/m³, weight = 4.111kg
Results: time to apogee: 18.1s, expected altitude: 2114m

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J1999N

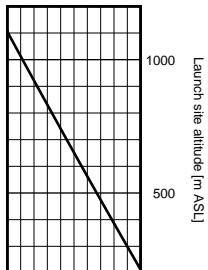
J1999N

Aerotech J350W.5

I_{tot} = 649.6 Ns
 F_{avg} = 433.0 N
 t_{burn} = 1.50 s
 d = 38 mm

Data source:
Aerotech

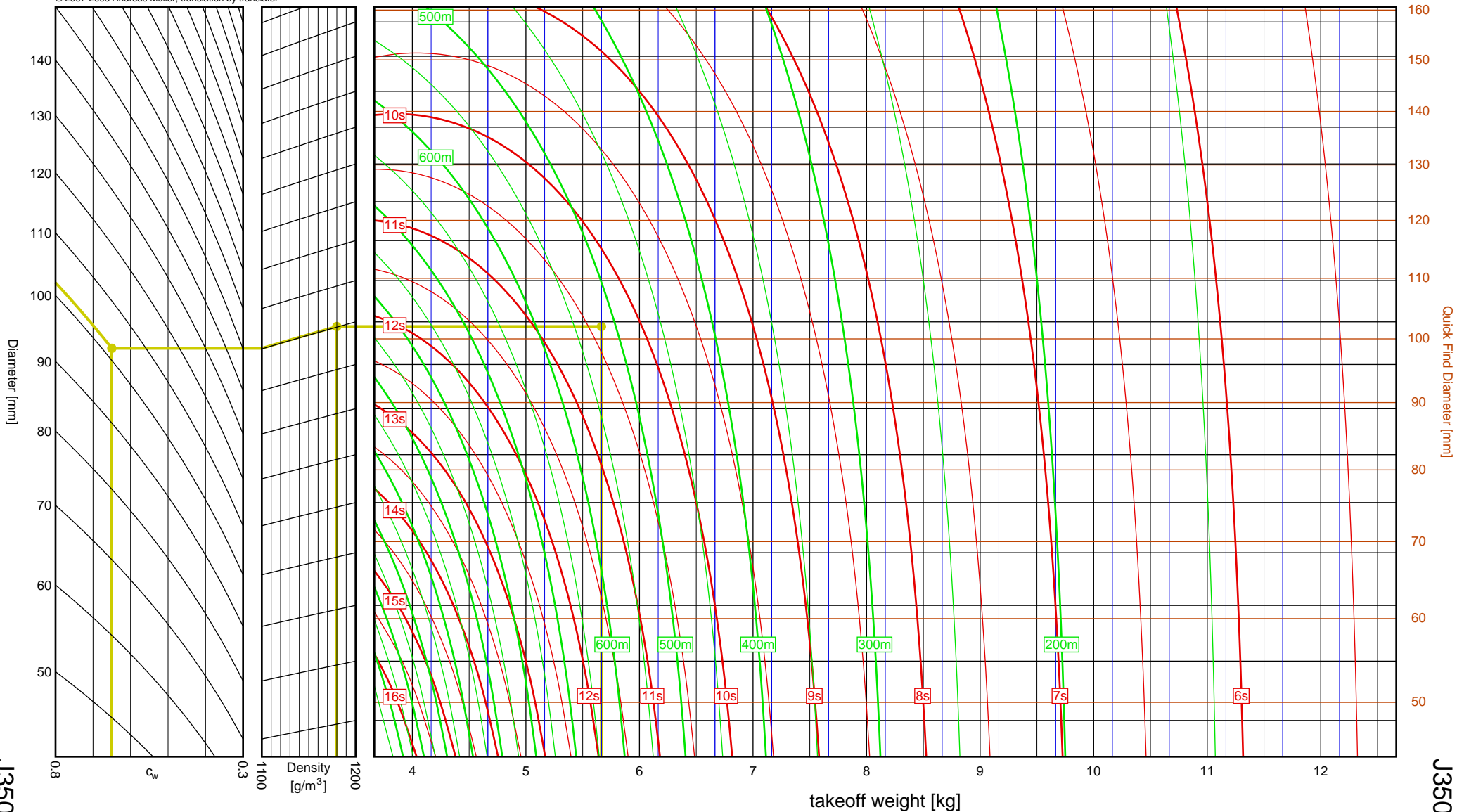
© 2007-2008 Andreas Müller, translation by translator



1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 102mm, drag = 0.65, density = 1180 g/m³, weight = 5.665kg
 Results: time to apogee: 10.4s, expected altitude: 517m

empty weight [kg]



4", J-K

J350W.5

Quick Find Diameter [mm]

50

60

70

80

90

100

110

120

130

140

150

160

170

180

190

200

210

220

230

240

250

260

270

280

290

300

310

320

330

340

350

360

370

380

390

400

410

420

430

440

450

460

470

480

490

500

510

520

530

540

550

560

570

580

590

600

610

620

630

640

650

660

670

680

690

700

710

720

730

740

750

760

770

780

790

800

810

820

830

840

850

860

870

880

890

900

910

920

930

940

950

960

970

980

990

1000

1010

1020

1030

1040

1050

1060

1070

1080

1090

1100

1110

1120

1130

1140

1150

1160

1170

1180

1190

1200

1210

1220

1230

1240

1250

1260

1270

1280

1290

1300

1310

1320

1330

1340

1350

1360

1370

1380

1390

1400

1410

1420

1430

1440

1450

1460

1470

1480

1490

1500

1510

1520

1530

1540

1550

1560

1570

1580

1590

1600

1610

1620

1630

1640

1650

1660

1670

1680

1690

1700

1710

1720

1730

1740

1750

1760

1770

1780

1790

1800

1810

1820

1830

1840

1850

1860

1870

1880

1890

1900

1910

1920

1930

1940

1950

1960

1970

1980

1990

2000

2010

2020

2030

2040

2050

2060

2070

2080

2090

2100

2110

2120

2130

2140

2150

2160

2170

2180

2190

2200

2210

2220

2230

2240

2250

2260

2270

2280

2290

2300

2310

2320

2330

2340

2350

2360

2370

2380

2390

2400

2410

2420

2430

2440

2450

2460

2470

2480

2490

2500

2510

2520

2530

2540

2550

2560

2570

2580

2590

2600

2610

2620

2630

2640

2650

2660

2670

2680

2690

2700

2710

2720

2730

2740

2750

2760

2770

2780

2790

2800

2810

2820

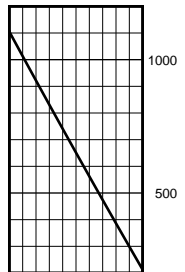
2830

Aerotech J420R

I_{tot} = 651.0 Ns
 F_{avg} = 404.3 N
 t_{burn} = 1.61 s
 d = 38 mm

Data source:
Aerotech

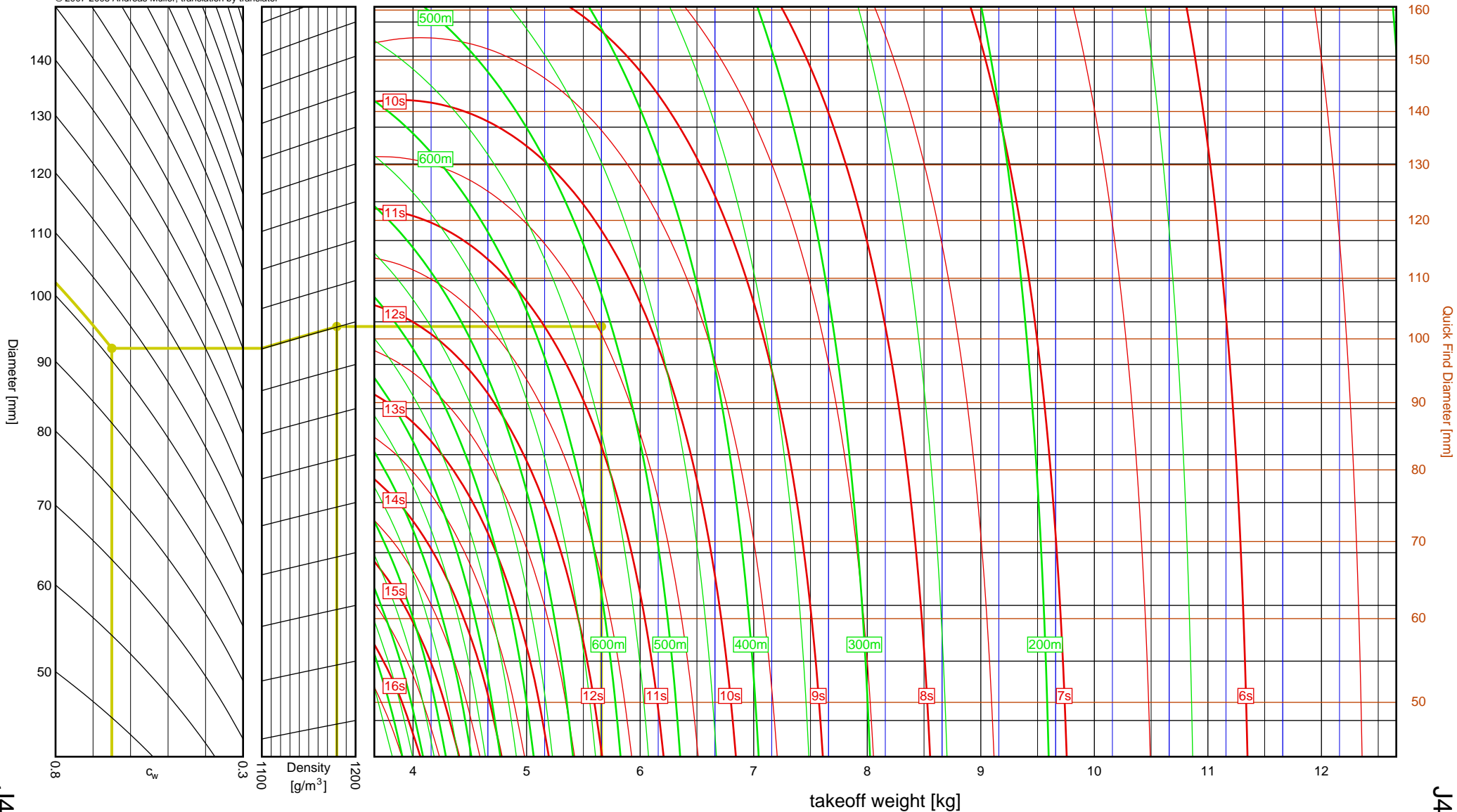
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1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 102mm, drag = 0.65, density = 1180 g/m³, weight = 5.659kg
 Results: time to apogee: 10.5s, expected altitude: 512m

empty weight [kg]

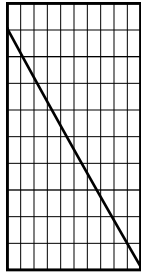


4", J-K⁷

J420R

J420R

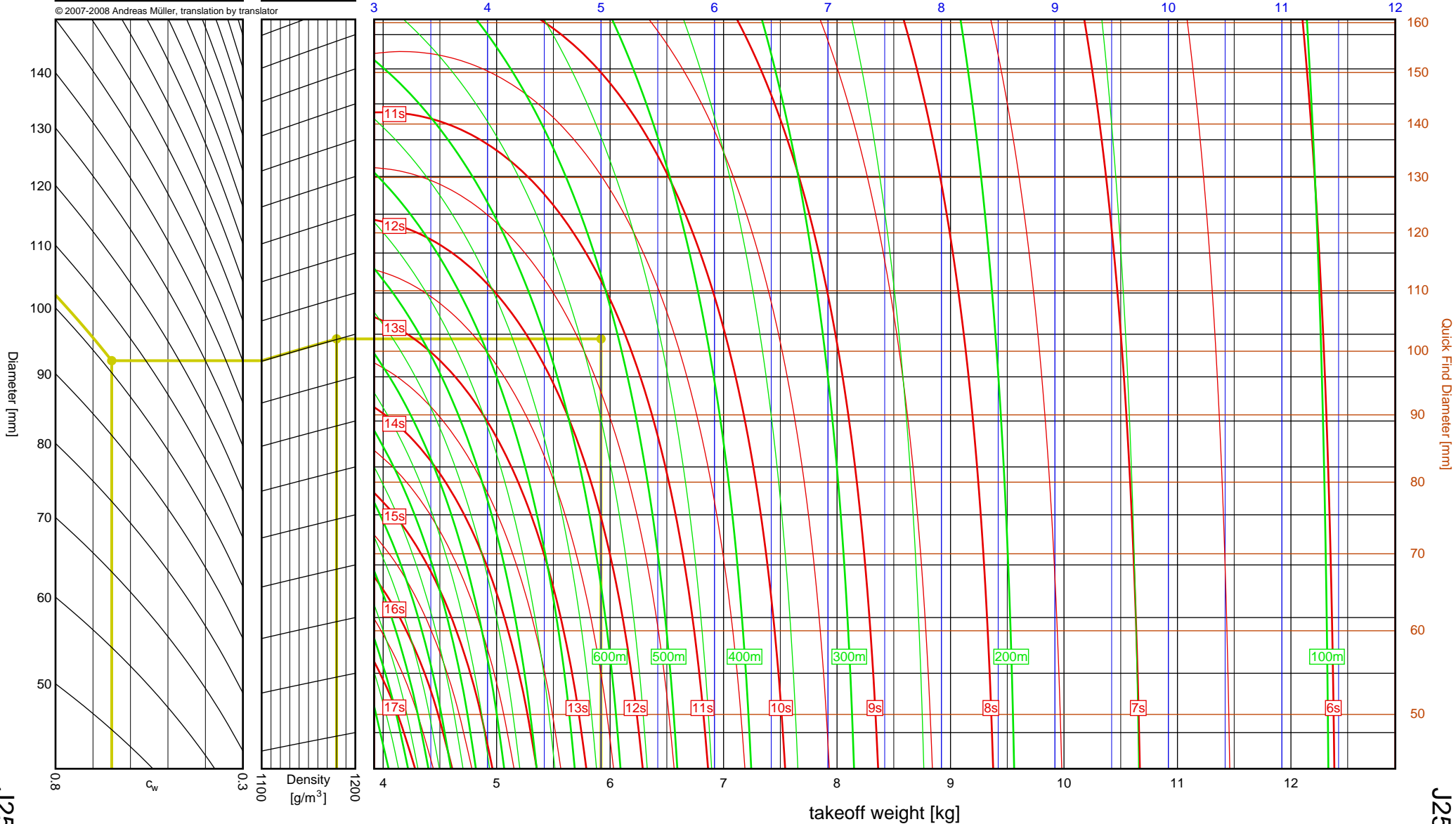
Aerotech	
J250FJ	
I_{tot}	= 707.2 Ns
F_{avg}	= 252.9 N
t_{burn}	= 2.80 s
d	= 54 mm
Data source: Aerotech	



1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 102mm, drag = 0.65, density = 1180 g/m³, weight = 5.920kg
 Results: time to apogee: 11.3s, expected altitude: 523m

empty weight [kg]



takeoff weight [kg]

4", J-K

Quick Find Diameter [mm]

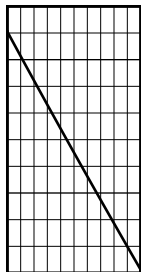
J250FJ

J250FJ

Aerotech J500G

I_{tot} = 722.7 Ns
 F_{avg} = 498.4 N
 t_{burn} = 1.45 s
 d = 38 mm

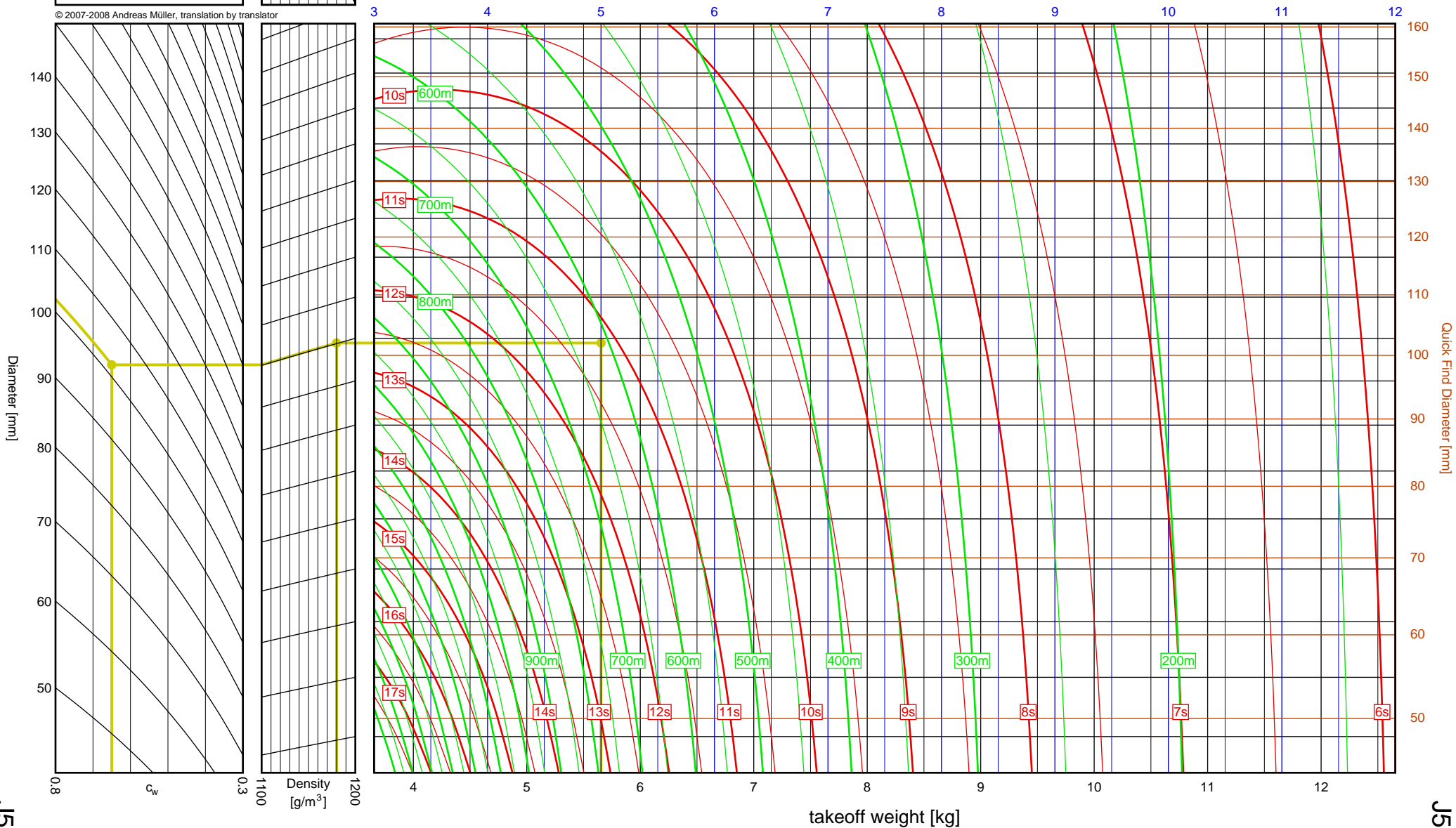
Data source:
Aerotech



1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 102mm, drag = 0.65, density = 1180 g/m³, weight = 5.654kg
 Results: time to apogee: 11.2s, expected altitude: 610m

empty weight [kg]



takeoff weight [kg]

4", J-K⁷

J500G

Quick Find Diameter [mm]

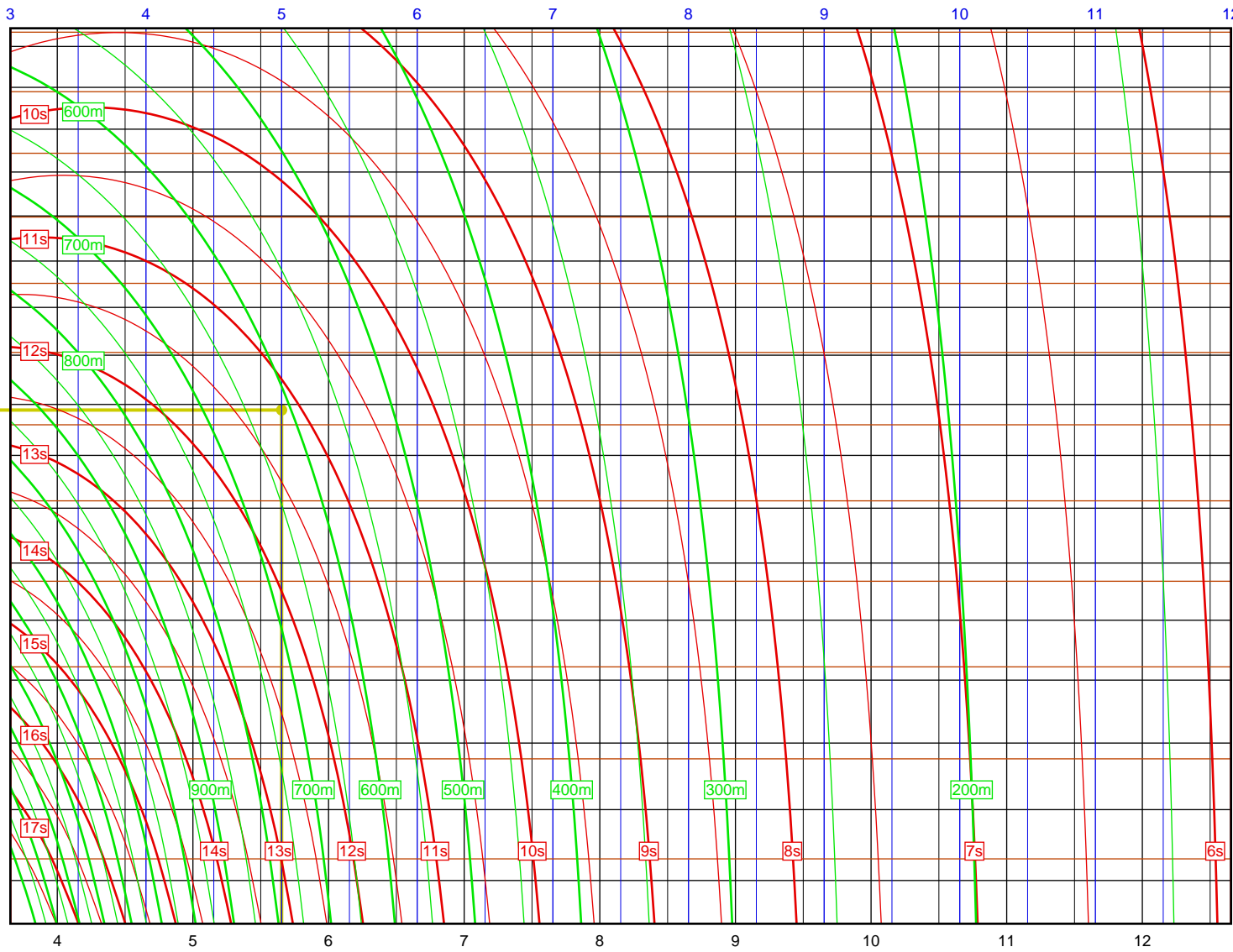
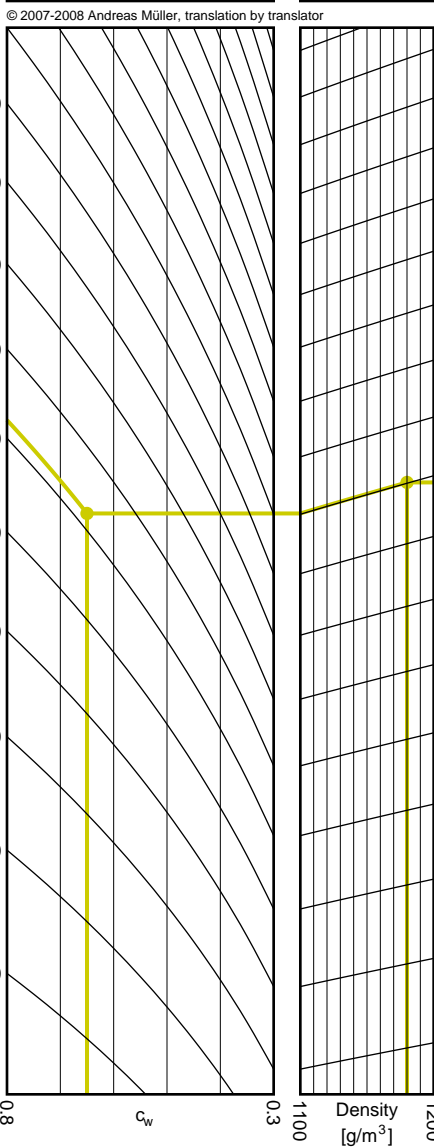
Diameter [mm]

c_w

Density
[g/m³]

J500G

7-5

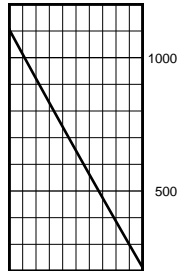


Aerotech J315R

I_{tot} = 757.1 Ns
 F_{avg} = 291.2 N
 t_{burn} = 2.60 s
 d = 54 mm

Data source:
Aerotech

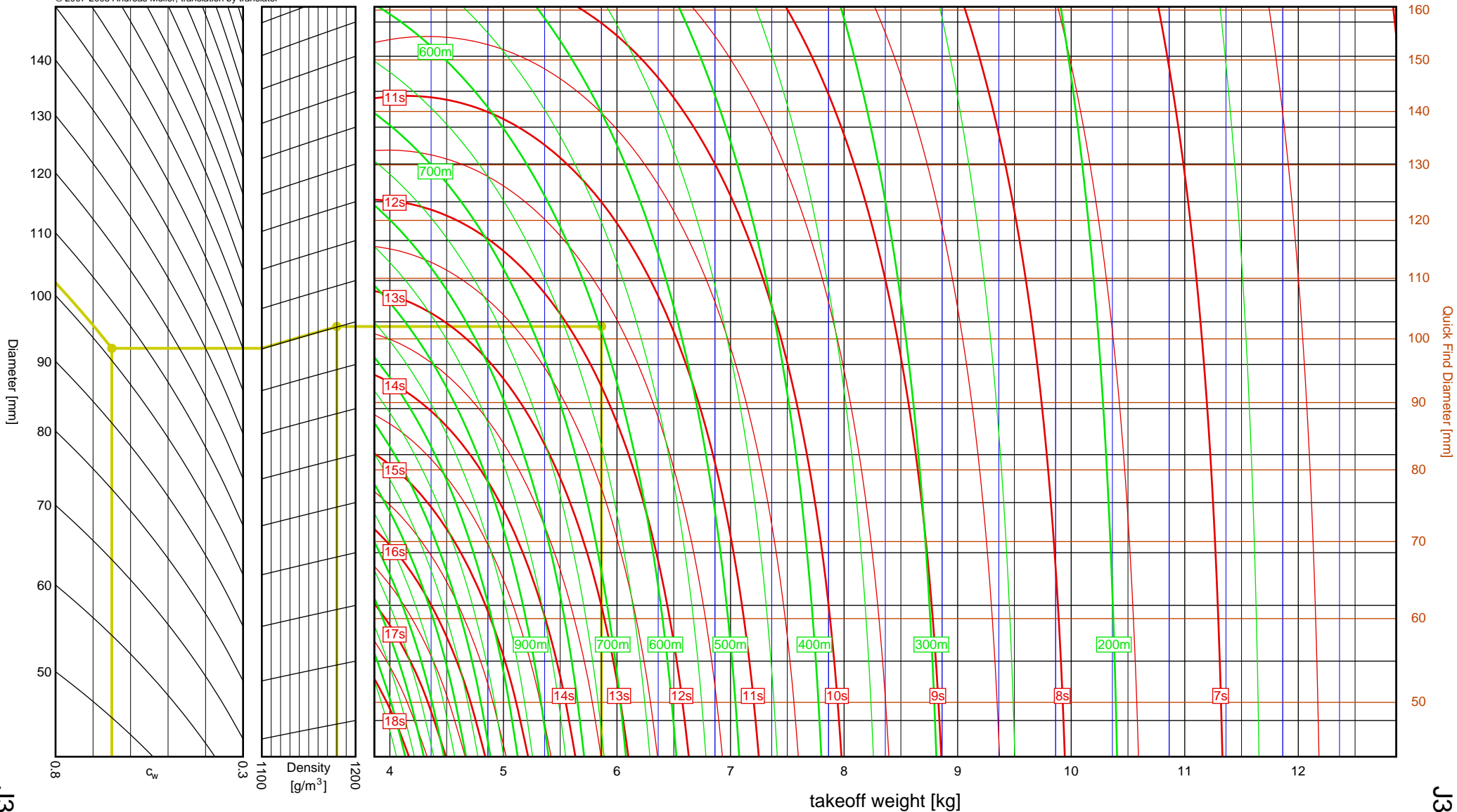
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1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 102mm, drag = 0.65, density = 1180 g/m³, weight = 5.863kg
 Results: time to apogee: 11.7s, expected altitude: 598m

empty weight [kg]



takeoff weight [kg]

4", J-K⁷

J315R

Quick-Find Diameter [mm]

Diameter [mm]

c_w

Density
[g/m³]

Quick-Find Diameter [mm]

J315R

Quick-Find Diameter [mm]

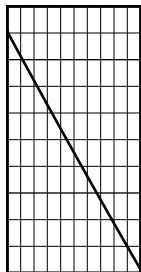
J315R

Aerotech J460T

I_{tot} = 783.5 Ns
 F_{avg} = 412.4 N
 t_{burn} = 1.90 s
 d = 54 mm

Data source:
Aerotech

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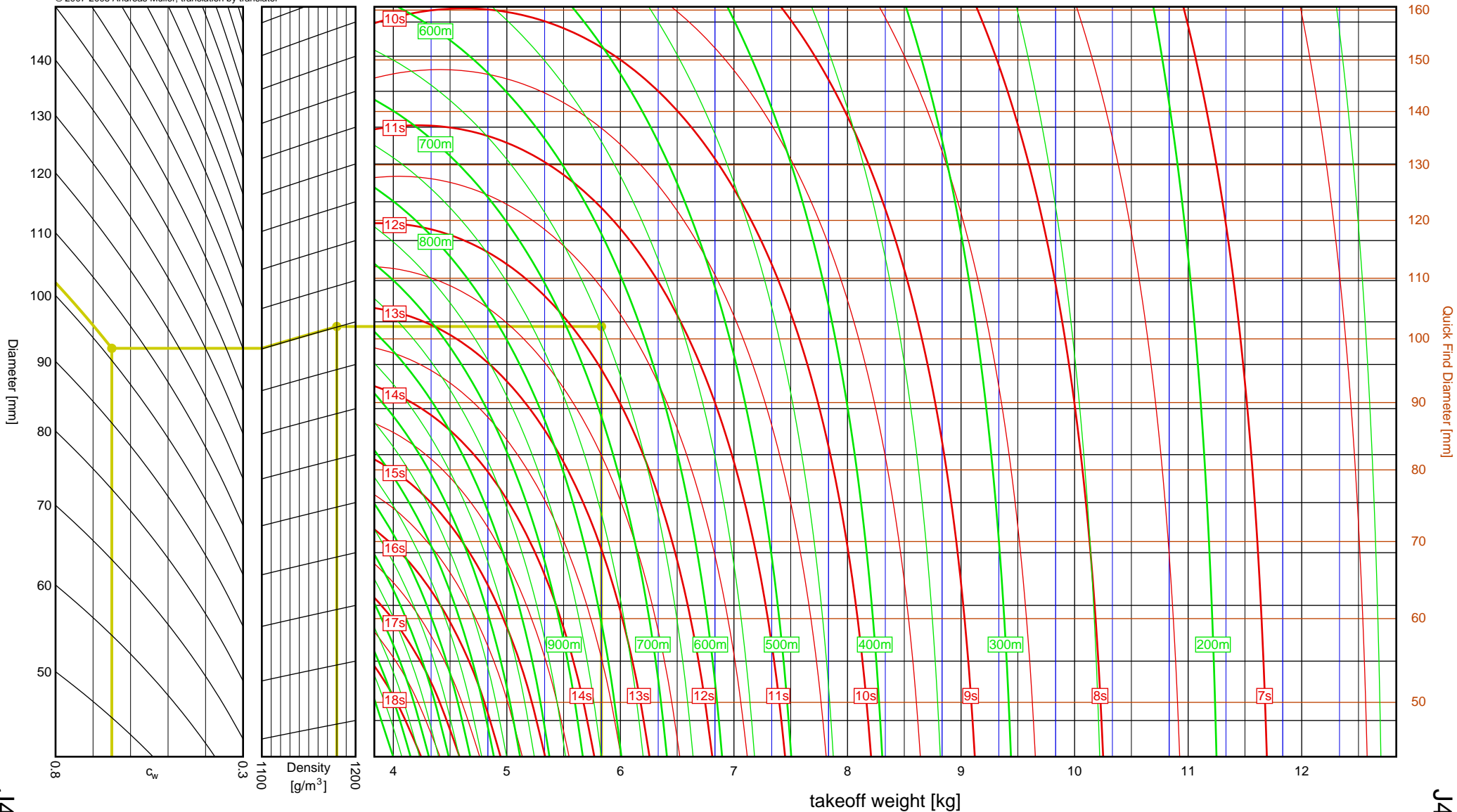


Launch site altitude [m ASL]

1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 102mm, drag = 0.65, density = 1180 g/m³, weight = 5.833kg
 Results: time to apogee: 11.7s, expected altitude: 651m

empty weight [kg]



takeoff weight [kg]

4", J-K⁷

J460T

Quick Find Diameter [mm]

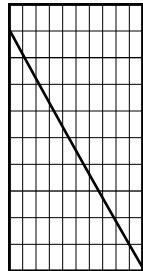
Diameter [mm]

c_w

Density [g/m³]

J460T

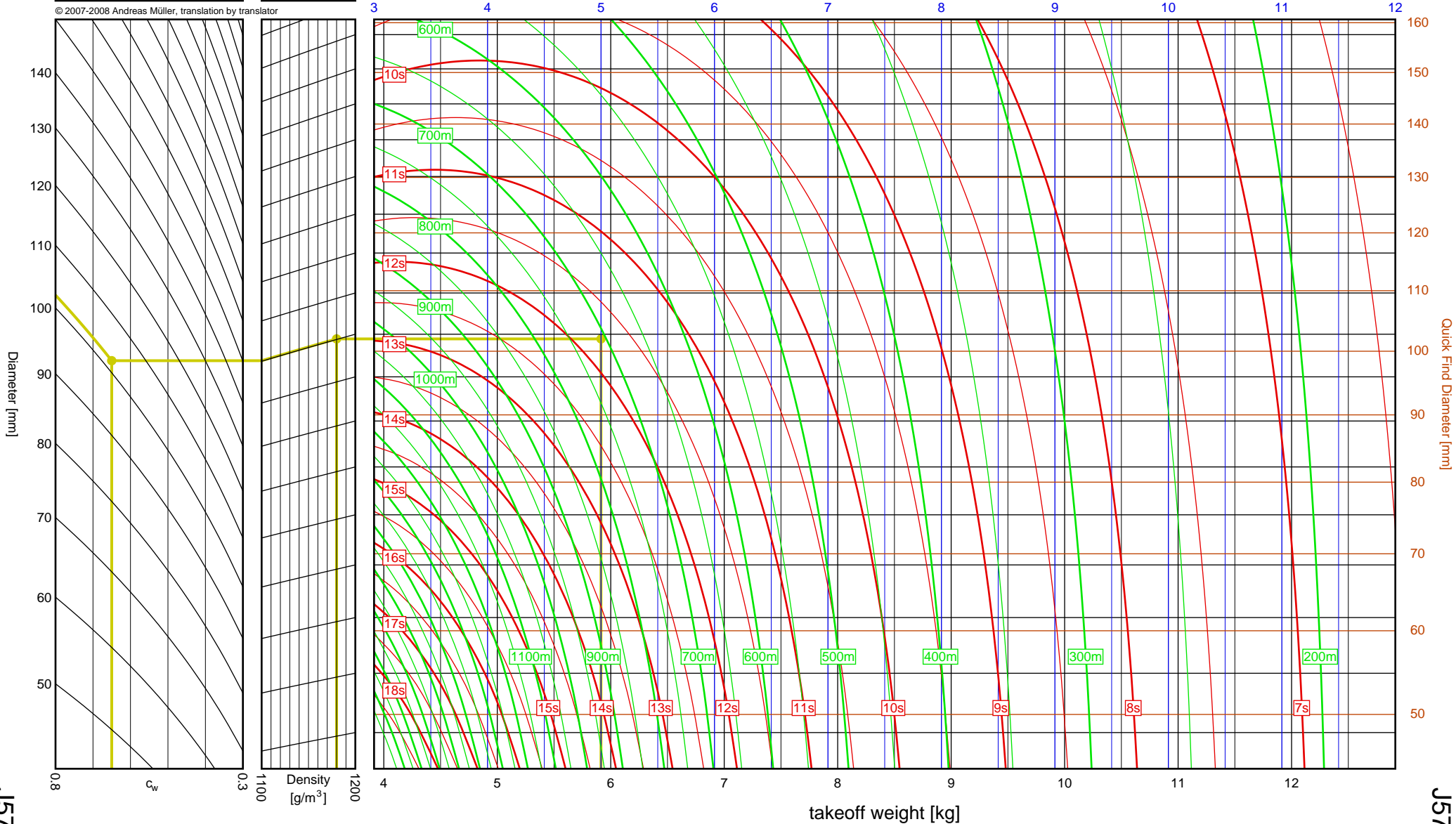
Aerotech J575FJ	
I_{tot}	= 800.6 Ns
F_{avg}	= 597.4 N
t_{burn}	= 1.34 s
d	= 38 mm
Data source: Aerotech	



1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 102mm, drag = 0.65, density = 1180 g/m³, weight = 5.914kg
 Results: time to apogee: 11.8s, expected altitude: 707m

empty weight [kg]



takeoff weight [kg]

4", J-K⁷

Quick-Find Diameter [mm]

J575FJ

J575FJ

7-8

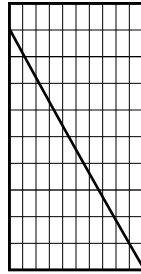
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Aerotech J275W

I_{tot} = 818.7 Ns
 F_{avg} = 255.8 N
 t_{burn} = 3.20 s
 d = 54 mm

Data source:
Aerotech

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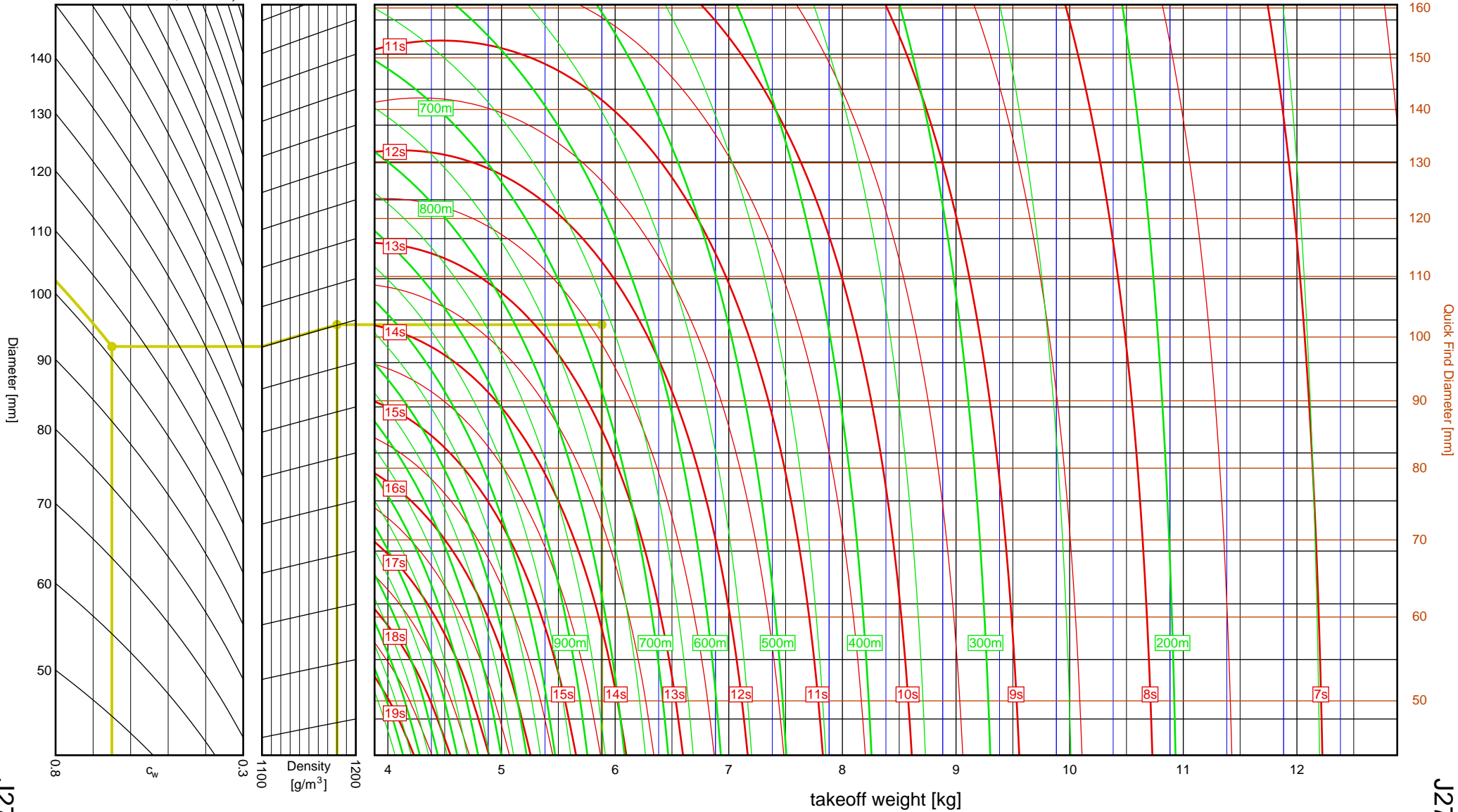


Launch site altitude [m ASL]

1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 102mm, drag = 0.65, density = 1180 g/m³, weight = 5.883kg
 Results: time to apogee: 12.4s, expected altitude: 665m

empty weight [kg]



takeoff weight [kg]

4", J-K⁷

Quick-Find Diameter [mm]

Diameter [mm]

c_w

Density [g/m³]

J275W

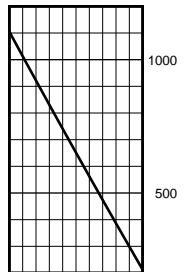
J275W

Aerotech J145H

I_{tot} = 821.6 Ns
 F_{avg} = 141.7 N
 t_{burn} = 5.80 s
 d = 54 mm

Data source:
Aerotech

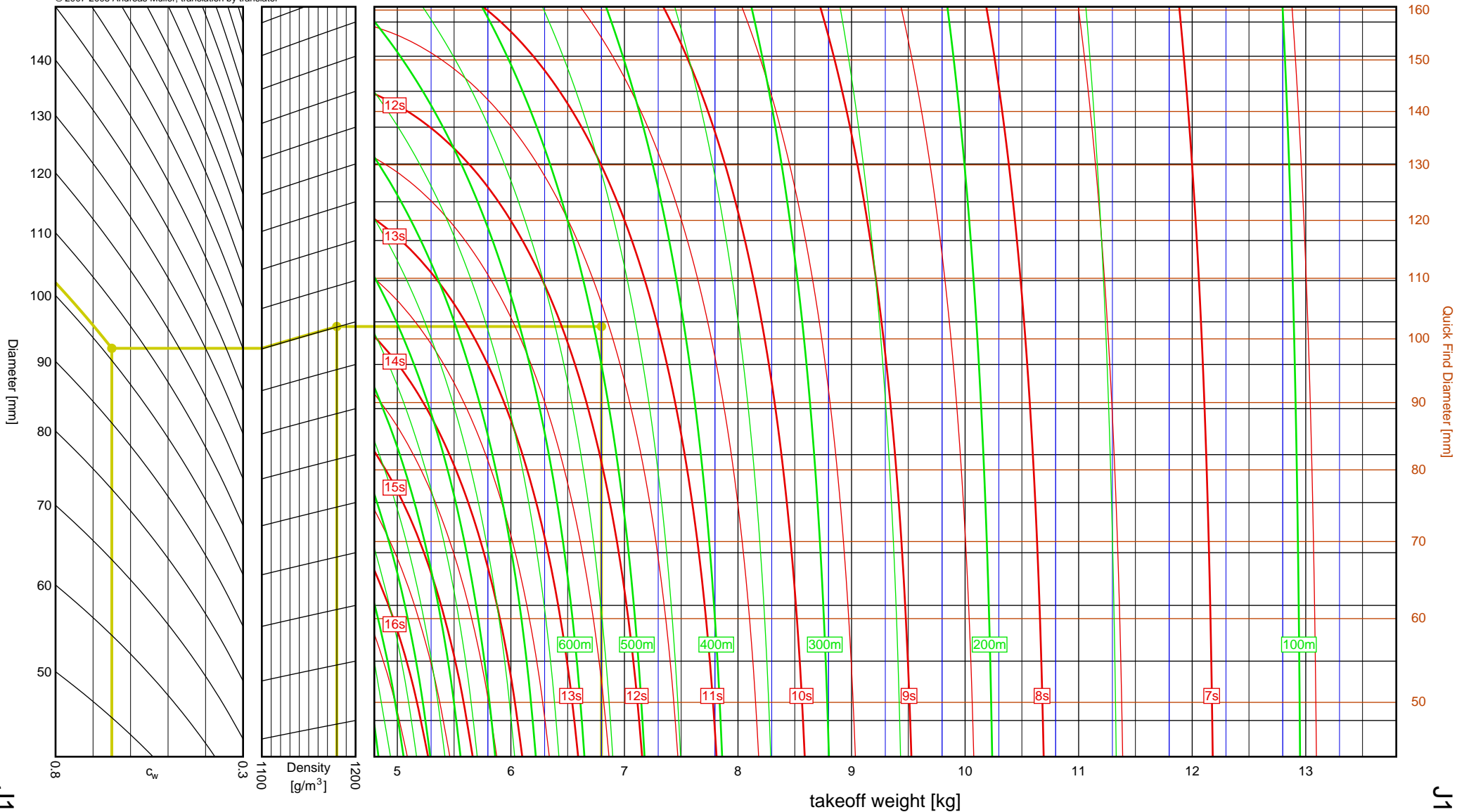
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1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 102mm, drag = 0.65, density = 1180 g/m³, weight = 6.797kg
 Results: time to apogee: 11.6s, expected altitude: 491m

empty weight [kg]



4", J-K⁷

J145H

Quick-Find Diameter [mm]

J145H

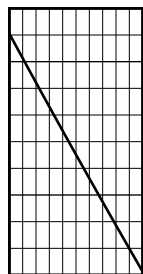
Diameter [mm]

7-10

Aerotech J180T

I_{tot} = 825.8 Ns
 F_{avg} = 183.5 N
 t_{burn} = 4.50 s
 d = 54 mm

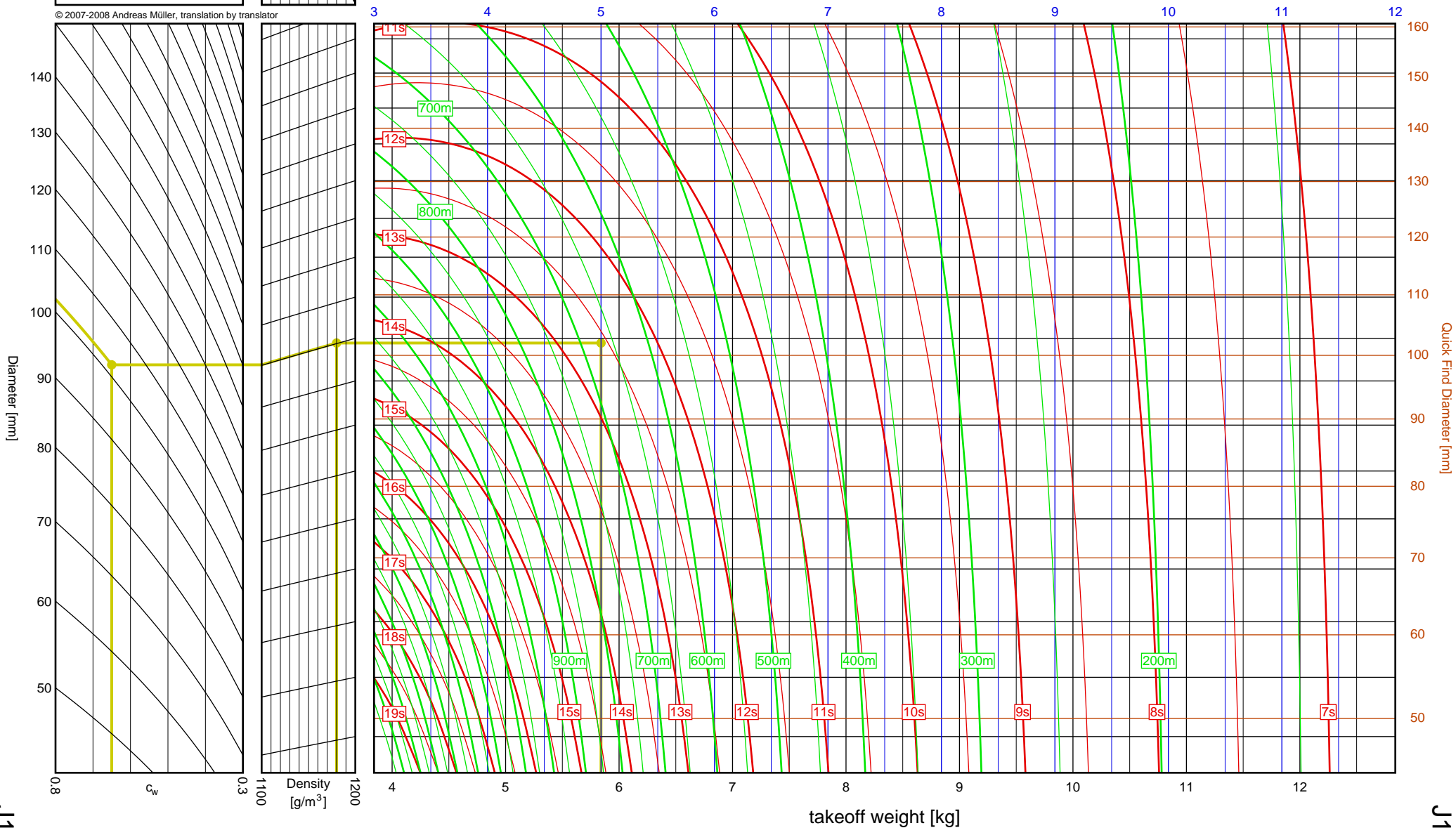
Data source:
Aerotech



1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 102mm, drag = 0.65, density = 1180 g/m³, weight = 5.841kg
 Results: time to apogee: 12.6s, expected altitude: 669m

empty weight [kg]



4", J-K⁷

J180T

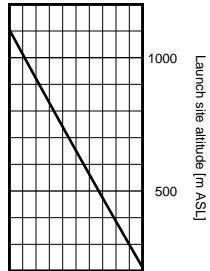
Quick Find Diameter [mm]

J180T

7-11

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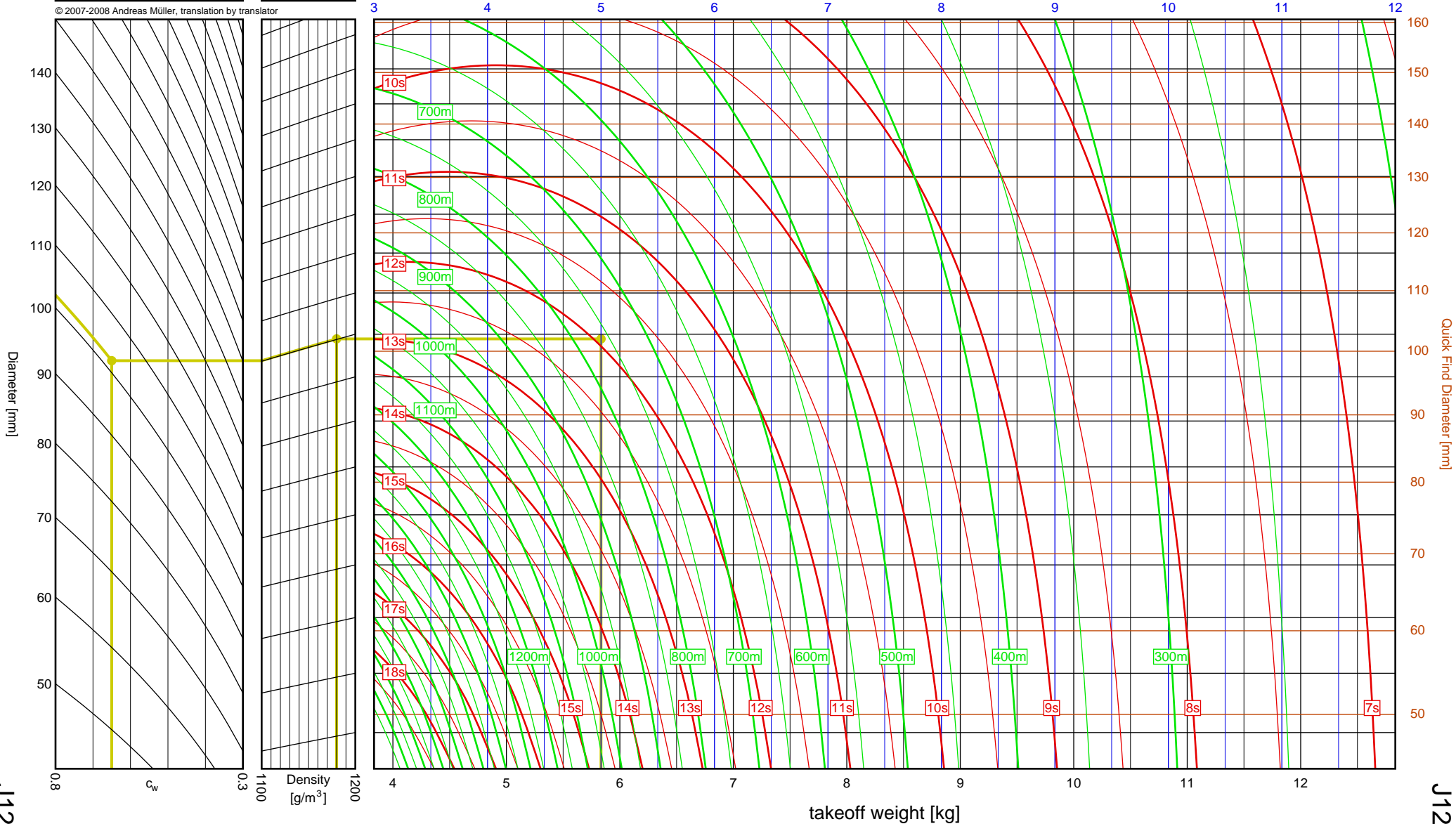
Aerotech	
J1299N	
I_{tot}	= 850.2 Ns
F_{avg}	= 1254.0 N
t_{burn}	= 0.68 s
d	= 54 mm
Data source: Aerotech	



1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 102mm, drag = 0.65, density = 1180 g/m³, weight = 5.834kg
 Results: time to apogee: 11.9s, expected altitude: 762m

empty weight [kg]



4", J-K⁷

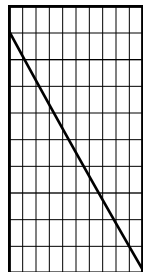
J1299N

J1299N

Aerotech J210H

I_{tot} = 853.8 Ns
 F_{avg} = 213.5 N
 t_{burn} = 4.00 s
 d = 54 mm

Data source:
Aerotech

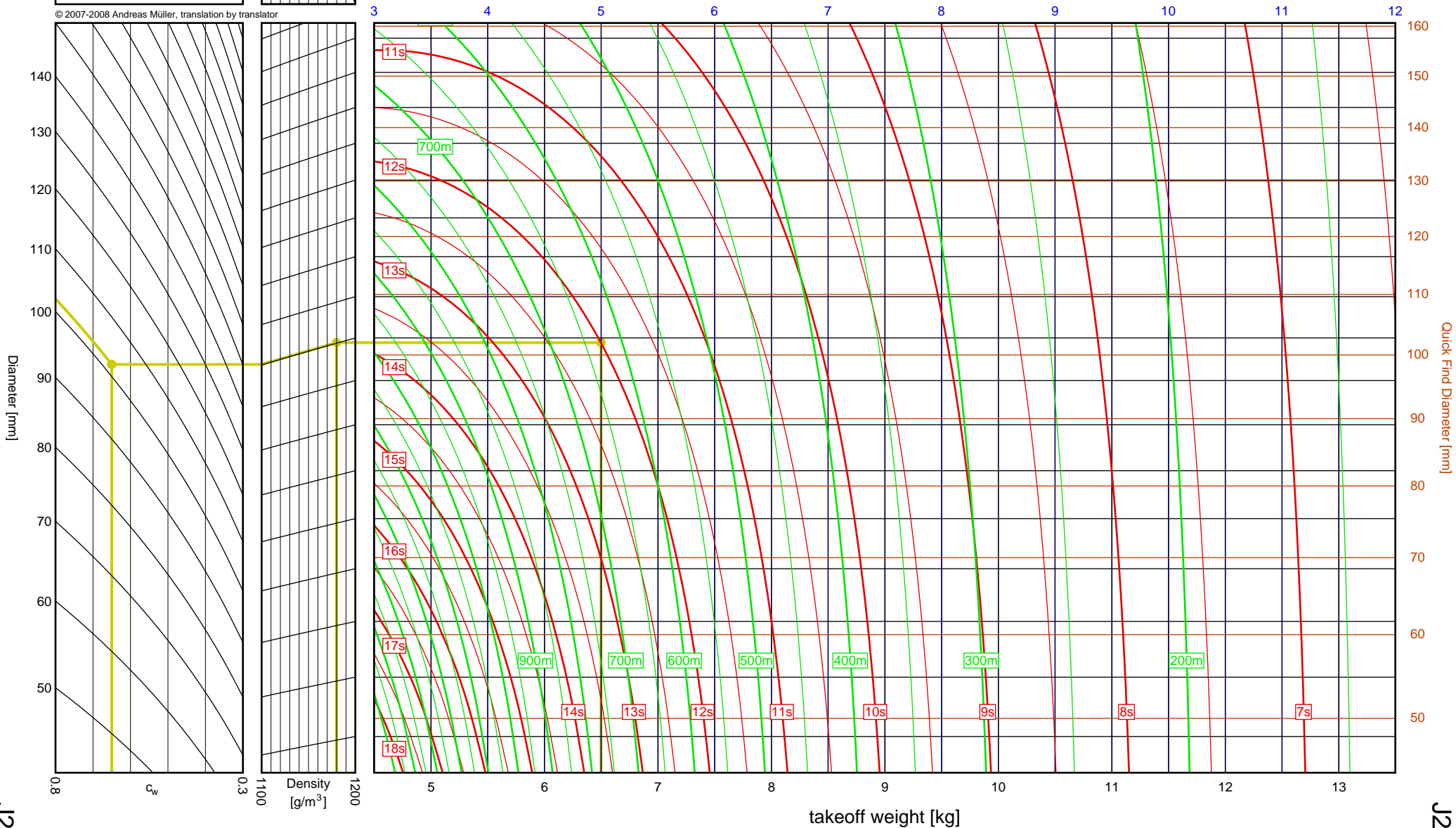


Launch site altitude [m ASL]

1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 102mm, drag = 0.65, density = 1180 g/m³, weight = 6.497kg
 Results: time to apogee: 12.0s, expected altitude: 628m

empty weight [kg]



takeoff weight [kg]

4", J-K⁷

J210H

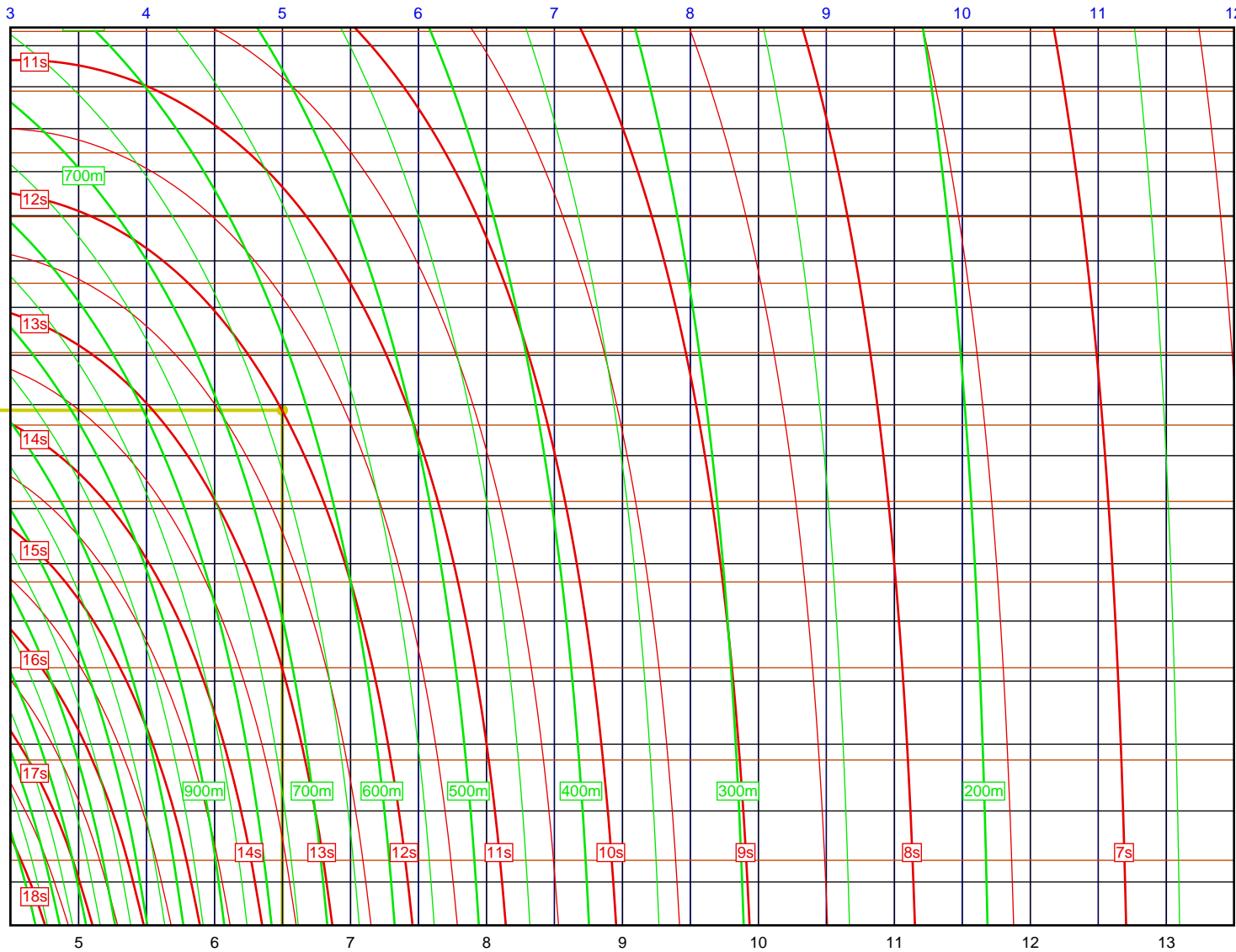
Quick Find Diameter [mm]

Diameter [mm]

c_w

Density [g/m³]

160
150
140
130
120
110
100
90
80
70
60
50



140
130
120
110
100
90
80
70
60
50

7-13

J210H

0.8

0.3

1100

1200

5

6

7

8

9

10

11

12

13

14s

13s

12s

11s

10s

9s

8s

7s

18s

17s

16s

15s

14s

13s

12s

11s

10s

9s

8s

7s

18s

17s

16s

15s

14s

13s

12s

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8s

7s

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8s

7s

18s

17s

16s

15s

14s

13s

12s

11s

10s

9s

8s

7s

18s

17s

16s

15s

14s

13s

12s

11s

10s

9s

8s

7s

18s

17s

16s

15s

14s

13s

12s

11s

10s

9s

8s

7s

18s

17s

16s

15s

14s

13s

12s

11s

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9s

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7s

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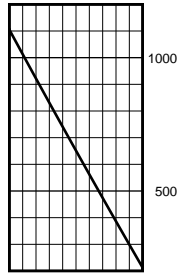
12s

Aerotech J825R

I_{tot} = 928.0 Ns
 F_{avg} = 786.4 N
 t_{burn} = 1.18 s
 d = 38 mm

Data source:
Aerotech

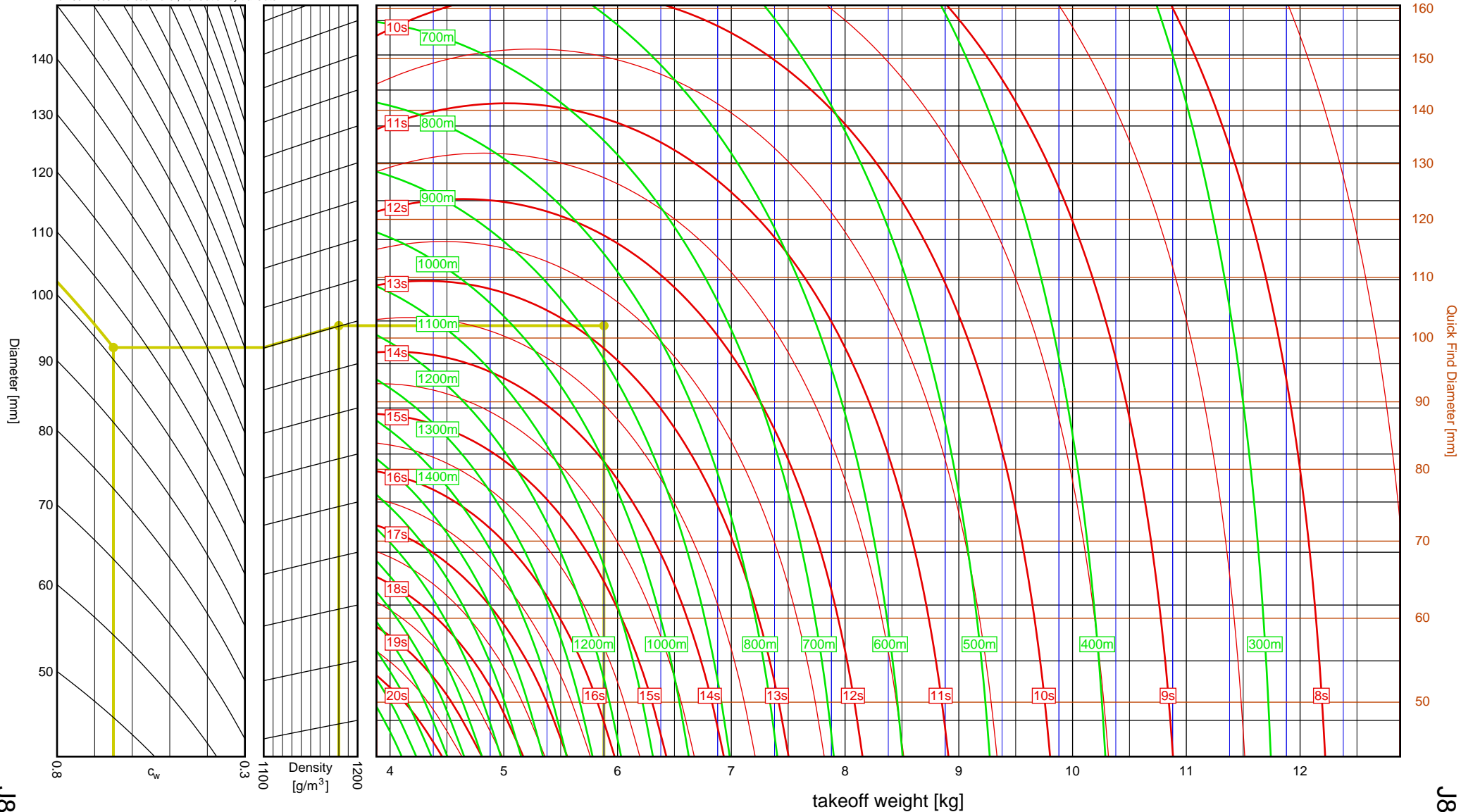
© 2007-2008 Andreas Müller, translation by translator



1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 102mm, drag = 0.65, density = 1180 g/m³, weight = 5.880kg
 Results: time to apogee: 12.8s, expected altitude: 868m

empty weight [kg]

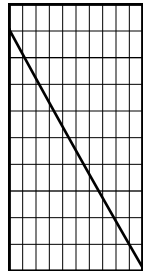


4", J-K 7

J825R

J825R

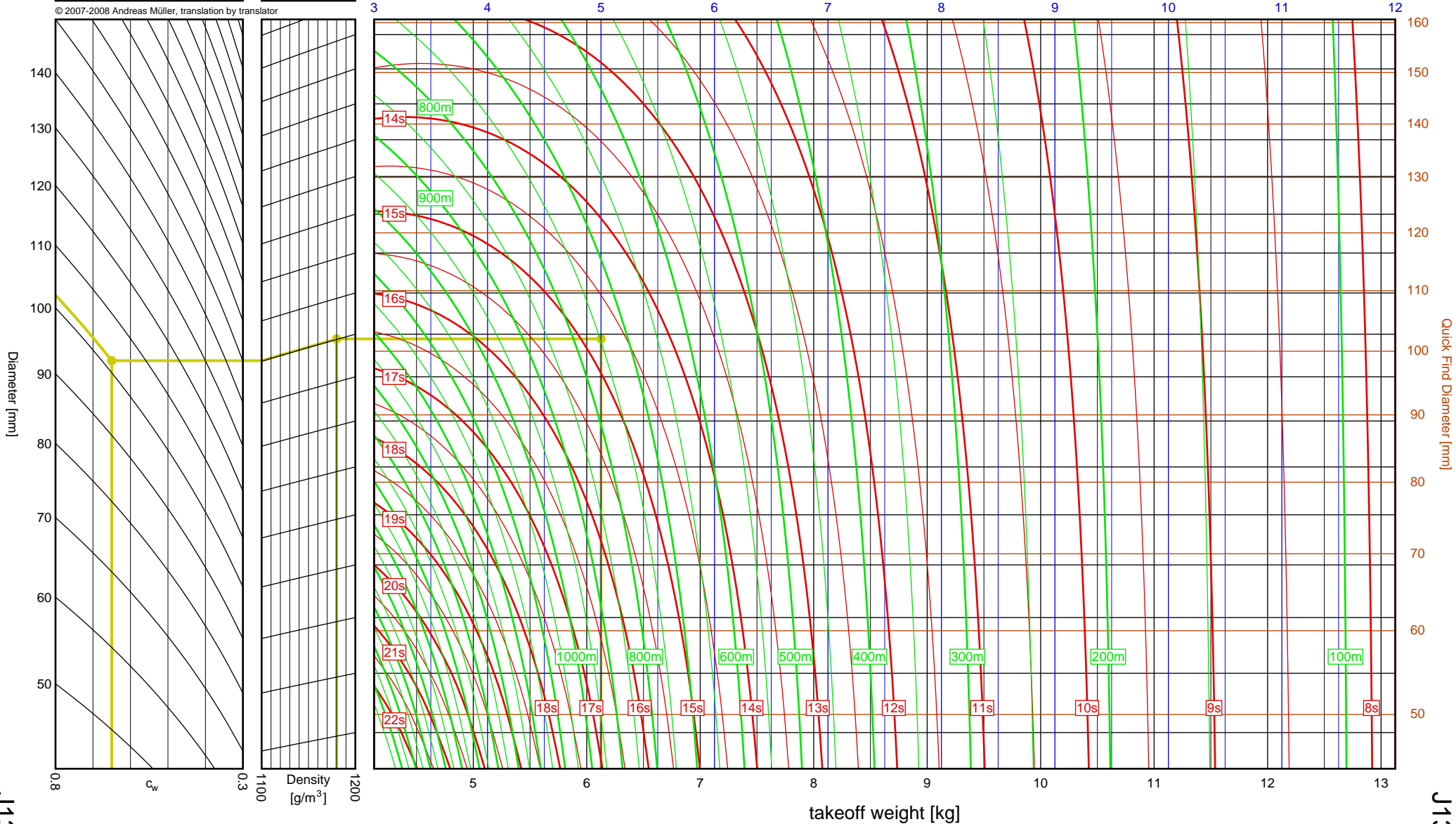
Aerotech	
J135W	
I_{tot}	= 989.2 Ns
F_{avg}	= 141.3 N
t_{burn}	= 7.00 s
d	= 54 mm
Data source: Aerotech	



1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 102mm, drag = 0.65, density = 1180 g/m³, weight = 6.126kg
 Results: time to apogee: 14.8s, expected altitude: 748m

empty weight [kg]



4", J-K⁷

J135W

Quick Find Diameter [mm]

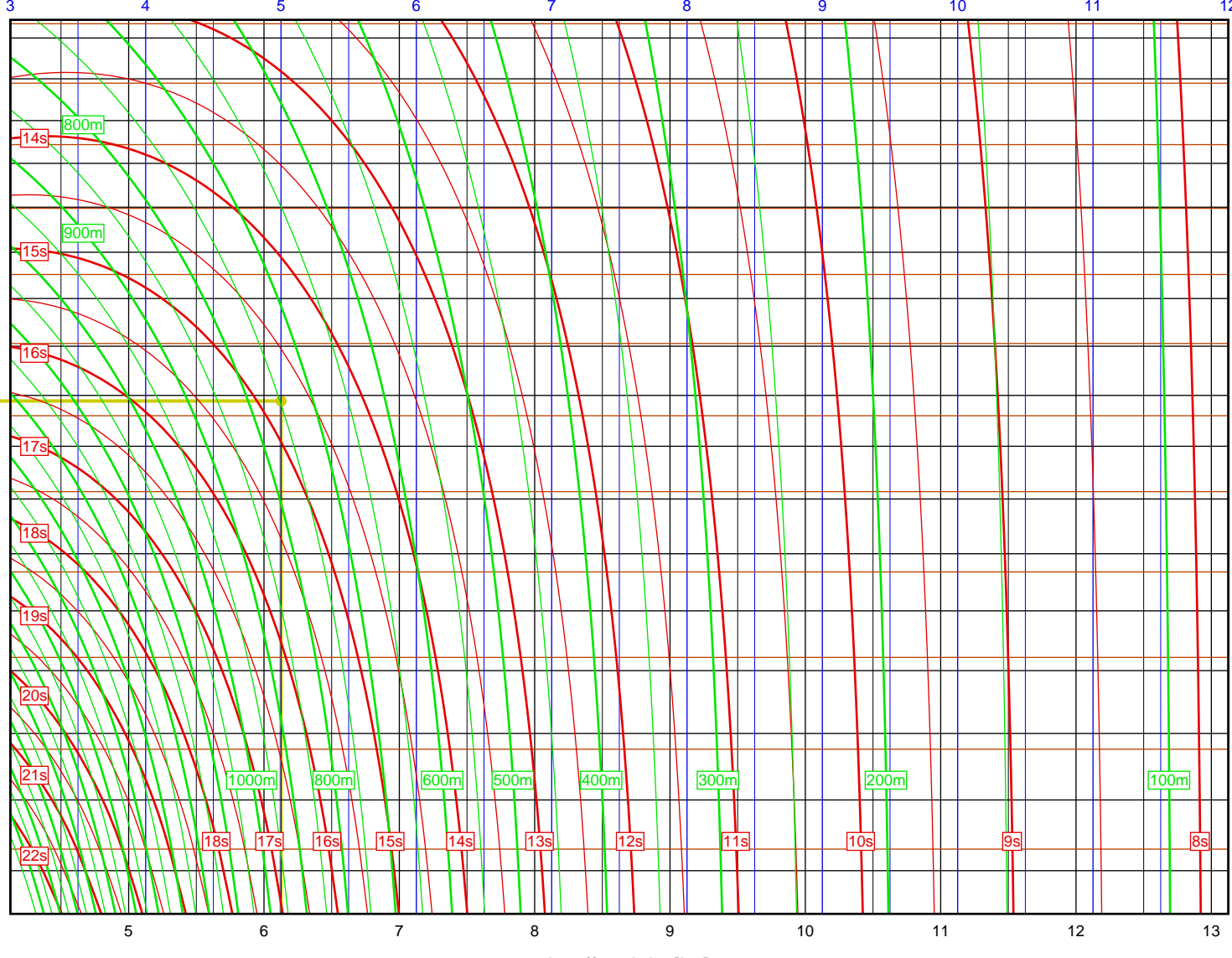
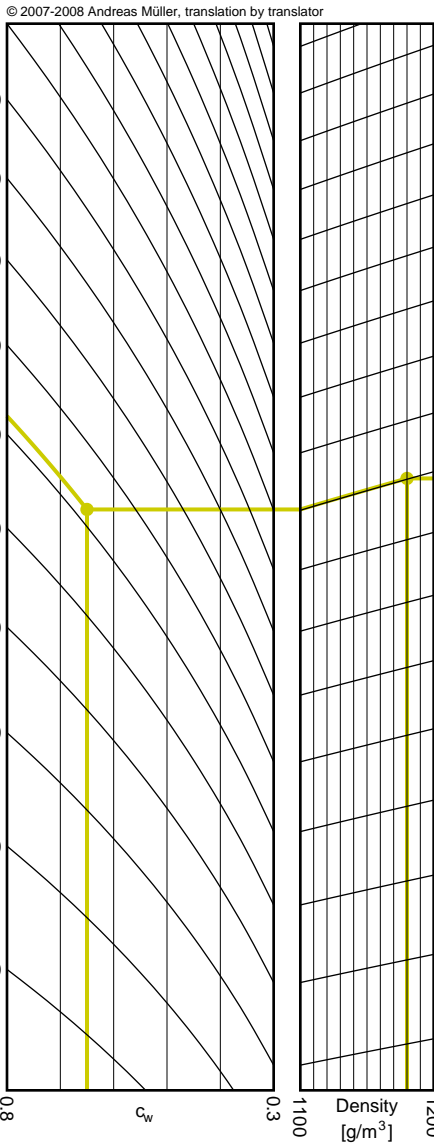
J135W

Diameter [mm]

c_w

Density [g/m³]

takeoff weight [kg]

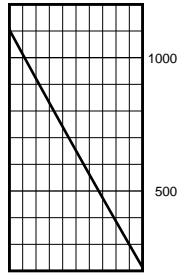


Aerotech J570W

I_{tot} = 1033.8 Ns
 F_{avg} = 503.8 N
 t_{burn} = 2.05 s
 d = 38 mm

Data source:
Aerotech

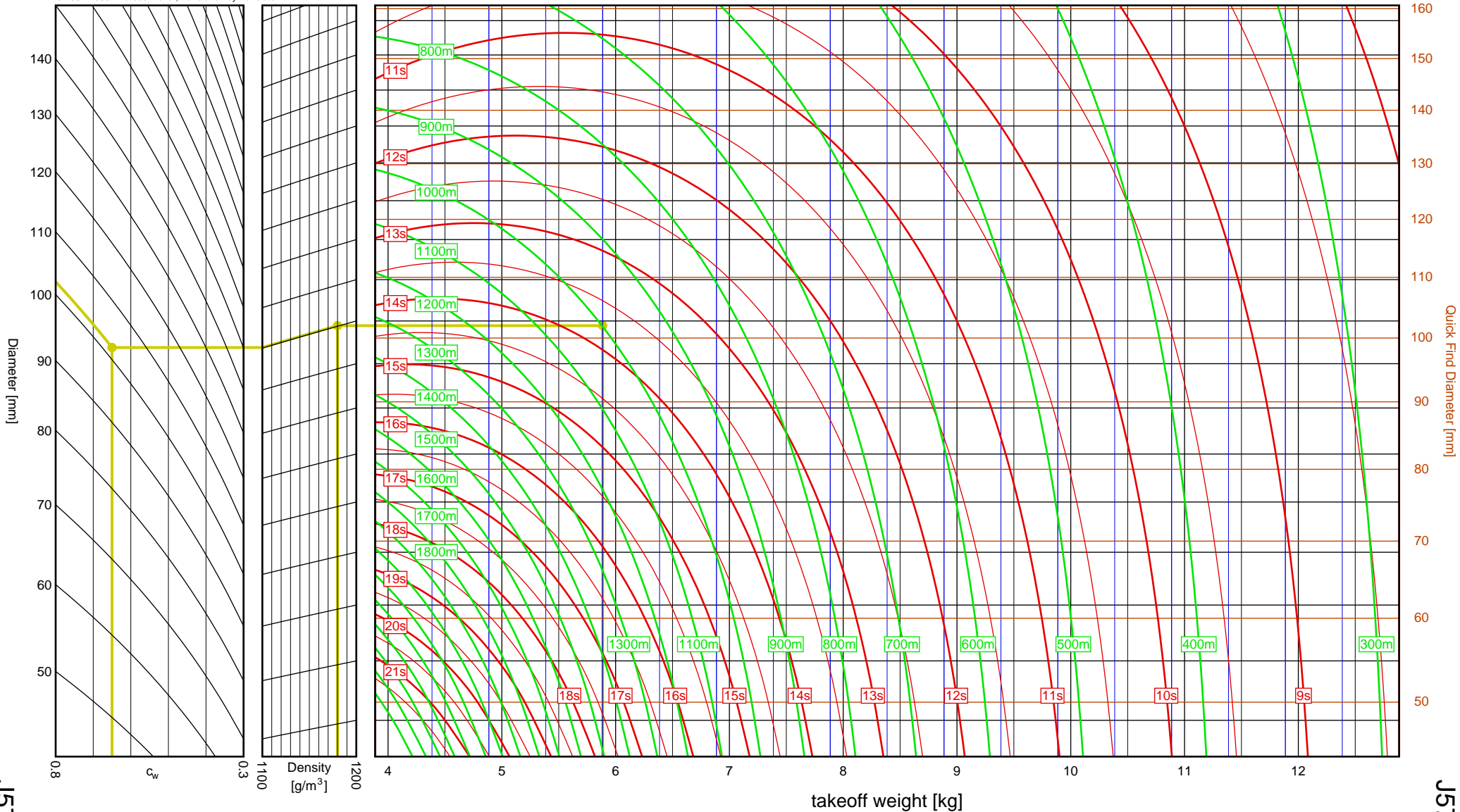
© 2007-2008 Andreas Müller, translation by translator



1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 102mm, drag = 0.65, density = 1180 g/m³, weight = 5.886kg
 Results: time to apogee: 13.8s, expected altitude: 999m

empty weight [kg]



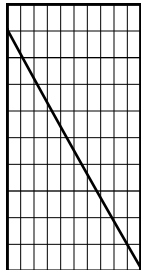
4", J-K⁷

Quick Find Diameter [mm]

J570W

J570W

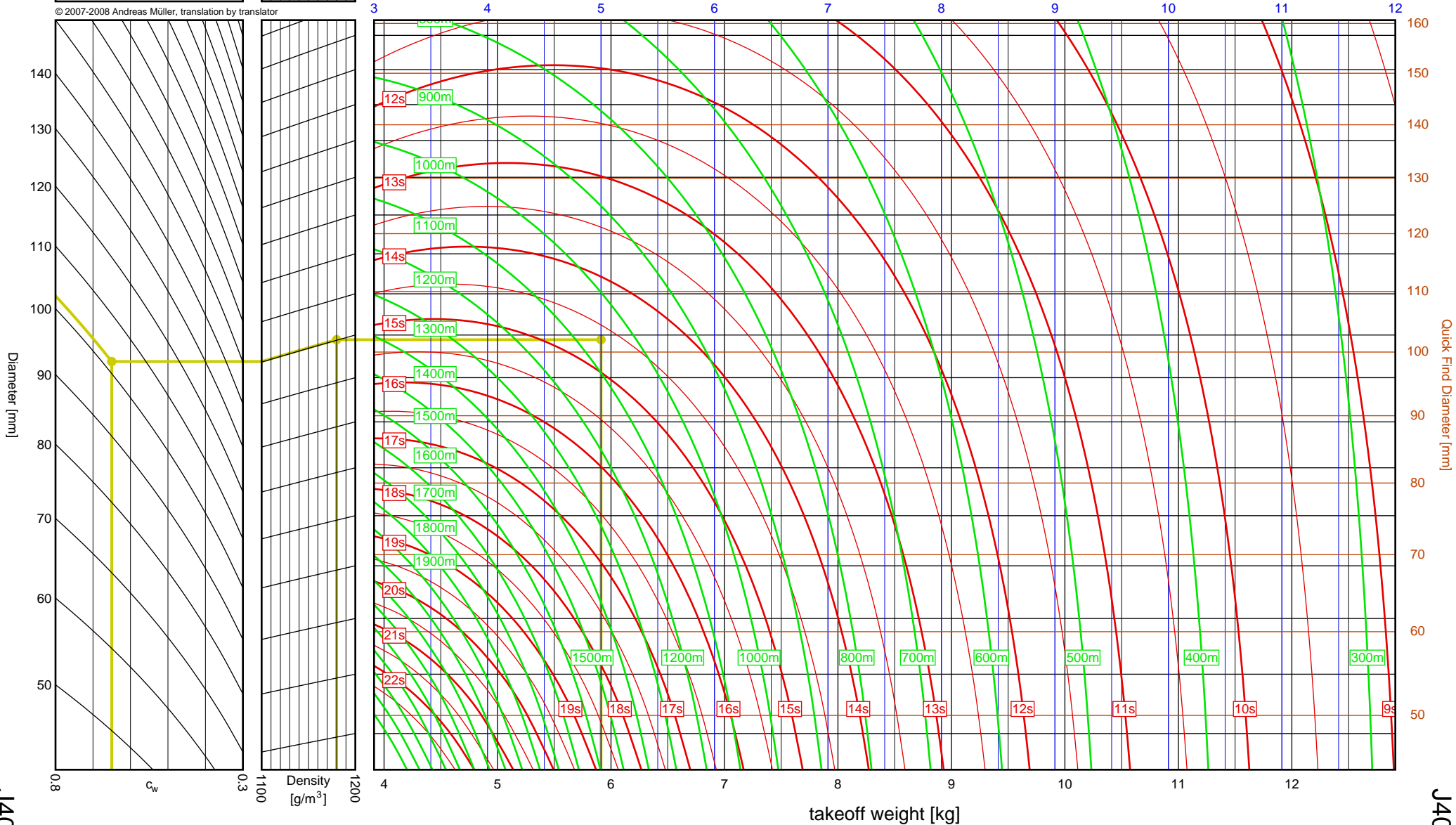
Aerotech	
J401FJ	
I_{tot}	= 1107.6 Ns
F_{avg}	= 398.0 N
t_{burn}	= 2.78 s
d	= 54 mm
Data source: Aerotech	



1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 102mm, drag = 0.65, density = 1180 g/m³, weight = 5.912kg
 Results: time to apogee: 14.7s, expected altitude: 1059m

empty weight [kg]



