

QUEST D5

CERTIFIED VALUES

Total Impulse: 17.61 newton-seconds
Delays: 4, 6

Propellant Type: Black Powder
Propellant Mass: 24.0 grams

Casing Dimensions: 20 mm × 96 mm

Certification Date: 09-Dec-14

Certification Type: Model Rocket

STATIC TEST DATA

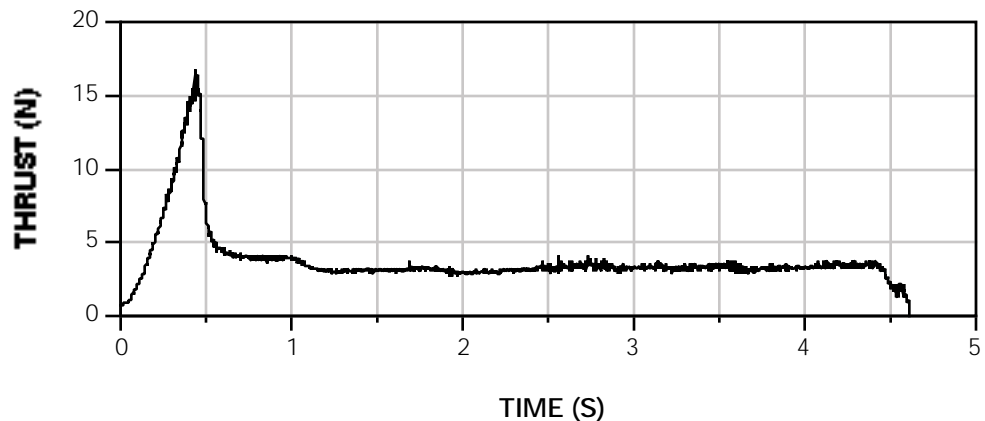
Date Tested: 09-Dec-13

Total Impulse: 17.61 newton-seconds (0.56
Peak Thrust: 16.80 newtons (0.55)
Burn Time: 4.61 seconds (0.11)
Average Thrust: 3.82 newtons

Mass After Firing: 13.1 grams

Delay Time	Average Measured Delay	Initial Mass
4	3.70	44.1 g
6	5.24	45.8 g

TYPICAL THRUST-TIME CURVE



REMARKS

		Quest D5								
ENGINE	TOTAL	MAX	AVG	BURN	DELAY	INIT	BURNT			
TYPE	IMPULSE	THRUST	THRUST	TIME	TIME	WT	WT			
D5-4	17.48	17.80	3.78	4.63	3.67	44.6	13.3			
D5-4	17.48	16.71	3.68	4.75	3.75	44.4	13.5			
D5-4	17.55	16.89	3.85	4.56	3.63	44.4	13.3			
D5-4	16.73	16.96	3.84	4.36	3.73	42.4	12.3			
D5-4	18.79	17.30	4.04	4.65	3.72	44.5	13.3			
D5-6	17.81	16.06	3.80	4.69	5.14	46.1	12.9			
D5-6	17.87	16.21	3.85	4.64	5.27	46.9	13.0			
D5-6	17.83	17.15	3.90	4.57	5.12	45.7	13.1			
D5-6	16.94	16.72	3.63	4.67	5.82	45.8	13.3			
D5-6	17.62	16.20	3.80	4.63	4.79	46.0	13.3			
AVG	17.61	16.80	3.82	4.61		45.1	13.1			
STD	0.53	0.52	0.11	0.10						
STD %	3.01	3.08	2.81	2.17						
DELAYS										
ALLOWABLE										INIT
RANGE		INDICATED	AVG	ACTUAL	ACTUAL	ACTUAL	ACTUAL	ACTUAL		
2.5 TO 5.5		4	3.70	3.67	3.75	3.63	3.73	3.72	44.1	
4.5 TO 7.5		6	5.23	5.14	5.27	5.12	5.82	4.79	46.1	

; QUEST D5 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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D5 20 96 4-6 0.0240 0.451 QUEST
0.010 1.014
0.122 2.652
0.172 4.836
0.273 7.723
0.331 10.610
0.390 13.809
0.448 16.800
0.480 12.403
0.484 8.266
0.517 5.221
0.713 4.125
0.974 4.121
1.135 3.338
1.324 3.101
1.550 3.254
1.971 3.169
2.393 3.162
2.752 3.391
3.069 3.386
3.547 3.301
3.694 3.064
3.948 3.294
4.215 3.290
4.412 3.287
4.496 2.505
4.586 1.801
4.610 0.000
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