

# APOGEE C4

## CERTIFIED VALUES

Total Impulse: 9.5 newton-seconds  
Delays: 3, 5, 7 seconds

Propellant Type: Composite  
Propellant Mass: 4.5 grams

Casing Dimensions: 18 mm × 50 mm

Certification Date: 93-August-29  
Contest Use Date: 93-December-1

Certification Type: Model Rocket

## STATIC TEST DATA

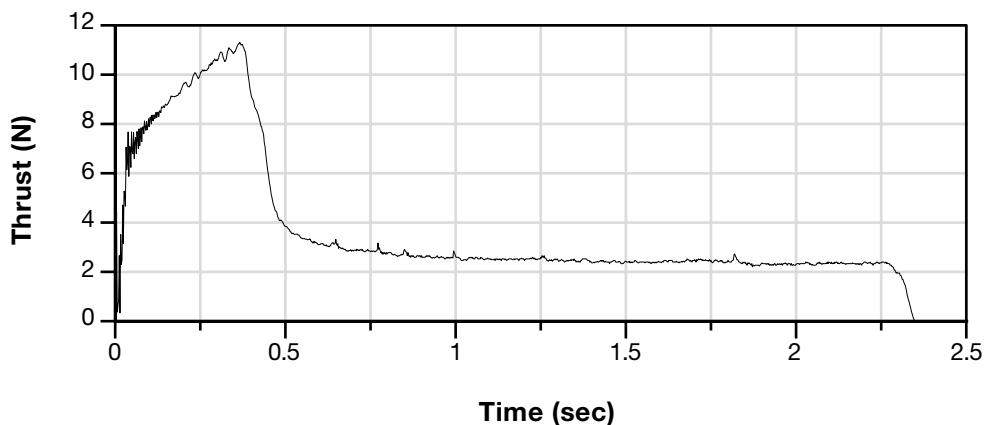
Date Tested: 93-August-28

Total Impulse: 8.92 newton-seconds ( $\sigma$  0.28)  
Peak Thrust: 11.31 newtons ( $\sigma$  0.51)  
Burn Time: 2.35 seconds ( $\sigma$  0.17)  
Average Thrust: 3.80 newtons

Mass After Firing: 9.6 grams

Delay Time	Average Measured Delay	Initial Mass	Mfg Recommended Max Liftoff Weight
3	3.30	17.0 g	170 g
5	5.31	17.1 g	140 g
7	6.52	17.0 g	125 g

## TYPICAL THRUST-TIME CURVE



## REMARKS

C4-3 is contest certified as of 94-March-20.

; Apogee C4 RASP.ENG file made from NAR published data  
 ; File produced September 4, 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.

C4 18 50 3-5-7 .0045 .0170 APO  
 0.018 3.230  
 0.041 6.874  
 0.147 8.779  
 0.294 10.683  
 0.365 11.310  
 0.388 10.521  
 0.412 8.779  
 0.441 7.040  
 0.465 4.555  
 0.529 3.479  
 0.629 2.981  
 0.653 3.230  
 0.718 2.816  
 0.853 2.733  
 1.065 2.650  
 1.253 2.567  
 1.453 2.401  
 1.694 2.484  
 1.794 2.484  
 1.812 2.733  
 1.841 2.401  
 1.947 2.401  
 2.112 2.401  
 2.235 2.401  
 2.282 2.236  
 2.312 1.656  
 2.329 0.662  
 2.350 0