4", J-K

J401FJ

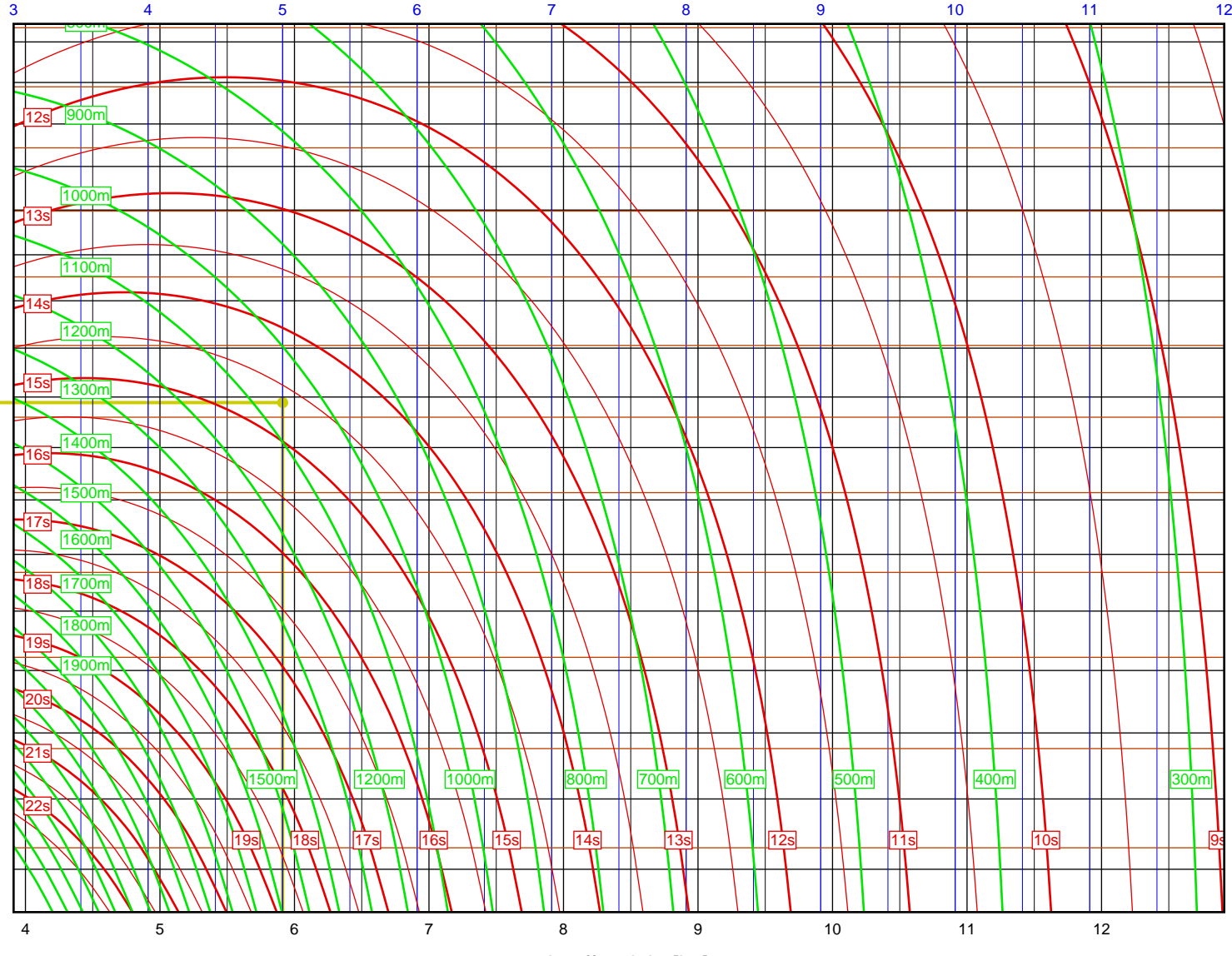
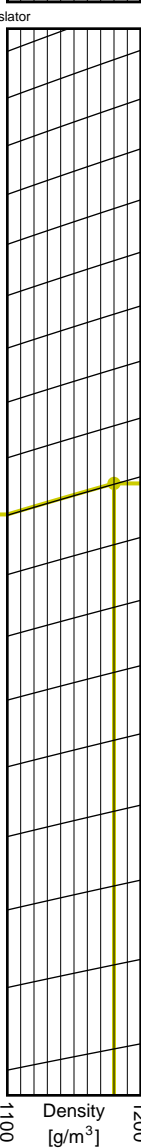
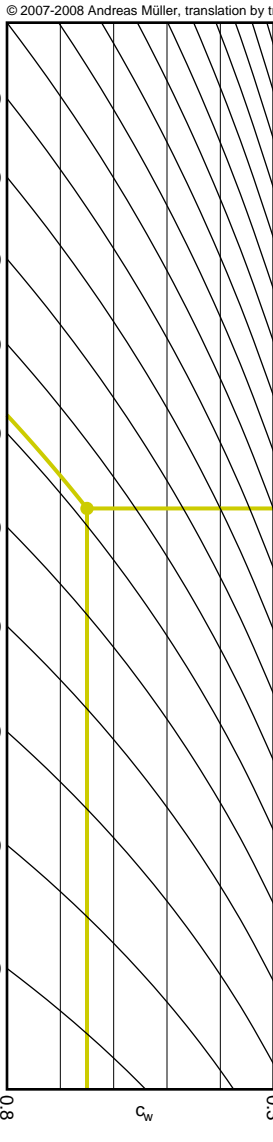
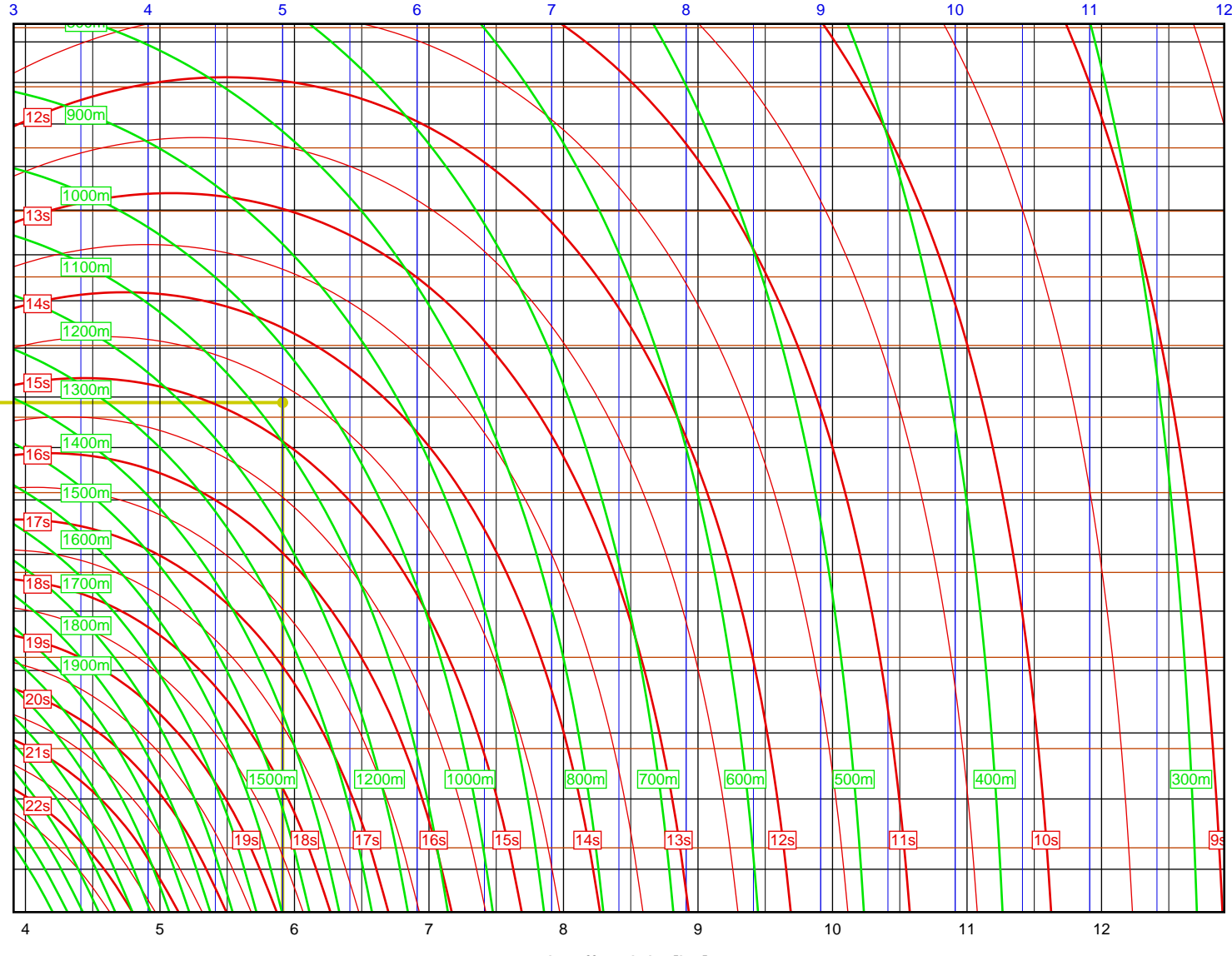
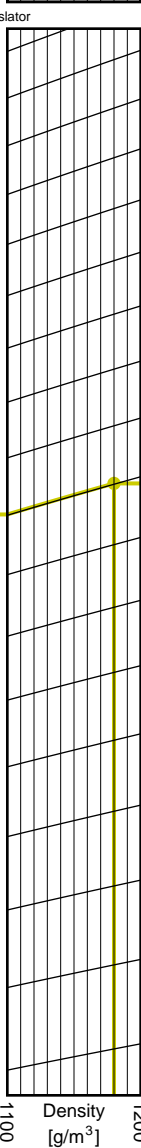
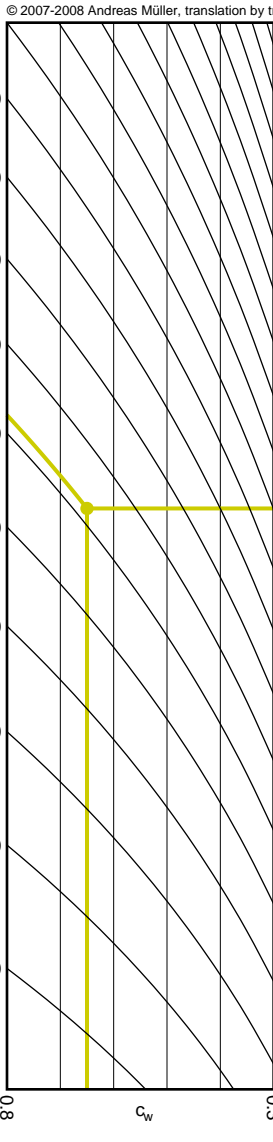
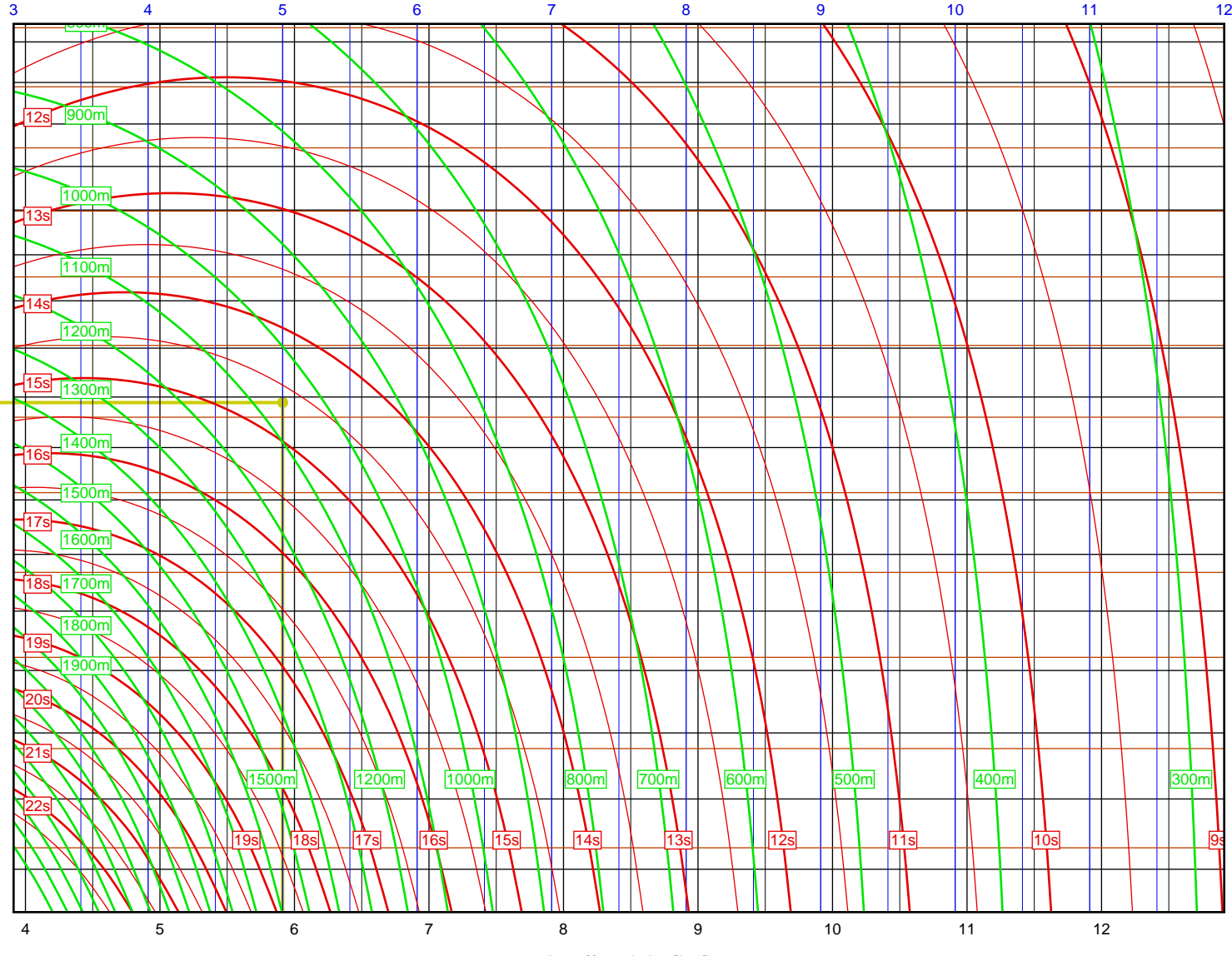
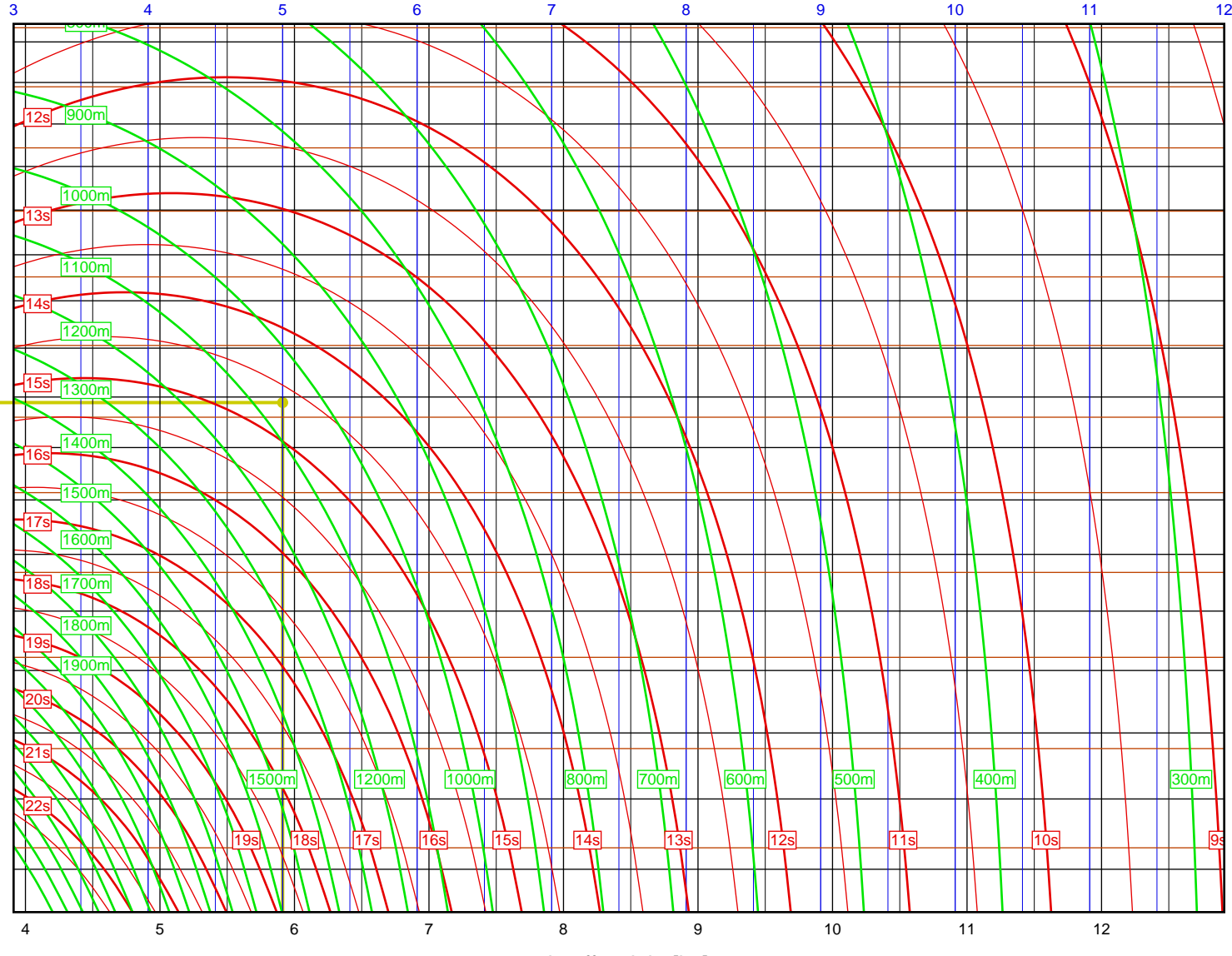
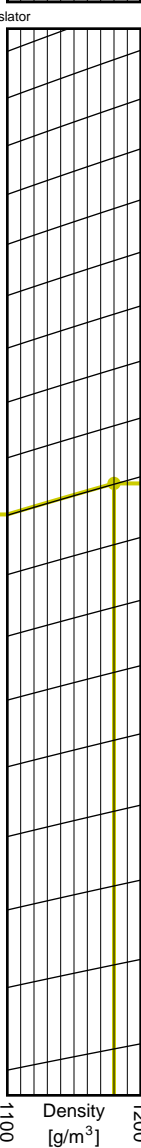
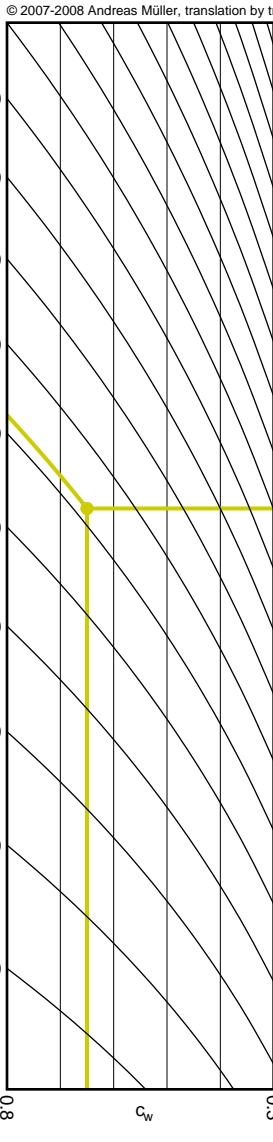
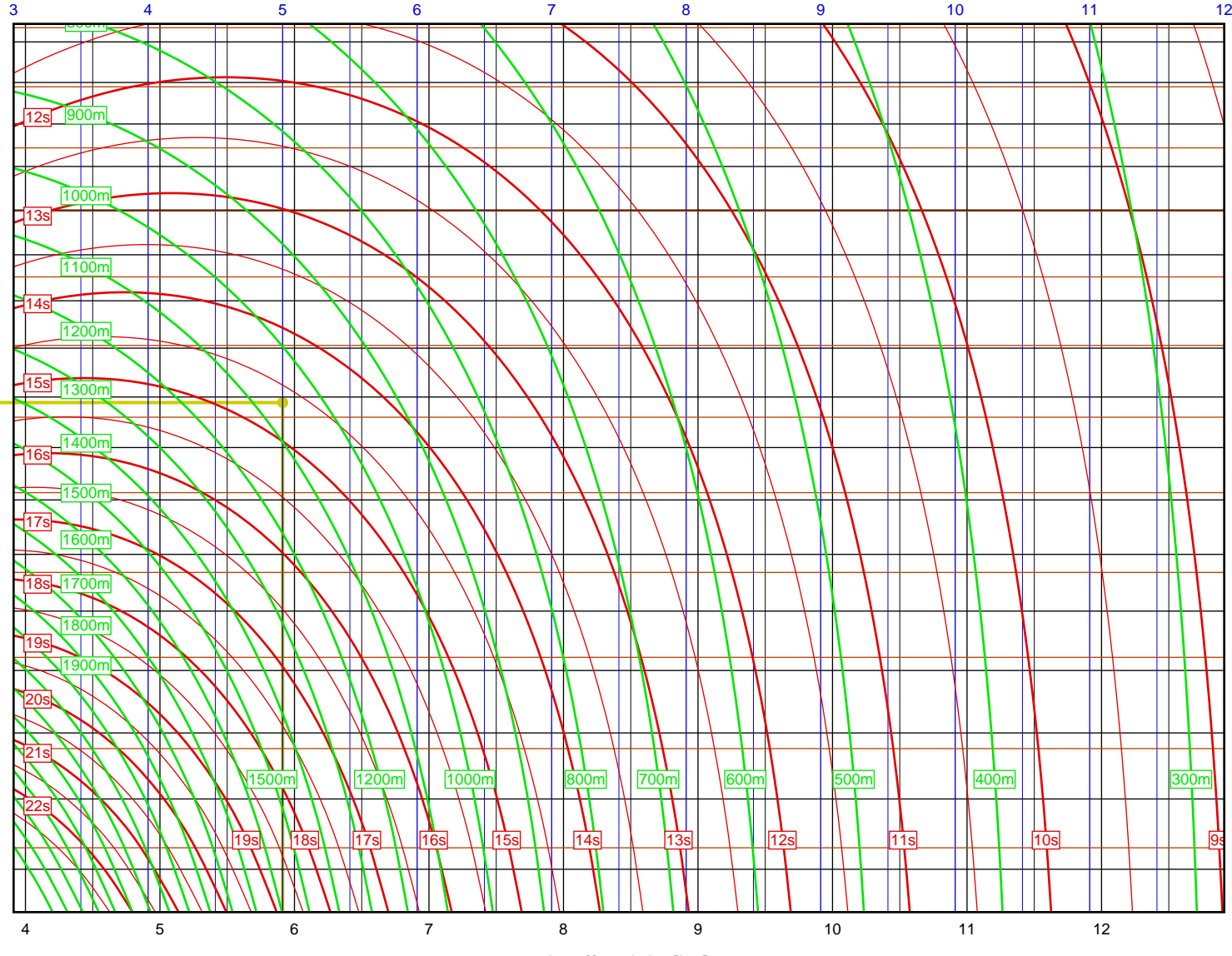
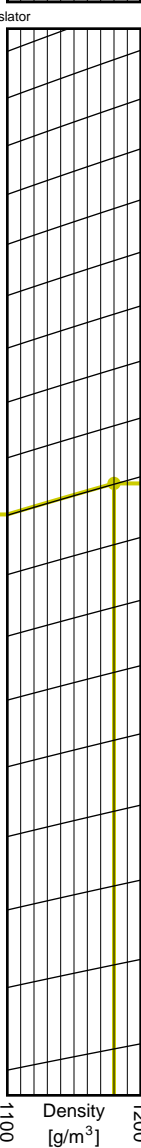
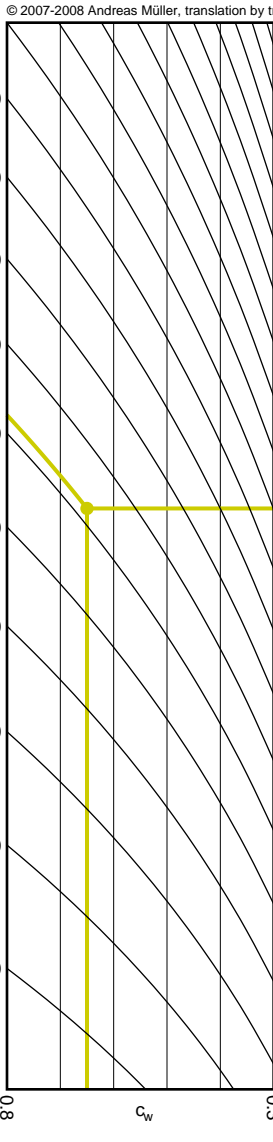
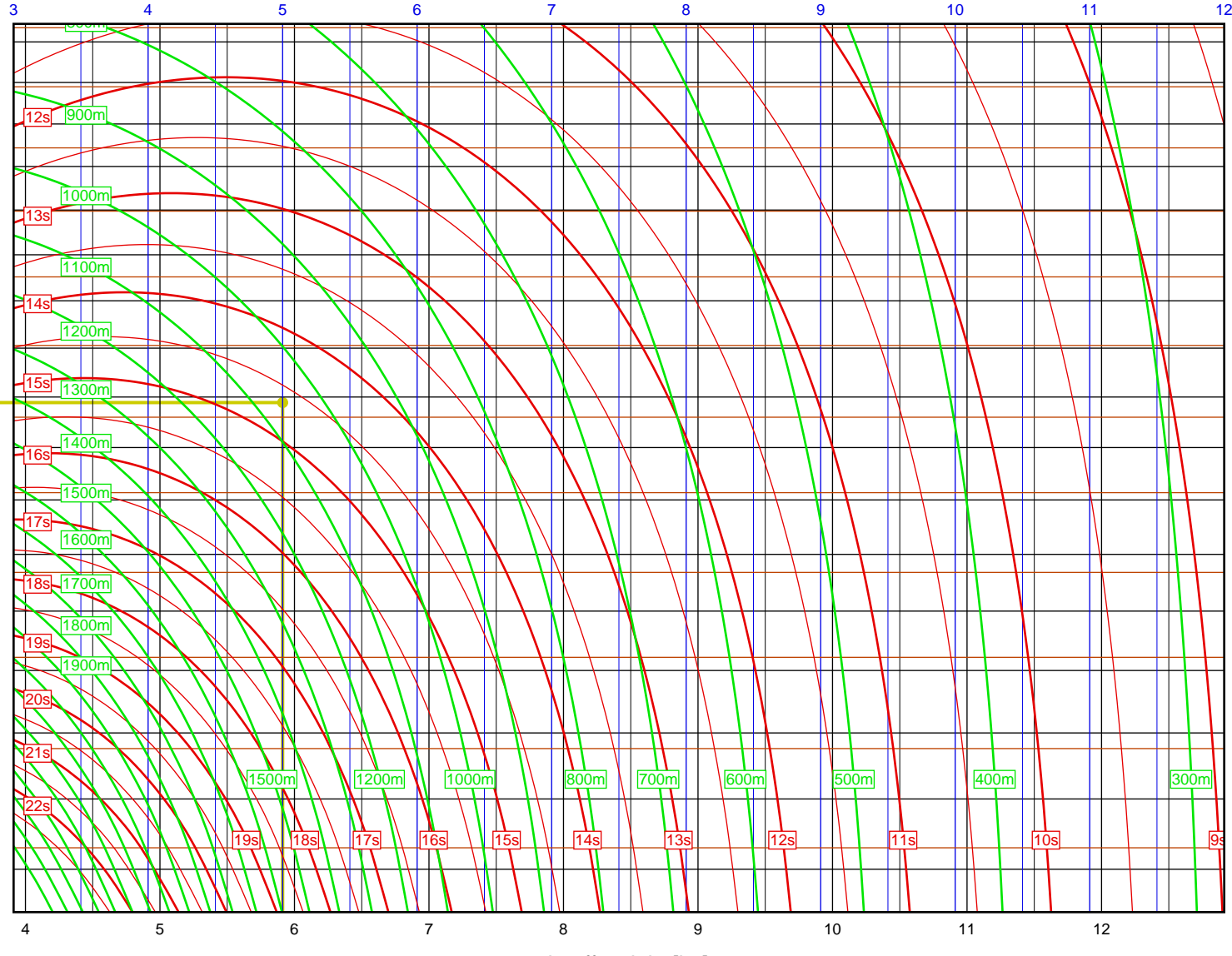
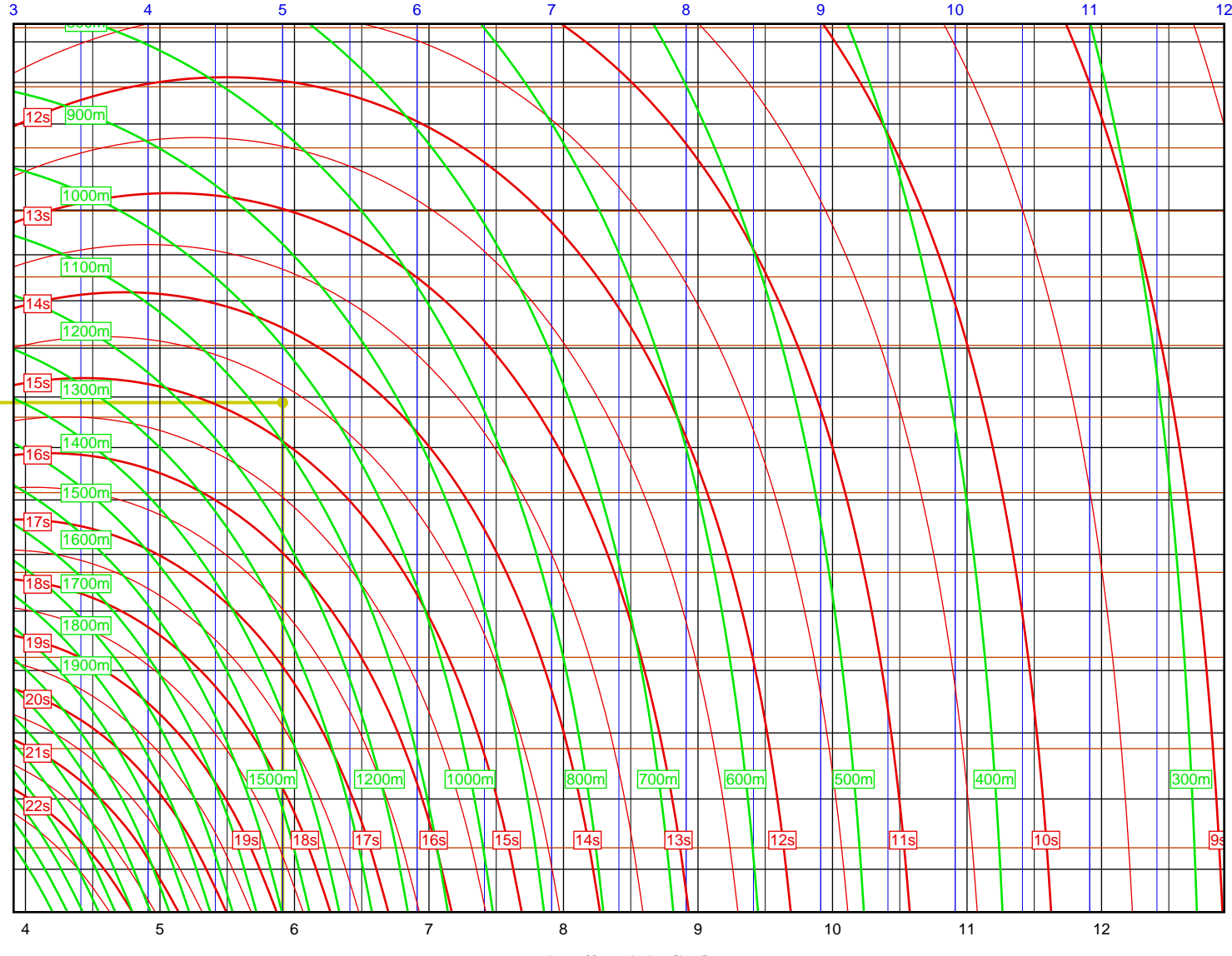
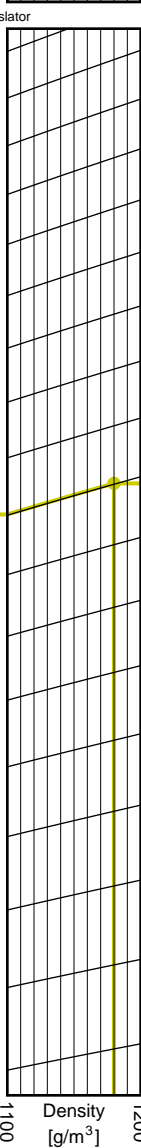
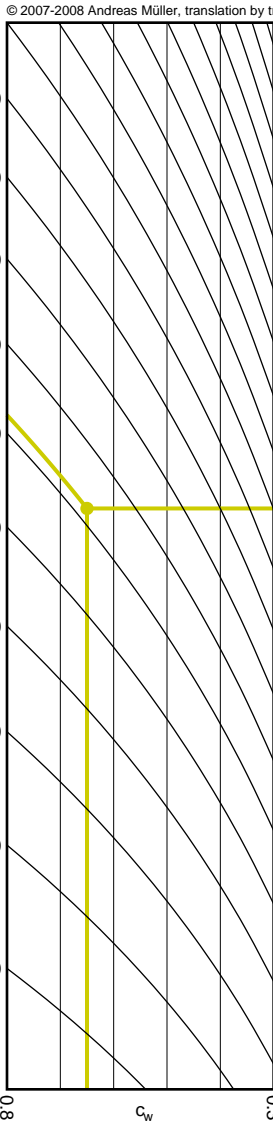
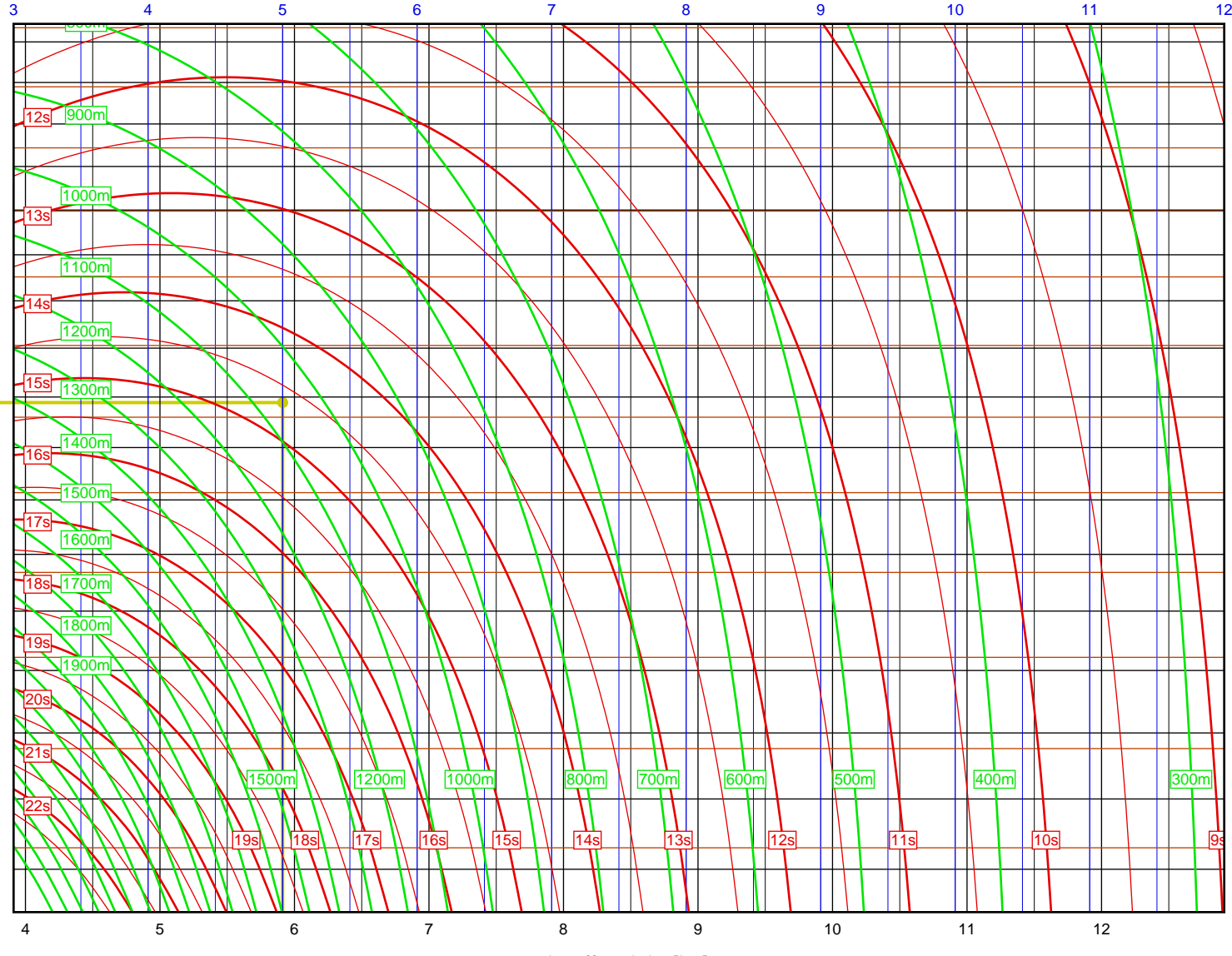
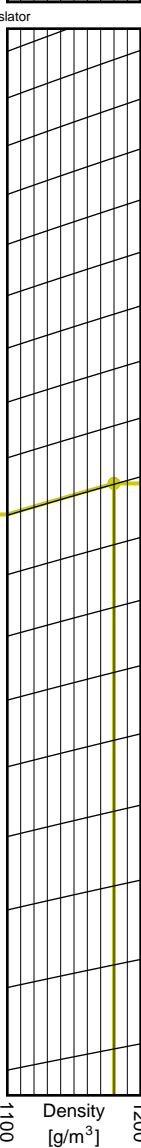
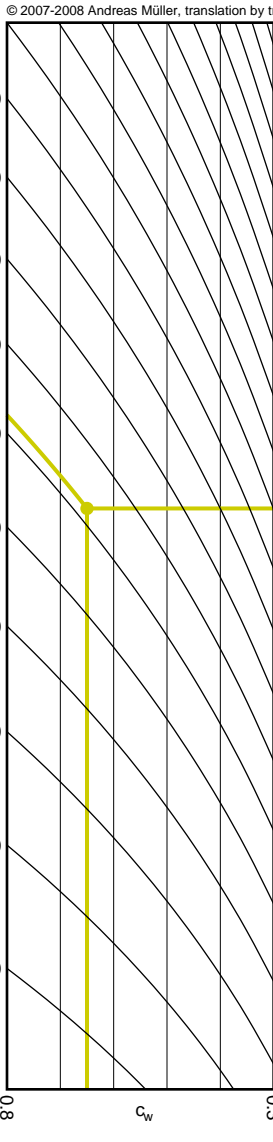
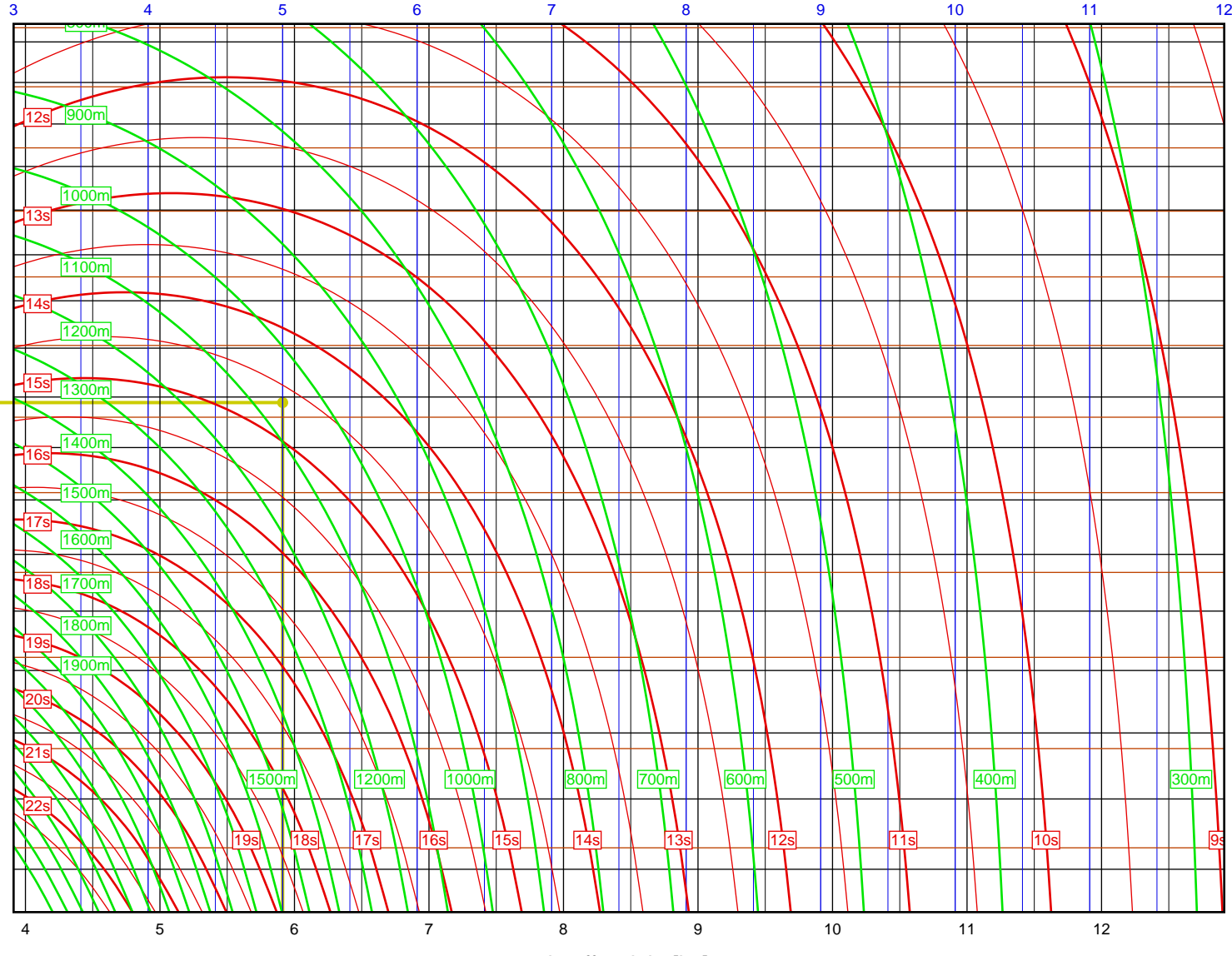
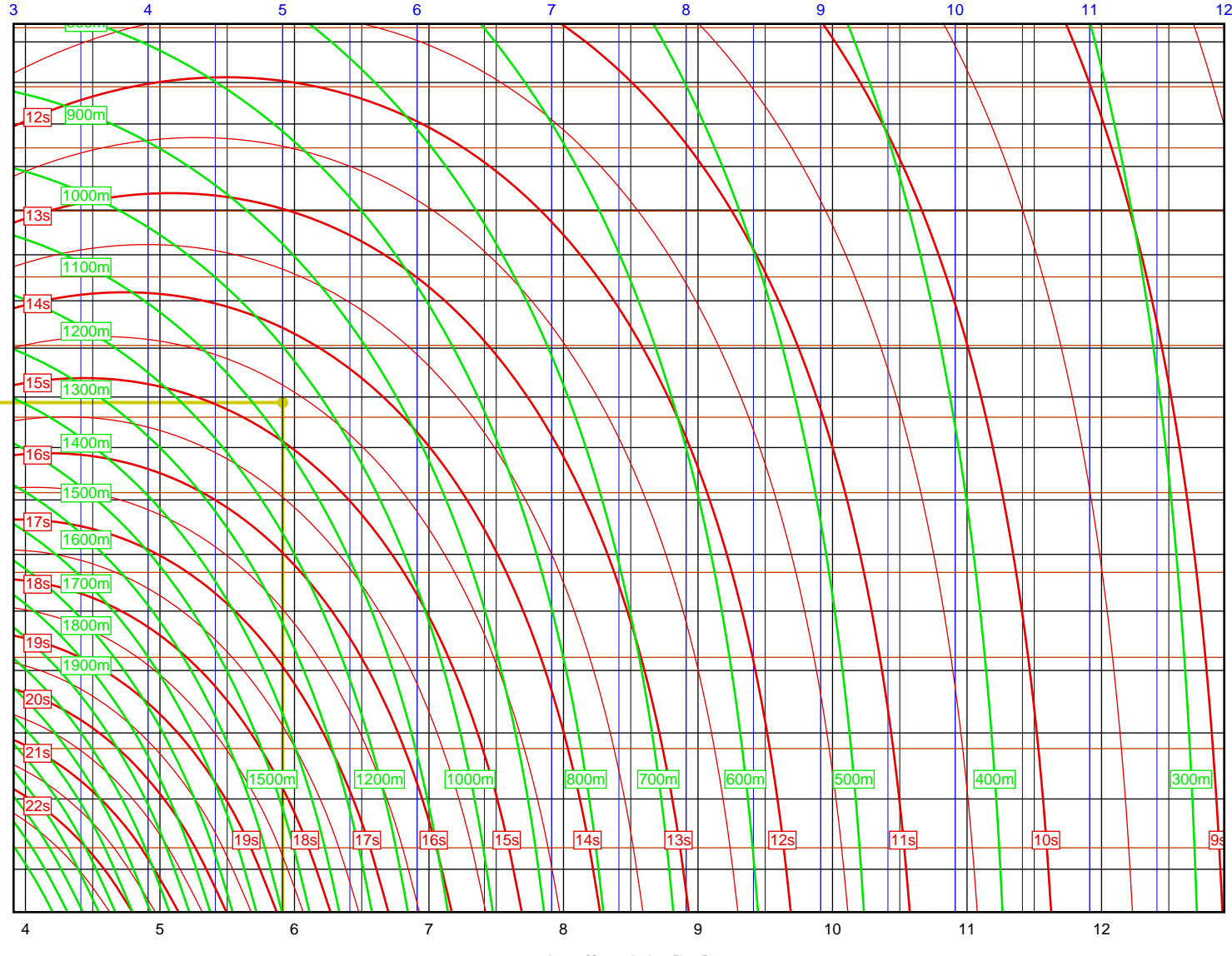
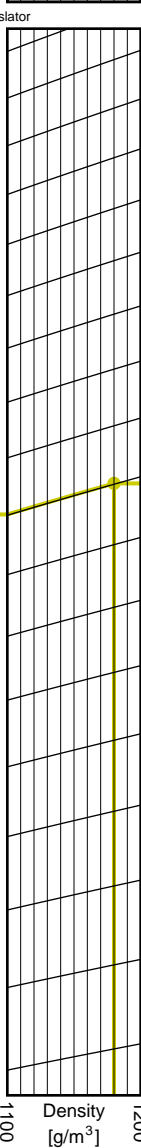
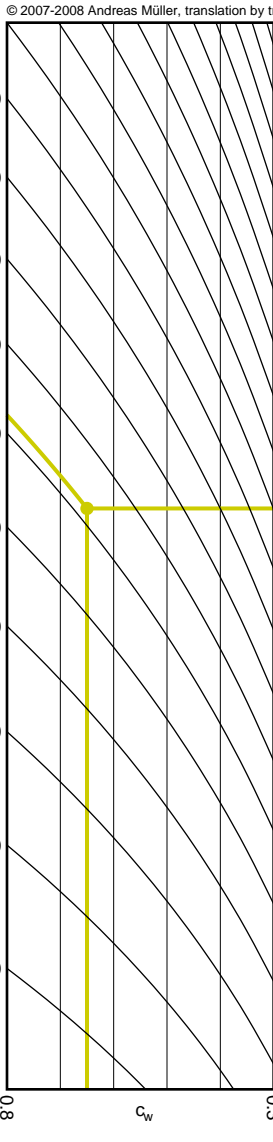
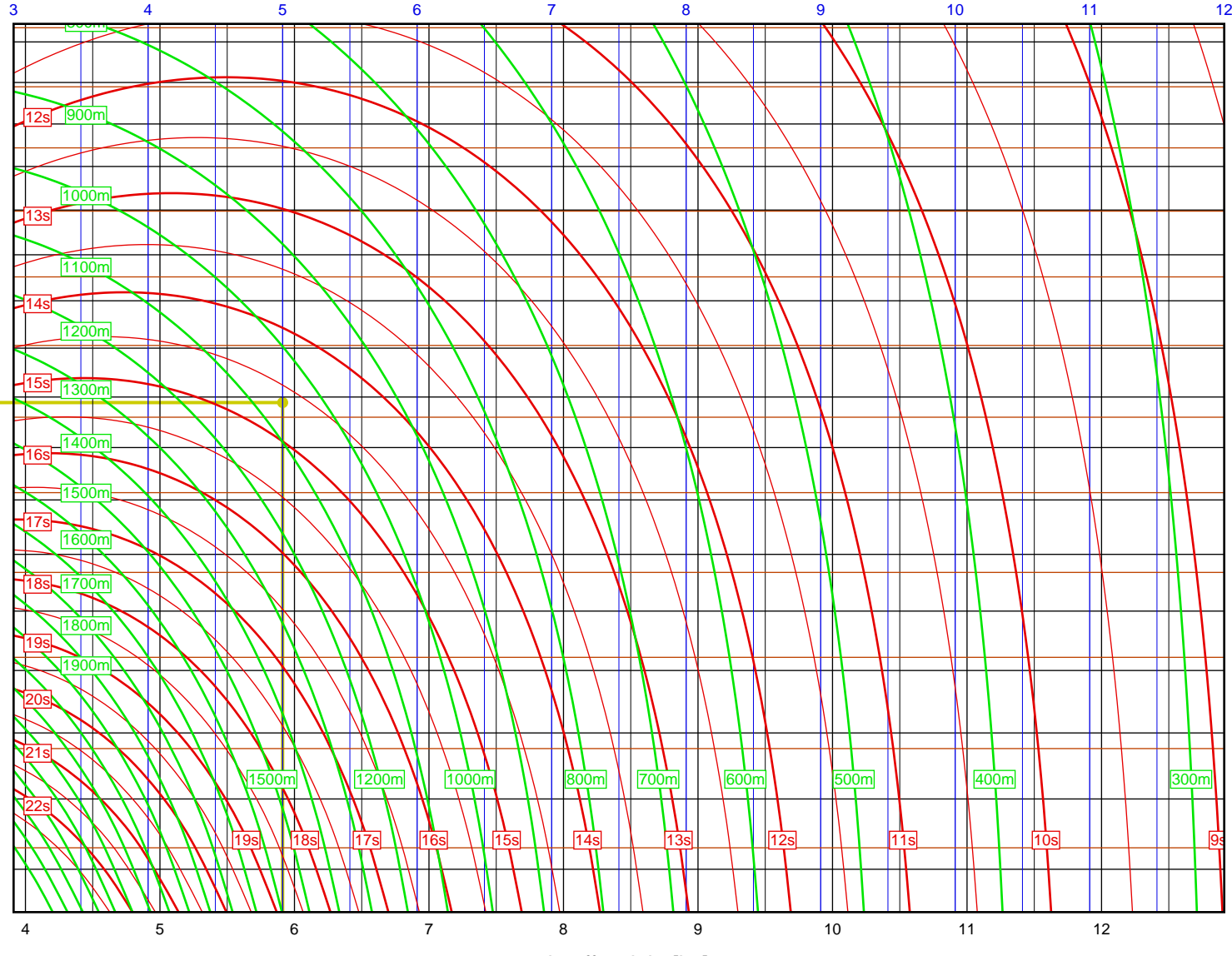
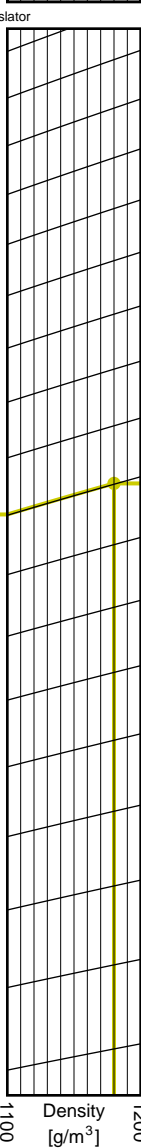
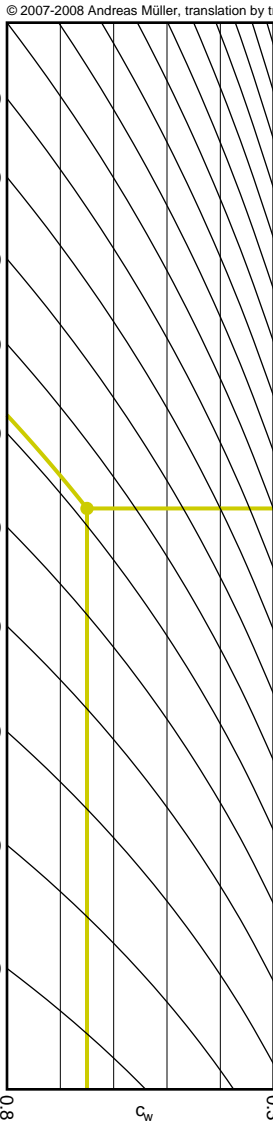
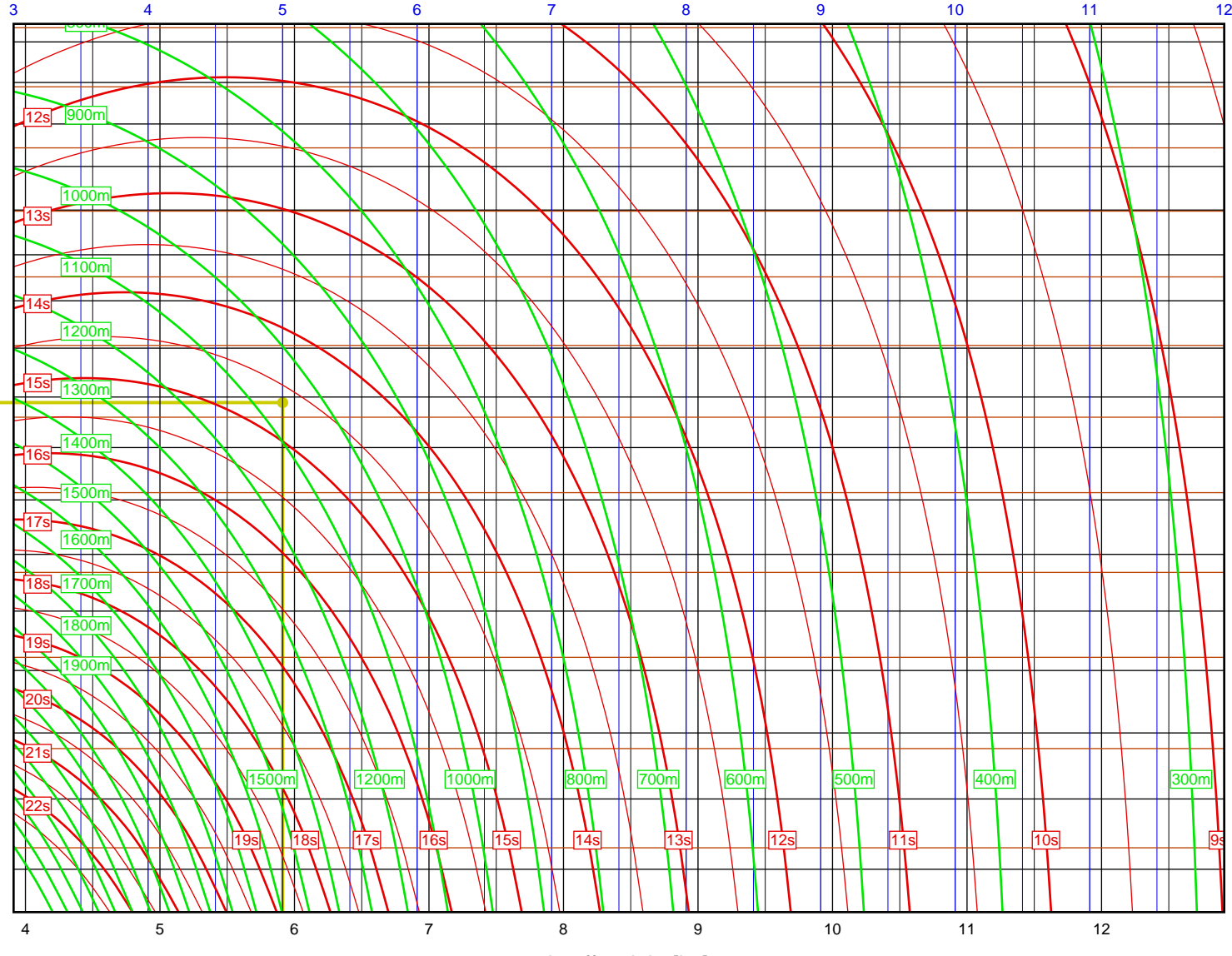
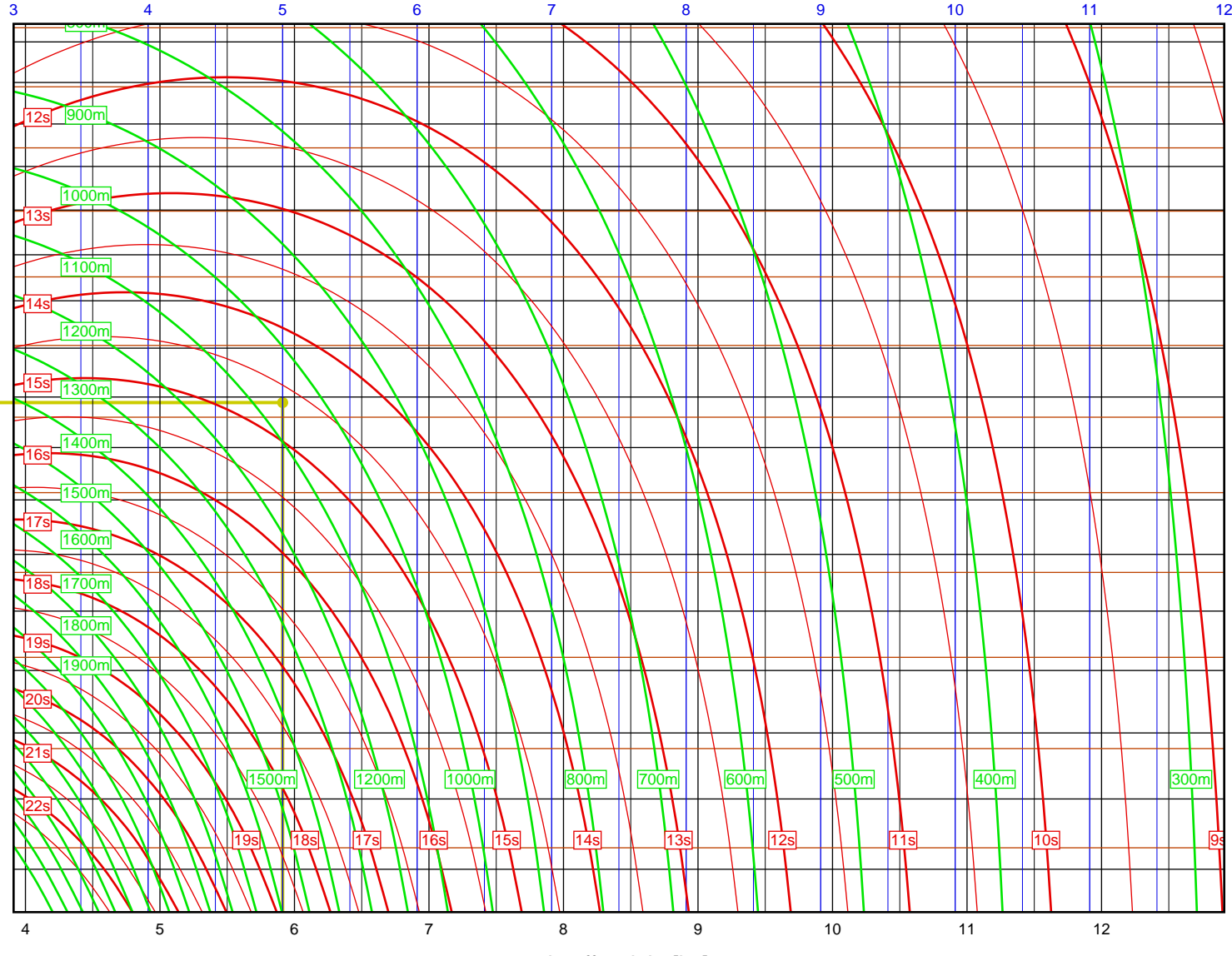
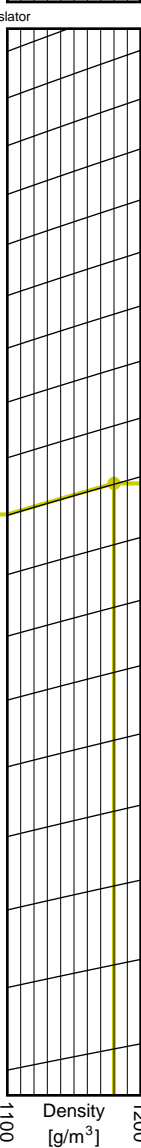
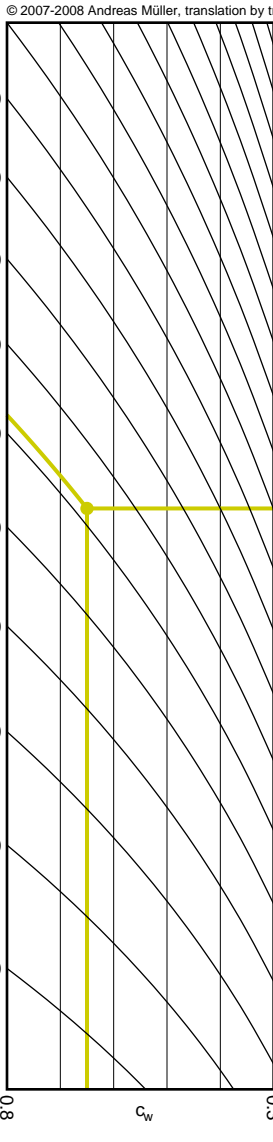
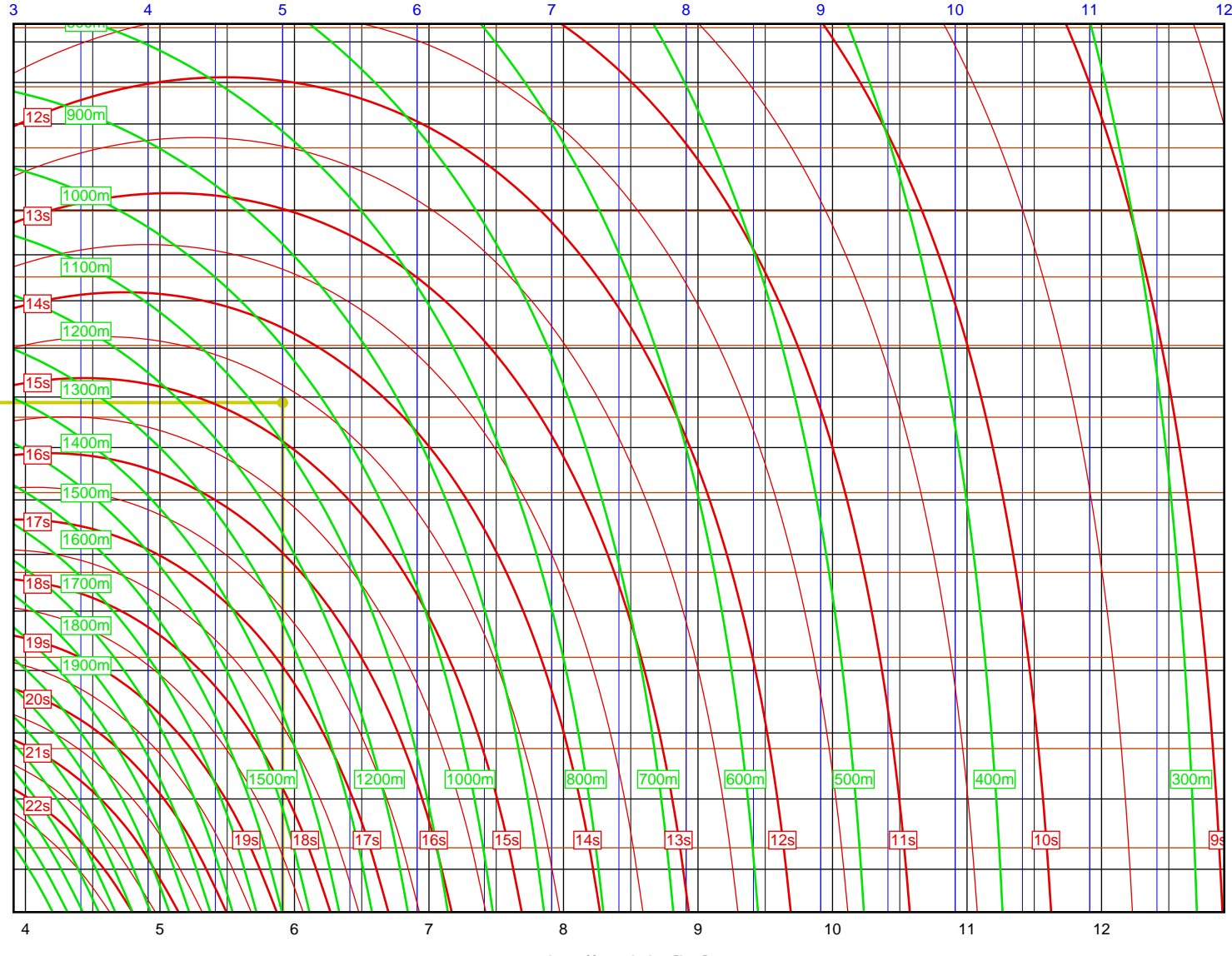
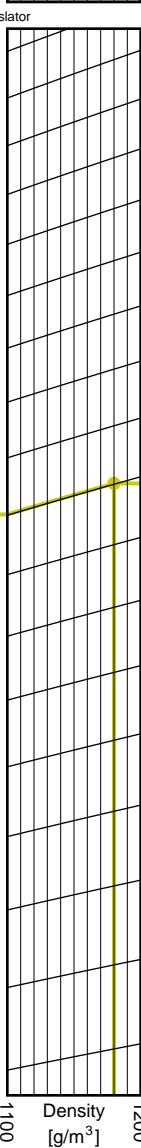
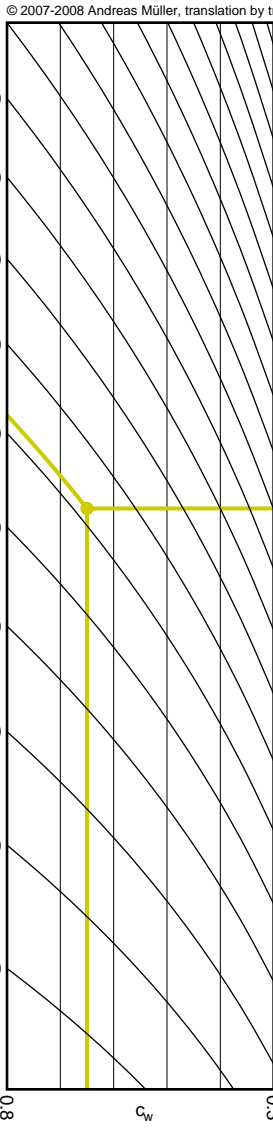
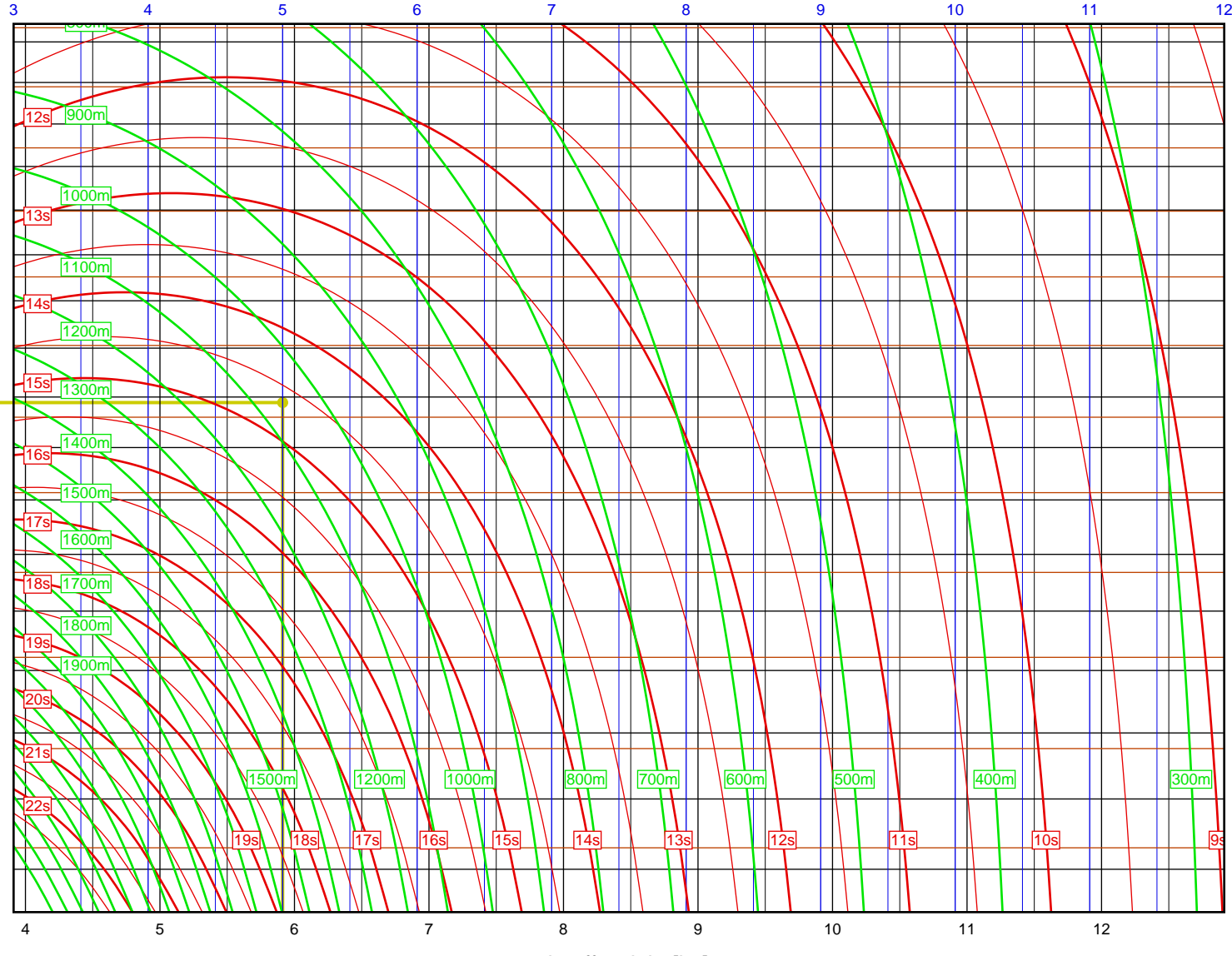
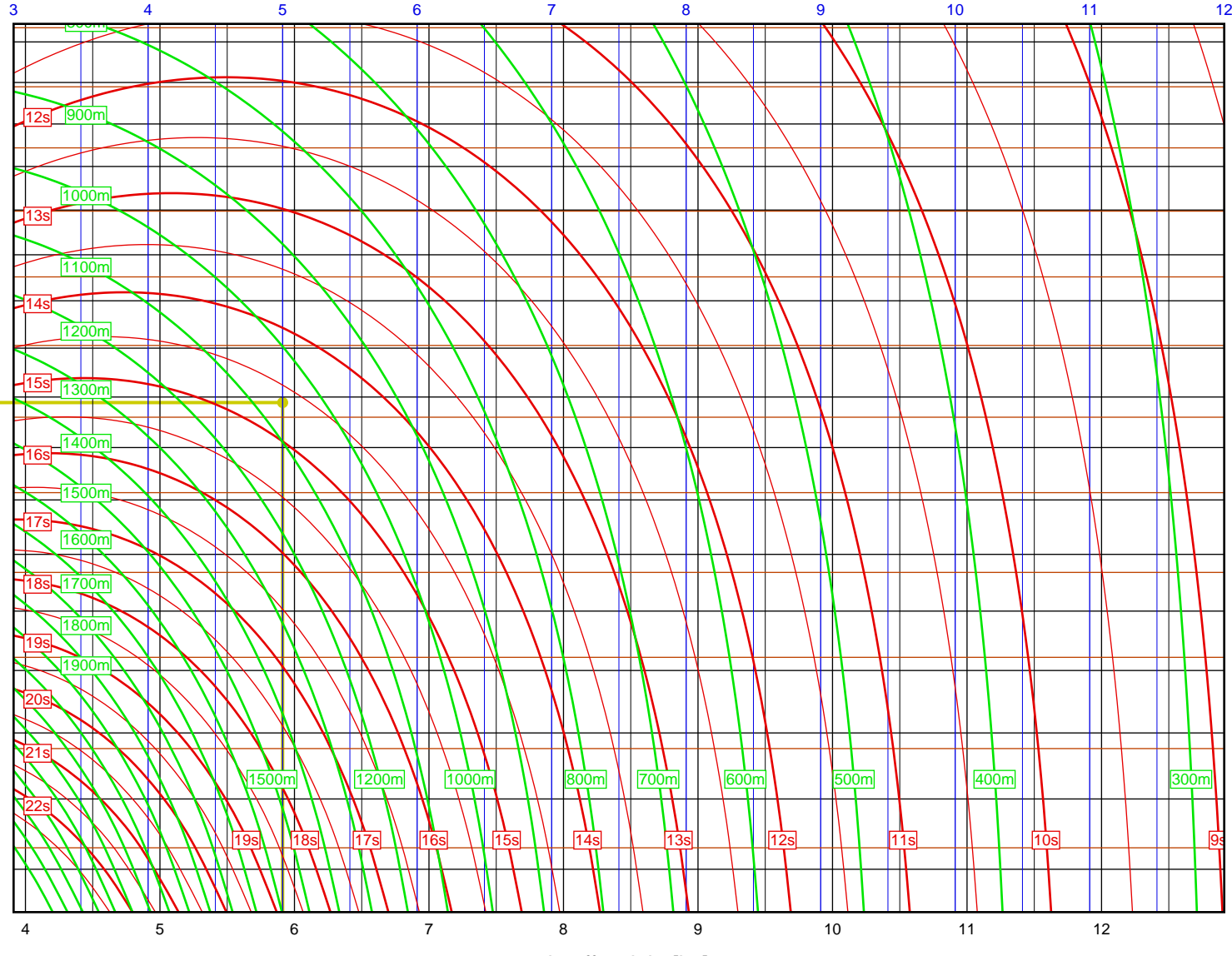
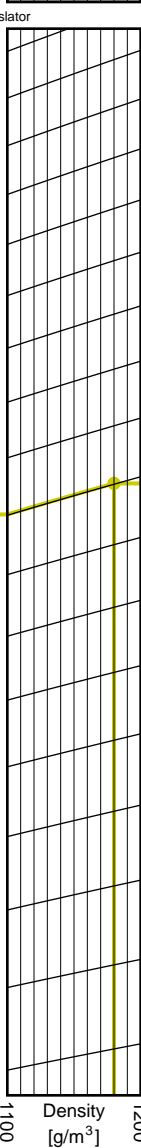
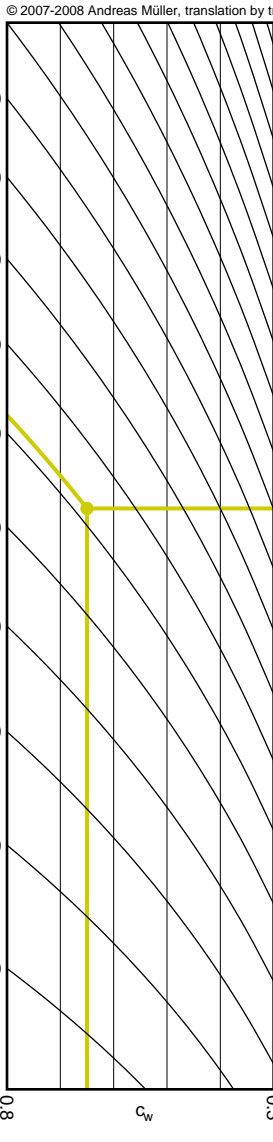
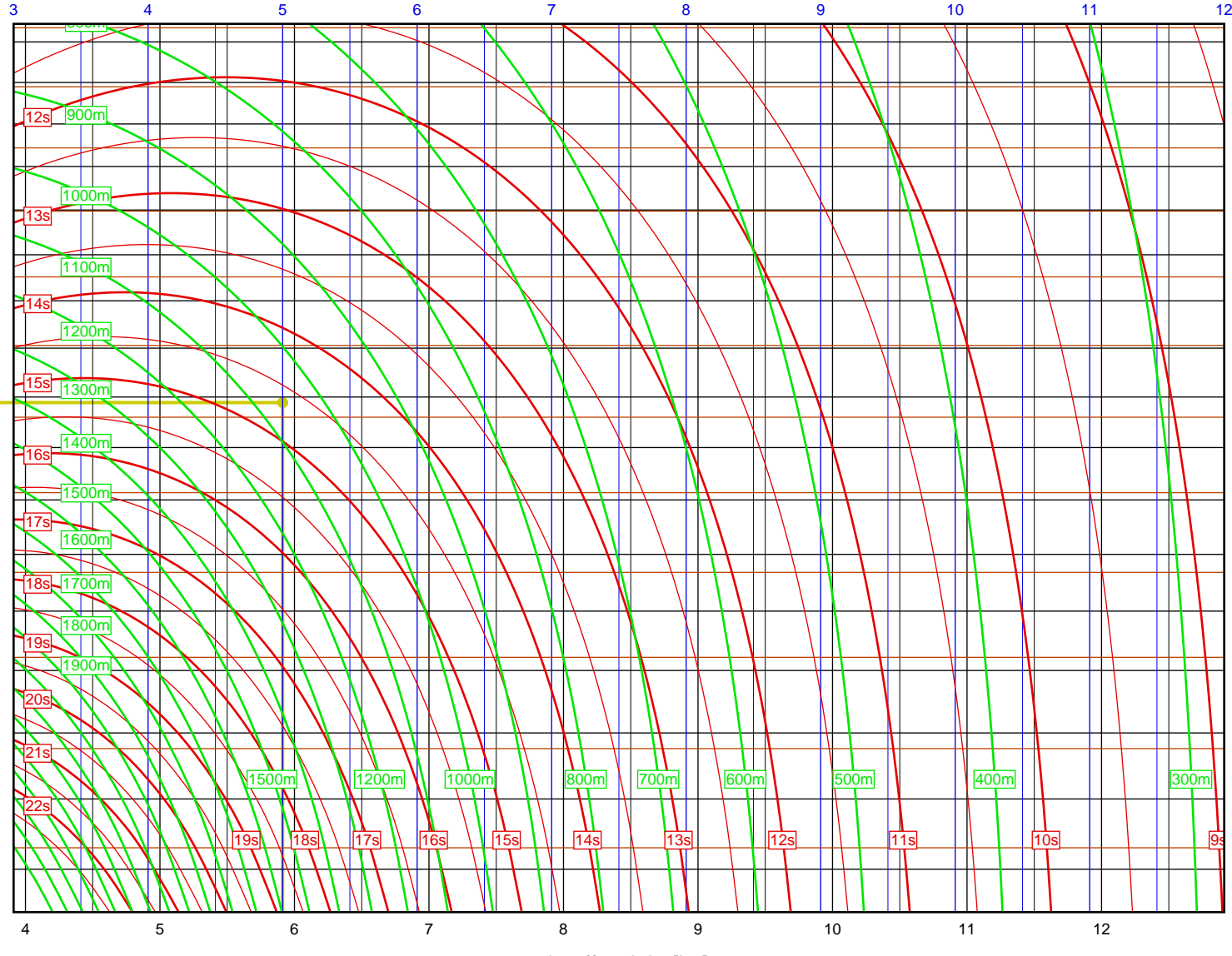
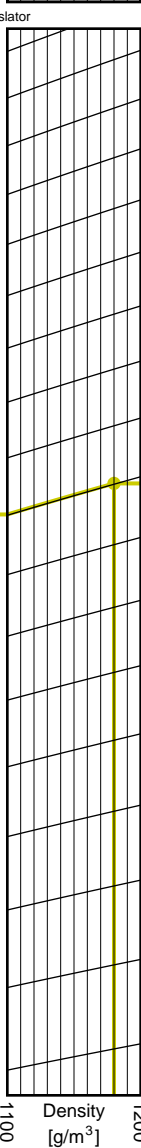
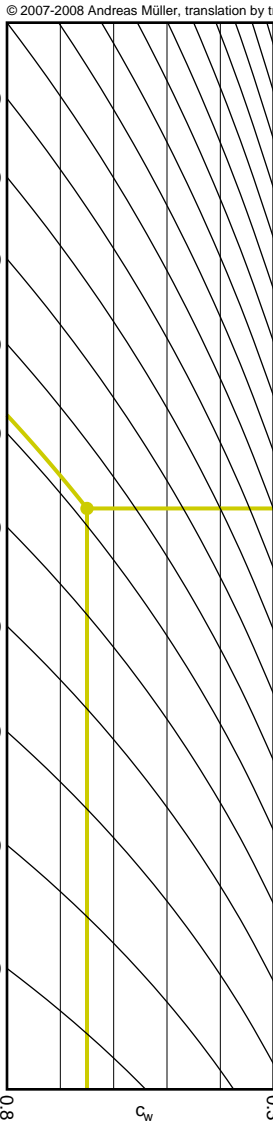
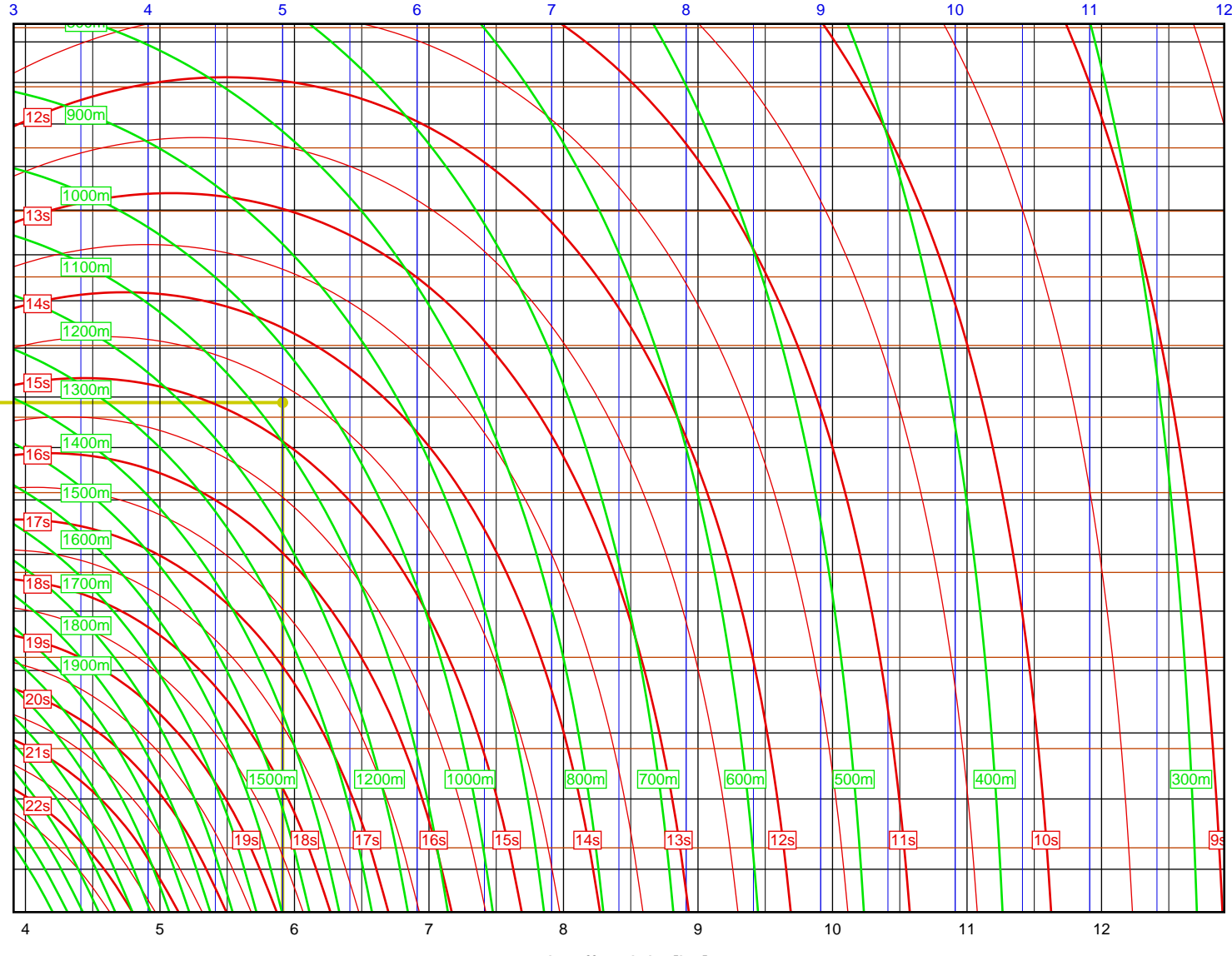
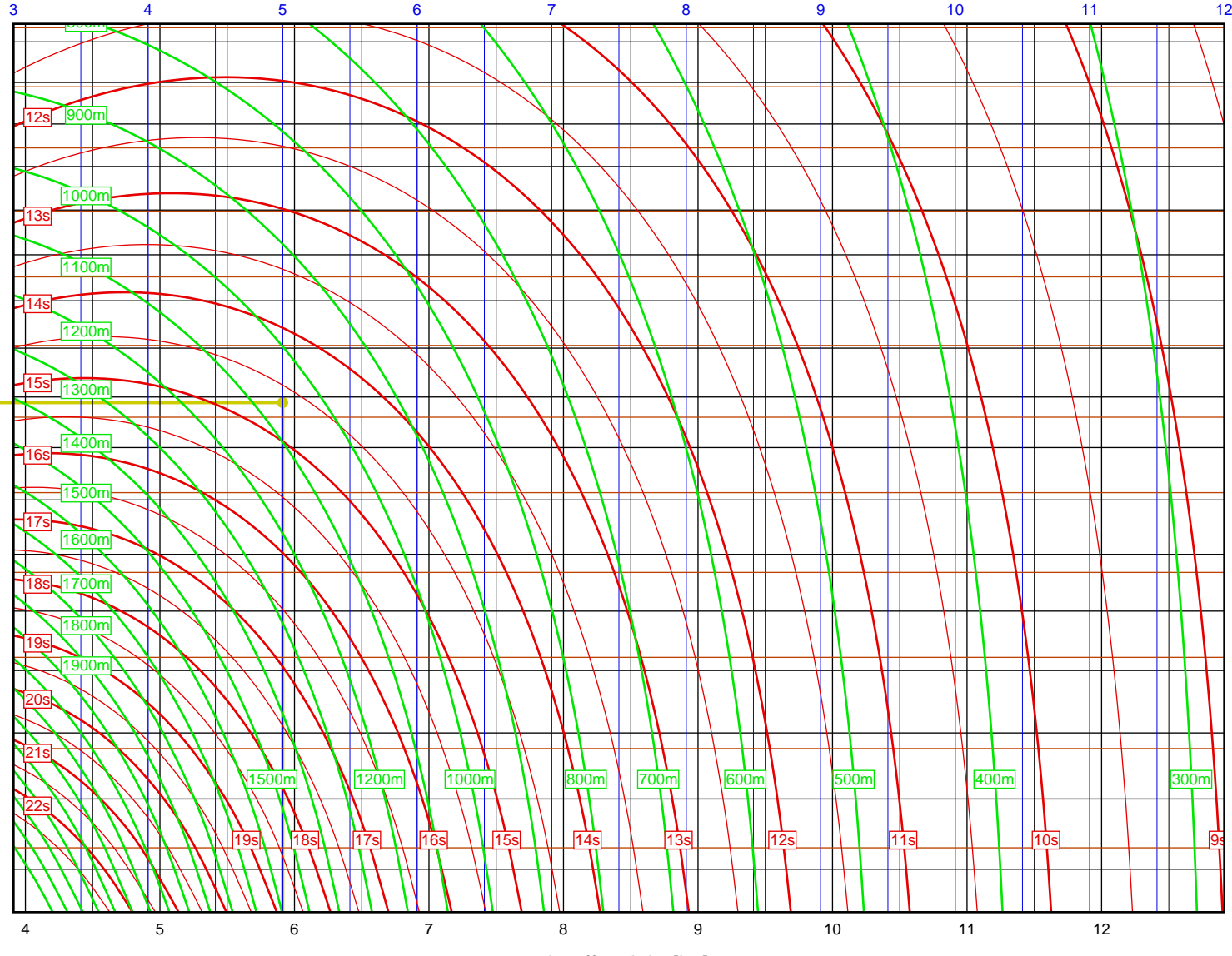
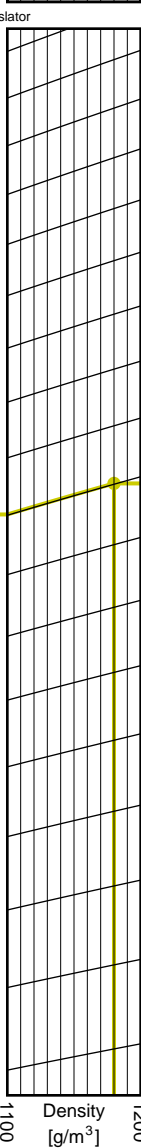
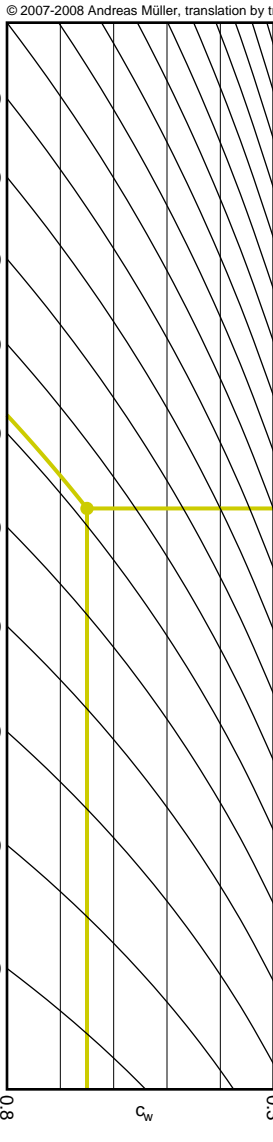
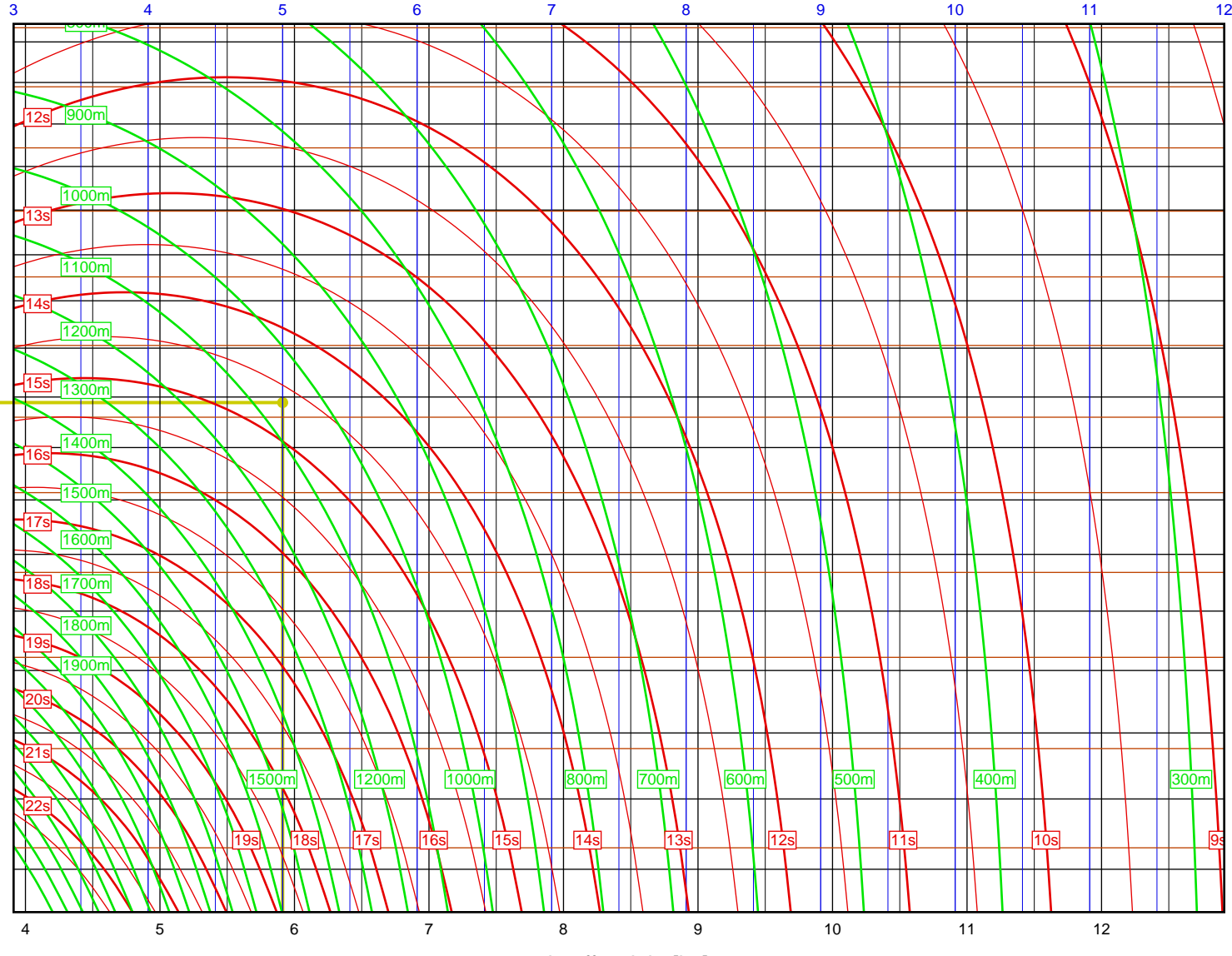
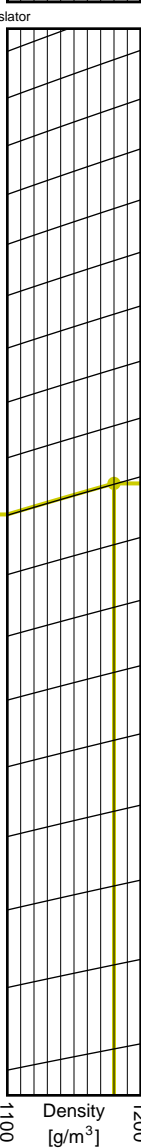
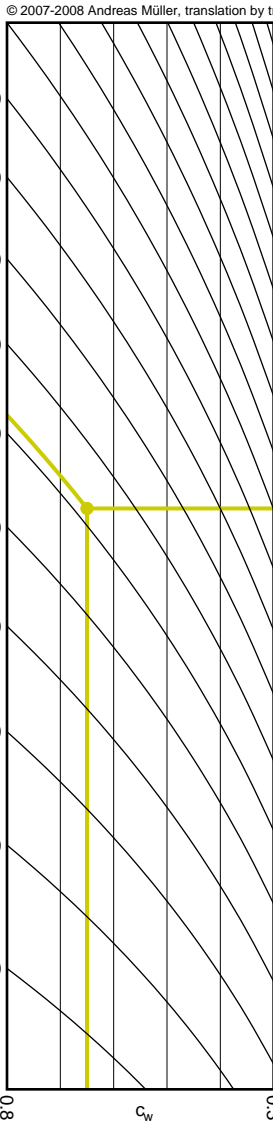
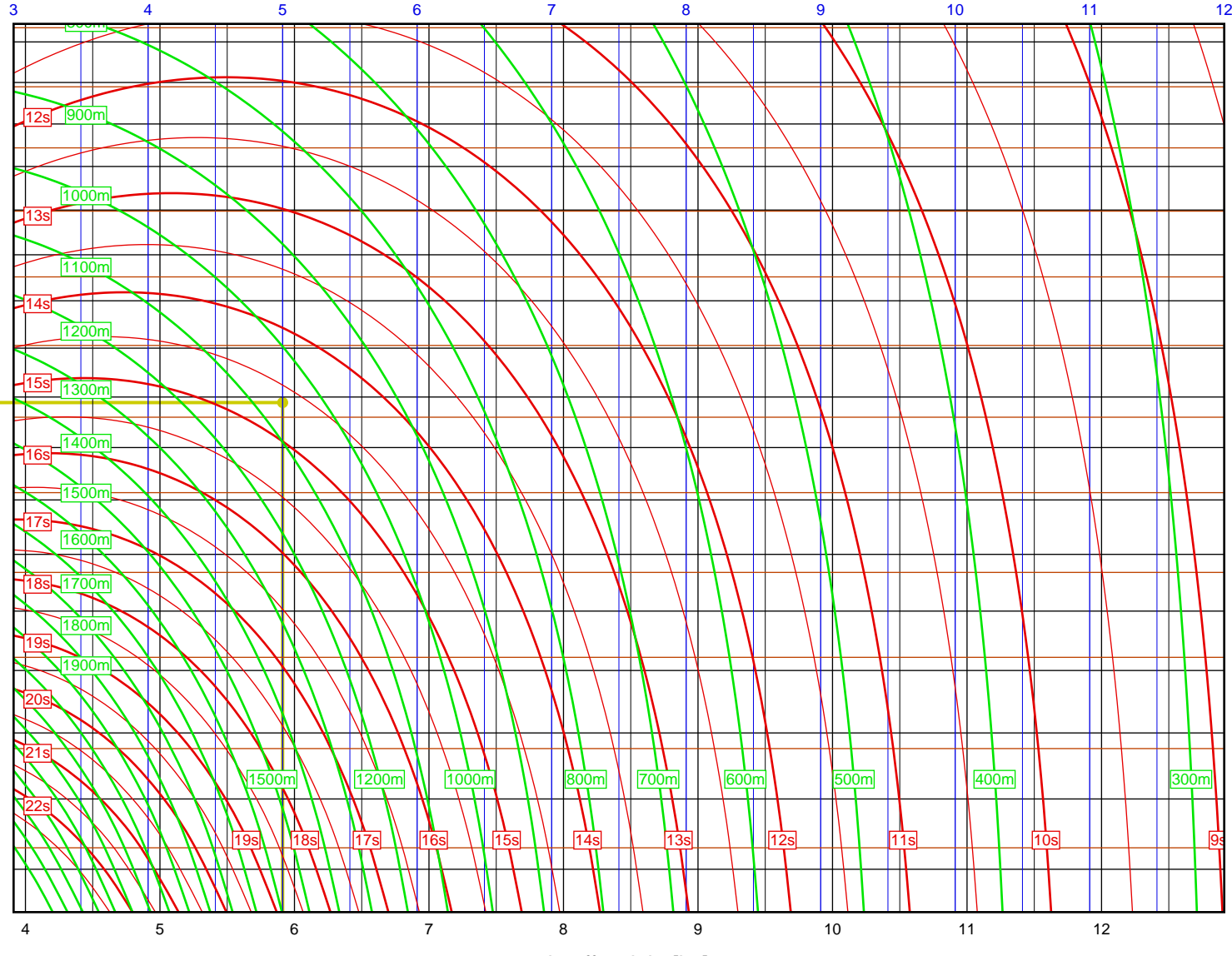
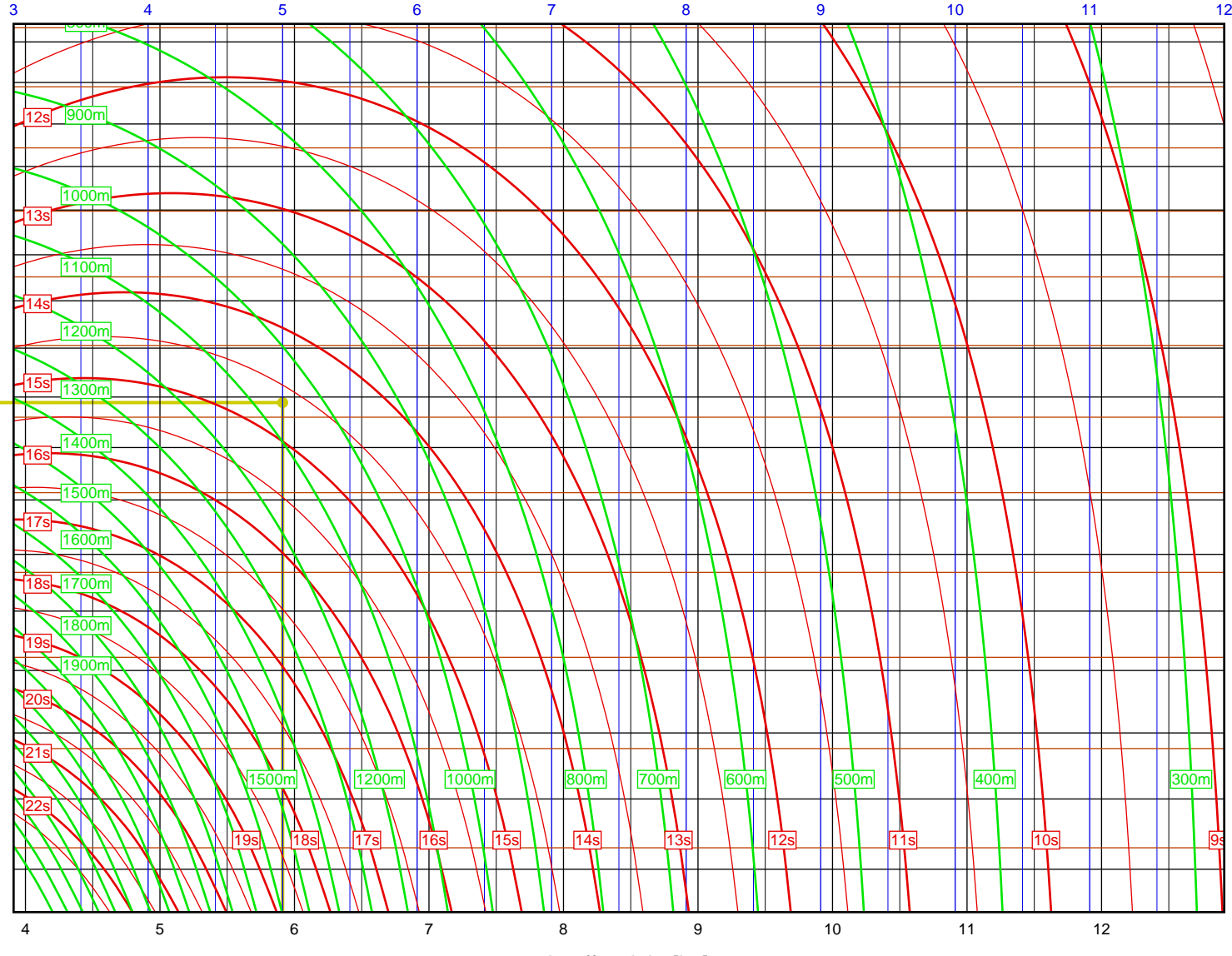
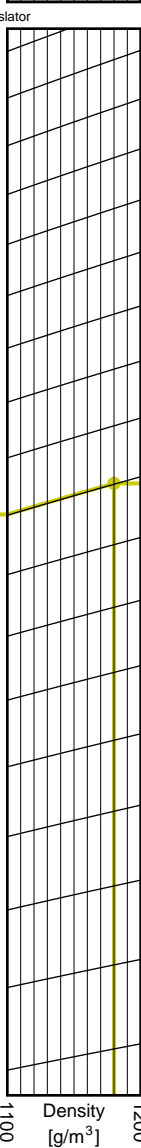
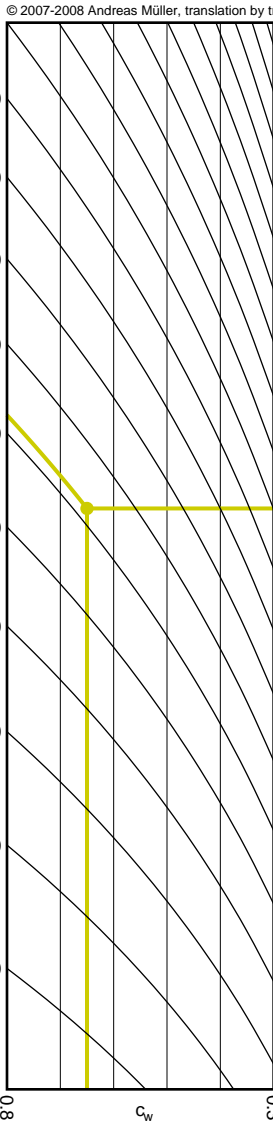
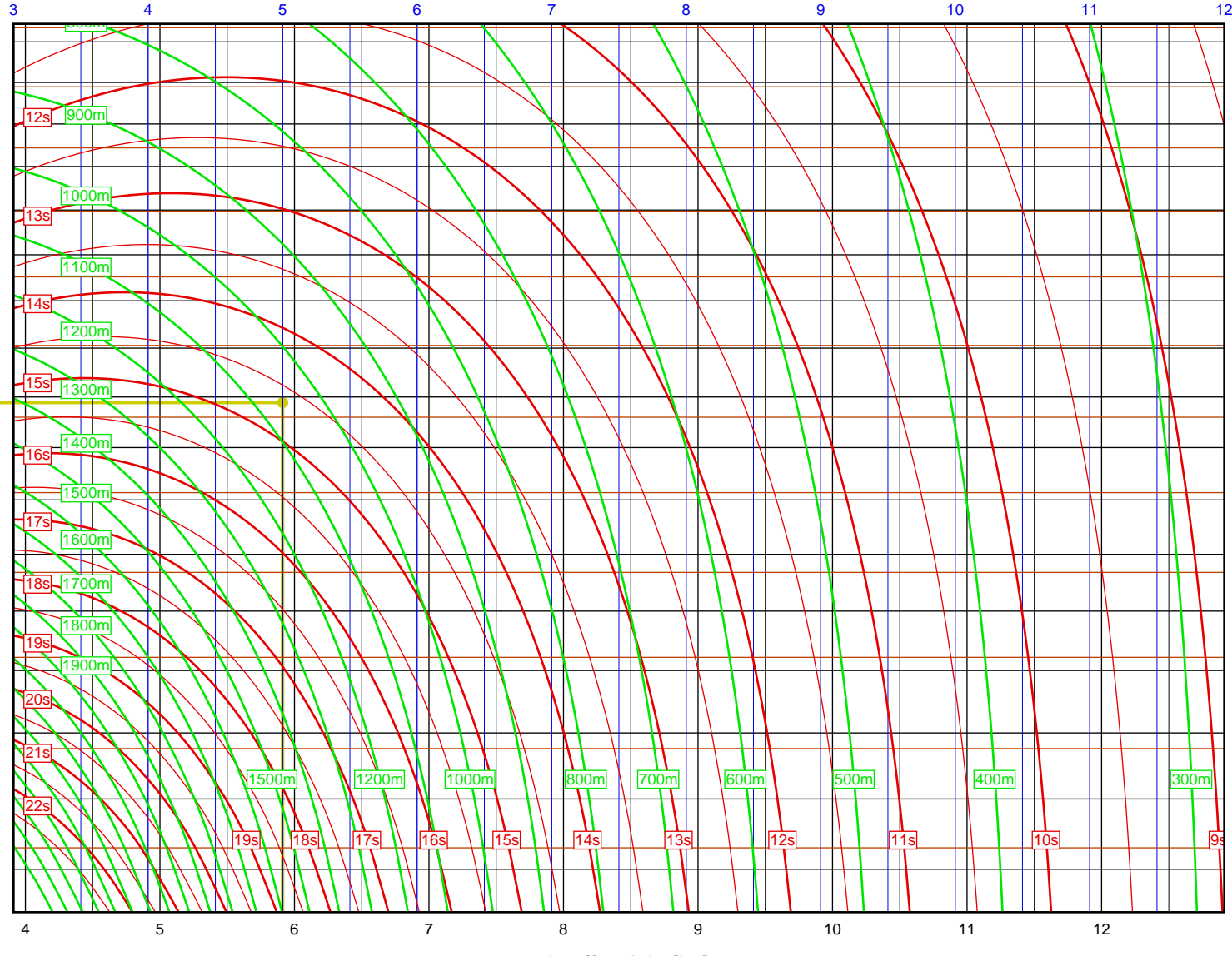
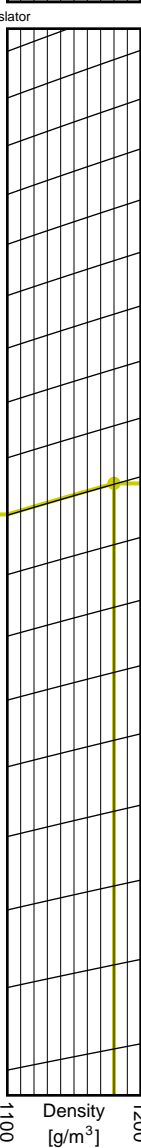
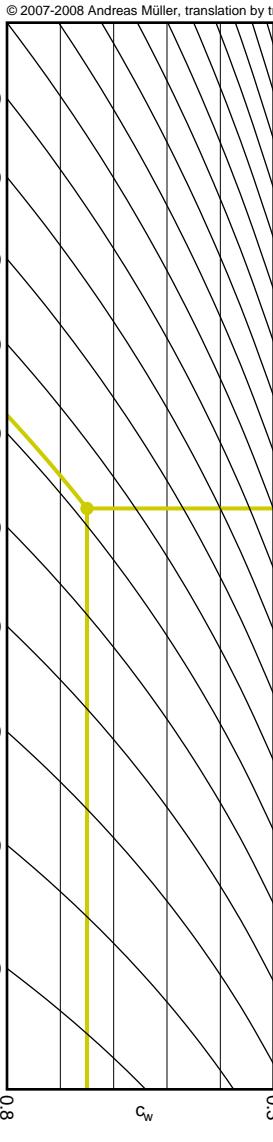
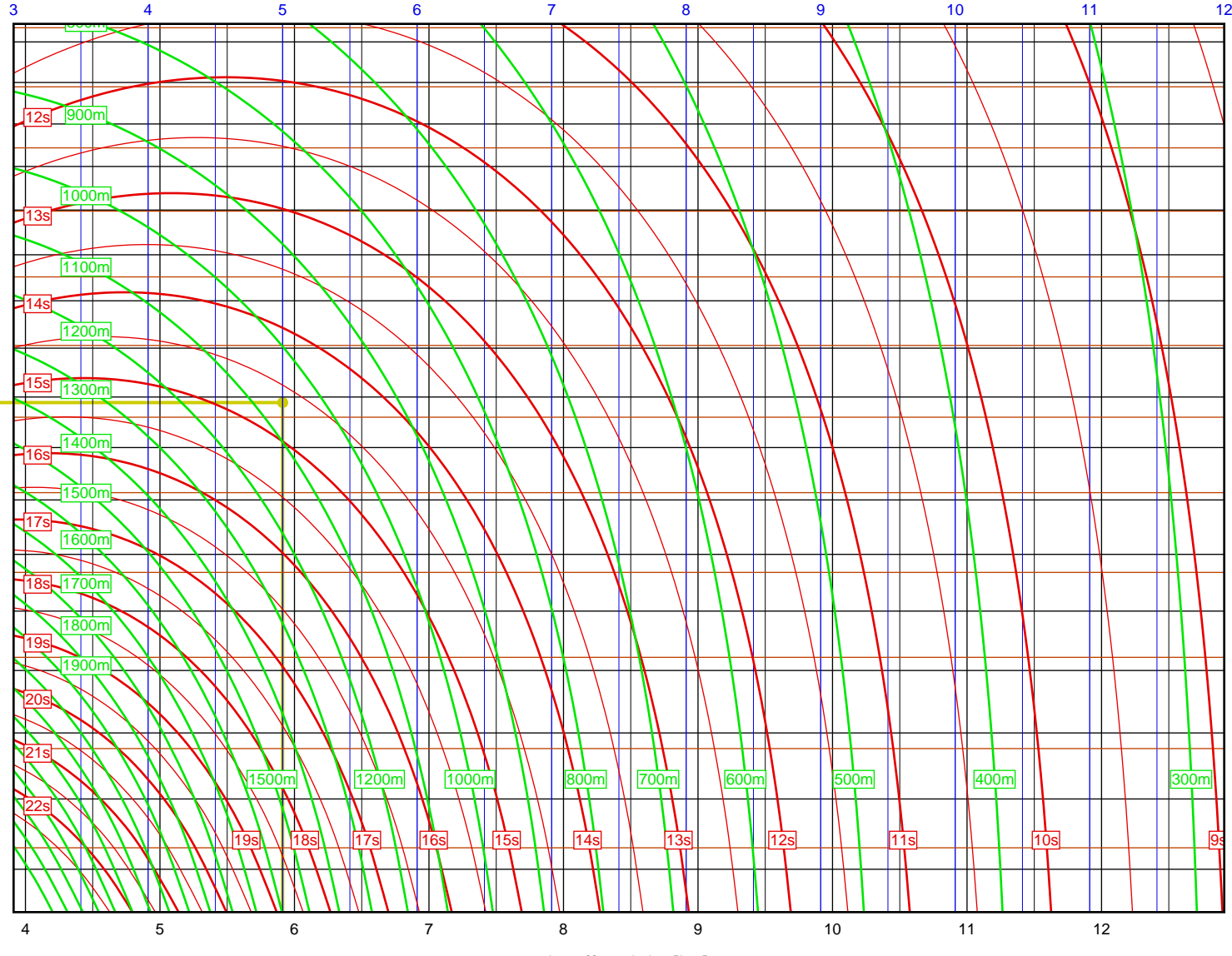
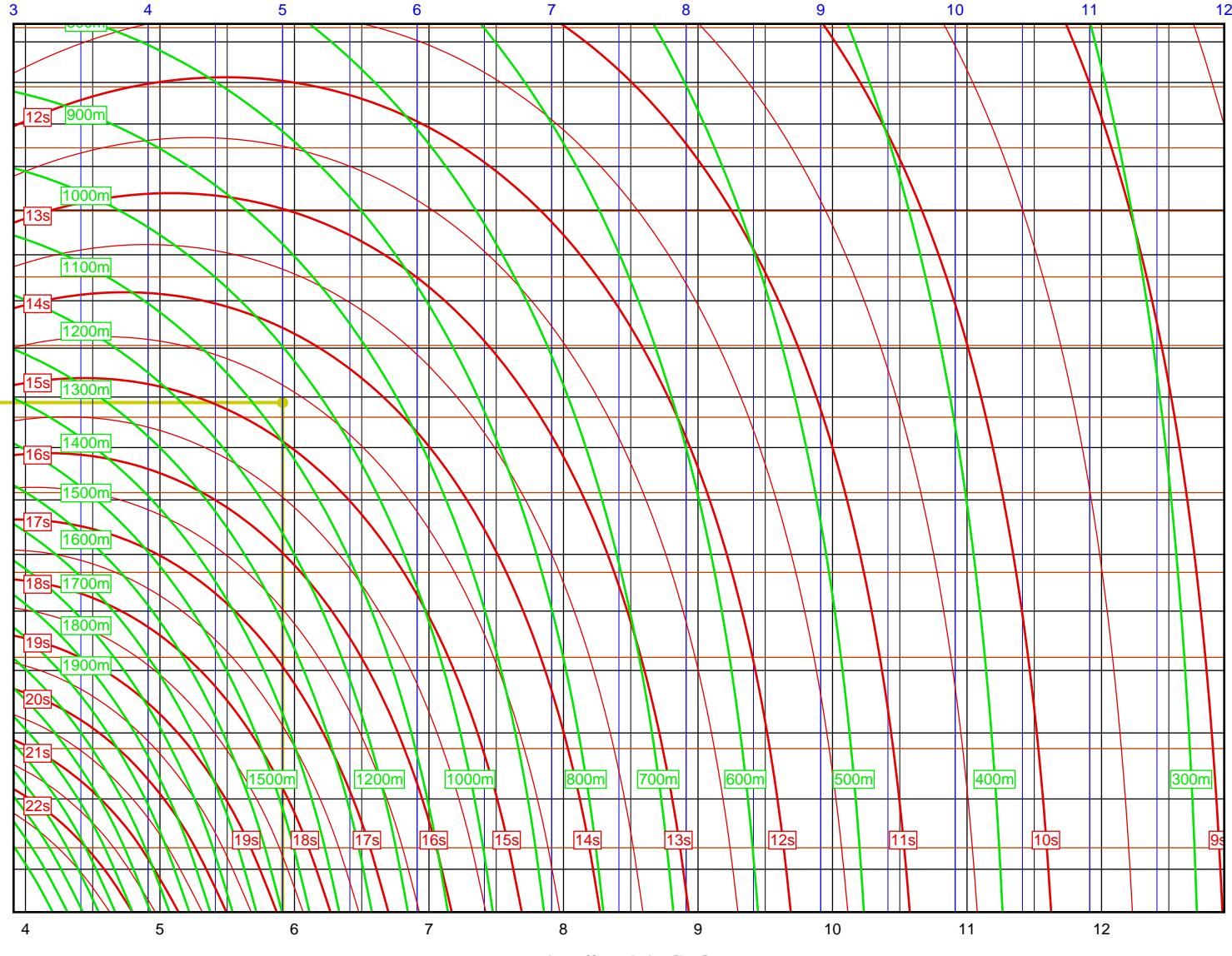
