



A better way to fly.™

Pro38®

2010 Catalog - v1.0

Pro38® reloadable high power rocket motors were introduced at LDRS20 in June 2000. Fliers quickly found out what sets them apart from the rest - super-fast and hassle-free assembly, adjustable delays, instant ignition, and mess-free unloading. With the quickest and most reliable factory-supplied ignition system on the market, Pro38® motors are the smart choice for clusters and upper stages. Available in seven sizes from G to I, and a wide selection of propellant types, there's a Pro38® motor ideal for your application.

Pro38-1G : 1.5 x 5.00 in

Motor Type	Burn time (s)	Peak thrust (lb)	Propellant
127G46-11A	2.76	25	Classic™
150G50-15A	2.87	18	Imax™
134G60-14A	2.23	20	Red Lightning™
141G78-15A	1.8	30	Blue Streak™
129G79-13A	1.63	22	Smoky Sam™
141G115-13A	1.24	30	White Thunder™
128G185-12A	0.69	48	Vmax™
117G69-14A	1.84	21	Skidmark™

Pro38-2G : 1.5 x 7.32 in

Motor Type	Burn time (s)	Peak thrust (lb)	Propellant
266H125-12A	2.15	34	Classic™
286H100-15A	2.82	27	Imax™
261H120-14A	2.15	34	Red Lightning™
276H152-15A	1.81	48	Blue Streak™
247H143-13A	1.43	38	Smoky Sam™
273H225-14A	1.21	57	White Thunder™
255H400-13A	0.64	101	Vmax™
232H123-14A	1.9	34	Skidmark™

Pro38-3G : 1.5 x 9.65 in

Motor Type	Burn time (s)	Peak thrust (lb)	Propellant
382I170-14A	2.26	59	Classic™
396I195-16A	2.02	54	Red Lightning™
413I236-17A	1.75	71	Blue Streak™
364I212-14A	1.71	57	Smoky Sam™
408I345-15A	1.18	91	White Thunder™
370I566-15A	0.65	144	Vmax™
338I180-14A	1.87	48	Skidmark™

Pro38-4G : 1.5 x 11.93 in

Motor Type	Burn time (s)	Peak thrust (lb)	Propellant
512I285-15A	1.91	79	Classic™
517I255-16A	2.04	71	Red Lightning™
538I303-16A	1.77	93	Blue Streak™
486I287-15A	1.7	77	Smoky Sam™
540I470-15A	1.14	125	White Thunder™
419I800-15A	0.52	210	Vmax™
434I223-14A	1.94	59	Skidmark™

Pro38-5G : 1.5 x 14.45 in

Motor Type	Burn time (s)	Peak thrust (lb)	Propellant	
648J285-15A	2.26	83	Classic™	Full 'I'
636I216-14A	2.94	85	Classic™	
649J335-15A	1.93	92	Red Lightning™	
658J357-17A	1.85	115	Blue Streak™	
601I350-16A	1.71	90	Smoky Sam™	
634I540-16A	1.18	141	White Thunder™	
543I297-15A	1.83	84	Skidmark™	

Pro38-6G : 1.5 x 16.57 in

Motor Type	Burn time (s)	Peak thrust (lb)	Propellant
765J330-16A	2.26	103	Classic™
774J410-16A	1.89	115	Red Lightning™
784J425-16A	1.84	142	Blue Streak™
700J400-16A	1.75	108	Smoky Sam™
660J381-15A	1.73	113	Skidmark™

Pro38-6GXL : 1.5 x 19.67 in

Motor Type	Burn time (s)	Peak thrust (lb)	Propellant
1008J420-15A	2.4	178	Classic™
1115J530-15A	2.1	186	Imax™
999J600-16A	1.66	162	Red Lightning™
985J595-16A	1.65	208	Blue Streak™
896J580-17A	1.55	155	Smokey Sam™
848J520-16A	1.63	148	Skidmark™

Motor Matrix

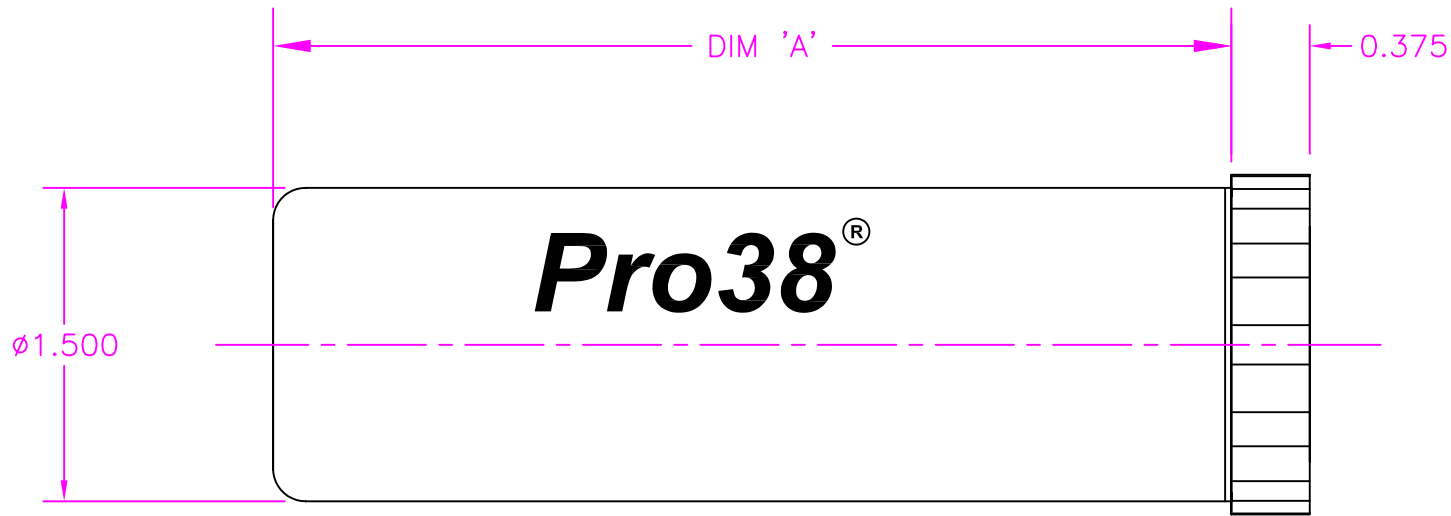
	1G	2G	3G	4G	5G	6G	6GXL
Classic	127G46-11A	266H125-12A	382I170-14A	512I285-15A	648J285-15A	765J330-16A	1008J420-15A
long burn					636I216-14A		
Red Lightning	134G60-14A	261H120-14A	396I195-16A	517I255-16A	649J335-15A	774J410-16A	999J600-16A
Blue Streak	141G78-15A	276H152-15A	413I236-17A	538I303-16A	658J357-17A	784J425-16A	985J595-16A
Smoky Sam	129G79-13A	247H143-13A	364I212-14A	486I287-15A	601I350-16A	700J400-16A	896J580-17A
Vmax	128G185-12A	225H400-13A	370I566-15A	419I800-15A			
Skidmark	117G69-14A	232H123-14A	338I180-14A	434I223-14A	543I297-15A	660J381-15A	848J520-16A
White Thunder	141G115-12A	273H225-14A	408I345-15A	540I470-15A	634I540-16A		
Imax	150G50-15A	286H100-15A					1115J530-15A

