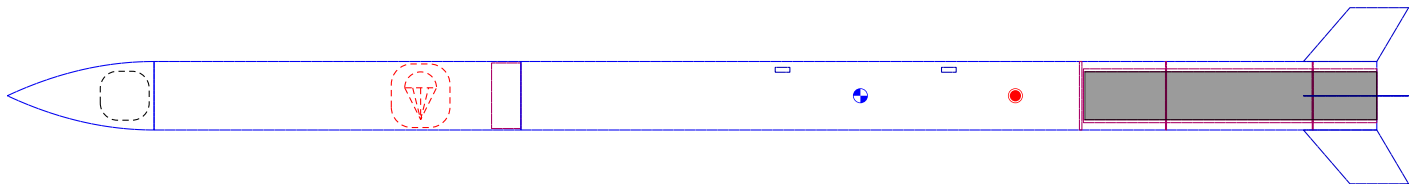


Rocket Design



Rocket

Stages: 1

Mass (with motor): 18414 g

Stability: 2.26 cal

CG: 174 cm

CP: 206 cm

Altitude	3399 m	Motor	Avg Thrust	Burn Time	Max Thrust	Total Impulse	Thrust to Wt	Propellant Wt	Size
Flight Time	401 s	M2400	2320 N	3.28 s	2696 N	7627 Ns	12.85:1	3653 g	98/597
Time to Apogee	24.4 s	T							mm
Optimum Delay	20.8 s								
Velocity off Pad	37 m/s								
Max Velocity	371 m/s								
Velocity at Deployment	42.8 m/s								
Landing Velocity	8.29 m/s								

## Parts Detail

### Sustainer

	Nose cone	Fiberglass (1.85 g/cm <sup>3</sup> )	Parabolic series	Len: 30 cm	Mass: 482 g
	Payload		Dia <sub>in</sub> 10 cm		Mass: 4000 g
	Body tube	Cardboard (0.68 g/cm <sup>3</sup> )	Dia <sub>in</sub> 13.4 cm Dia <sub>out</sub> 14 cm	Len: 75 cm	Mass: 659 g
	Tube coupler	Cardboard (0.68 g/cm <sup>3</sup> )	Dia <sub>in</sub> 13.4 cm Dia <sub>out</sub> 13.4 cm	Len: 6 cm	Mass: 0 g
	Parachute	Polyethylene (heavy) (40 g/m <sup>2</sup> )	Dia <sub>out</sub> 170 cm	Len: 12 cm	Mass: 148 g
	Shroud Lines	Tubular nylon (14 mm, 9/16 in) (16 g/m)	Lines: 6	Len: 60 cm	
	Body tube	Fiberglass (1.85 g/cm <sup>3</sup> )	Dia <sub>in</sub> 13.4 cm Dia <sub>out</sub> 14 cm	Len: 175 cm	Mass: 4180 g
	Inner Tube	Fiberglass (1.85 g/cm <sup>3</sup> )	Dia <sub>in</sub> 9.84 cm Dia <sub>out</sub> 11 cm	Len: 60 cm	Mass: 2108 g
	Centering ring	Fiberglass (1.85 g/cm <sup>3</sup> )	Dia <sub>in</sub> 11 cm Dia <sub>out</sub> 14 cm	Len: 0.2 cm	Mass: 21.8 g
	Centering ring	Fiberglass (1.85 g/cm <sup>3</sup> )	Dia <sub>in</sub> 11 cm Dia <sub>out</sub> 14 cm	Len: 0.2 cm	Mass: 21.8 g
	Engine block	Carbon fiber (1.78 g/cm <sup>3</sup> )	Dia <sub>in</sub> 14 cm Dia <sub>out</sub> 14 cm	Len: 0.5 cm	Mass: 0 g
	Trapezoidal fin set (4)	Fiberglass (1.85 g/cm <sup>3</sup> )	Thick: 0.3 cm		Mass: 330 g
	Launch lug	Steel (7.85 g/cm <sup>3</sup> )	Dia <sub>in</sub> 0.8 cm Dia <sub>out</sub> 1 cm	Len: 3 cm	Mass: 6.66 g
	Launch lug	Steel (7.85 g/cm <sup>3</sup> )	Dia <sub>in</sub> 0.8 cm Dia <sub>out</sub> 1 cm	Len: 3 cm	Mass: 6.66 g