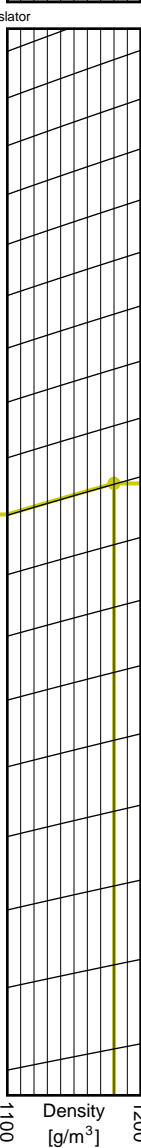
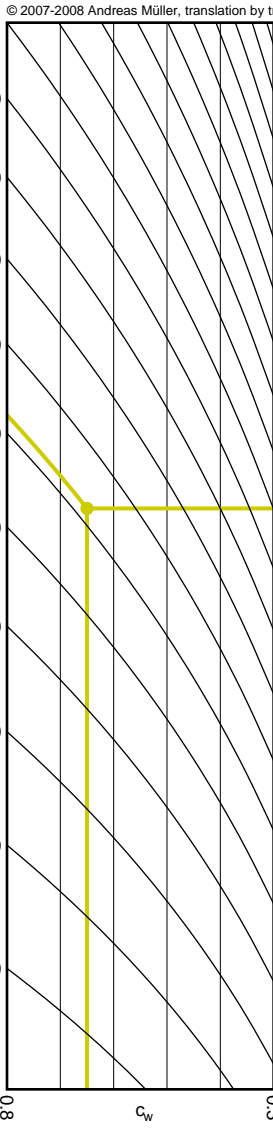
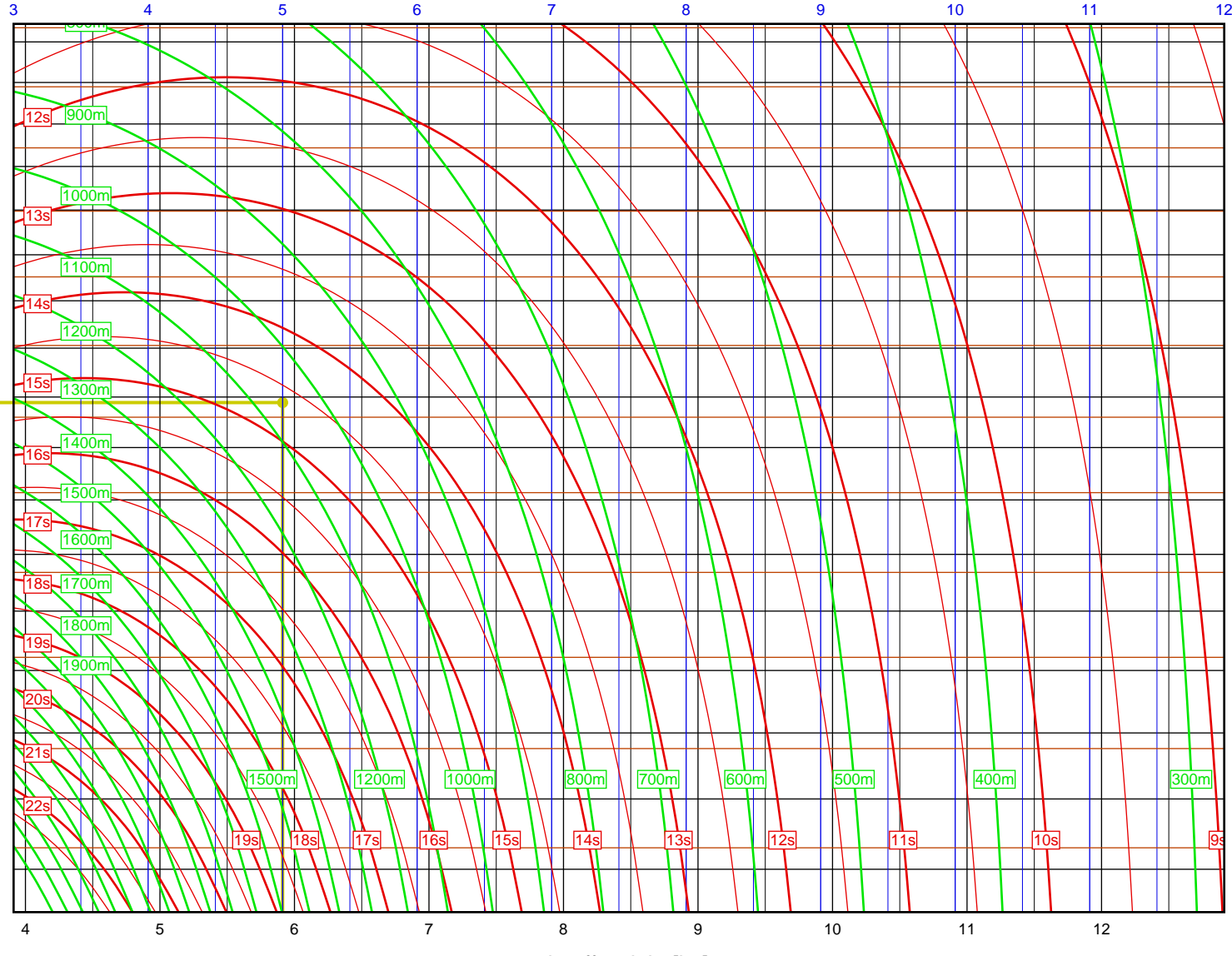
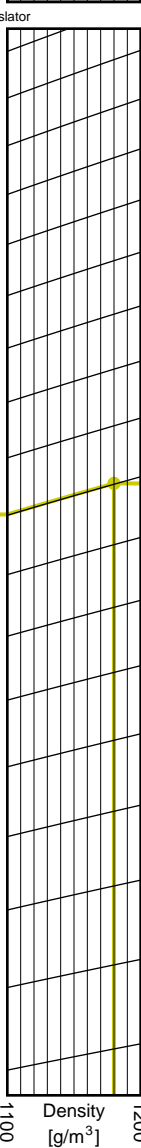
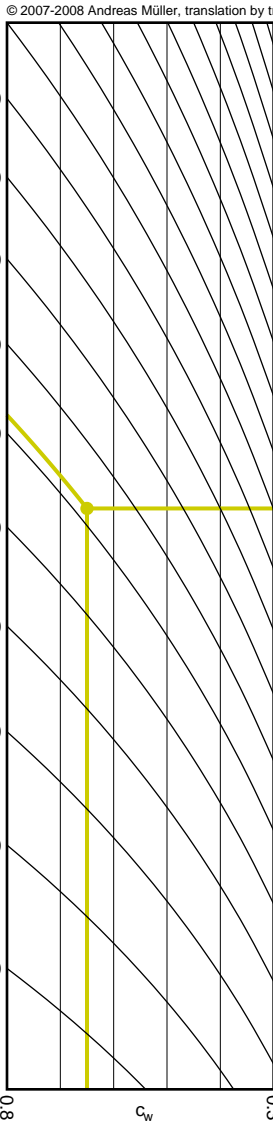
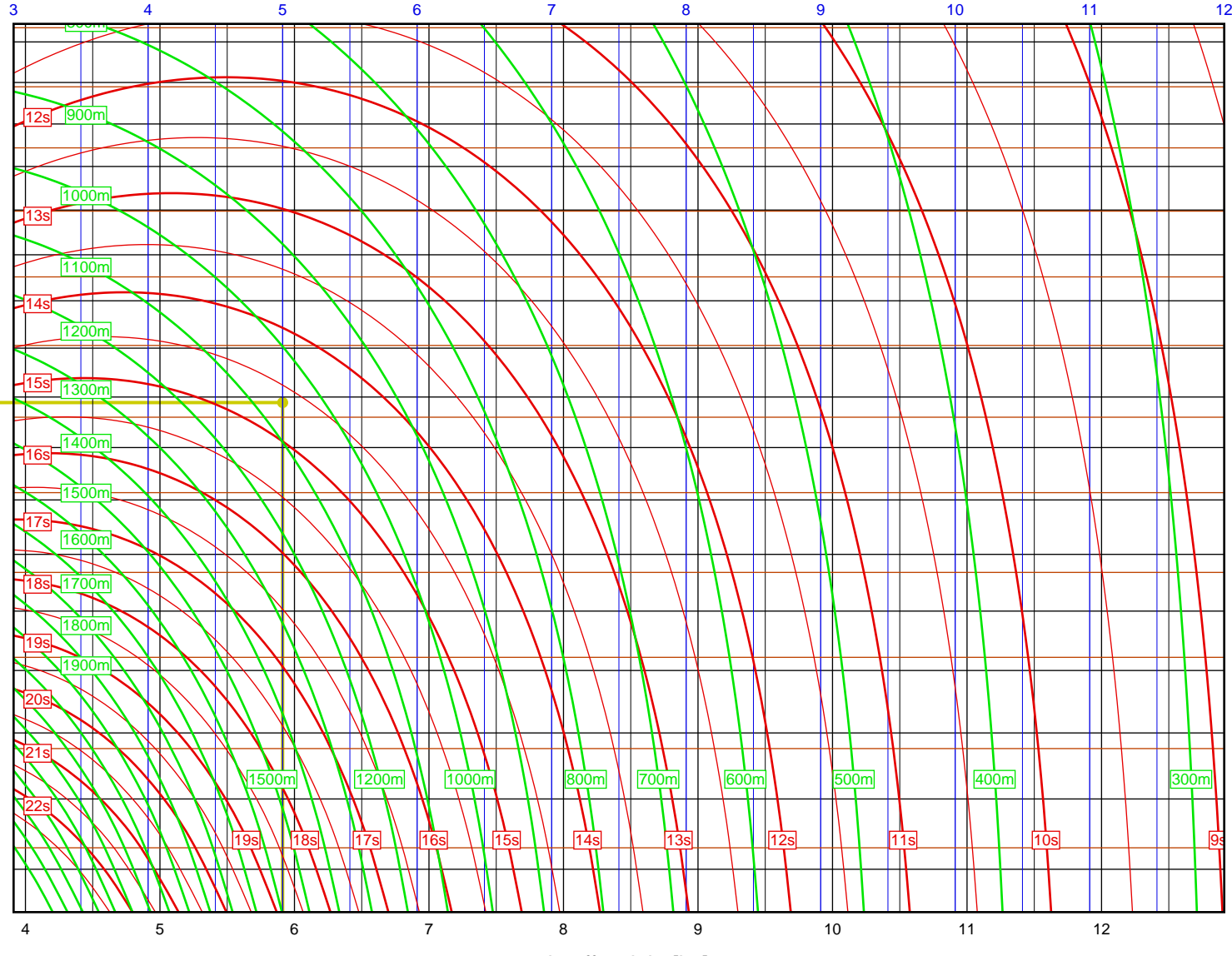
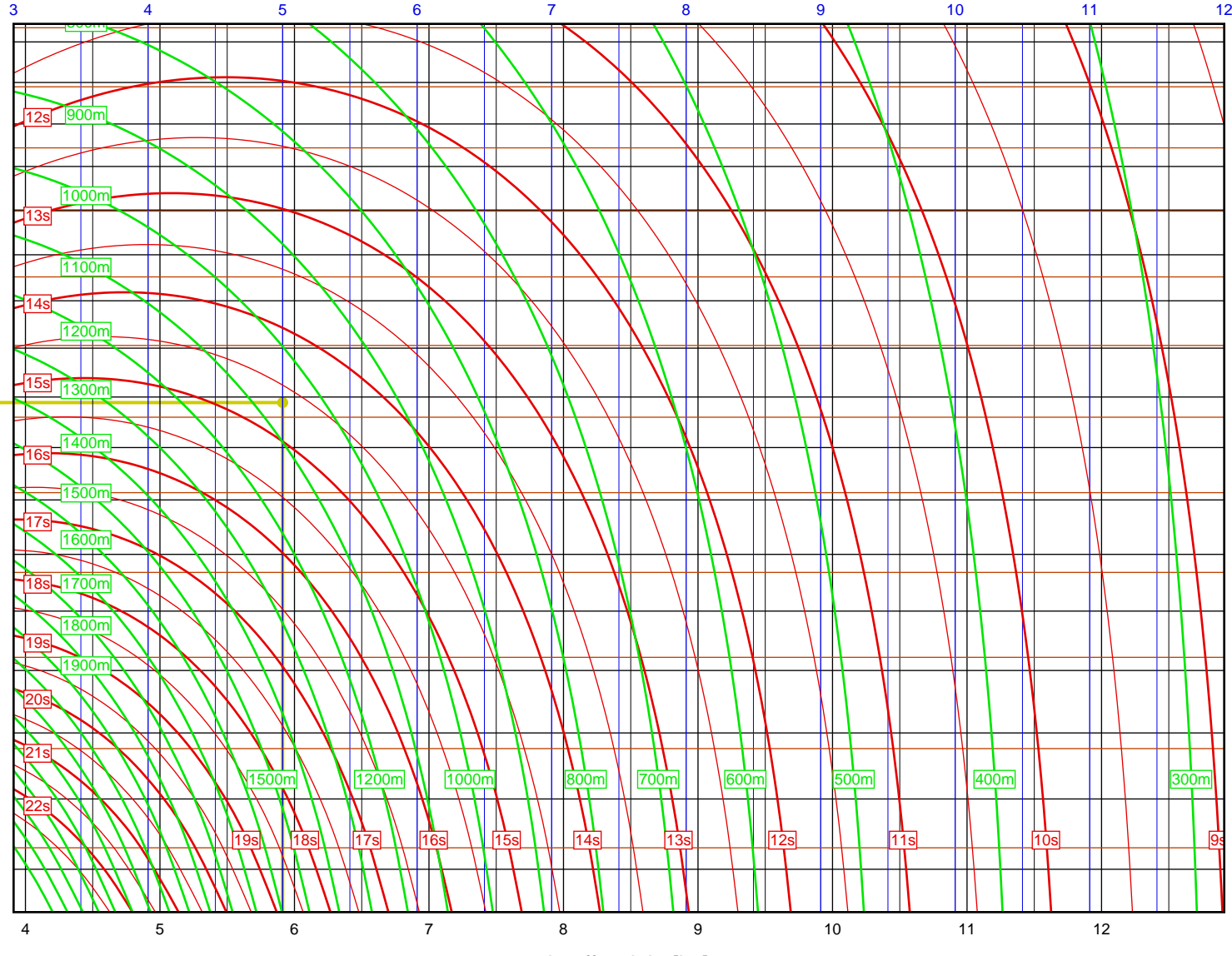
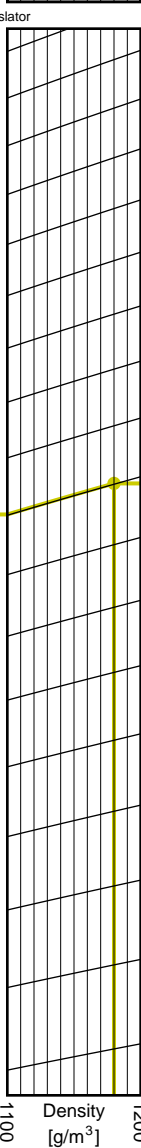
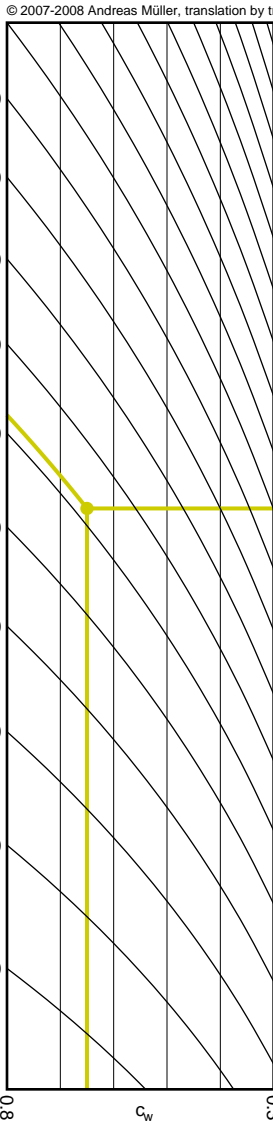
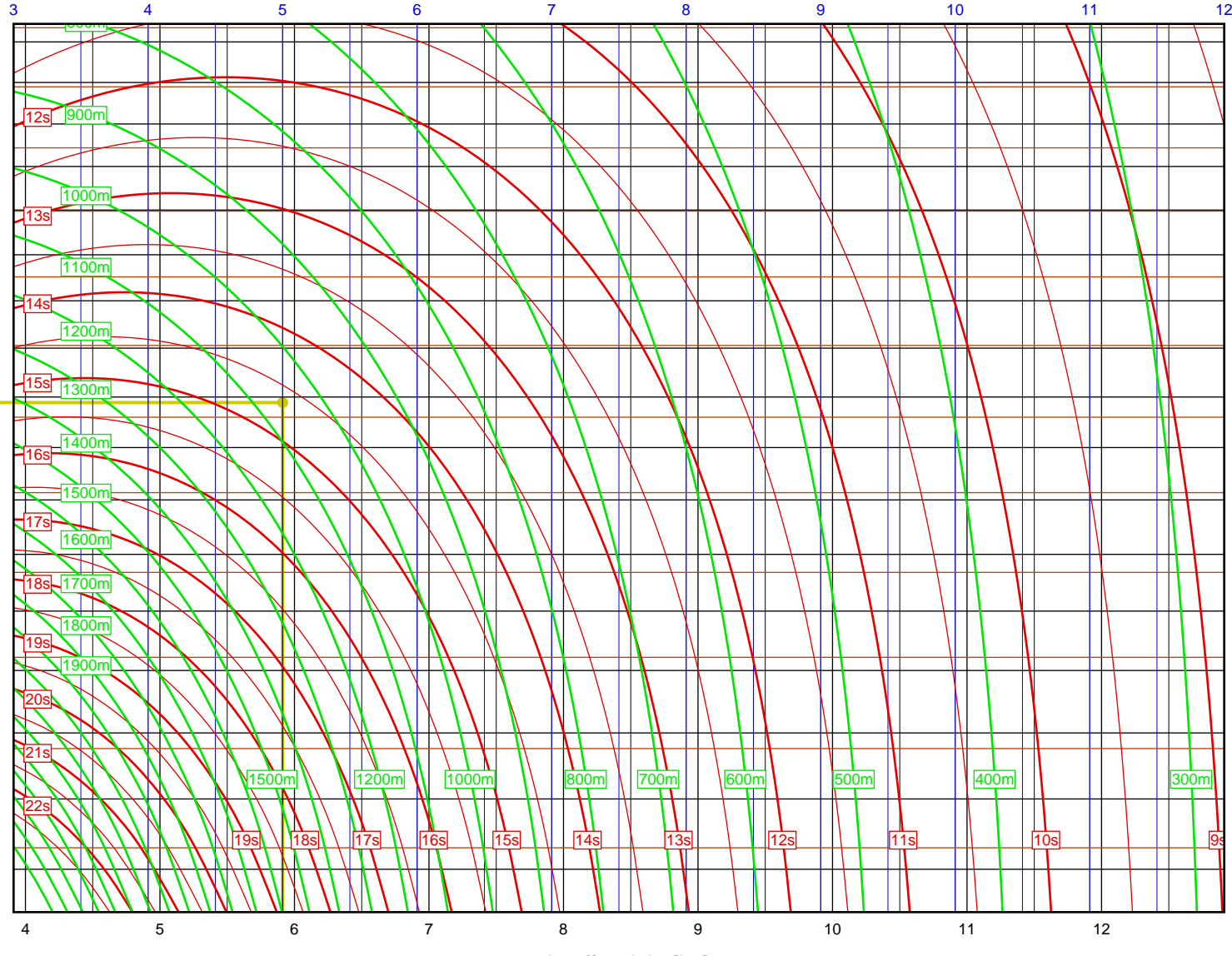
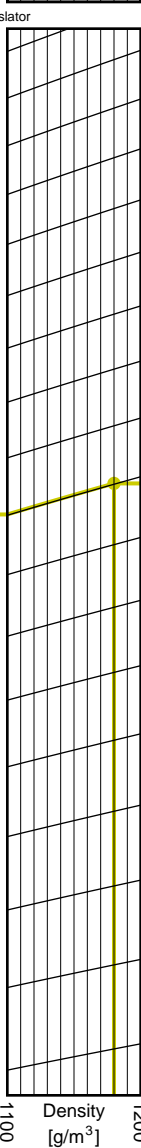
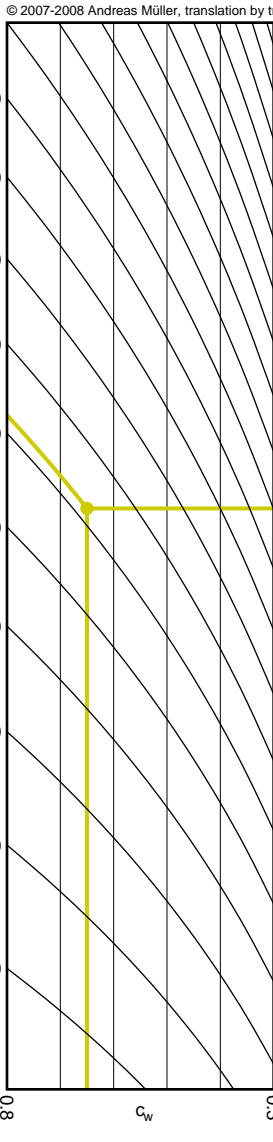
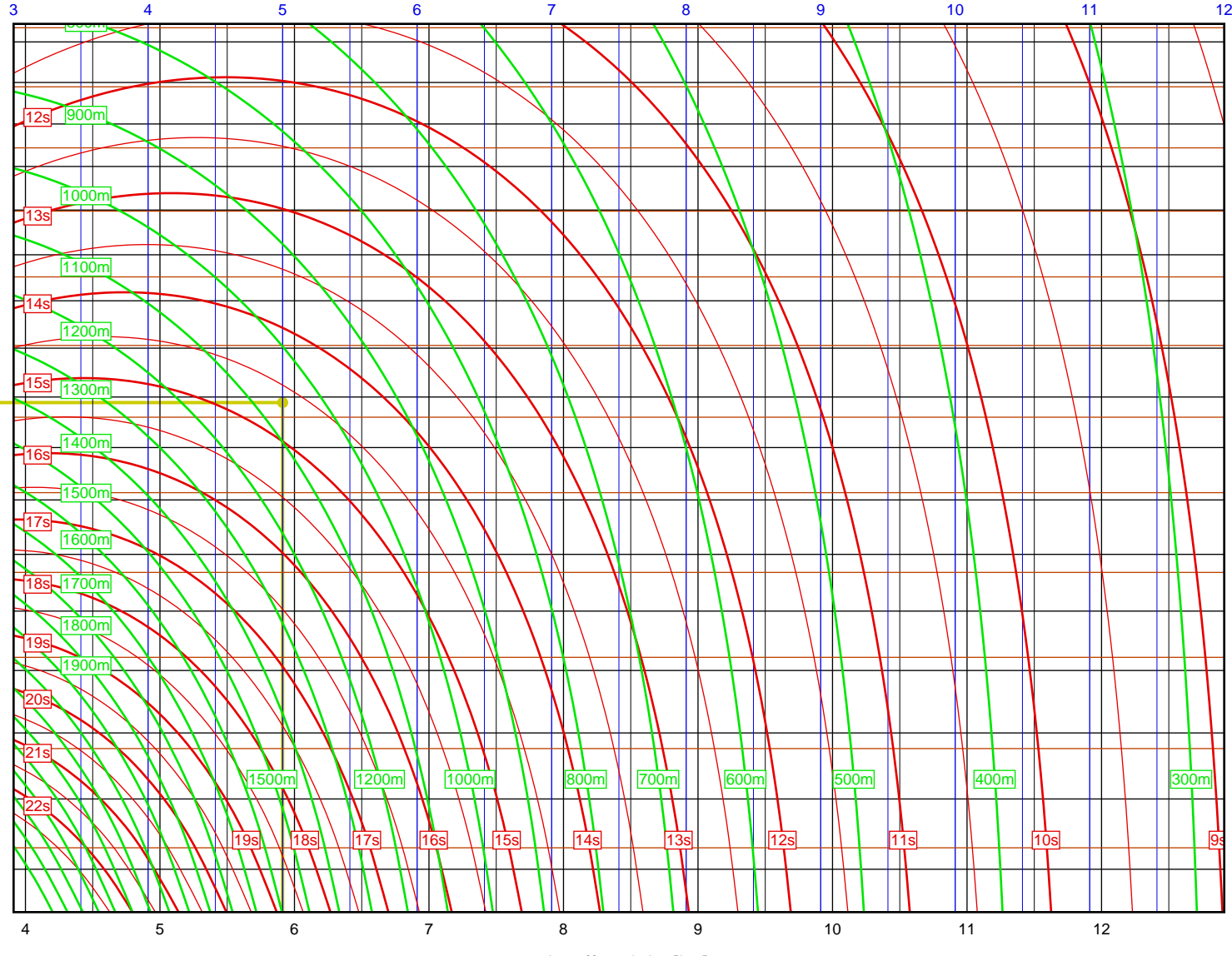
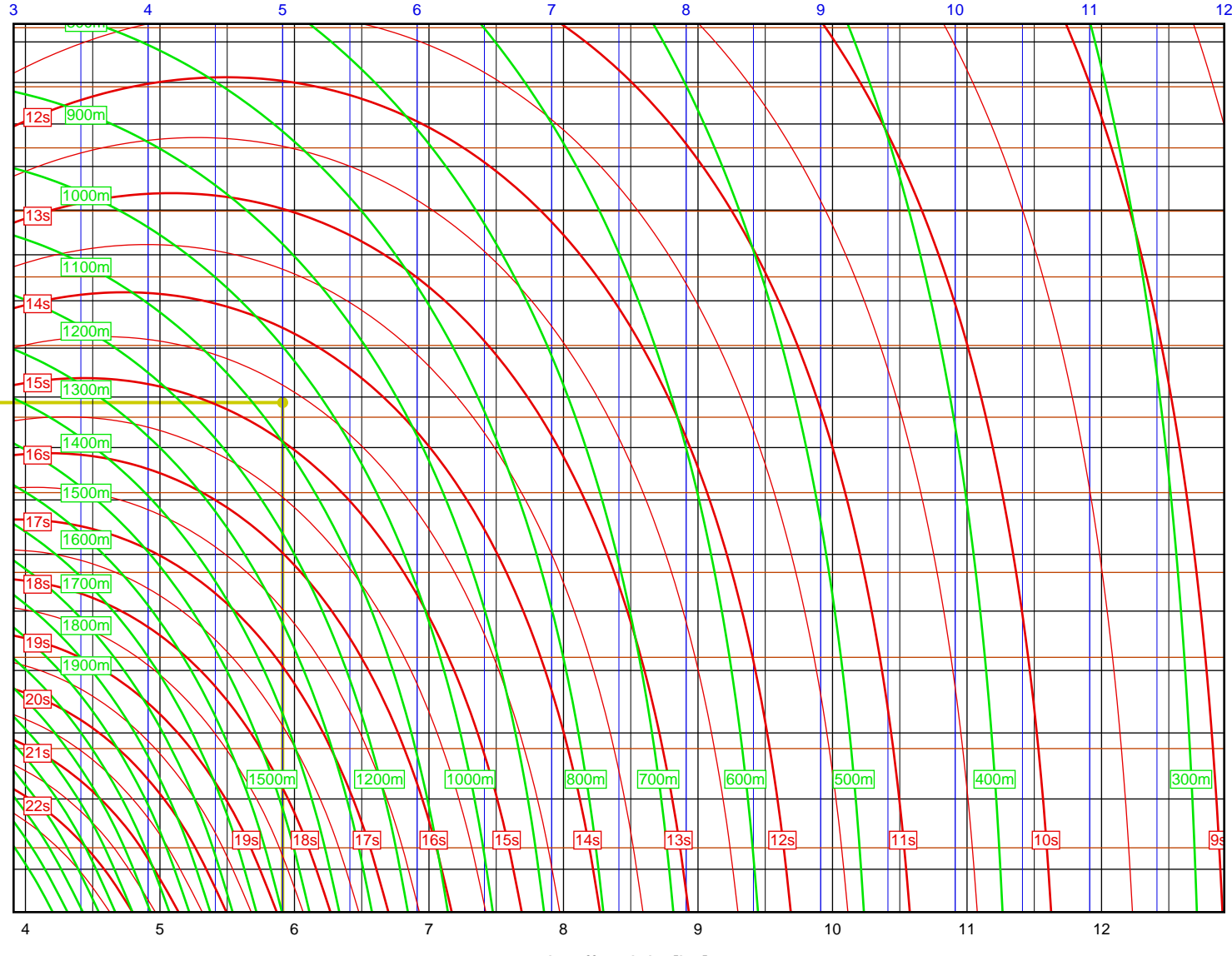
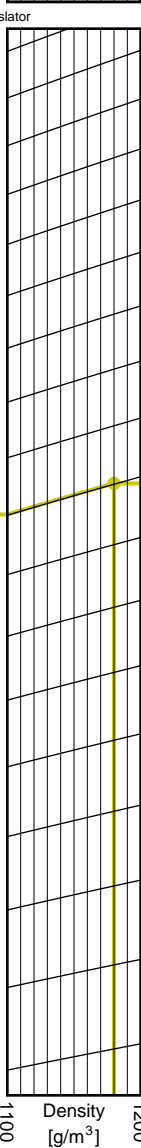
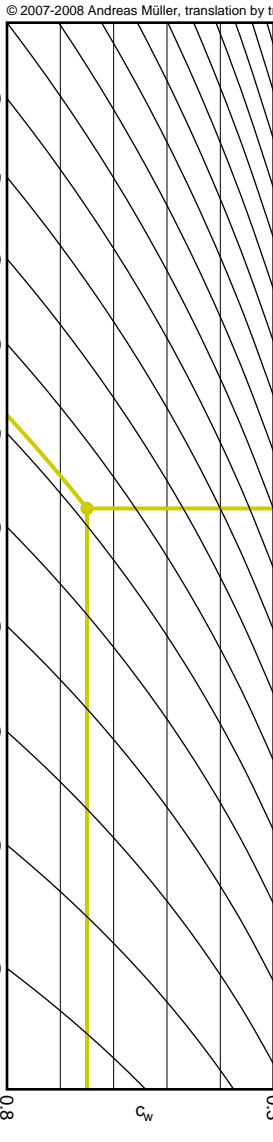
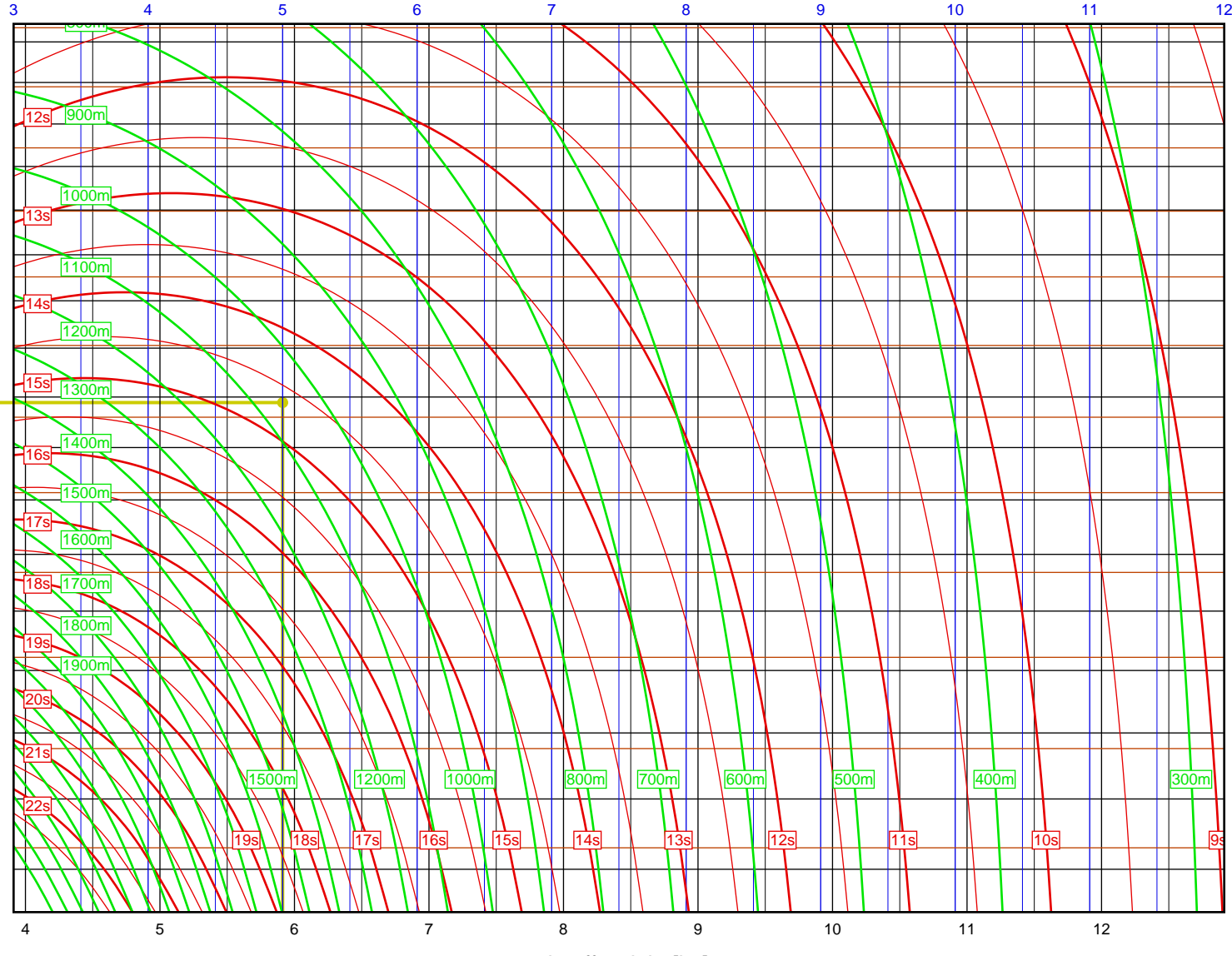
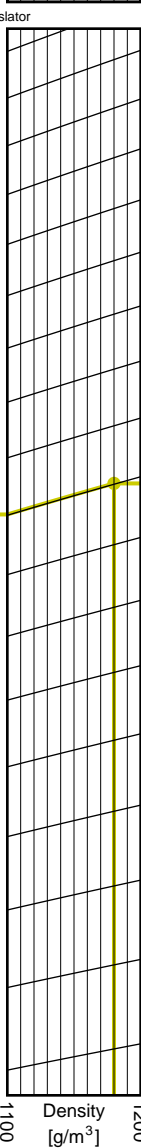
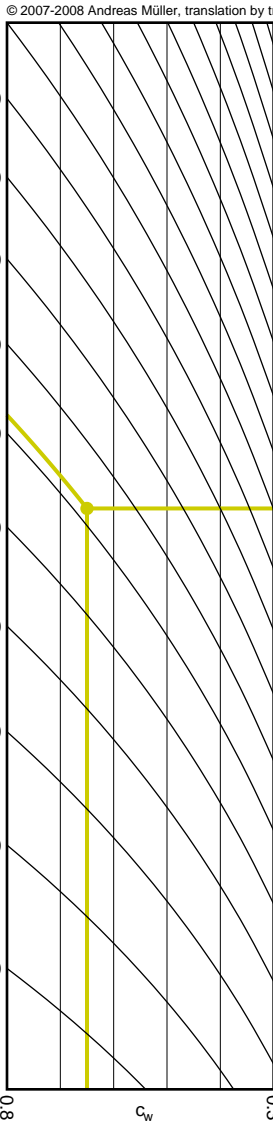
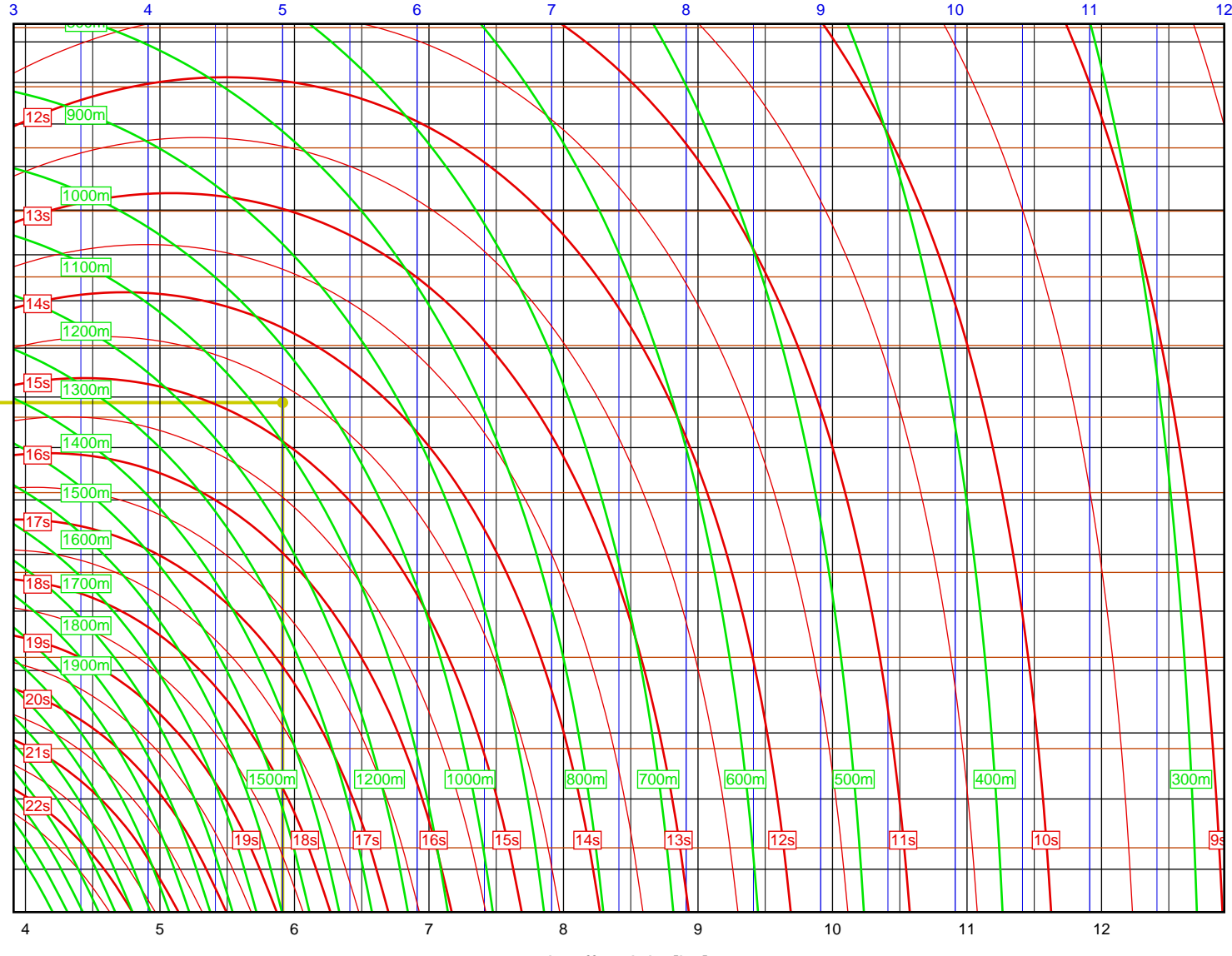
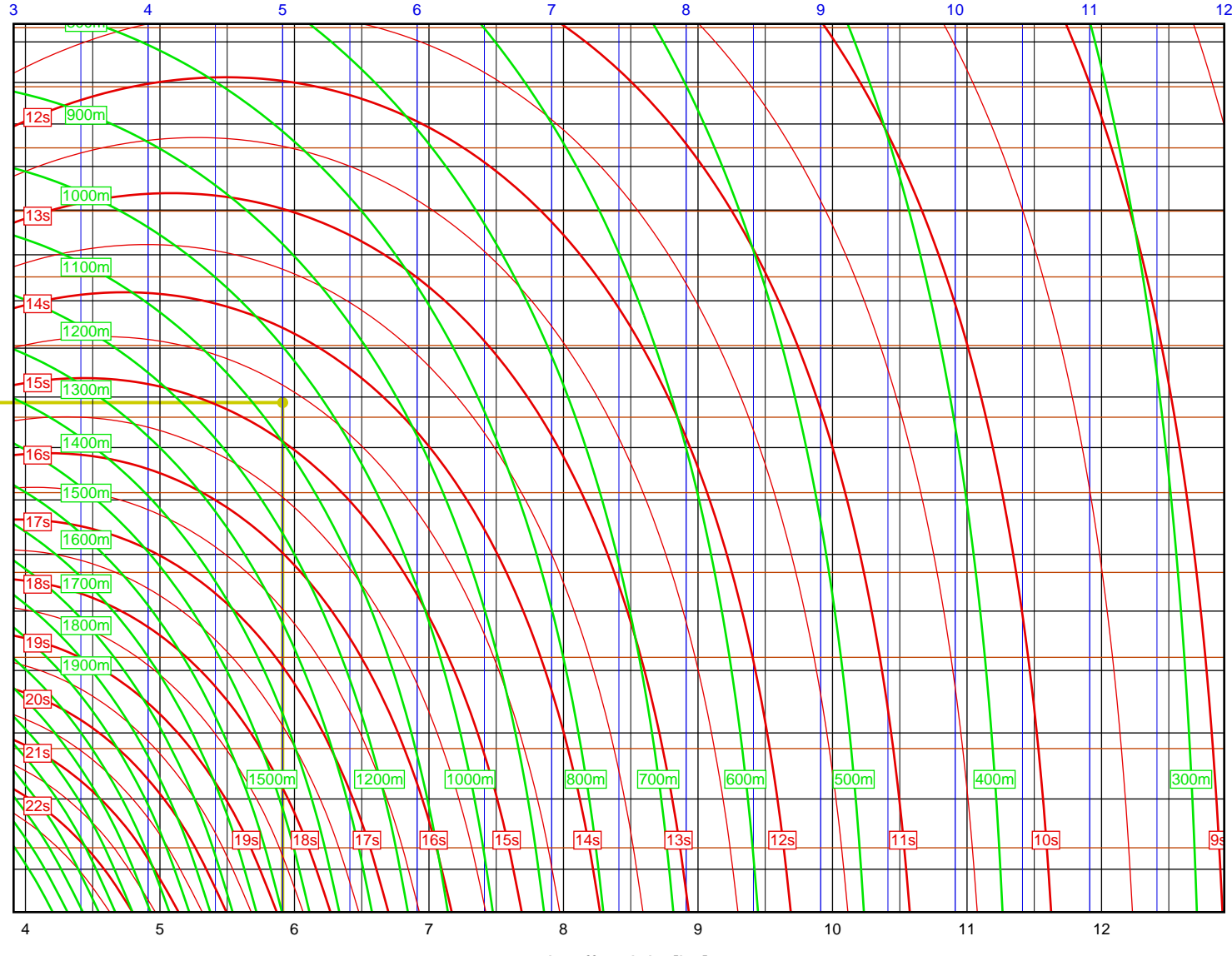
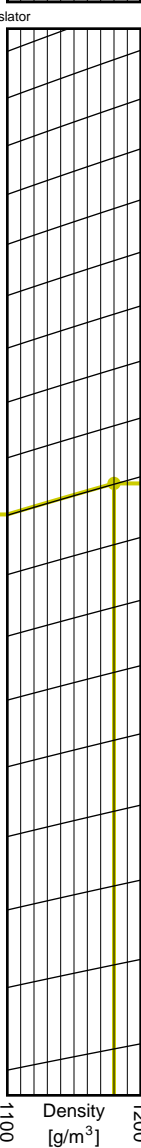
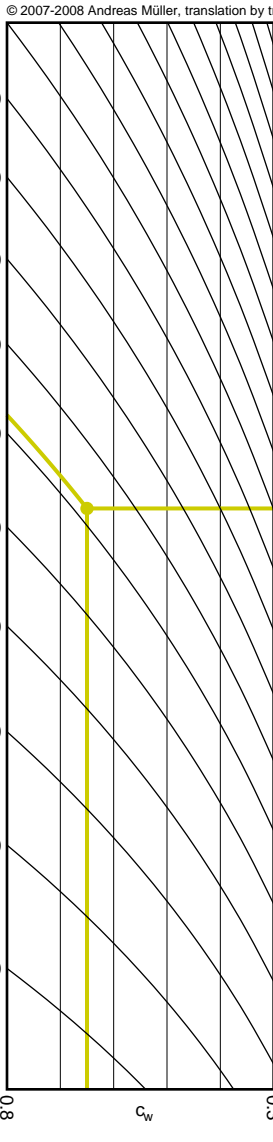
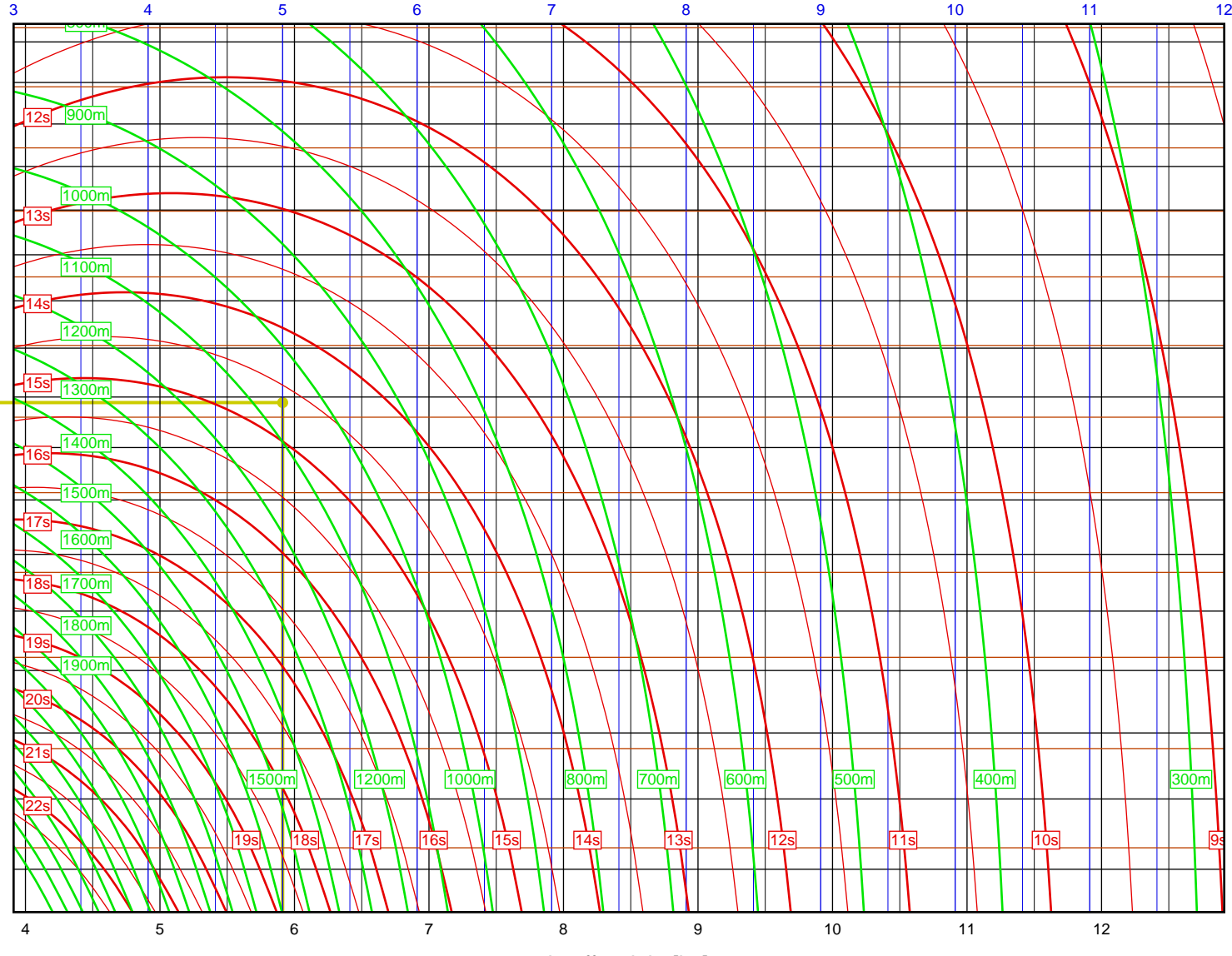
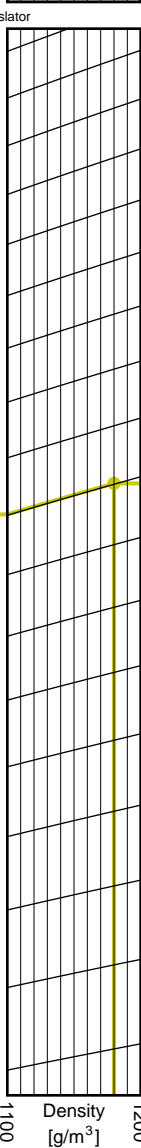
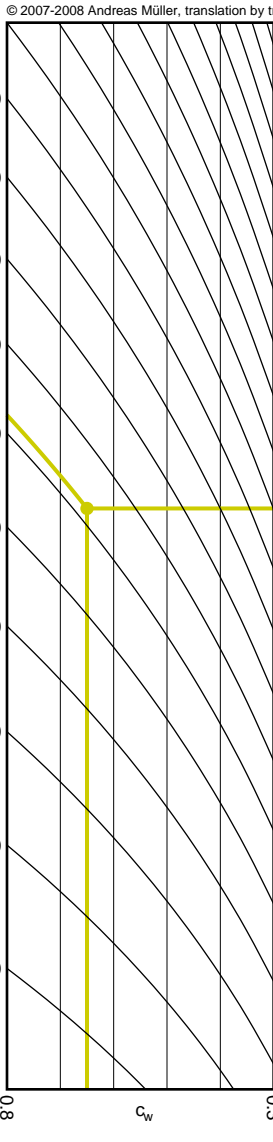
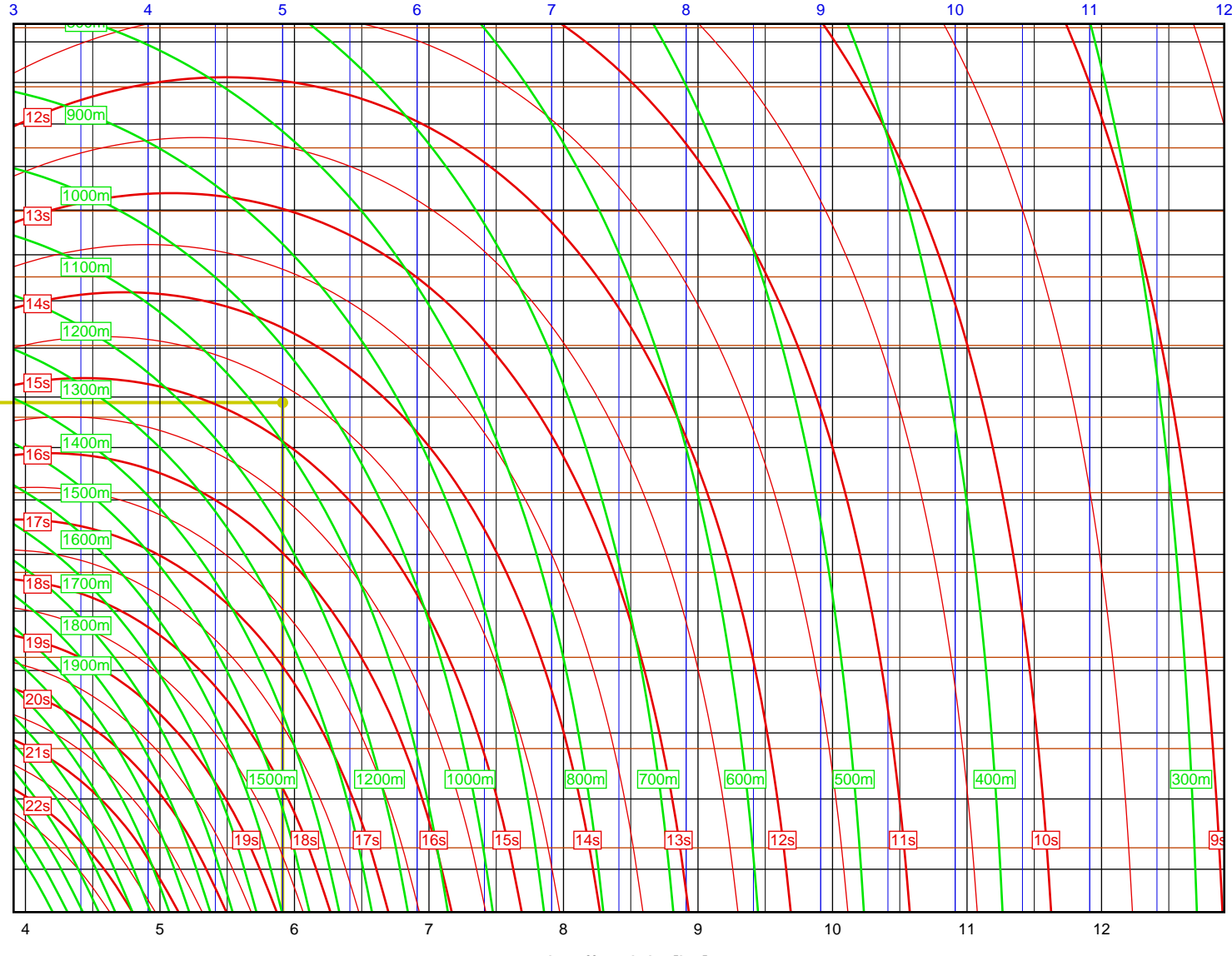
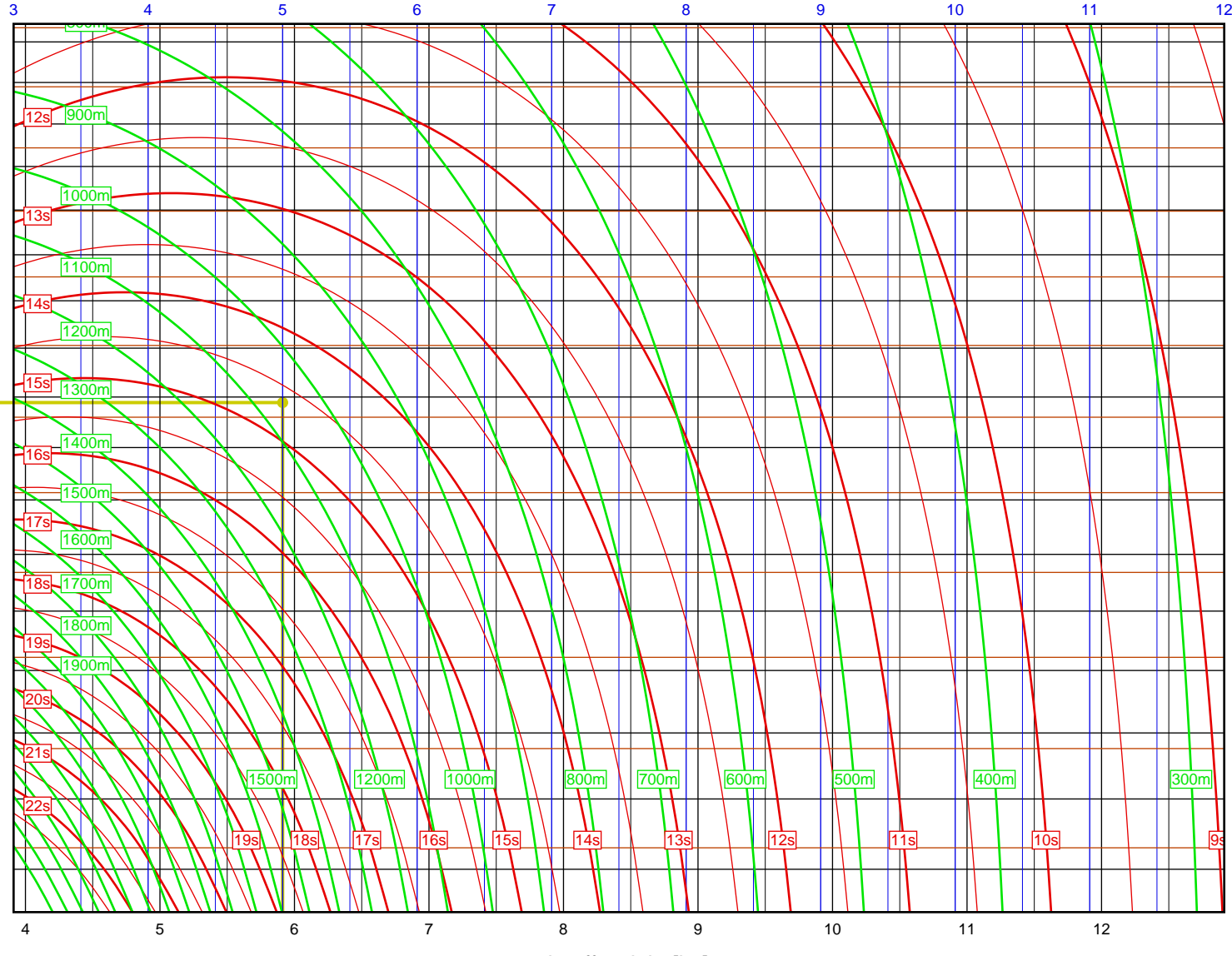
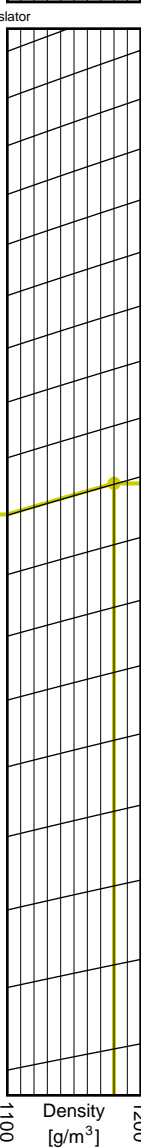
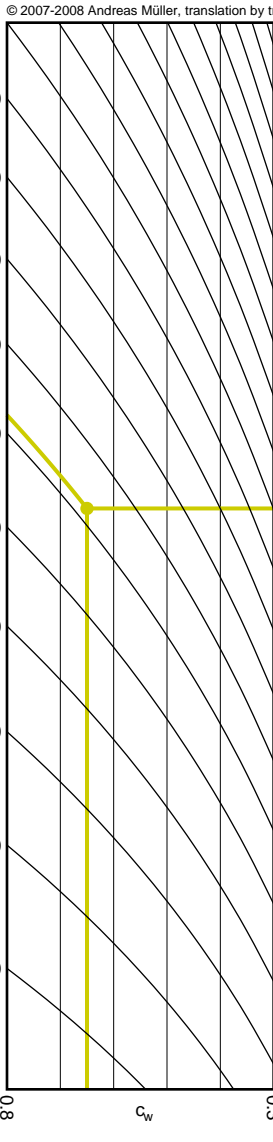
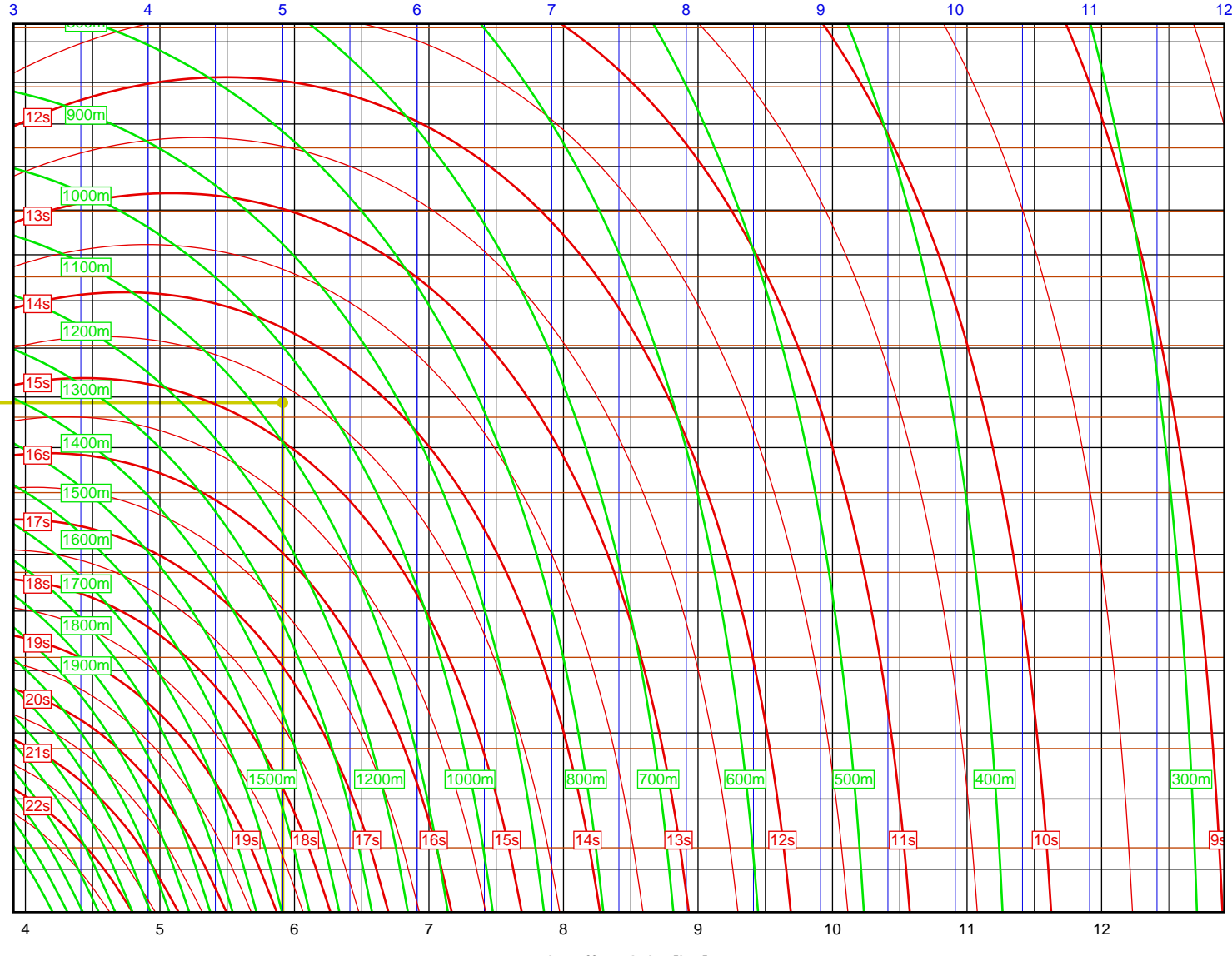
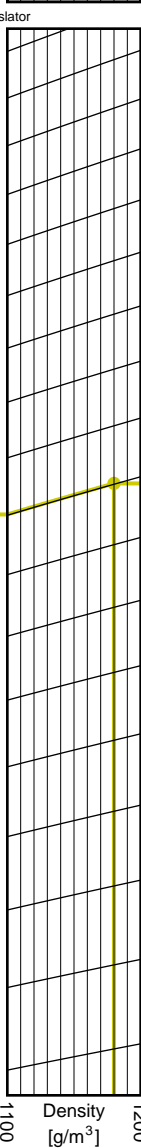
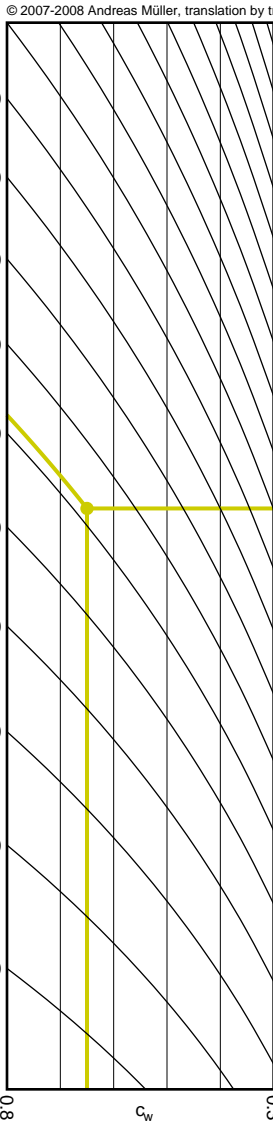
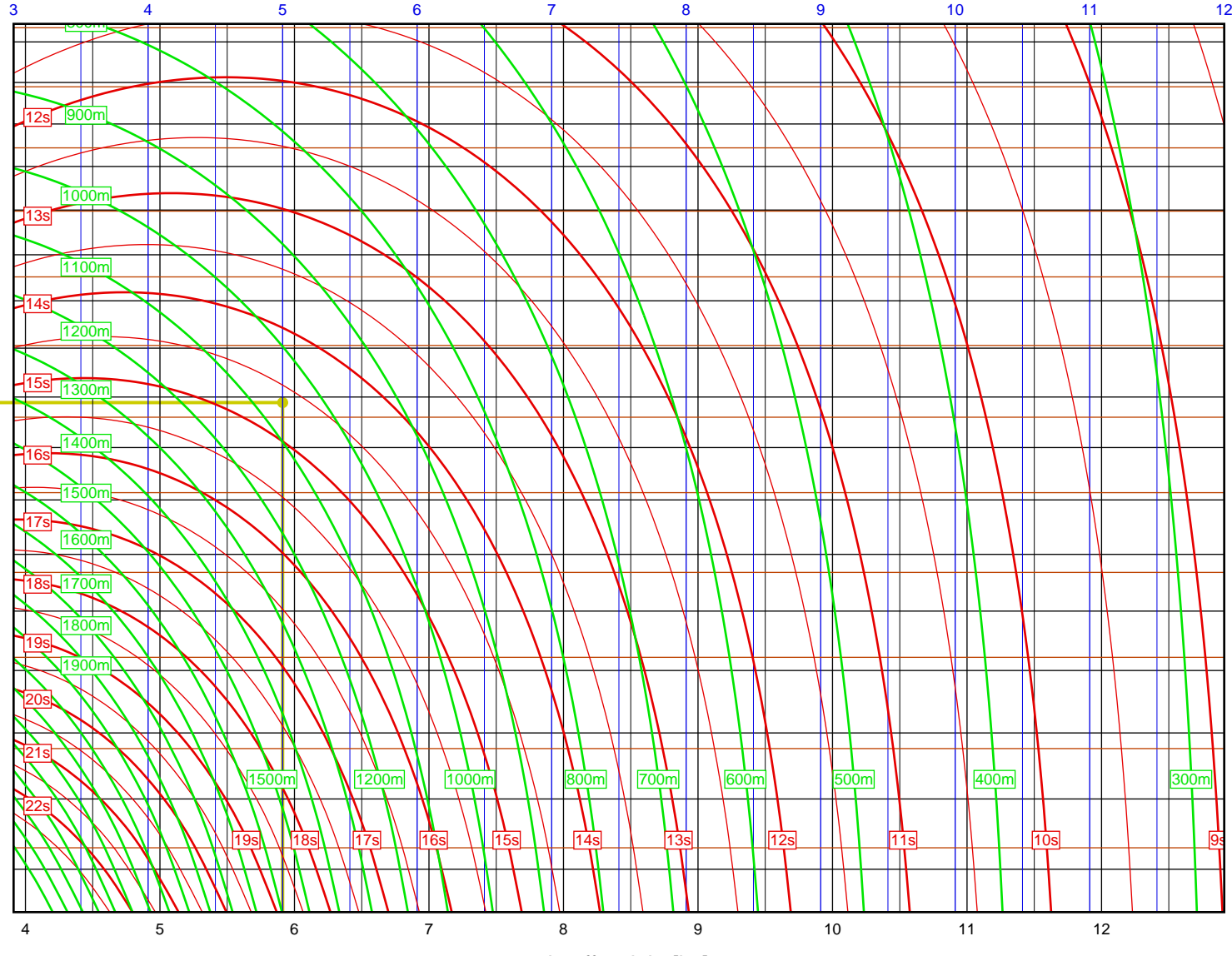
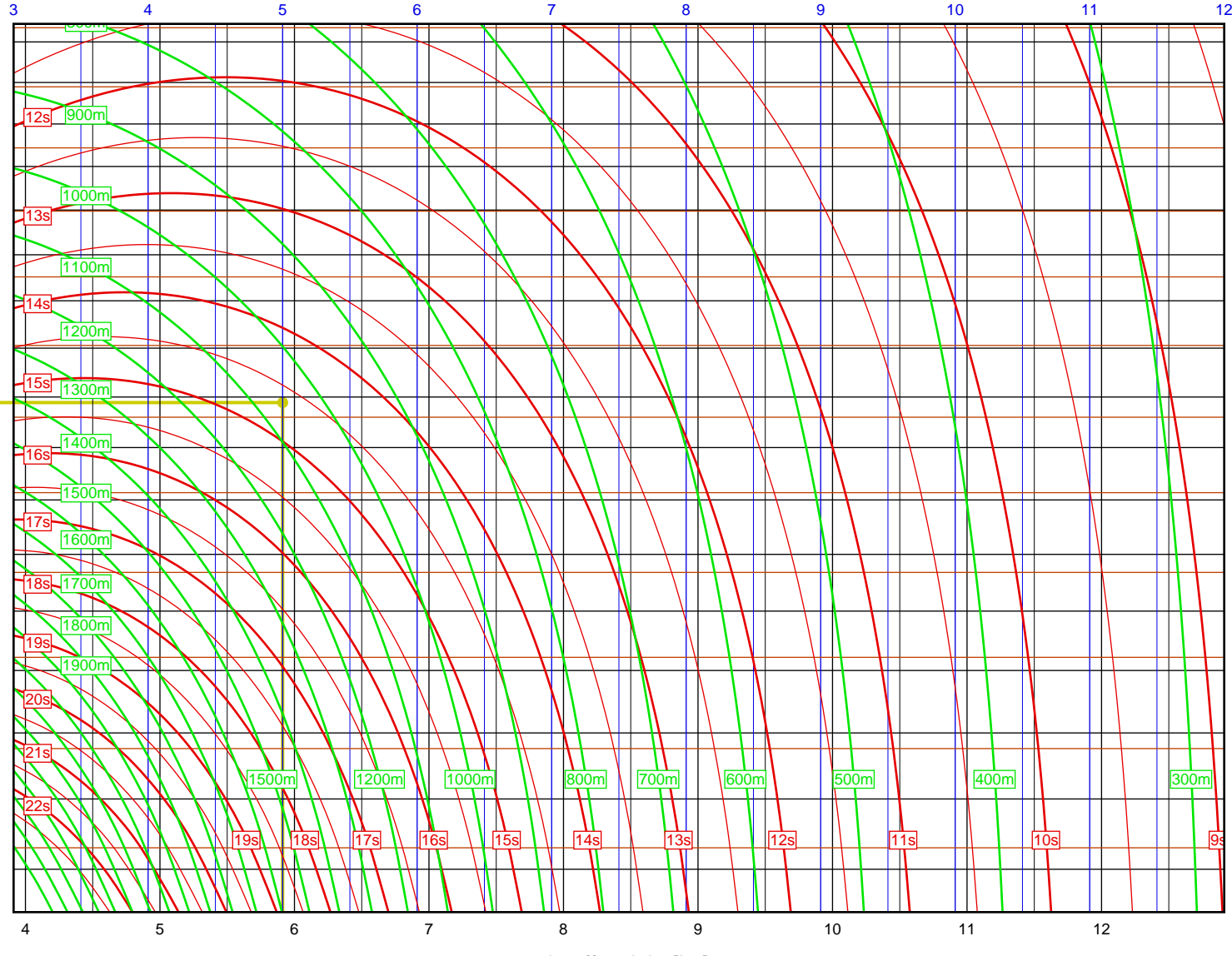
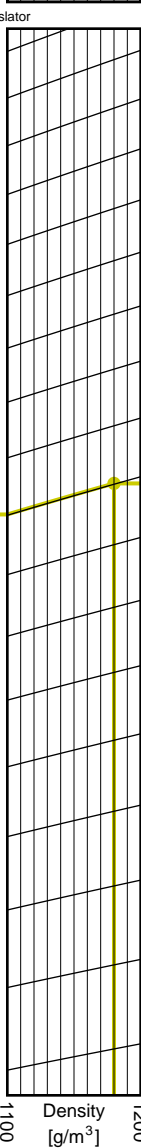
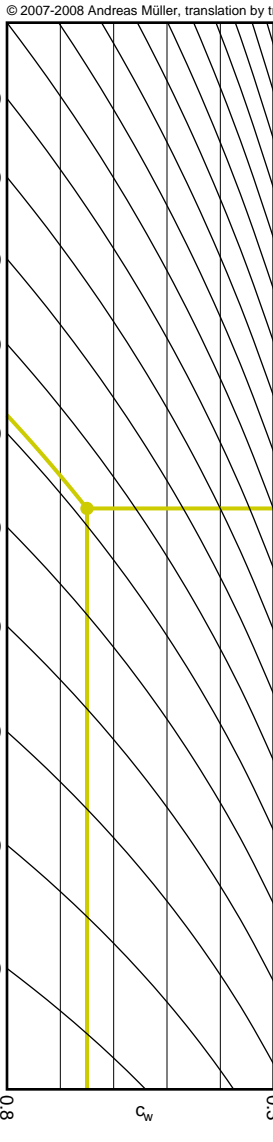
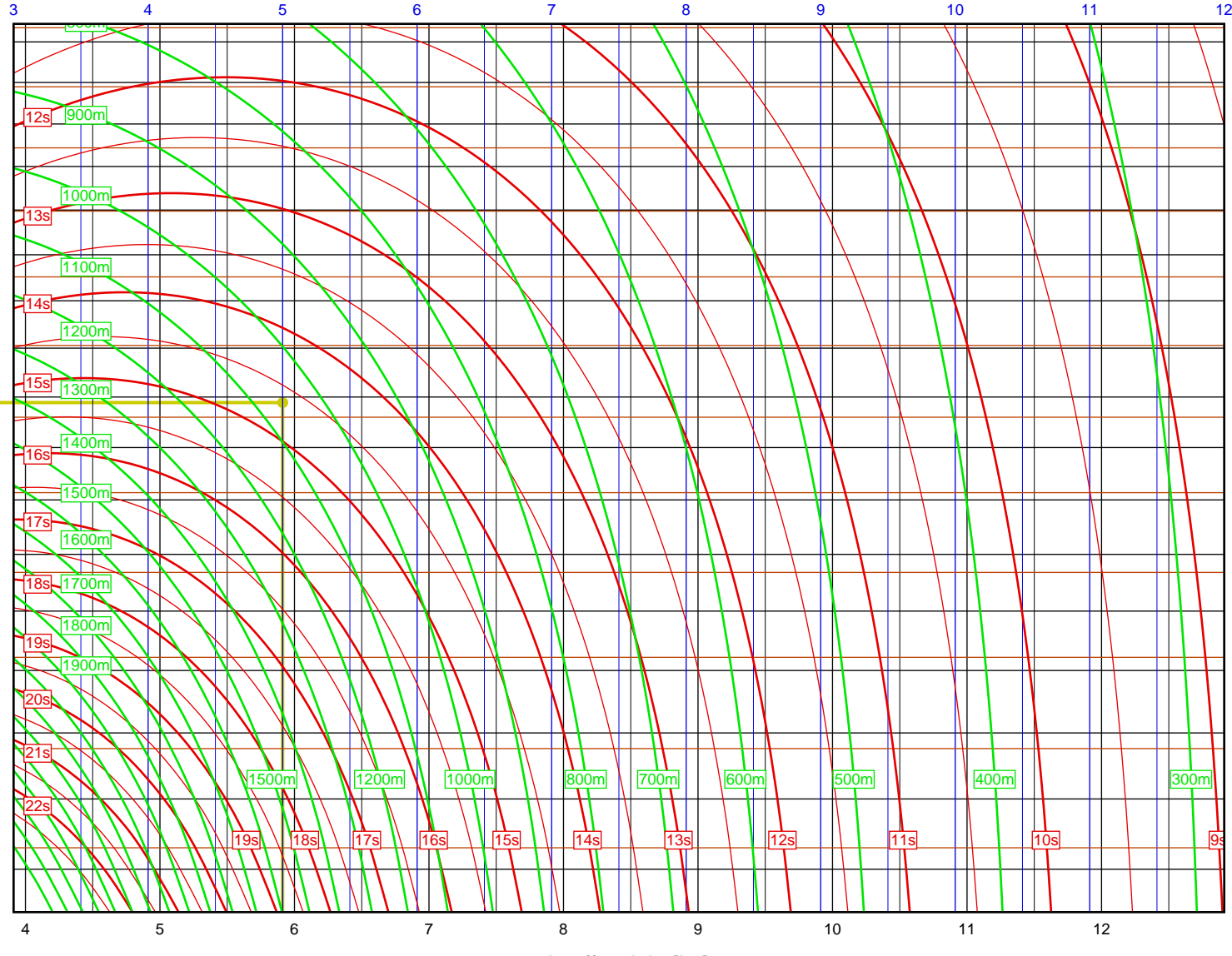
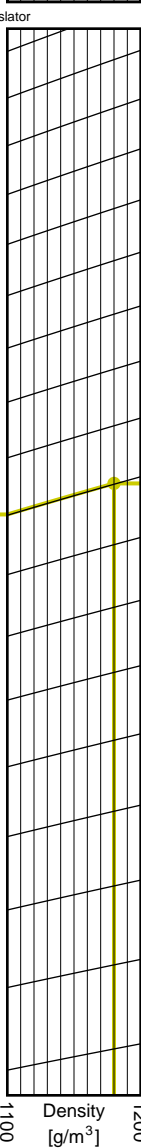
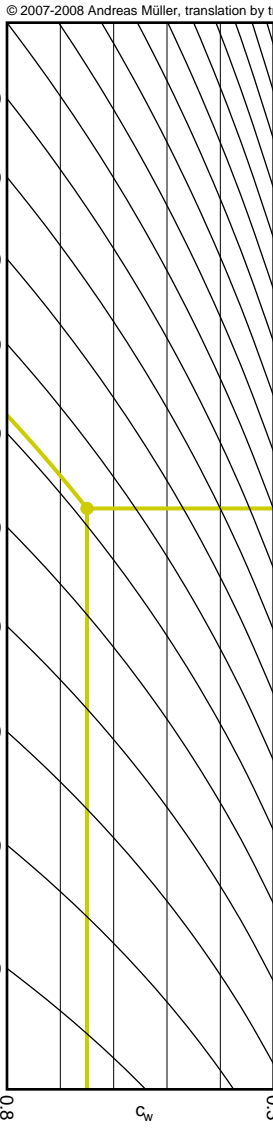
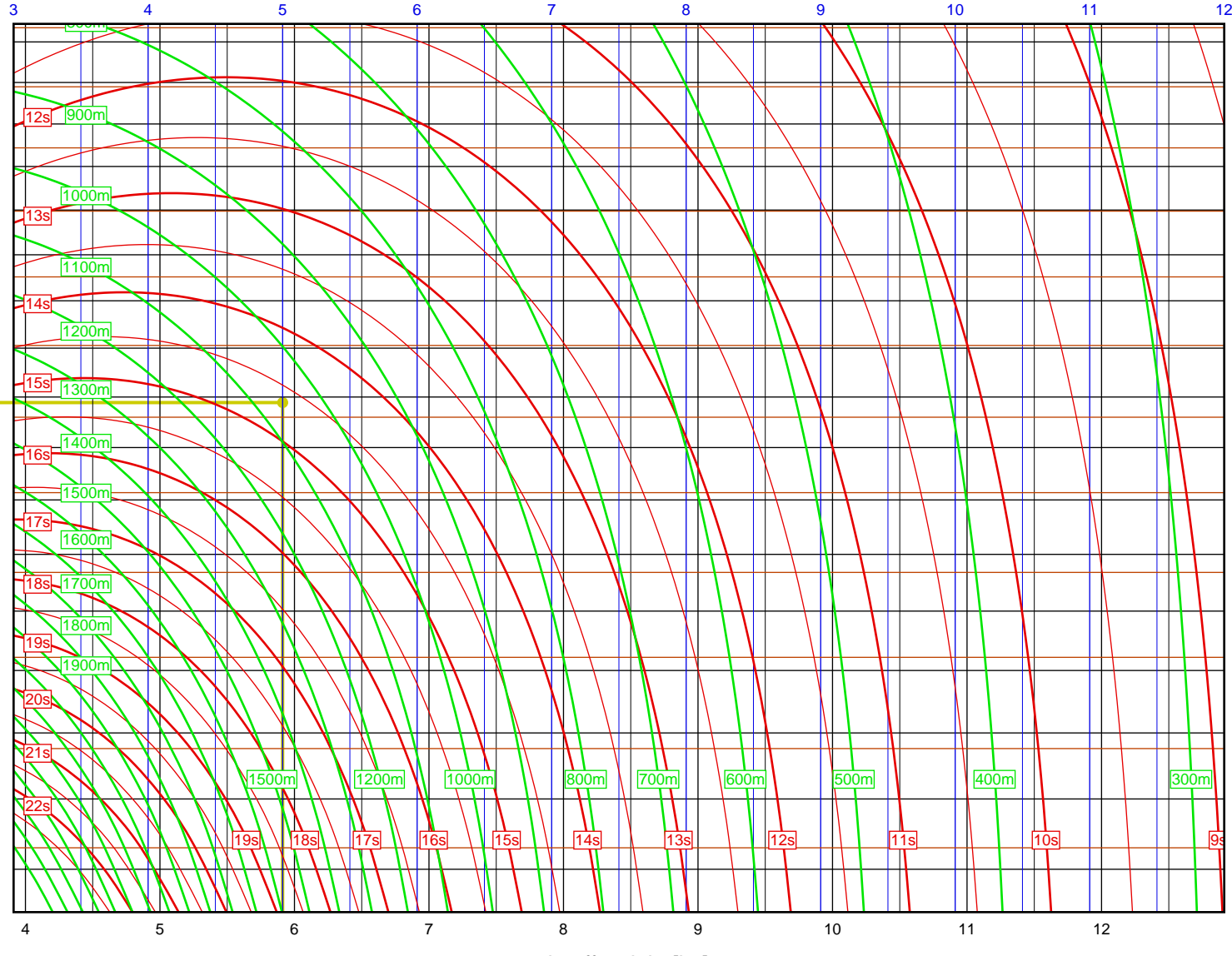
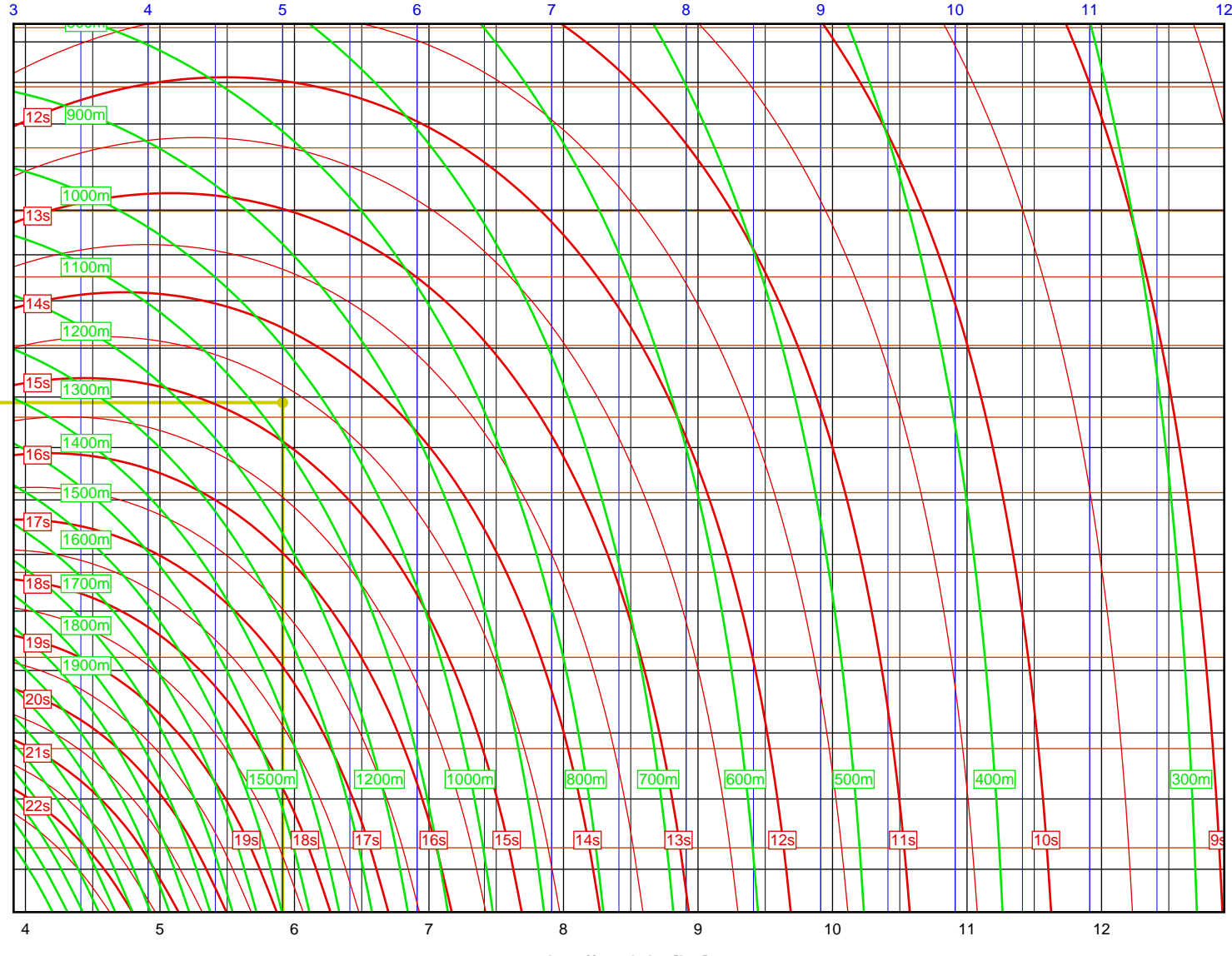
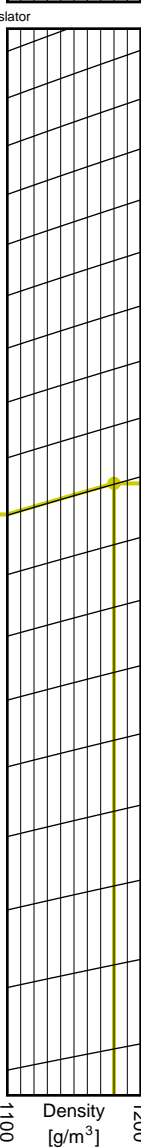
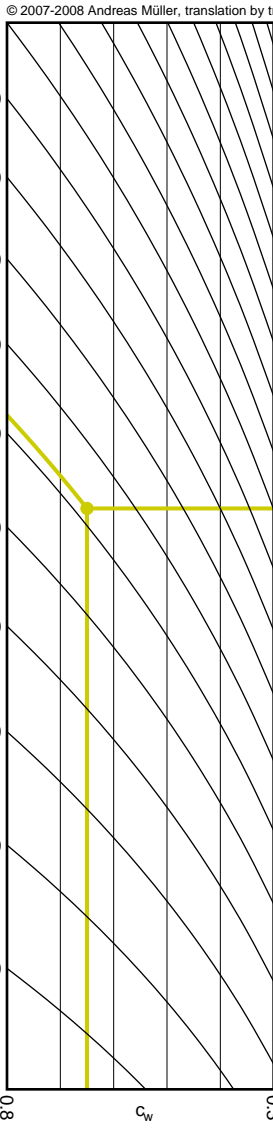
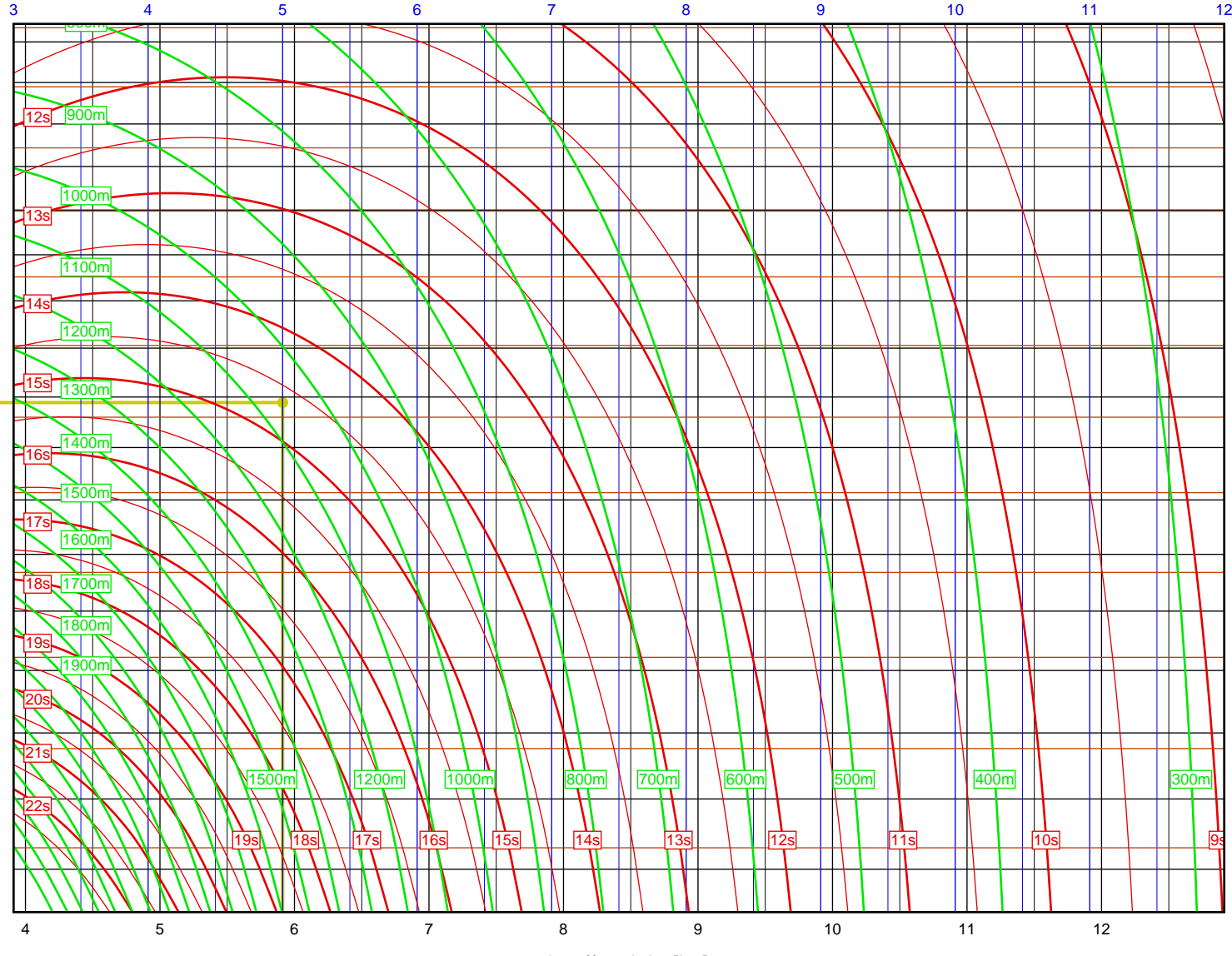
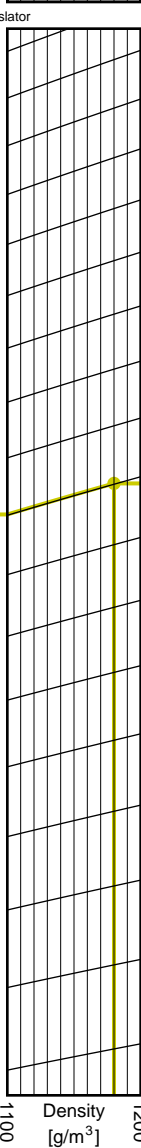
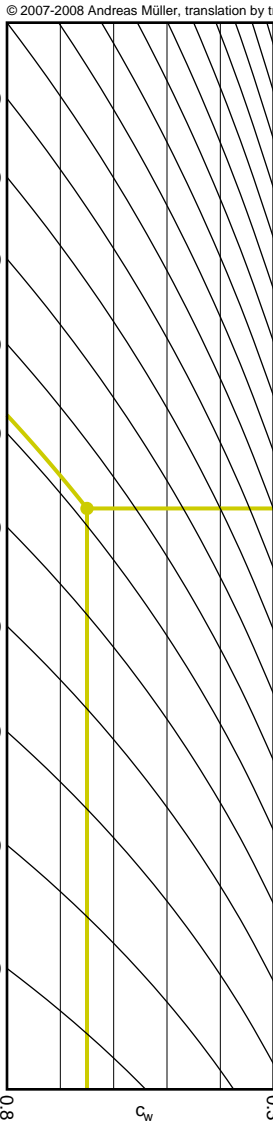
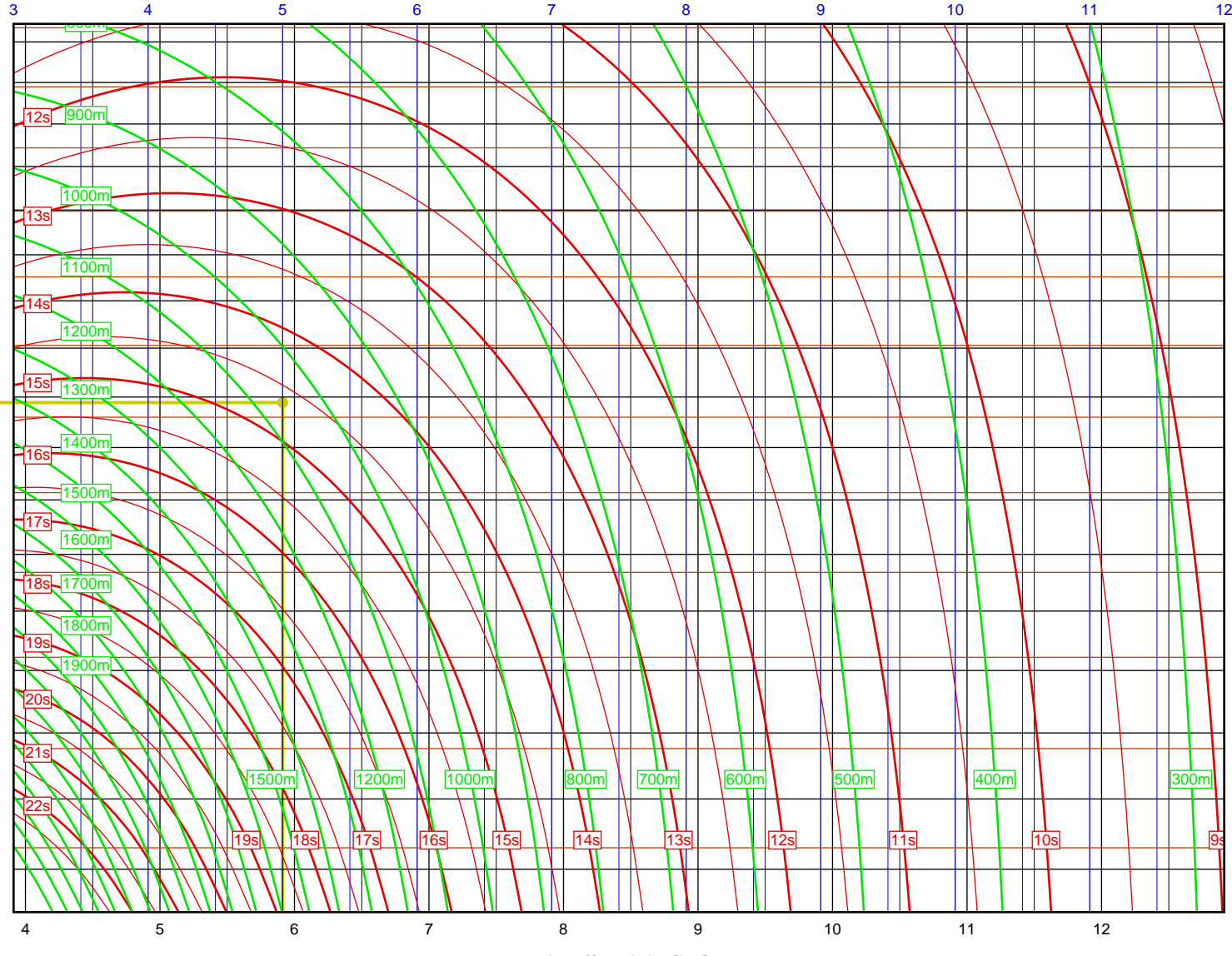
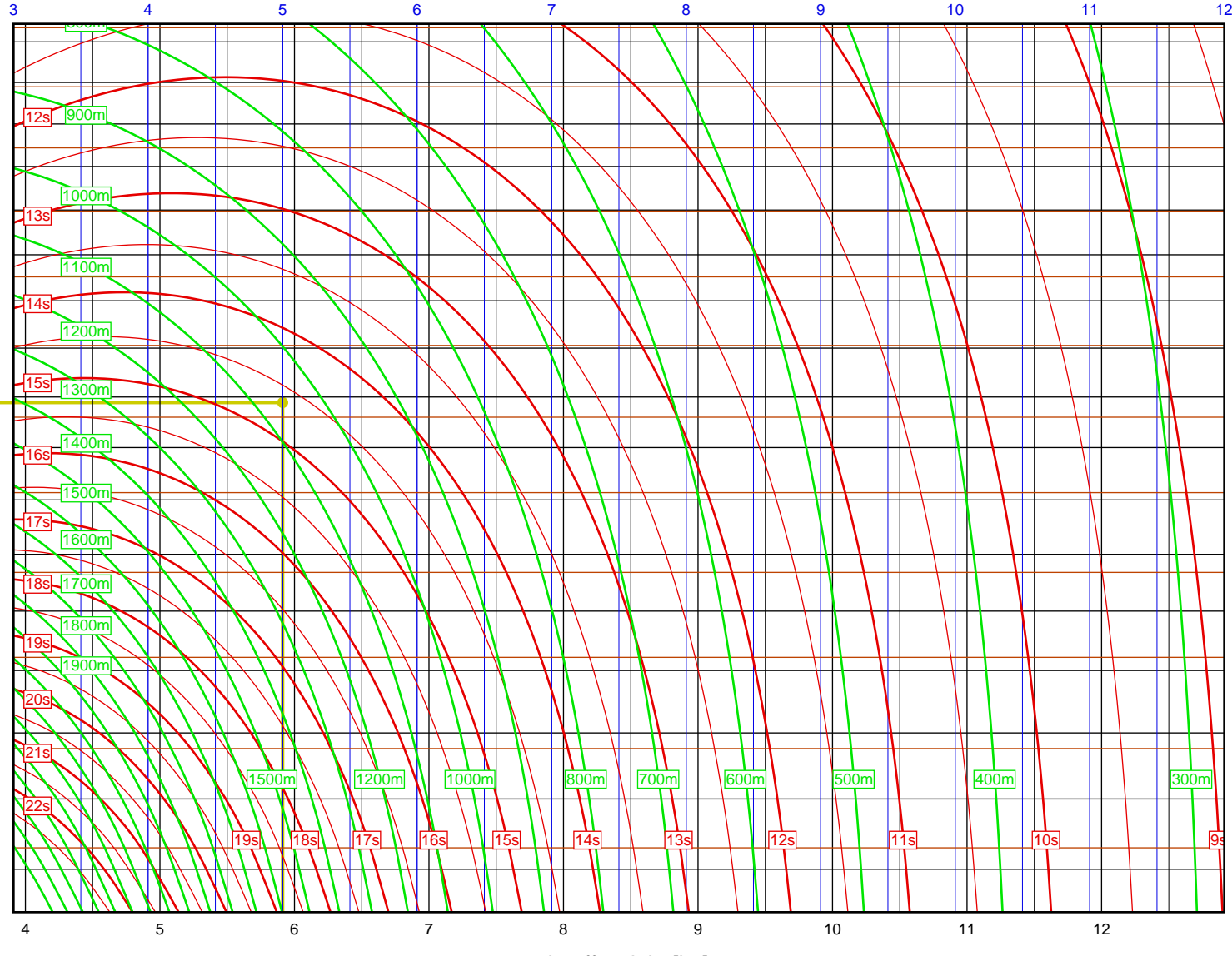
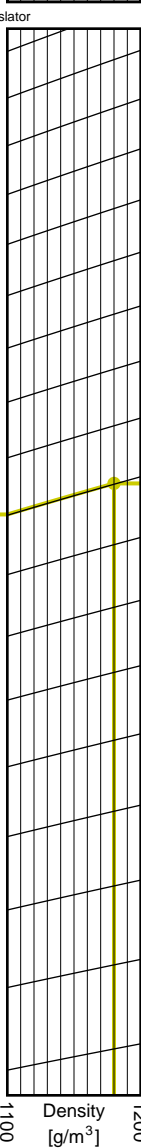
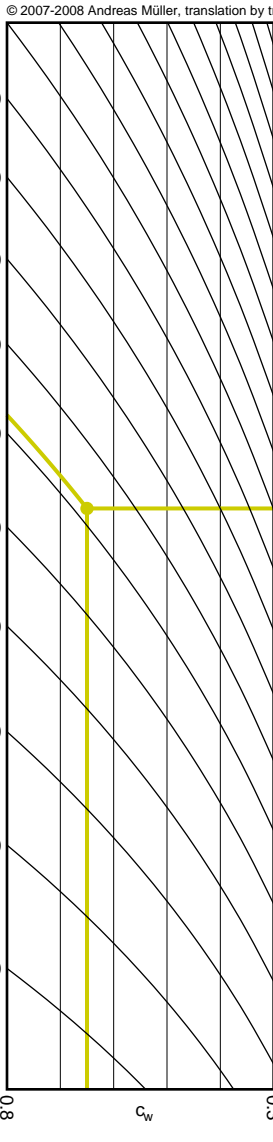
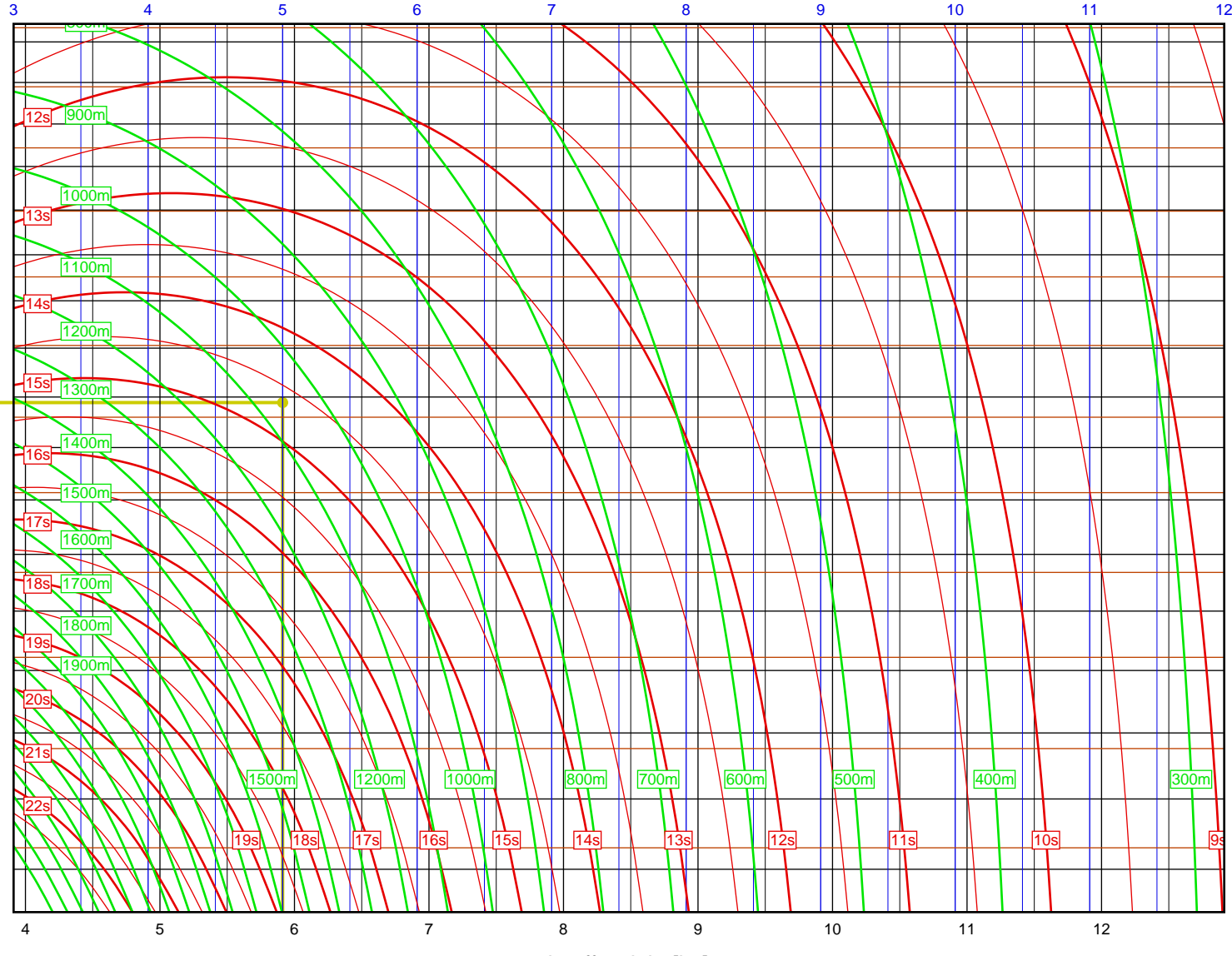
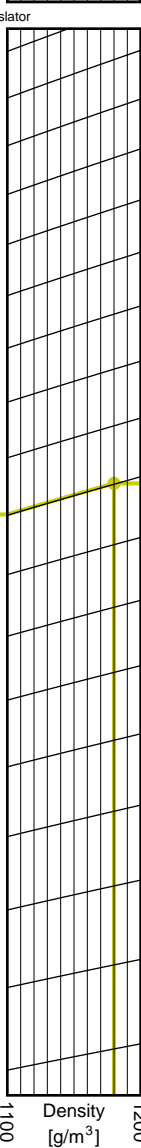
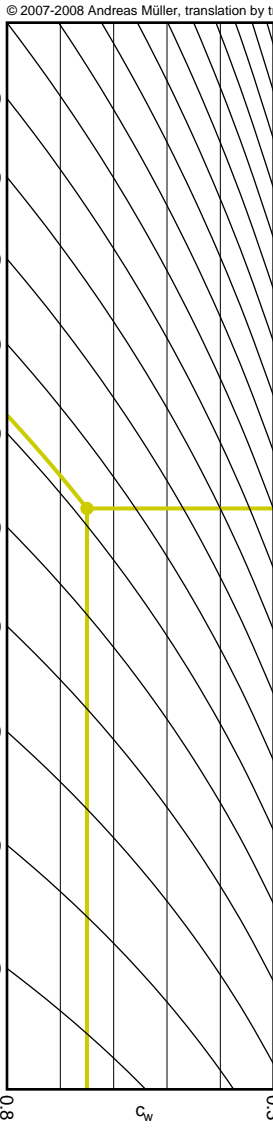
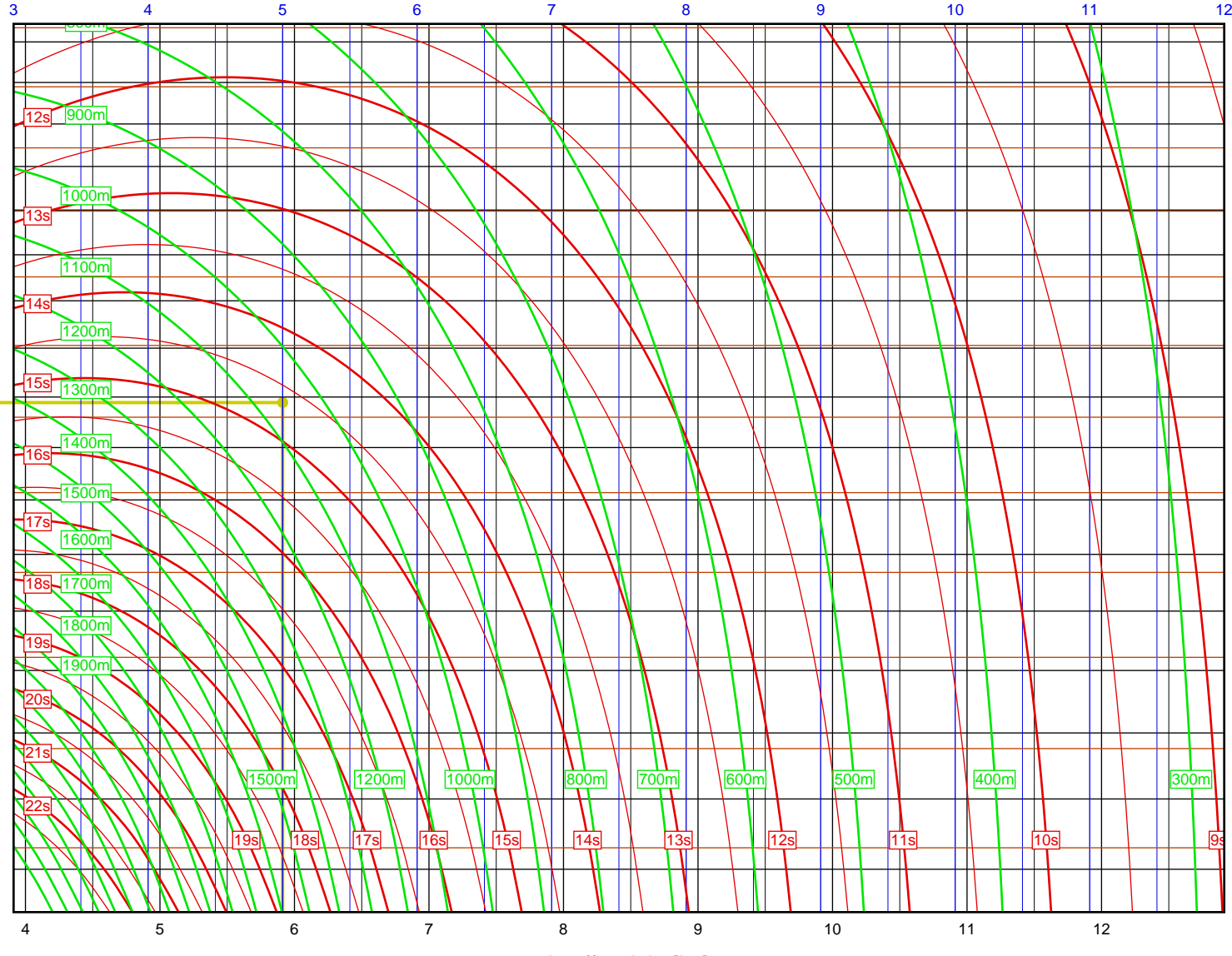
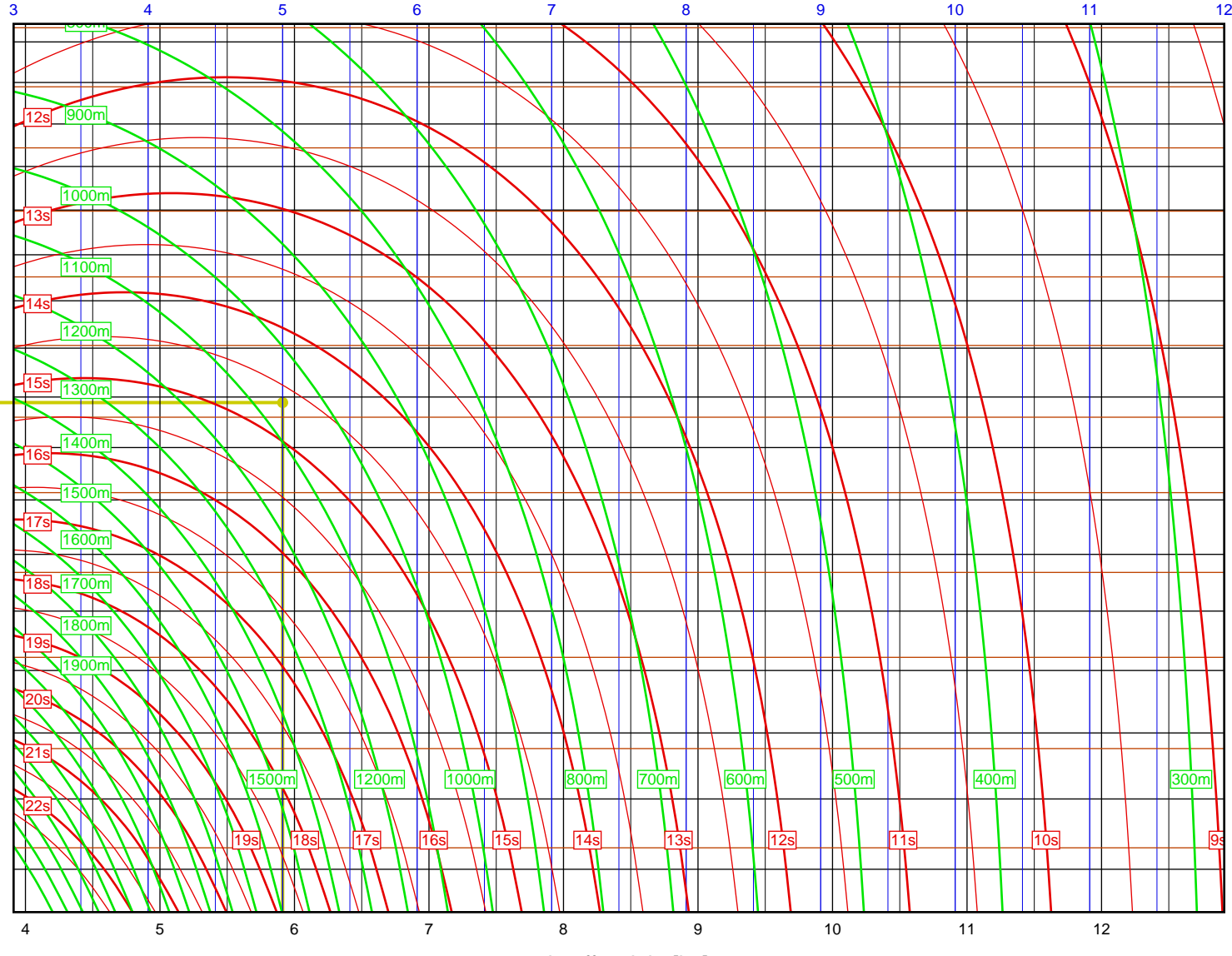
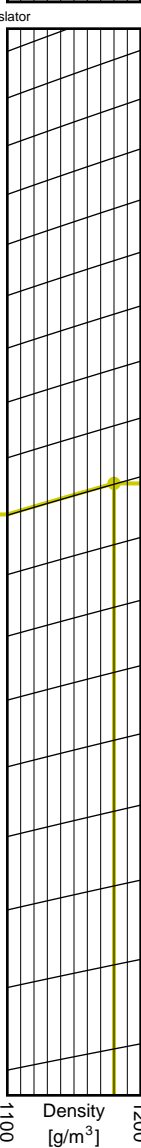
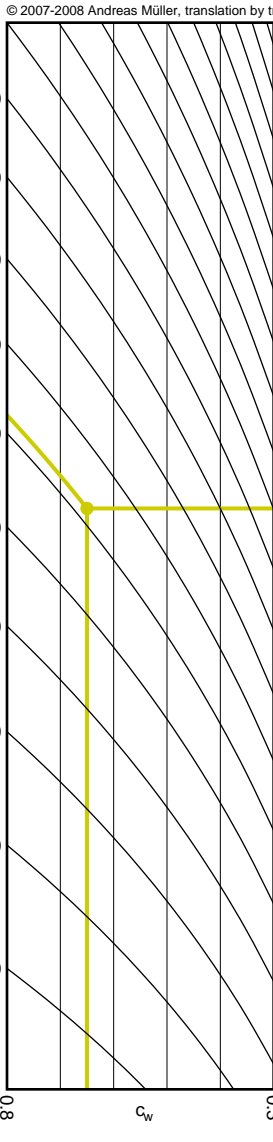