Hardware / Reload Matrix

Casing Size	Reload Size					
	1G	2G	3G	4G	5G	6G
1G	.	x	x	x	x	x
2G	1x P38-SP	.	x	x	x	x
3G	2x P38-SP	1x P38-SP	.	x	x	x
4G	x	2x P38-SP	1x P38-SP	.	x	x
5G	x	x	2x P38-SP	1x P38-SP	.	x
6G	x	x	x	2x P38-SP	1x P38-SP	.
6GXL	x	x	x	x	2x P38-SP and 1x P38-SPXL	1x P38-SP and 1x P38-SPXL

Legend: . = no extra hardware required, x = not possible / not certified

Type	DIM 'A'
1G	4.59
2G	6.89
3G	9.20
4G	11.50
5G	13.81
6G	16.11
6GXL	19.71



REV	DESCRIPTION	DRAWN	CHKD	DATE
REVISIONS All changes must be processed and reprinted. Destroy all previous copies.				



CESARONI TECHNOLOGY INCORPORATED
 2561 STOUFFVILLE ROAD GORMLEY ONTARIO CANADA

Unless Otherwise Specified
 X/X ± 1/64
 .XX ± 0.010
 .XXX ± 0.002
 .XXXX ± 0.0005
 X' ± 0'-30'
 BREAK ALL SHARP EDGES .01 X 45°
 CHAMFER ALL TAPPED HOLES 90° TO THREADED DIAMETER

THIS DOCUMENT CONTAINS CONFIDENTIAL PROPRIETARY INFORMATION. UNAUTHORIZED USE OR REPRODUCTION IS PROHIBITED.

SCALE: 1:1	DATE (DD/MM/YY): 12/03/09	FILE NAME: Pro38_dimensions.dwg
DRAWN BY: A.L.T.	LINEAR MEASURE: INCHES [MM]	DRAWING SIZE: A
WEIGHT: -	CUSTOMER: -	TITLE: Pro38 Motor Hardware Dimensions
MATERIAL: -	SURFACE TREATMENT: -	SHEET: 1 OF 1

PROJECT # : 0

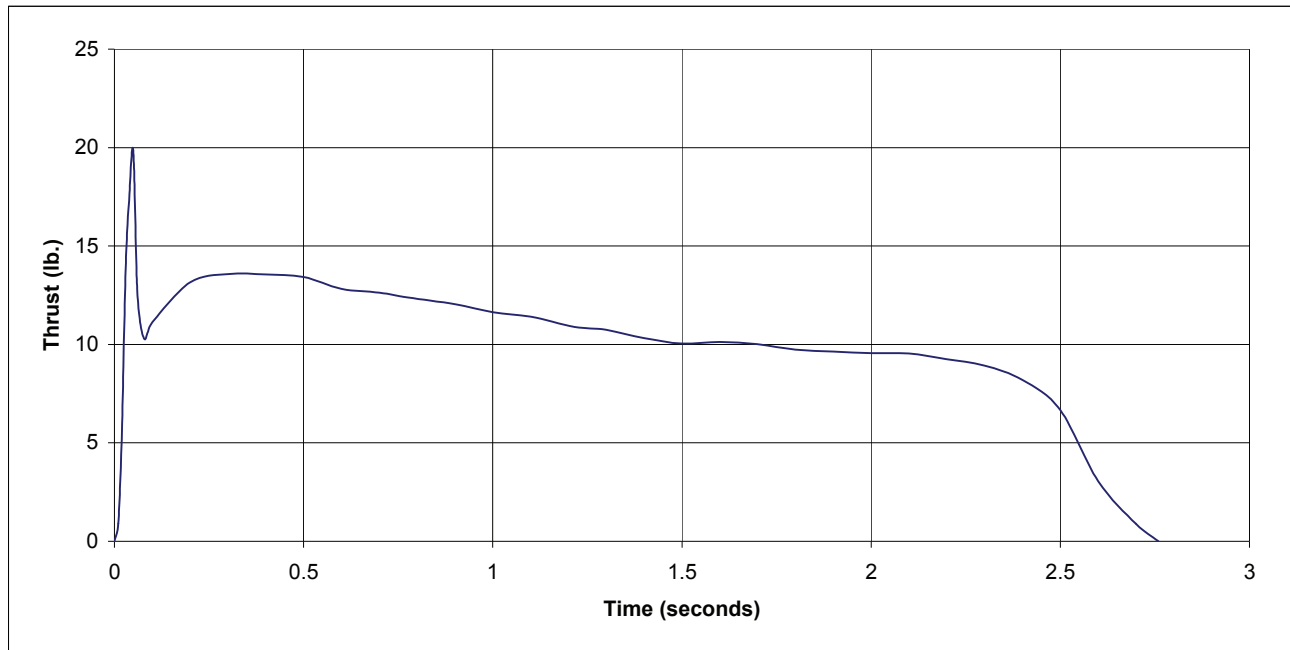
Motor Data

Single-Use/Reload/Hybrid	Reloadable
Loaded Weight	197 g (6.95 oz)
Propellant Weight	62.5 g (2.20 oz)
Burnout Weight	119 g (4.20 oz)
Delays Tested	2, 4, 6, 8, 11 s adjustable

