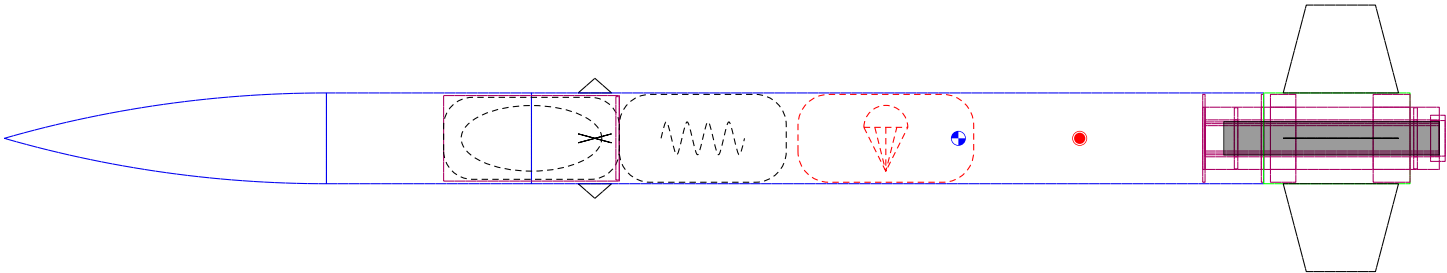


Rocket Design



Rocket

Stages: 1

Mass (with motor): 1512 g

Stability: 1.34 cal

CG: 32.578 in




CP: 36.72 in

G54-RL-5

		Motor	Avg Thrust	Burn Time	Max Thrust	Total Impulse	Thrust to Wt	Propellant Wt	Size
Altitude	335 m	G54-RL	53.3 N	2.99 s	122 N	160 Ns	3.59:1	96.8 g	29/187 mm
Flight Time	76.6 s								
Time to Apogee	8.49 s								
Optimum Delay	5.79 s								
Velocity off Pad	11.8 m/s								
Max Velocity	71 m/s								
Velocity at Deployment	8.01 m/s								
Landing Velocity	4.88 m/s								

Parts Detail

Sustainer

	Nose cone	PVC (1.39 g/cm ³)	Ogive	Len: 11 in	Mass: 142 g
	Body tube	Kraft phenolic (0.95 g/cm ³)	Dia _{in} 2.97 in Dia _{out} 3.1 in	Len: 7 in	Mass: 67.5 g
	Trapezoidal fin set (4)	Carbon fiber (1.78 g/cm ³)	Thick: 0.079 in		Mass: 2.71 g
	Body tube	Kraft phenolic (0.95 g/cm ³)	Dia _{in} 3 in Dia _{out} 3.1 in	Len: 25 in	Mass: 186 g
	Inner Tube	Kraft phenolic (0.95 g/cm ³)	Dia _{in} 2.087 in Dia _{out} 2.126 in	Len: 2 in	Mass: 4.06 g
	Inner Tube	Kraft phenolic (0.95 g/cm ³)	Dia _{in} 0.866 in Dia _{out} 1.26 in	Len: 8 in	Mass: 81.9 g
	AeroPak 29 mm retainer	Aluminum (2.7 g/cm ³)	Dia _{in} 1.215 in Dia _{out} 1.575 in	Len: 0.5 in	Mass: 16 g
	Motor casing	Aluminum (2.7 g/cm ³)	Dia _{in} 1.004 in Dia _{out} 1.122 in	Len: 8 in	Mass: 92 g
	Centering ring	Plywood (birch) (0.63 g/cm ³)	Dia _{in} 1.26 in Dia _{out} 2.087 in	Len: 0.118 in	Mass: 2.65 g
	Centering ring	Plywood (birch) (0.63 g/cm ³)	Dia _{in} 1.26 in Dia _{out} 2.087 in	Len: 0.125 in	Mass: 2.8 g
	Inner Tube	Kraft phenolic (0.95 g/cm ³)	Dia _{in} 2.087 in Dia _{out} 2.126 in	Len: 6 in	Mass: 12.2 g
	Centering ring	Plywood (birch) (0.63 g/cm ³)	Dia _{in} 2.126 in Dia _{out} 3 in	Len: 0.079 in	Mass: 2.86 g
	Centering ring	Plywood (birch) (0.63 g/cm ³)	Dia _{in} 2.126 in Dia _{out} 3 in	Len: 0.079 in	Mass: 2.86 g
	Tube coupler	Kraft phenolic (0.95 g/cm ³)	Dia _{in} 2.85 in Dia _{out} 2.921 in	Len: 6 in	Mass: 30 g
	Camera + attitude control Payload		Dia _{out} 2.8 in		Mass: 200 g
	Bulkhead	Plywood (birch) (0.63 g/cm ³)	Dia _{out} 2.85 in	Len: 0.118 in	Mass: 7.78 g
	Shock cord	Tubular nylon (14 mm, 9/16 in) (16 g/m)		Len: 177 in	Mass: 72 g
	Parachute	Ripstop nylon (67 g/m ²)	Dia _{out} 48 in	Len: 6 in	Mass: 65 g
	Shroud Lines	Braided nylon (2 mm, 1/16 in) (1 g/m)	Lines: 8	Len: 48 in	
	Body tube	Kraft phenolic (0.95 g/cm ³)	Dia _{in} 3 in Dia _{out} 3.1 in	Len: 5 in	Mass: 37.3 g
	Rear Bearing	Acrylic (1.19 g/cm ³)	Dia _{in} 2.126 in Dia _{out} 3 in	Len: 1.26 in	Mass: 86.4 g



Forward bearing

Acrylic
(1.19 g/cm³)

Dia_{in} 2.126 in
Dia_{out} 3 in

Len: 0.866 in

Mass: 59.4 g



Trapezoidal fin set (4)

Carbon fiber
(1.78 g/cm³)

Thick: 0.118 in

Mass: 140 g

