

ROADRUNNER F60R

CERTIFIED VALUES

Total Impulse: 75.84 newton-seconds
Delays: 4, 7, 10 seconds

Propellant Type: Composite / Rapid
Propellant Mass: 38.1 grams

Casing Dimensions: 29 mm × 112 mm

Certification Date: 06-April -22
Contest Use Date: 06-June -22

Certification Type: Model Rocket

STATIC TEST DATA

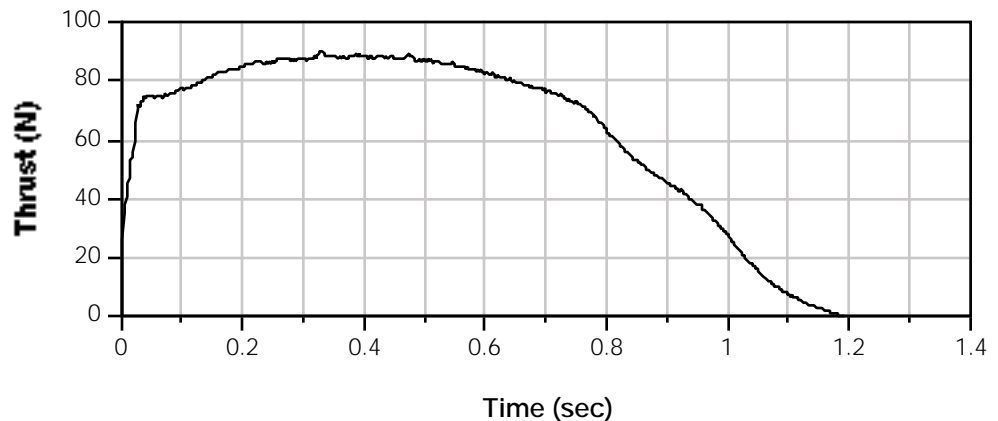
Date Tested: February 2006

Total Impulse: 75.84 newton-seconds (0.86)
Peak Thrust: 90.07 newtons (2.72)
Burn Time: 1.19 seconds (0.03)

Mass After Firing: 58.4 grams

Delay Time	Average Measured Delay	Initial Mass
4	3.89	105.7 g
7	7.19	105.6 g
10	10.11	106.1 g

TYPICAL THRUST-TIME CURVE



REMARKS

			ROADRUNNER		F60-4, 7, 10					
			ENGINE	TOTAL	MAX	AVG	BURN	DELAY	INIT	BURNT
			TYPE	IMPULSE	THRUST	THRUST	TIME	TIME	WT	WT
			F60-4	74.68	88.99	61.92	1.21	3.97	105.7	58.4
			F60-4	75.93	90.43	63.69	1.19	4.53	105.6	58.4
			F60-4	76.45	88.74	64.79	1.18	3.48	106.0	58.6
			F60-4	75.34	91.72	63.42	1.19	3.58	105.6	58.7
			F60-7	74.90	85.00	61.29	1.22	7.66	105.3	58.2
			F60-7	75.49	88.88	63.12	1.20	6.96	105.6	58.2
			F60-7	77.30	93.75	67.33	1.15	6.80	106.0	58.4
			F60-7	75.58	89.70	62.46	1.21	7.33	105.6	58.0
			F60-10	74.91	87.84	60.70	1.23	10.98	105.6	58.3
			F60-10	76.44	90.16	64.56	1.18	9.92	105.9	58.3
			F60-10	77.19	95.55	67.48	1.14	9.43	106.8	59.0
			AVG	75.84	90.07	63.71	1.19		105.79	58.41
			STD	0.86	2.72	2.12	0.03			
			STD %	1.14	3.02	3.32	2.22			
				DELAYS						
			ALLOWABLE						INIT	
			RANGE	INDICATED	AVG	ACTUAL	ACTUAL	ACTUAL	ACTUAL	WT
2.5	TO	5.5	4	3.89	3.97	4.53	3.48	3.58	105.7	
5.6	TO	8.4	7	7.19	7.66	6.96	6.80	7.33	105.6	
8	TO	12	10	10.11	10.98	9.92	9.43		106.1	

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; ROADRUNNER F60 RASP.ENG FILE
; 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.

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F60 29 112 4-7-10 0.038 0.105 RR
0.013 45.860
0.021 63.937
0.029 72.291
0.041 75.214
0.061 74.374
0.087 76.872
0.155 83.122
0.231 86.440
0.309 88.088
0.329 90.070
0.345 88.33
0.395 87.90
0.454 87.208
0.514 87.188
0.616 82.141
0.699 77.105
0.765 70.400
0.807 61.611
0.859 51.983
0.926 42.355
0.978 33.556
1.022 21.430
1.061 13.056
1.101 6.776
1.133 3.423
1.190 0.000

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