Motor Dimensions mm	38.00 x 127.00 mm (1.50 x 5.00 in)
Total Impulse	127.3 Ns (28.62 lb.s)
Maximum Thrust	112.7 N (25.34 lb)
Avg Thrust	46.2 N (10.38 lb)
ISP	207.4 s
Burntime	2.76 s

Notes

Representative Thrust Curve



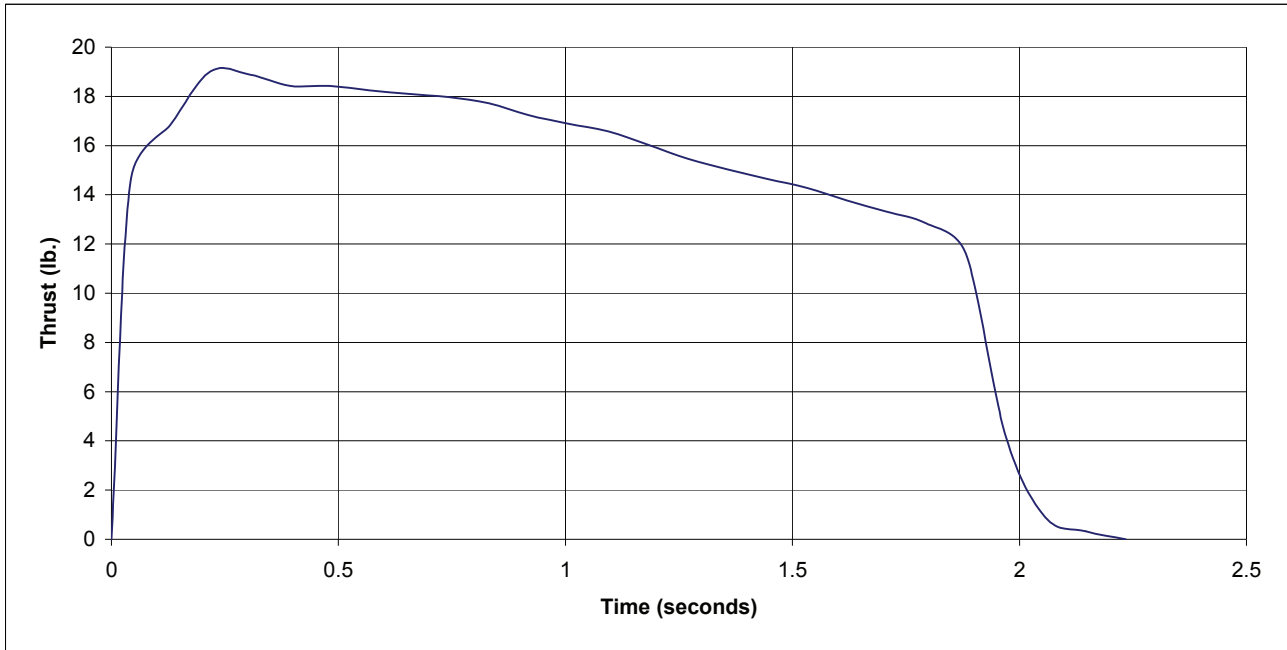
Motor Data

Single-Use/Reload/Hybrid	Reloadable
Loaded Weight	206 g (7.27 oz)
Propellant Weight	68.3 g (2.41 oz)
Burnout Weight	120.0 g (4.22 oz)
Delays Tested	5, 7, 9, 11, 14 s, adjustable

Motor Dimensions mm	38.00 x 127.00 mm (1.50 x 5.00 in)
Total Impulse	134.2 Ns (30.18 lb.s)
Maximum Thrust	87.8 N (19.74 lb)
Avg Thrust	60.3 N (13.55 lb)
ISP	200.4 s
Burntime	2.23 s

Notes

Representative Thrust Curve



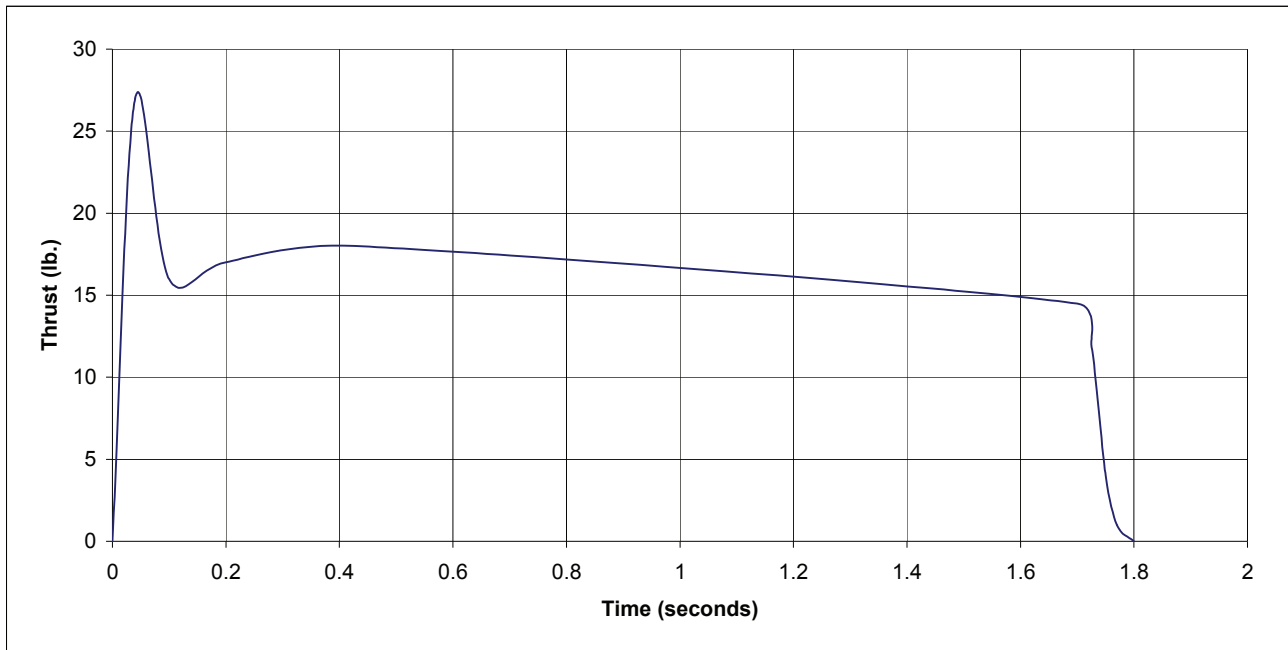
Motor Data

Single-Use/Reload/Hybrid	Reloadable
Loaded Weight	197 g
Propellant Weight	69 g
Burnout Weight	
Delays Tested	6, 8, 10, 12, 15 s, adjustable