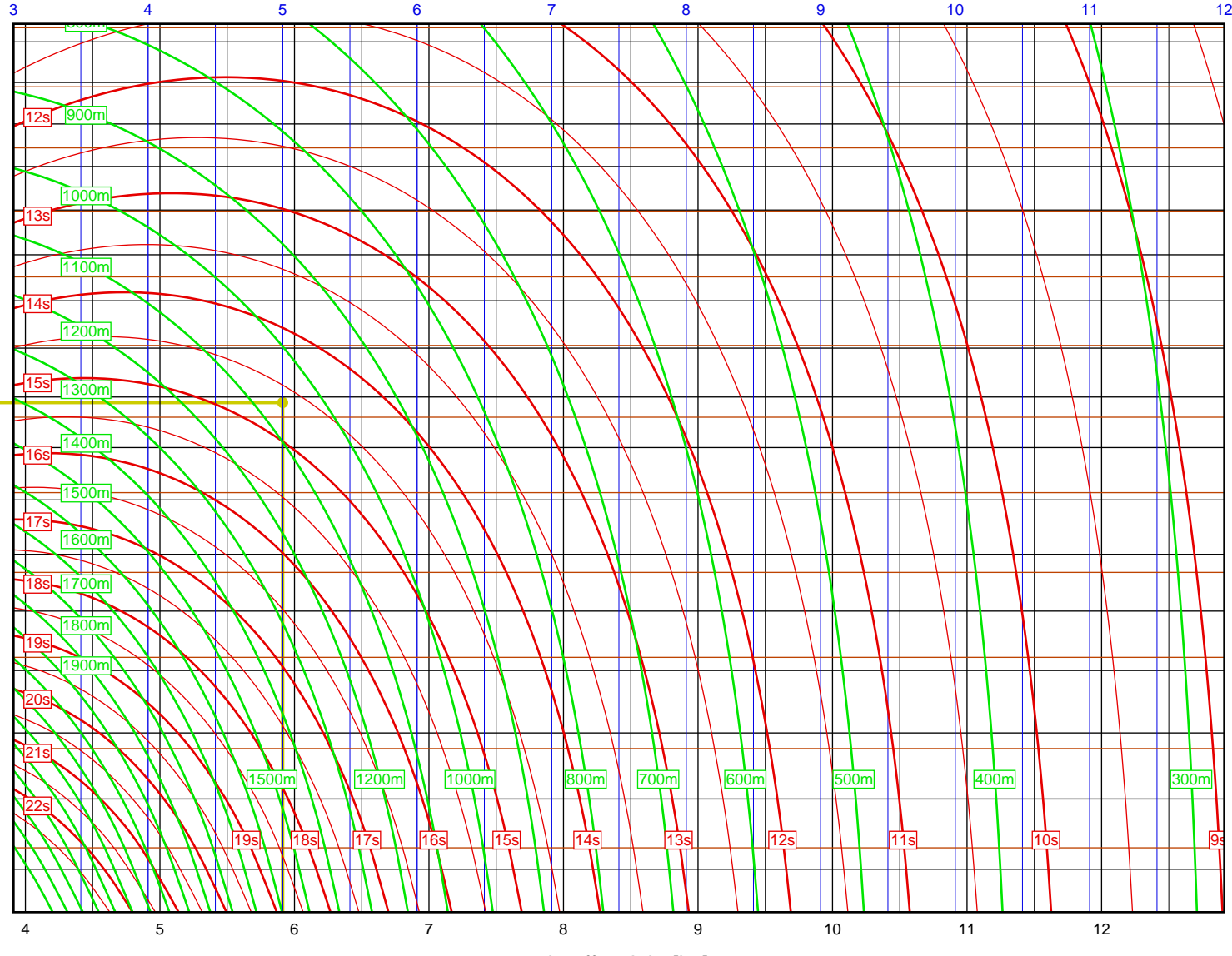
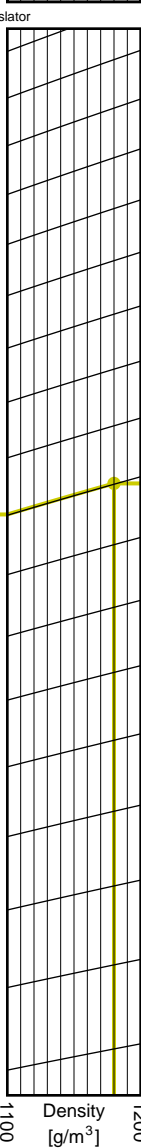
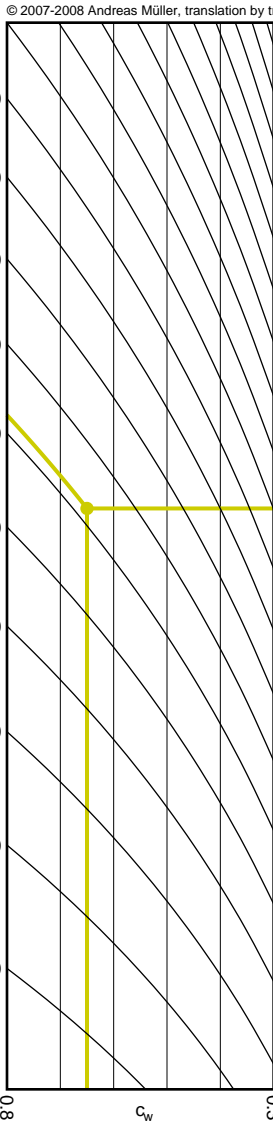
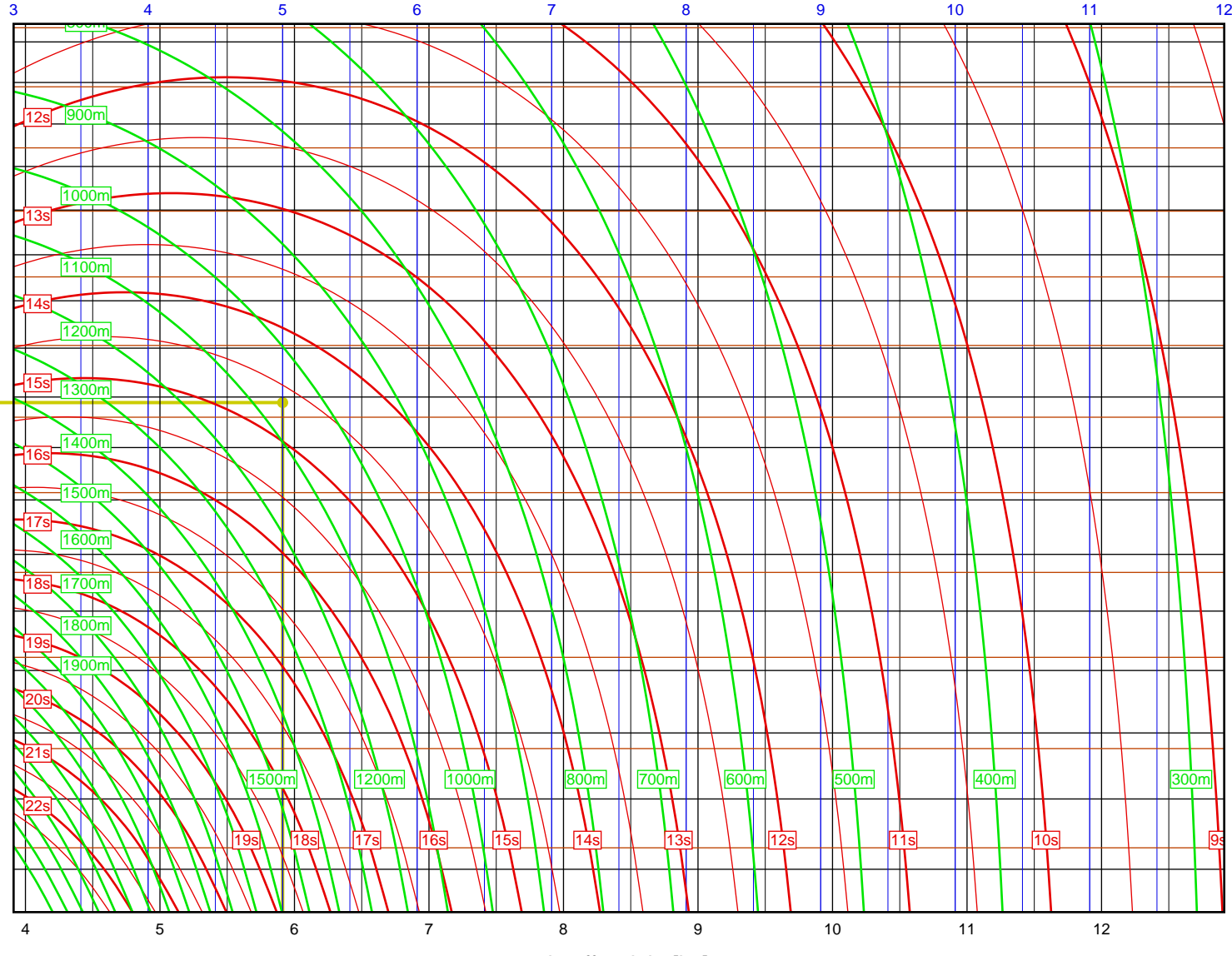
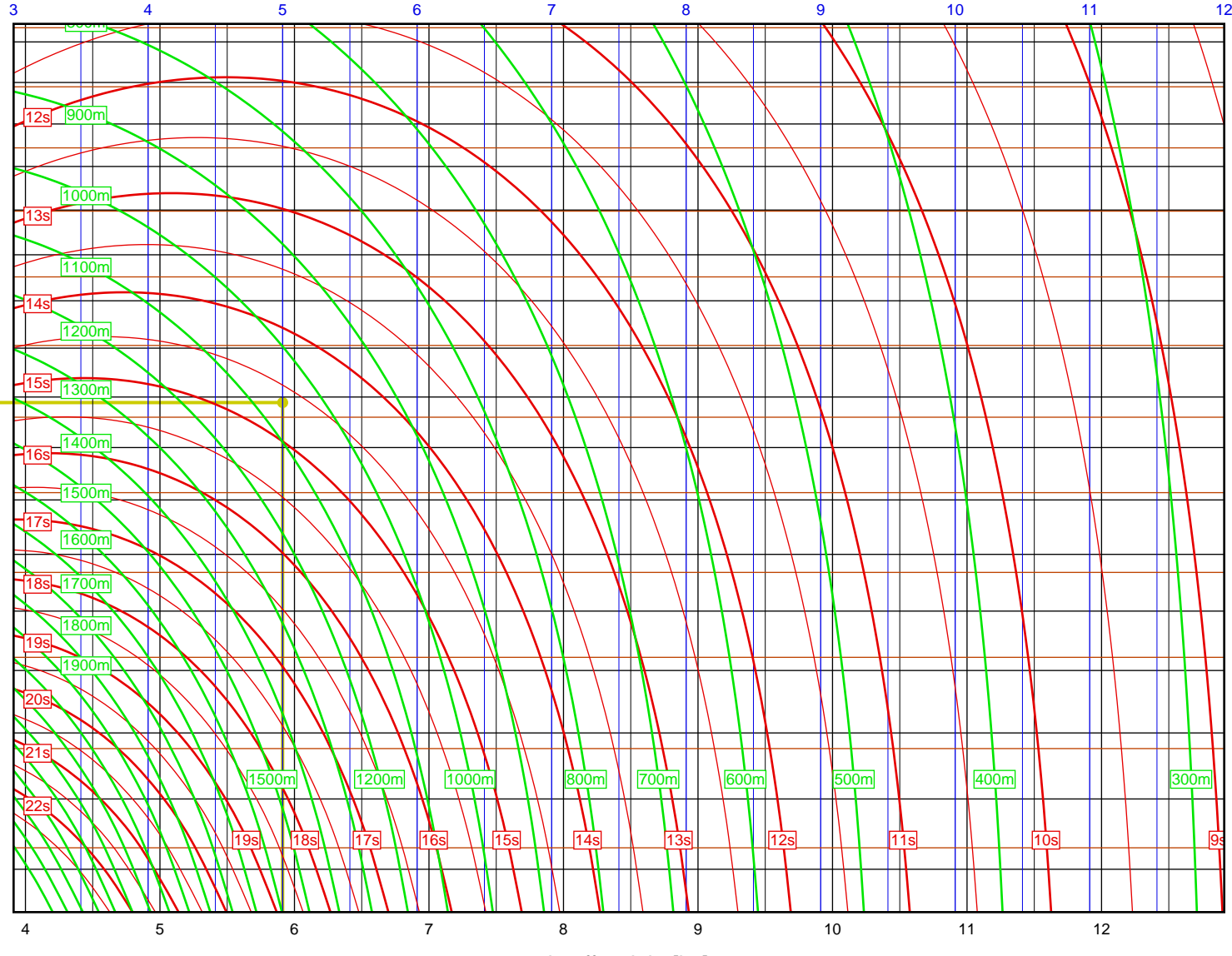
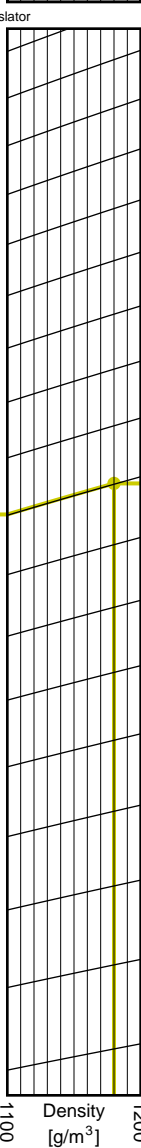
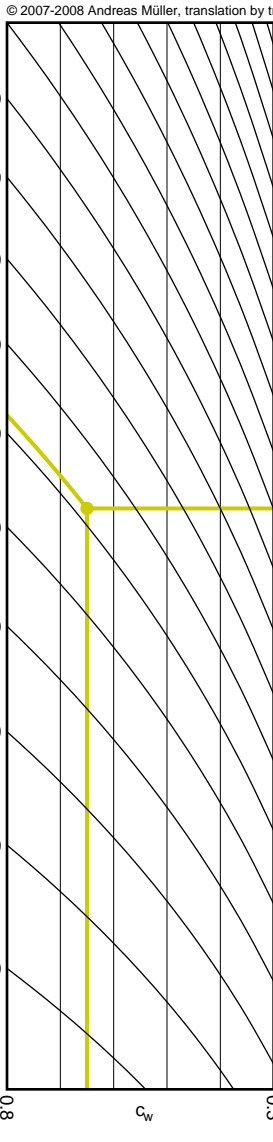
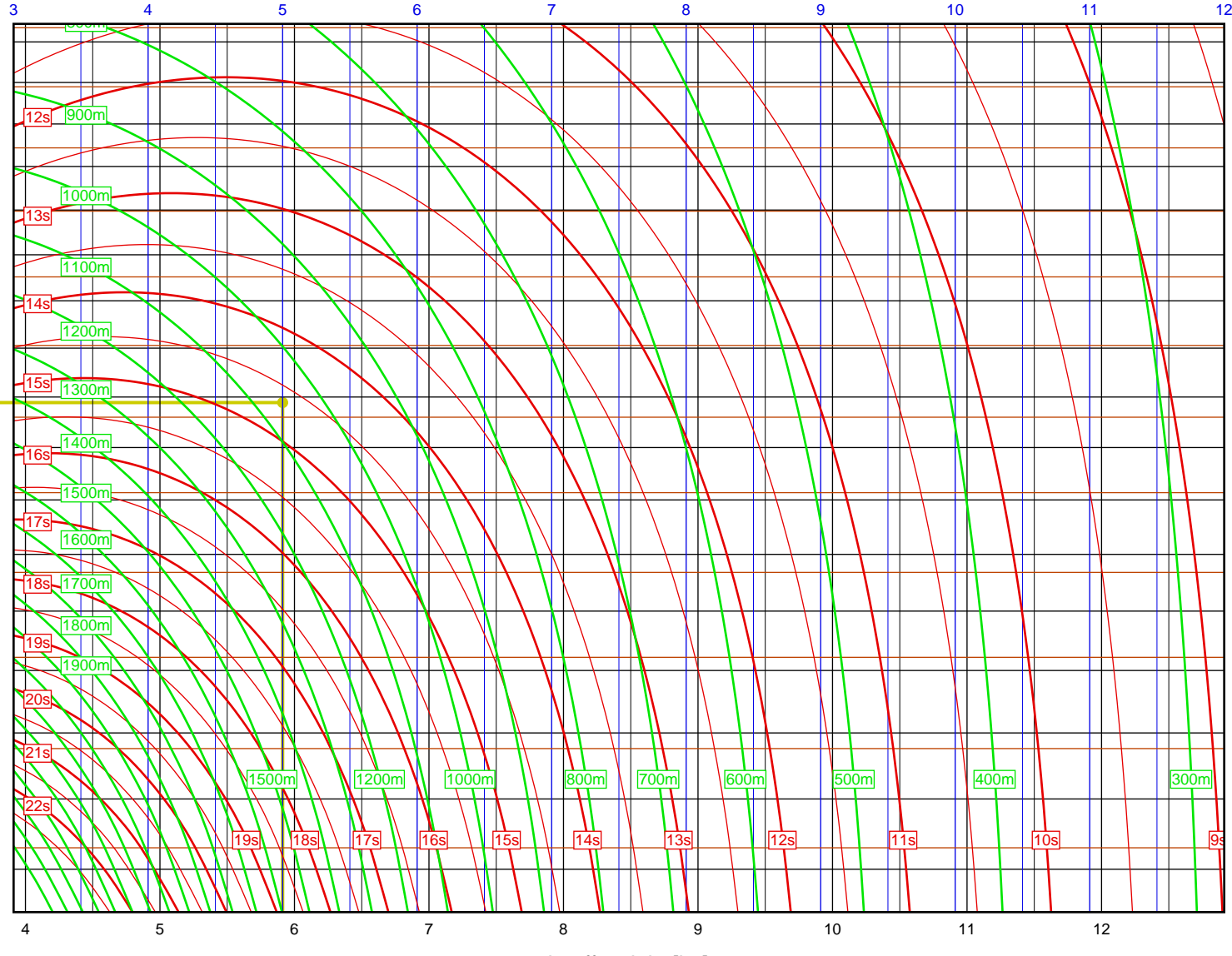
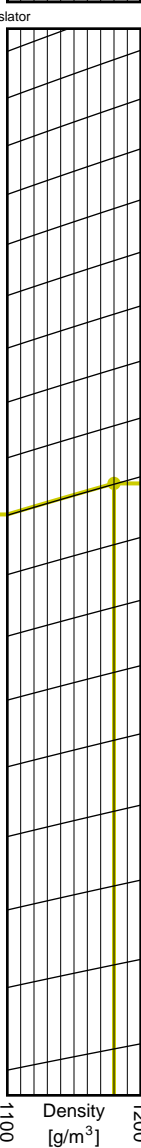
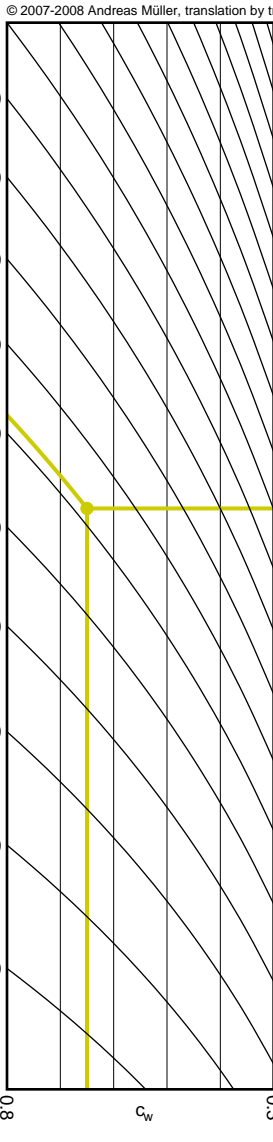
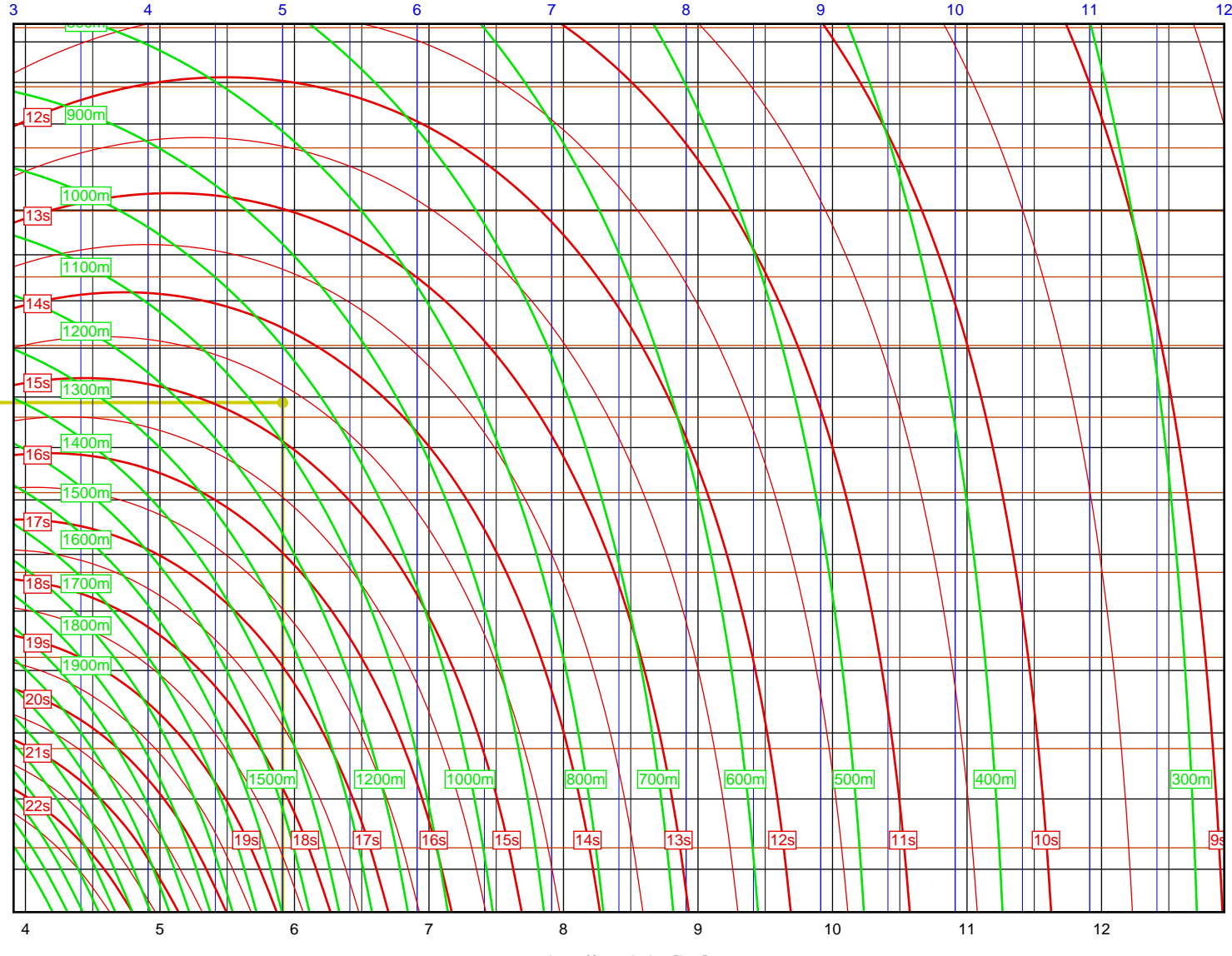
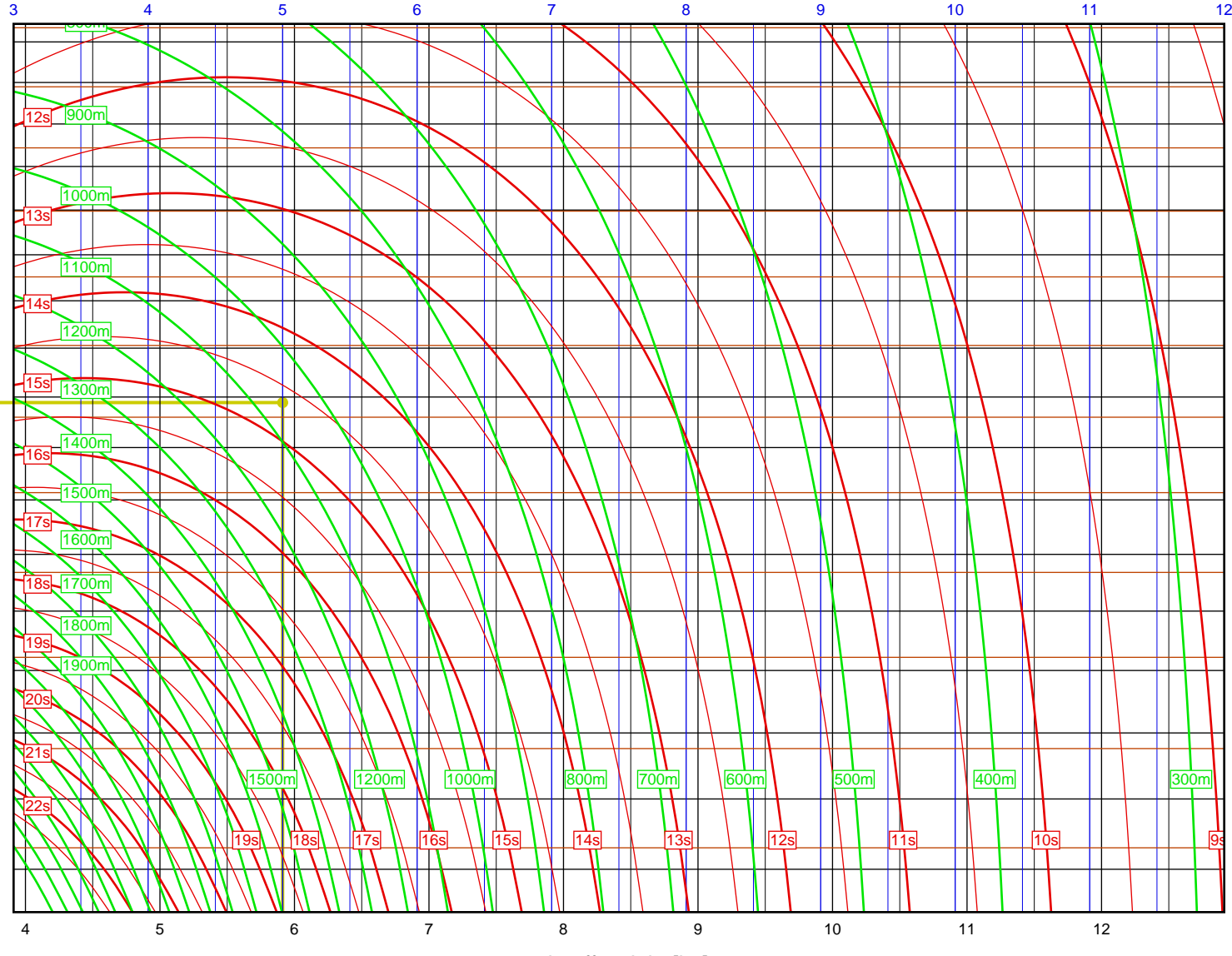
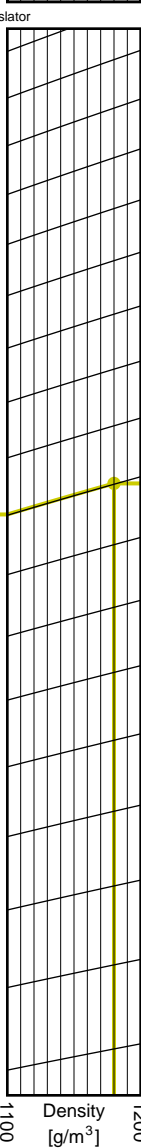
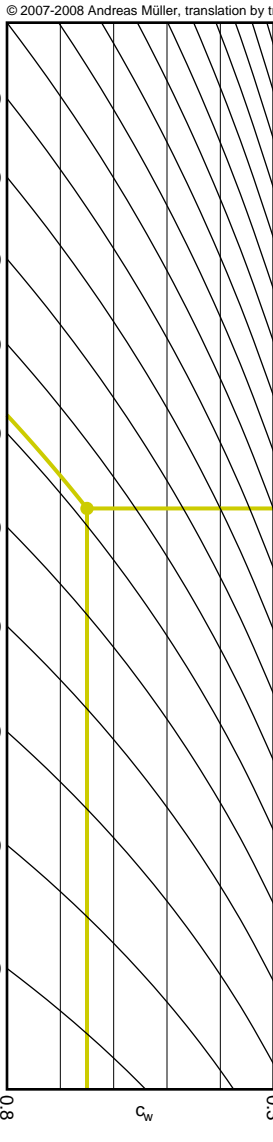
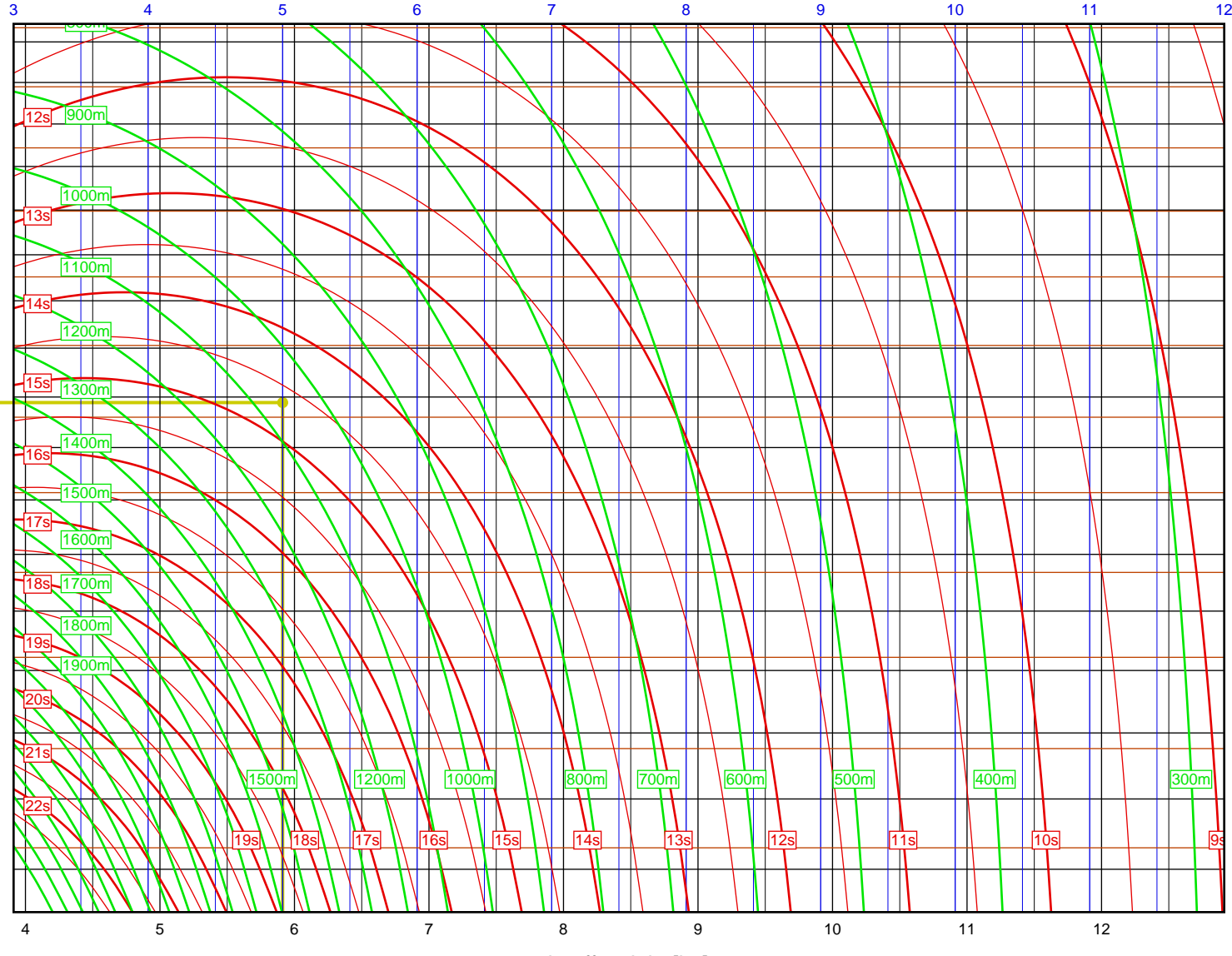
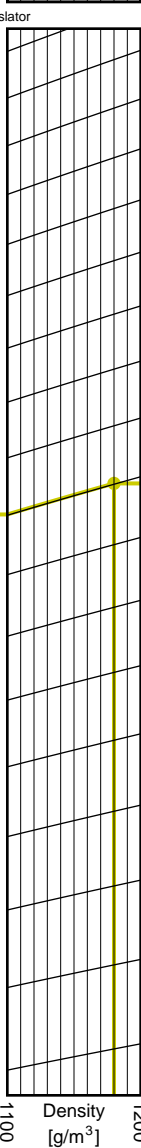
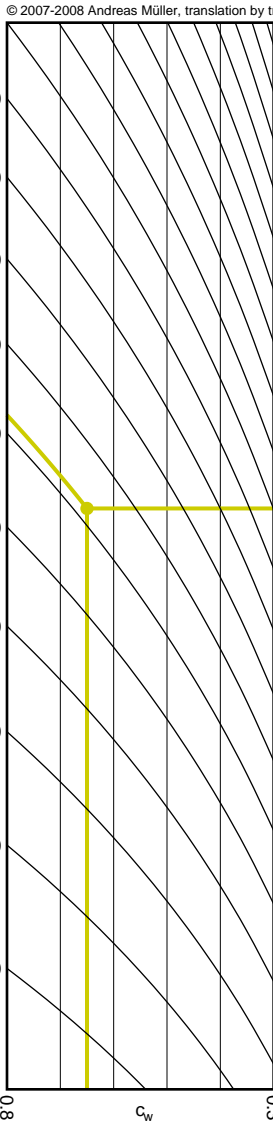
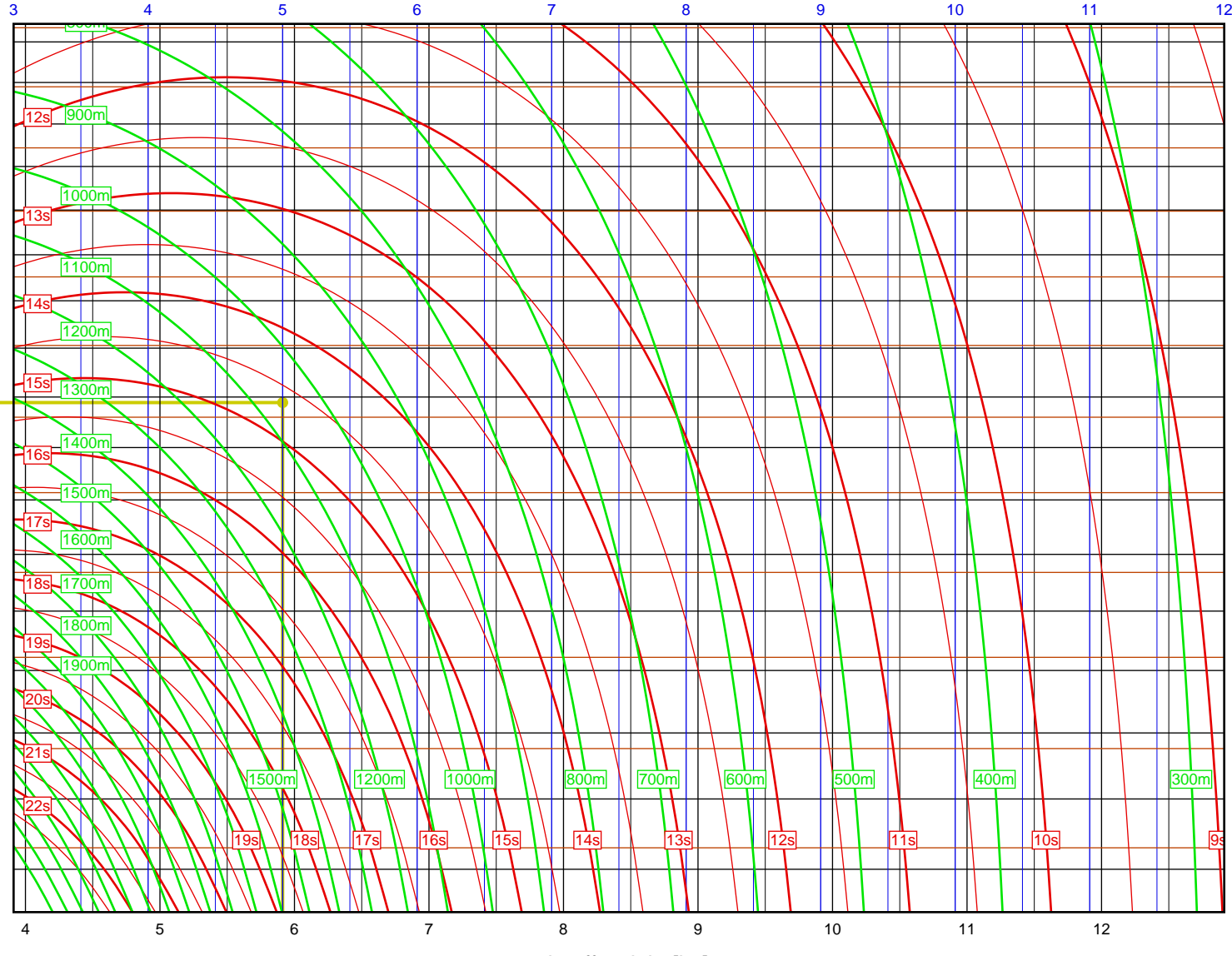
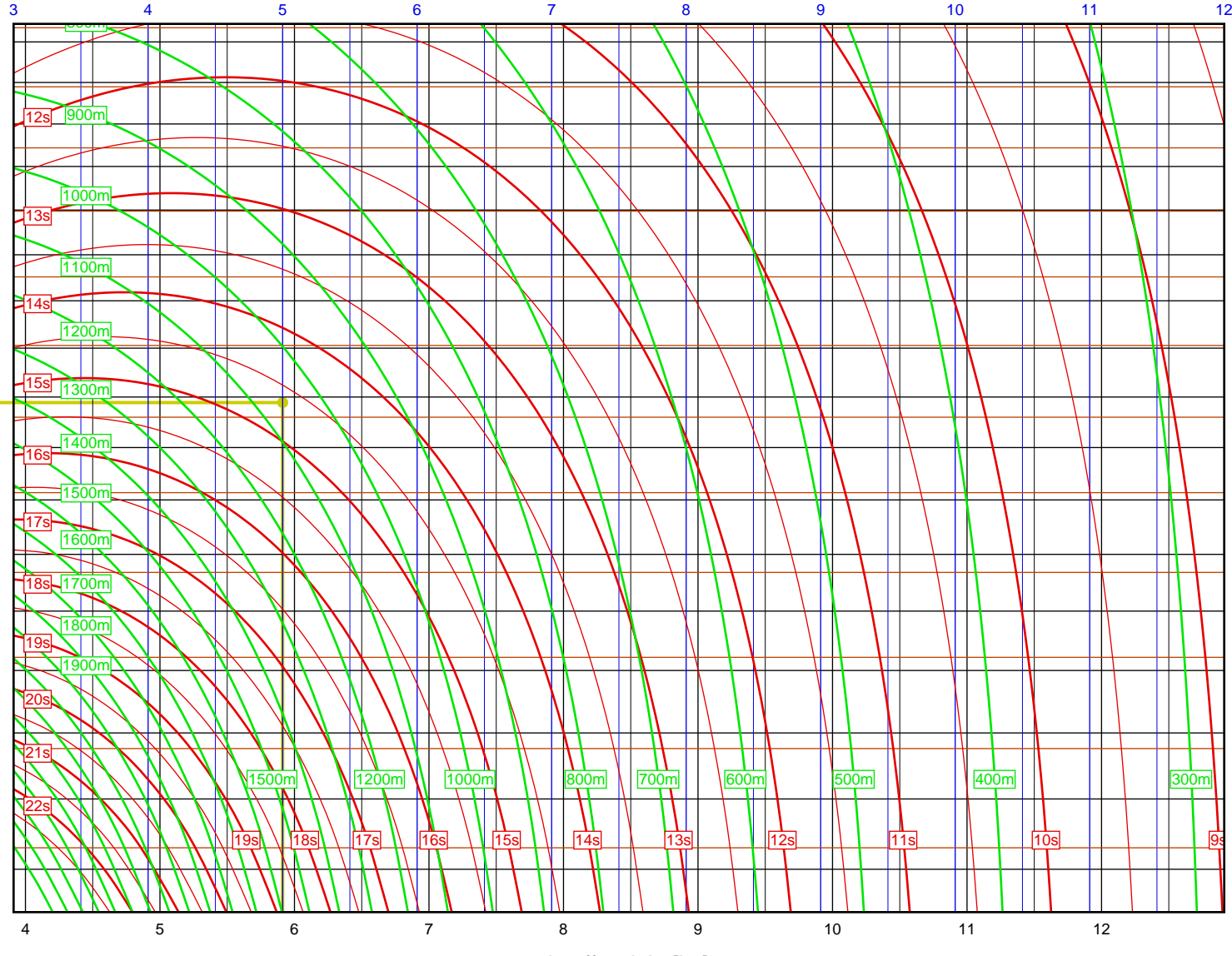
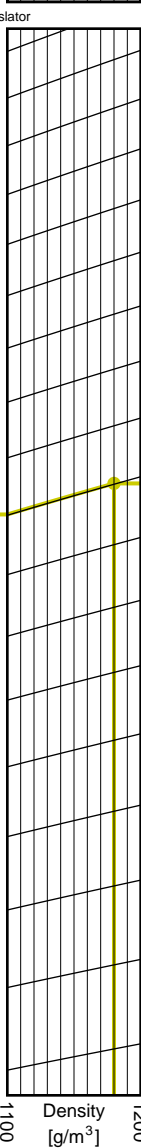
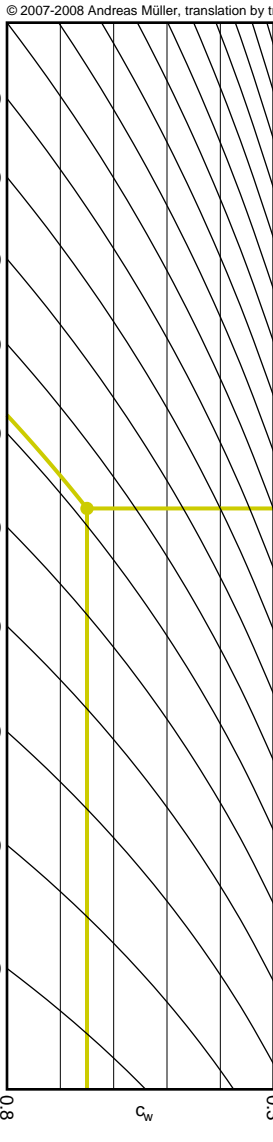
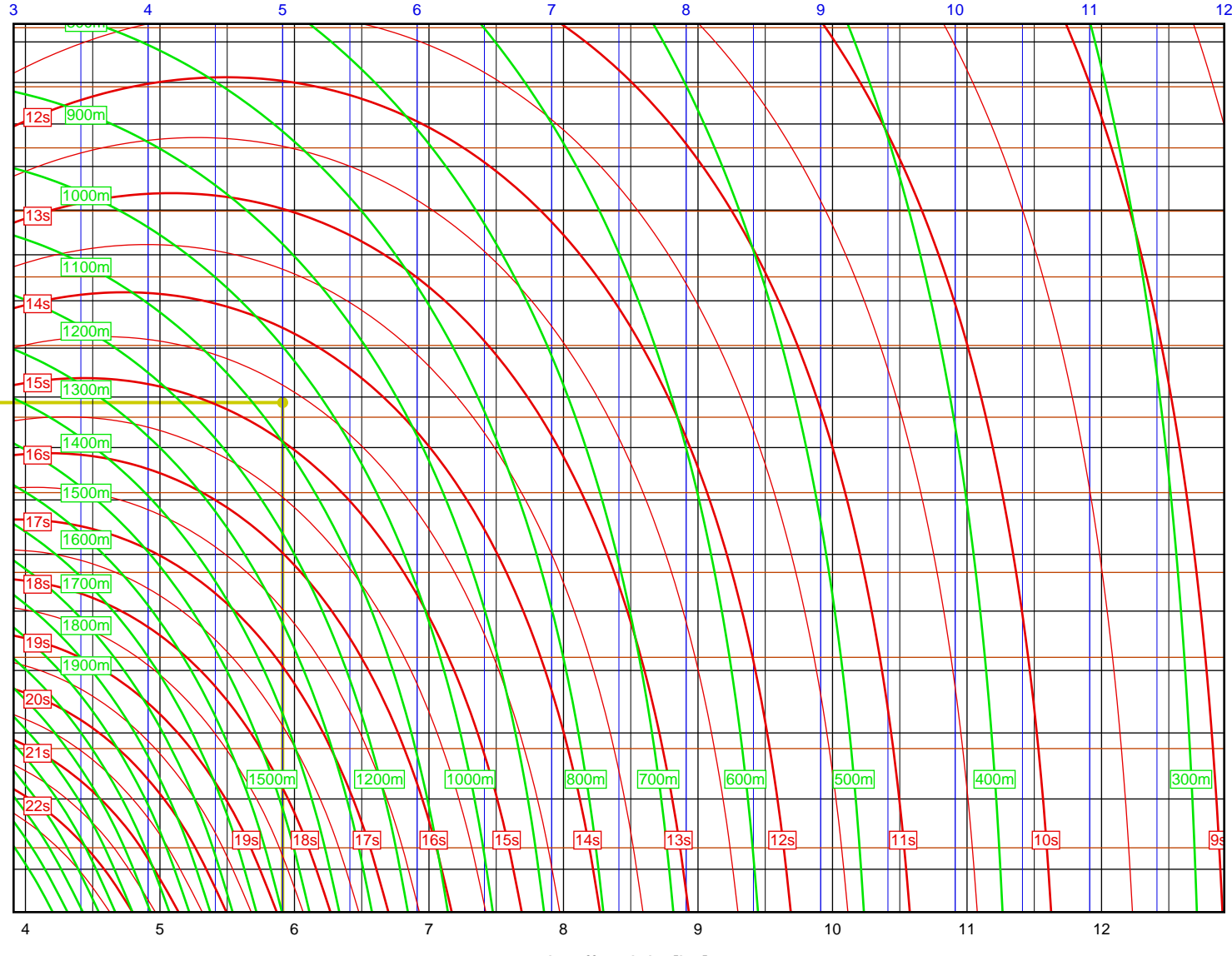
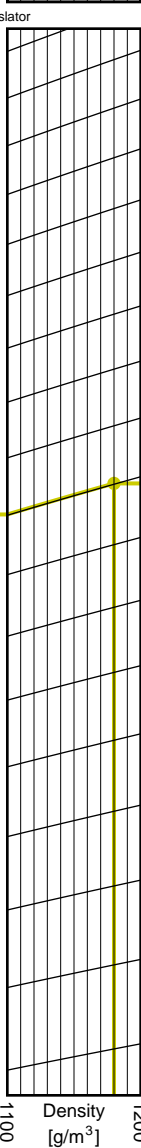
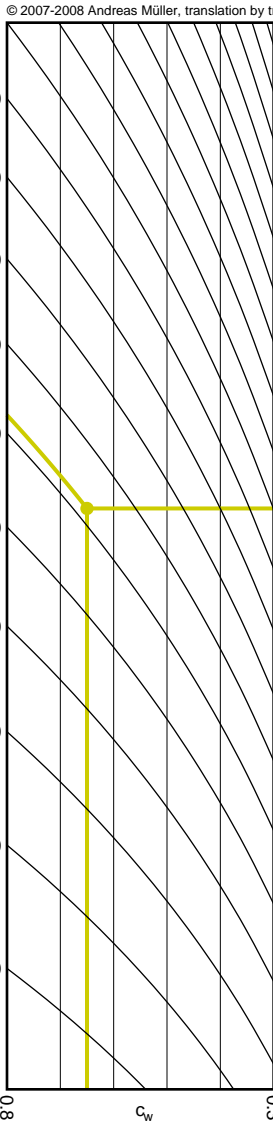
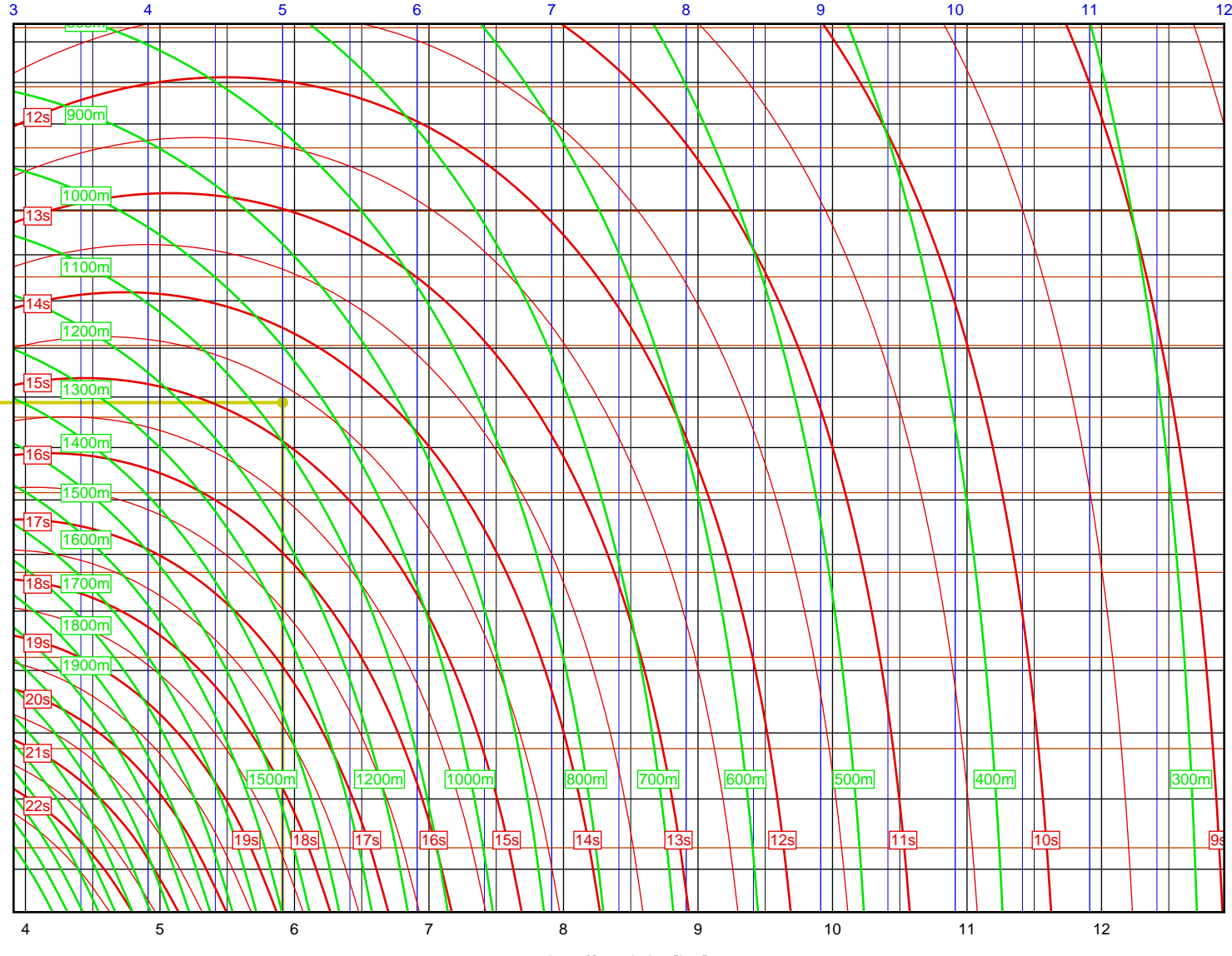
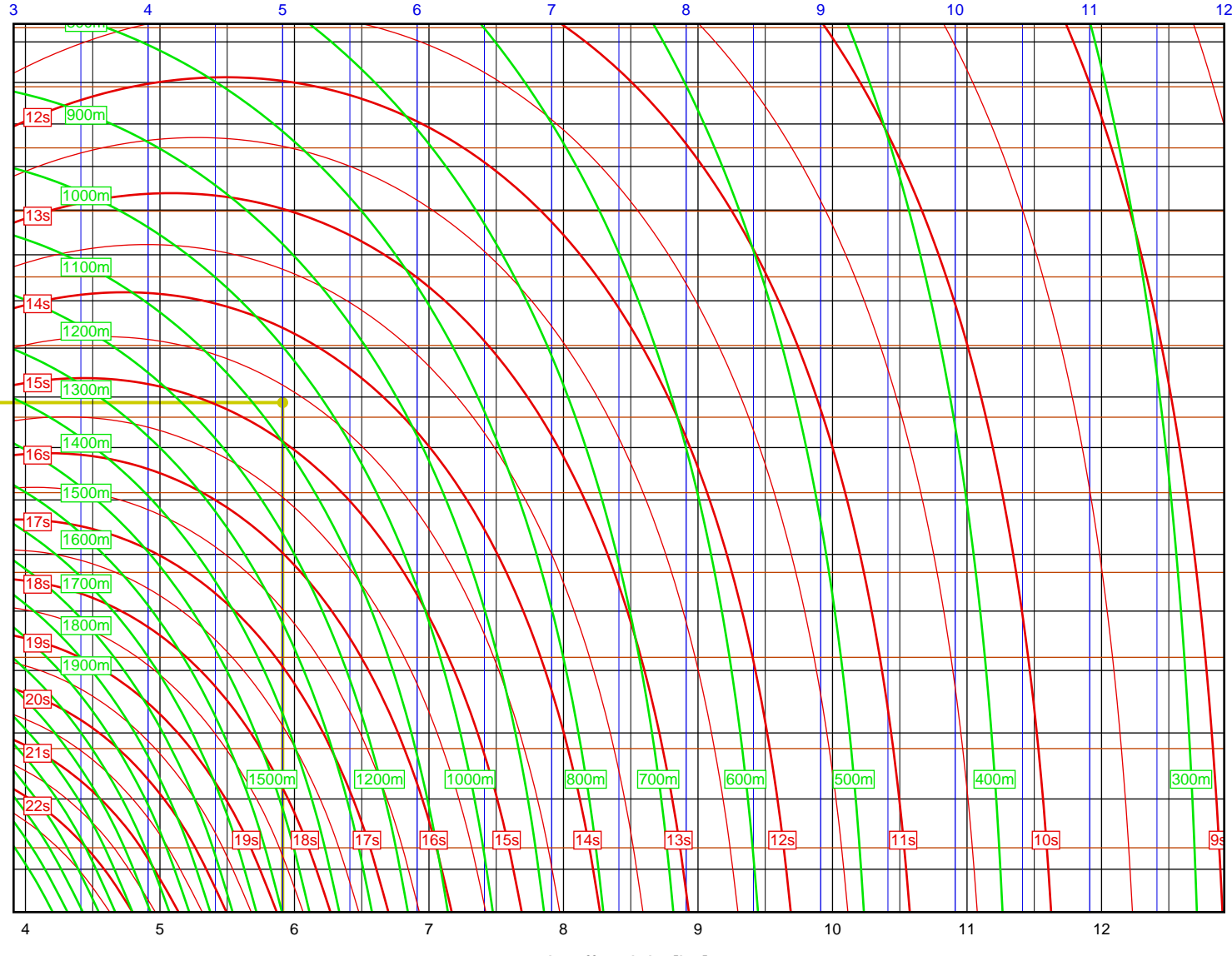
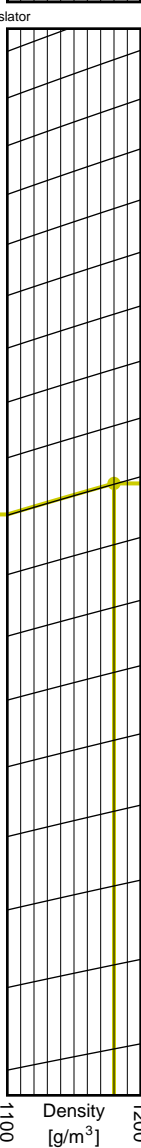
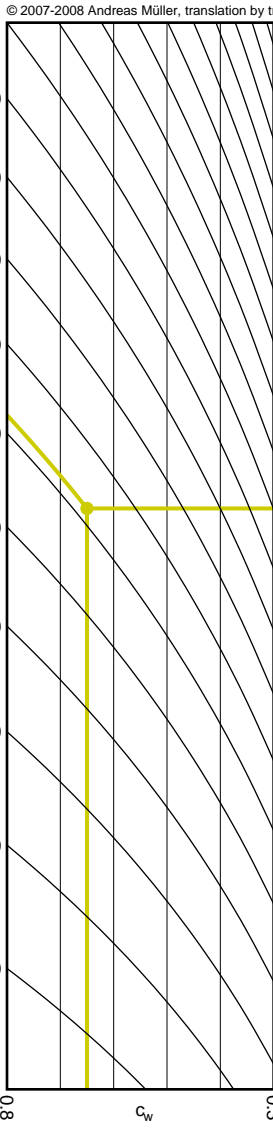
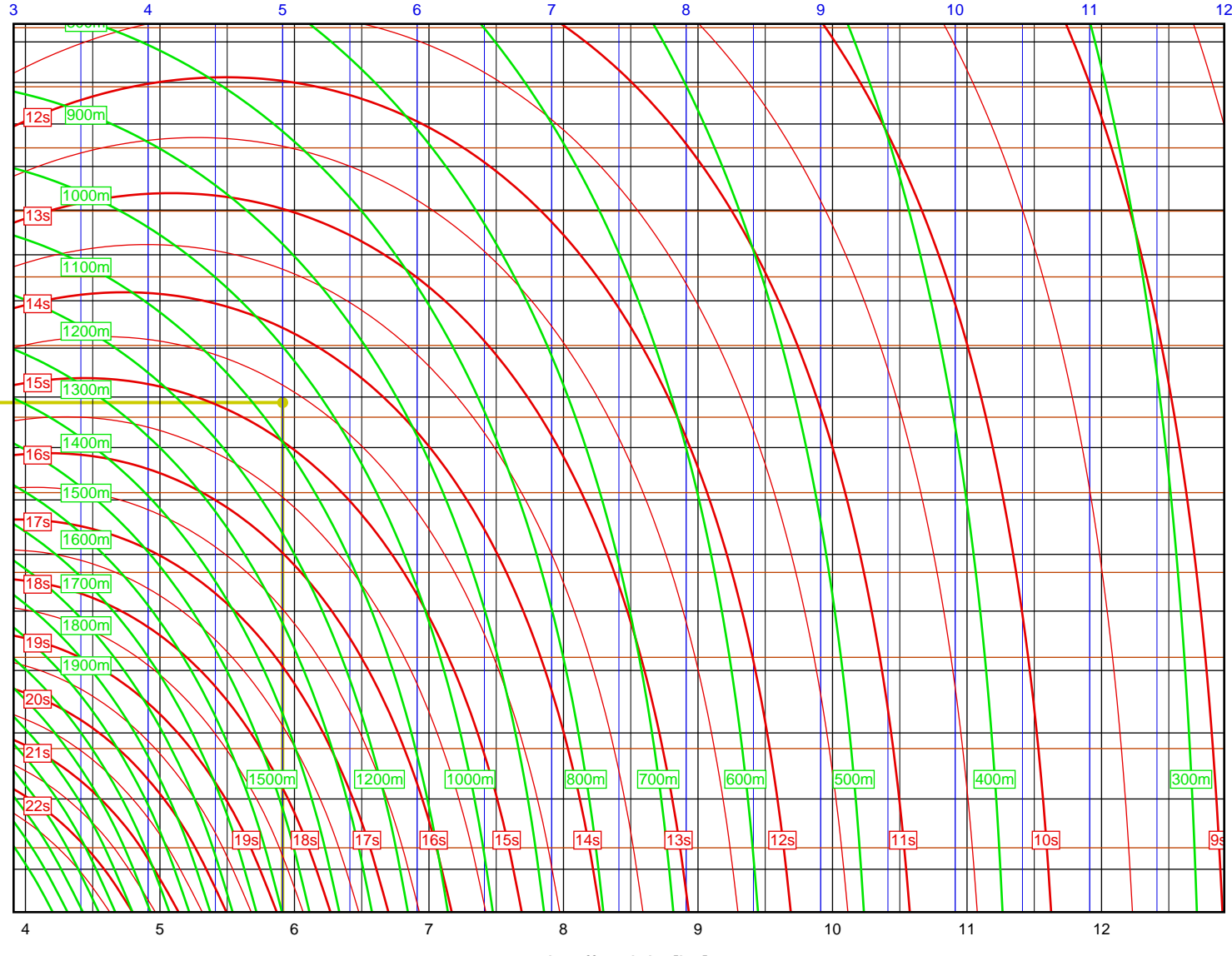
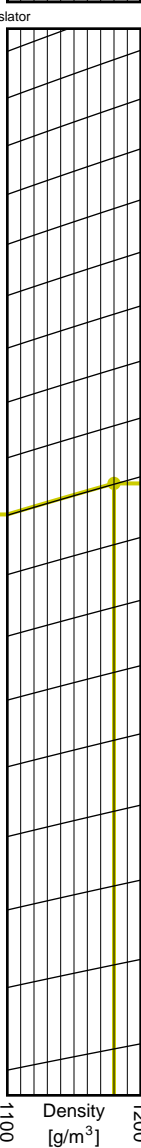
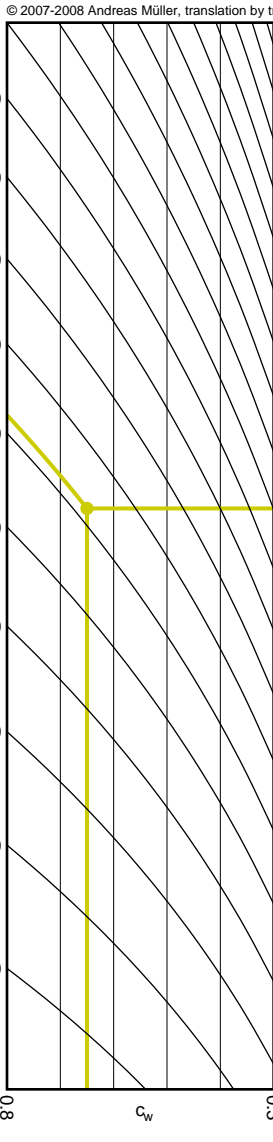
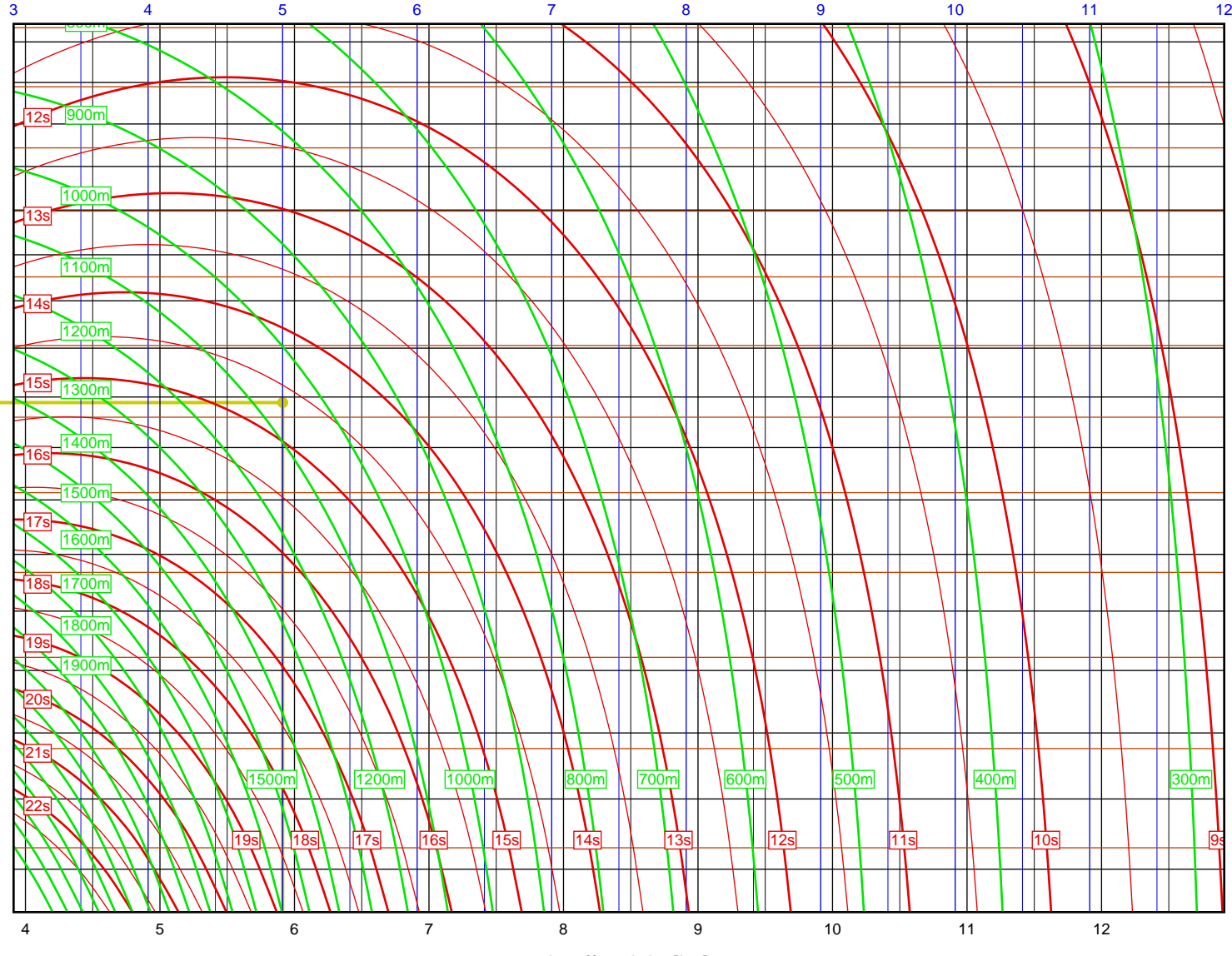
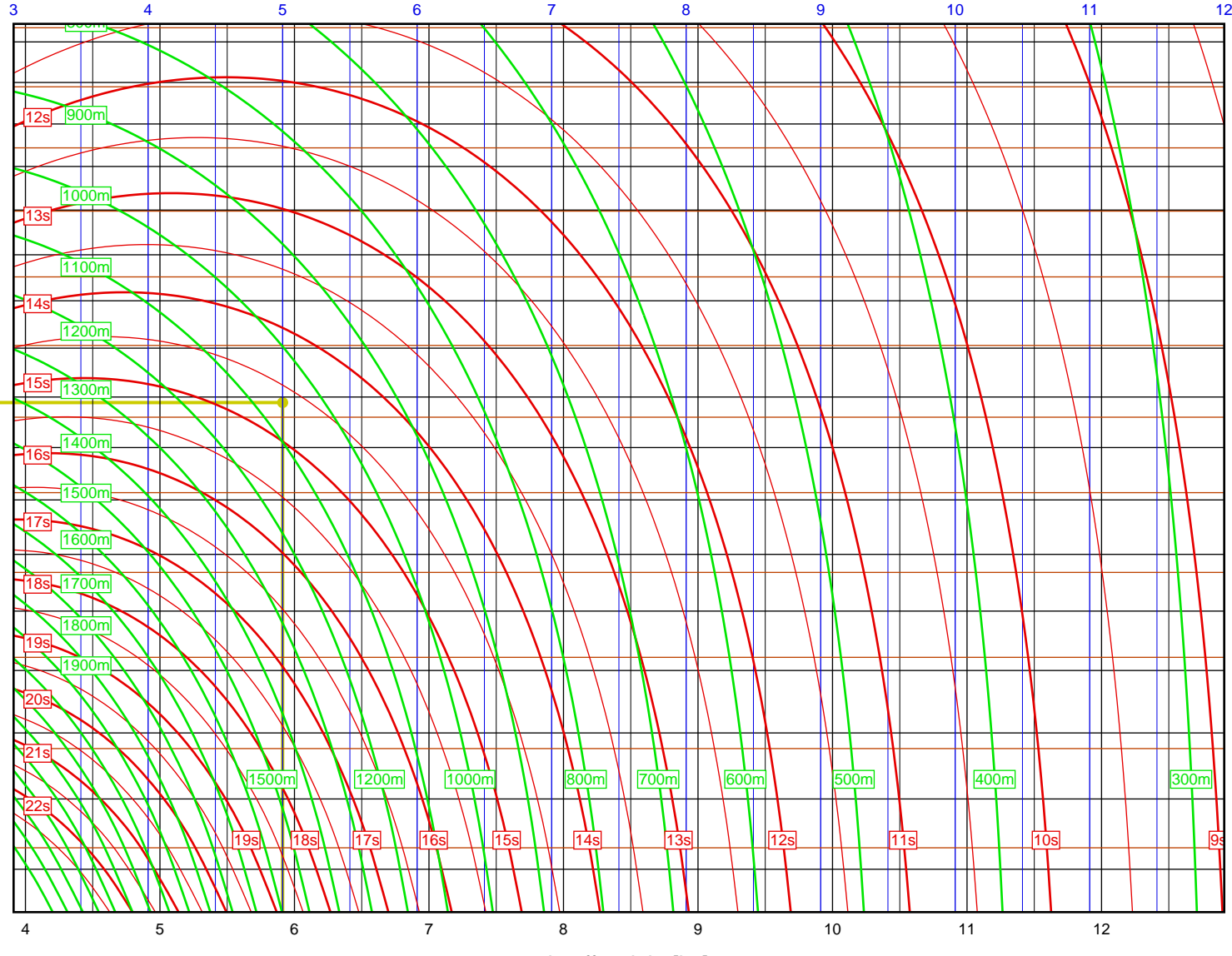
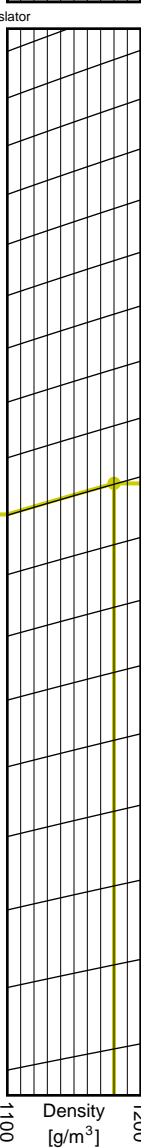
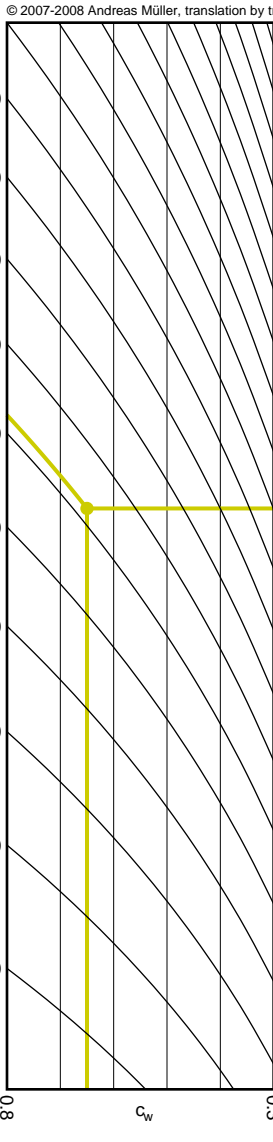
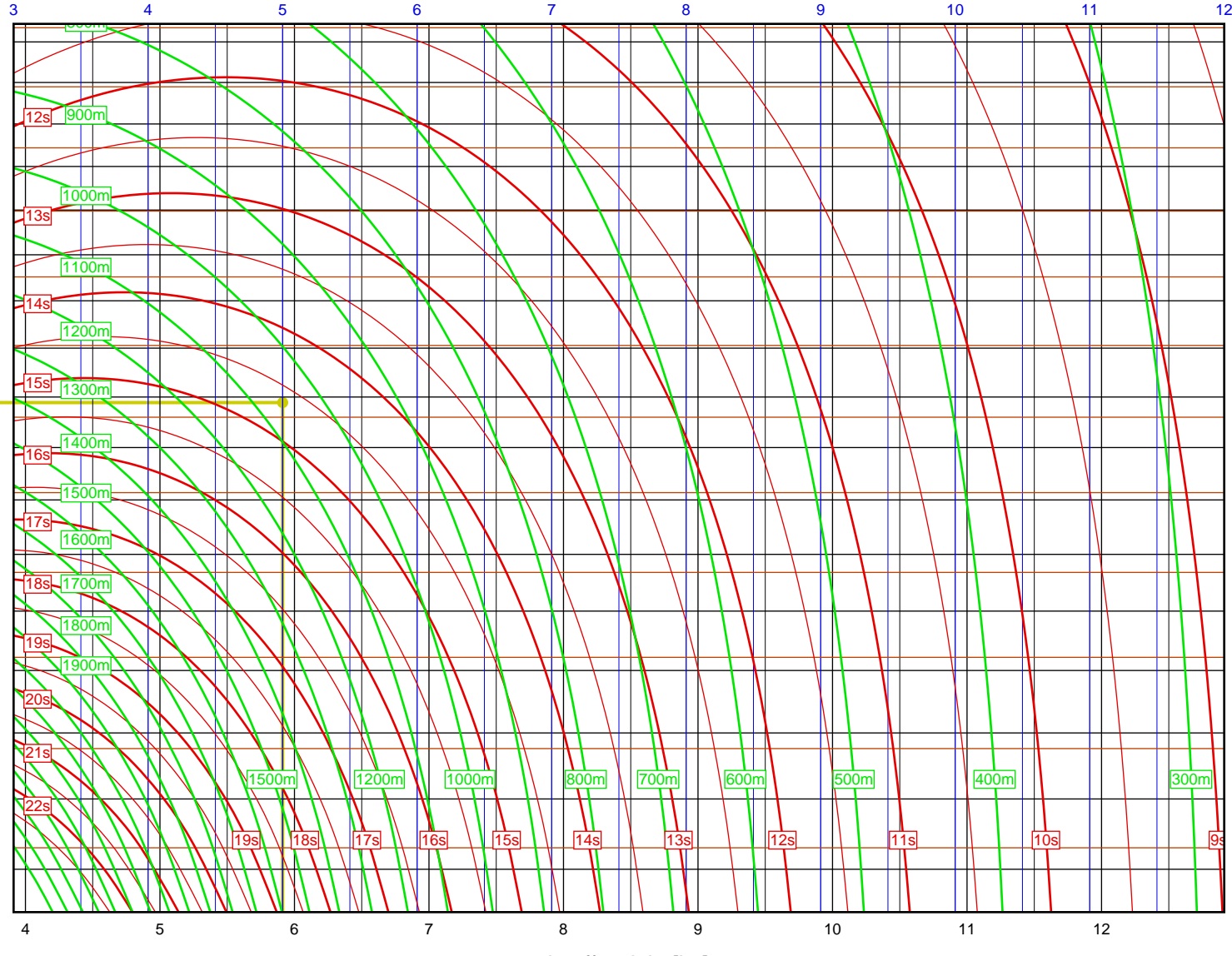
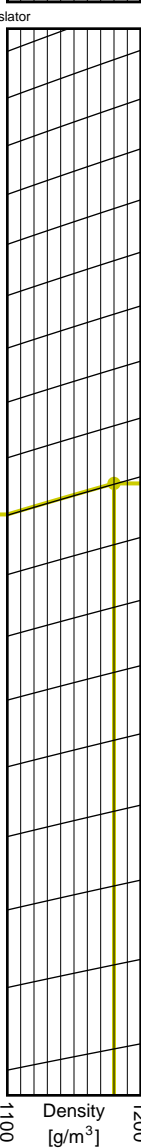
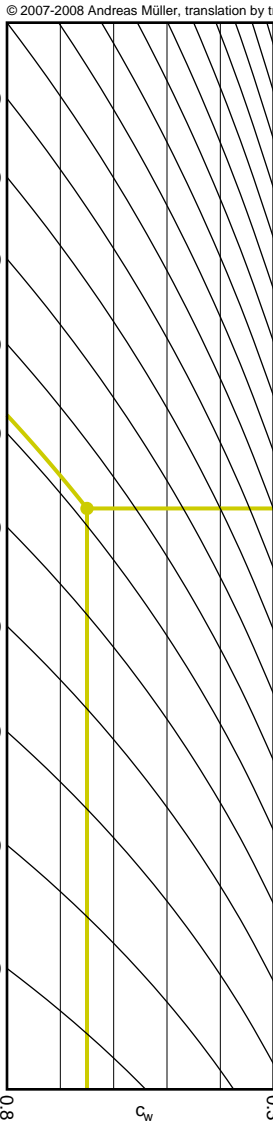
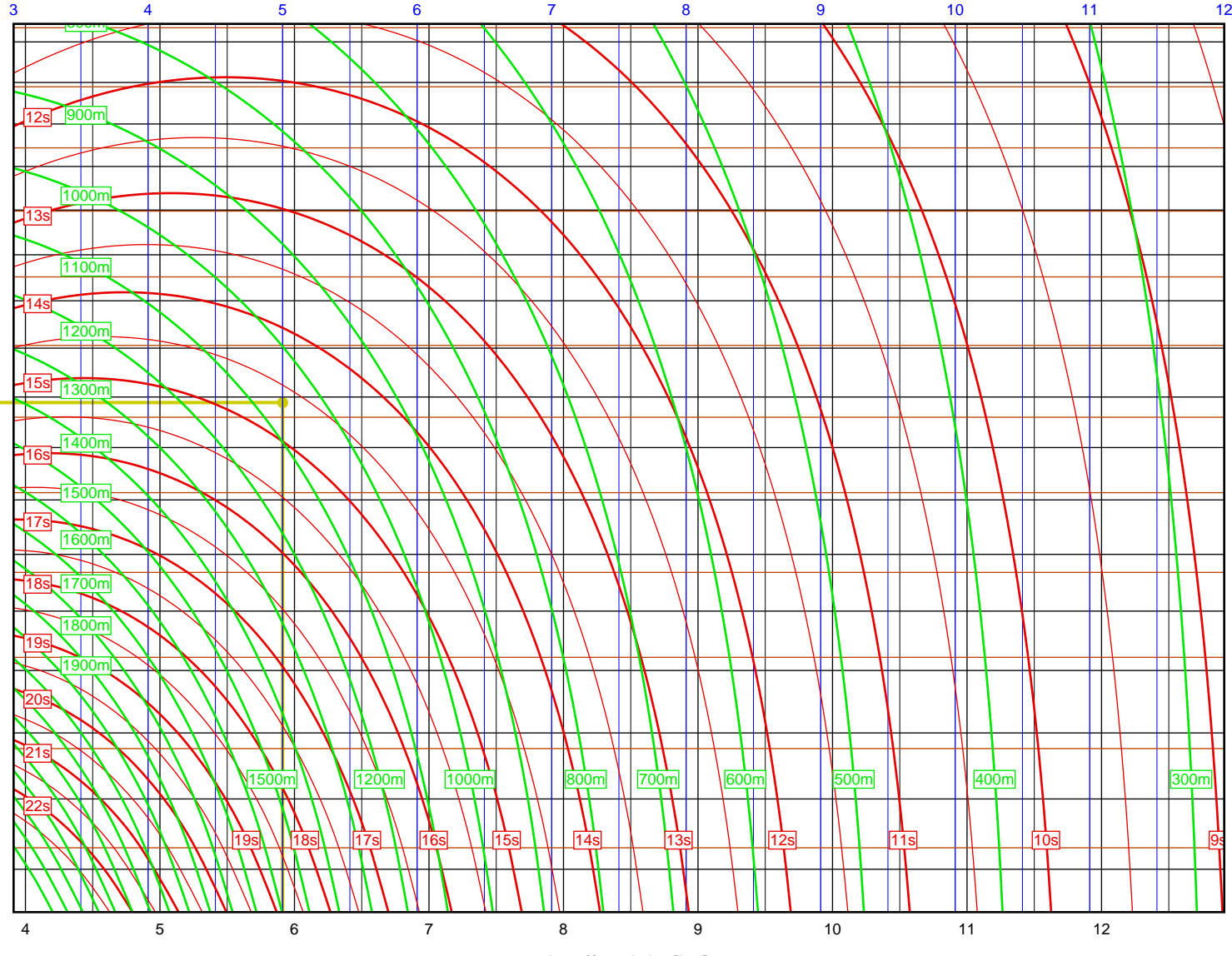
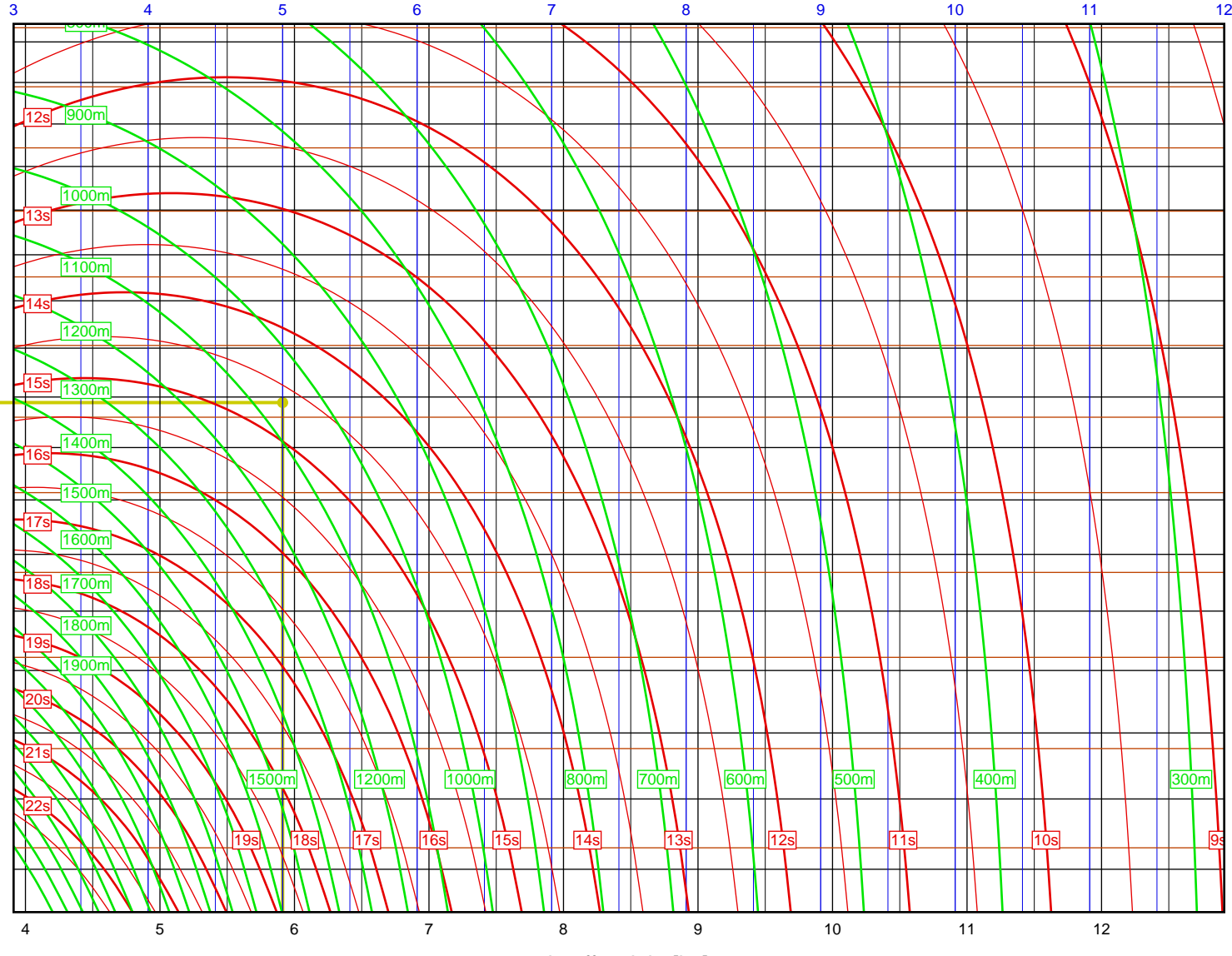
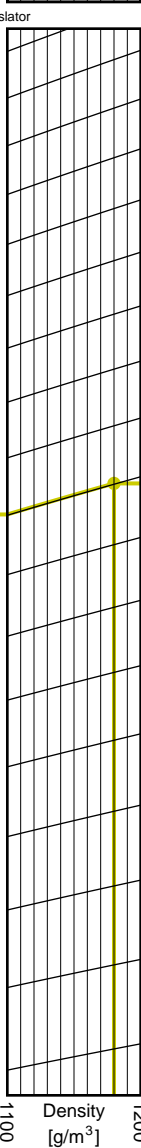
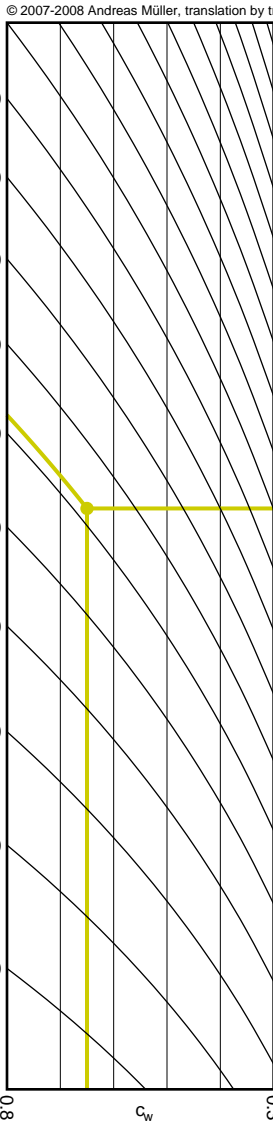
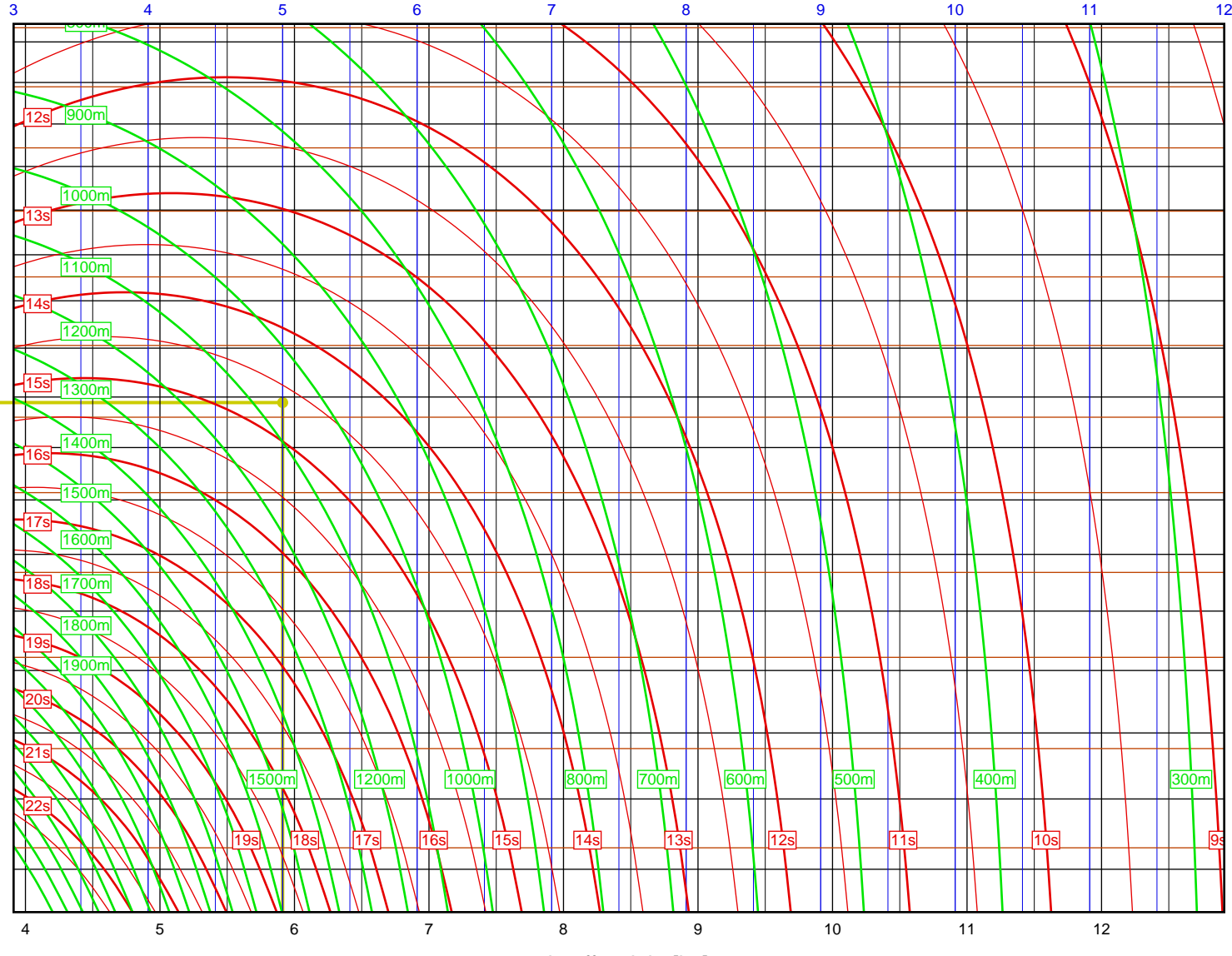
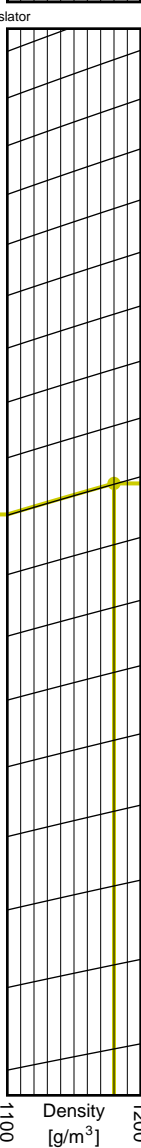
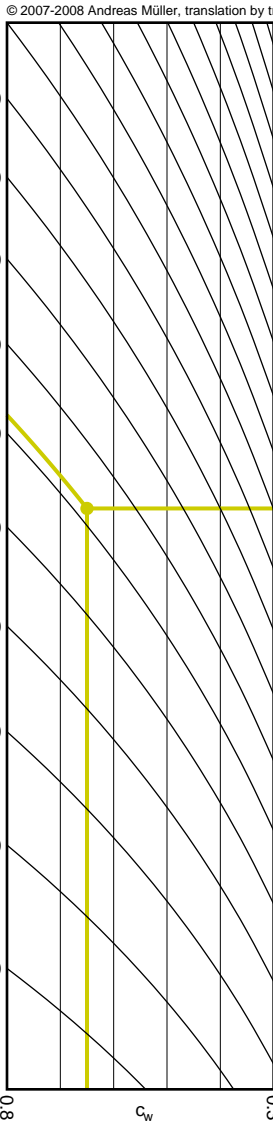
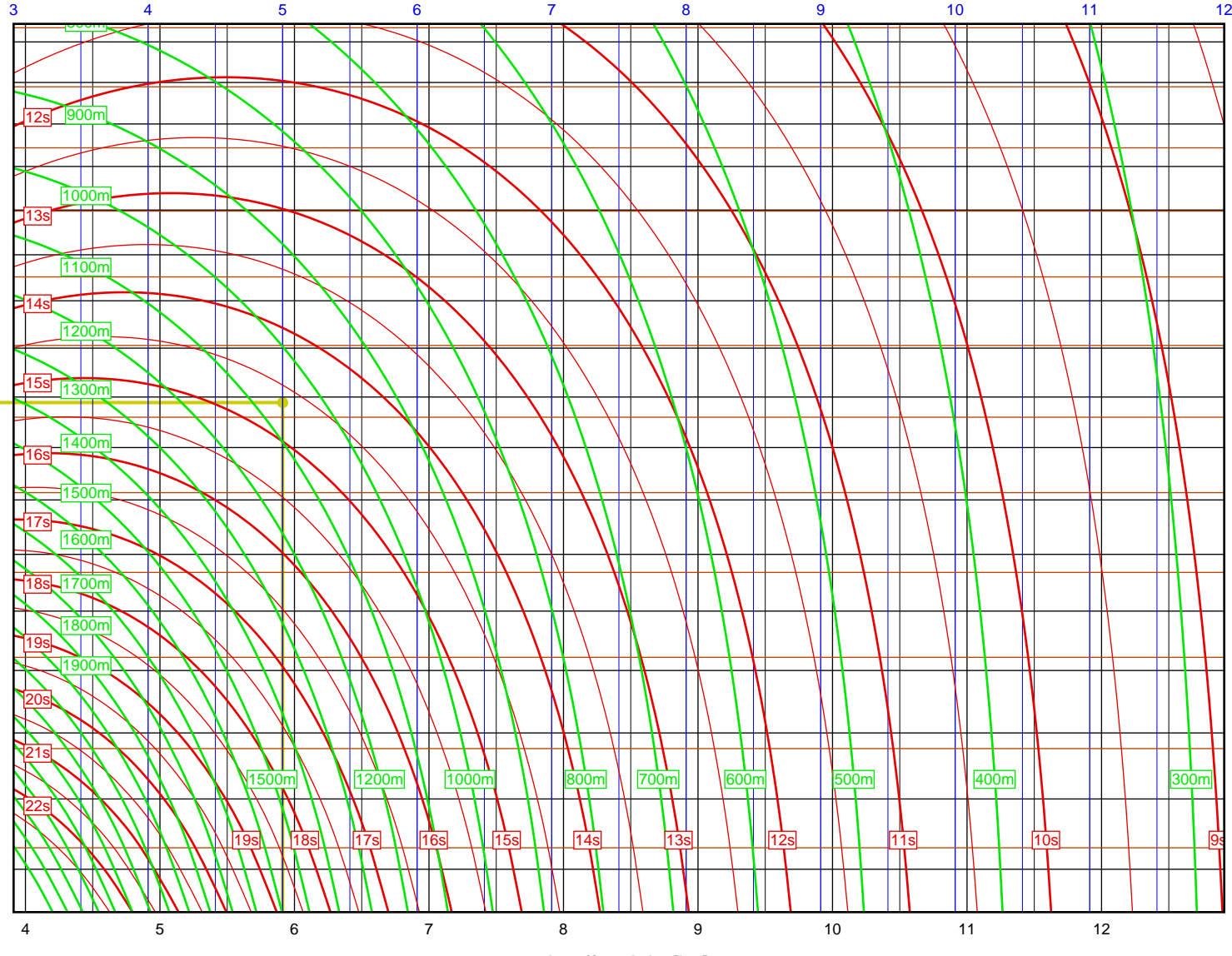
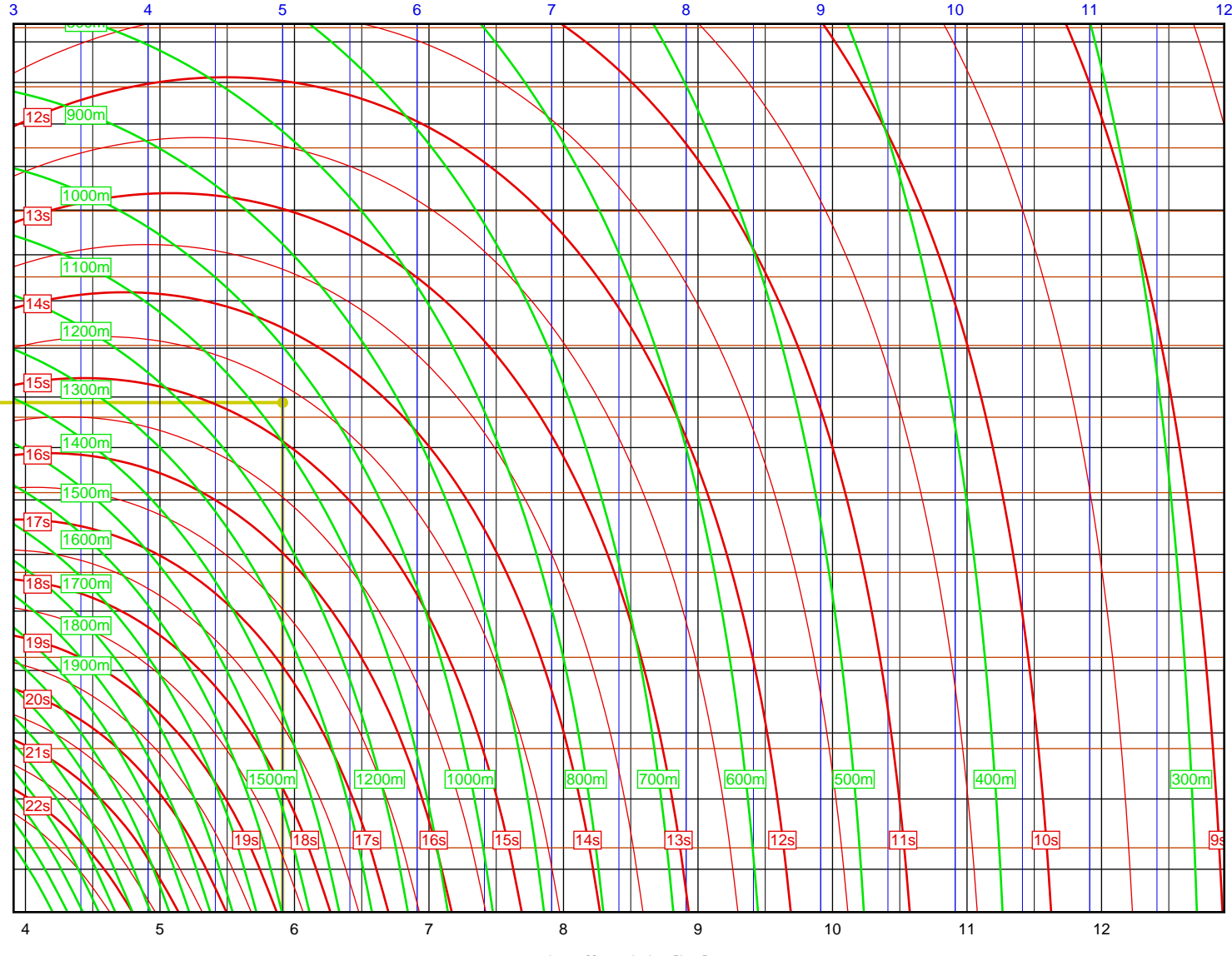
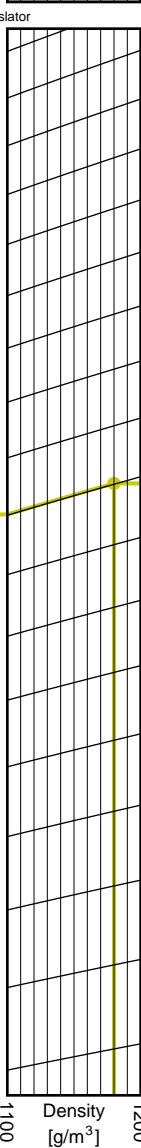
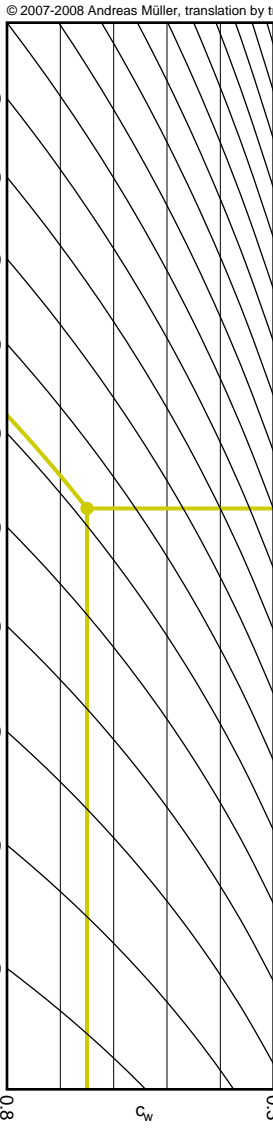
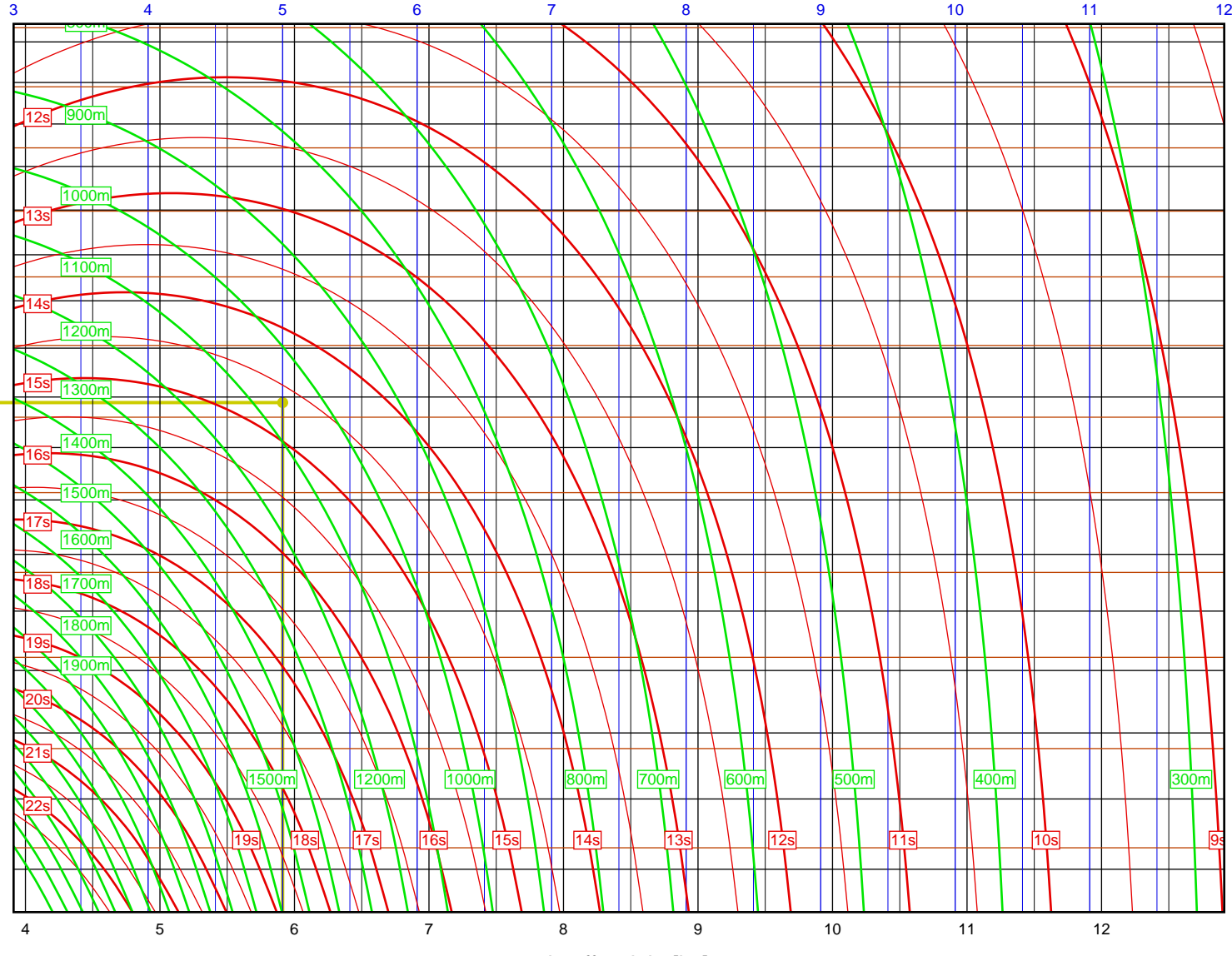
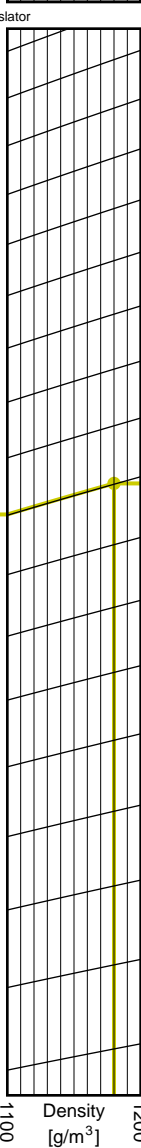
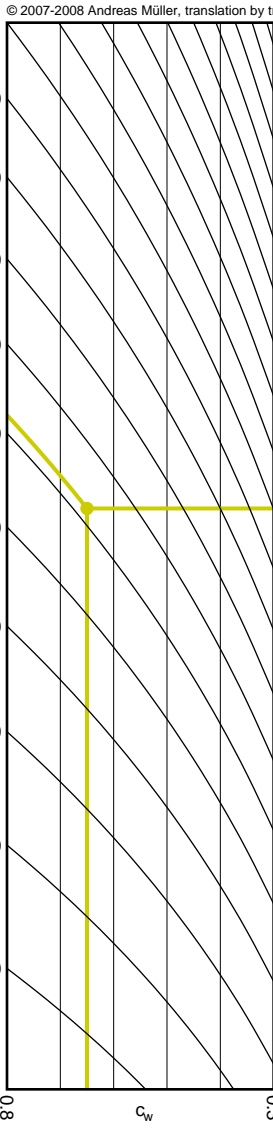
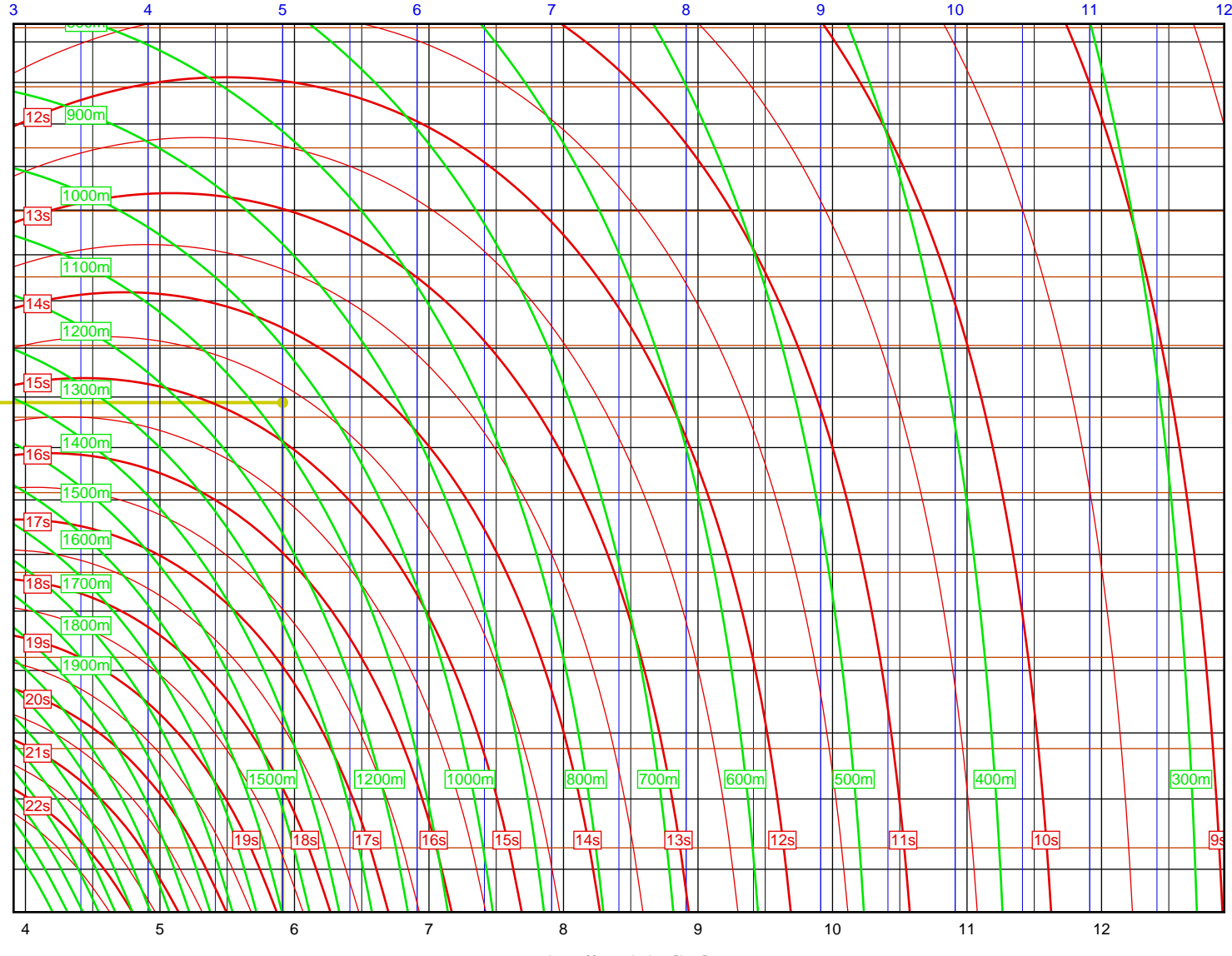
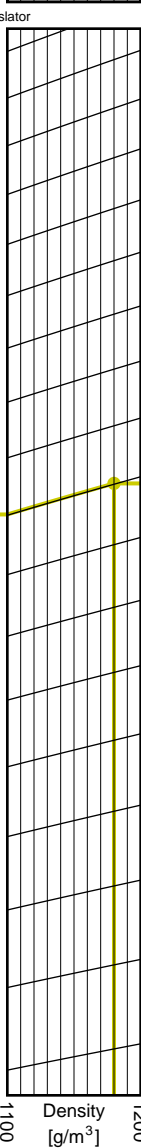
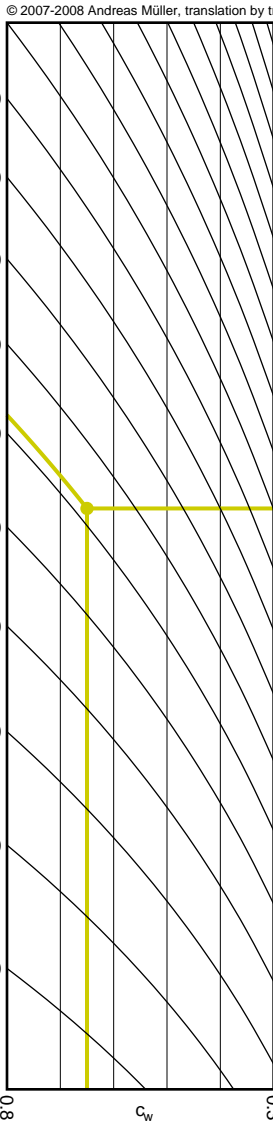
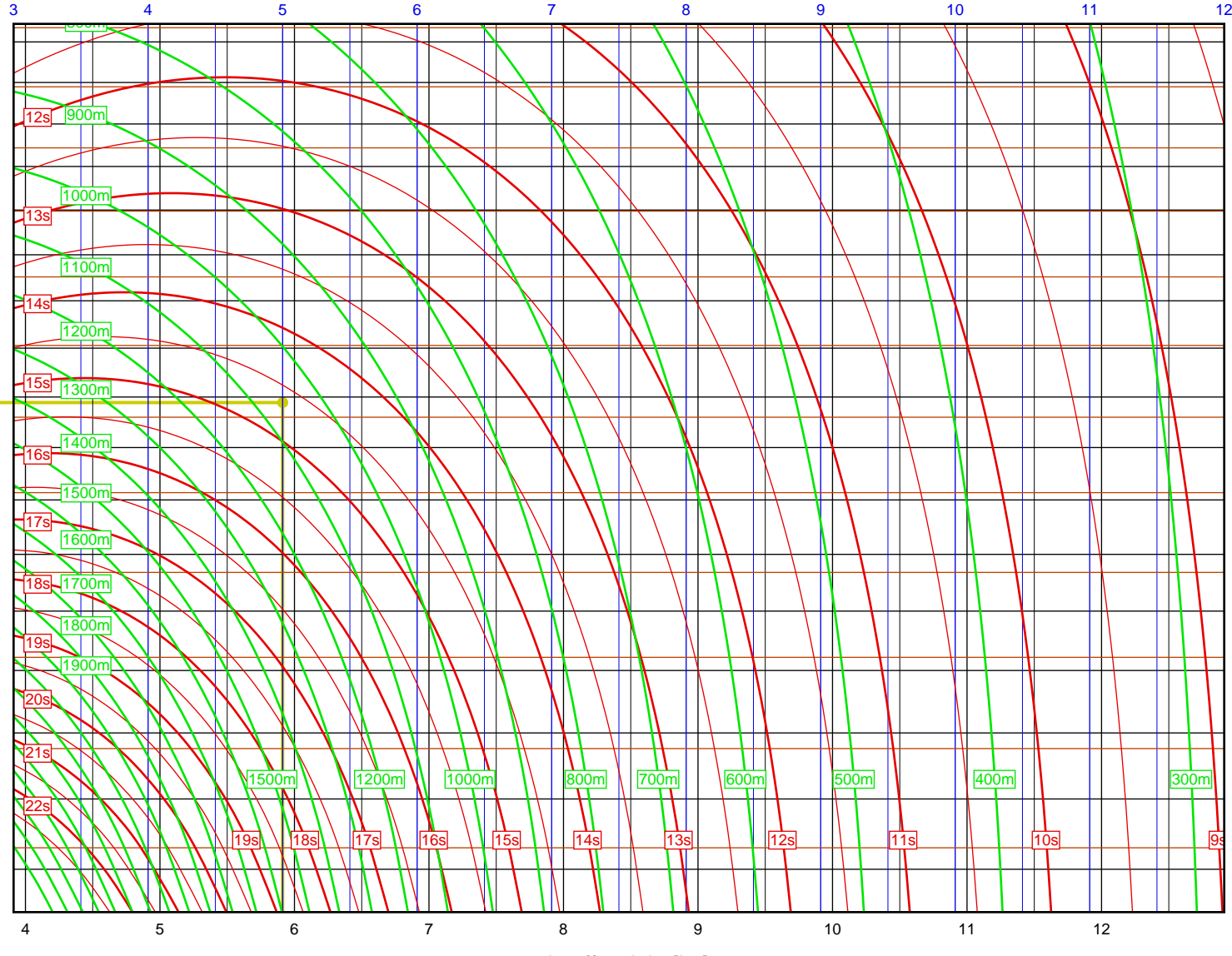
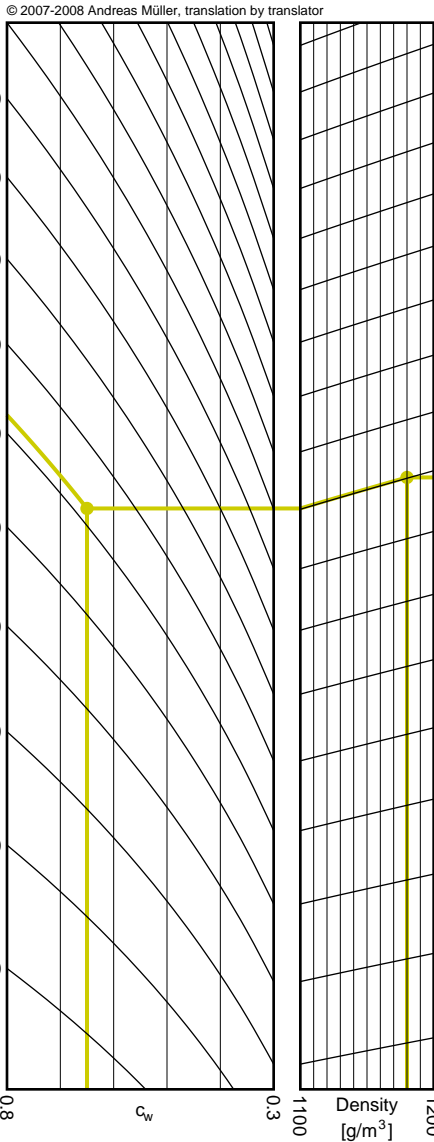
Quick Find Diameter [mm]

