

ESTES D11-P

CERTIFIED VALUES

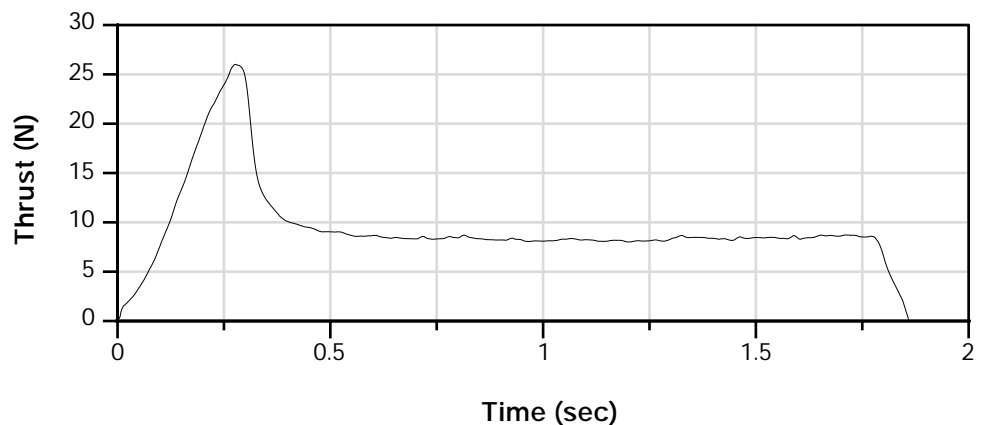
Total Impulse: 18 newton-seconds
Delays: None
Propellant Type: Black Powder
Propellant Mass: 24.5 grams
Casing Dimensions: 24 mm × 70 mm
Certification Date: 92-April-19
Contest Use Date: 92-July-18
Certification Type: Model Rocket

STATIC TEST DATA

Date Tested: 92-April-18
Total Impulse: 17.49 newton-seconds (σ 0.21)
Peak Thrust: 26.01 newtons (σ 1.64)
Burn Time: 1.86 seconds (σ 0.04)
Average Thrust: 9.40 grams
Mass After Firing: 21.4 grams

Delay Time	Average Measured Delay	Initial Mass	Mfg Recommended Max Liftoff Weight
P	None	44.8 g	453.1 g

TYPICAL THRUST-TIME CURVE



REMARKS

Plugged motor, no ejection charge, not a booster motor.

; Estes D11 RASP.ENG file made from NAR published data
; File produced October 3, 2000
; The total impulse, peak thrust, average thrust and burn time are
; the same as the averaged static test data on the NAR web site in
; the certification file. The curve drawn with these data points is as
; close to the certification curve as can be with such a limited
; number of points (32) allowed with wRASP up to v1.6.

D11	24	70	P	.0245	.0448	E
0.033	2.393					
0.084	5.783					
0.144	12.170					
0.214	20.757					
0.261	24.350					
0.289	26.010					
0.311	23.334					
0.325	18.532					
0.338	14.536					
0.356	12.331					
0.398	10.720					
0.480	9.303					
0.618	8.676					
0.761	8.247					
0.955	8.209					
1.222	7.955					
1.402	8.319					
1.540	8.291					
1.701	8.459					
1.784	8.442					
1.803	6.239					
1.834	3.033					
1.860	0.000					