Motor Dimensions mm	38.00 x 127.00 mm (1.50 x 5.00 in)
Total Impulse	140.9 Ns (31.7 lb.s)
Maximum Thrust	137.3 N (30.9 lb.)
Avg Thrust	78.4 N (17.6 lb.)
ISP	208.16 s
Burntime	1.80 s

Notes

Representative Thrust Curve



Pro38-1G 129G79-13A Smoky Sam



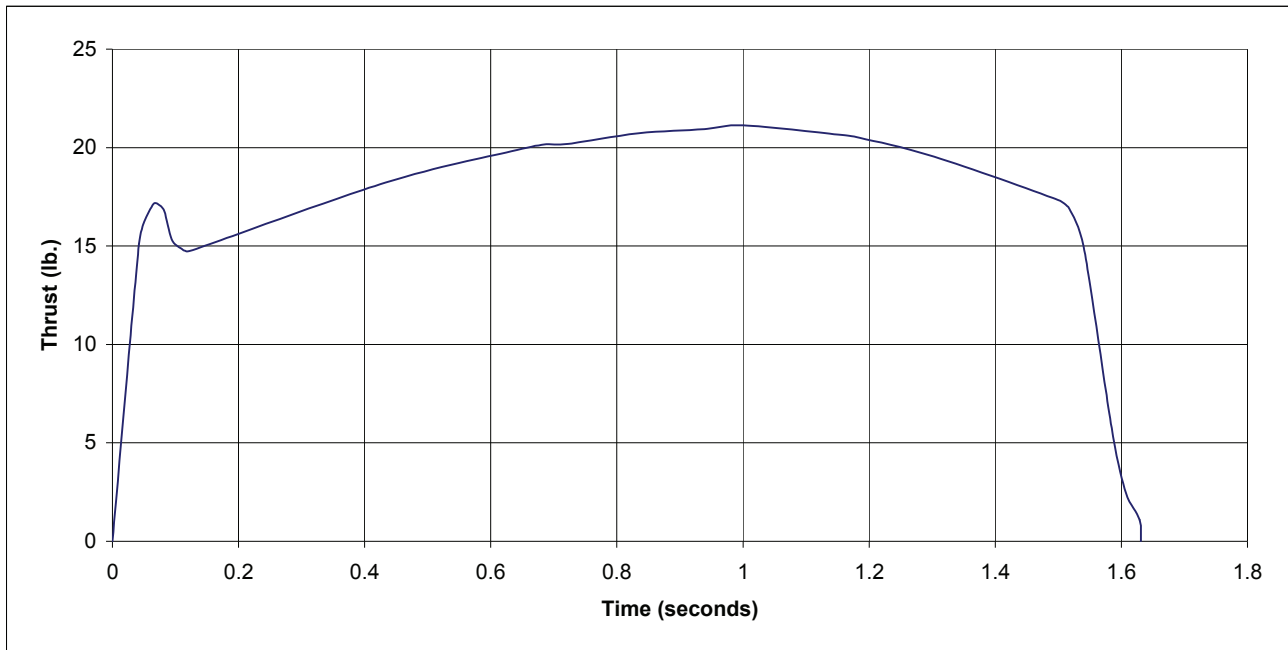
Motor Data

Single-Use/Reload/Hybrid	Reloadable
Loaded Weight	226.00 g (7.9)
Propellant Weight	82.70 g (2.89 oz)
Burnout Weight	126.00 g (4.41 oz)
Delays Tested	4, 6, 8, 10, 13 s, adjustable

Motor Dimensions mm	38.00 x 127.00 mm (1.50 x 5.00 in)
Total Impulse	129.00 Ns (29.03 lb.s)
Maximum Thrust	95.85 N (21.57 lb)
Avg Thrust	79.90 N (17.98 lb)
ISP	159.0 s
Burntime	1.63 s