Diameter [mm]

c_w

Density [g/m³]

takeoff weight [kg]

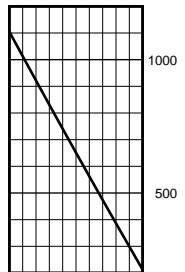


Aerotech J540R

I_{tot} = 1149.7 Ns
 F_{avg} = 511.0 N
 t_{burn} = 2.25 s
 d = 54 mm

Data source:
Aerotech

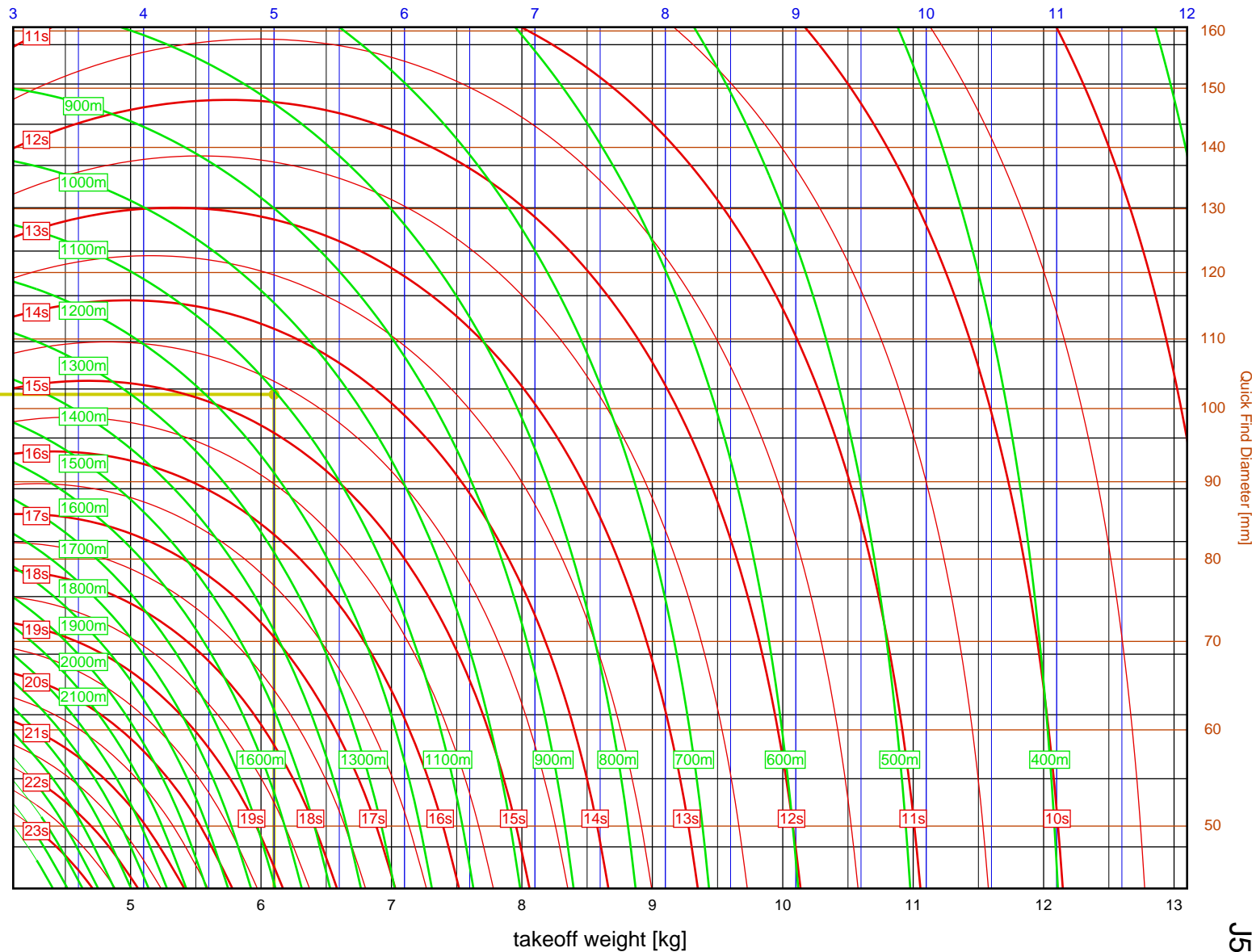
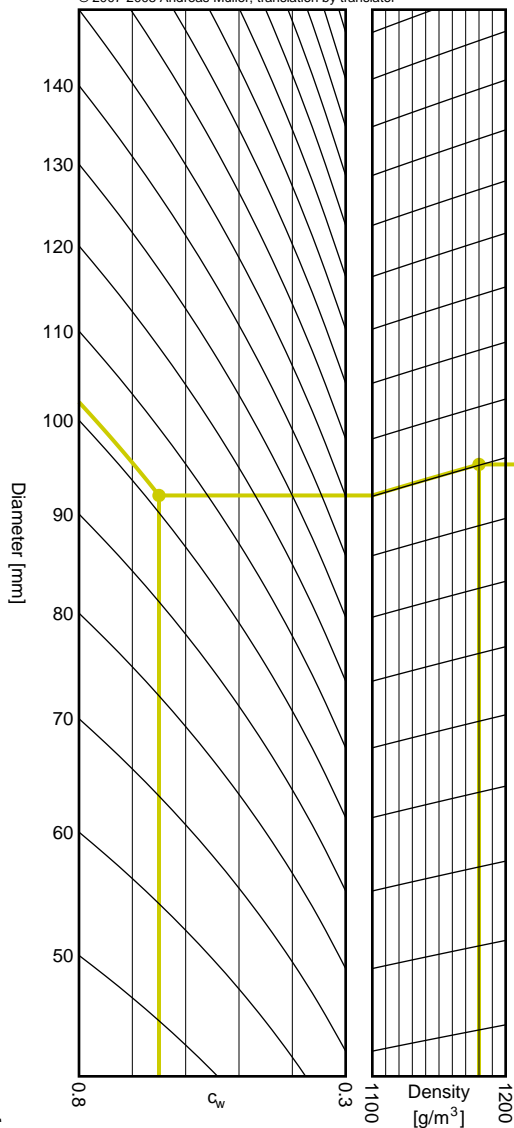
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1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 102mm, drag = 0.65, density = 1180 g/m³, weight = 6.100kg
 Results: time to apogee: 14.6s, expected altitude: 1105m

empty weight [kg]



4", J-K

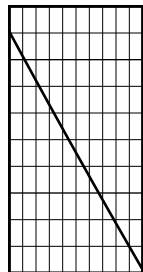
J540R

Aerotech J260HW

I_{tot} = 1170.2 Ns
 F_{avg} = 260.0 N
 t_{burn} = 4.50 s
 d = 54 mm

Data source:
Aerotech

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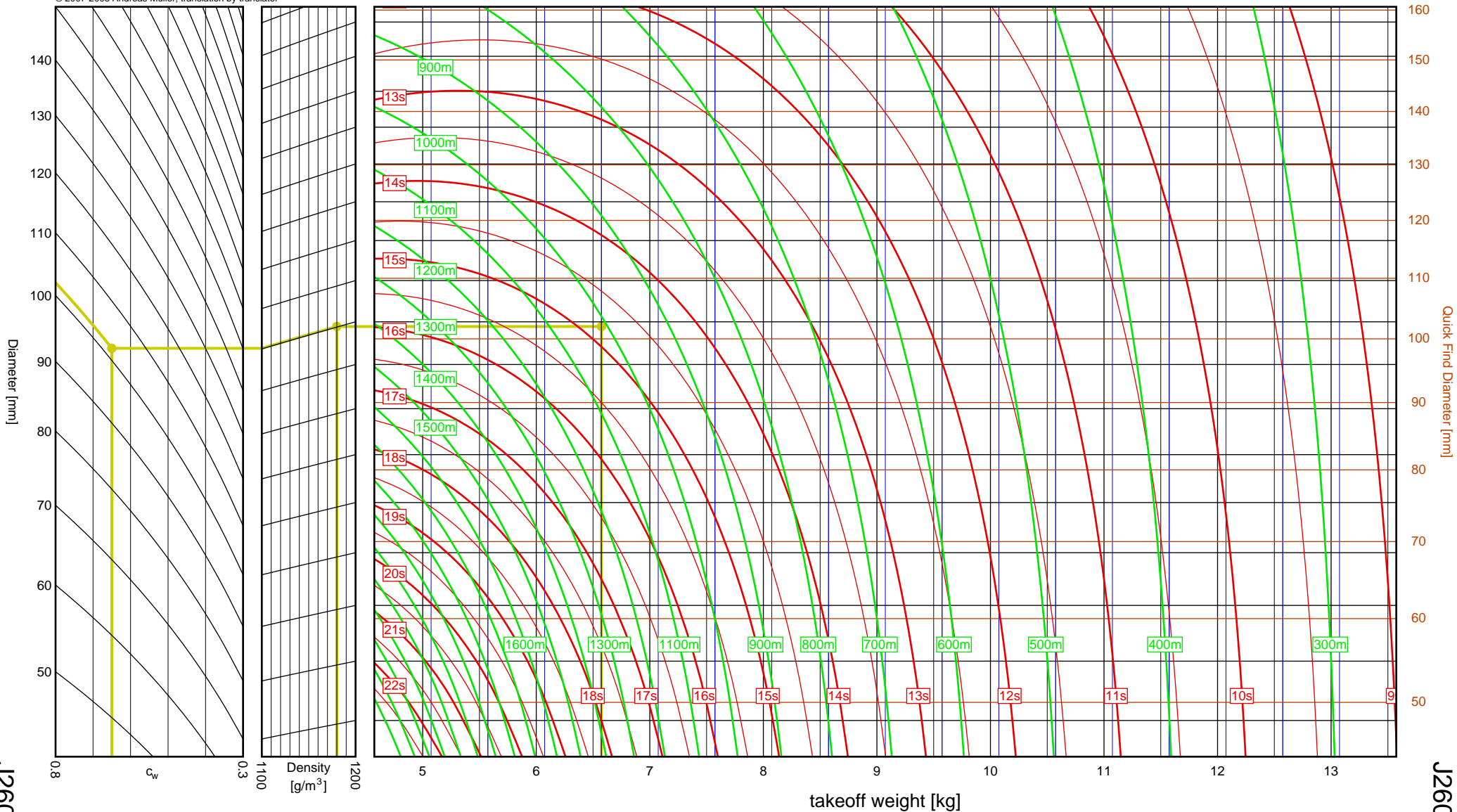


Launch site altitude [m ASL]

1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 102mm, drag = 0.65, density = 1180 g/m³, weight = 6.574kg
 Results: time to apogee: 14.8s, expected altitude: 1011m

empty weight [kg]



4", J-K⁷

J260HW

Quick Find Diameter [mm]

12

11

10

9

8

7

6

5

4

3

160

150

140

130

120

110

100

90

80

70

60

50

40

30

20

10

0

-10

-20

-30

-40

-50

-60

-70

-80

-90

-100

-110

-120

-130

-140

-150

-160

-170

-180

-190

-200

-210

-220

-230

-240

-250

-260

-270

-280

-290

-300

-310

-320

-330

-340

-350

-360

-370

-380

-390

-400

-410

-420

-430

-440

-450

-460

-470

-480

-490

-500

-510

-520

-530

-540

-550

-560

-570

-580

-590

-600

-610

-620

-630

-640

-650

-660

-670

-680

-690

-700

-710

-720

-730

-740

-750

-760

-770

-780

-790

-800

-810

-820

-830

-840

-850

-860

-870

-880

-890

-900

-910

-920

-930

-940

-950

-960

-970

-980

-990

-1000

-1010

-1020

-1030

-1040

-1050

-1060

-1070

-1080

-1090

-1100

-1110

-1120

-1130

-1140

-1150

-1160

-1170

-1180

-1190

-1200

-1210

-1220

-1230

-1240

-1250

-1260

-1270

-1280

-1290

-1300

-1310

-1320

-1330

-1340

-1350

-1360

-1370

-1380

-1390

-1400

-1410

-1420

-1430

-1440

-1450

-1460

-1470

-1480

-1490

-1500

-1510

-1520

-1530

-1540

-1550

-1560

-1570

-1580

-1590

-1600

-1610

-1620

-1630

-1640

-1650

-1660

-1670

-1680

-1690

-1700

-1710

-1720

-1730

-1740

-1750

-1760

-1770

-1780

-1790

-1800

-1810

-1820

-1830

-1840

-1850

-1860

-1870

-1880

-1890

-1900

-1910

-1920

-1930

-1940

-1950

-1960

-1970

-1980

-1990

-2000

-2010

-2020

-2030

-2040

-2050

-2060

-2070

-2080

-2090

-2100

-2110

-2120

-2130

-2140

-2150

-2160

-2170

-2180

-2190

-2200

-2210

-2220

-2230

-2240

-2250

-2260

-2270

-2280

-2290

-2300

-2310

-2320

-2330

-2340

-2350

-2360

-2370

-2380

-2390

-2400

-2410

-2420

-2430

-2440

-2450

-2460

-2470

-2480

-2490

-2500

-2510

-2520

-2530

-2540

-2550

-2560

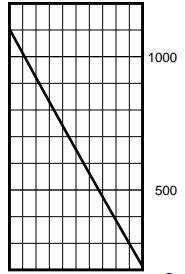
-2570

-2580

Aerotech J415W

I_{tot} = 1173.7 Ns
 F_{avg} = 335.4 N
 t_{burn} = 3.50 s
 d = 54 mm

Data source:
Aerotech

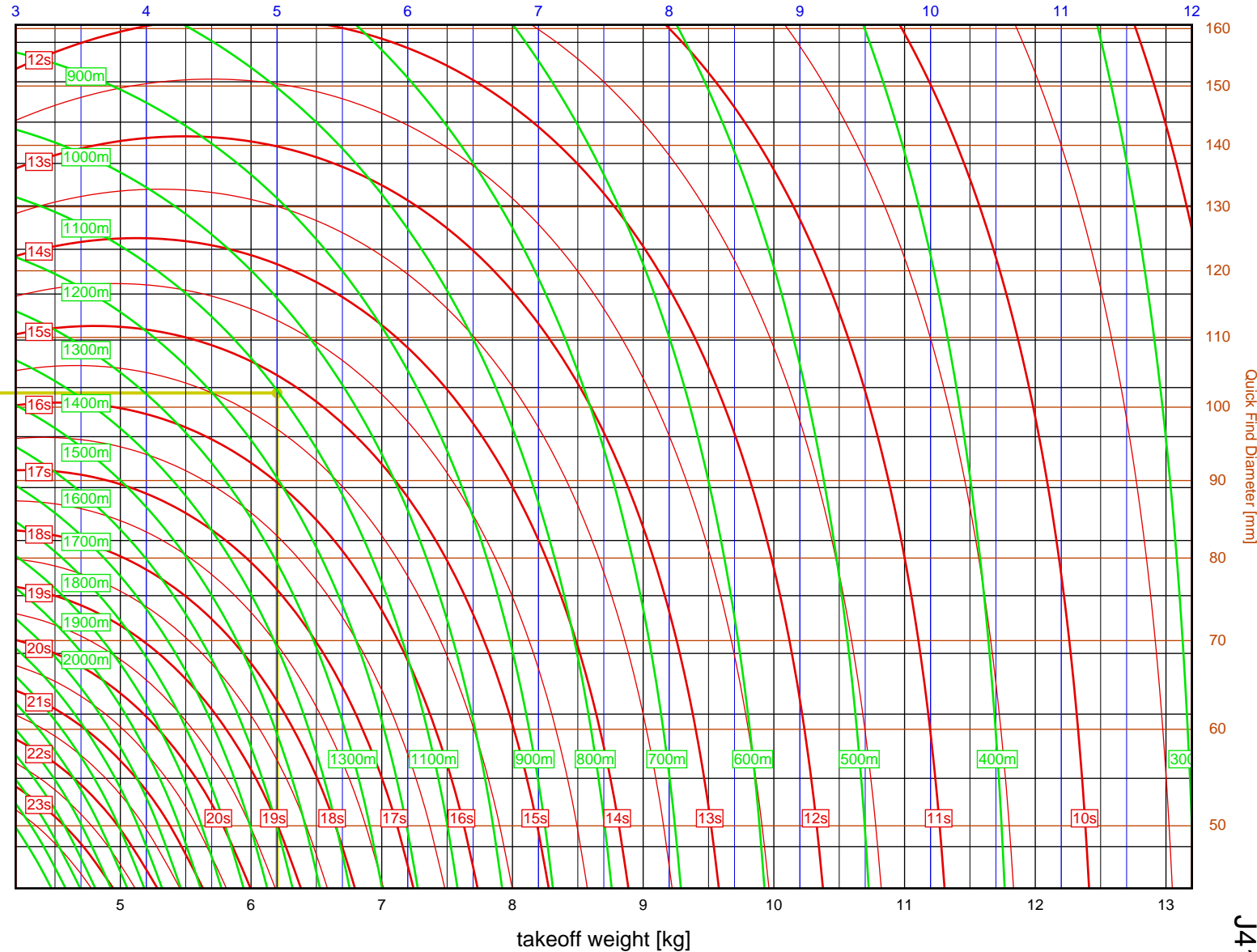
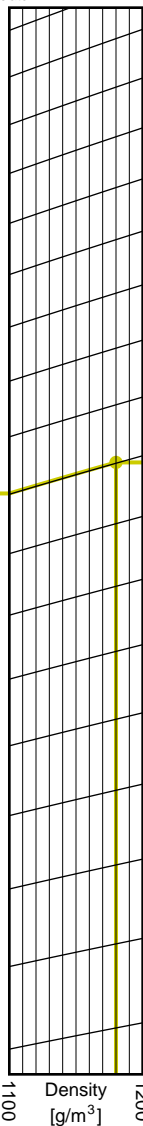
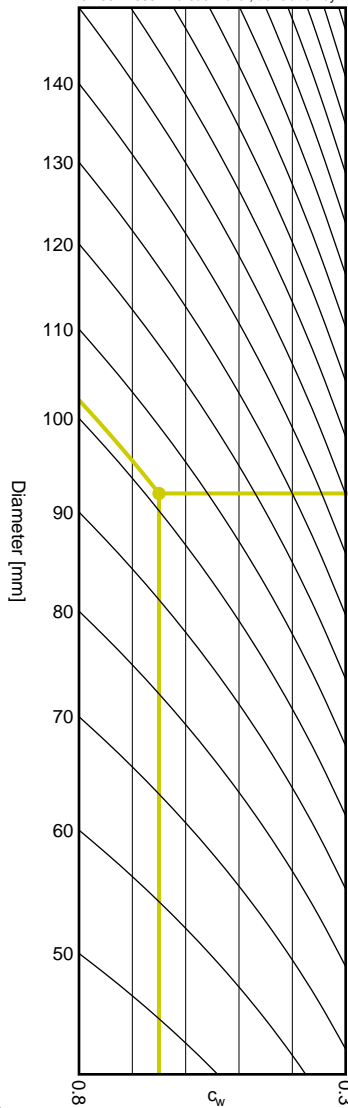


Launch site altitude [m ASL]

1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 102mm, drag = 0.65, density = 1180 g/m³, weight = 6.199kg
 Results: time to apogee: 15.2s, expected altitude: 1103m

empty weight [kg]



takeoff weight [kg]

4", J-K⁷

Quick Find Diameter [mm]

J415W

J415W

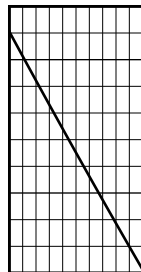
7-20

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Aerotech J800T

I_{tot} = 1202.0 Ns
 F_{avg} = 751.3 N
 t_{burn} = 1.60 s
 d = 54 mm

Data source:
Aerotech

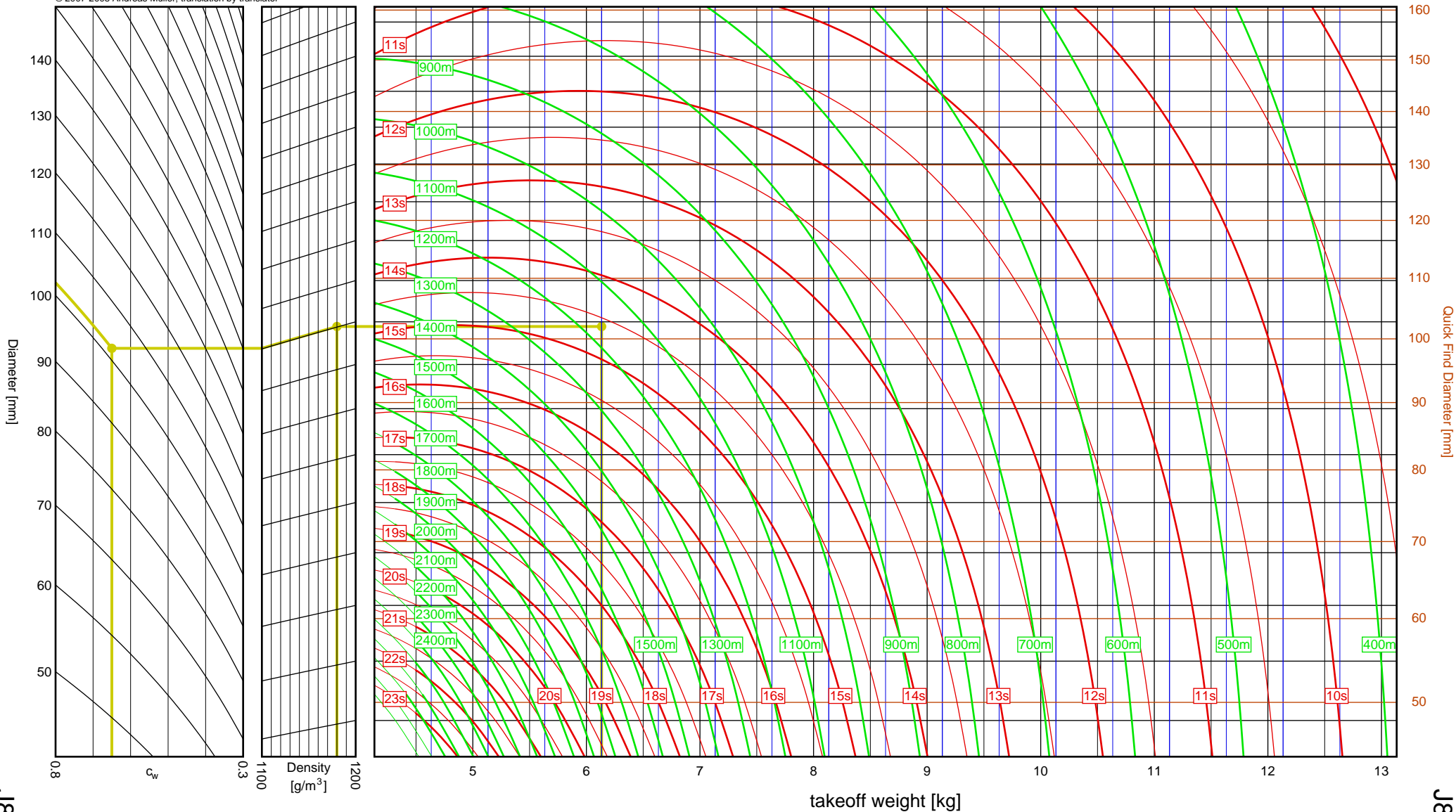


Launch site altitude [m ASL]

1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 102mm, drag = 0.65, density = 1180 g/m³, weight = 6.134kg
 Results: time to apogee: 14.6s, expected altitude: 1168m

empty weight [kg]



4", J-K⁷

J800T

Quick Find Diameter [mm]

Diameter [mm]

c_w

Density [g/m³]

takeoff weight [kg]

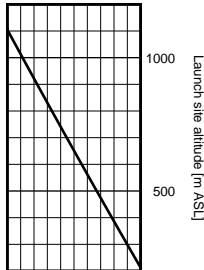
J800T

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Aerotech
J1999N

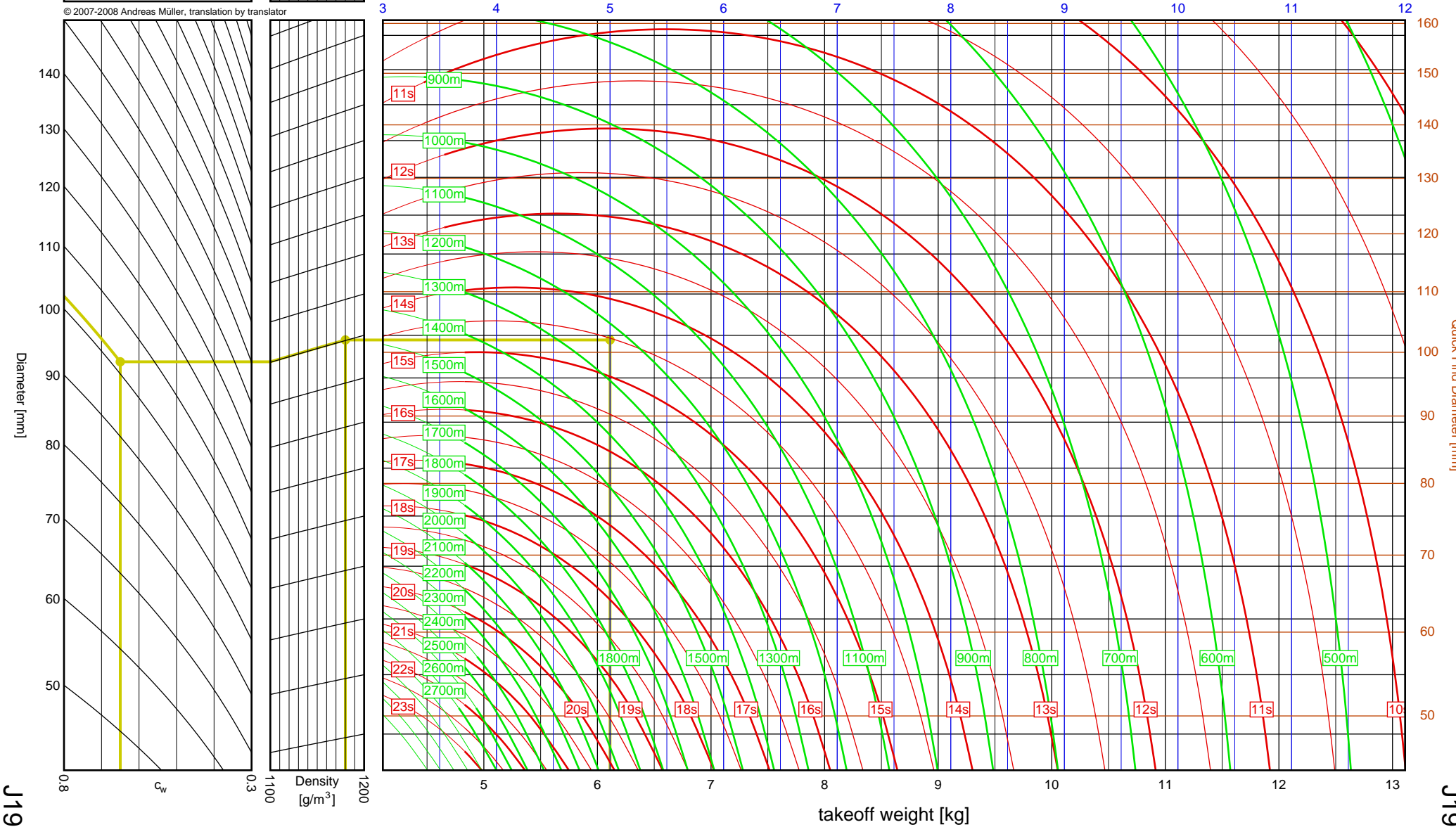
I_{tot} = 1250.3 Ns
 F_{avg} = 1866.2 N
 t_{burn} = 0.67 s
 d = 54 mm

Data source:
Aerotech



1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
 2. Move along horizontal to left border of density scale
 3. Move up slanted line to vertical line matching density at launch site
 4. From intersection point move horizontally to vertical line matching rocket mass
 5. Read off expected time to apogee from red curves, altitude from green curves
- Sample: diameter = 102mm, drag = 0.65, density = 1180 g/m³, weight = 6.111kg
- Results: time to apogee: 14.5s, expected altitude: 1229m

empty weight [kg]



