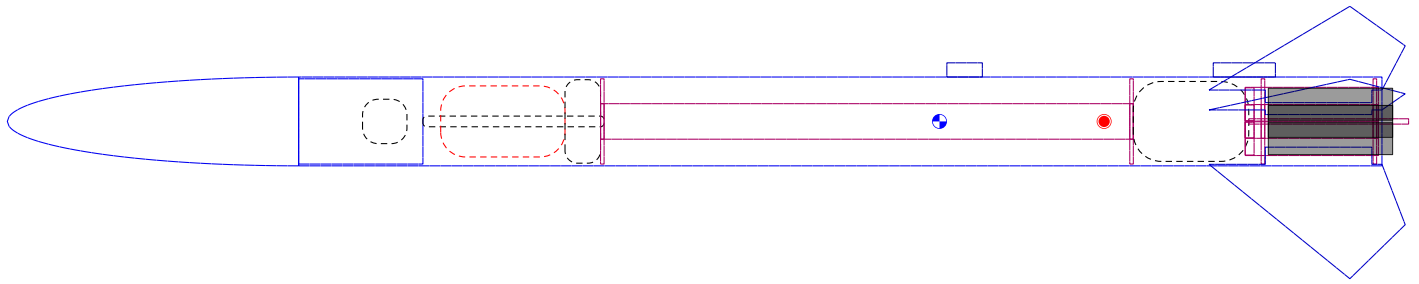


# Rocket Design



## Cluster Buster

Stages: 1

Mass (with motor): 229 g

Stability: 1,85 cal

CG: 52,5 cm

CP: 61,8 cm

### 3xB4-0

	Motor	Avg Thrust	Burn Time	Max Thrust	Total Impulse	Thrust to Wt	Propellant Wt	Size
Altitude								
116 m								
Flight Time	B4 (×3)	3,5 N	1,3 s	7,82 N	4,55 Ns	1,60:1	6,2 g	18/70 mm
20,5 s								
Time to Apogee								
5,2 s								
Velocity off Pad								
10,5 m/s								
Max Velocity								
46,6 m/s								
Velocity at Deployment								
12,7 m/s								
Landing Velocity								
7,61 m/s								
<b>Total:</b>					13,7 Ns	4,80:1	18,6 g	

### 3xC6-0

	Motor	Avg Thrust	Burn Time	Max Thrust	Total Impulse	Thrust to Wt	Propellant Wt	Size
Altitude								
293 m								
Flight Time	C6 (×3)	6,37 N	1,53 s	15,2 N	9,8 Ns	2,83:1	8,4 g	18/70 mm
46,2 s								
Time to Apogee								
7,22 s								
Velocity off Pad								
15,4 m/s								
Max Velocity								
97,4 m/s								
Velocity at Deployment								
5,46 m/s								
Landing Velocity								
7,6 m/s								
<b>Total:</b>					29,4 Ns	8,50:1	25,2 g	

### 3xD9-7



## Parts Detail

### Sustainer

	Nose cone	Polystyrène (1,05 g/cm <sup>3</sup> )	Ellipsoid	Len: 16,4 cm	Mass: 43 g
	Masse		Dia <sub>out</sub> 2,5 cm		Mass: 8 g
	Body tube	Karton (0,68 g/cm <sup>3</sup> )	Dia <sub>in</sub> 4,8 cm Dia <sub>out</sub> 5 cm	Len: 61 cm	Mass: 56 g
	Shock cord	Elastikband (rund, 2mm, 1/16 in) (1,8 g/m)		Len: 60 cm	Mass: 1,08 g
	Parachute	Ripstop Nylon (67 g/m <sup>2</sup> )	Dia <sub>out</sub> 30 cm	Len: 7 cm	Mass: 6,54 g
	Shroud Lines	Nylonflachband (2 mm, 1/16 in) (1 g/m)	Lines: 6	Len: 30 cm	
	Wadding		Dia <sub>out</sub> 4,7 cm		Mass: 2 g
	Centering ring	Karton (0,68 g/cm <sup>3</sup> )	Dia <sub>in</sub> 2 cm Dia <sub>out</sub> 4,8 cm	Len: 0,2 cm	Mass: 2,03 g
	Centering ring	Karton (0,68 g/cm <sup>3</sup> )	Dia <sub>in</sub> 2 cm Dia <sub>out</sub> 4,8 cm	Len: 0,2 cm	Mass: 2,03 g
	Pressure distribution tube	Karton (0,68 g/cm <sup>3</sup> )	Dia <sub>in</sub> 1,9 cm Dia <sub>out</sub> 2 cm	Len: 30 cm	Mass: 6,25 g
	Cooling Mash		Dia <sub>out</sub> 4,5 cm		Mass: 2 g
	Retainer	Stahl (7,85 g/cm <sup>3</sup> )	Dia <sub>in</sub> 0,2 cm Dia <sub>out</sub> 0,3 cm	Len: 9 cm	Mass: 2,77 g
	Launch lug	Messing (8,6 g/cm <sup>3</sup> )	Dia <sub>in</sub> 0,7 cm Dia <sub>out</sub> 0,8 cm	Len: 2 cm	Mass: 2,03 g
	Launch lug	Messing (8,6 g/cm <sup>3</sup> )	Dia <sub>in</sub> 0,7 cm Dia <sub>out</sub> 0,8 cm	Len: 3,5 cm	Mass: 3,55 g
	Centering ring	Karton (0,68 g/cm <sup>3</sup> )	Dia <sub>in</sub> 1,9 cm Dia <sub>out</sub> 4,8 cm	Len: 0,2 cm	Mass: 2,08 g
	Centering ring	Karton (0,68 g/cm <sup>3</sup> )	Dia <sub>in</sub> 1,9 cm Dia <sub>out</sub> 4,8 cm	Len: 0,2 cm	Mass: 2,08 g
	Clustered Inner Tube	Karton (0,68 g/cm <sup>3</sup> )	Dia <sub>in</sub> 1,8 cm Dia <sub>out</sub> 1,9 cm	Len: 7,5 cm	Mass: 4,45 g
	Engine block	Aluminum (2,7 g/cm <sup>3</sup> )	Dia <sub>in</sub> 1,85 cm Dia <sub>out</sub> 1,85 cm	Len: 0,5 cm	Mass: 0 g
	Frei geformte Leitwerke (3)	Sperrholz (Birke) (0,63 g/cm <sup>3</sup> )	Thick: 0,2 cm		Mass: 17,4 g