Notes

Representative Thrust Curve



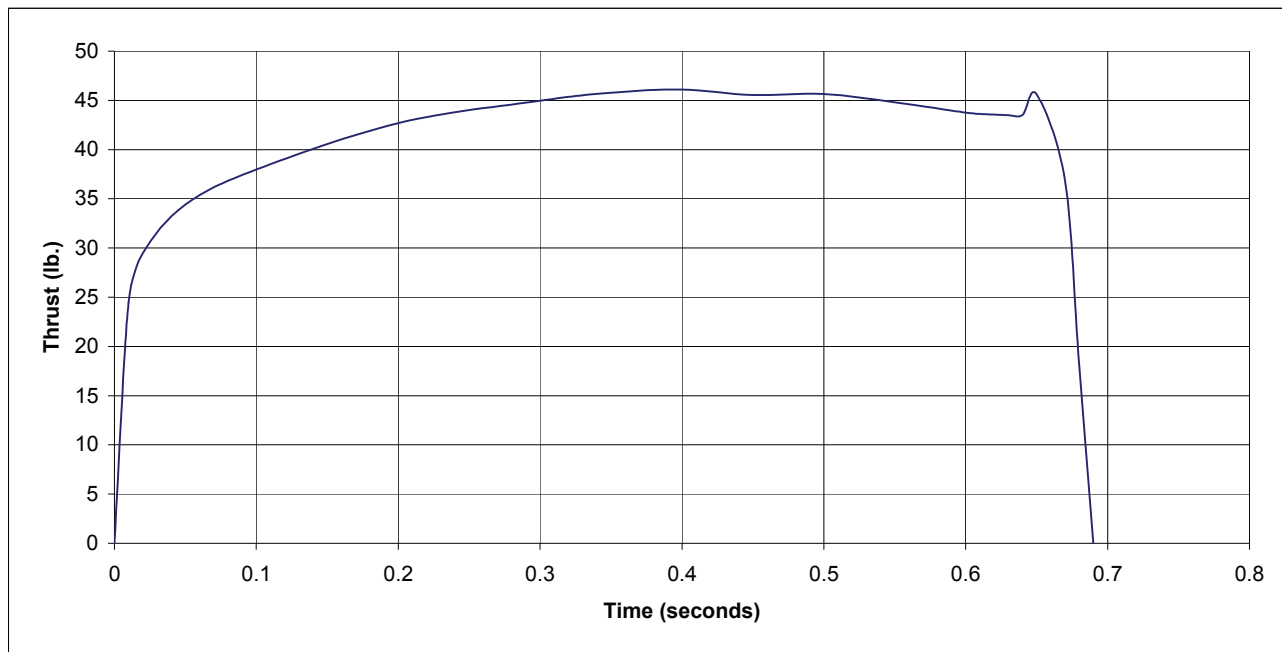
Motor Data

Single-Use/Reload/Hybrid	Reloadable
Loaded Weight	188.40 g (6.65 oz)
Propellant Weight	61.2 g (2.16 oz)
Burnout Weight	116.7 g (4.12 oz)
Delays Tested	3, 5, 7, 9, 12 s, adjustable

Motor Dimensions mm	38 x 127 mm (1.50 x 5.00 in)
Total Impulse	128 Ns (28.76 lb.s)
Maximum Thrust	212.16 N (47.68 lb)
Avg Thrust	183.3 N (41.2 lb)
ISP	213.3s
Burntime	0.69s

Notes

Representative Thrust Curve



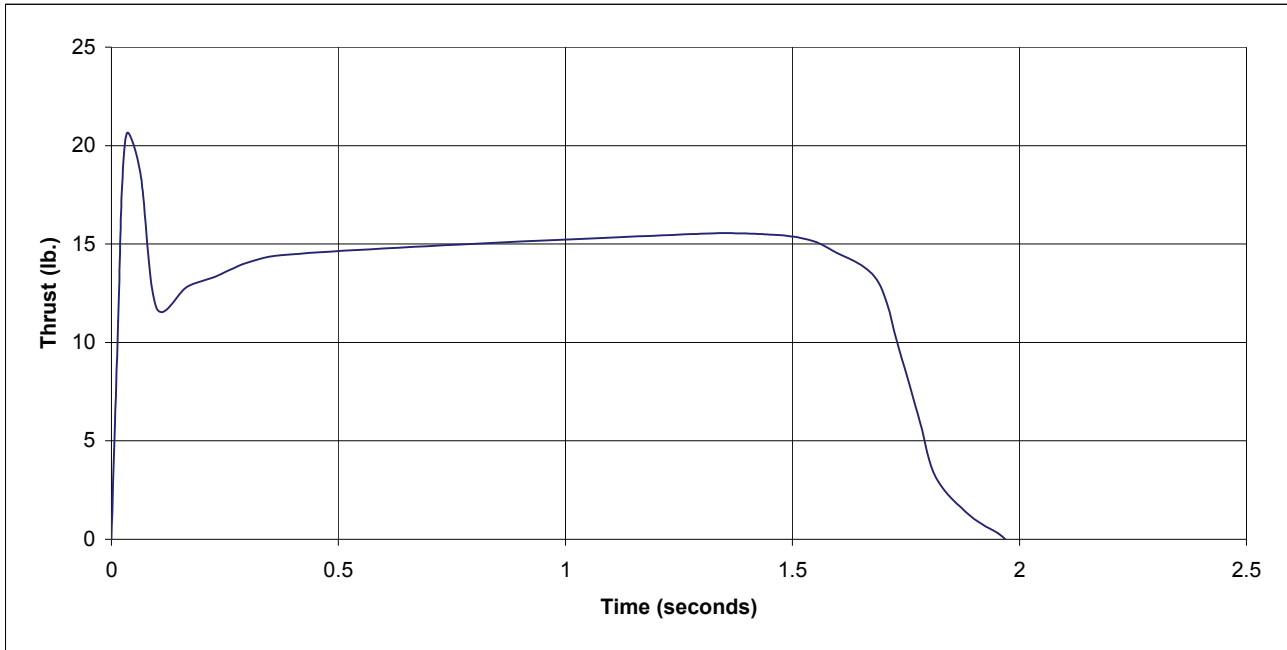
Motor Data

Single-Use/Reload/Hybrid	Reloadable
Loaded Weight	198 g
Propellant Weight	67 g
Burnout Weight	
Delays Tested	5, 7, 9, 11, 14 s, adjustable

Motor Dimensions mm	38.00 x 127.00 mm (1.50 x 5.00 in)
Total Impulse	117.15 Ns
Maximum Thrust	91.97 N
Avg Thrust	63.60 N
ISP	178.24 s
Burntime	1.84 s

Notes

Representative Thrust Curve



Chris Colby's Nike Apache at LDRS 28 (photo Ray Lapanse)