4", J-K ⁷

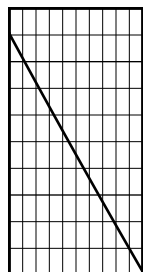
J1999N

J1999N

Aerotech
J390HW-TURBO

I_{tot} = 1279.1 Ns
 F_{avg} = 365.5 N
 t_{burn} = 3.50 s
 d = 54 mm

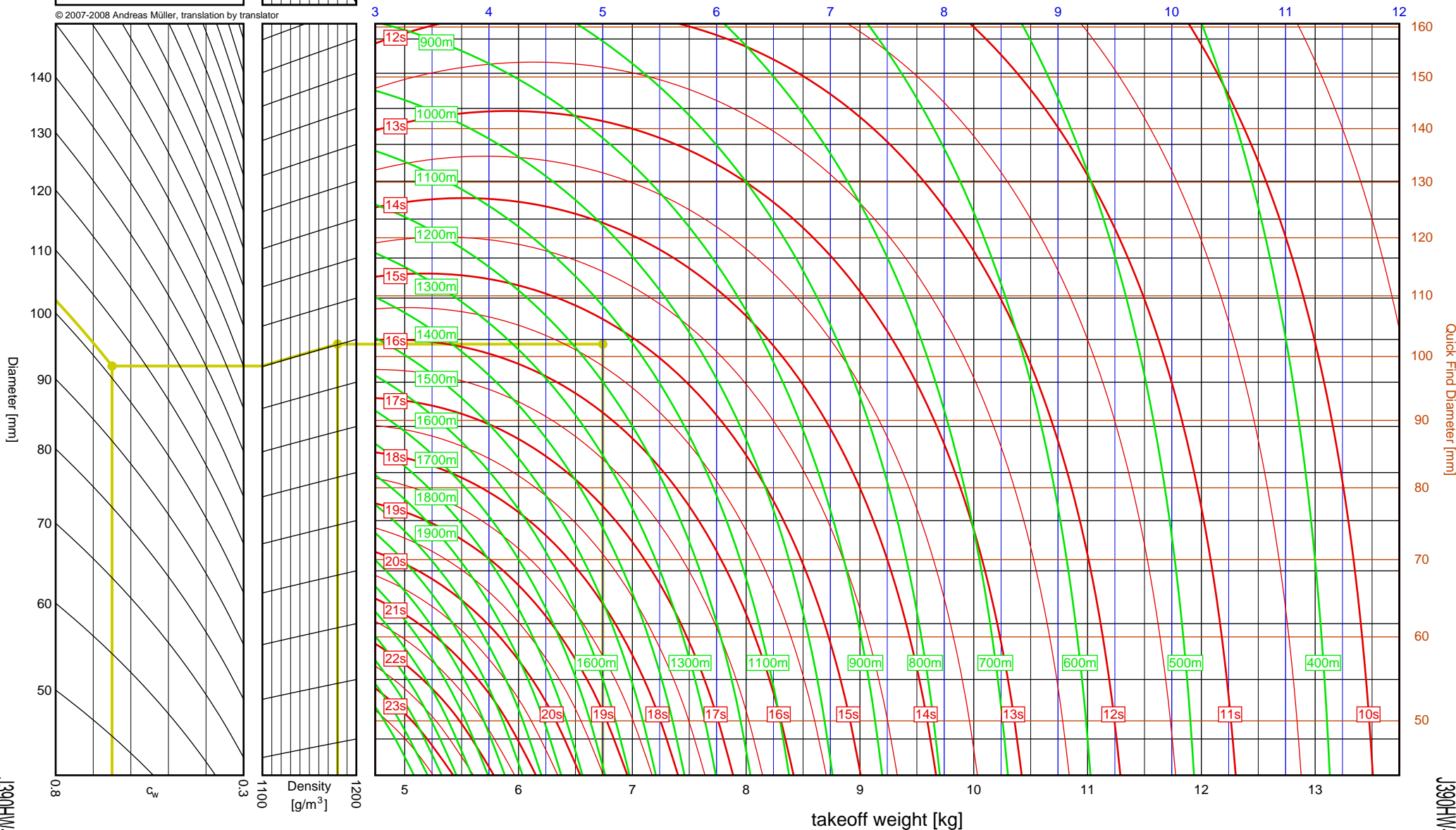
Data source:
Aerotech



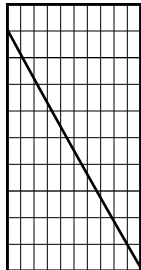
1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 102mm, drag = 0.65, density = 1180 g/m³, weight = 6.740kg
 Results: time to apogee: 15.3s, expected altitude: 1150m

empty weight [kg]



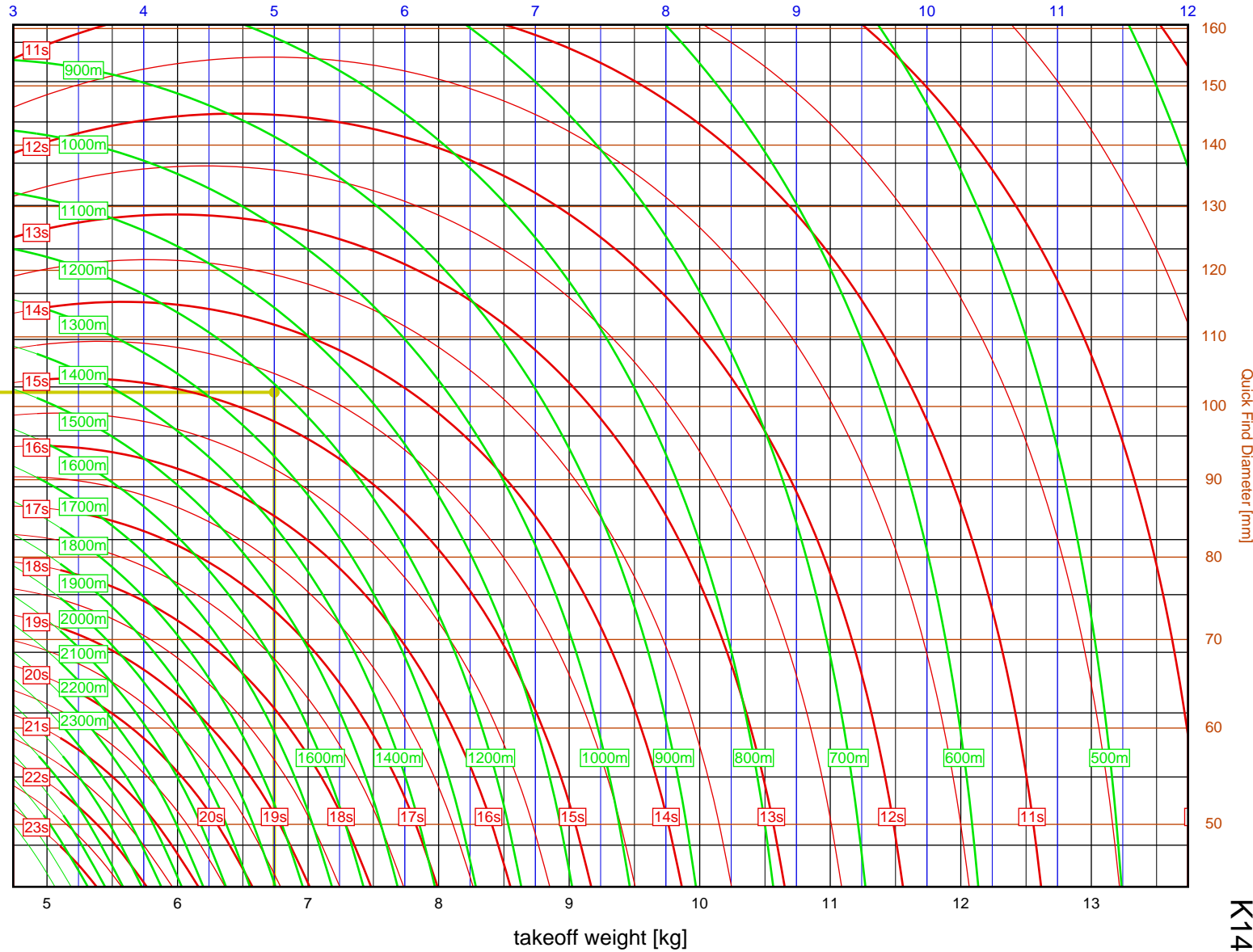
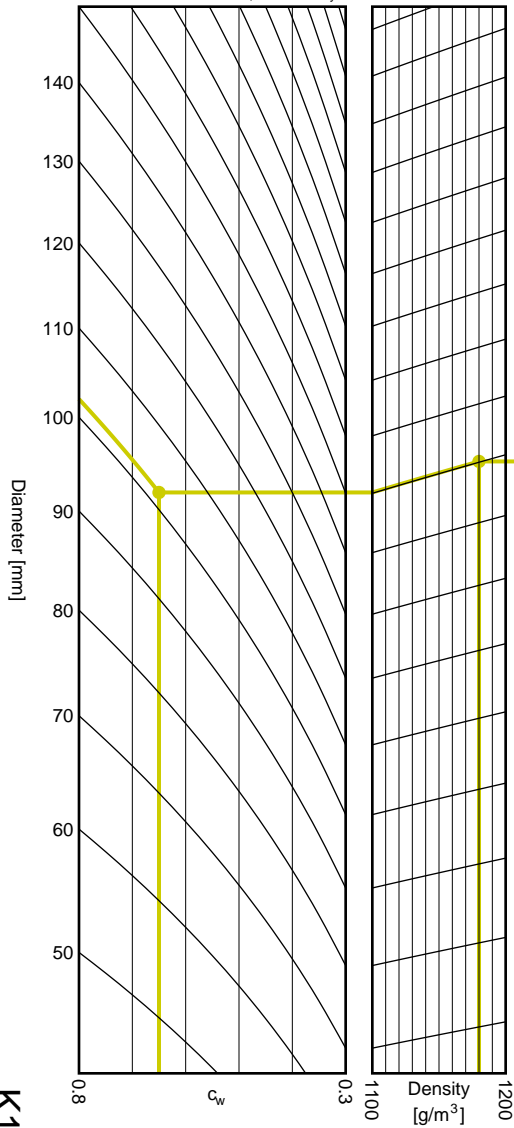
Aerotech	
K1499N	
I_{tot}	= 1320.4 Ns
F_{avg}	= 1500.5 N
t_{burn}	= 0.88 s
d	= 75 mm
Data source: Aerotech	



1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 102mm, drag = 0.65, density = 1180 g/m³, weight = 6.741kg
 Results: time to apogee: 14.7s, expected altitude: 1212m

empty weight [kg]



takeoff weight [kg]

4", J-K

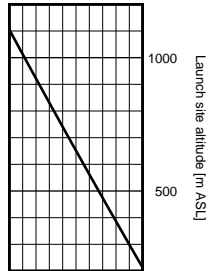
Quick Find Diameter [mm]

K1499N

K1499N

7-24

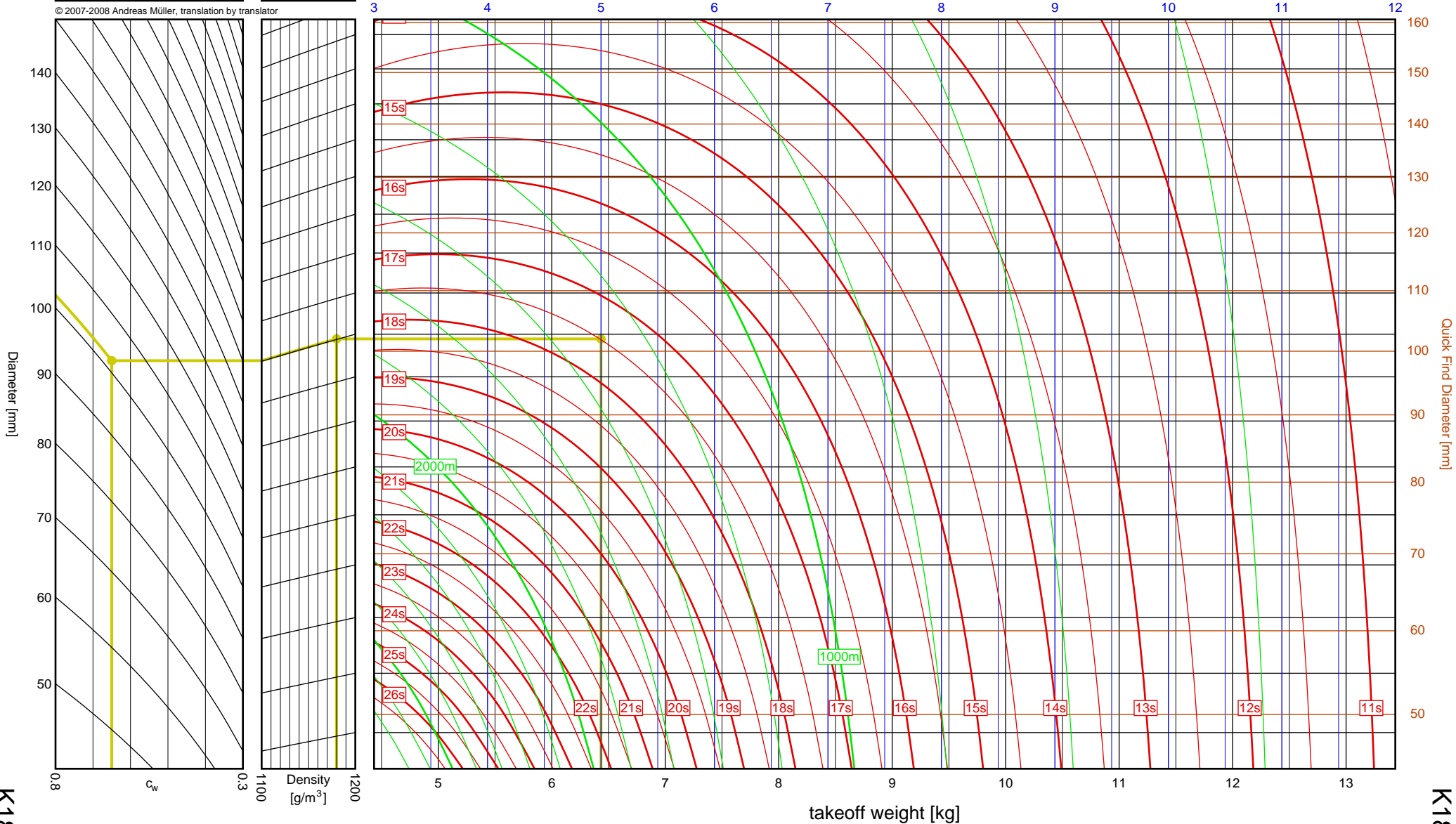
Aerotech K185W	
I_{tot}	= 1378.6 Ns
F_{avg}	= 178.7 N
t_{burn}	= 7.71 s
d	= 54 mm
Data source: Aerotech	



1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 102mm, drag = 0.65, density = 1180 g/m³, weight = 6.434kg
 Results: time to apogee: 17.5s, expected altitude: 1293m

empty weight [kg]



takeoff weight [kg]

4", J-K⁷

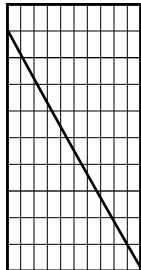
Quick-Find Diameter [mm]

K185W

K185W

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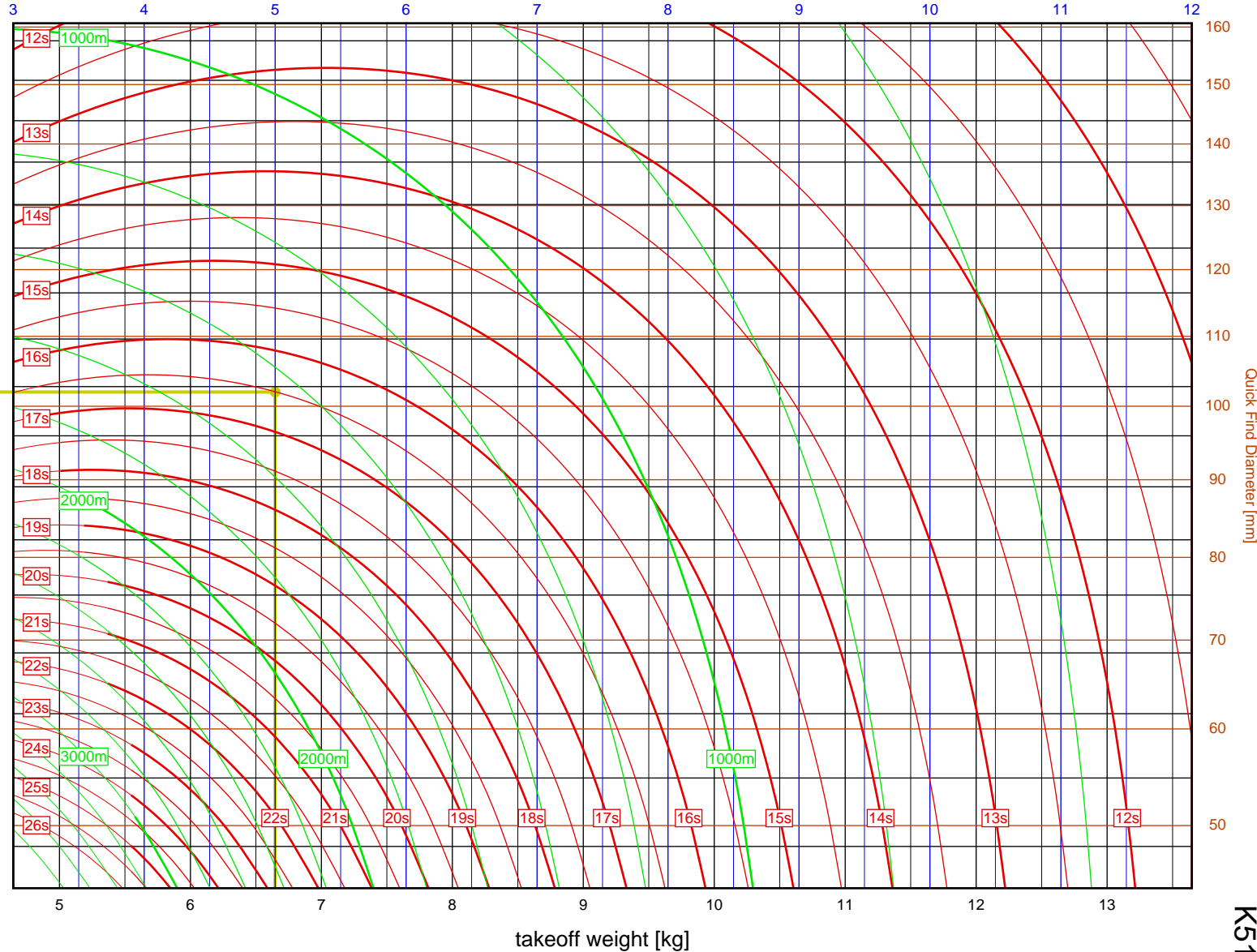
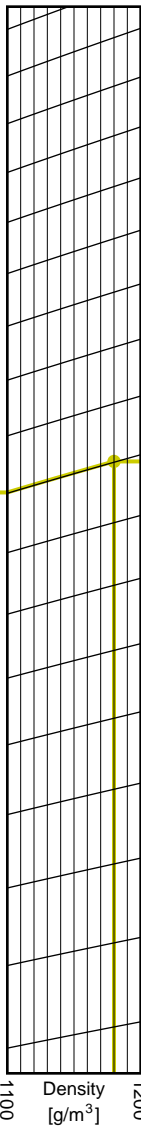
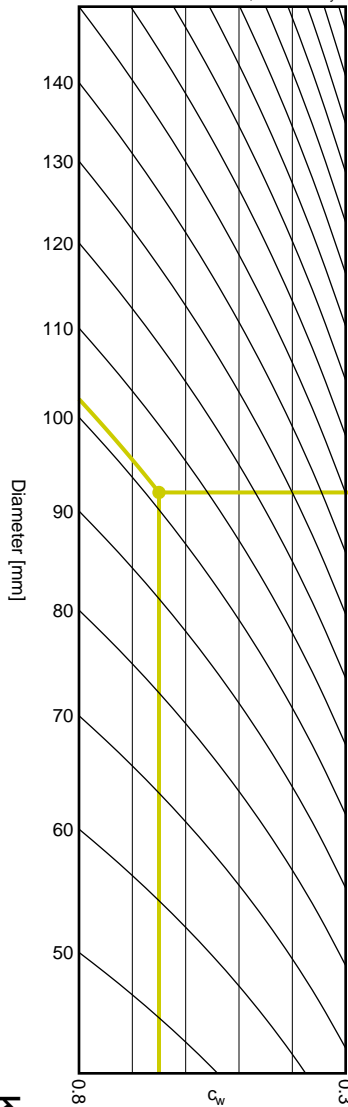
Aerotech K513FJ	
I_{tot}	= 1474.9 Ns
F_{avg}	= 541.0 N
t_{burn}	= 2.73 s
d	= 54 mm
Data source: Aerotech	



1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 102mm, drag = 0.65, density = 1180 g/m³, weight = 6.647kg
 Results: time to apogee: 16.5s, expected altitude: 1444m

empty weight [kg]



takeoff weight [kg]

4", J-K

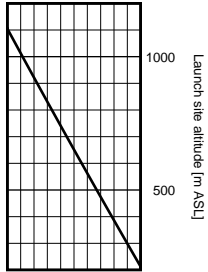
Quick Find Diameter [mm]

K513FJ

K513FJ

7-26

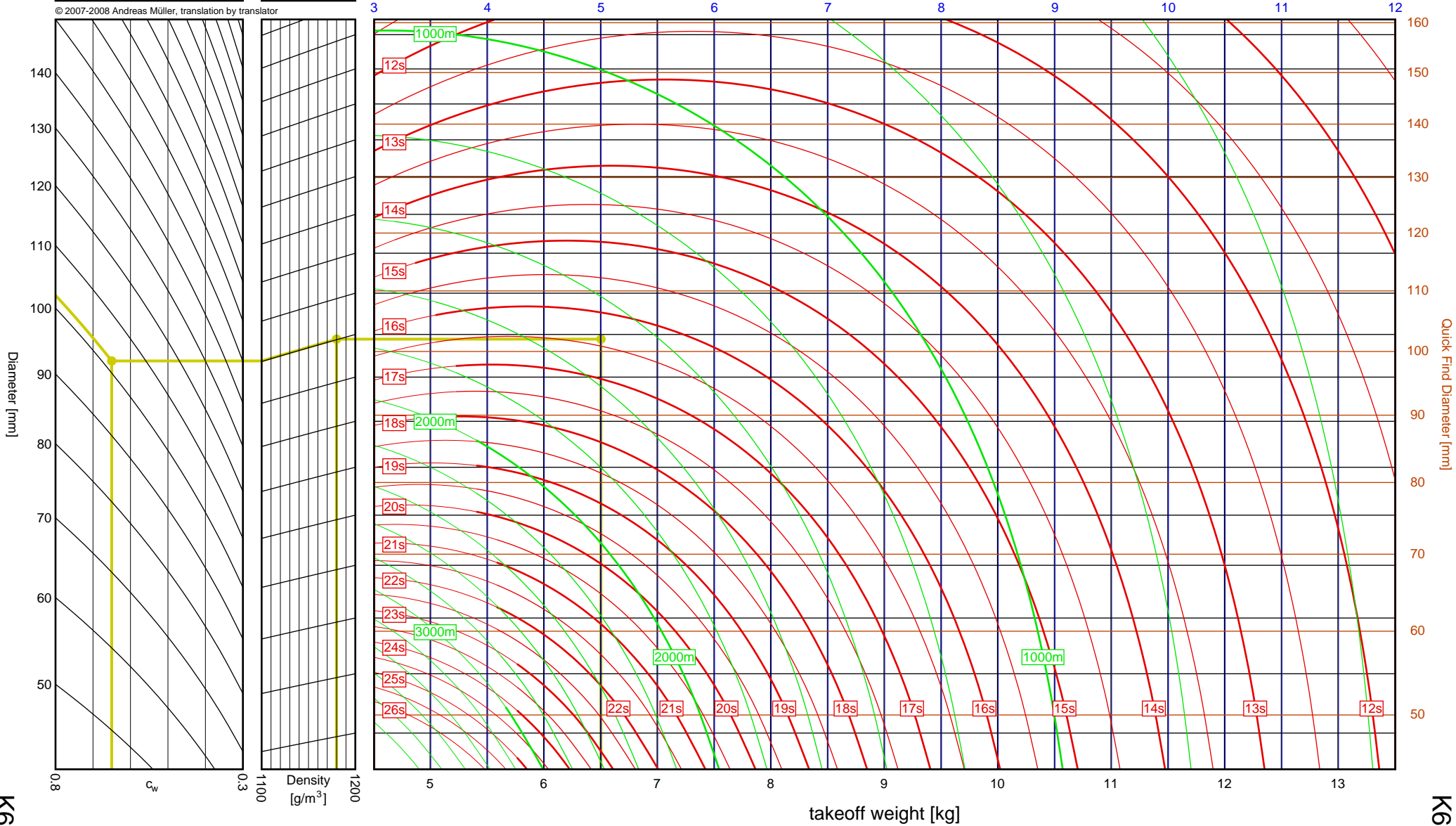
Aerotech	
K695R	
I_{tot}	= 1496.5 Ns
F_{avg}	= 665.1 N
t_{burn}	= 2.25 s
d	= 54 mm
Data source: Aerotech	



1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 102mm, drag = 0.65, density = 1180 g/m³, weight = 6.506kg
 Results: time to apogee: 16.4s, expected altitude: 1493m

empty weight [kg]

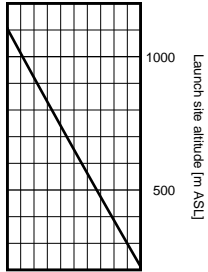


4", J-K⁷

K695R

K695R

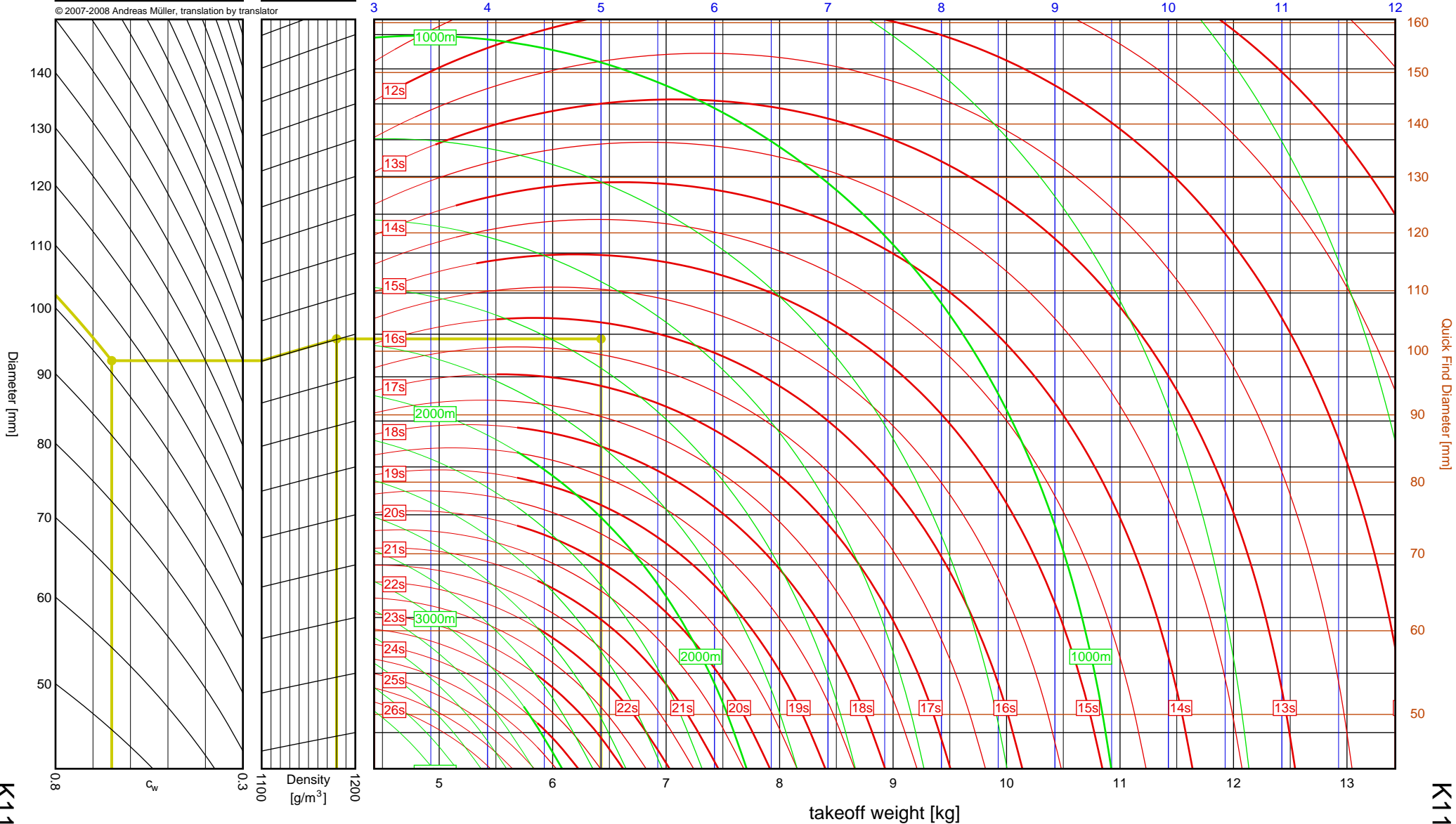
Aerotech	
K1100T	
I_{tot}	= 1537.5 Ns
F_{avg}	= 960.9 N
t_{burn}	= 1.60 s
d	= 54 mm
Data source: Aerotech	



1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 102mm, drag = 0.65, density = 1180 g/m³, weight = 6.426kg
 Results: time to apogee: 16.3s, expected altitude: 1531m

empty weight [kg]



takeoff weight [kg]

4", J-K ⁷

Quick Find Diameter [mm]

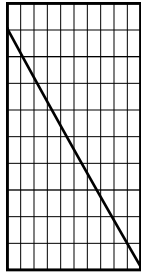
K1100T

K1100T

7-28

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Aerotech	
K550W	
I_{tot}	= 1563.1 Ns
F_{avg}	= 446.6 N
t_{burn}	= 3.50 s
d	= 54 mm
Data source: Aerotech	

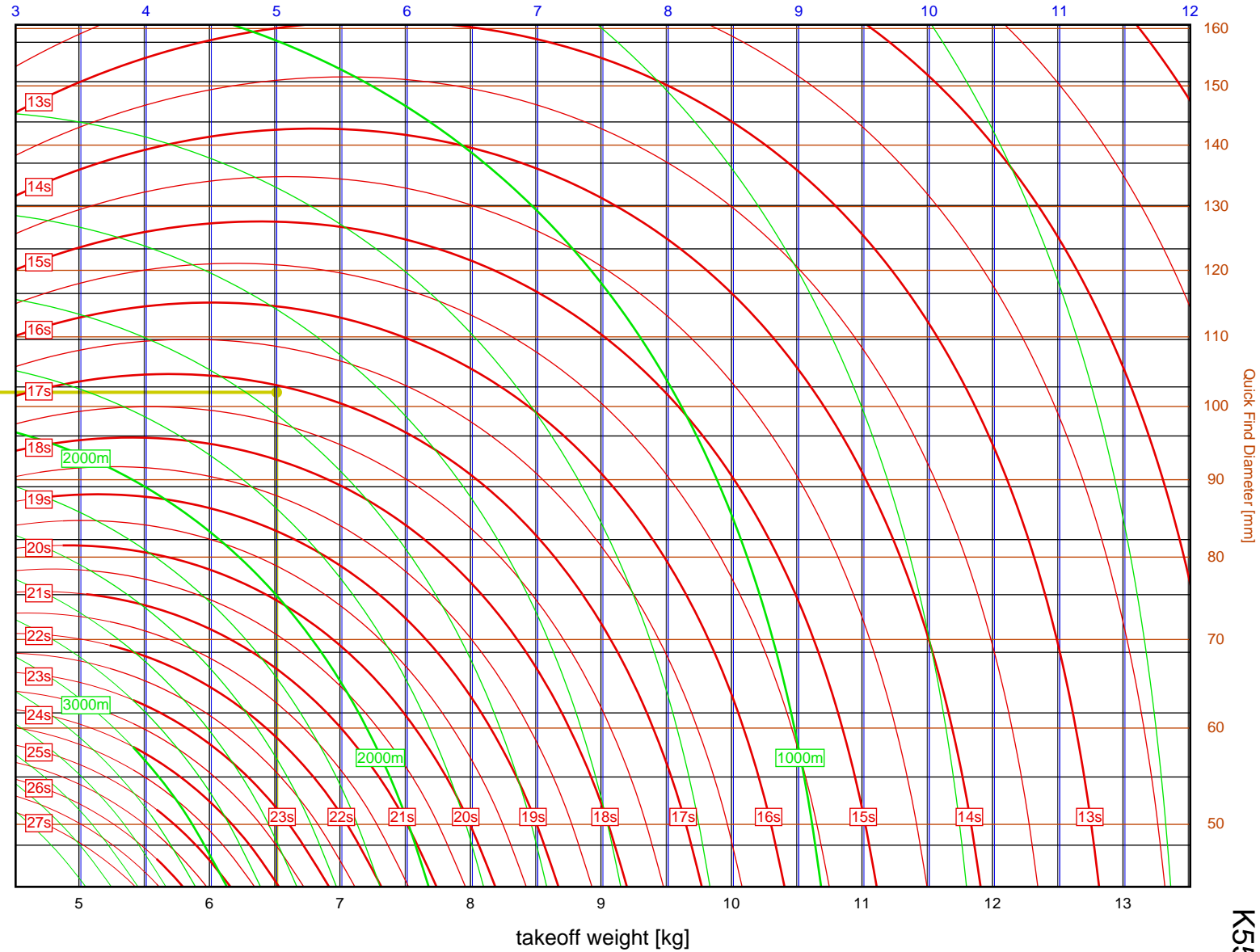
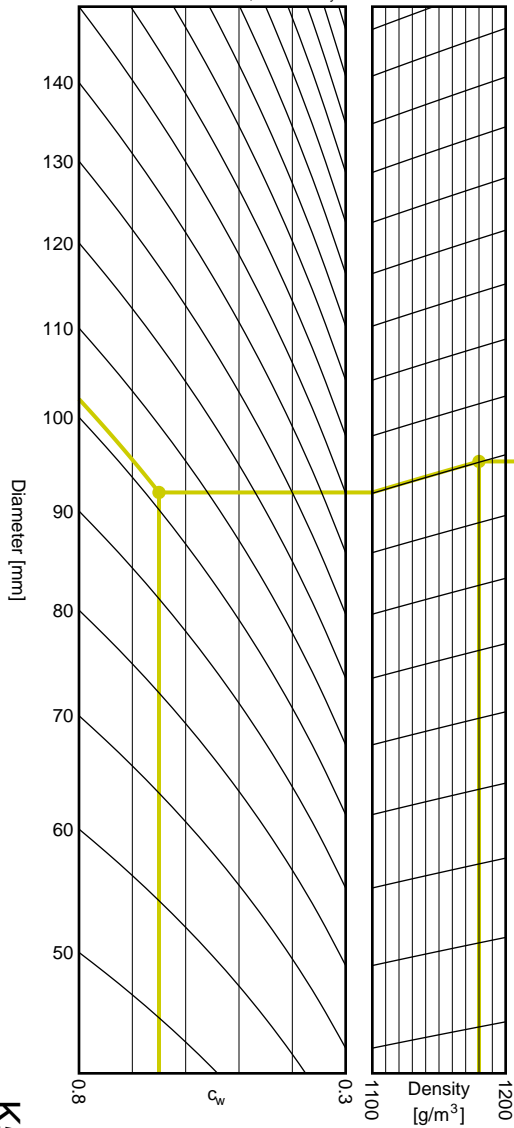


Launch site altitude [m ASL]

1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 102mm, drag = 0.65, density = 1180 g/m³, weight = 6.515kg
 Results: time to apogee: 17.1s, expected altitude: 1557m

empty weight [kg]



takeoff weight [kg]

4", J-K⁷

Quick Find Diameter [mm]

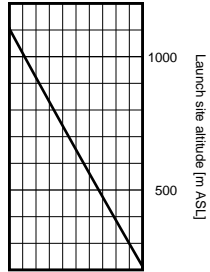
K550W

K550W

7-29

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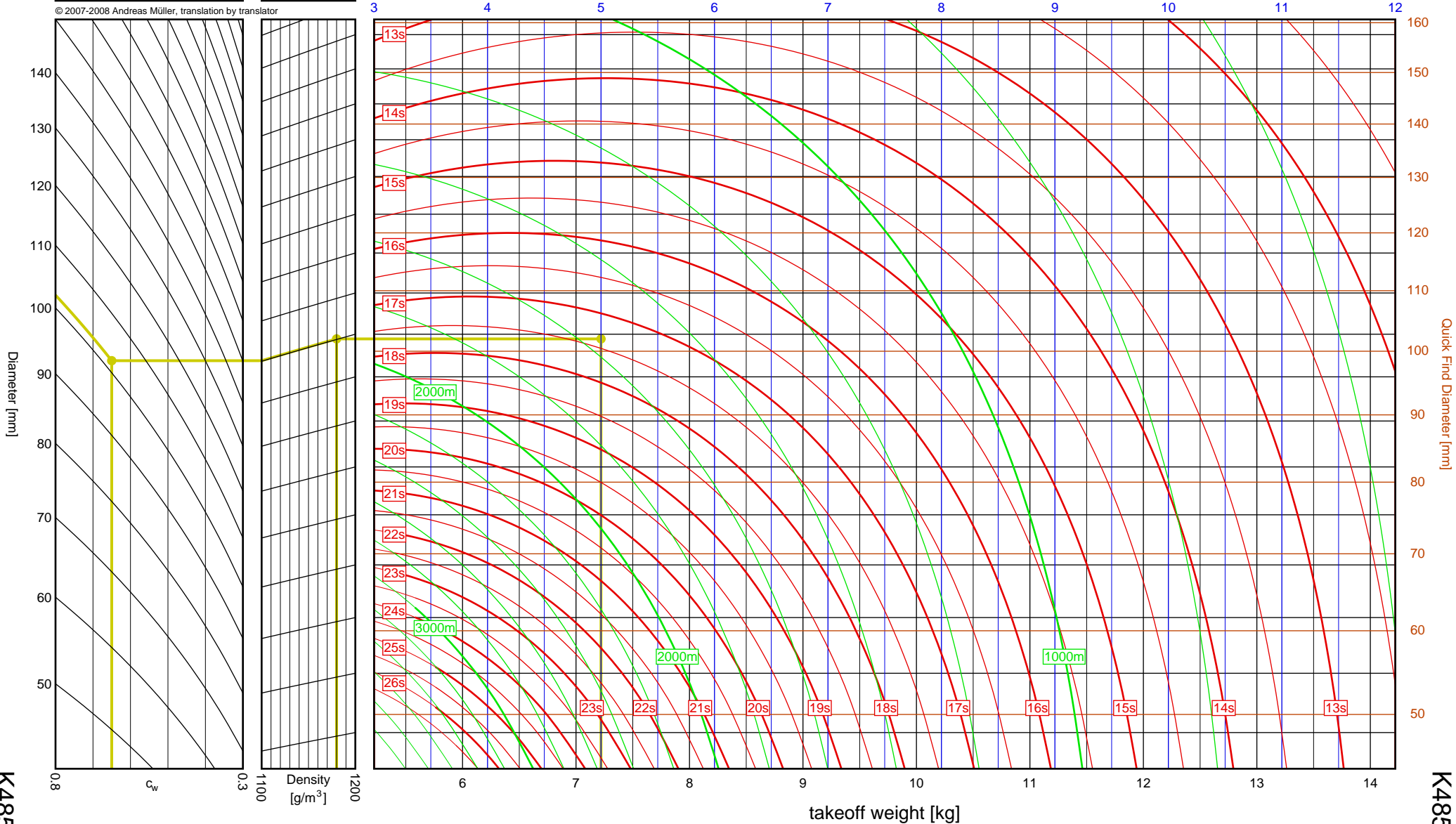
Aerotech	
K485HW	
I_{tot}	= 1682.2 Ns
F_{avg}	= 431.5 N
t_{burn}	= 3.90 s
d	= 54 mm
Data source: Aerotech	



1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 102mm, drag = 0.65, density = 1180 g/m³, weight = 7.220kg
 Results: time to apogee: 17.4s, expected altitude: 1562m

empty weight [kg]



4", J-K⁷

K485HW

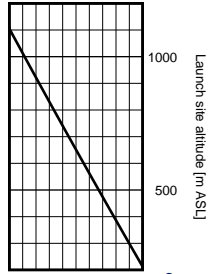
K485HW

Aerotech K805G

I_{tot} = 1730.0 Ns
 F_{avg} = 720.8 N
 t_{burn} = 2.40 s
 d = 54 mm

Data source:
Aerotech

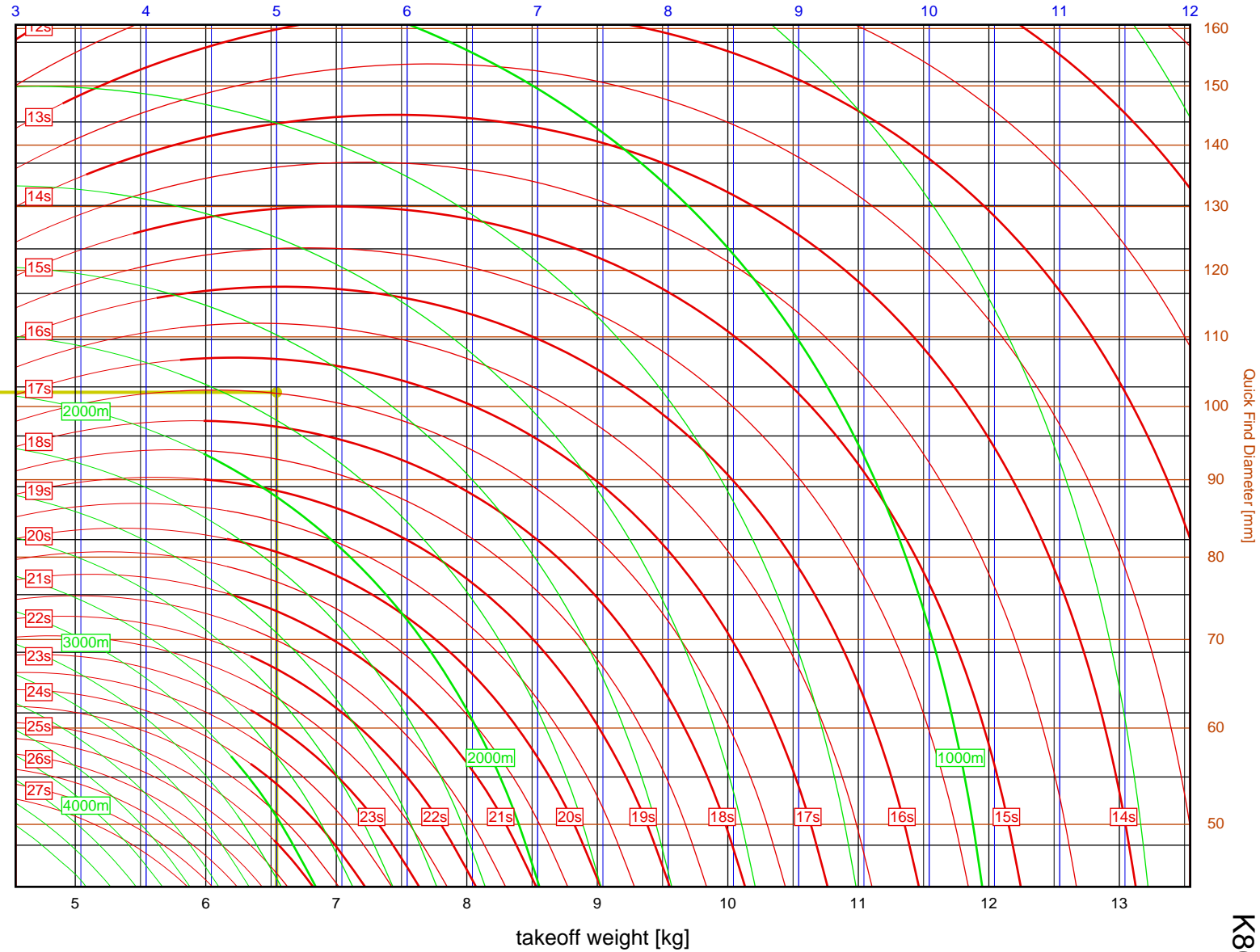
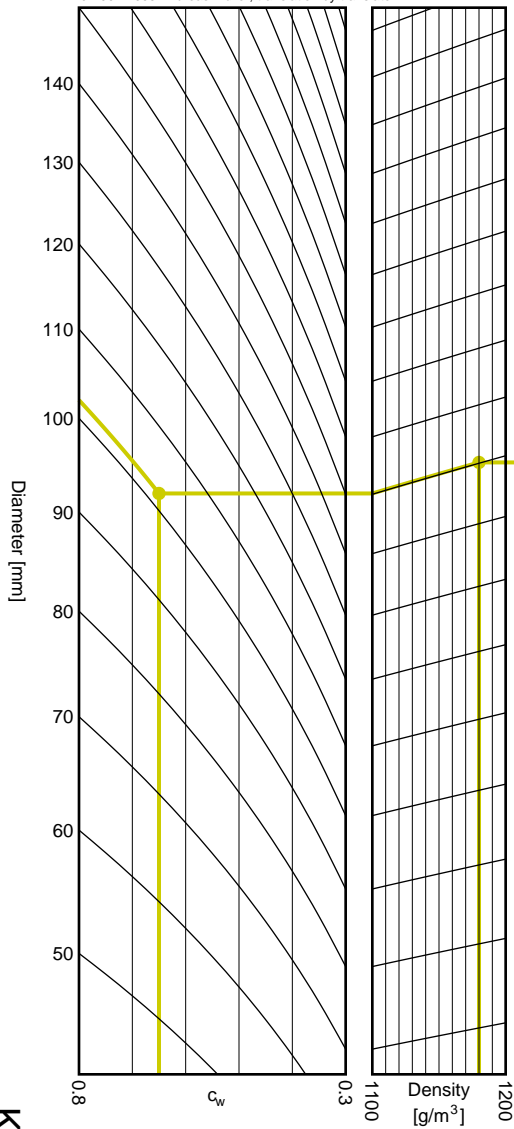
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1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 102mm, drag = 0.65, density = 1180 g/m³, weight = 6.543kg
 Results: time to apogee: 17.5s, expected altitude: 1733m

empty weight [kg]



4", J-K

K805G

Quick Find Diameter [mm]

50

60

70

80

90

100

110

120

130

140

150

160

170

180

190

200

210

220

230

240

250

260

270

280

290

300

310

320

330

340

350

360

370

380

390

400

410

420

430

440

450

460

470

480

490

500

510

520

530

540

550

560

570

580

590

600

610

620

630

640

650

660

670

680

690

700

710

720

730

740

750

760

770

780

790

800

810

820

830

840

850

860

870

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960

970

980

990

1000

1010

1020

1030

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1100

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1120

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1180

1190

1200

1210

1220

1230

1240

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2090

2100

2110

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2140

2150

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2170

2180

2190

2200

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2570

2580

2590

2600

2610

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2680

2690

2700

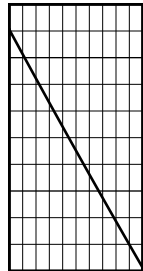
2710

2720

2730

27

Aerotech K1499N	
I_{tot}	= 1320.4 Ns
F_{avg}	= 1500.5 N
t_{burn}	= 0.88 s
d	= 75 mm
Data source: Aerotech	

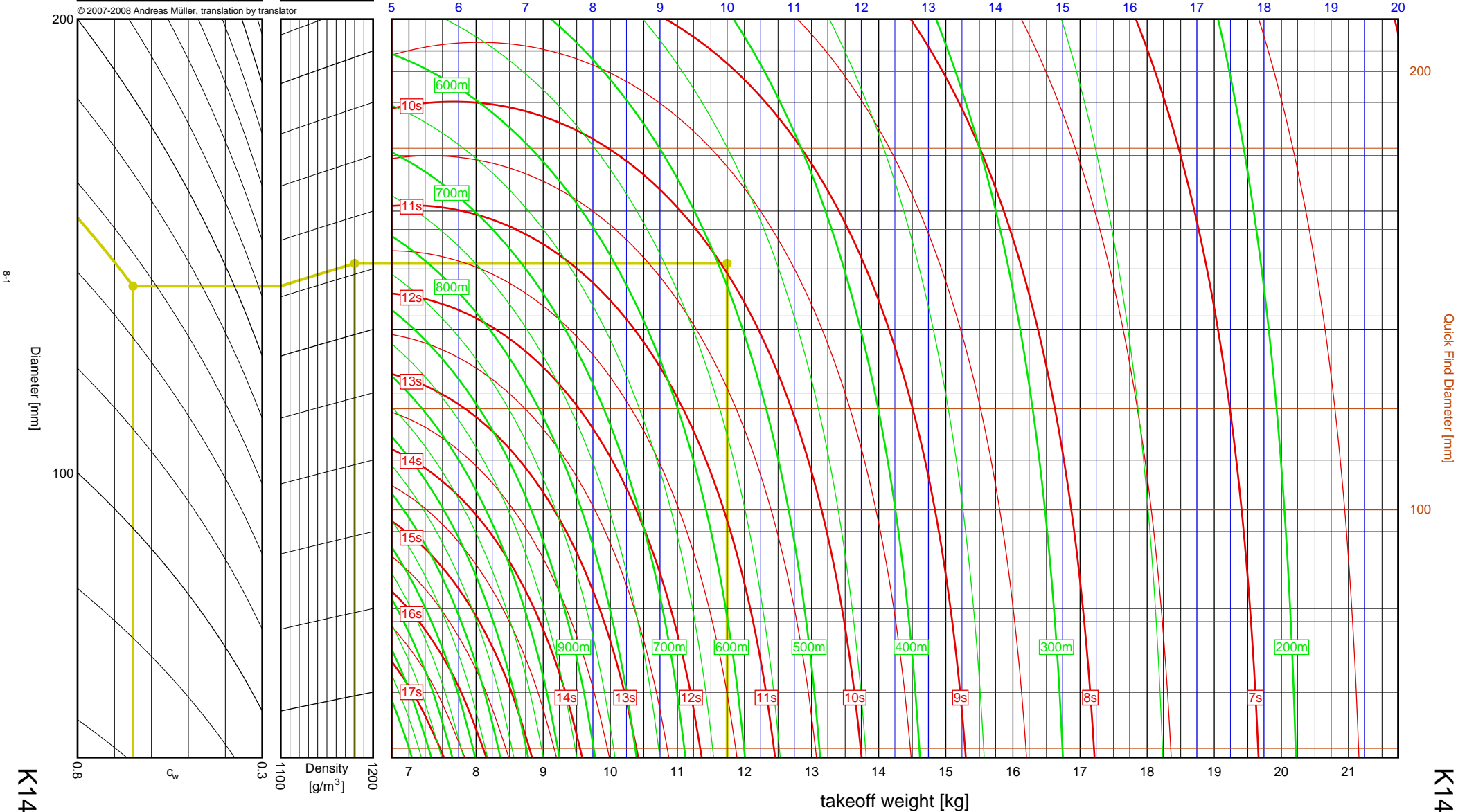


Launch site altitude [m ASL]

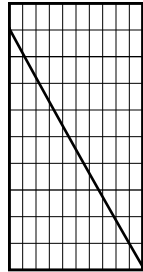
1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 152mm, drag = 0.65, density = 1180 g/m³, weight = 11.741kg
 Results: time to apogee: 10.0s, expected altitude: 492m

empty weight [kg]



Aerotech	
K513FJ	
I_{tot}	= 1474.9 Ns
F_{avg}	= 541.0 N
t_{burn}	= 2.73 s
d	= 54 mm
Data source: Aerotech	

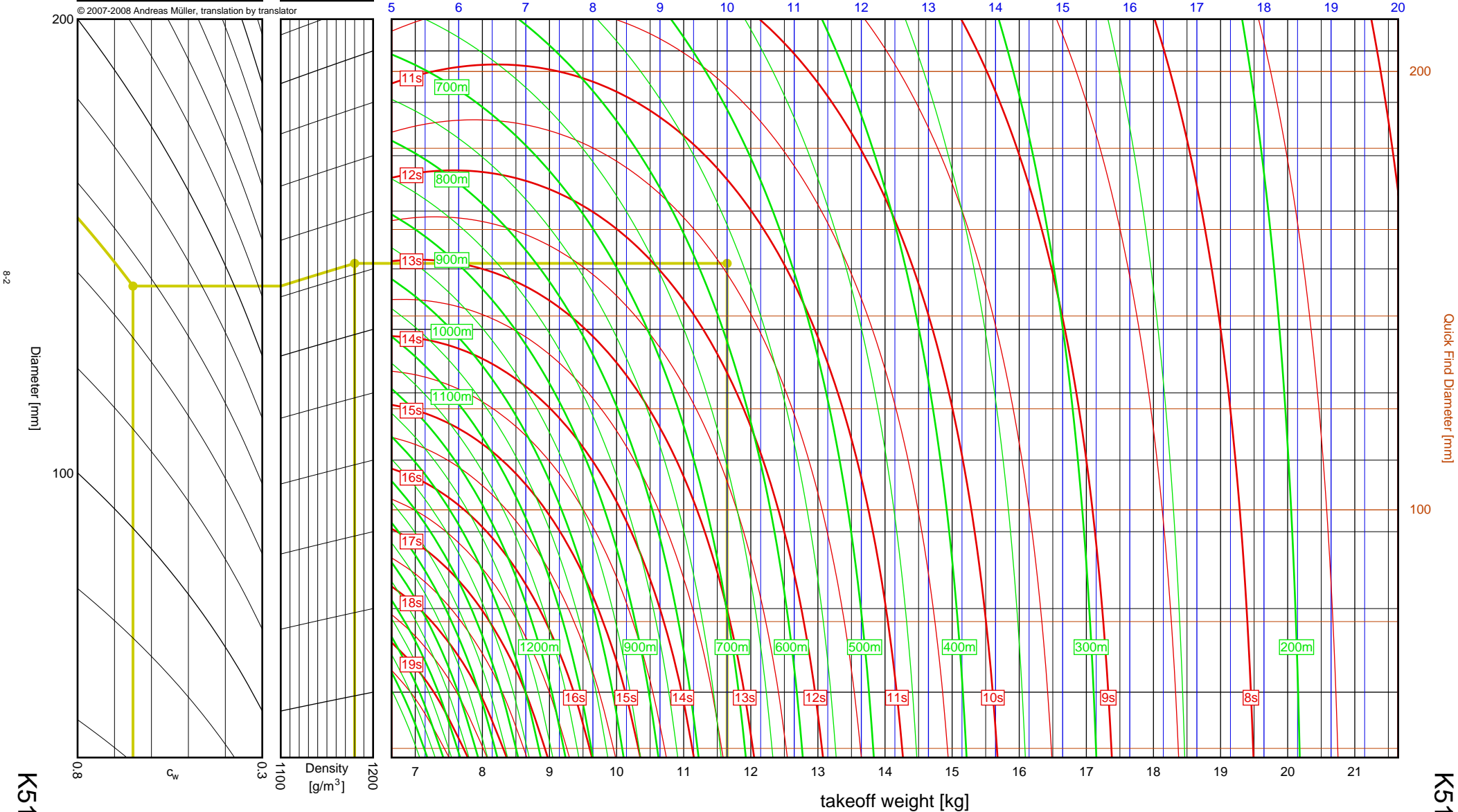


Launch site altitude [m ASL]

1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 152mm, drag = 0.65, density = 1180 g/m³, weight = 11.647kg
 Results: time to apogee: 11.4s, expected altitude: 567m

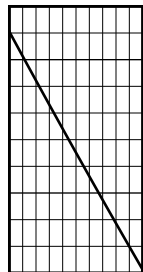
empty weight [kg]



Aerotech K695R

I_{tot} = 1496.5 Ns
 F_{avg} = 665.1 N
 t_{burn} = 2.25 s
 d = 54 mm

Data source:
Aerotech

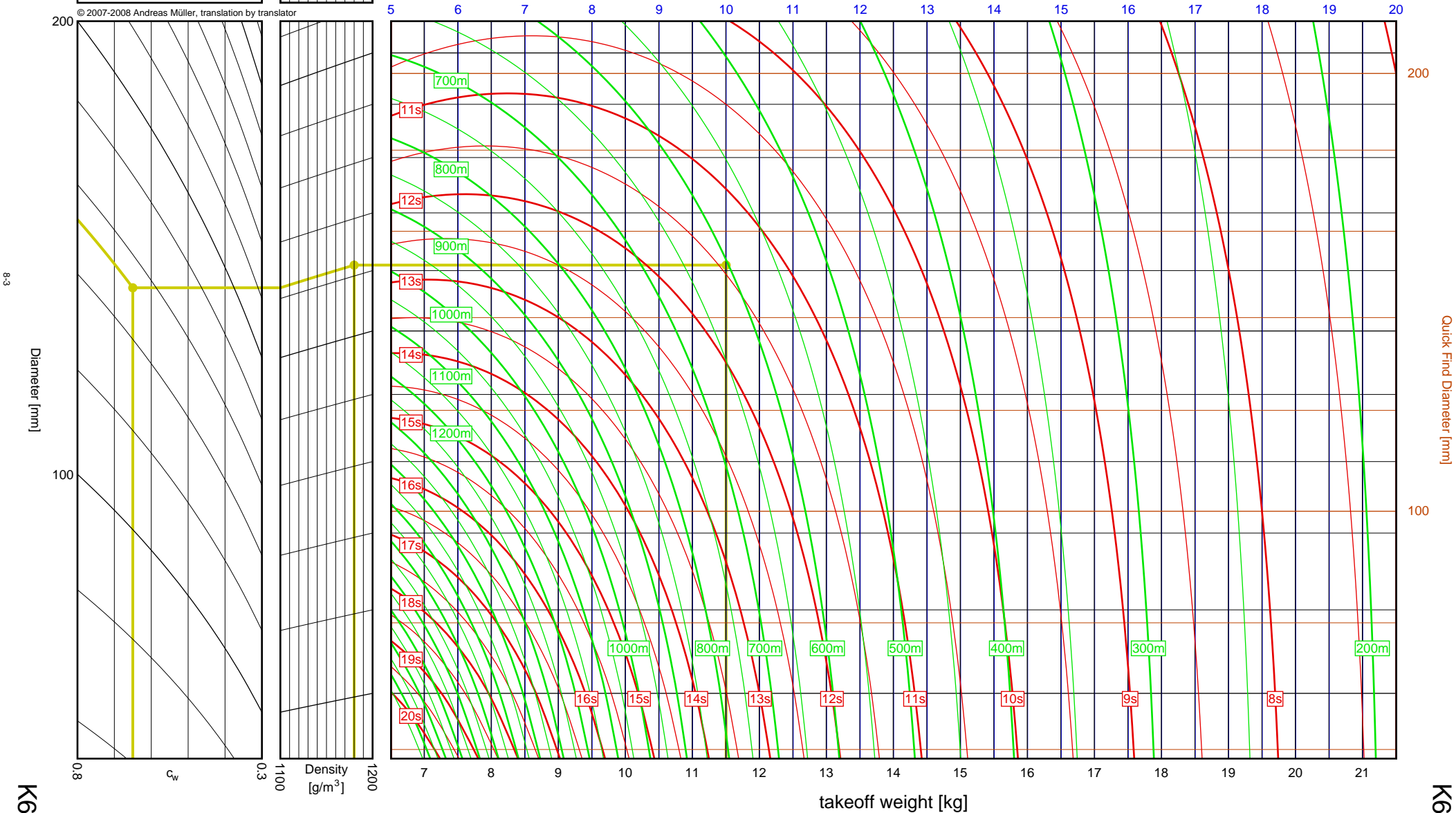


Launch site altitude [m ASL]

1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 152mm, drag = 0.65, density = 1180 g/m³, weight = 11.506kg
 Results: time to apogee: 11.4s, expected altitude: 603m

empty weight [kg]



6", K-L⁸

Quick-Find Diameter [mm]

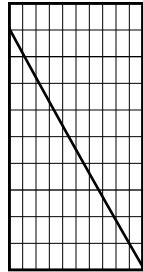
100

200

K695R

K695R

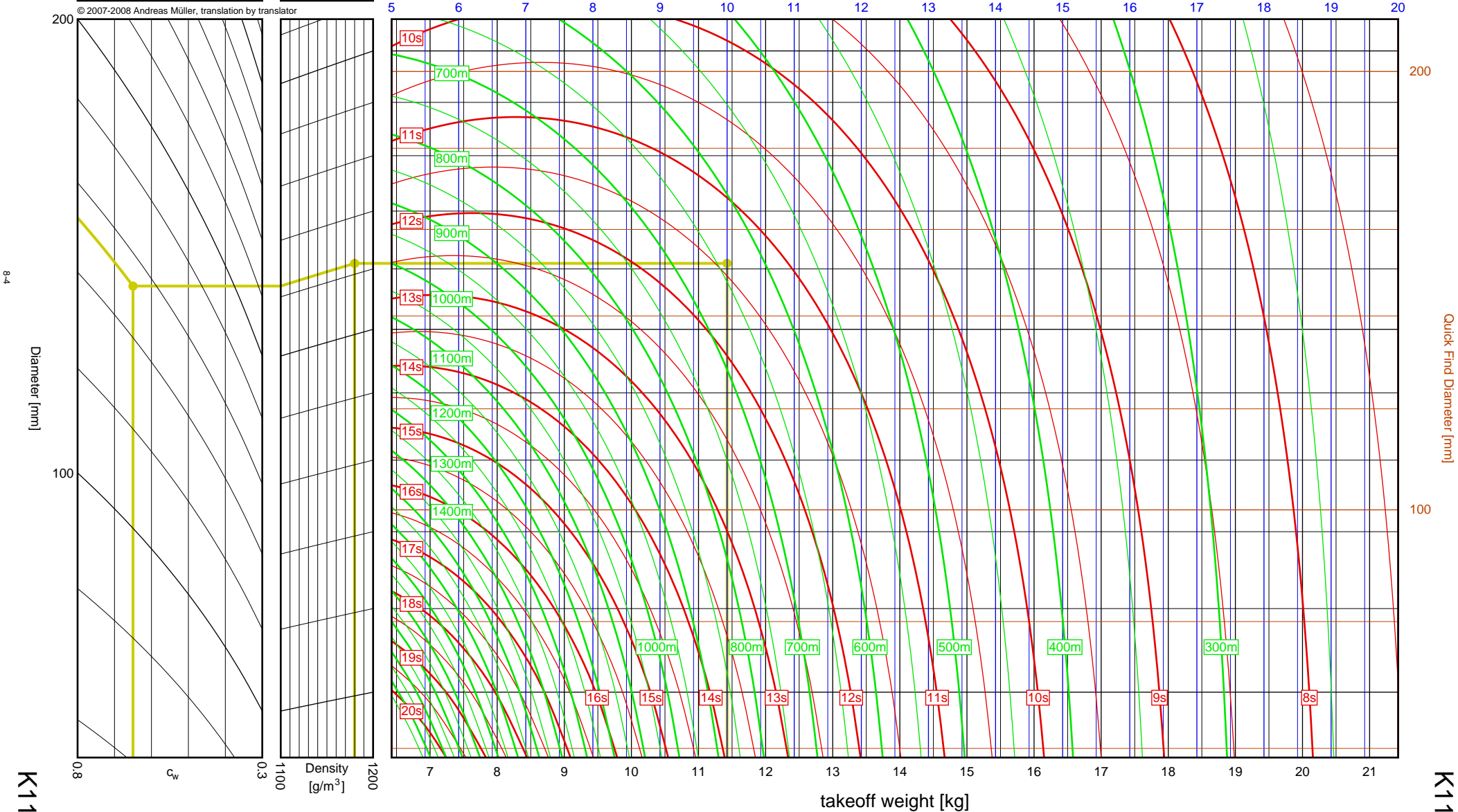
Aerotech K1100T	
I_{tot}	= 1537.5 Ns
F_{avg}	= 960.9 N
t_{burn}	= 1.60 s
d	= 54 mm
Data source: Aerotech	



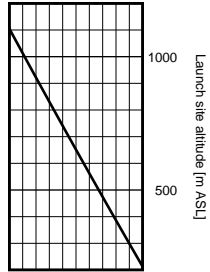
1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 152mm, drag = 0.65, density = 1180 g/m³, weight = 11.426kg
 Results: time to apogee: 11.4s, expected altitude: 640m

empty weight [kg]



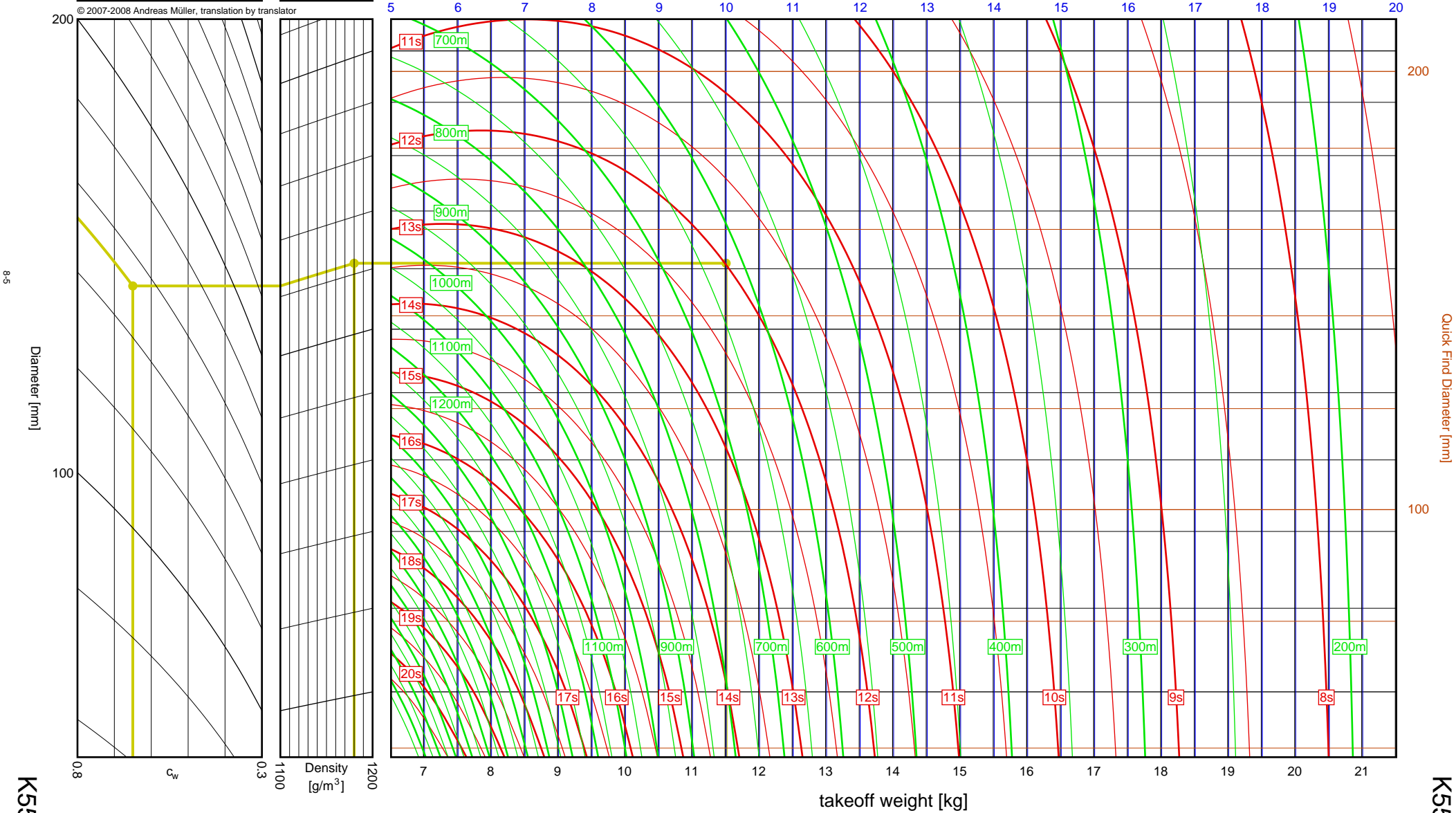
Aerotech	
K550W	
I_{tot}	= 1563.1 Ns
F_{avg}	= 446.6 N
t_{burn}	= 3.50 s
d	= 54 mm
Data source: Aerotech	



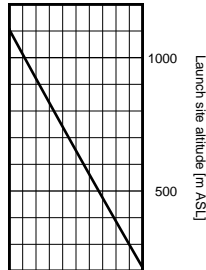
1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 152mm, drag = 0.65, density = 1180 g/m³, weight = 11.515kg
 Results: time to apogee: 12.0s, expected altitude: 620m

empty weight [kg]



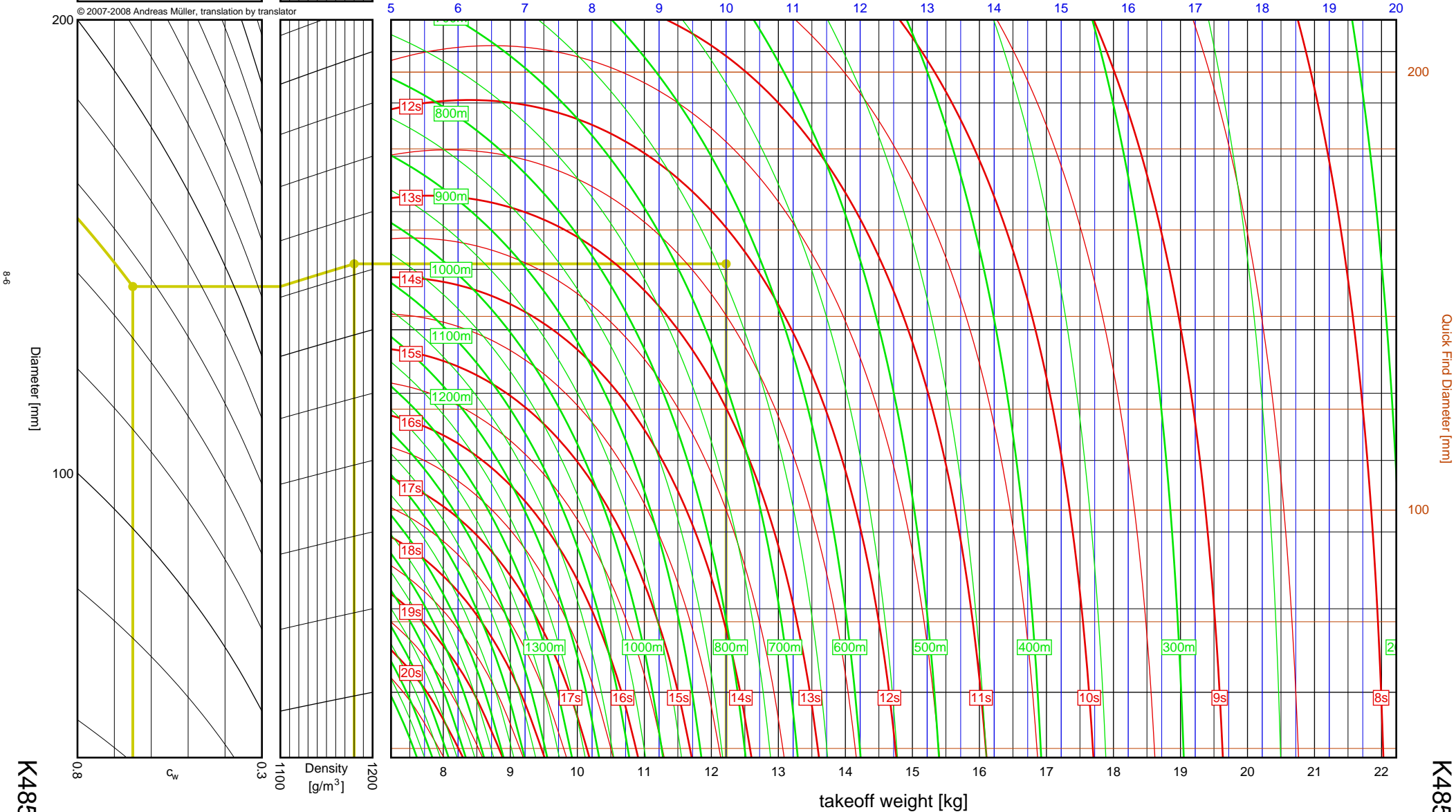
Aerotech	
K485HW	
I_{tot}	= 1682.2 Ns
F_{avg}	= 431.5 N
t_{burn}	= 3.90 s
d	= 54 mm
Data source: Aerotech	



1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 152mm, drag = 0.65, density = 1180 g/m³, weight = 12.220kg
 Results: time to apogee: 12.2s, expected altitude: 640m

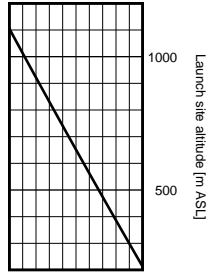
empty weight [kg]



Aerotech K805G

I_{tot} = 1730.0 Ns
 F_{avg} = 720.8 N
 t_{burn} = 2.40 s
 d = 54 mm

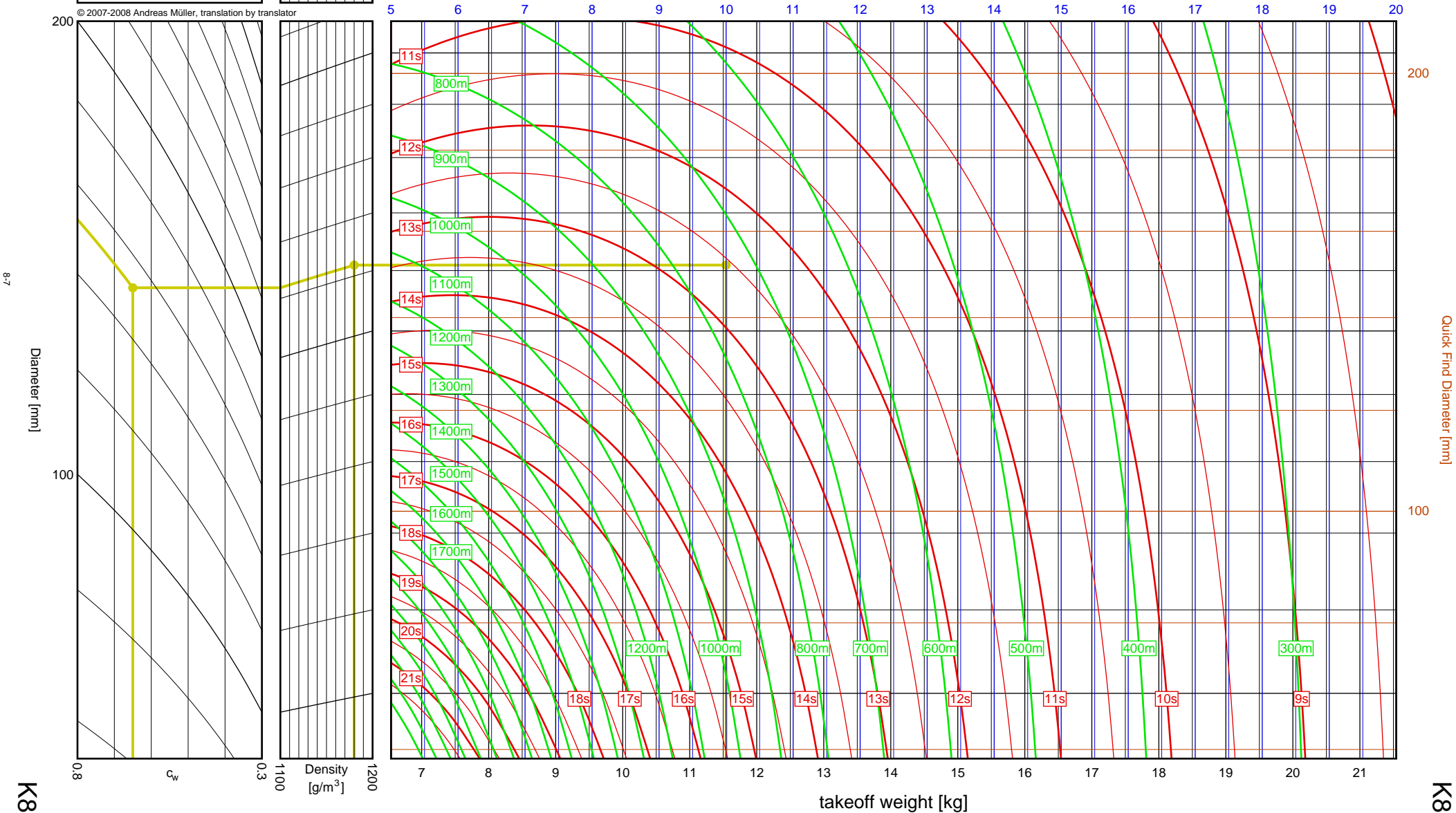
Data source:
Aerotech



1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 152mm, drag = 0.65, density = 1180 g/m³, weight = 11.543kg
 Results: time to apogee: 12.6s, expected altitude: 735m

empty weight [kg]



6", K-L⁸

Quick-Find Diameter [mm]

100

200

K805G

K805G

8-7

Diameter [mm]

200

100

0.8

c_w

0.3

Density

[g/m³]

1.100

1.200

takeoff weight [kg]

1200m

1000m

800m

700m

600m

500m

400m

300m

11s

800m

12s

900m

13s

1000m

14s

1100m

15s

1200m

16s

1300m

17s

1400m

18s

1500m

19s

1600m

20s

1700m

21s

18s

17s

16s

15s

14s

13s

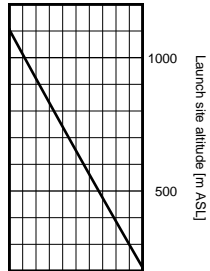
12s

11s

10s

9s

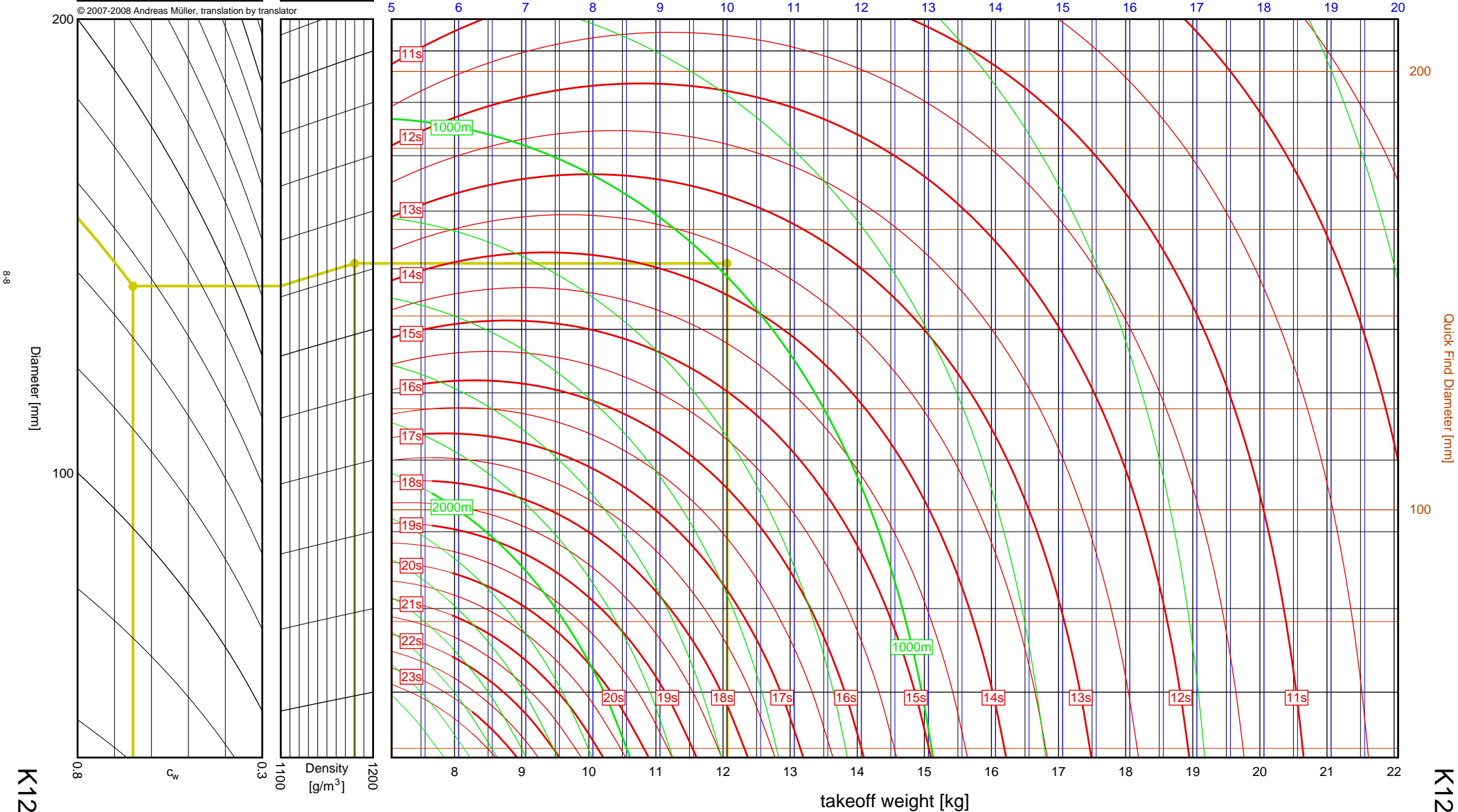
Aerotech K1275R	
I_{tot}	= 2132.3 Ns
F_{avg}	= 1066.2 N
t_{burn}	= 2.00 s
d	= 54 mm
Data source: Aerotech	



1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 152mm, drag = 0.65, density = 1180 g/m³, weight = 12.061kg
 Results: time to apogee = 13.7s, expected altitude = 985m

empty weight [kg]



6", K-L⁸

Quick-Find Diameter [mm]

100

200

K1275R

K1275R

8-8

Diameter [mm]

200

100

0.8

c_w

0.3

Density

[g/m³]

1100

1200

5

6

7

8

9

10

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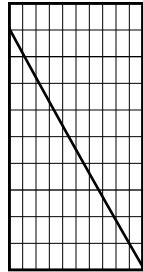
275

276

277

278

Aerotech	
K270W	
I_{tot}	= 2154.9 Ns
F_{avg}	= 247.9 N
t_{burn}	= 8.69 s
d	= 54 mm
Data source: Aerotech	

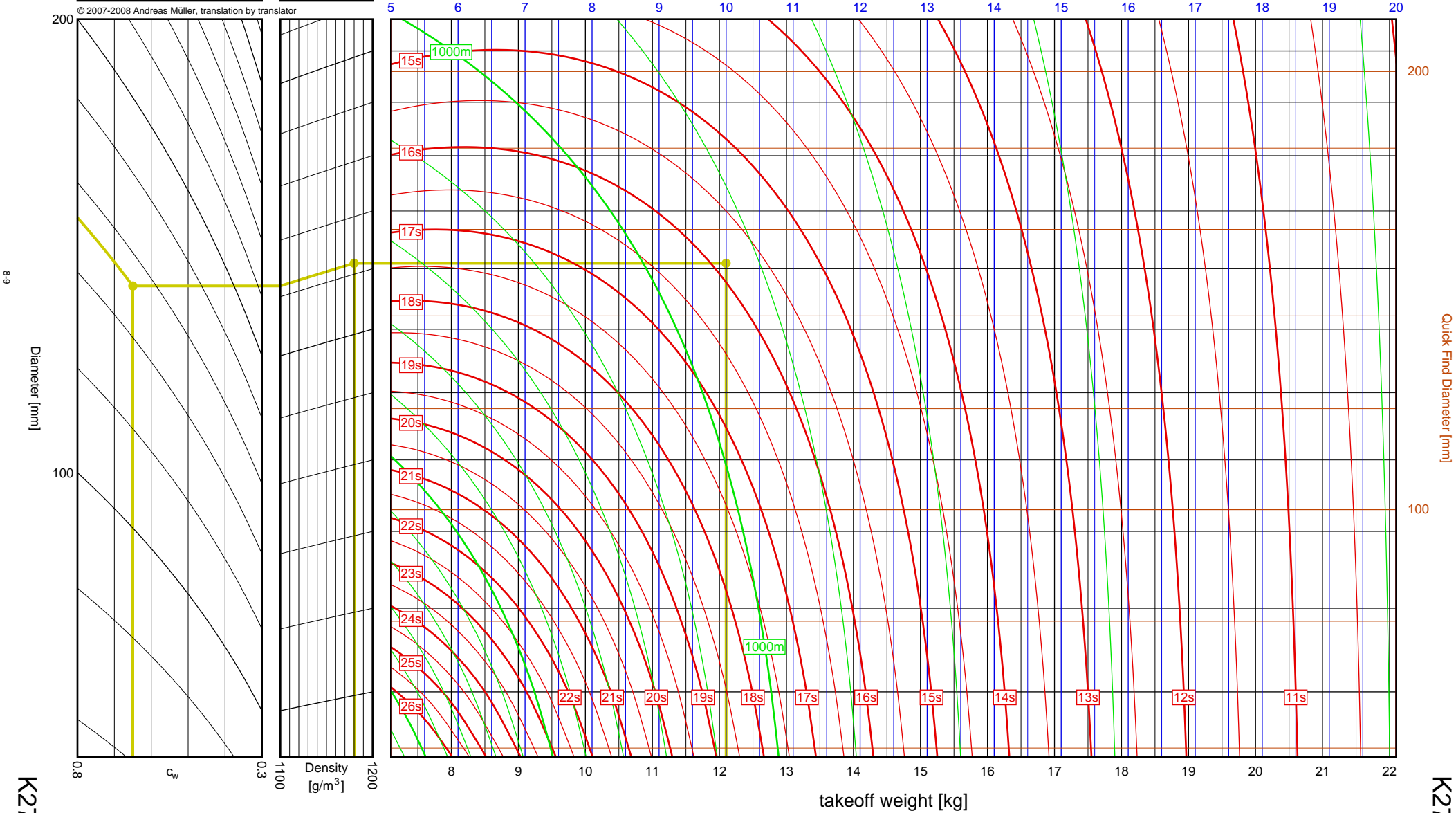


Launch site altitude [m ASL]

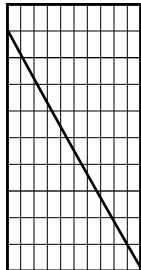
1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 152mm, drag = 0.65, density = 1180 g/m³, weight = 12.100kg
 Results: time to apogee: 15.9s, expected altitude: 855m

empty weight [kg]



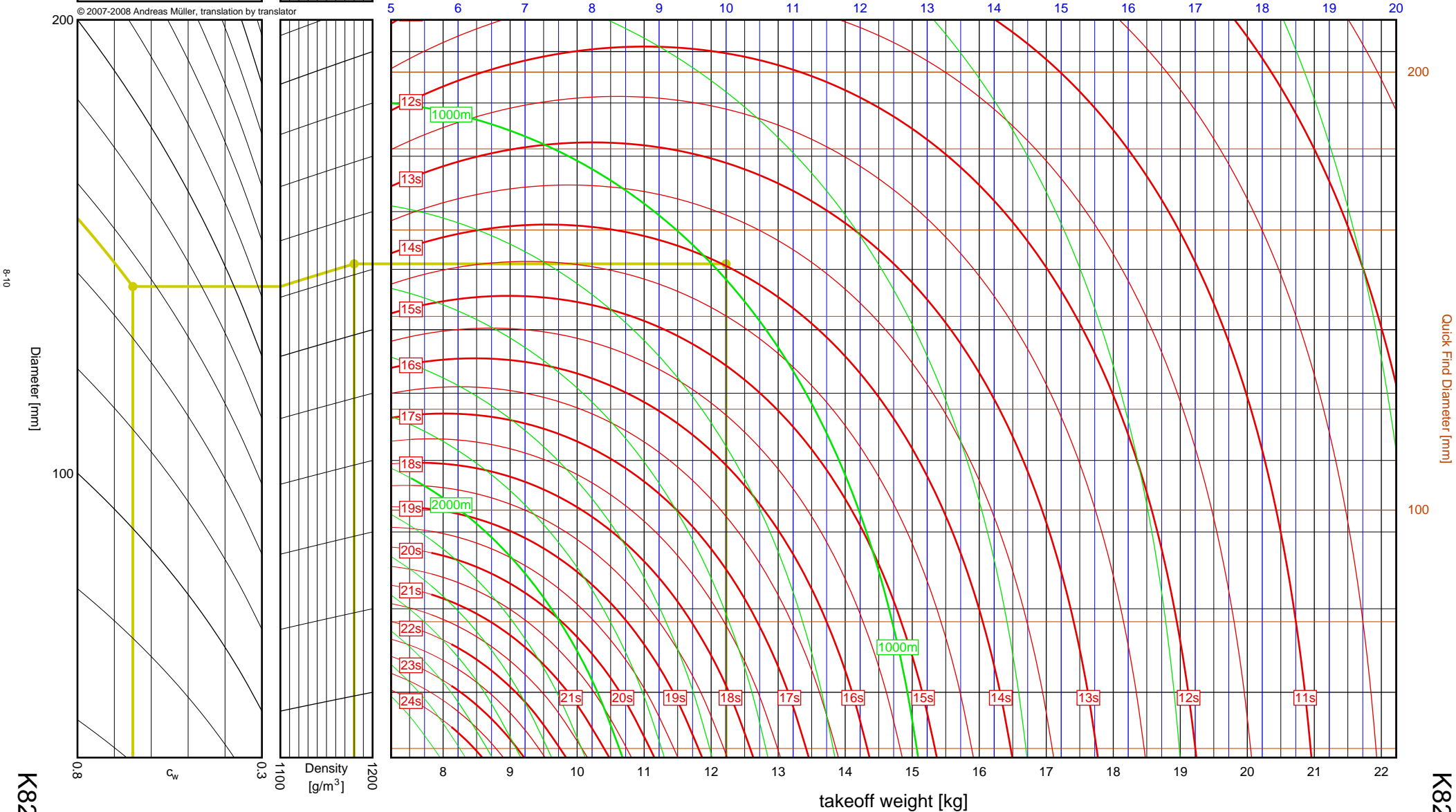
Aerotech	
K828FJ	
I_{tot}	= 2157.2 Ns
F_{avg}	= 862.9 N
t_{burn}	= 2.50 s
d	= 54 mm
Data source: Aerotech	



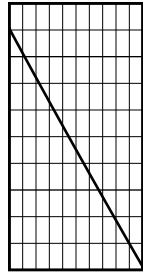
1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 152mm, drag = 0.65, density = 1180 g/m³, weight = 12.223kg
 Results: time to apogee: 14.0s, expected altitude: 983m

empty weight [kg]



Aerotech	
K700W	
I_{tot}	= 2283.7 Ns
F_{avg}	= 635.6 N
t_{burn}	= 3.59 s
d	= 54 mm
Data source: Aerotech	

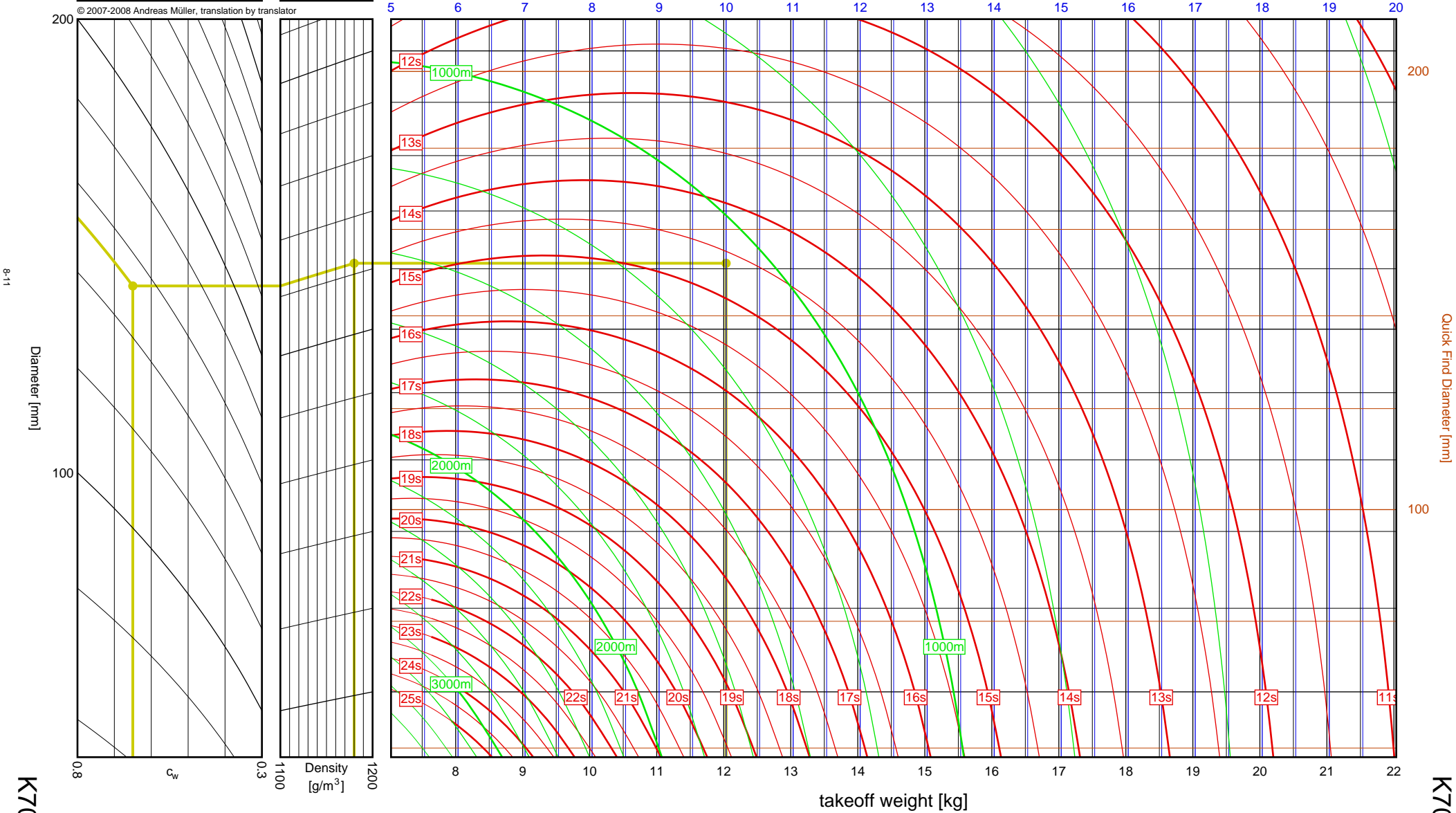


Launch site altitude [m ASL]

