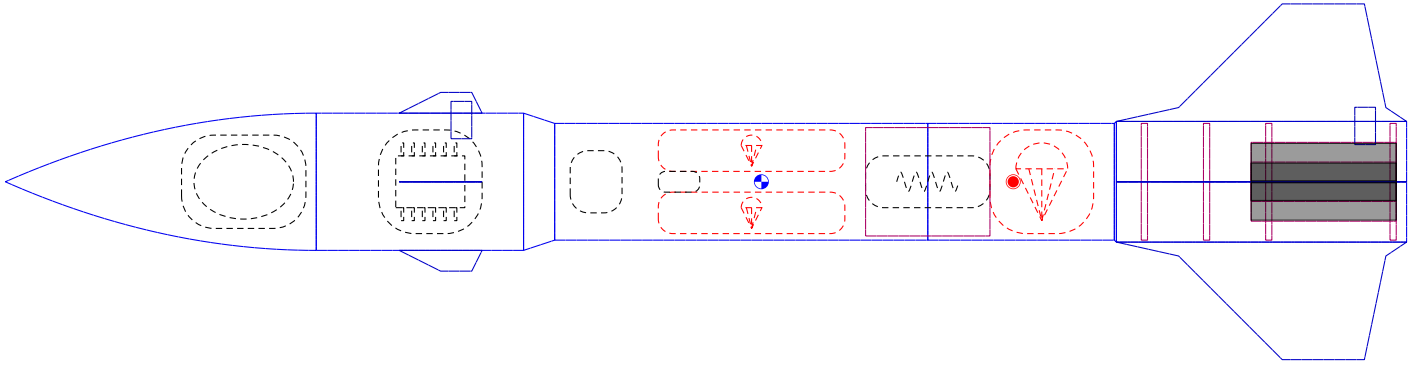


Rocket Design



Rocket

Stages: 1

Mass (with motor): 614 g

Stability: 1.84 cal

CG: 36.5 cm

CP: 48.6 cm

3×D9-5

Altitude	278 m	Motor	Avg Thrust	Burn Time	Max Thrust	Total Impulse	Thrust to Wt	Propellant Wt	Size
Flight Time	42.2 s	D9 (×3)	9.16 N	2.18 s	25 N	20 Ns	1.52:1	16.1 g	18/70 mm
Time to Apogee	7.86 s	Total:					59.9 Ns	4.56:1	48.3 g
Optimum Delay	5.79 s								
Velocity off Pad	13.7 m/s								
Max Velocity	72 m/s								
Velocity at Deployment	8.72 m/s								
Landing Velocity	4.76 m/s								

Parts Detail

Sustainer



Nose cone

3D Print
(1.23 g/cm³)

Parabolic
series

Len: 15 cm

Mass: 21 g



Body tube

3D Print
(1.23 g/cm³)

Dia_{in} 6.46 cm
Dia_{out} 6.62 cm

Len: 10 cm

Mass: 20.2 g



Egg

Dia_{out} 4.5 cm

Mass: 63 g



Arduino Fins (4)

Balsa
(0.17 g/cm³)

Thick: 1 cm

Mass: 4 g



Arduino + Payloads

Dia_{out} 5 cm

Mass: 79 g



Launch lug

Cardboard
(0.68 g/cm³)

Dia_{in} 1.72 cm
Dia_{out} 1.8 cm

Len: 1 cm

Mass: 0.15 g



Transition

3D Print
(1.23 g/cm³)

Fore Dia: 6.62 cm
Aft Dia: 5.63 cm

Len: 1.5 cm

Mass: 4.39 g



Main Body

Cardboard
(0.68 g/cm³)

Dia_{in} 5.53 cm
Dia_{out} 5.63 cm

Len: 18 cm

Mass: 10.7 g



Parachute 1

Ripstop nylon
(67 g/m²)

Dia_{out} 50 cm

Len: 9 cm

Mass: 16.4 g

Shroud Lines

Elastic cord
(round 2 mm,
1/16 in)
(1.8 g/m)

Lines: 6

Len: 30 cm



Parachute 1

Ripstop nylon
(67 g/m²)

Dia_{out} 50 cm

Len: 9 cm

Mass: 16.4 g

Shroud Lines

Elastic cord
(round 2 mm,
1/16 in)
(1.8 g/m)

Lines: 6

Len: 30 cm



Parachute Servo

Dia_{out} 1 cm

Mass: 10 g



Unspecified

Dia_{out} 3 cm

Mass: 150 g



Body tube

Cardboard
(0.68 g/cm³)

Dia_{in} 5.23 cm
Dia_{out} 5.63 cm

Len: 9 cm

Mass: 20.9 g



Shock cord

Elastic cord
(round 2 mm,
1/16 in)
(1.8 g/m)

Len: 40 cm

Mass: 0.72 g



Parachute Back

Ripstop nylon
(67 g/m²)

Dia_{out} 45 cm

Len: 5 cm

Mass: 13.9 g

Shroud Lines

Elastic cord
(round 2 mm,
1/16 in)
(1.8 g/m)

Lines: 6

Len: 30 cm



Tube Coupler

Cardboard
(0.68 g/cm³)

Dia_{in} 5.03 cm
Dia_{out} 5.23 cm

Len: 6 cm

Mass: 6.58 g



Transition

Cardboard
(0.68 g/cm³)

Fore Dia: 5.63 cm
Aft Dia: 5.82 cm

Len: 0.1 cm

Mass: 0 g



Boost	Cardboard (0.68 g/cm ³)	Dia _{in} 5.73 cm Dia _{out} 5.82 cm	Len: 14 cm	Mass: 30 g
Engines	Cardboard (0.68 g/cm ³)	Dia _{in} 1.8 cm Dia _{out} 1.9 cm	Len: 7 cm	Mass: 4.15 g
Bulkhead	Cardboard (0.68 g/cm ³)	Dia _{out} 5.63 cm	Len: 0.3 cm	Mass: 0 g
Bulkhead	Cardboard (0.68 g/cm ³)	Dia _{out} 5.63 cm	Len: 0.3 cm	Mass: 0 g
Bulkhead	Cardboard (0.68 g/cm ³)	Dia _{out} 5.63 cm	Len: 0.3 cm	Mass: 27 g
Bulkhead	Cardboard (0.68 g/cm ³)	Dia _{out} 5.63 cm	Len: 0.3 cm	Mass: 0 g
Fin Fillet (4)	Cardboard (0.68 g/cm ³)	Thick: 1 cm		Mass: 26 g
Launch lug	Cardboard (0.68 g/cm ³)	Dia _{in} 1.72 cm Dia _{out} 1.8 cm	Len: 1 cm	Mass: 0.15 g



