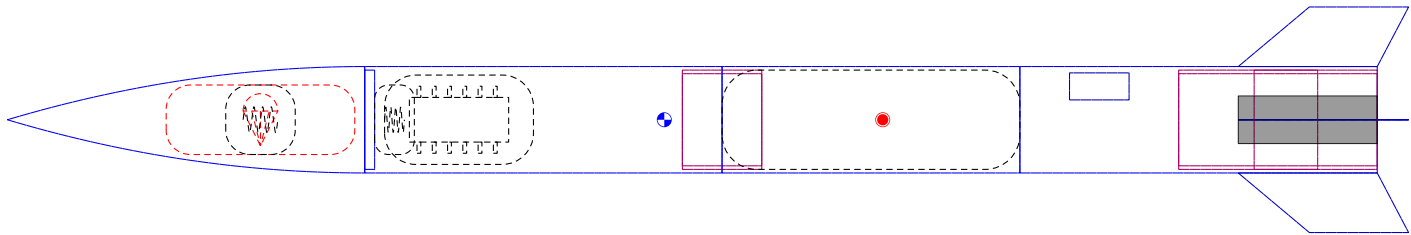


Rocket Design



Rocket
Stages: 1
Mass (with motor): 979 g
Stability: 2.05 cal
CG: 33.1 cm
CP: 44.1 cm

G74W-U

Altitude	272 m	Motor	Avg Thrust	Burn Time	Max Thrust	Total Impulse	Thrust to Wt	Propellant Wt	Size
Flight Time	39.3 s	G74W	76.2 N	1.12 s	91.2 N	85.3 Ns	7.65:1	39.3 g	29/83 mm
Time to Apogee	7.8 s								
Optimum Delay	6.7 s								
Velocity off Pad	11.8 m/s								
Max Velocity	73.1 m/s								
Velocity at Deployment	2.52 m/s								
Landing Velocity	8.88 m/s								

F37-6

Altitude	85.5 m	Motor	Avg Thrust	Burn Time	Max Thrust	Total Impulse	Thrust to Wt	Propellant Wt	Size
Flight Time	15.3 s	F37	32.6 N	1.55 s	46.5 N	50.7 Ns	3.21:1	28.2 g	29/99 mm
Time to Apogee	4.92 s								
Optimum Delay	3.35 s								
Velocity off Pad	7.71 m/s								
Max Velocity	34.1 m/s								
Velocity at Deployment	1.76 m/s								
Landing Velocity	9.04 m/s								

E15-4

Altitude	42 m	Motor	Avg Thrust	Burn Time	Max Thrust	Total Impulse	Thrust to Wt	Propellant Wt	Size
Flight Time	9.93 s	E15	15.7 N	2.53 s	28.8 N	39.8 Ns	1.63:1	20.1 g	24/70
Time to Apogee	4.09 s								mm
Optimum Delay	1.5 s								
Velocity off Pad	5.47 m/s								
Max Velocity	17.3 m/s								
Velocity at Deployment	4.83 m/s								
Landing Velocity	8.8 m/s								

Parts Detail

Sustainer



Nose cone

PLA
(1.3 g/cm³)

Parabolic
series

Len: 18 cm

Mass: 47 g



Parachute

Polyethylene
(thin)
(15 g/m²)

Dia_{out} 60 cm

Len: 9.5 cm

Mass: 14.6 g

Shroud Lines

Elastic cord
(flat 6 mm, 1/4
in)
(4.3 g/m)

Lines: 8

Len: 30 cm



Shock cord

Elastic cord
(flat 6 mm, 1/4
in)
(4.3 g/m)

Len: 10 cm

Mass: 0.43 g



Body tube

PLA
(1.3 g/cm³)

Dia_{in} 5 cm
Dia_{out} 5.36 cm

Len: 18 cm

Mass: 68.5 g



Tube coupler

PLA
(1.3 g/cm³)

Dia_{in} 4.64 cm
Dia_{out} 5 cm

Len: 4 cm

Mass: 14.2 g



Shock cord

Elastic cord
(flat 6 mm, 1/4
in)
(4.3 g/m)

Len: 40 cm

Mass: 1.72 g



Altimeter

Dia_{out} 4.5 cm

Mass: 500 g



Body tube

PLA
(1.3 g/cm³)

Dia_{in} 5 cm
Dia_{out} 5.36 cm

Len: 15 cm

Mass: 57.1 g



Tolerance

Dia_{out} 5 cm

Mass: 100 g



Body tube

PLA
(1.3 g/cm³)

Dia_{in} 5 cm
Dia_{out} 5.36 cm

Len: 18 cm

Mass: 68.5 g



Trapezoidal fin set (4)

PLA
(1.3 g/cm³)

Thick: 0.2 cm

Mass: 18.7 g



Launch lug

PLA
(1.3 g/cm³)

Dia_{in} 1 cm
Dia_{out} 1.36 cm

Len: 3 cm

Mass: 2.6 g



Inner Tube

PLA
(1.3 g/cm³)

Dia_{in} 4.64 cm
Dia_{out} 5 cm

Len: 10 cm

Mass: 35.4 g



Centering ring

PLA
(1.3 g/cm³)

Dia_{in} 5 cm
Dia_{out} 5 cm

Len: 3.2 cm

Mass: 0 g