1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 152mm, drag = 0.65, density = 1180 g/m³, weight = 12.035kg
 Results: time to apogee: 14.6s, expected altitude: 1060m

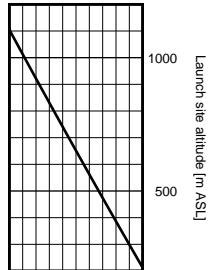
empty weight [kg]



Aerotech K680R

I_{tot} = 2358.3 Ns
 F_{avg} = 675.7 N
 t_{burn} = 3.49 s
 d = 98 mm

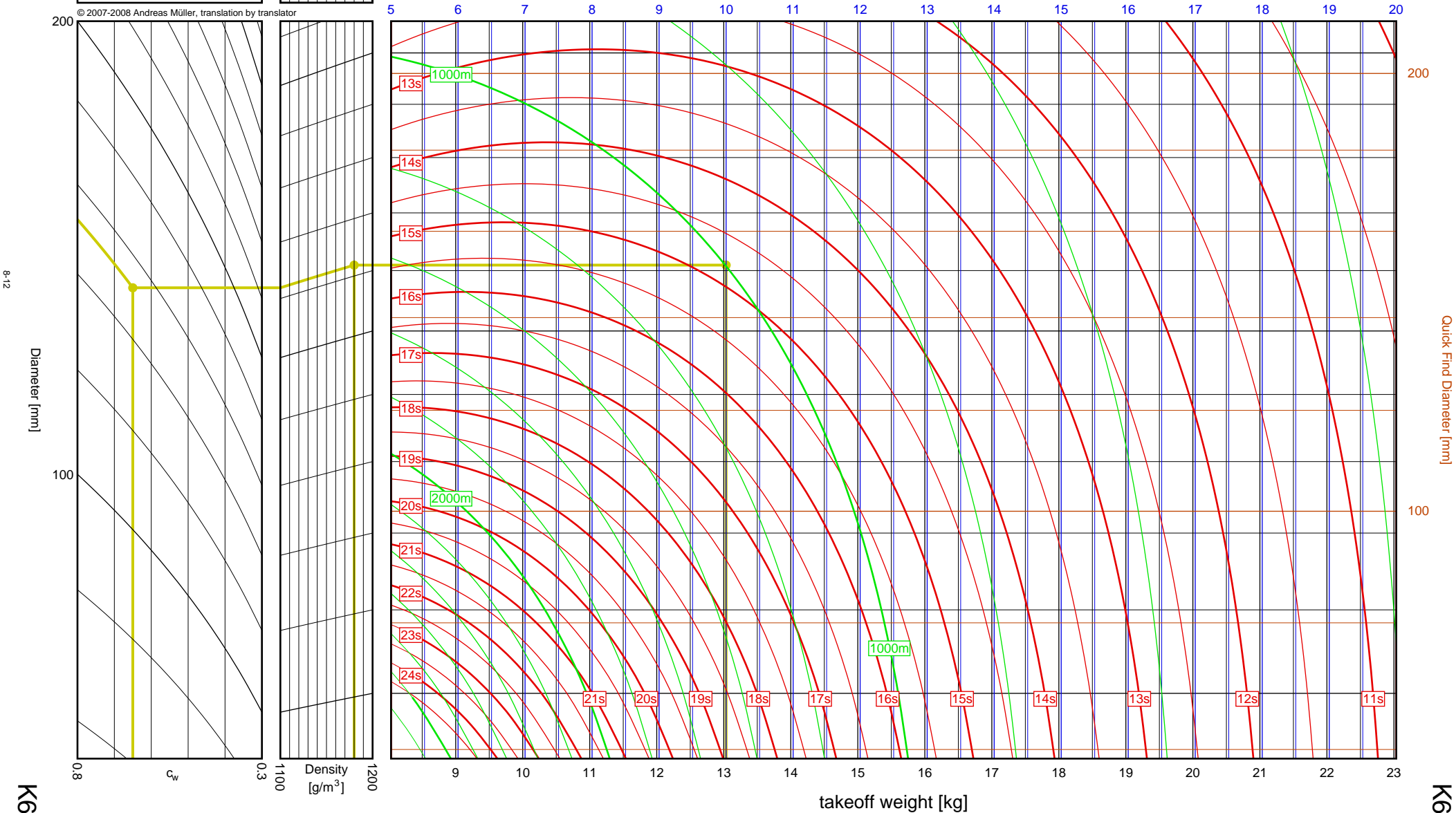
Data source:
Aerotech



1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 152mm, drag = 0.65, density = 1180 g/m³, weight = 13.035kg
 Results: time to apogee: 14.8s, expected altitude: 999m

empty weight [kg]



6", K-L

8

K680R

Quick Find Diameter [mm]

200

100

23

22

21

20

19

18

17

16

15

14

13

12

11

10

9

8

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6

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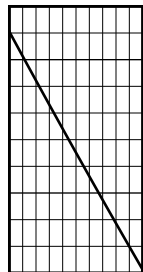
-254

-255

Aerotech K780R

I_{tot} = 2361.1 Ns
 F_{avg} = 770.8 N
 t_{burn} = 3.06 s
 d = 75 mm

Data source:
Aerotech

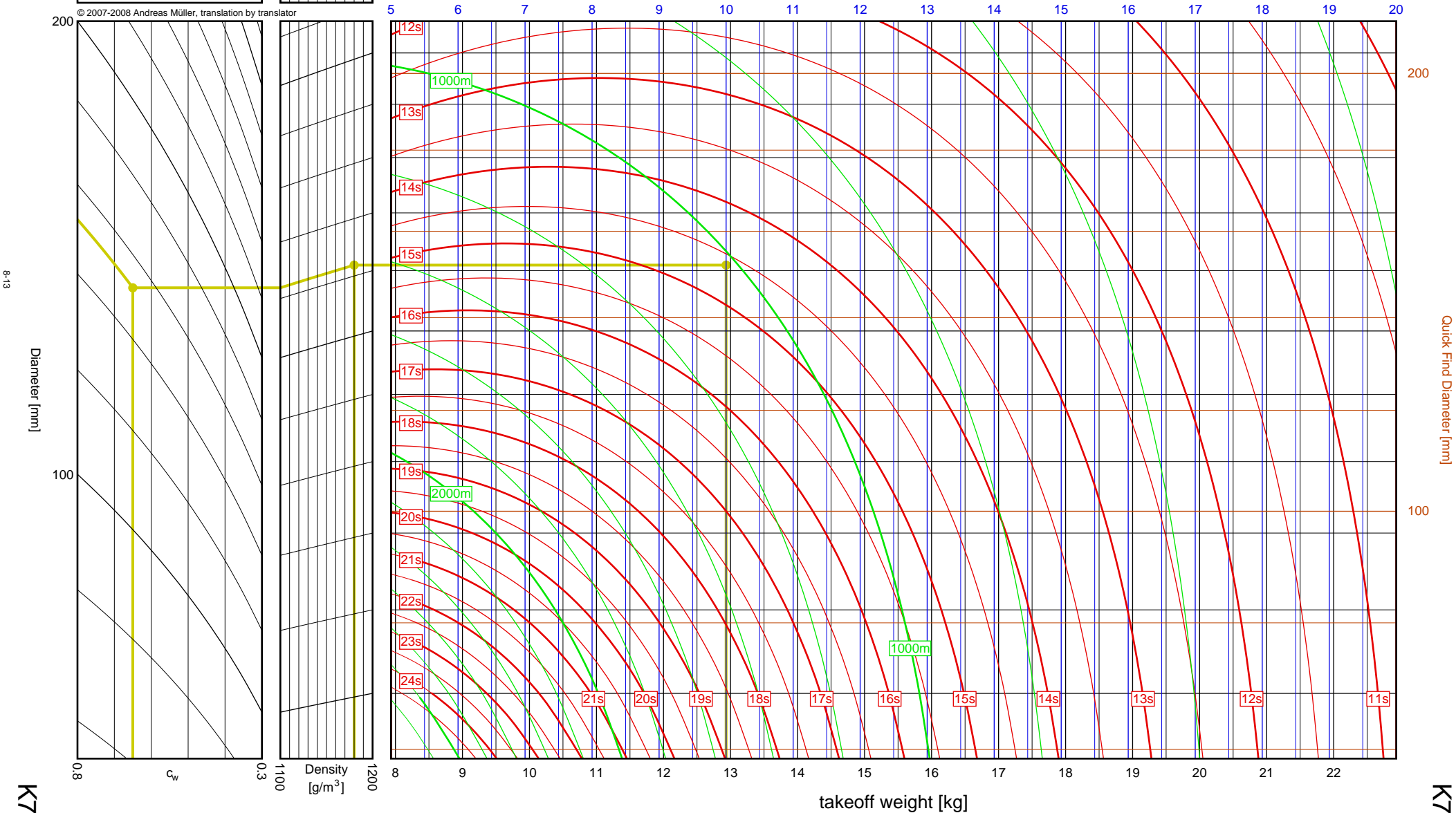


Launch site altitude [m ASL]

1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 152mm, drag = 0.65, density = 1180 g/m³, weight = 12.934kg
 Results: time to apogee: 14.6s, expected altitude: 1016m

empty weight [kg]



6", K-L⁸

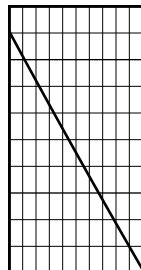
K780R

Quick Find Diameter [mm]

Aerotech K650T

I_{tot} = 2387.8 Ns
 F_{avg} = 581.3 N
 t_{burn} = 4.11 s
 d = 98 mm

Data source:
Aerotech



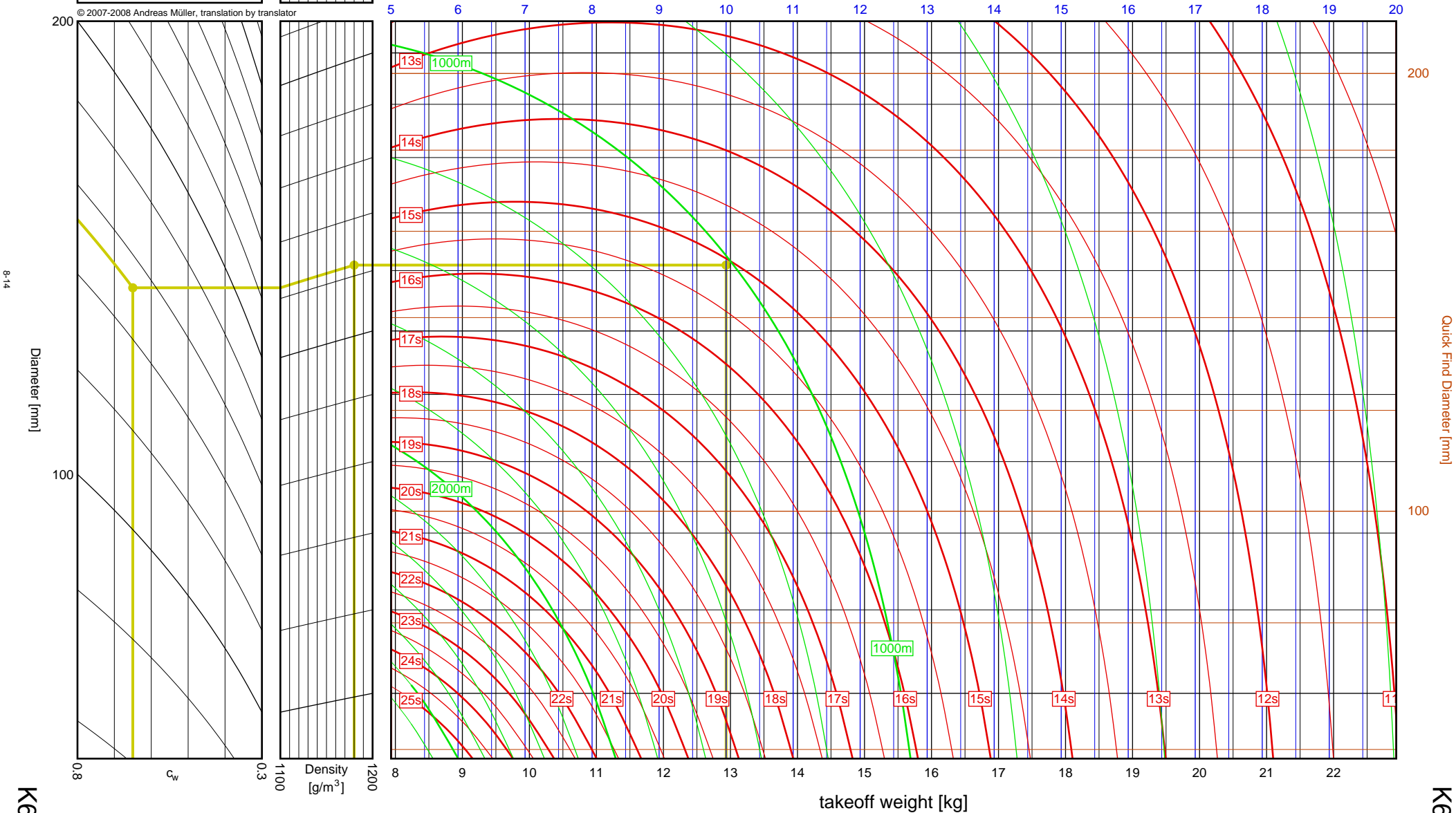
Launch site altitude [m ASL]

1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 152mm, drag = 0.65, density = 1180 g/m³, weight = 12.935kg

Results: time to apogee: 15.1s, expected altitude: 1011m

empty weight [kg]



6", K-L⁸

Quick Find Diameter [mm]

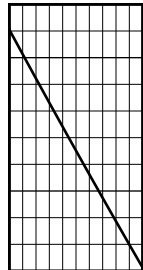
100

200

K650T

K650T

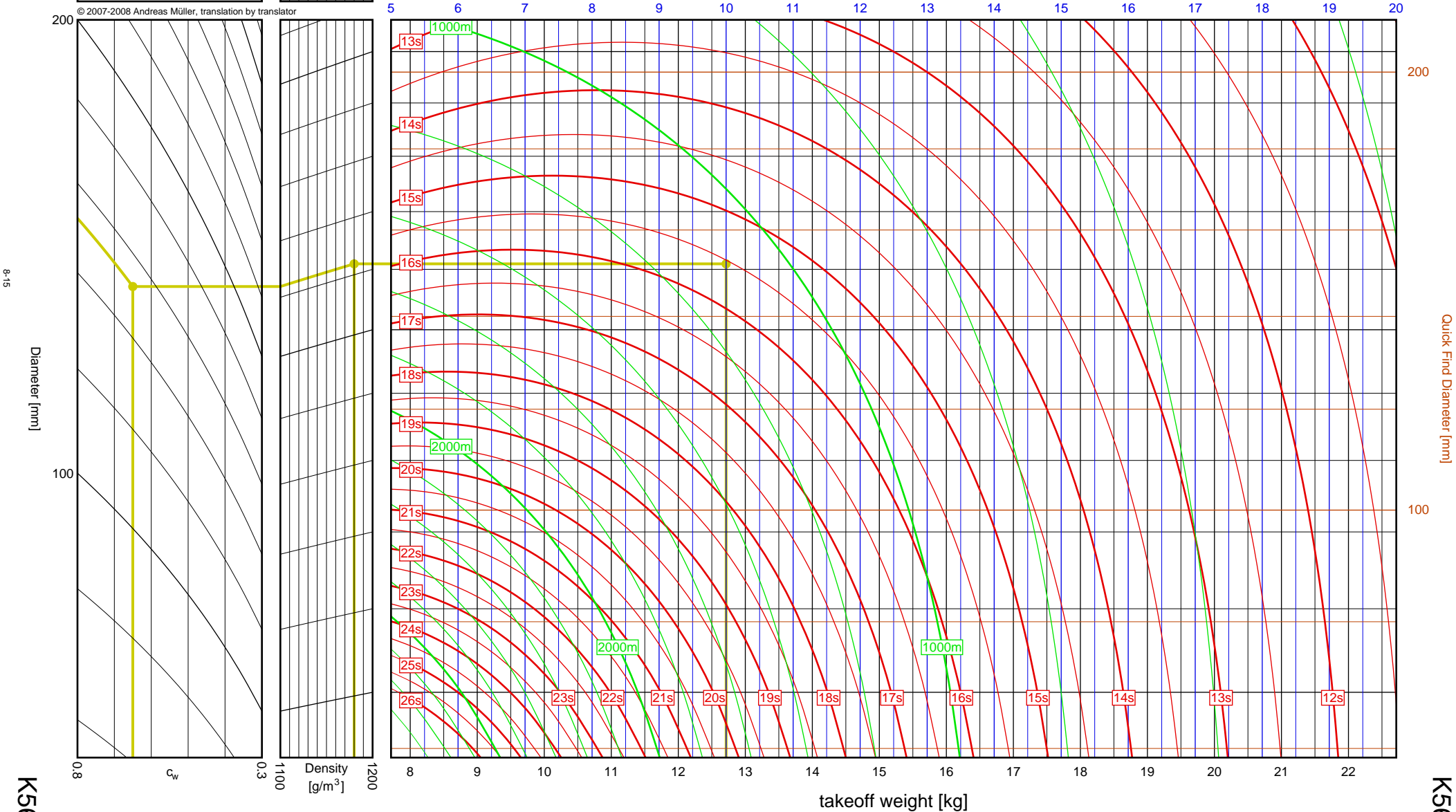
Aerotech	
K560W	
I_{tot}	= 2467.2 Ns
F_{avg}	= 496.9 N
t_{burn}	= 4.96 s
d	= 75 mm
Data source: Aerotech	



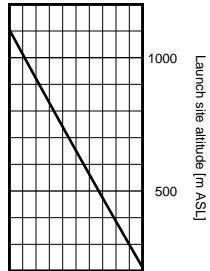
1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 152mm, drag = 0.65, density = 1180 g/m³, weight = 12.714kg
 Results: time to apogee: 15.5s, expected altitude: 1090m

empty weight [kg]



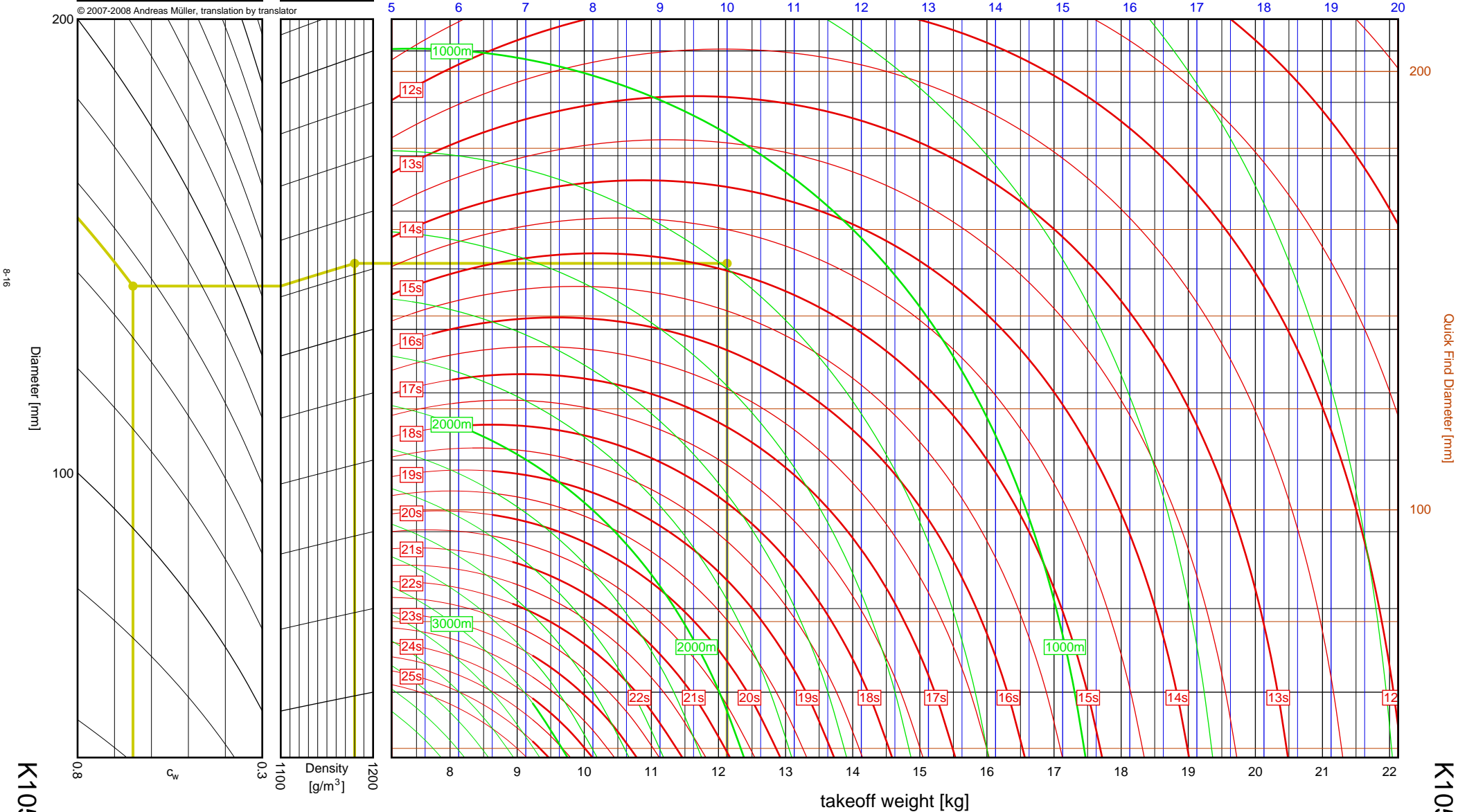
Aerotech K1050W	
I_{tot}	= 2507.9 Ns
F_{avg}	= 983.9 N
t_{burn}	= 2.55 s
d	= 54 mm
Data source: Aerotech	



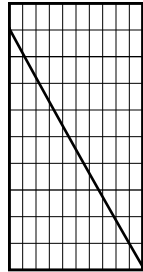
1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 152mm, drag = 0.65, density = 1180 g/m³, weight = 12.128kg
 Results: time to apogee: 14.9s, expected altitude: 1192m

empty weight [kg]



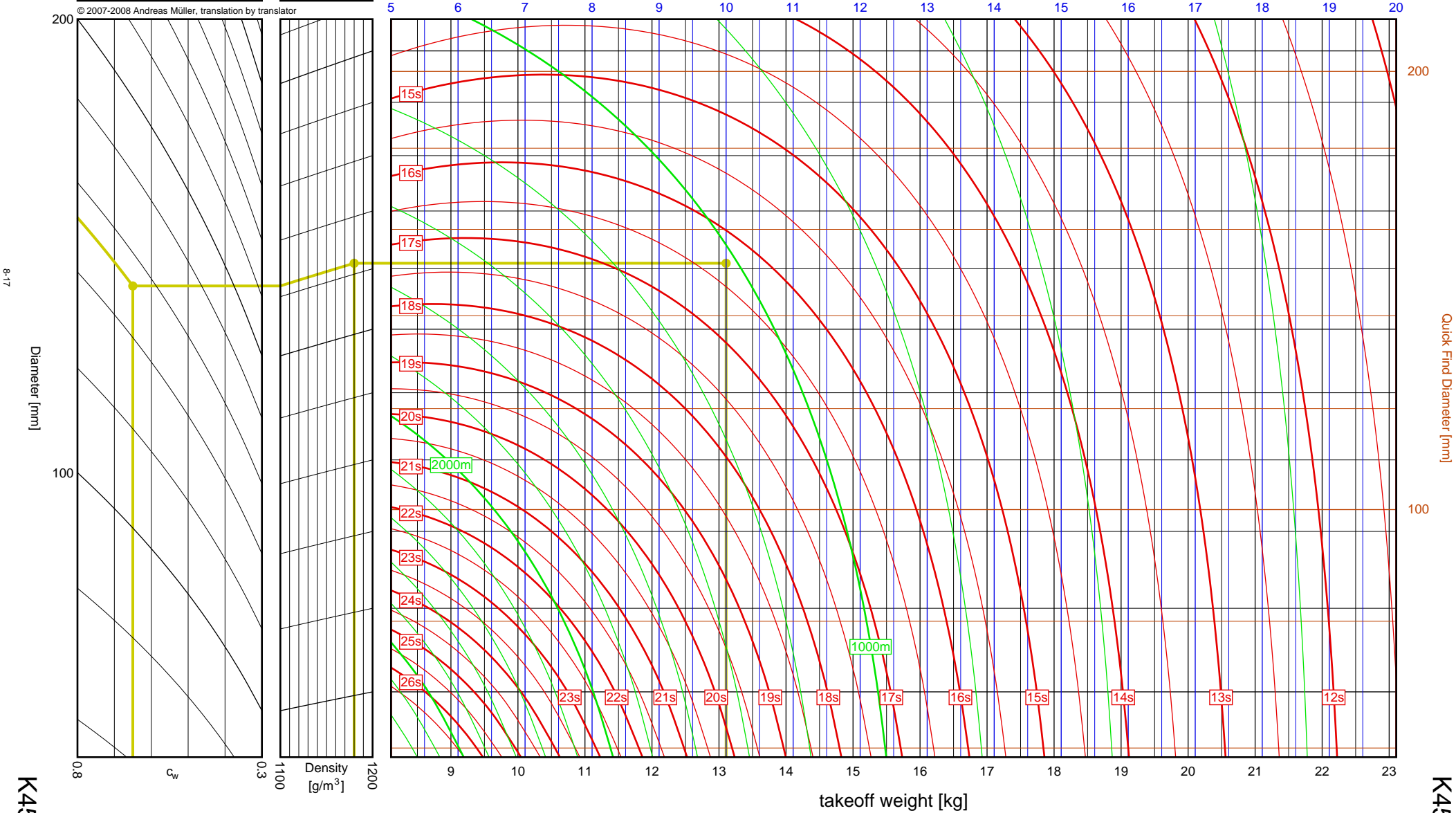
Aerotech	
K458W	
I_{tot}	= 2518.2 Ns
F_{avg}	= 393.5 N
t_{burn}	= 6.40 s
d	= 98 mm
Data source: Aerotech	



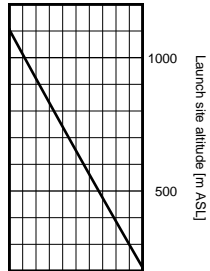
1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 152mm, drag = 0.65, density = 1180 g/m³, weight = 13.106kg
 Results: time to apogee: 16.3s, expected altitude: 1019m

empty weight [kg]



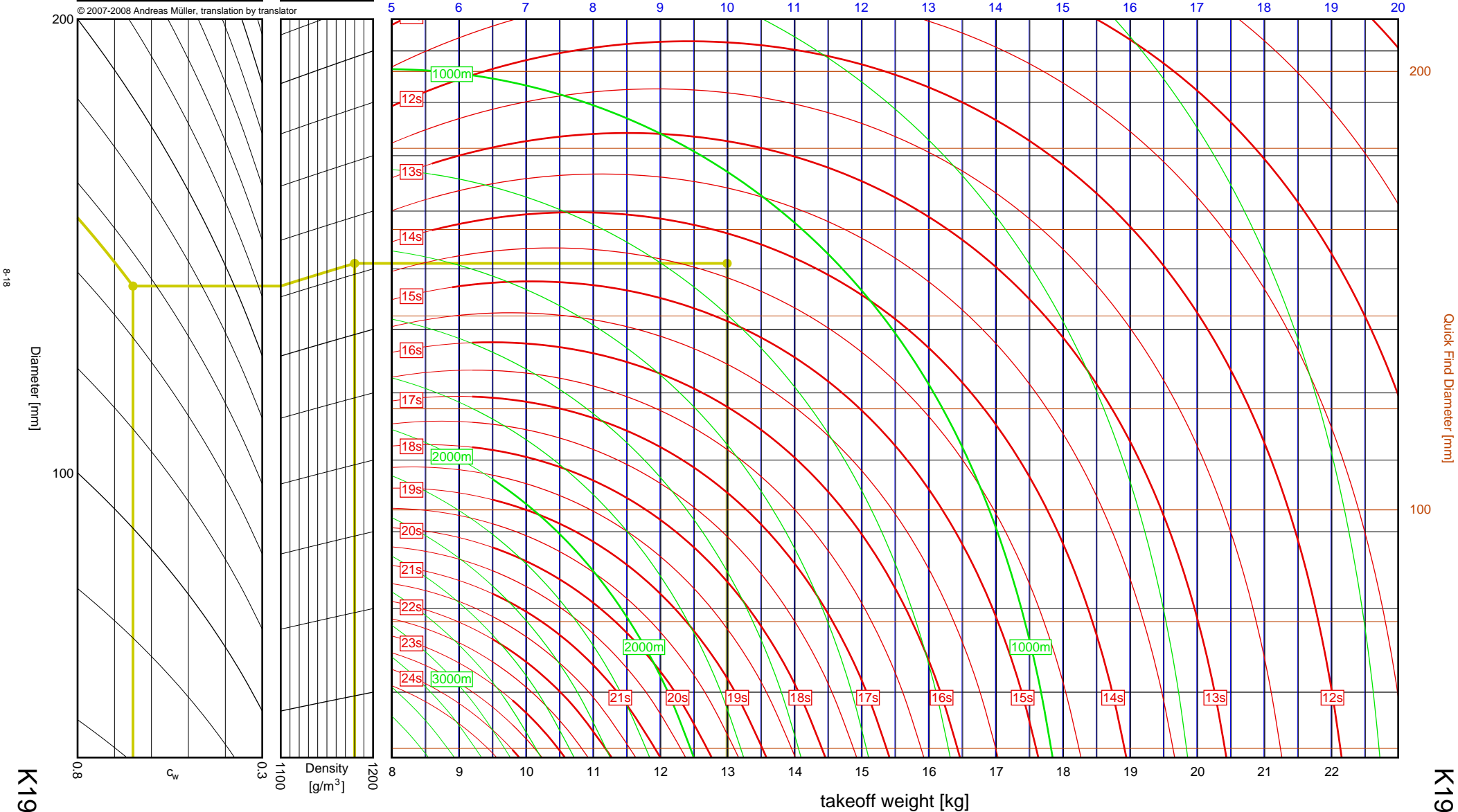
Aerotech	
K1999N	
I_{tot}	= 2520.4 Ns
F_{avg}	= 1800.3 N
t_{burn}	= 1.40 s
d	= 98 mm
Data source: Aerotech	



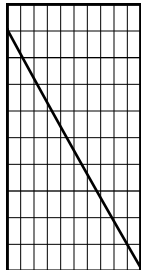
1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 152mm, drag = 0.65, density = 1180 g/m³, weight = 12.989kg
 Results: time to apogee: 14.3s, expected altitude: 1126m

empty weight [kg]



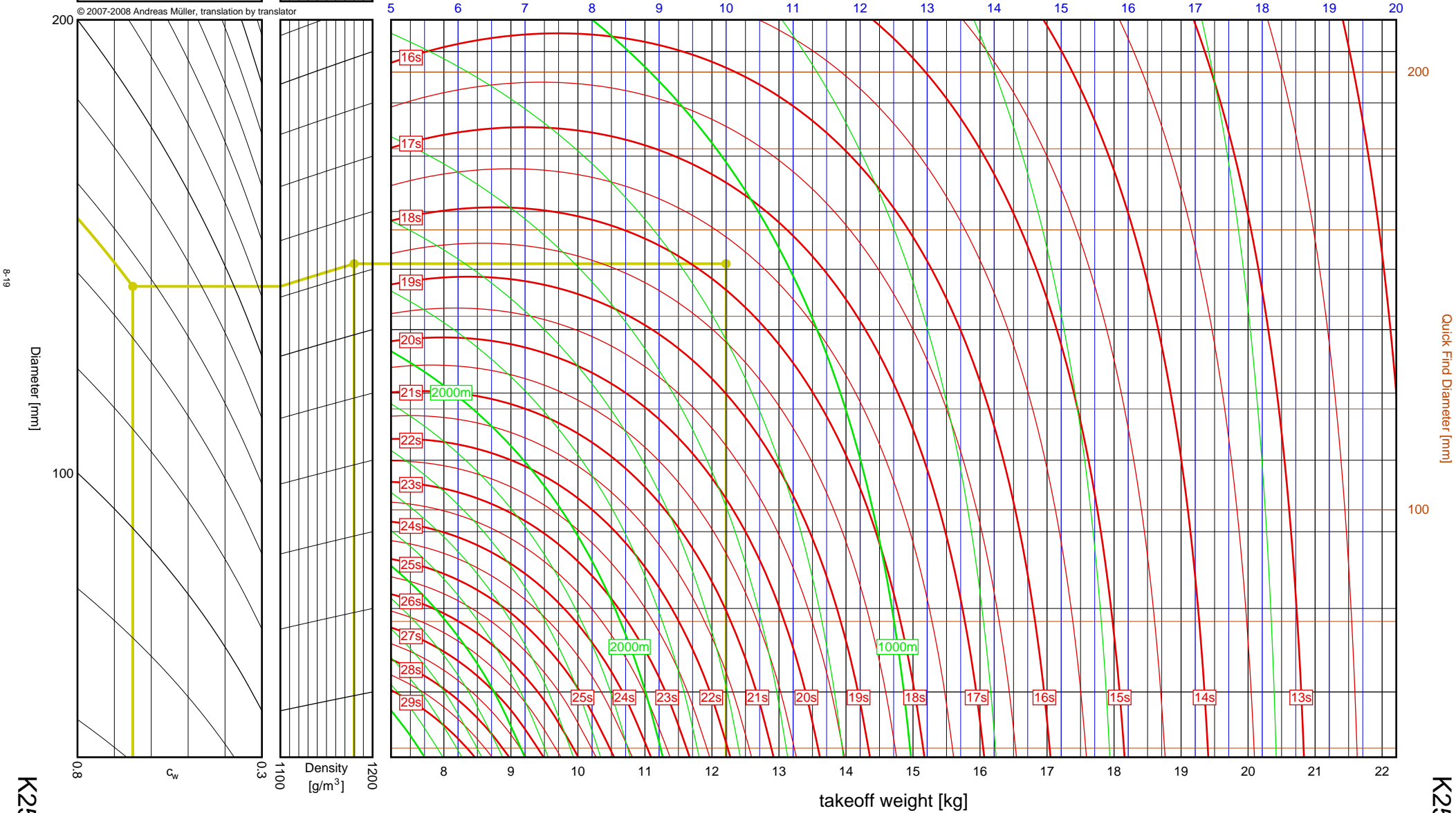
Aerotech	
K250W	
I_{tot}	= 2553.0 Ns
F_{avg}	= 249.9 N
t_{burn}	= 10.22 s
d	= 54 mm
Data source: Aerotech	



1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 152mm, drag = 0.65, density = 1180 g/m³, weight = 12.211kg
 Results: time to apogee: 17.8s, expected altitude: 1112m

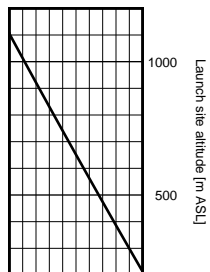
empty weight [kg]



Aerotech L339N

I_{tot} = 2800.5 Ns
 F_{avg} = 332.4 N
 t_{burn} = 8.43 s
 d = 98 mm

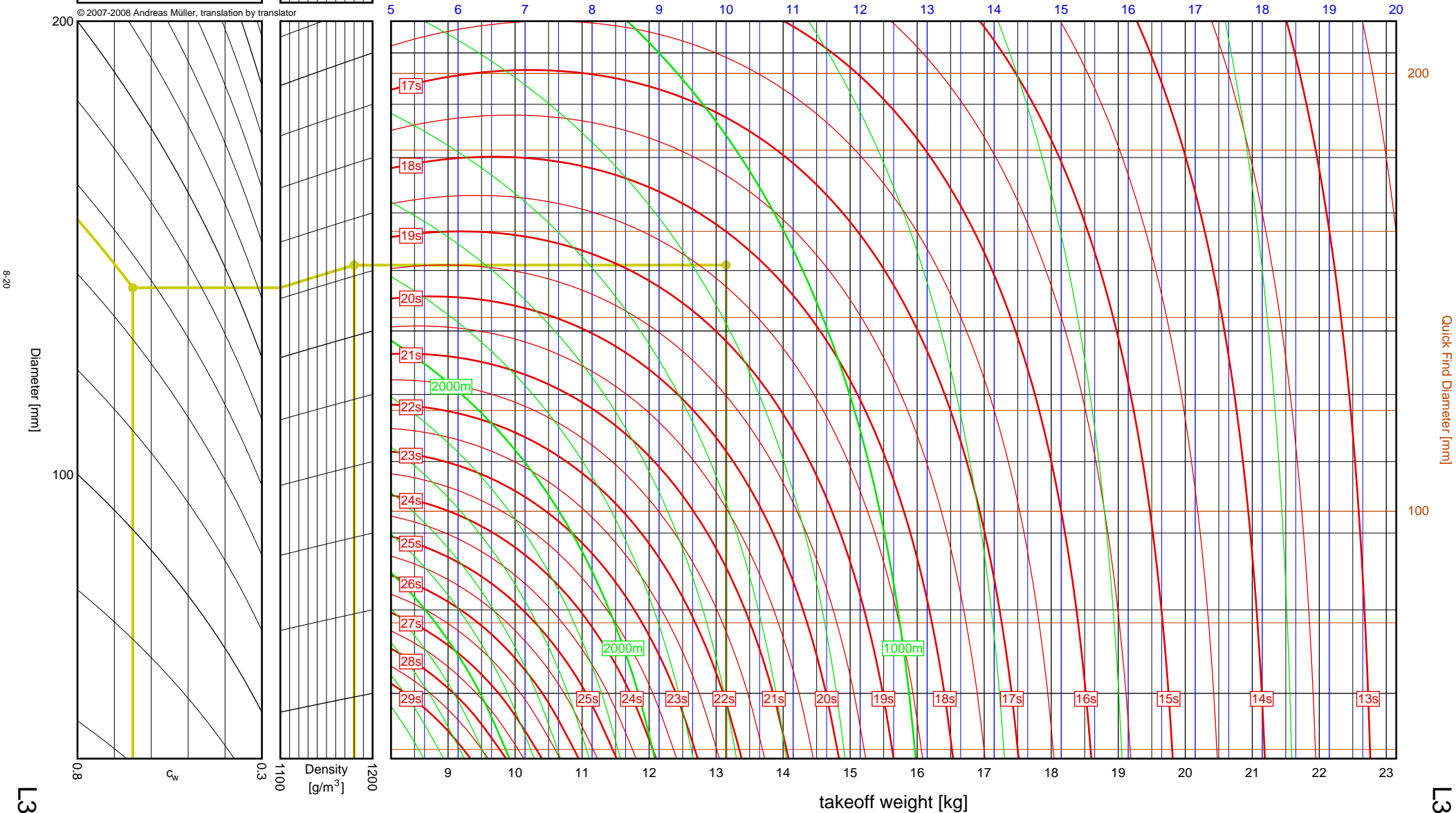
Data source:
Aerotech



1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 152mm, drag = 0.65, density = 1180 g/m³, weight = 13.149kg
 Results: time to apogee: 18.3s, expected altitude: 1136m

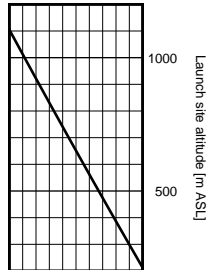
empty weight [kg]



Aerotech
L1170FJ

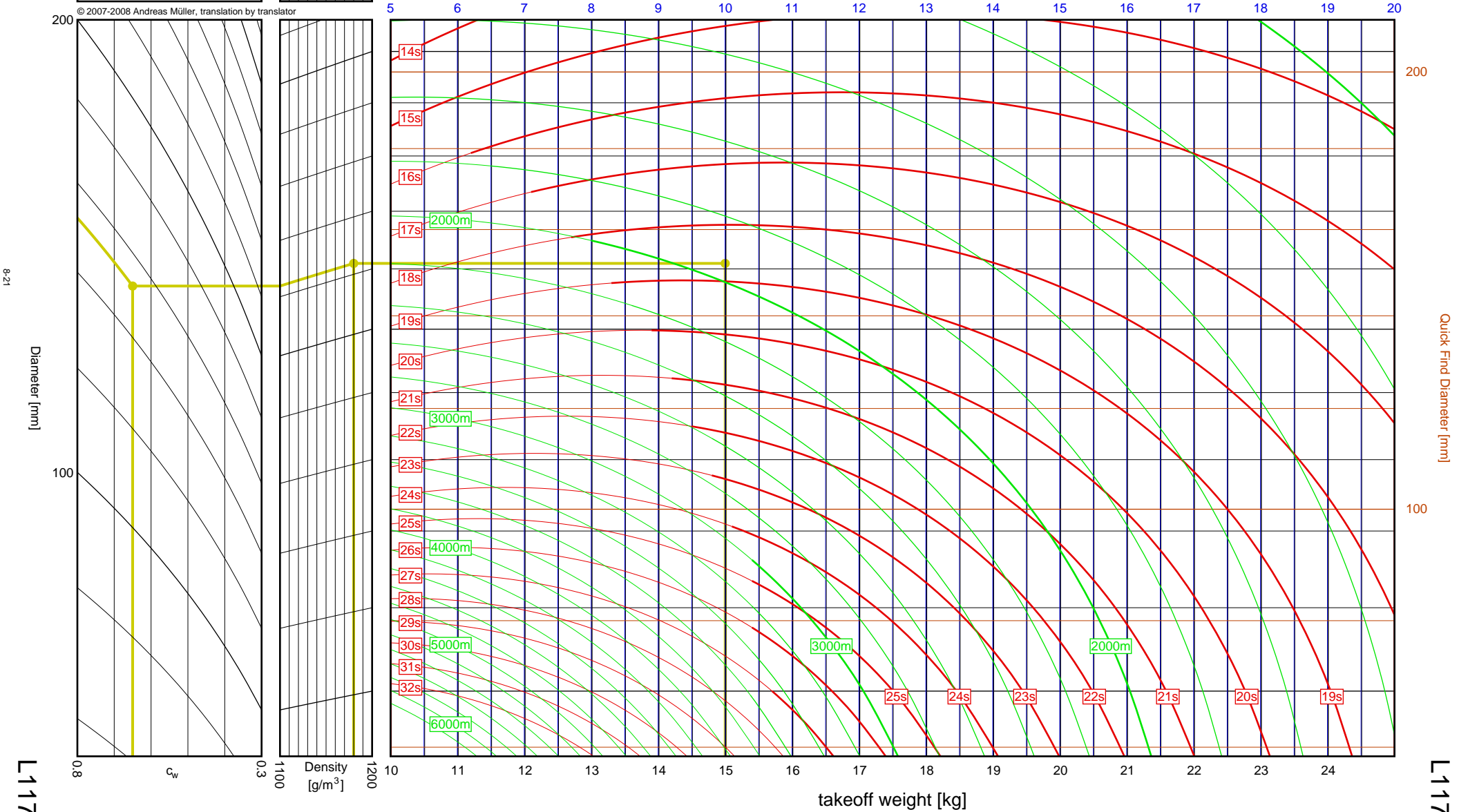
I_{tot} = 4222.6 Ns
 F_{avg} = 1136.9 N
 t_{burn} = 3.71 s
 d = 75 mm

Data source:
Aerotech



- 1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
 - 2. Move along horizontal to left border of density scale
 - 3. Move up slanted line to vertical line matching density at launch site
 - 4. From intersection point move horizontally to vertical line matching rocket mass
 - 5. Read off expected time to apogee from red curves, altitude from green curves
- Sample: diameter = 152mm, drag = 0.65, density = 1180 g/m³, weight = 14.990kg
- Results: time to apogee: 18.7s, expected altitude: 1942m

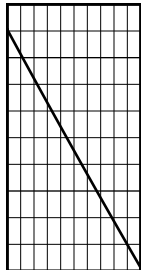
empty weight [kg]



L1170FJ

L1170FJ

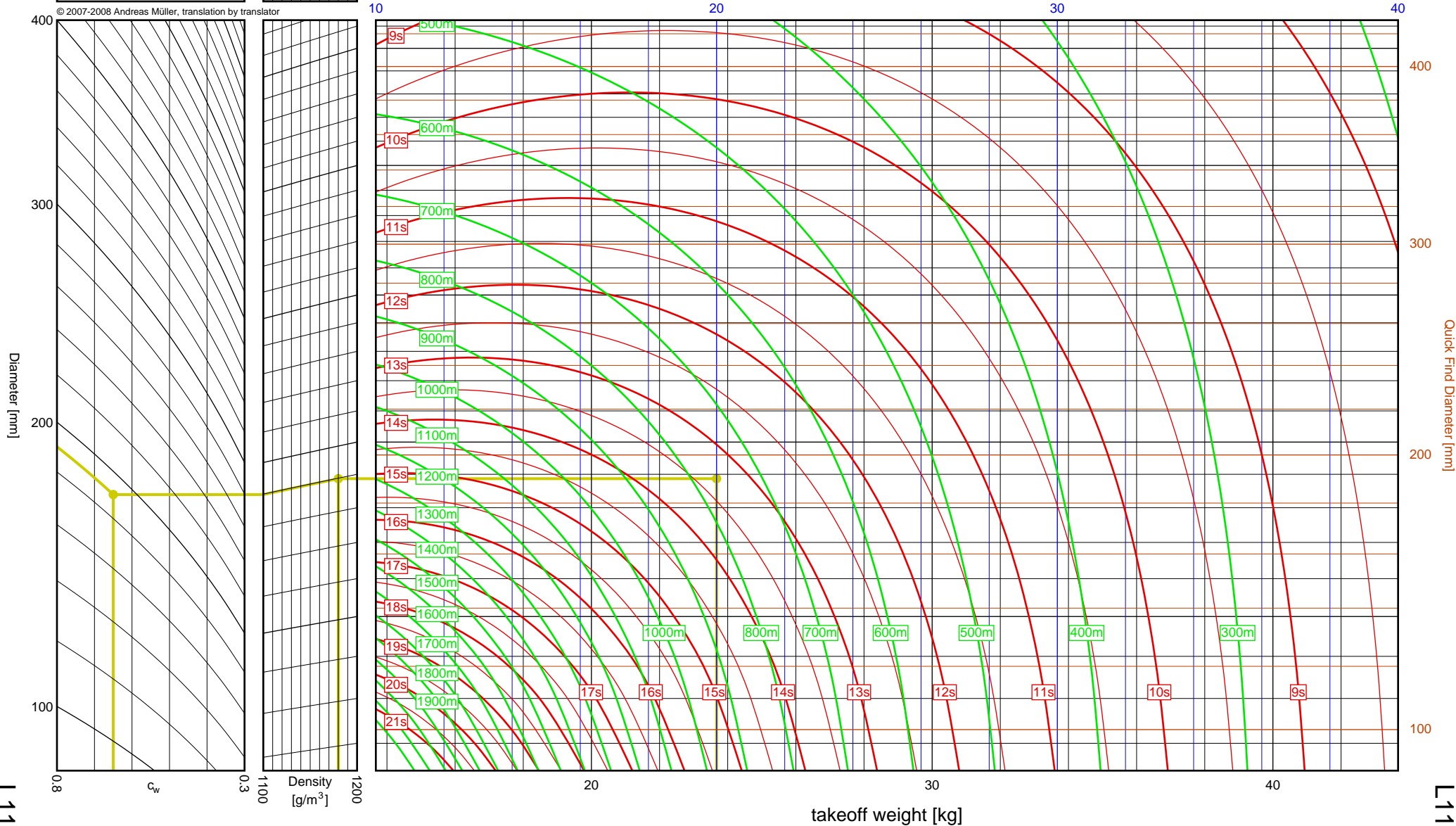
Aerotech	
L1150R	
I_{tot}	= 3488.6 Ns
F_{avg}	= 1102.2 N
t_{burn}	= 3.17 s
d	= 75 mm
Data source: Aerotech	



1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 190mm, drag = 0.65, density = 1180 g/m³, weight = 23.674kg
 Results: time to apogee: 13.3s, expected altitude: 763m

empty weight [kg]



7.5"

L1150R

Quick Find Diameter [mm]

takeoff weight [kg]

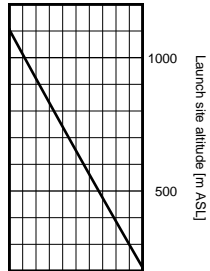
Density [g/m³]

Diameter [mm]

L1150R

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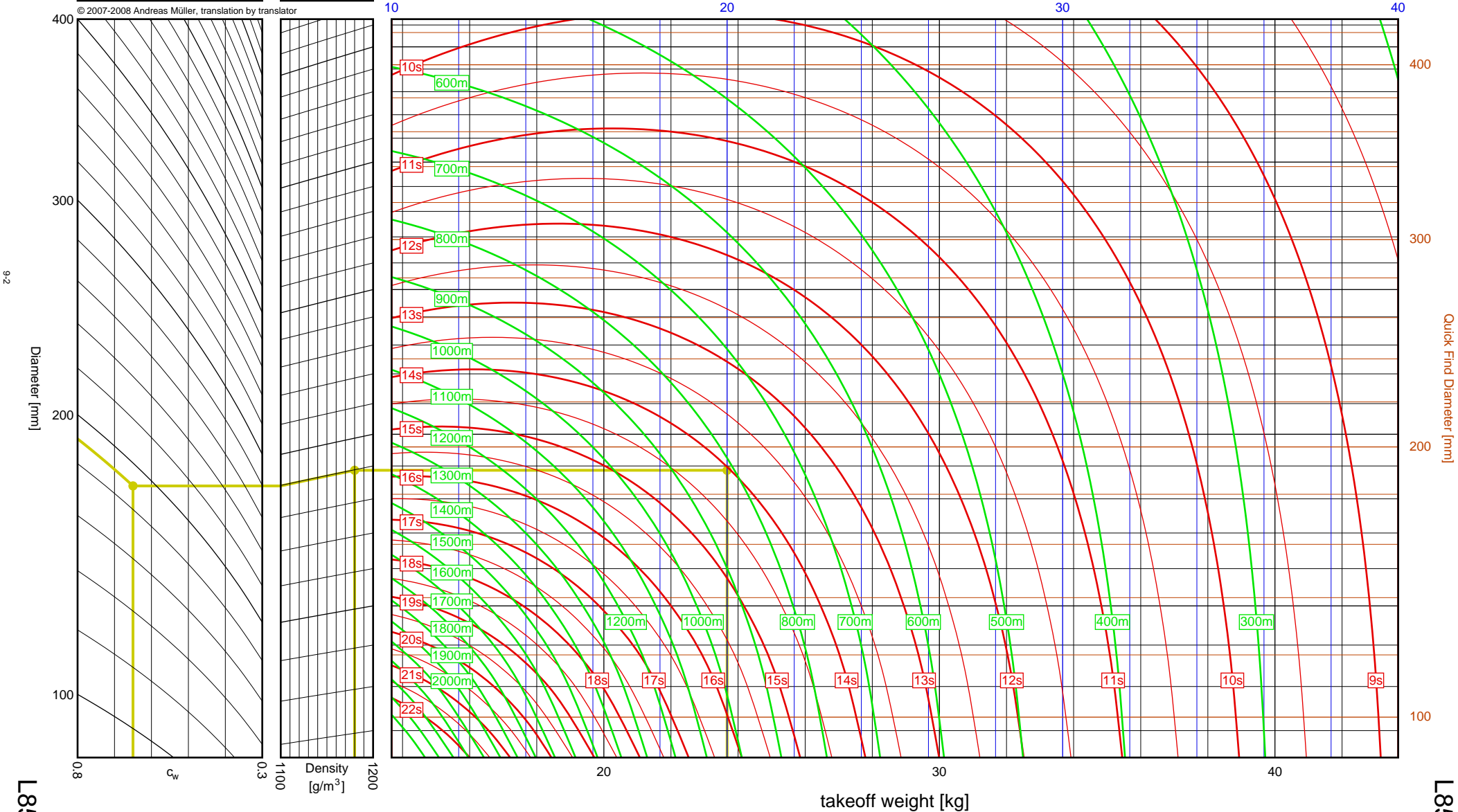
Aerotech	
L850W	
I_{tot}	= 3695.0 Ns
F_{avg}	= 786.7 N
t_{burn}	= 4.70 s
d	= 75 mm
Data source: Aerotech	



1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 190mm, drag = 0.65, density = 1180 g/m³, weight = 23.673kg
 Results: time to apogee: 14.0s, expected altitude: 812m

empty weight [kg]

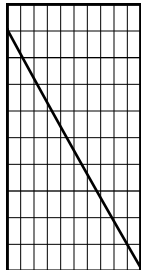


7.5"

L850W

Quick Find Diameter [mm]

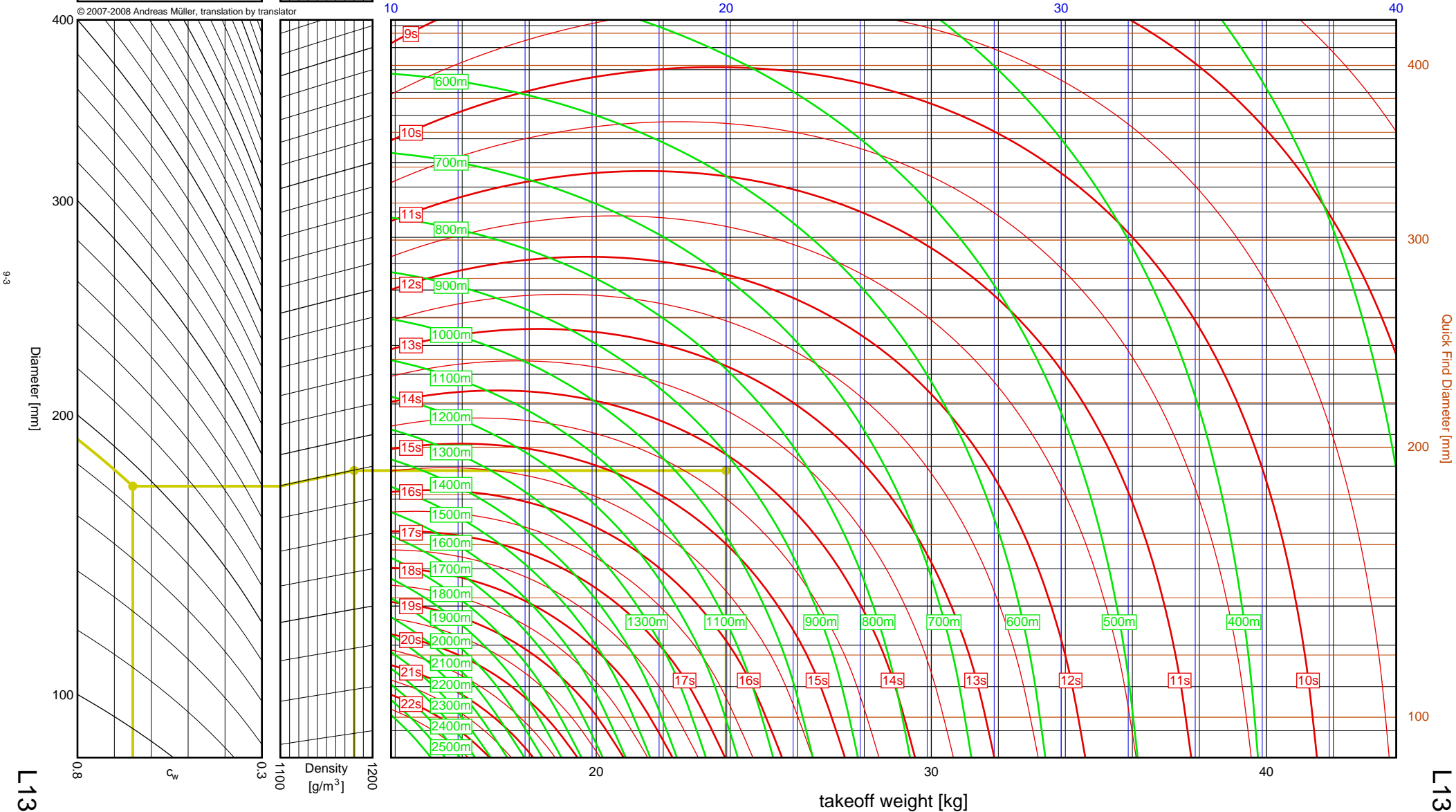
Aerotech	
L1390G	
I_{tot}	= 3946.5 Ns
F_{avg}	= 1355.7 N
t_{burn}	= 2.91 s
d	= 75 mm
Data source: Aerotech	



1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 190mm, drag = 0.65, density = 1180 g/m³, weight = 23.876kg
 Results: time to apogee: 14.2s, expected altitude: 921m

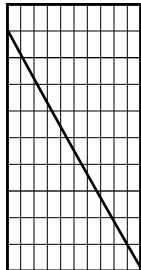
empty weight [kg]



7.5" ⁹

L1390G

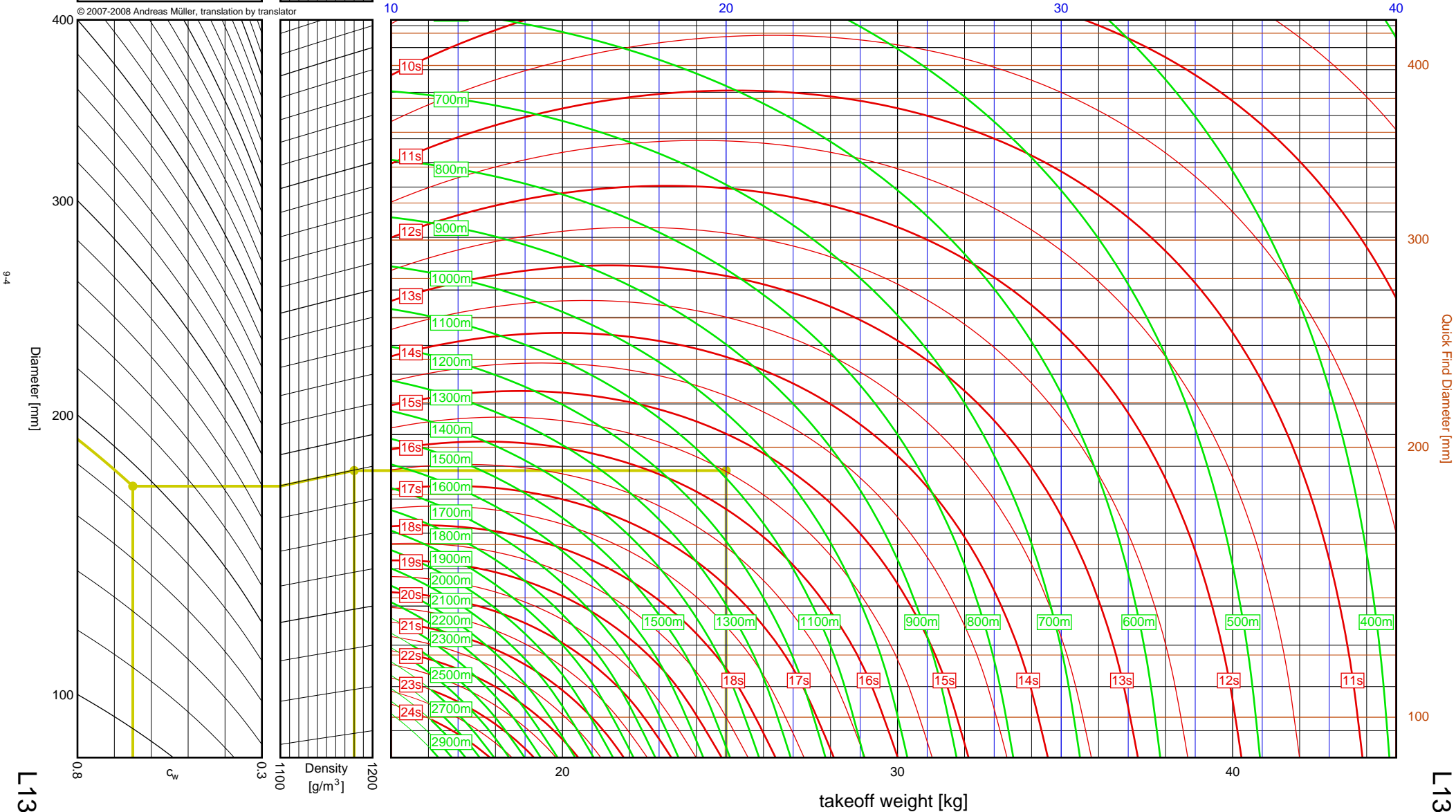
Aerotech	
L1300R	
I_{tot}	= 4556.4 Ns
F_{avg}	= 1301.8 N
t_{burn}	= 3.50 s
d	= 98 mm
Data source: Aerotech	



1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 190mm, drag = 0.65, density = 1180 g/m³, weight = 24.884kg
 Results: time to apogee: 15.5s, expected altitude: 1089m

empty weight [kg]



7.5"

L1300R

Quick Find Diameter [mm]

takeoff weight [kg]

Density [g/m³]

c_w

Diameter [mm]

10

20

30

40

400

300

200

100

400

300

200

100

20

30

40

1500m

1300m

1100m

900m

800m

700m

600m

500m

400m

1500m

1300m

1100m

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1300m

1100m

900m

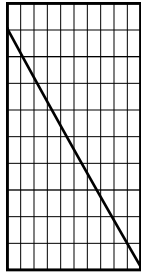
800m

700m

600m

500m

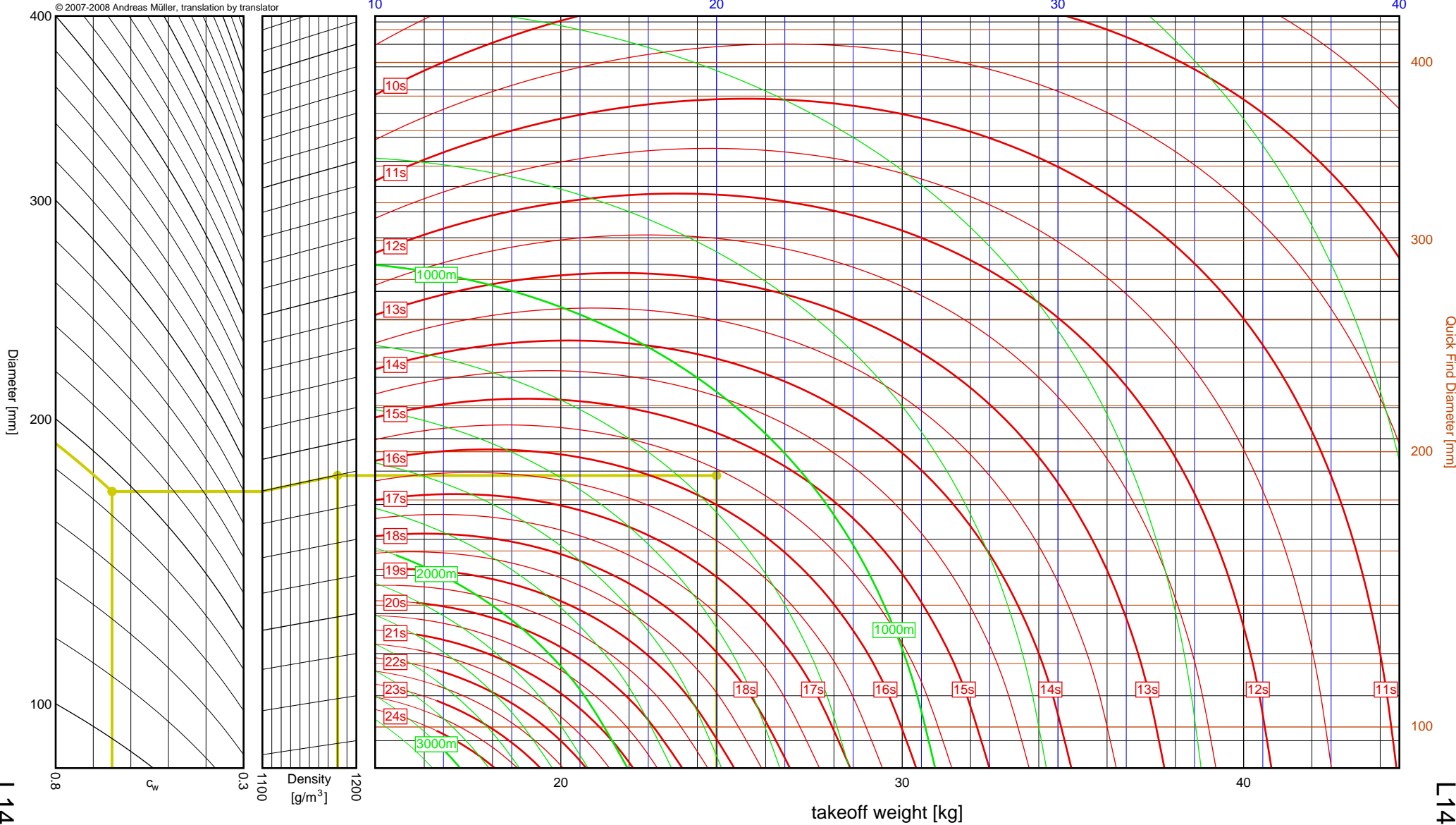
Aerotech	
L1420R	
I_{tot}	= 4616.3 Ns
F_{avg}	= 1424.8 N
t_{burn}	= 3.24 s
d	= 75 mm
Data source: Aerotech	



1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 190mm, drag = 0.65, density = 1180 g/m³, weight = 24.562kg
 Results: time to apogee: 15.6s, expected altitude: 1137m

empty weight [kg]



7.5"

L1420R

Quick Find Diameter [mm]

takeoff weight [kg]

Diameter [mm]

c_w

Density
[g/m³]

20

20

30

30

40

40

10

20

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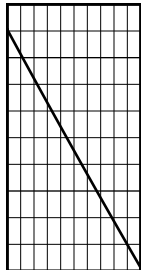
20

30

40

10

Aerotech	
L1120W	
I_{tot}	= 4922.2 Ns
F_{avg}	= 982.7 N
t_{burn}	= 5.01 s
d	= 75 mm
Data source: Aerotech	

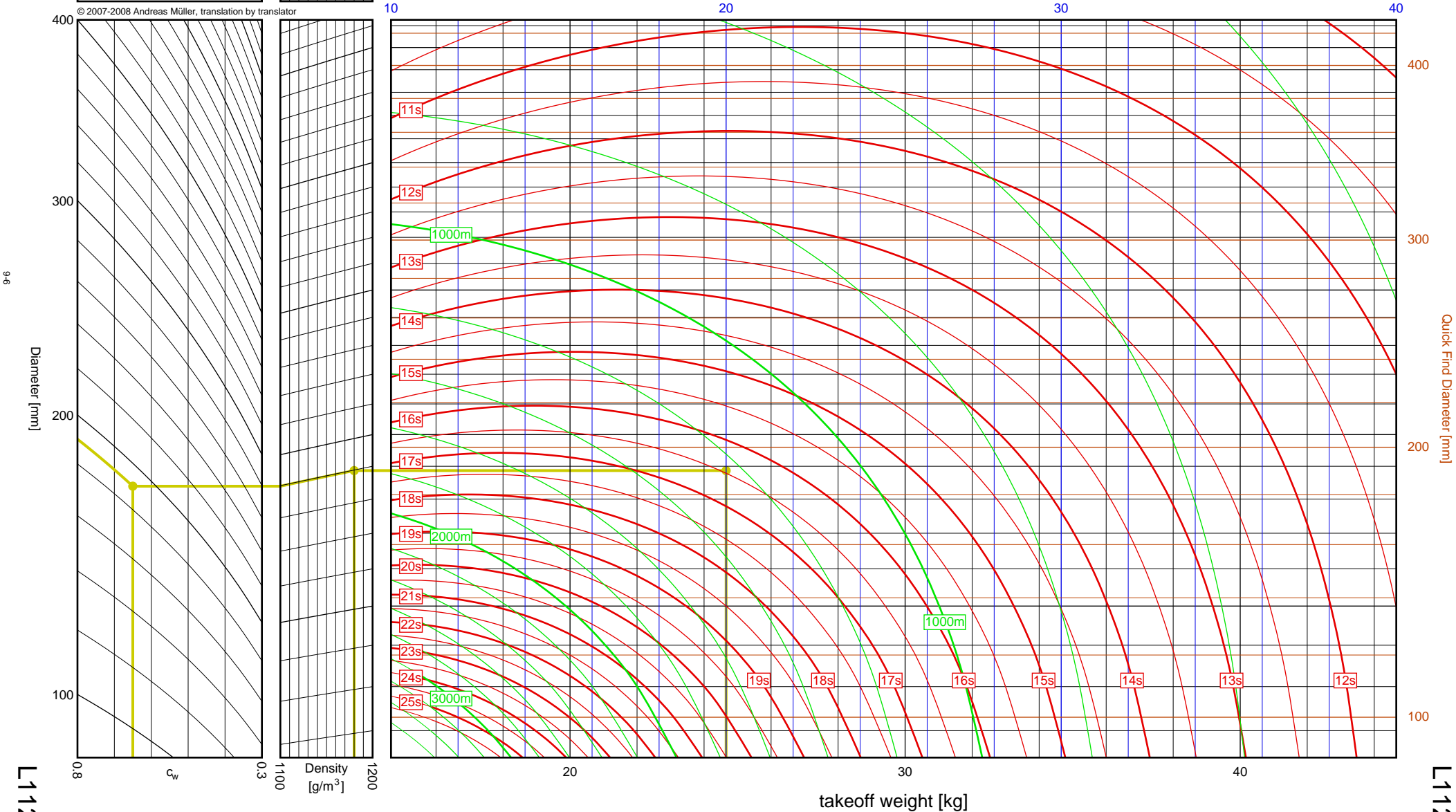


Launch site altitude [m ASL]

1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 190mm, drag = 0.65, density = 1180 g/m³, weight = 24.658kg
 Results: time to apogee: 16.5s, expected altitude: 1232m

empty weight [kg]



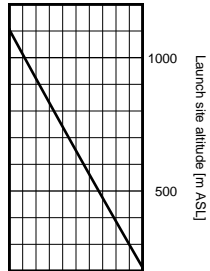
7.5"

9

L1120W

L1120W

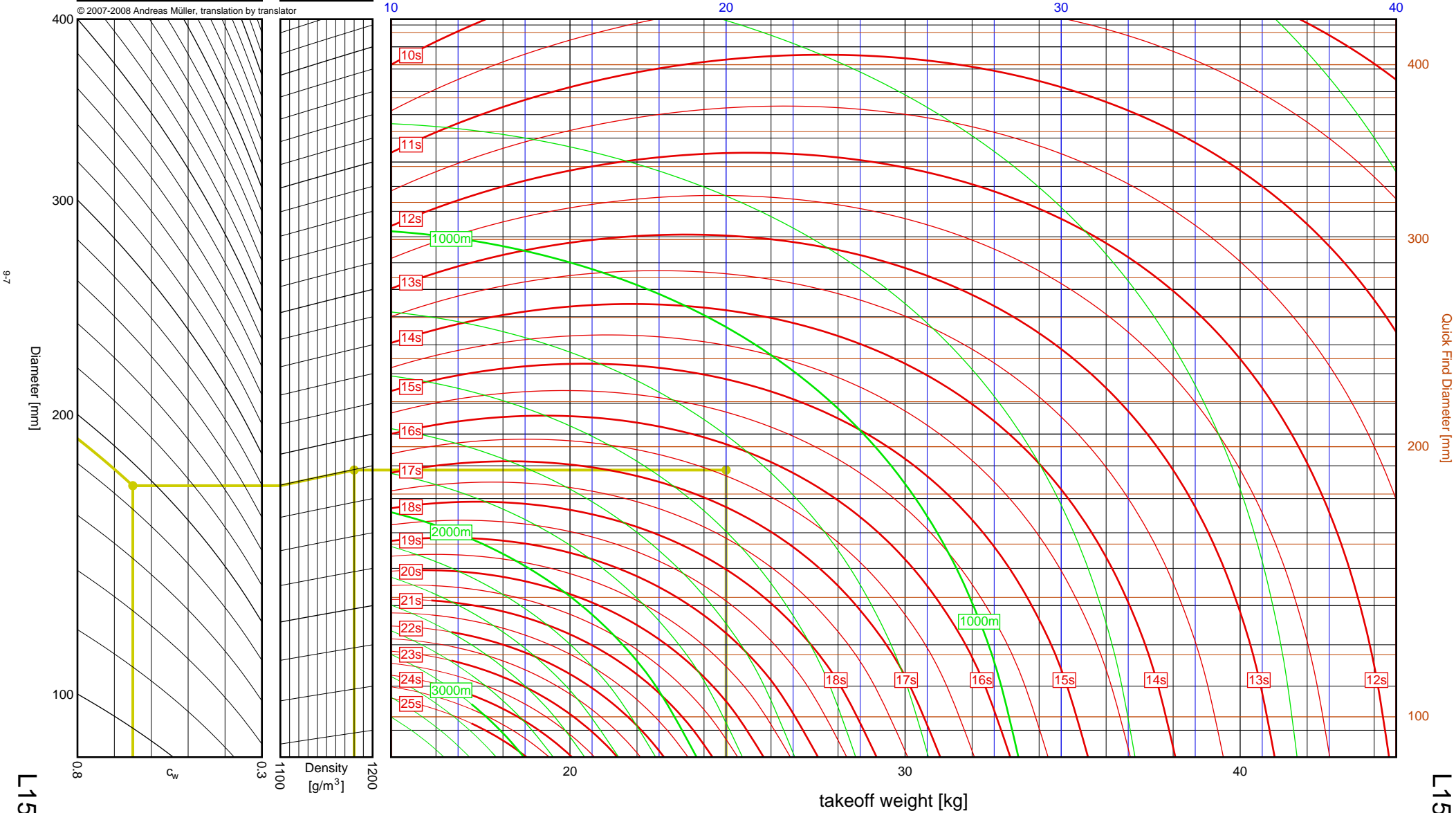
Aerotech	
L1500T	
I_{tot}	= 5056.1 Ns
F_{avg}	= 1325.0 N
t_{burn}	= 3.82 s
d	= 98 mm
Data source: Aerotech	



1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 190mm, drag = 0.65, density = 1180 g/m³, weight = 24.659kg
 Results: time to apogee: 16.4s, expected altitude: 1271m

empty weight [kg]



7.5"

L1500T

Quick Find Diameter [mm]

100

200

300

400

40

30

20

10

20

30

40

takeoff weight [kg]

Density
[g/m³]

1200

1100

1000

900

800

700

600

500

400

300

200

100

0

0.3

0.4

0.5

0.6

0.7

0.8

0.9

1.0

1.1

1.2

1.3

1.4

1.5

1.6

1.7

1.8

1.9

2.0

2.1

2.2

2.3

2.4

2.5

2.6

2.7

2.8

2.9

3.0

3.1

3.2

3.3

3.4

3.5

3.6

3.7

3.8

3.9

4.0

4.1

4.2

4.3

4.4

4.5

4.6

4.7

4.8

4.9

5.0

5.1

5.2

5.3

5.4

5.5

5.6

5.7

5.8

5.9

6.0

6.1

6.2

6.3

6.4

6.5

6.6

6.7

6.8

6.9

7.0

7.1

7.2

7.3

7.4

7.5

7.6

7.7

7.8

7.9

8.0

8.1

8.2

8.3

8.4

8.5

8.6

8.7

8.8

8.9

9.0

9.1

9.2

9.3

9.4

9.5

9.6

9.7

9.8

9.9

10.0

10.1

10.2

10.3

10.4

10.5

10.6

10.7

10.8

10.9

11.0

11.1

11.2

11.3

11.4

11.5

11.6

11.7

11.8

11.9

12.0

12.1

12.2

12.3

12.4

12.5

12.6

12.7

12.8

12.9

13.0

13.1

13.2

13.3

13.4

13.5

13.6

13.7

13.8

13.9

14.0

14.1

14.2

14.3

14.4

14.5

14.6

14.7

14.8

14.9

15.0

15.1

15.2

15.3

15.4

15.5

15.6

15.7

15.8

15.9

16.0

16.1

16.2

16.3

16.4

16.5

16.6

16.7

16.8

16.9

17.0

17.1

17.2

17.3

17.4

17.5

17.6

17.7

17.8

17.9

18.0

18.1

18.2

18.3

18.4

18.5

18.6

18.7

18.8

18.9

19.0

19.1

19.2

19.3

19.4

19.5

19.6

19.7

19.8

19.9

20.0

20.1

20.2

20.3

20.4

20.5

20.6

20.7

20.8

20.9

21.0

21.1

21.2

21.3

21.4

21.5

21.6

21.7

21.8

21.9

22.0

22.1

22.2

22.3

22.4

22.5

22.6

22.7

22.8

22.9

23.0

23.1

23.2

23.3

23.4

23.5

23.6

23.7

23.8

23.9

24.0

24.1

24.2

24.3

24.4

24.5

24.6

24.7

24.8

24.9

25.0

25.1

25.2

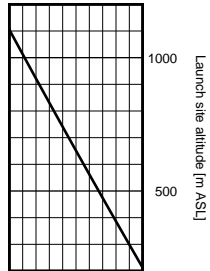
25.3

25.4

25.5

25.6

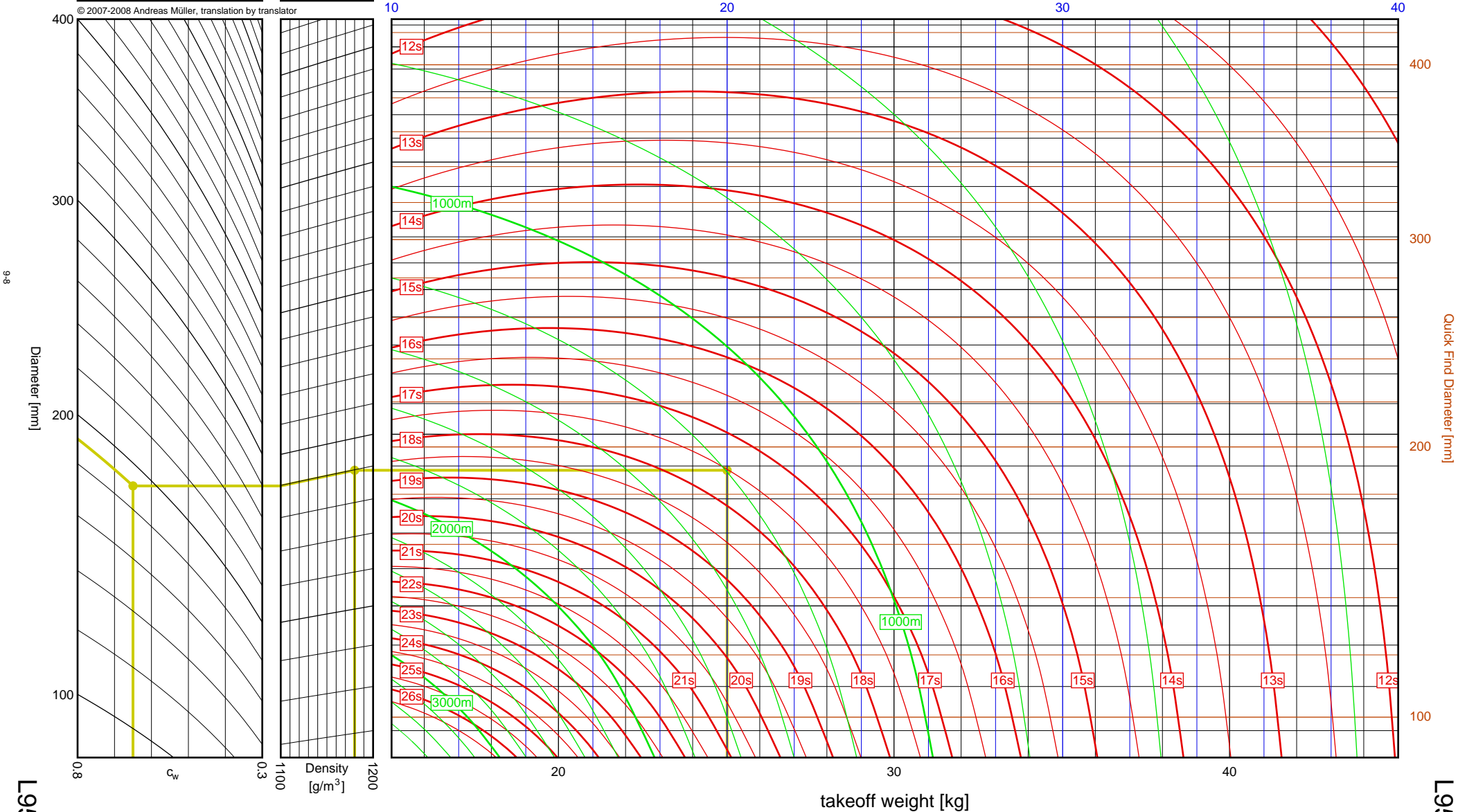
Aerotech	
L952W	
I_{tot}	= 5097.8 Ns
F_{avg}	= 760.9 N
t_{burn}	= 6.70 s
d	= 98 mm
Data source: Aerotech	



1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 190mm, drag = 0.65, density = 1180 g/m³, weight = 25.026kg
 Results: time to apogee: 17.5s, expected altitude: 1198m

empty weight [kg]

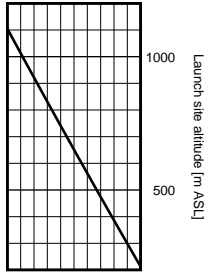


7.5"

L952W

L952W

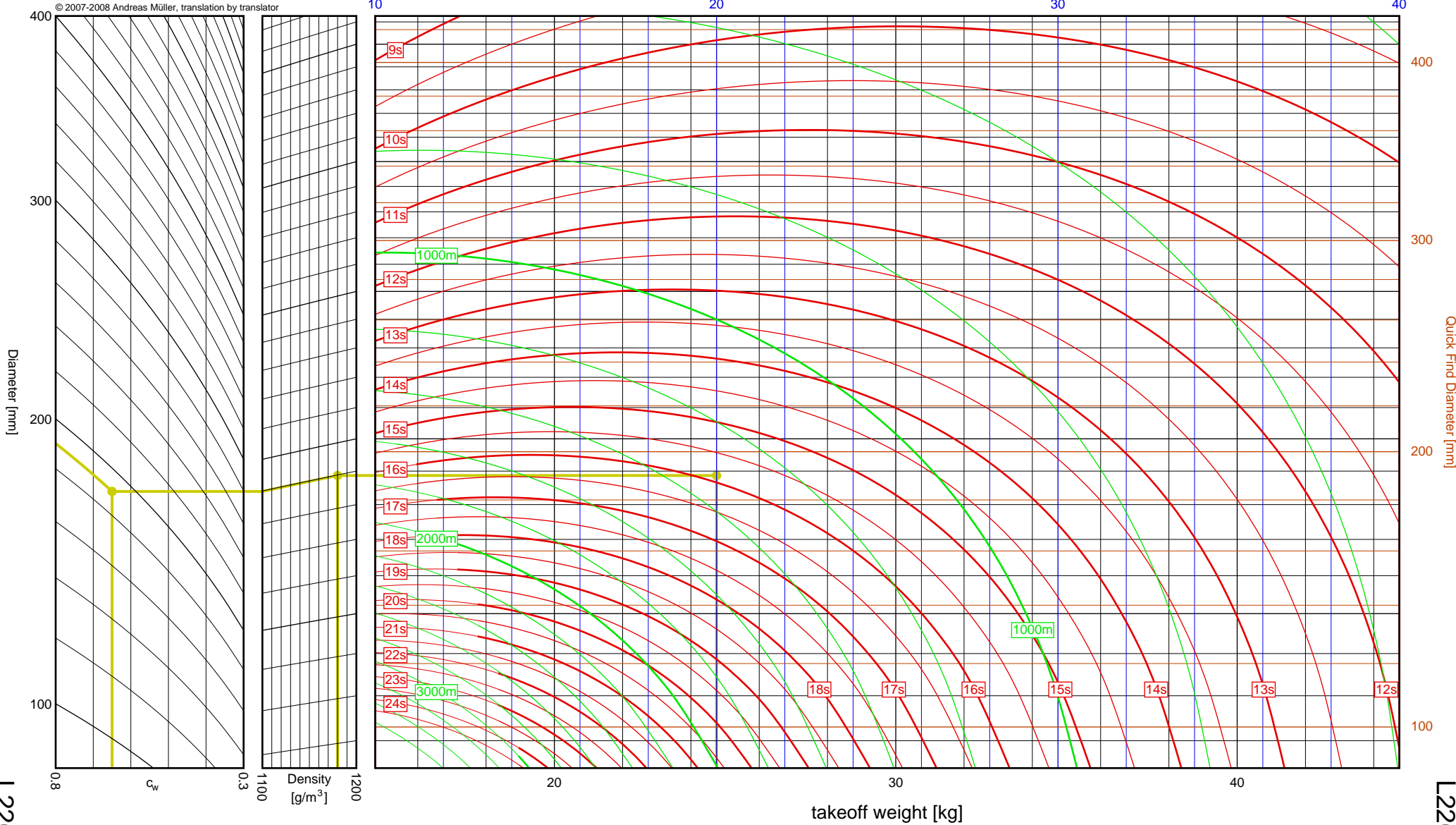
Aerotech	
L2200G	
I_{tot}	= 5104.1 Ns
F_{avg}	= 2126.7 N
t_{burn}	= 2.40 s
d	= 75 mm
Data source: Aerotech	



1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 190mm, drag = 0.65, density = 1180 g/m³, weight = 24.751kg
 Results: time to apogee: 15.9s, expected altitude: 1318m

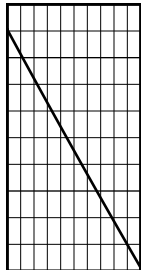
empty weight [kg]



7.5"

L2200G

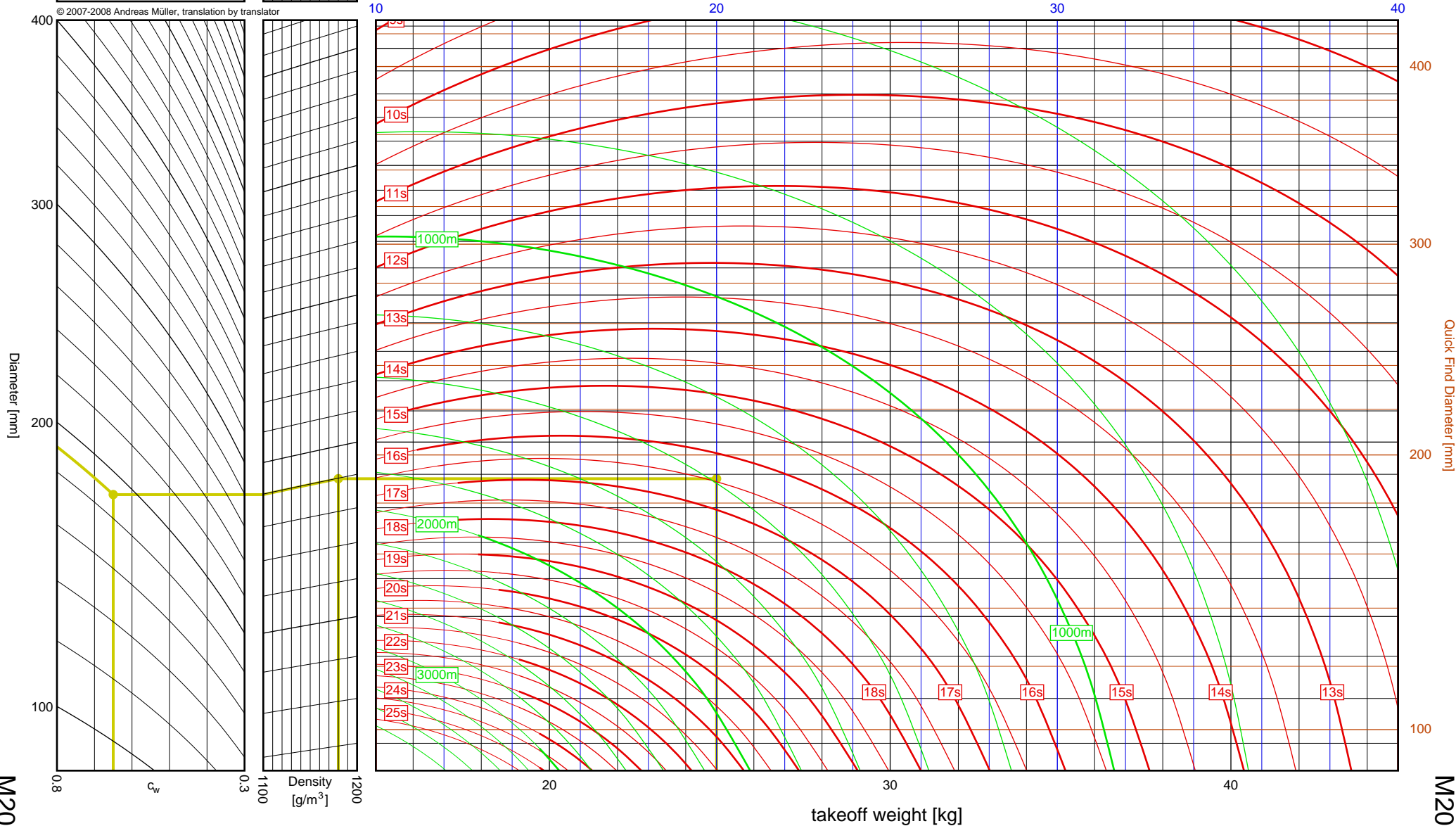
Aerotech	
M2030G	
I_{tot}	= 5356.9 Ns
F_{avg}	= 2002.6 N
t_{burn}	= 2.67 s
d	= 75 mm
Data source: Aerotech	



1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 190mm, drag = 0.65, density = 1180 g/m³, weight = 24.906kg
 Results: time to apogee: 16.5s, expected altitude: 1390m

empty weight [kg]



7.5" ⁹

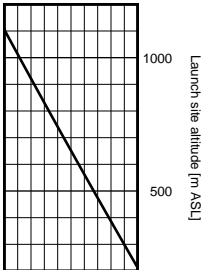
M2030G

M2030G

Aerotech
M1297W

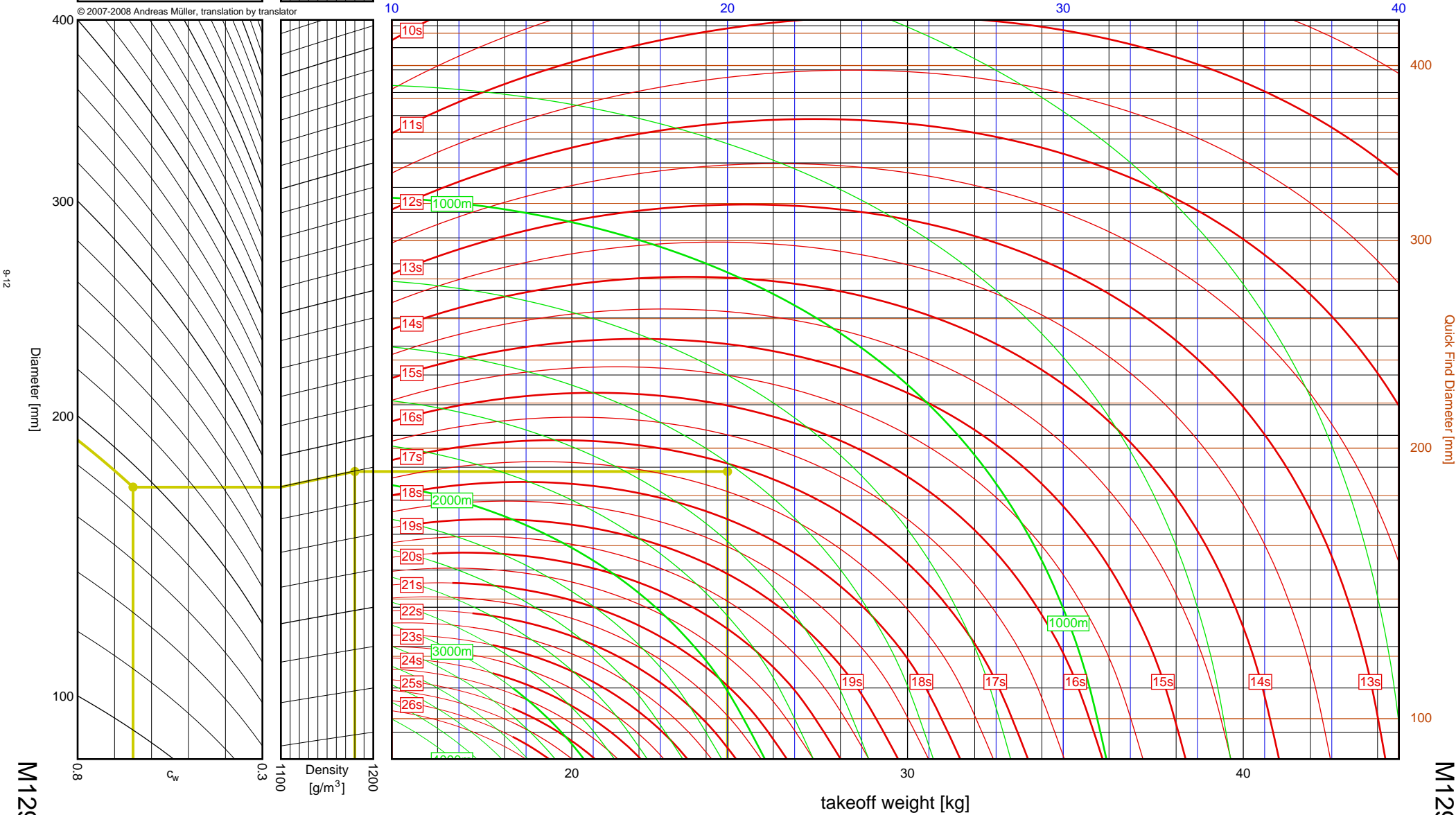
I_{tot} = 5439.0 Ns
 F_{avg} = 1304.3 N
 t_{burn} = 4.17 s
 d = 75 mm

