

AEROTECH E20

CERTIFIED VALUES

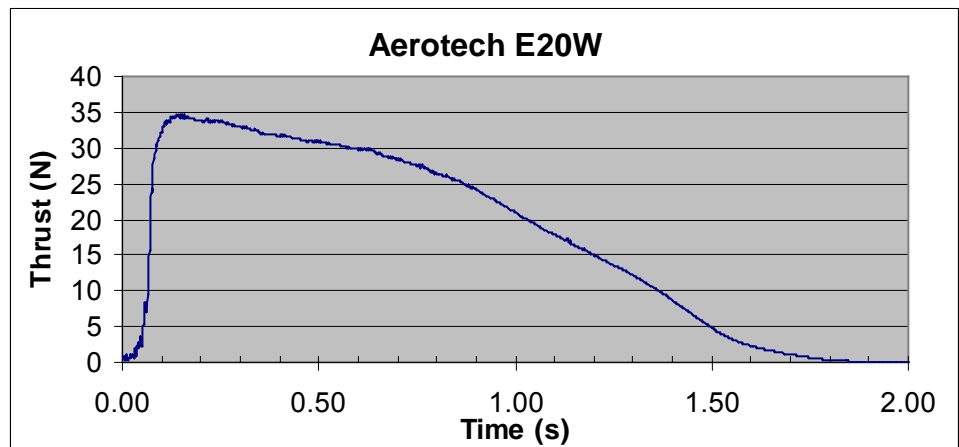
Total Impulse: 35.0 Newton-seconds
Delays: 4, 7, 10
Propellant Type: White Lightning
Propellant Mass: 16.2 grams
Casing Dimensions: 24mm × 65mm
Certification Date: November 27, 2009
Certification Type: Model Rocket Motor

STATIC TEST DATA

Date Tested: November 24, 2009
Total Impulse: 35.0 Newton-seconds (σ 0.3)
Peak Thrust: 34.9 Newtons (σ 0.9)
Burn Time: 1.60 seconds (σ 0.03)
Average Thrust: 21.8 Newtons (σ 0.4)
Mass After Firing: 27.1 grams

Delay Time(sec.)	4	7	10
Average Measured Delay(sec.)	4.69	6.75	10.26
Initial Mass (gm.)	48.5	49.0	49.8

TYPICAL THRUST-TIME CURVE



REMARKS



Data File #	Engine	Total Impulse	Max Thrust	Avg. Thrust	Burn Time	Delay Time	Initial Weight	Fired Weight
091024W01	E20-4W	34.8	35.6	22.3	1.535	4.57	48.1	26.9
091024W04	E20-4W	35.4	36.2	22.1	1.579	4.70	48.7	27.1
091024W05	E20-4W	34.9	34.5	21.2	1.630	5.02	48.5	26.9
091024W06	E20-4W	35.2	35.2	22.1	1.579	4.45	48.5	26.8
091024W08	E20-7W	34.7	34.1	21.3	1.613	6.70	49.0	27.9
091024W10	E20-7W	35.2	33.9	21.9	1.597	7.77	49.1	27.4
091024W11	E20-7W	35.3	35.5	21.7	1.616	5.77	48.9	27.9
091024W12	E20-10W	34.7	35.9	21.5	1.603	10.74	49.9	26.7
091024W15	E20-10W	35.2	33.7	22.1	1.589	9.64	49.7	26.9
091024W16	E20-10W	34.7	34.3	21.3	1.621	10.40	49.7	26.9
Average		35.01	34.9	21.8	1.596		49.0	27.1
Std Dev		0.282	0.895	0.391	0.028			
Std Dev %		0.8%	2.6%	1.8%	1.7%			
Range	Indicated	Actual	Actual	Actual	Actual	Average		
4	2.5 to 5.5	4.57	4.70	5.02	4.45	4.69		
7	5.5 to 8.5	6.70	7.77	5.77		6.75		
10	8.0 to 12.0	10.74	9.64	10.4		10.26		

; @File: E20.txt, @Pts-I: 1001, @Pts-O: 32, @Sm: 3, @CO: 5%
; @TI: 34.6666, @Tla: 34.5451, @Tle: 0.0%, @ThMax: 34.6991, @ThAvg: 22.1301, @Tb: 1.561
; Exported using ThrustCurveTool, www.ThrustGear.com
E22 24 65 4, 7, 10 0.0162 0.049 Aerotech?RCS

```

0.0 0.0290422
0.024 0.227567
0.038 1.394029
0.048 2.6721
0.056 5.81661
0.06 7.76916
0.062 9.00446
0.064 10.71764
0.072 20.3365
0.074 22.4147
0.08 27.1311
0.084 28.9874
0.09 30.5394
0.104 32.9513
0.124 34.2647
0.138 34.677
0.252 33.8465
0.36 32.0816
0.63 29.8124
0.672 28.8301
0.77 27.3596
0.8 26.3903
0.9 24.2069
1.084 18.06808
1.134 16.89181
1.16 15.87009
1.2899 12.19213
1.3719 9.38065
1.5079 4.03928
1.5519 2.72185
1.6019 1.720821
1.7579 0.0

```