

# AEROTECH F42

## CERTIFIED VALUES

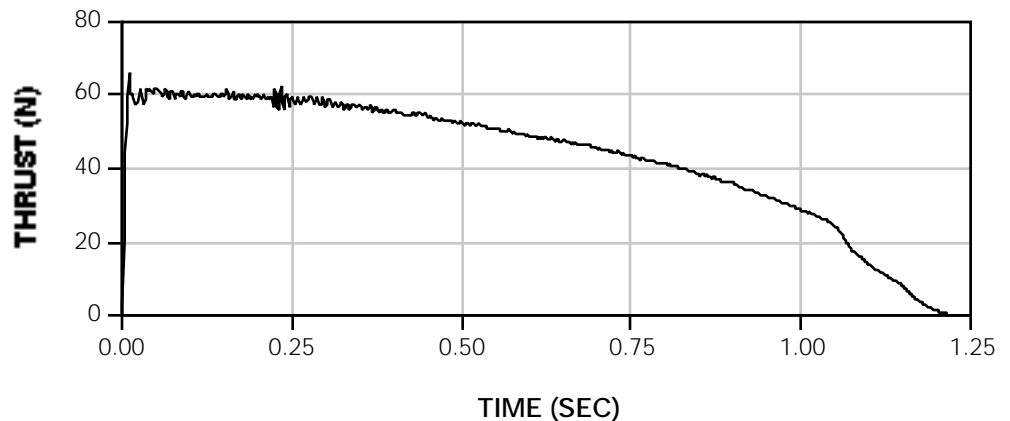
Total Impulse: 52.93 newton-seconds  
Delays: 4, 8 seconds  
Propellant Type: Composite-Blue Thunder  
Propellant Mass: 27.0 grams  
Casing Dimensions: 29 mm × 83 mm  
Certification Date: 2005-April-10  
Certification Type: Model Rocket

## STATIC TEST DATA

Date Tested: 2005-April-9  
Total Impulse: 52.93 newton-seconds ( 0.35)  
Peak Thrust: 66.04 newtons ( 1.64)  
Burn Time: 1.23 seconds ( 0.01)  
Average Thrust: 43.03 newtons  
Mass After Firing: 43.4 grams

Delay Time	Average Measured Delay	Initial Mass	Mfg Recommended Max Liftoff Weight
4	4.33	75.1 g	
8	7.26	75.9 g	

## TYPICAL THRUST-TIME CURVE



## REMARKS

			AEROTECH F42	FIRED 4/9/05			22 Deg C			
			Alt 20 feet							
FILE	MOTOR	ENGINE	TOTAL	MAX	AVG	BURN	DELAY	INIT	EMPTY	
	NO.	TYPE	IMPULSE	THRUST	THRUST	TIME	TIME	WEIGHT	WEIGHT	
AT101	1	F42-4	53.43	68.28	43.23	1.24	4.28	75.15	43.40	
AT102	2	F42-4	52.53	67.66	43.13	1.22	4.40	75.17	43.52	
AT103	3	F42-4	52.98	65.21	43.78	1.21	4.31	74.89	43.40	
AT104	4	F42-8	53.24	65.01	43.08	1.24	7.92	75.98	43.40	
AT105	5	F42-8	52.45	66.57	42.37	1.24	6.70	75.78	43.25	
AT106	6	F42-8	52.95	63.49	43.05	1.23	7.15	76.02	43.50	
			AVG	52.93	66.04	43.03	1.23			
			STD	0.35	1.64	0.41	0.01			
			STD %	0.66	2.49	0.96	0.94			
			DELAYS							
ALLOWABLE										
RANGE			INDICATED	AVG	ACTUAL	ACTUAL	ACTUAL			
3	TO	5	4	4.33	4.28	4.40	4.31			
6.4	TO	9.6	8	7.26	7.92	6.70	7.15			

; Aerotech F42 RASP.ENG file made from NAR data  
; File produced May 20, 2005  
; 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.

F42	29	83	4-8	0.027	0.0755	A
0.005	50.33					
0.012	66.04					
0.023	58.443					
0.026	61.684					
0.057	61.352					
0.109	59.389					
0.172	59.701					
0.212	59.047					
0.229	61.312					
0.241	56.44					
0.250	58.382					
0.295	58.372					
0.339	57.386					
0.396	55.745					
0.444	55.081					
0.472	52.806					
0.528	51.487					
0.590	48.88					
0.696	45.931					
0.814	40.706					
0.927	33.529					
1.009	27.661					
1.038	25.386					
1.061	20.504					
1.087	15.3					
1.128	9.773					
1.153	7.169					
1.186	1.639					
1.230	0					