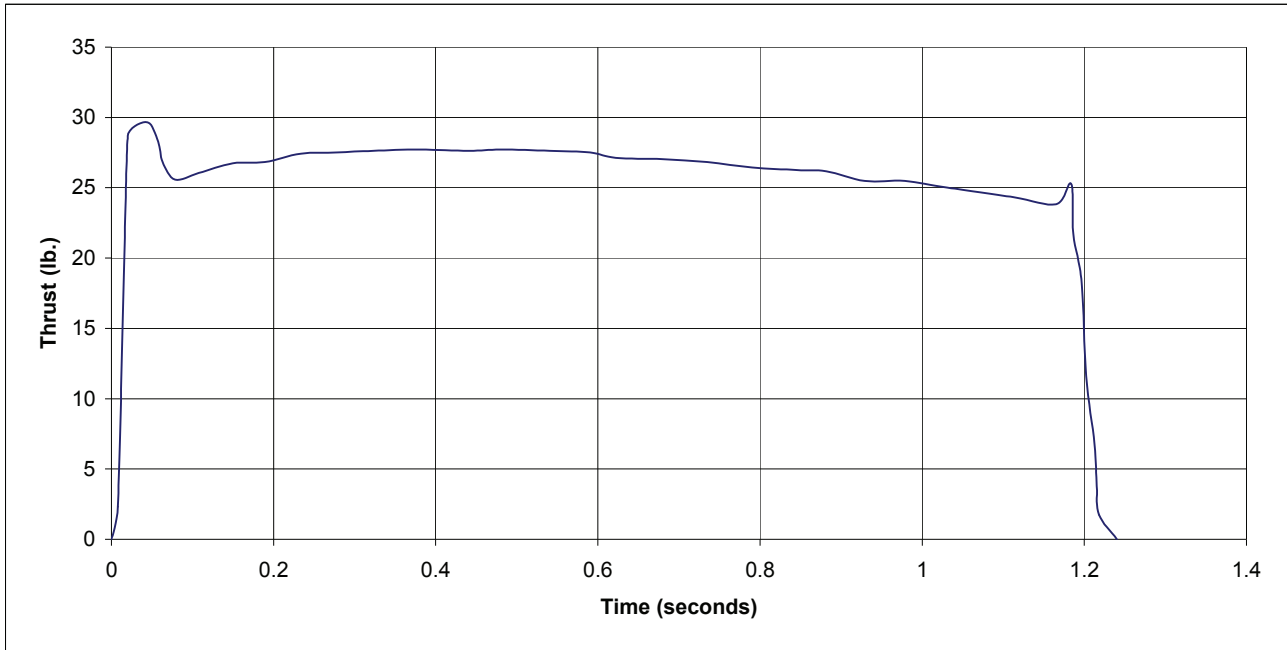
Motor Data

Single-Use/Reload/Hybrid Reloadable
Loaded Weight 195.00 g (6.90 oz)
Propellant Weight 61.80 g (2.20 oz)
Burnout Weight 118.00 g (4.10 oz)
Delays Tested 4, 6, 8, 10, 13 s, adjustable

Motor Dimensions mm 38.00 x 127.00 mm (1.50 x 5.00 in)
Total Impulse 140.6 Ns (31.60 lb.s)
Maximum Thrust 134.40 N (30.20 lb)
Avg Thrust 113.50 N (25.50 lb)
ISP 232.0 s
Burntime 1.24 s

Notes

Representative Thrust Curve



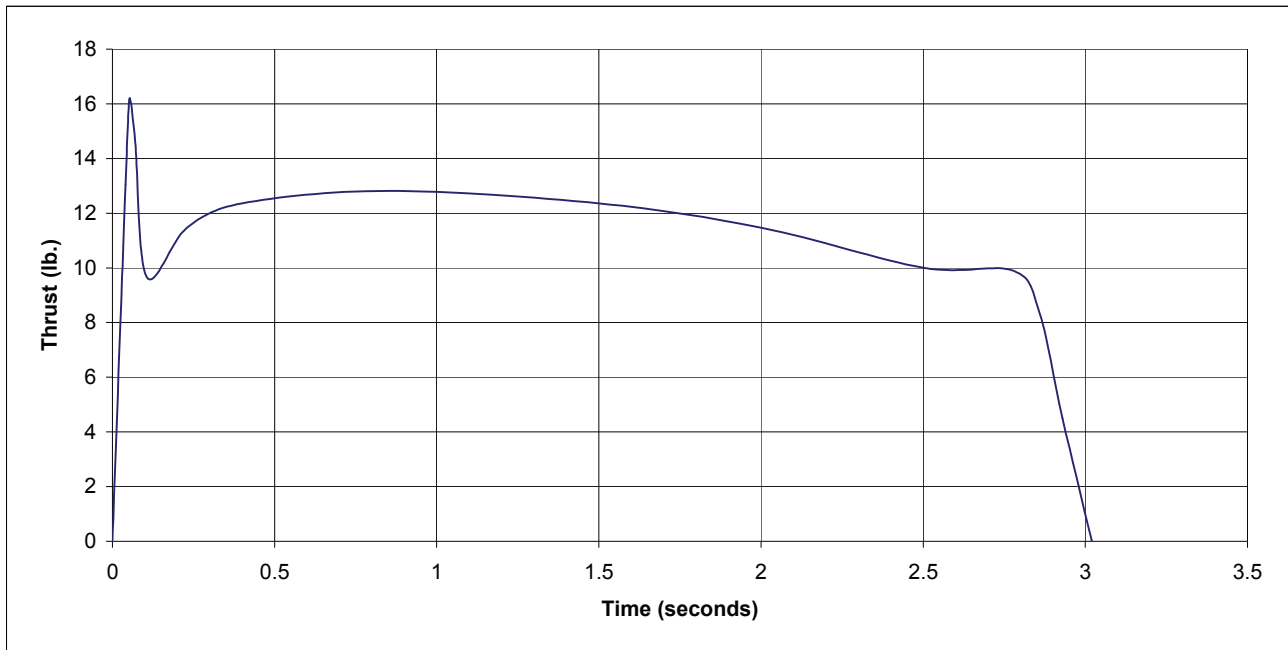
Motor Data

Single-Use/Reload/Hybrid	Reloadable
Loaded Weight	218.00 g (7.63 oz)
Propellant Weight	77.70 g (2.72 oz)
Burnout Weight	122.00 g (4.27 oz)
Delays Tested	6, 8, 10, 12, 15 s, adjustable

Motor Dimensions mm	38.00 x 127.00 mm (1.50 x 5.00 in)
Total Impulse	150.00 Ns (33.75 lb/s)
Maximum Thrust	78.80 N (17.73 lb)
Avg Thrust	52.50 N (11.81 lb)
ISP	196.87 s
Burntime	2.87 s

