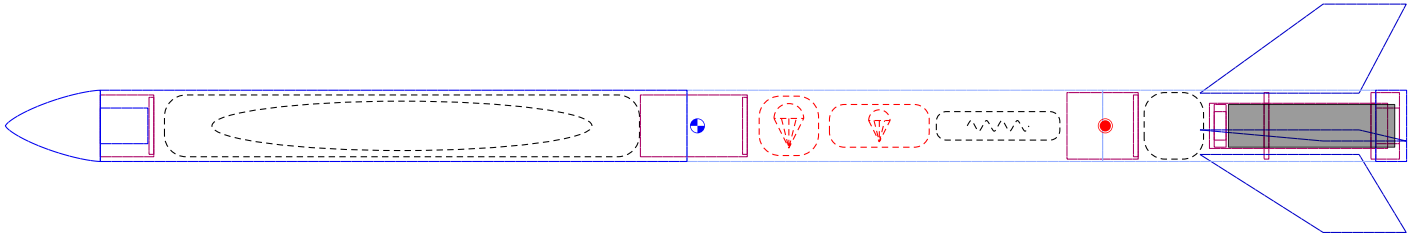


Rocket Design



EMR-L-001-Demo

Stages: 3

Mass (with motors): 287 g

Stability: 5.72 cal / 29.1 %

CG: 29.1 cm









CP: 46.3 cm

None; D24T-4; None










Altitude	185 m	Motor	Avg Thrust	Burn Time	Max Thrust	Total Impulse	Thrust to Wt	Motor Wt	Size
Flight Time	28.3 s	D24T	23.2 N	0.858 s	39.6 N	20 Ns	8.67:1	8.7 g	18/70 mm
Time to Apogee	5.78 s								
Optimum Delay	5.46 s								
Velocity off Pad	14.9 m/s								
Max Velocity	60.7 m/s								
Velocity at Deployment	14.9 m/s								
Landing Velocity	8.59 m/s								

Parts Detail

Stage: Deployable Payload

	Nose cone	Nylon (1.15 g/cm ³)	Haack series	Len: 4 cm	Mass: 18.4 g
	Body Tube	Nylon (1.15 g/cm ³)	Dia _{in} 2.6 cm Dia _{out} 3 cm	Len: 24.7 cm	Mass: 50 g
	Tube Coupler	Nylon (1.15 g/cm ³)	Dia _{in} 2.4 cm Dia _{out} 2.6 cm	Len: 2.25 cm	Mass: 2.03 g
	Bulkhead	Nylon (1.15 g/cm ³)	Dia _{out} 2.4 cm	Len: 0.2 cm	Mass: 1.04 g
	Payload		Dia _{out} 2.6 cm		Mass: 100 g
	Tube Coupler	Nylon (1.15 g/cm ³)	Dia _{in} 2.4 cm Dia _{out} 2.6 cm	Len: 4.5 cm	Mass: 4.06 g
	Bulkhead	Nylon (1.15 g/cm ³)	Dia _{out} 2.4 cm	Len: 0.2 cm	Mass: 1.04 g
	Parachute, plastic, preassembled, 10 in., PN 2262 Estes PK-10, 2262	Polyethylene film, HDPE, 1.0 mil, bare (23.5 g/m ²)	Dia _{out} 25.4 cm	Len: 2.5 cm	Mass: 1.69 g
	Shroud Lines Estes PK-10, 2262	Carpet Thread (0.33 g/m)	Lines: 6	Len: 25.4 cm	

Stage: 2nd Stage

	Tube Coupler	Nylon (1.15 g/cm ³)	Dia _{in} 2.8 cm Dia _{out} 3 cm	Len: 17.5 cm	Mass: 18.3 g
	Parachute kit, plastic, 8 in., PN 2260 Estes PK-8, 2260	Polyethylene film, HDPE, 1.0 mil, bare (23.5 g/m ²)	Dia _{out} 20.3 cm	Len: 4.2 cm	Mass: 1.16 g
	Shroud Lines Estes PK-8, 2260	Carpet Thread (0.33 g/m)	Lines: 6	Len: 20.3 cm	
	Shock cord	Elastic cord (round 2mm, 1/16 in) (1.8 g/m)		Len: 40 cm	Mass: 0.72 g
	Tube Coupler	Nylon (1.15 g/cm ³)	Dia _{in} 2.6 cm Dia _{out} 2.8 cm	Len: 3 cm	Mass: 2.93 g
	Bulkhead	Nylon (1.15 g/cm ³)	Dia _{out} 2.6 cm	Len: 0.2 cm	Mass: 1.22 g
	Body tube	Nylon (1.15 g/cm ³)	Dia _{in} 2.8 cm Dia _{out} 3 cm	Len: 11.5 cm	Mass: 12 g
	Wadding		Dia _{out} 2.8 cm		Mass: 2 g
	Centering ring	Nylon (1.15 g/cm ³)	Dia _{in} 1.9 cm Dia _{out} 2.8 cm	Len: 0.2 cm	Mass: 0.764 g
	Centering ring	Nylon (1.15 g/cm ³)	Dia _{in} 1.9 cm Dia _{out} 2.8 cm	Len: 0.2 cm	Mass: 0.764 g
	Inner Tube	Nylon (1.15 g/cm ³)	Dia _{in} 1.8 cm Dia _{out} 1.9 cm	Len: 7.5 cm	Mass: 2.51 g
	Engine block	Nylon (1.15 g/cm ³)	Dia _{in} 1.2 cm Dia _{out} 1.8 cm	Len: 0.5 cm	Mass: 0.813 g



Trapezoidal fin set (3)	Nylon (1.15 g/cm ³)	Thick: 0.2 cm	Mass: 14.2 g
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Tube Coupler	Nylon (1.15 g/cm ³)	Dia _{in} 1.5 cm Dia _{out} 2.8 cm	Len: 1 cm	Mass: 5.05 g
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Stage: Booster



Amature	Aluminum (2.7 g/cm ³)	Dia _{in} 2 cm Dia _{out} 3 cm	Len: 1.3 cm	Mass: 13.8 g
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