

# AEROTECH G138T

## CERTIFIED VALUES

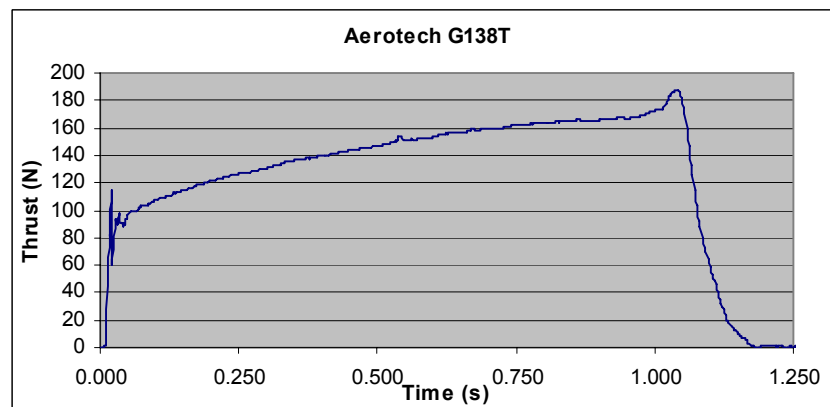
**Total Impulse:** 157.1 Newton-seconds  
**Delays:** 14 seconds, adjustable  
**Propellant Type:** Blue Thunder  
**Propellant Mass:** 70.0 grams  
**Casing Dimensions:** 29mm × 124mm  
**Certification Date:** July 26, 2010  
**Certification Type:** High Power Rocket Motor

## STATIC TEST DATA

**Date Tested:** July 22, 2010  
**Total Impulse:** 157.1 Newton-seconds ( $\sigma$  0.5)  
**Peak Thrust:** 190.1 Newtons ( $\sigma$  3.3)  
**Burn Time:** 1.14 seconds ( $\sigma$  0.01)  
**Average Thrust:** 138.0 Newtons ( $\sigma$  0.4)  
**Mass After Firing:** 78 grams

Reduction Rate (in./sec.)	Adjustment Depth	Nominal Delay (sec)	NFPA Tolerance		Observed Delay (sec)
			-20%	20%	
0.032	0.000	14.00	11.20	16.80	13.66
0.032	0.075	11.66	9.33	13.99	12.99
0.032	0.175	8.53	6.83	10.24	9.23

## TYPICAL THRUST-TIME CURVE



## REMARKS

Uses Aerotech RMS 29/40-120 Reload System  
 Delay adjustment is: .032" per second.  
 Maximum Adjustment: 0.250"



Data File #	Engine	Total Impulse	Max Thrust	Avg Thrust	Burn Time	Delay Time	Init Weight	Fired Weight
100722W40	G138T	156.8	190.7	137.9	1.137	13.66	148	78
100722W41	G138T	157.6	186.6	137.6	1.145	12.99	147	77
100722W42	G138T	156.9	193.1	138.4	1.133	9.23	149	79
Average		157.1	190.1	138.0	1.14		148.0	78.0

Std Dev		0.453	3.293	0.416	0.006
Std Dev %		0.3%	1.7%	0.3%	0.5%

; @File: G138Tb.txt, @Pts-I: 770, @Pts-O: 31, @Sm: 0, @CO: 5%  
; @TI: 157.2916, @Tla: 157.0762, @Tle: 0.0%, @ThMax: 188.2898, @ThAvg: 138.0962, @Tb: 1.139  
; Exported using ThrustCurveTool, www.ThrustGear.com

G138 29 124 14 0.07 0.148 Aerotech

0.024 1.054534  
0.026 57.9957  
0.028 83.2067  
0.030 81.3773  
0.032 115.0663  
0.034 61.6101  
0.038 93.2912  
0.044 89.4091  
0.046 97.5302  
0.052 88.3382  
0.066 99.0027  
0.086 103.7325  
0.202 121.1348  
0.540 149.8263  
0.548 151.5219  
0.550 155.1362  
0.566 151.4773  
0.684 159.8661  
0.982 168.835  
1.026 174.9034  
1.050 188.2898  
1.058 184.8094  
1.066 171.3784  
1.086 108.9086  
1.094 88.6059  
1.102 73.3901  
1.138 25.3285  
1.150 15.56091  
1.164 9.22469  
1.192 0.309359  
1.504 0.0