Notes

Representative Thrust Curve



Motor Data

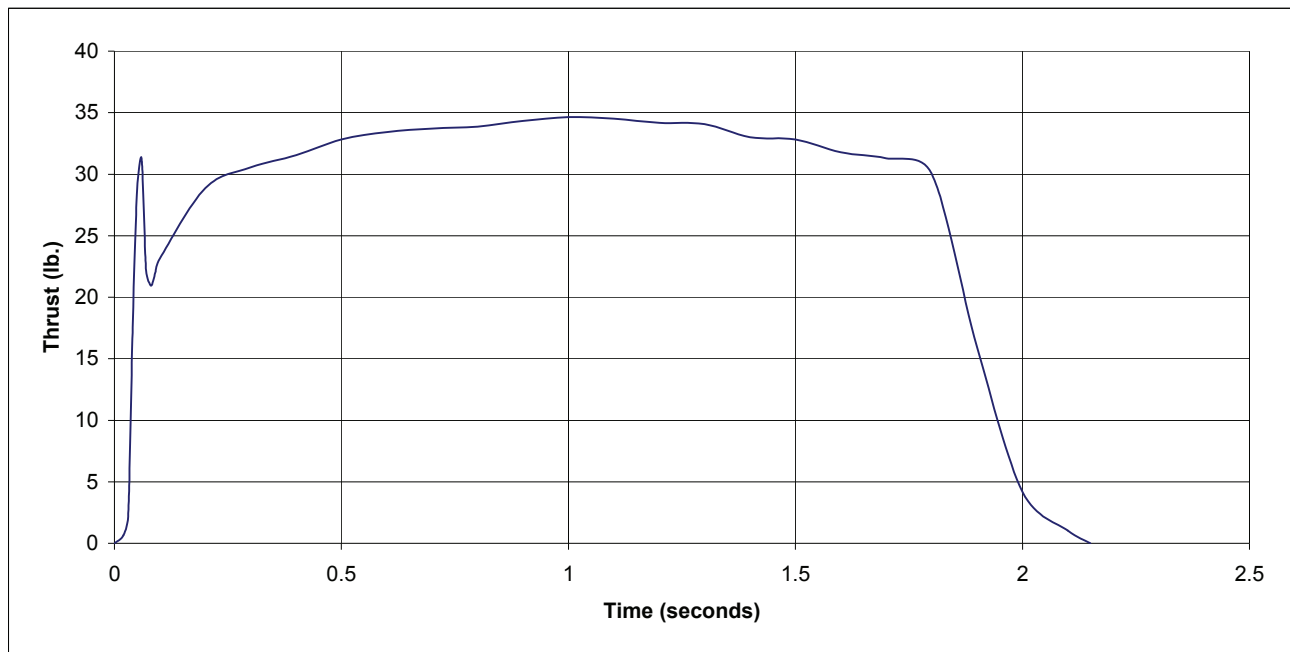
Single-Use/Reload/Hybrid	Reloadable
Loaded Weight	293 g (10.34 oz)
Propellant Weight	125 g (4.41 oz)
Burnout Weight	155 g (5.47 oz)
Delays Tested	3, 5, 7, 9, 12 s, adjustable

Motor Dimensions mm

Total Impulse	265.6 Ns (59.70 lb.s)
Maximum Thrust	152.9 N (34.38 lb)
Avg Thrust	125.1 N (28.11 lb)
ISP	216.6 s
Burntime	2.15 s

Notes

Representative Thrust Curve



Tim Van Milligan's MadCow Little John (photo Ray Lapanse)

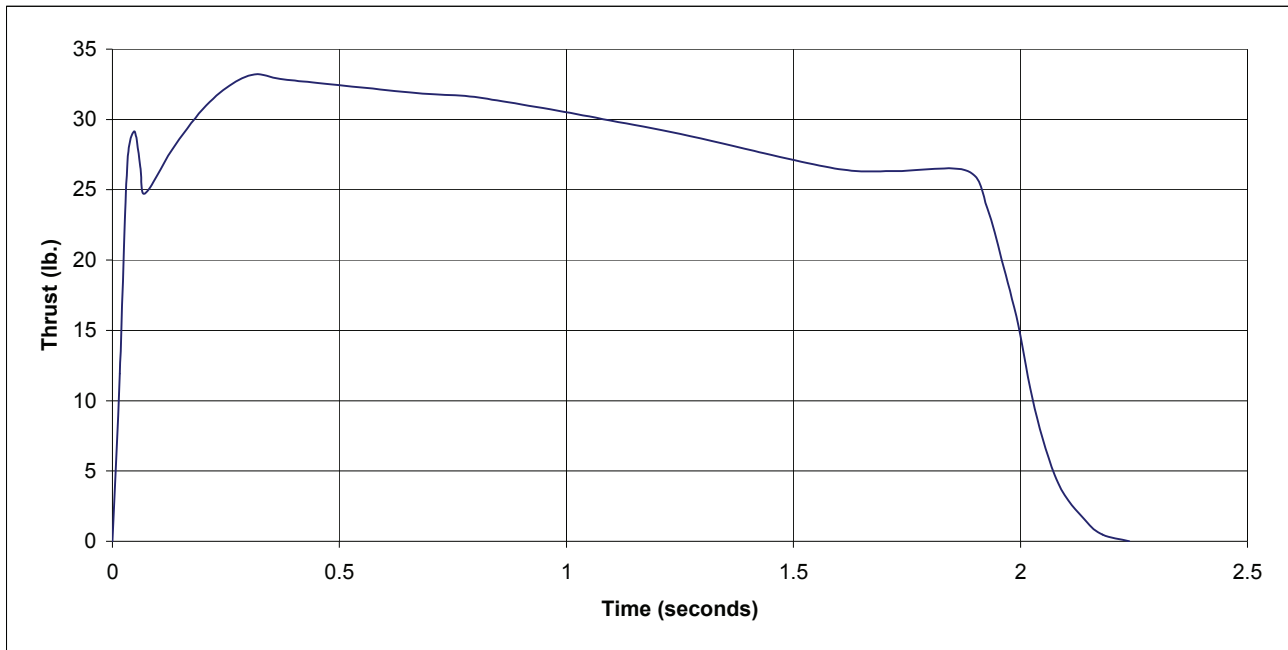
Motor Data

Single-Use/Reload/Hybrid	Reloadable
Loaded Weight	295.0 g (10.4 oz)
Propellant Weight	136.6 g (4.82 oz)
Burnout Weight	154.0 g (5.43 oz)
Delays Tested	5, 7, 9, 11, 14 s, adjustable

Motor Dimensions mm	38.00 x 186.00 mm (1.50 x 7.32 in)
Total Impulse	260.7 Ns (58.61 lb.s)
Maximum Thrust	149.4 N (33.59 lb)
Avg Thrust	121.4 N (27.29 lb)
ISP	194.6 s
Burntime	2.15 s

Notes

Representative Thrust Curve



David Tjarks's Small Endeavor (photo Ray Lapanse)