Data source:
Aerotech



1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
 2. Move along horizontal to left border of density scale
 3. Move up slanted line to vertical line matching density at launch site
 4. From intersection point move horizontally to vertical line matching rocket mass
 5. Read off expected time to apogee from red curves, altitude from green curves
- Sample: diameter = 190mm, drag = 0.65, density = 1180 g/m³, weight = 24.637kg
- Results: time to apogee: 17.1s, expected altitude: 1423m

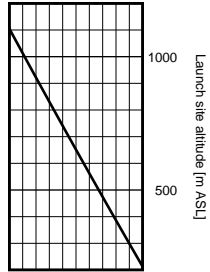
empty weight [kg]



M1297W

M1297W

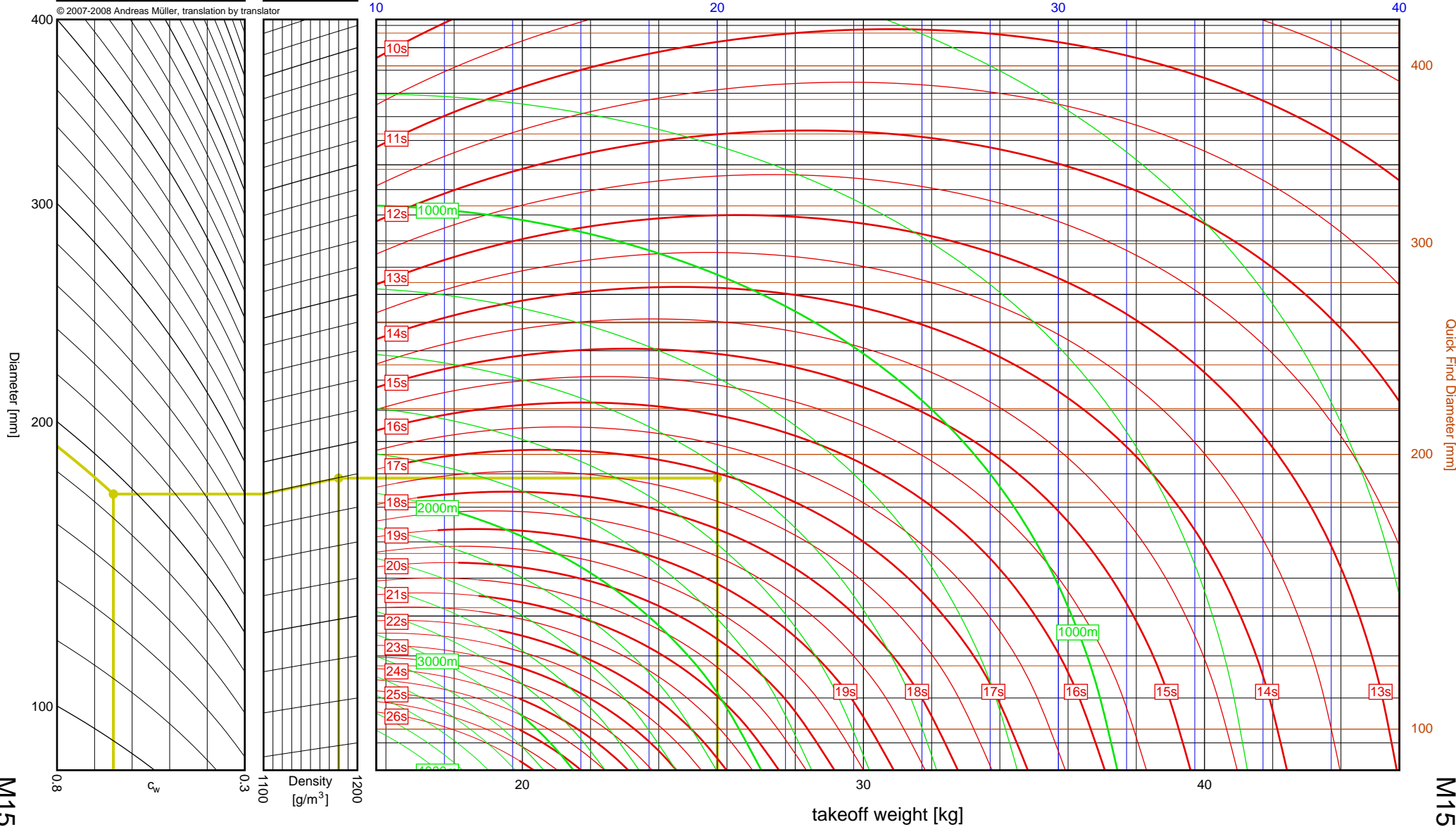
Aerotech	
M1550R	
I_{tot}	= 5529.1 Ns
F_{avg}	= 1531.6 N
t_{burn}	= 3.61 s
d	= 75 mm
Data source: Aerotech	



1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 190mm, drag = 0.65, density = 1180 g/m³, weight = 25.715kg
 Results: time to apogee: 17.1s, expected altitude: 1432m

empty weight [kg]



7.5"

M1550R

Quick Find Diameter [mm]

100

200

300

400

40

30

20

10

0.3

0.8

1000

500

1000m

2000m

3000m

13s

14s

15s

16s

17s

18s

19s

20s

21s

22s

23s

24s

25s

26s

190mm

17.1s

1432m

25.715kg

0.65

1180 g/m³

5529.1 Ns

1531.6 N

3.61 s

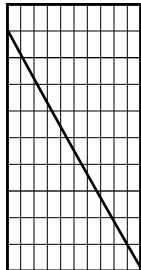
75 mm

Aerotech

M1550R

9

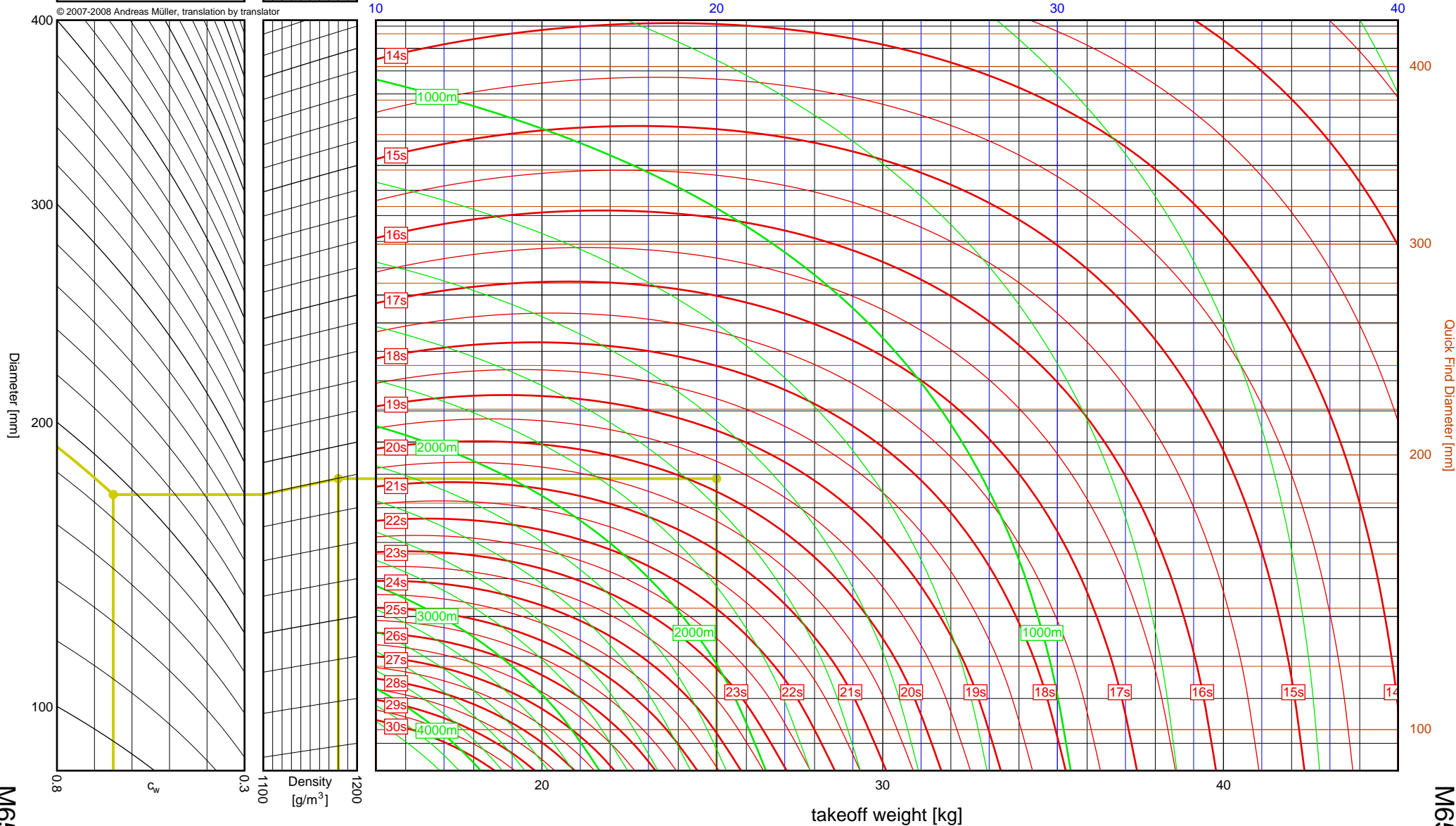
Aerotech	
M650W	
I_{tot}	= 6006.0 Ns
F_{avg}	= 522.3 N
t_{burn}	= 11.50 s
d	= 75 mm
Data source: Aerotech	



1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 190mm, drag = 0.65, density = 1180 g/m³, weight = 25.125kg
 Results: time to apogee: 19.8s, expected altitude: 1533m

empty weight [kg]

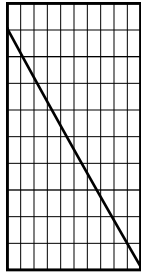


7.5" ⁹

M650W

M650W

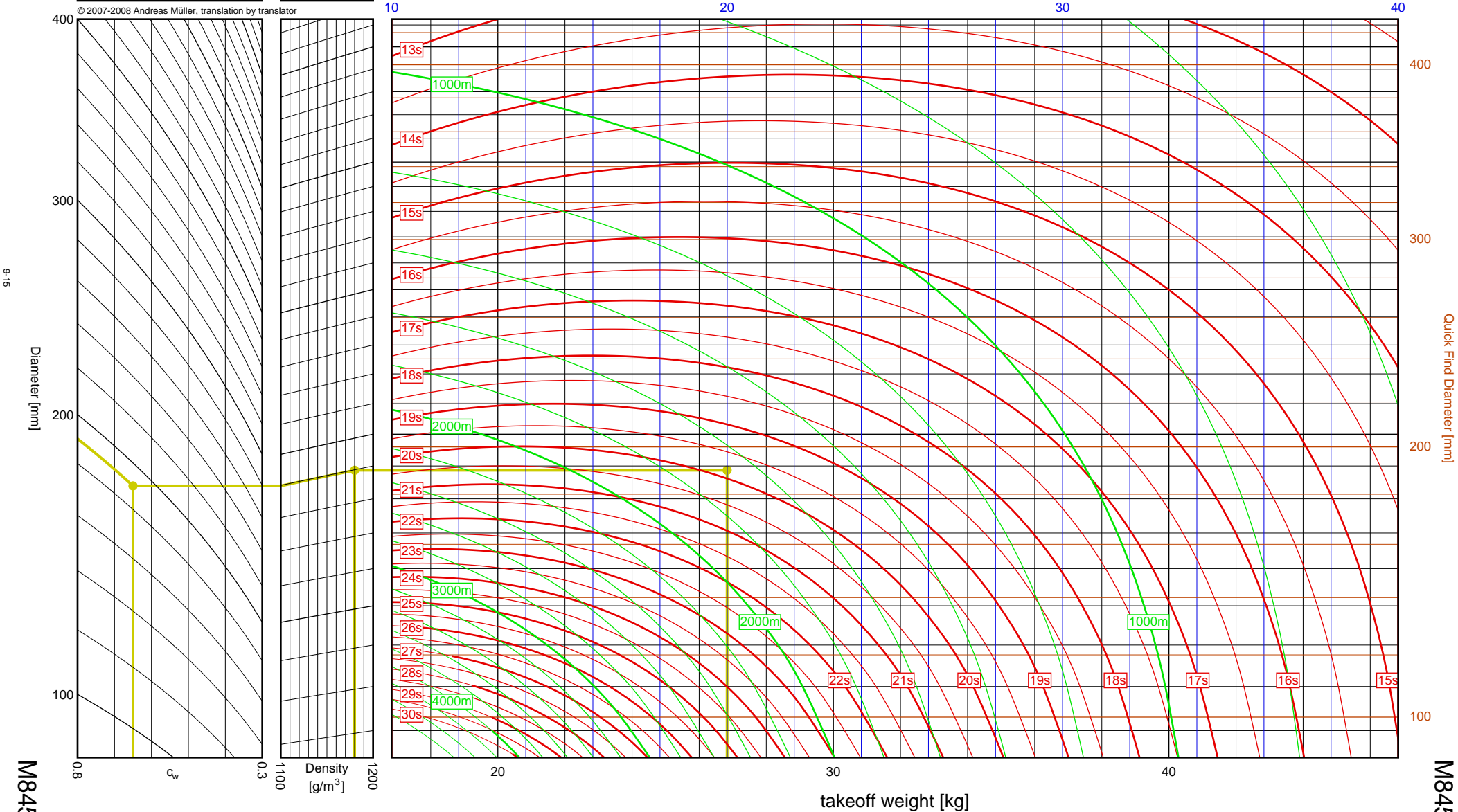
Aerotech	
M845HW	
I_{tot}	= 6601.6 Ns
F_{avg}	= 880.2 N
t_{burn}	= 7.50 s
d	= 98 mm
Data source: Aerotech	



1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 190mm, drag = 0.65, density = 1180 g/m³, weight = 26.833kg
 Results: time to apogee: 19.9s, expected altitude: 1670m

empty weight [kg]



7.5" ⁹

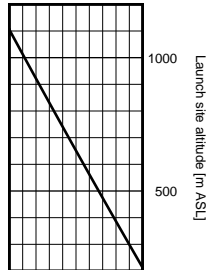
M845HW

M845HW

Aerotech
M1315W

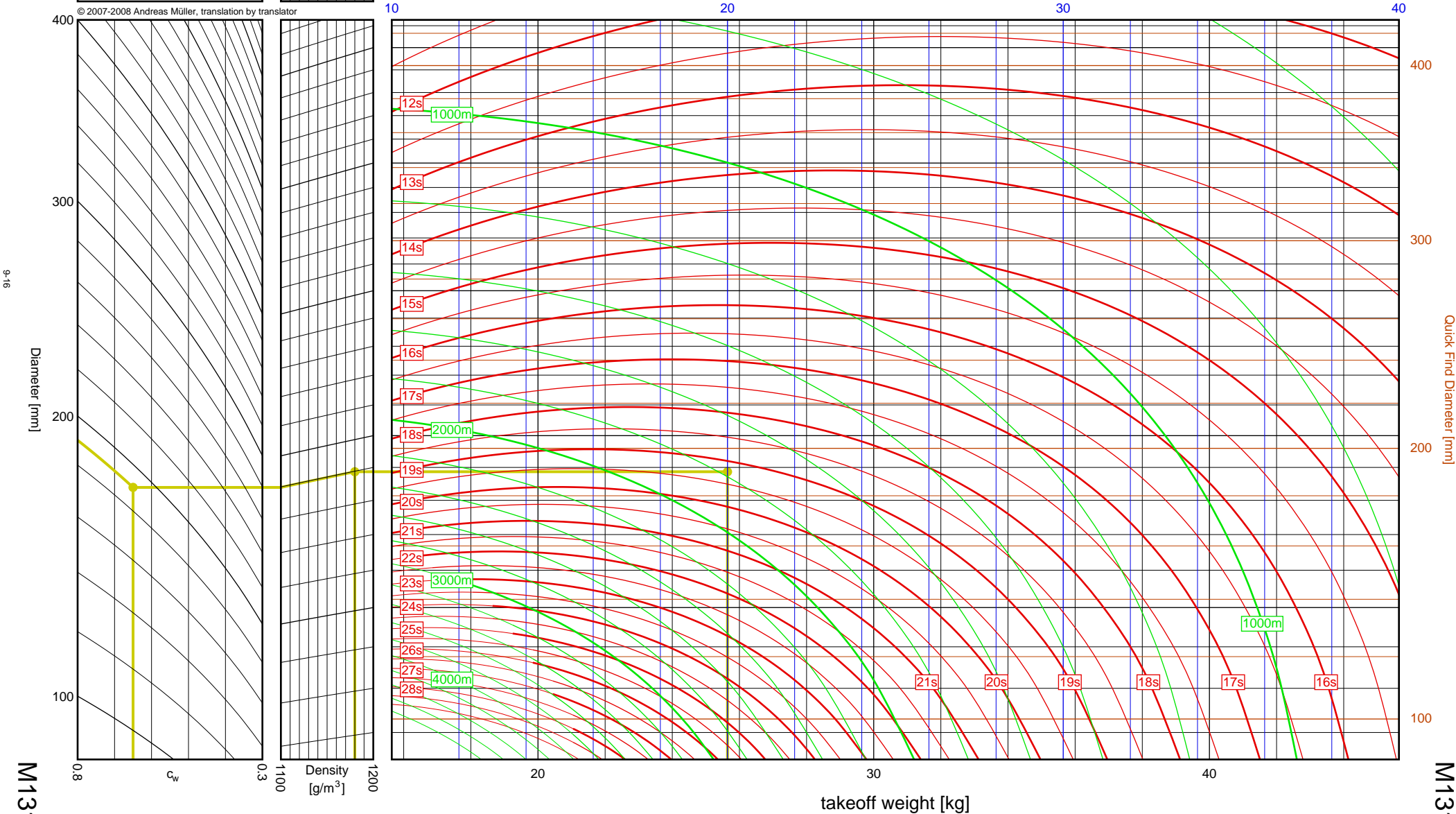
I_{tot} = 6645.3 Ns
 F_{avg} = 1117.1 N
 t_{burn} = 5.95 s
 d = 75 mm

Data source:
Aerotech

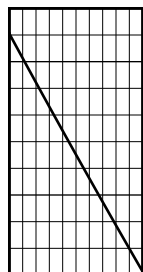


1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
 2. Move along horizontal to left border of density scale
 3. Move up slanted line to vertical line matching density at launch site
 4. From intersection point move horizontally to vertical line matching rocket mass
 5. Read off expected time to apogee from red curves, altitude from green curves
- Sample: diameter = 190mm, drag = 0.65, density = 1180 g/m³, weight = 25.645kg
Results: time to apogee: 19.2s, expected altitude: 1784m

empty weight [kg]



Aerotech M1600R	
I_{tot}	= 6993.2 Ns
F_{avg}	= 1554.0 N
t_{burn}	= 4.50 s
d	= 98 mm
Data source: Aerotech	

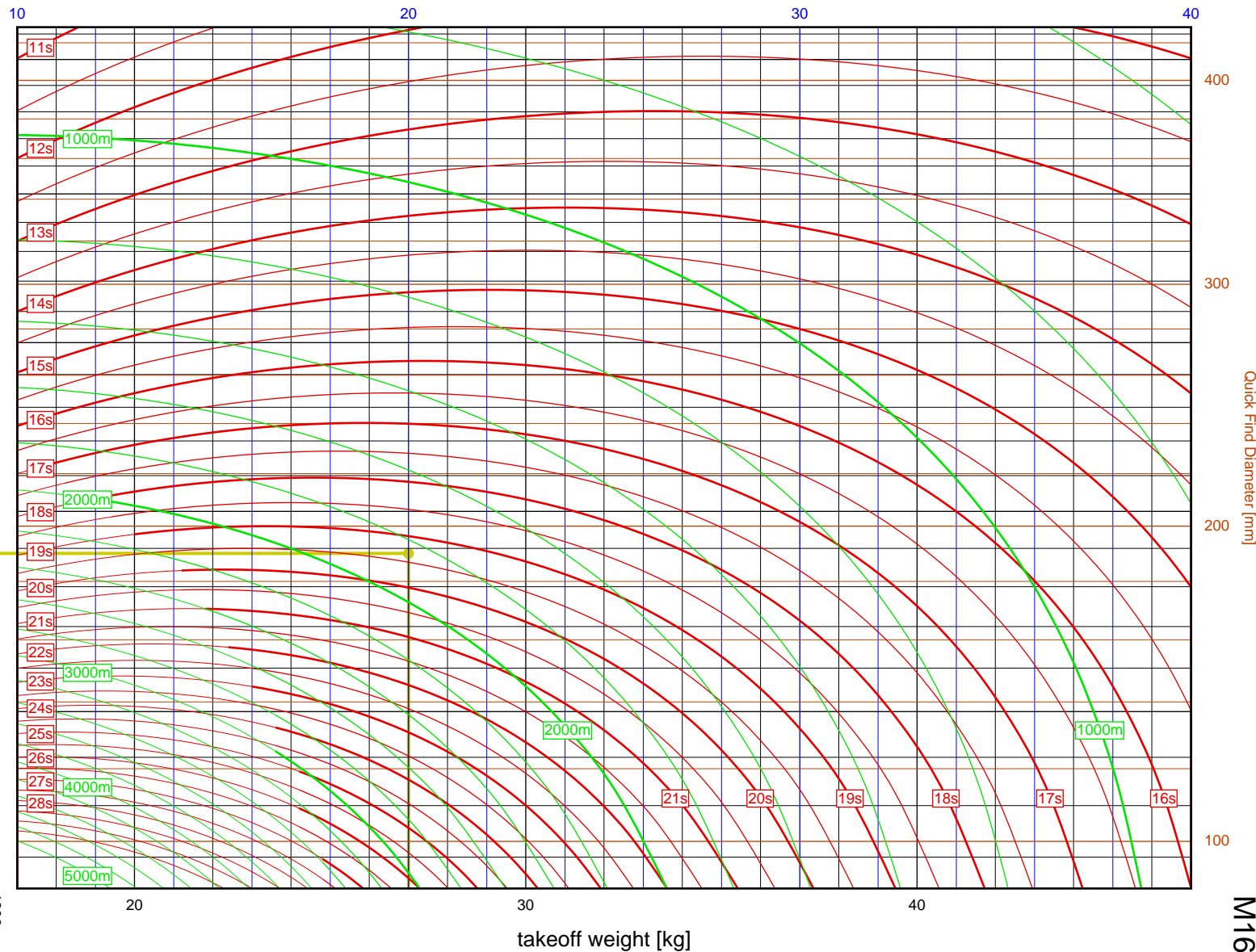


Launch site altitude [m ASL]

1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 190mm, drag = 0.65, density = 1180 g/m³, weight = 27.004kg
 Results: time to apogee: 19.3s, expected altitude: 1844m

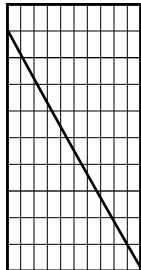
empty weight [kg]



takeoff weight [kg]

7.5"

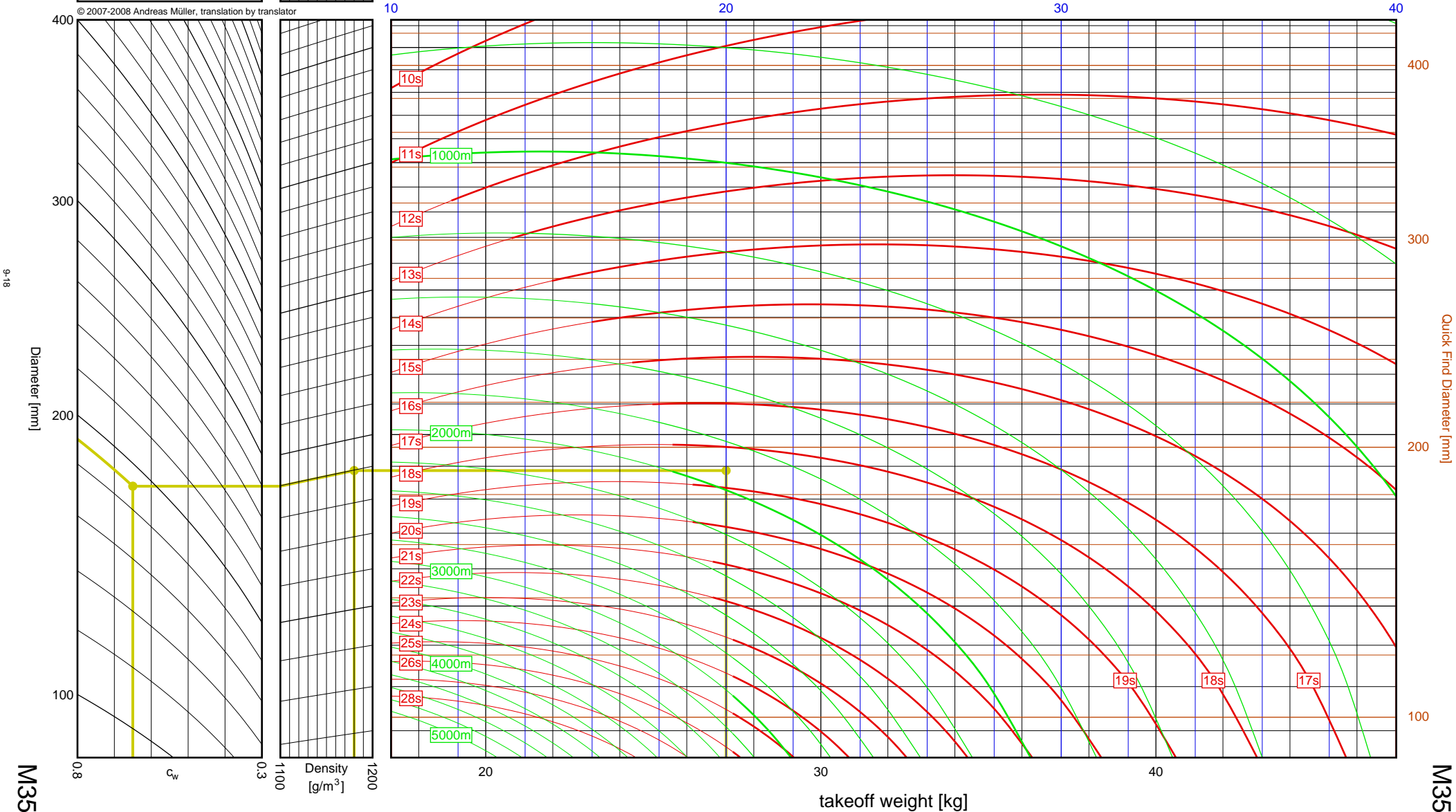
Aerotech	
M3500R	
I_{tot}	= 7312.0 Ns
F_{avg}	= 3111.6 N
t_{burn}	= 2.35 s
d	= 75 mm
Data source: Aerotech	



1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 190mm, drag = 0.65, density = 1180 g/m³, weight = 27.173kg
 Results: time to apogee: 18.6s, expected altitude: 1919m

empty weight [kg]



7.5"

M3500R

Quick-Find Diameter [mm]

300

400

500

600

700

800

900

1000

1100

1200

1300

1400

1500

1600

1700

1800

1900

2000

2100

2200

2300

2400

2500

2600

2700

2800

2900

3000

3100

3200

3300

3400

3500

3600

3700

3800

3900

4000

4100

4200

4300

4400

4500

4600

4700

4800

4900

5000

5100

5200

5300

5400

5500

5600

5700

5800

5900

6000

6100

6200

6300

6400

6500

6600

6700

6800

6900

7000

7100

7200

7300

7400

7500

7600

7700

7800

7900

8000

8100

8200

8300

8400

8500

8600

8700

8800

8900

9000

9100

9200

9300

9400

9500

9600

9700

9800

9900

10000

10100

10200

10300

10400

10500

10600

10700

10800

10900

11000

11100

11200

11300

11400

11500

11600

11700

11800

11900

12000

12100

12200

12300

12400

12500

12600

12700

12800

12900

13000

13100

13200

13300

13400

13500

13600

13700

13800

13900

14000

14100

14200

14300

14400

14500

14600

14700

14800

14900

15000

15100

15200

15300

15400

15500

15600

15700

15800

15900

16000

16100

16200

16300

16400

16500

16600

16700

16800

16900

17000

17100

17200

17300

17400

17500

17600

17700

17800

17900

18000

18100

18200

18300

18400

18500

18600

18700

18800

18900

19000

19100

19200

19300

19400

19500

19600

19700

19800

19900

20000

20100

20200

20300

20400

20500

20600

20700

20800

20900

21000

21100

21200

21300

21400

21500

21600

21700

21800

21900

22000

22100

22200

22300

22400

22500

22600

22700

22800

22900

23000

23100

23200

23300

23400

23500

23600

23700

23800

23900

24000

24100

24200

24300

24400

24500

24600

24700

24800

24900

25000

25100

25200

25300

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25500

25600

25700

25800

25900

26000

26100

26200

26300

26400

26500

26600

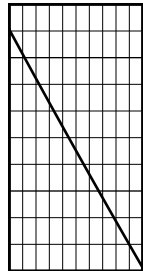
26700

26800

26900

27000</

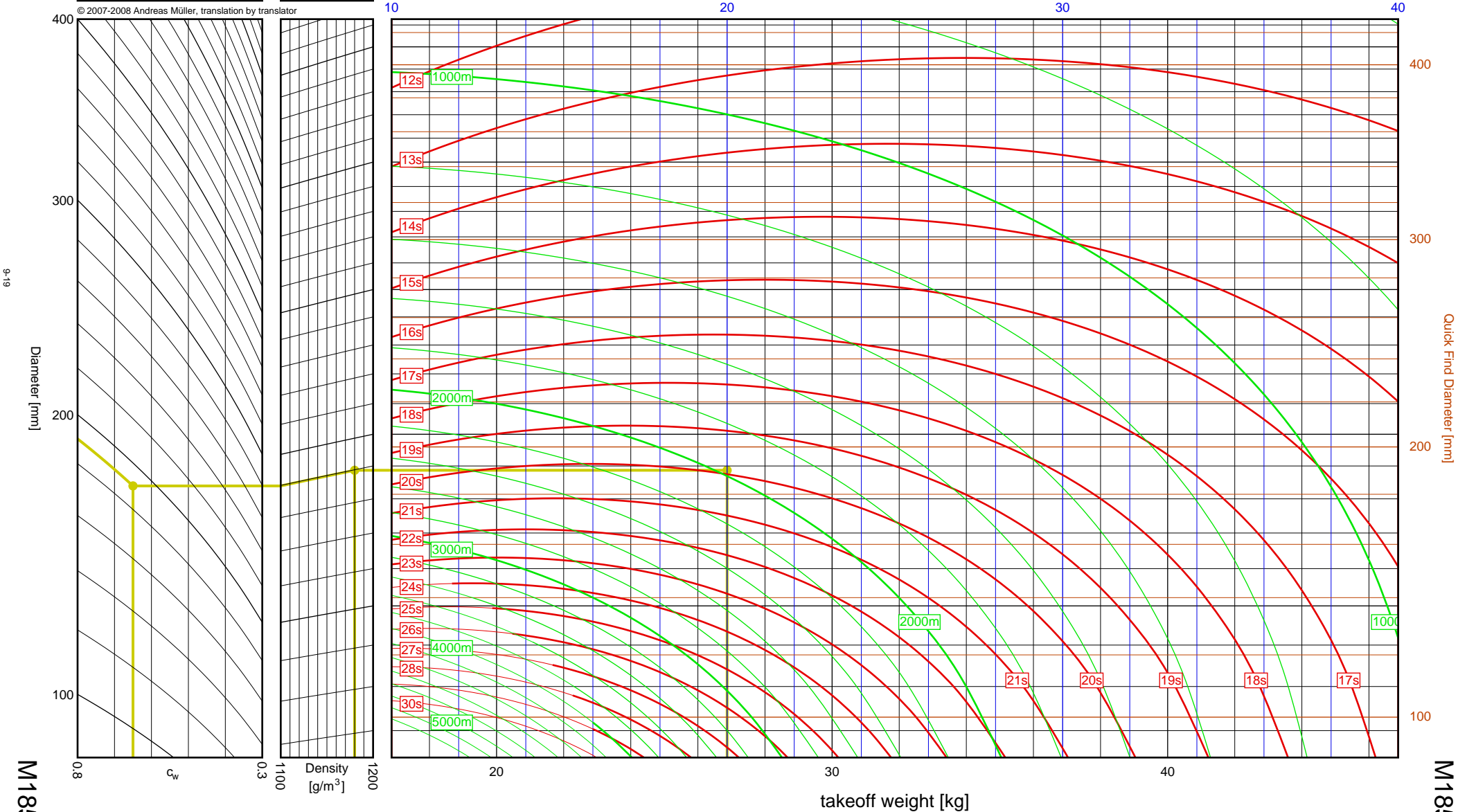
Aerotech	
M1850W	
I_{tot}	= 7365.9 Ns
F_{avg}	= 1133.2 N
t_{burn}	= 6.50 s
d	= 75 mm
Data source: Aerotech	



1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 190mm, drag = 0.65, density = 1180 g/m³, weight = 26.871kg
 Results: time to apogee: 19.9s, expected altitude: 1978m

empty weight [kg]



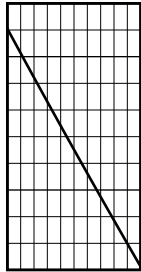
7.5"

M1850W

M1850W

M1419W

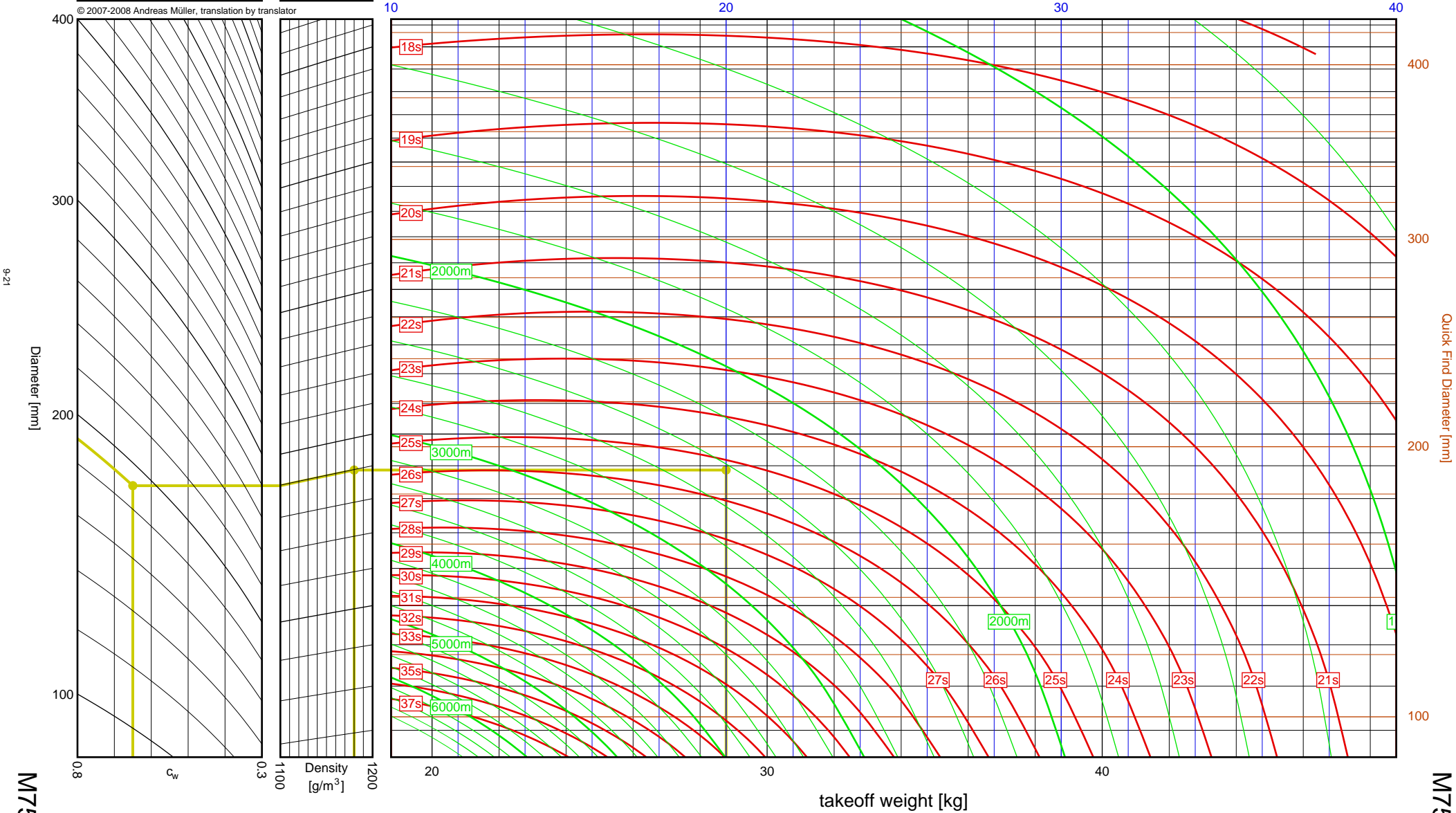
Aerotech	
M750W	
I_{tot}	= 9255.9 Ns
F_{avg}	= 578.5 N
t_{burn}	= 16.00 s
d	= 98 mm
Data source: Aerotech	



1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 190mm, drag = 0.65, density = 1180 g/m³, weight = 28.776kg
 Results: time to apogee: 25.3s, expected altitude: 2429m

empty weight [kg]



7.5"

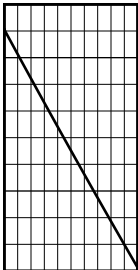
M750W

M750W

Aerotech
N1000W

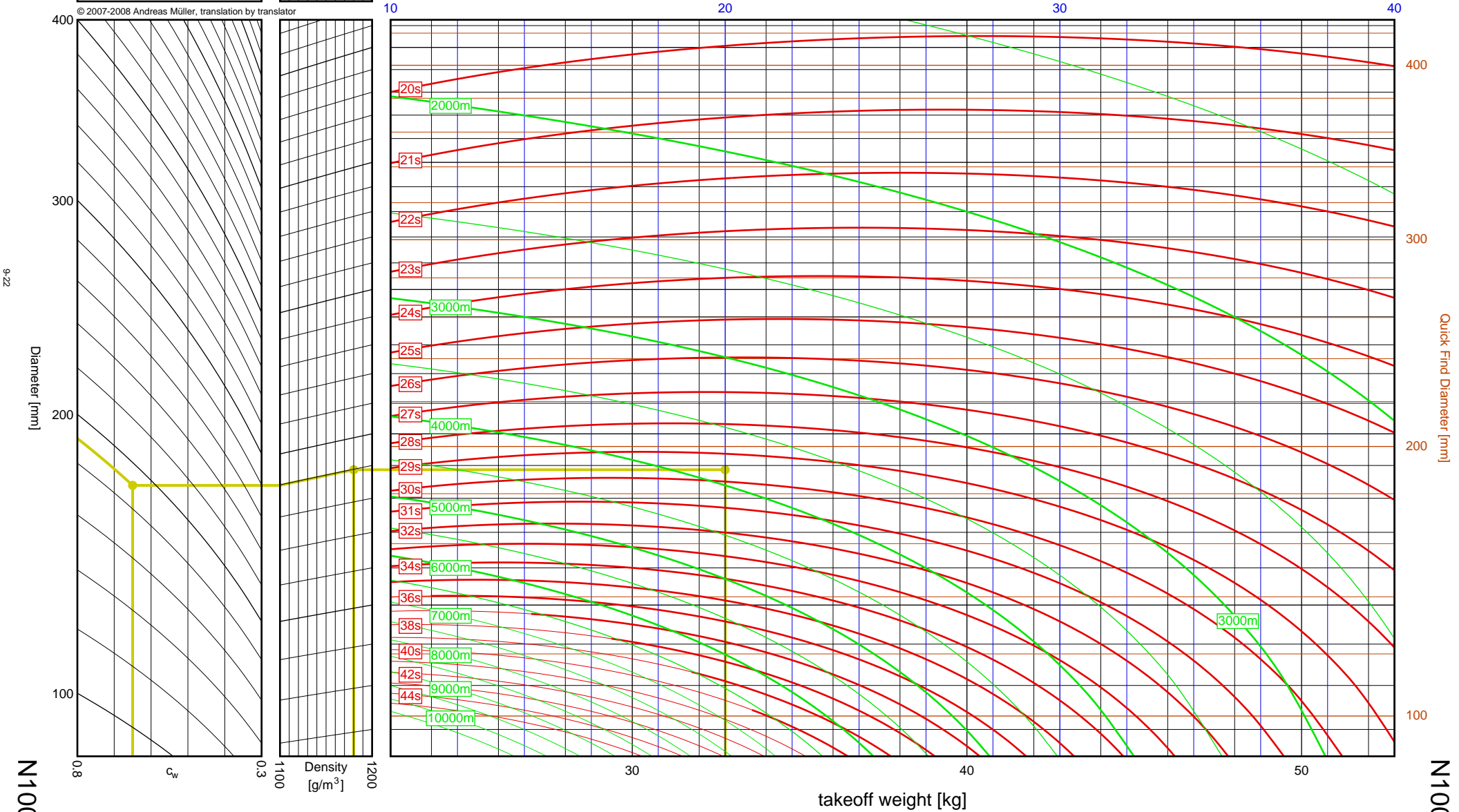
I_{tot} = 14138.4 Ns
 F_{avg} = 876.2 N
 t_{burn} = 16.14 s
 d = 98 mm

Data source:
Aerotech

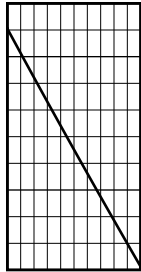


1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
 2. Move along horizontal to left border of density scale
 3. Move up slanted line to vertical line matching density at launch site
 4. From intersection point move horizontally to vertical line matching rocket mass
 5. Read off expected time to apogee from red curves, altitude from green curves
- Sample: diameter = 190mm, drag = 0.65, density = 1180 g/m³, weight = 32.777kg
Results: time to apogee: 29.6s, expected altitude: 3861m

empty weight [kg]



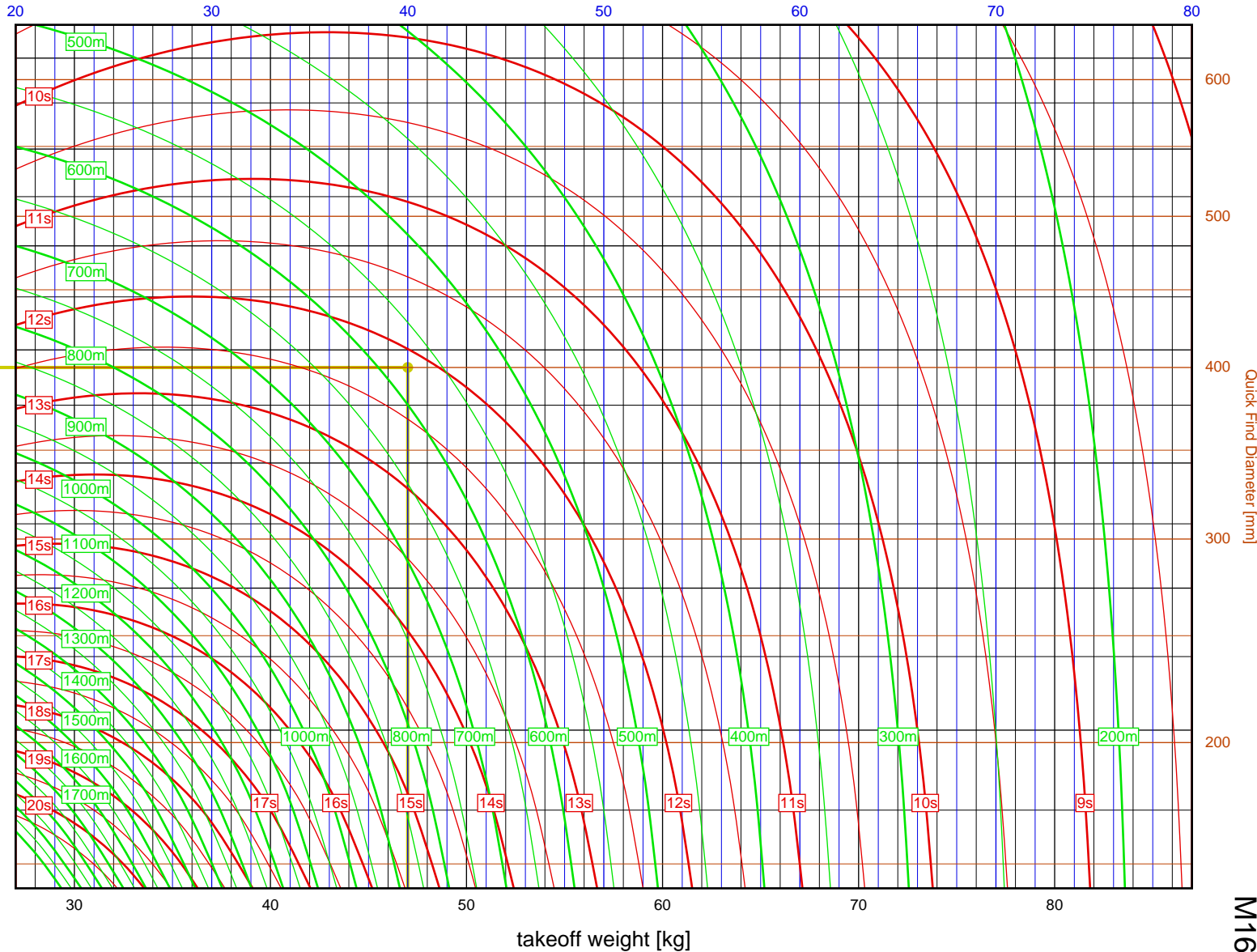
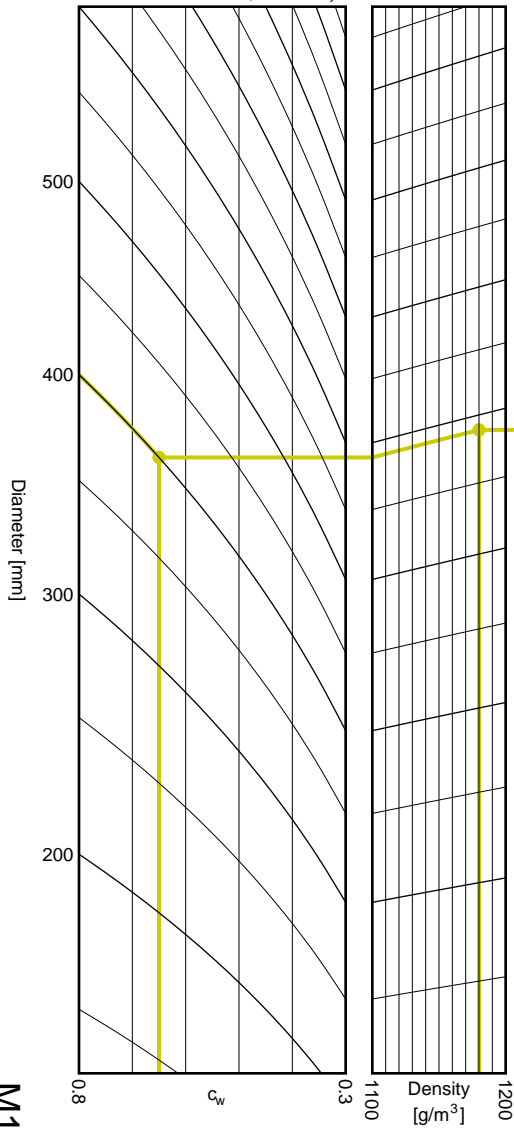
Aerotech	
M1600R	
I_{tot}	= 6993.2 Ns
F_{avg}	= 1554.0 N
t_{burn}	= 4.50 s
d	= 98 mm
Data source: Aerotech	



1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 400mm, drag = 0.65, density = 1180 g/m³, weight = 47.004kg
 Results: time to apogee: 12.1s, expected altitude: 577m

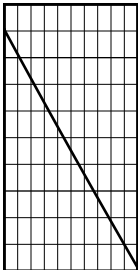
empty weight [kg]



Aerotech
M2400T

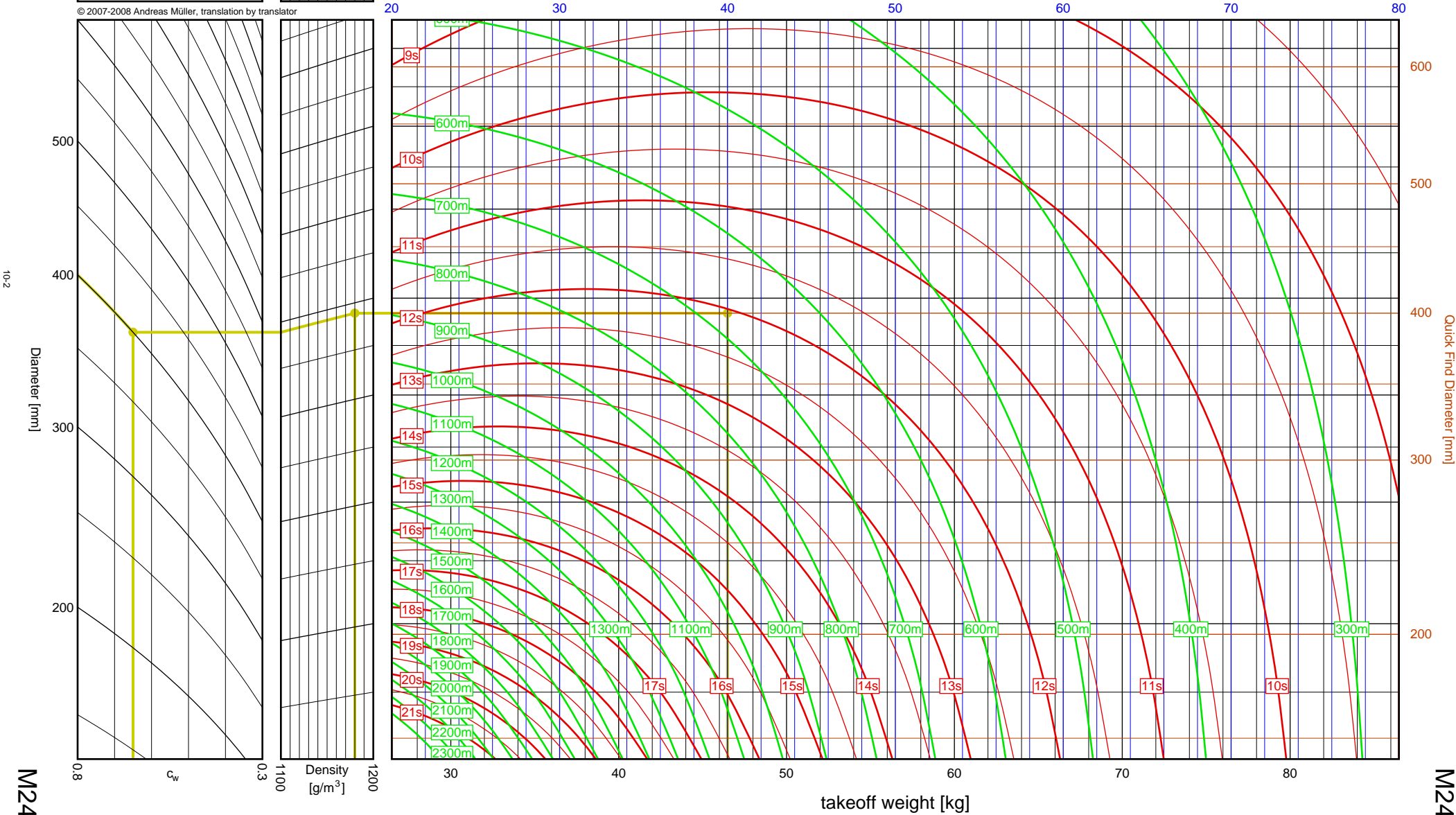
I_{tot} = 7619.8 Ns
 F_{avg} = 2177.1 N
 t_{burn} = 3.50 s
 d = 98 mm

Data source:
Aerotech

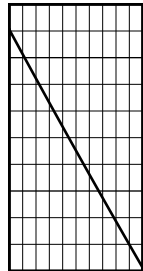


1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
 2. Move along horizontal to left border of density scale
 3. Move up slanted line to vertical line matching density at launch site
 4. From intersection point move horizontally to vertical line matching rocket mass
 5. Read off expected time to apogee from red curves, altitude from green curves
- Sample: diameter = 400mm, drag = 0.65, density = 1180 g/m³, weight = 46.483kg
Results: time to apogee: 12.0s, expected altitude: 675m

empty weight [kg]



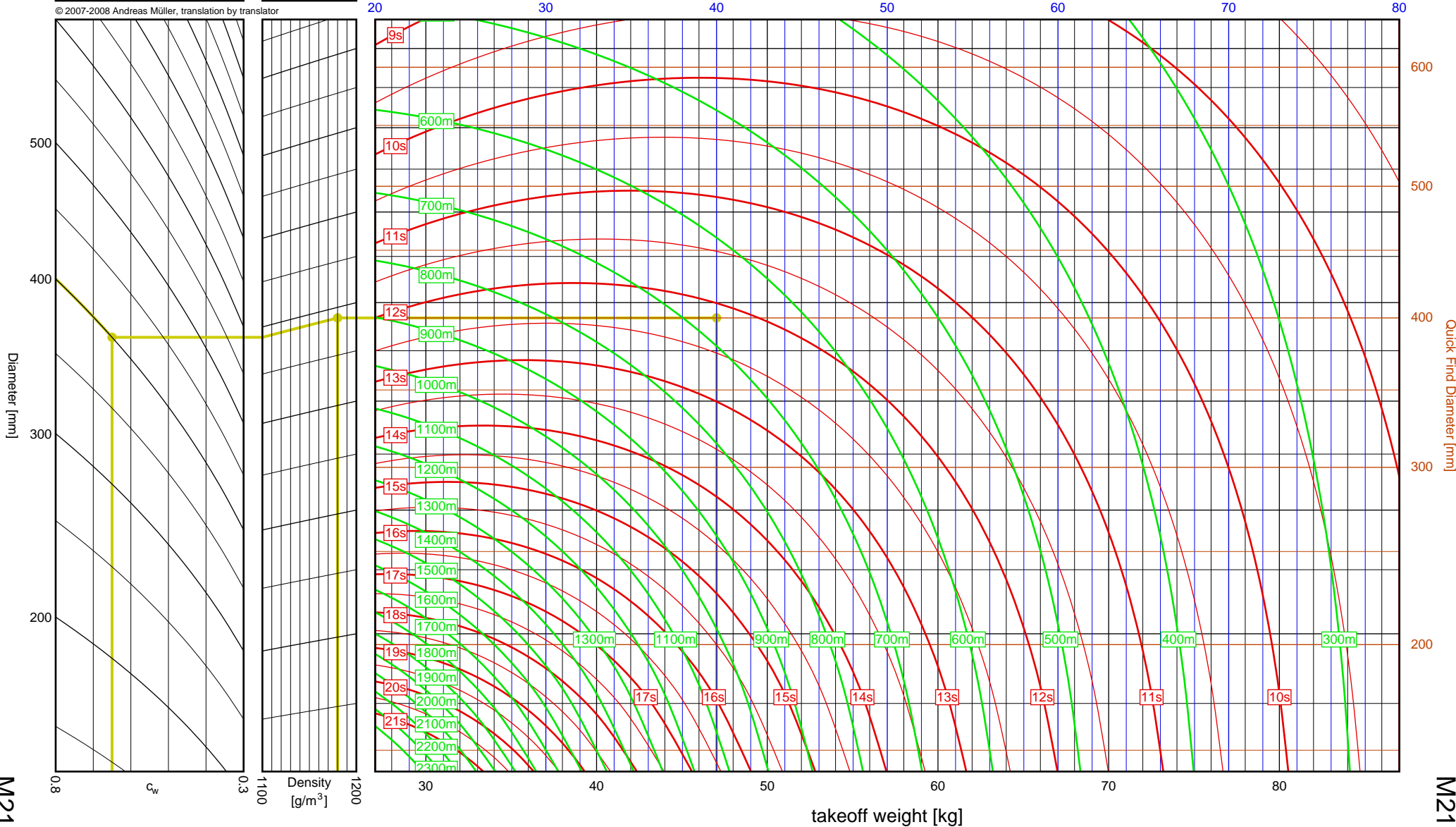
Aerotech M2100G	
I_{tot}	= 7655.8 Ns
F_{avg}	= 2162.1 N
t_{burn}	= 3.54 s
d	= 98 mm
Data source: Aerotech	



1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 400mm, drag = 0.65, density = 1180 g/m³, weight = 47.030kg
 Results: time to apogee: 12.1s, expected altitude: 673m

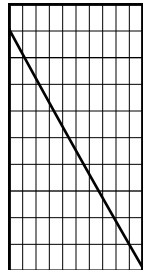
empty weight [kg]



Aerotech
M1800FJ

I_{tot} = 8212.7 Ns
 F_{avg} = 1658.5 N
 t_{burn} = 4.95 s
 d = 98 mm

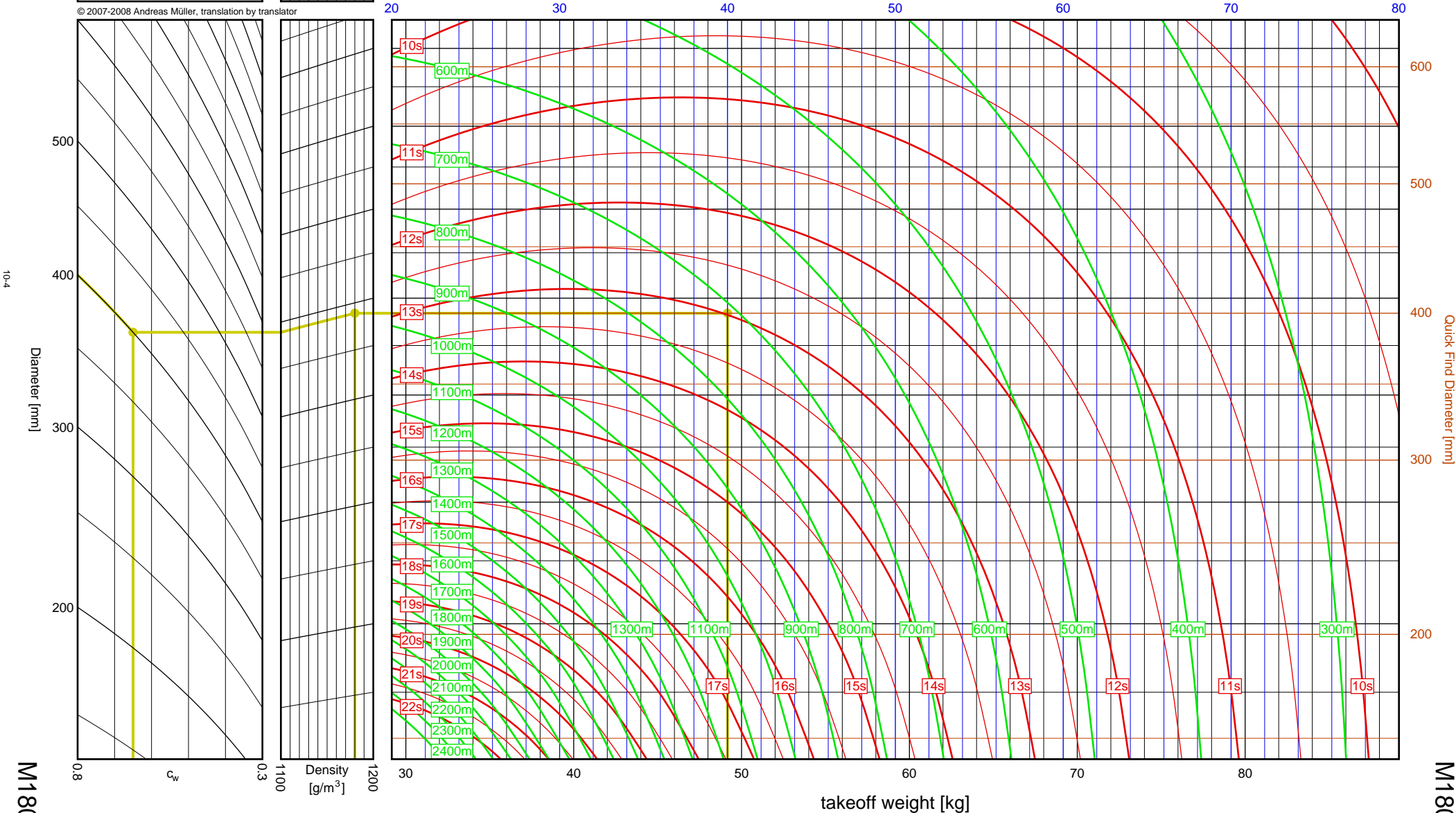
Data source:
Aerotech



1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 400mm, drag = 0.65, density = 1180 g/m³, weight = 49.162kg
Results: time to apogee: 13.0s, expected altitude: 711m

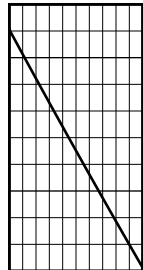
empty weight [kg]



Aerotech
M2000R

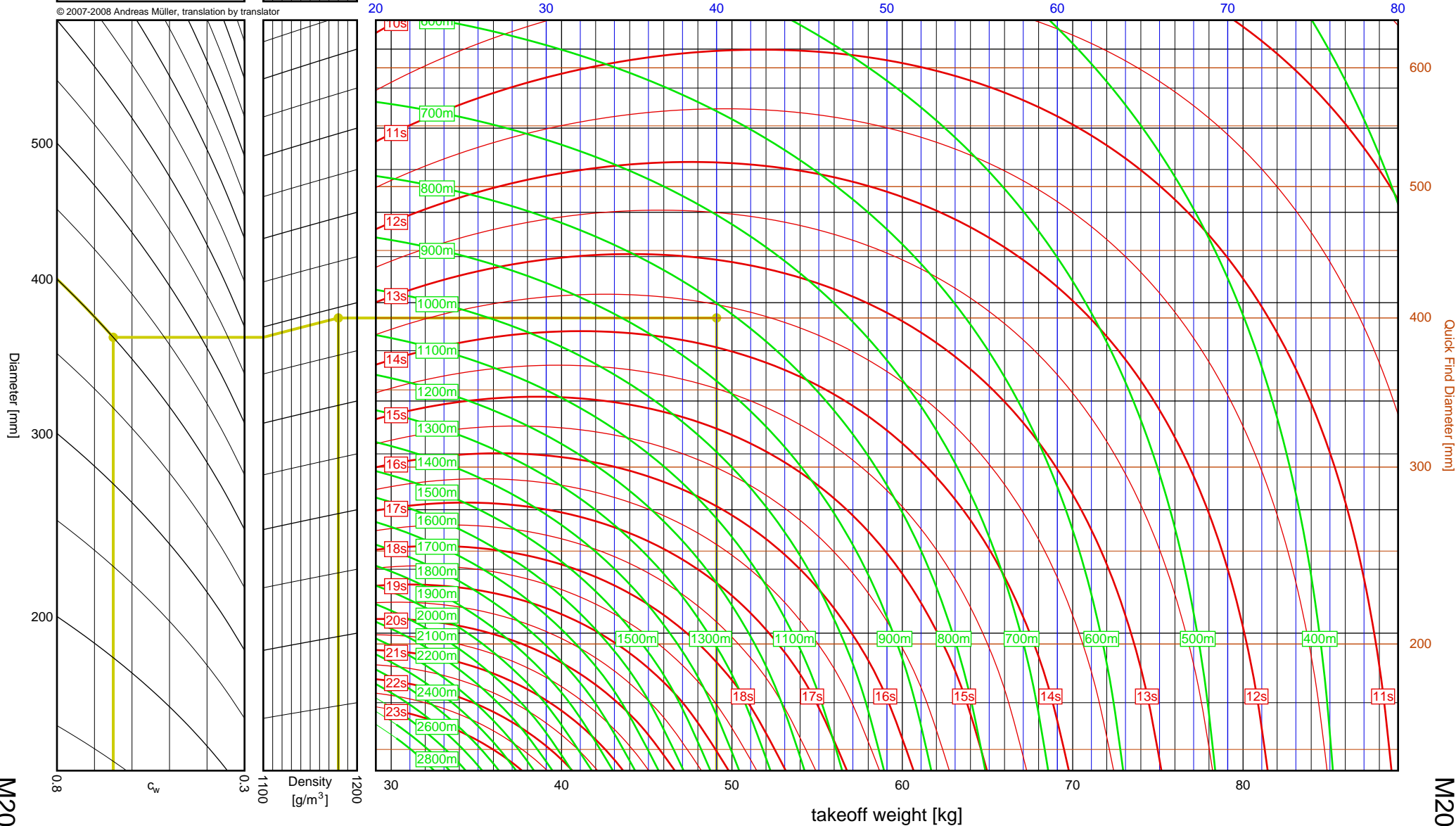
I_{tot} = 9181.0 Ns
 F_{avg} = 1953.4 N
 t_{burn} = 4.70 s
 d = 98 mm

Data source:
Aerotech

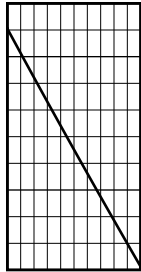


1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
 2. Move along horizontal to left border of density scale
 3. Move up slanted line to vertical line matching density at launch site
 4. From intersection point move horizontally to vertical line matching rocket mass
 5. Read off expected time to apogee from red curves, altitude from green curves
- Sample: diameter = 400mm, drag = 0.65, density = 1180 g/m³, weight = 49.099kg
Results: time to apogee: 13.7s, expected altitude: 819m

empty weight [kg]



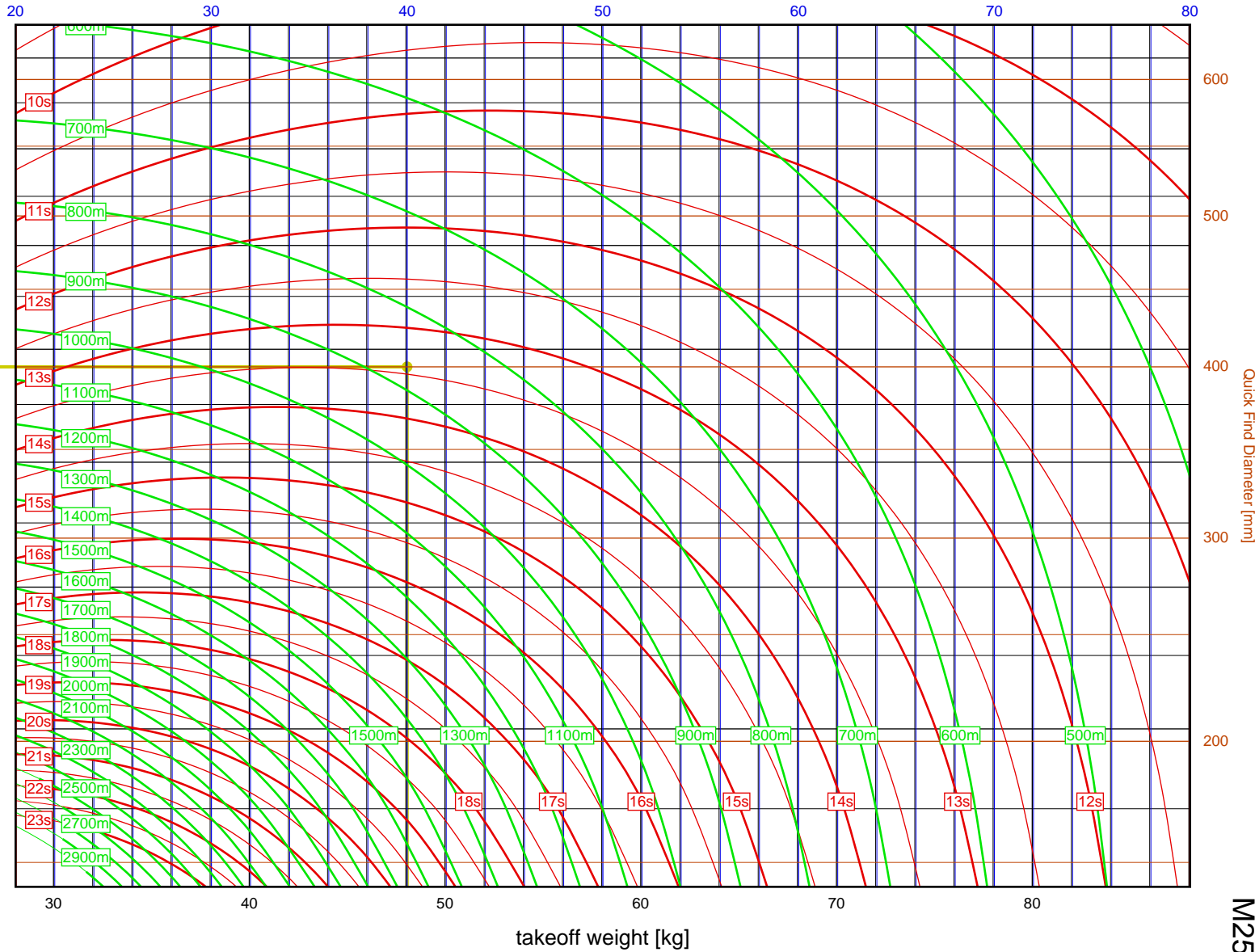
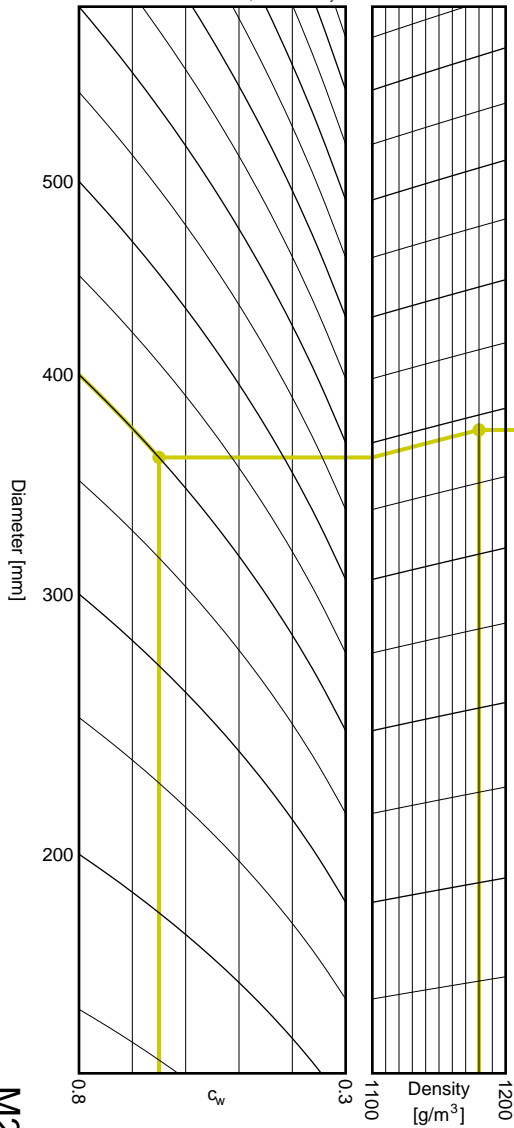
Aerotech	
M2500T	
I_{tot}	= 9573.0 Ns
F_{avg}	= 2245.1 N
t_{burn}	= 4.26 s
d	= 98 mm
Data source: Aerotech	



1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
2. Move along horizontal to left border of density scale
3. Move up slanted line to vertical line matching density at launch site
4. From intersection point move horizontally to vertical line matching rocket mass
5. Read off expected time to apogee from red curves, altitude from green curves

Sample: diameter = 400mm, drag = 0.65, density = 1180 g/m³, weight = 48.064kg
 Results: time to apogee: 13.4s, expected altitude: 871m

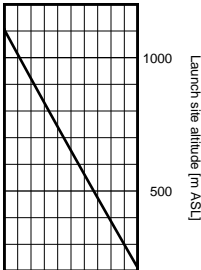
empty weight [kg]



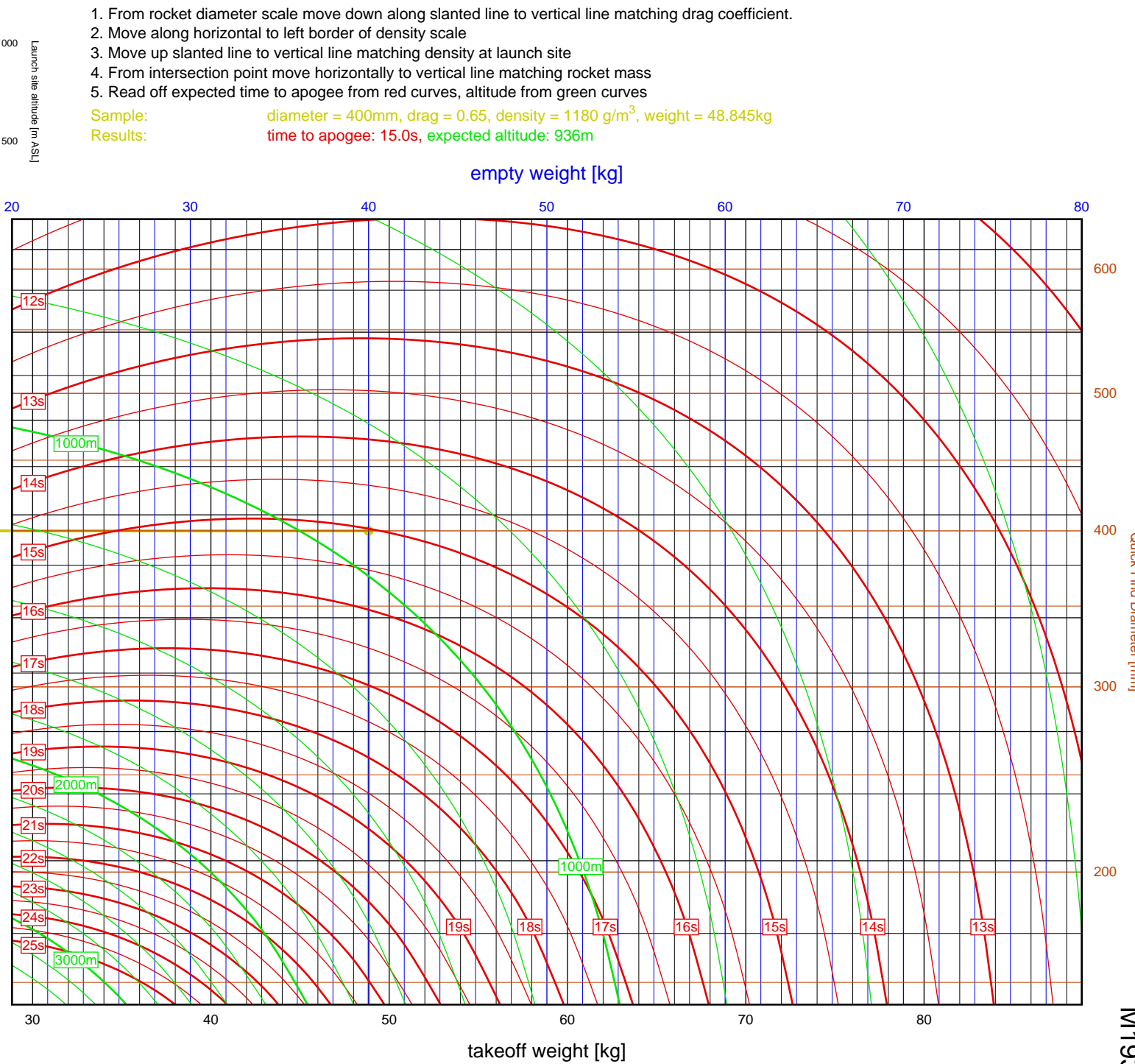
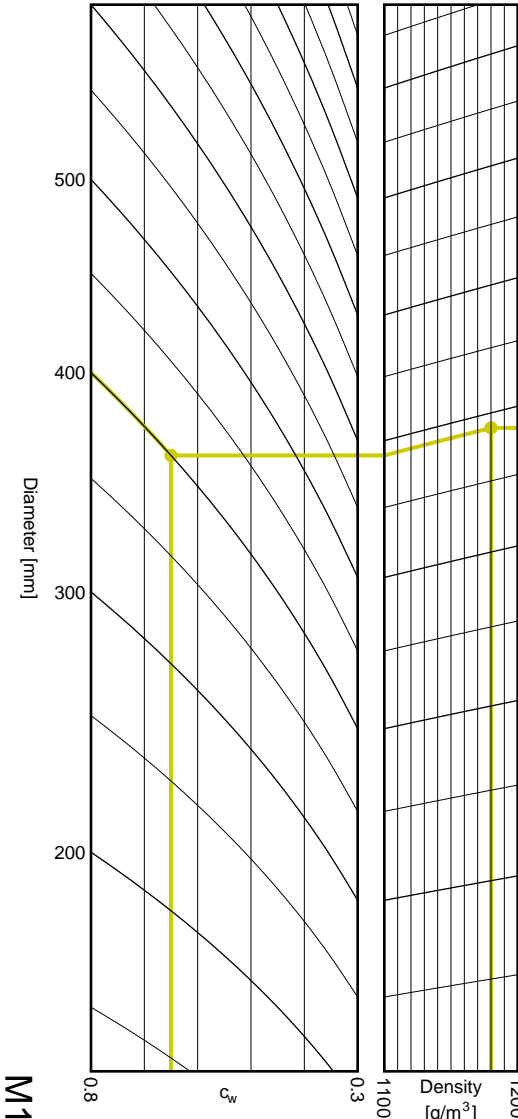
Aerotech
M1939W

I_{tot} = 10339.7 Ns
 F_{avg} = 1477.1 N
 t_{burn} = 7.00 s
 d = 98 mm

Data source:
Aerotech



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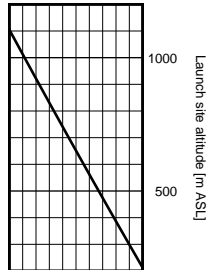
M1939W

M1939W

Aerotech
N2000W

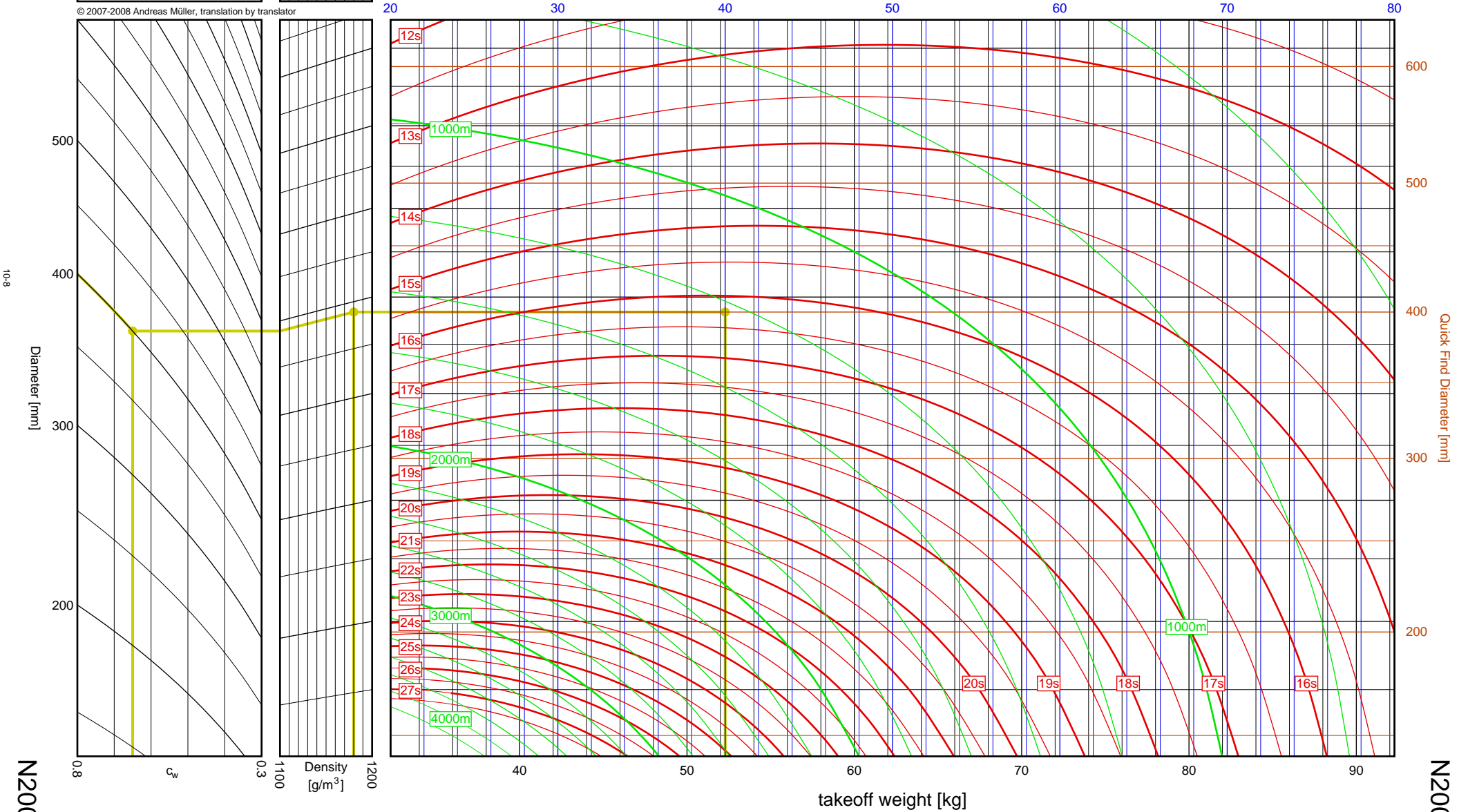
I_{tot} = 13263.4 Ns
 F_{avg} = 1727.2 N
 t_{burn} = 7.68 s
 d = 98 mm

Data source:
Aerotech

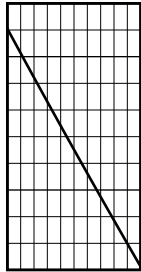


1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
 2. Move along horizontal to left border of density scale
 3. Move up slanted line to vertical line matching density at launch site
 4. From intersection point move horizontally to vertical line matching rocket mass
 5. Read off expected time to apogee from red curves, altitude from green curves
- Sample: diameter = 400mm, drag = 0.65, density = 1180 g/m³, weight = 52.283kg
- Results: time to apogee: 16.3s, expected altitude: 1224m

empty weight [kg]

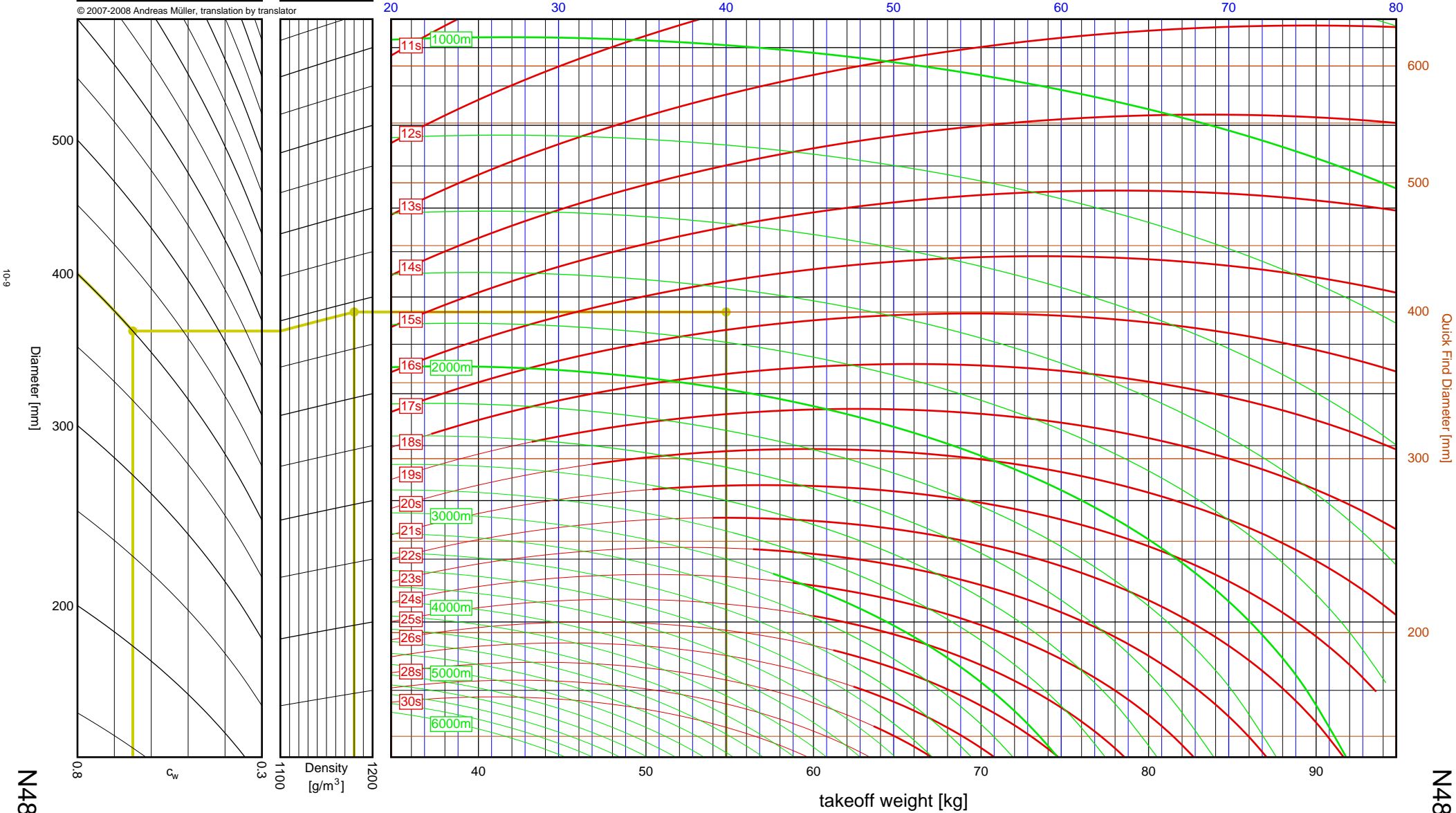


Aerotech	
N4800T	
I_{tot}	= 19273.9 Ns
F_{avg}	= 3702.2 N
t_{burn}	= 5.21 s
d	= 98 mm
Data source: Aerotech	



1. From rocket diameter scale move down along slanted line to vertical line matching drag coefficient.
 2. Move along horizontal to left border of density scale
 3. Move up slanted line to vertical line matching density at launch site
 4. From intersection point move horizontally to vertical line matching rocket mass
 5. Read off expected time to apogee from red curves, altitude from green curves
- Sample: diameter = 400mm, drag = 0.65, density = 1180 g/m³, weight = 54.784kg
 Results: time to apogee: 16.6s, expected altitude: 1686m

empty weight [kg]



A8	1-1	G76G	3-32	J1999N	6-38, 7-22	L952W	9-8
B4	1-2	G77R	3-25	J210H	6-35, 7-13	M1297W	9-12
C6	1-3	G78G	3-29	J250FJ	6-27, 7-4	M1315W	9-16
D12	2-1	G79W	3-26	J260HW	7-19	M1419W	9-20
D13W	2-5	G80T	3-34	J275W	6-32, 7-9	M1500G	9-10
D15T	2-7	H112J	4-15	J315R	6-29, 7-6	M1550R	9-13
D21T	2-6	H123W	4-8	J350W	5-22, 6-25, 7-3	M1600R	10-1, 9-17
D24T	2-2	H128W	4-2	J350W.5	5-20, 6-23, 7-1	M1800FJ	10-4
D7-RC	2-3	H148R	4-10	J390HW-TURBO	7-23	M1850W	9-19
D9W	2-4	H165R	4-3	J401FJ	7-17	M1939W	10-7
E11J	2-8	H180W	4-7	J415W	7-20	M2000R	10-5
E12J-RC	2-9	H210R	4-9	J420R	5-21, 6-24, 7-2	M2030G	9-11
E15W	2-14	H220T	4-11	J460T	6-30, 7-7	M2100G	10-3
E16W	2-11	H238T	4-1	J500G	6-28, 7-5	M2400T	10-2
E18W	2-15	H242T	4-13	J540R	7-18	M2500T	10-6
E23T	2-10	H250G	4-14	J570W	7-16	M3500R	9-18
E28T	2-13	H268R	4-16	J575FJ	6-31, 7-8	M650W	9-14
E30T	2-12	H55W	4-4	J800T	7-21	M750W	9-21
F12J	2-16	H669N	4-12	J825R	6-36, 7-14	M845HW	9-15
F20W	3-10	H73J	4-5	J90W	6-26	N1000W	9-22
F21W	3-7	H97J	4-6	K1050W	8-16	N2000W	10-8
F22J	3-12	H999N	4-19	K1100T	7-28, 8-4	N4800T	10-9
F23FJ	3-6	I115W	6-10	K1275R	8-8		
F24W	3-2	I117FJ	6-5	K1499N	7-24, 8-1		
F25W	3-14	I1299N	5-11, 6-15	K185W	7-25		
F26FJ	3-11	I154J	4-24, 5-7, 6-7	K1999N	8-18		
F27R	3-3	I161W	4-21, 5-4, 6-3	K250W	8-19		
F35W	3-9	I195J	5-12, 6-16	K270W	8-9		
F37W	3-5	I200W	4-20, 5-3	K458W	8-17		
F39T	3-4	I211W	5-10, 6-14	K485HW	7-30, 8-6		
F40W	3-17	I215R	6-8	K513FJ	7-26, 8-2		
F42T	3-8	I218R	4-18, 5-2, 6-2	K550W	7-29, 8-5		
F50T	3-13	I225FJ	4-23, 5-6, 6-6	K560W	8-15		
F52T	3-15	I229T	6-12	K650T	8-14		
F62T	3-1	I245G	4-22, 5-5, 6-4	K680R	8-12		
G104T	3-16	I284W	5-15, 6-19	K695R	7-27, 8-3		
G142	3-19	I285R	5-9, 6-13	K700W	8-11		
G339N	3-31	I300T	5-8, 6-11	K780R	8-13		
G33J	3-22	I305FJ	5-13, 6-17	K805G	7-31, 8-7		
G35EJ	3-24	I357T	4-17, 5-1, 6-1	K828FJ	8-10		
G38FJ	3-20	I364FJ	5-17, 6-21	L1120W	9-6		
G40W	3-23	I366R	5-16, 6-20	L1150R	9-1		
G53FJ	3-21	I435T	5-14, 6-18	L1170FJ	8-21		
G54W	3-18	I599N	6-9	L1300R	9-4		
G61W	3-30	I600R	5-19, 6-22	L1390G	9-3		
G64W	3-33	I65W	5-18	L1420R	9-5		
G67R	3-28	J1299N	7-12	L1500T	9-7		
G69N	3-35	J135W	6-37, 7-15	L2200G	9-9		
G71R	3-27	J145H	6-33, 7-10	L339N	8-20		
G75J	3-36	J180T	6-34, 7-11	L850W	9-2		