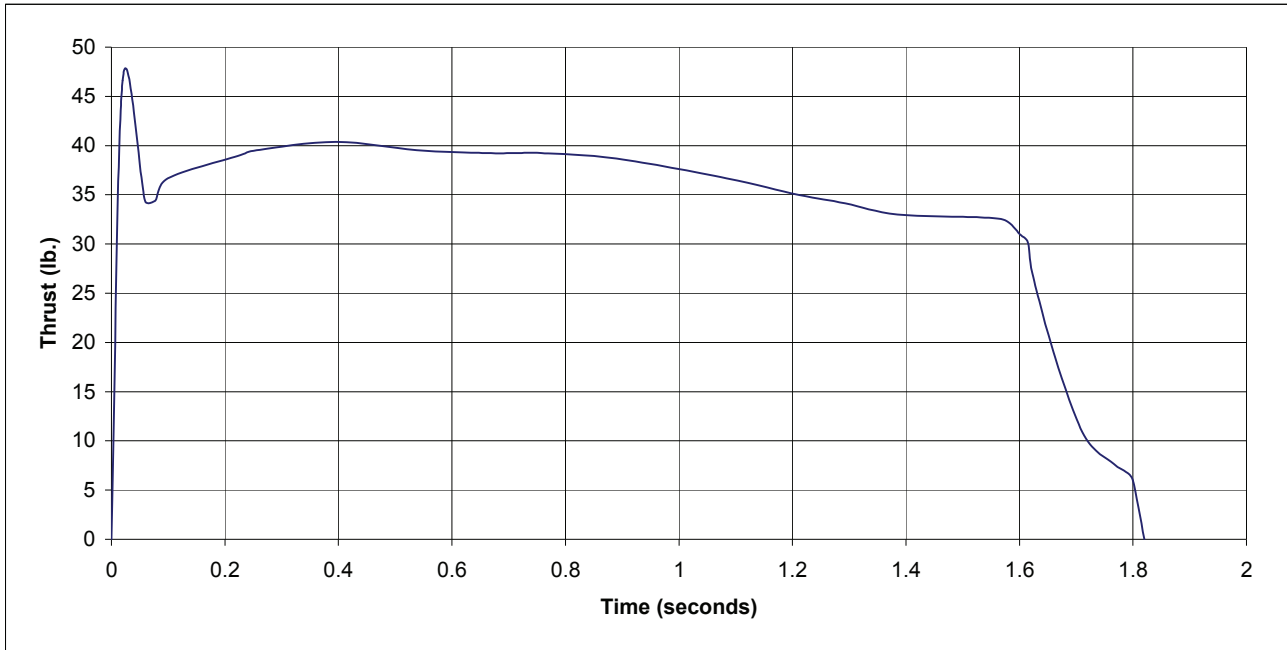
Motor Data

Single-Use/Reload/Hybrid	Reloadable
Loaded Weight	298 g
Propellant Weight	138 g
Burnout Weight	
Delays Tested	6, 8, 10, 12, 15s, adjustable

Motor Dimensions mm	38.00 x 186.00 mm (1.50 x 7.32 in)
Total Impulse	275.9 Ns (62.0 lb.s)
Maximum Thrust	212.4 N (47.8 lb.)
Avg Thrust	152.4 N (34.3 lb.)
ISP	203.80 s
Burntime	1.81 s

Notes

Representative Thrust Curve



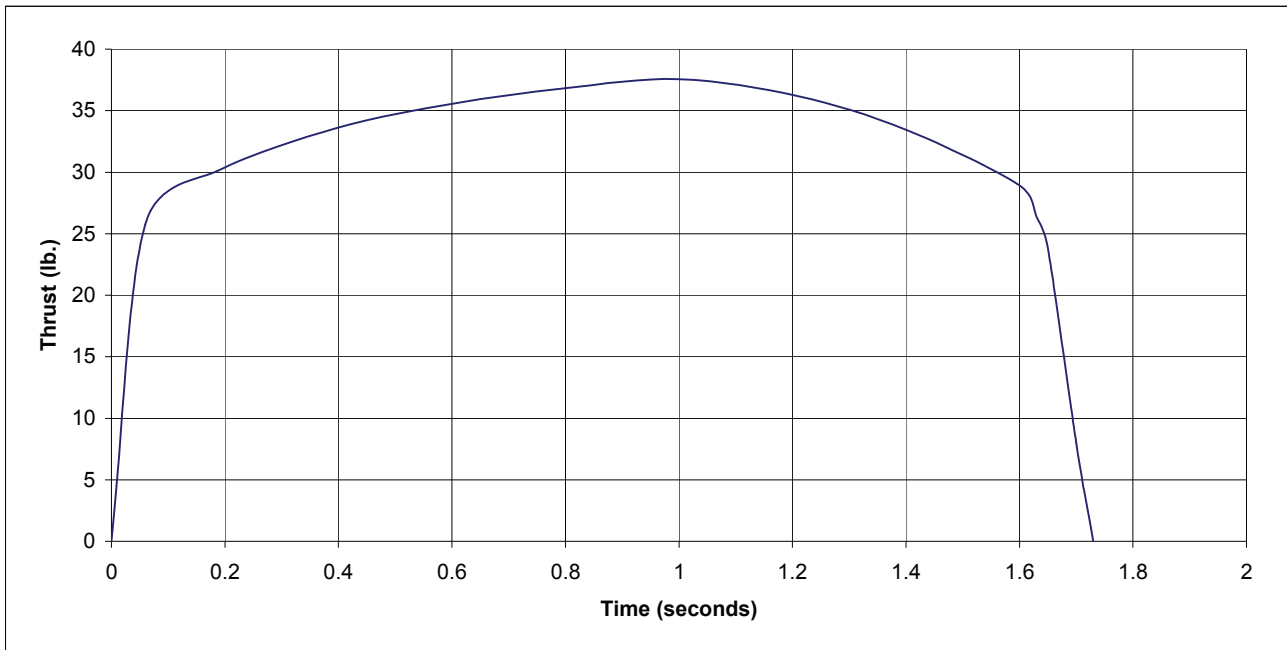
Motor Data

Single-Use/Reload/Hybrid Reloadable
Loaded Weight 347.00 g (12.15 oz)
Propellant Weight 165.40 g (5.79 oz)
Burnout Weight 160.00 g (5.60 oz)
Delays Tested 4, 6, 8, 10, 13 s, adjustable

Motor Dimensions mm 38.00 x 186.00 mm (1.50 x 7.32 in)
Total Impulse 247.00 Ns (55.58 lb.s)
Maximum Thrust 167.00 N (37.58 lb)
Avg Thrust 142.40 N (32.04 lb)
ISP 152.2 s
Burntime 1.73 s

Notes

Representative Thrust Curve



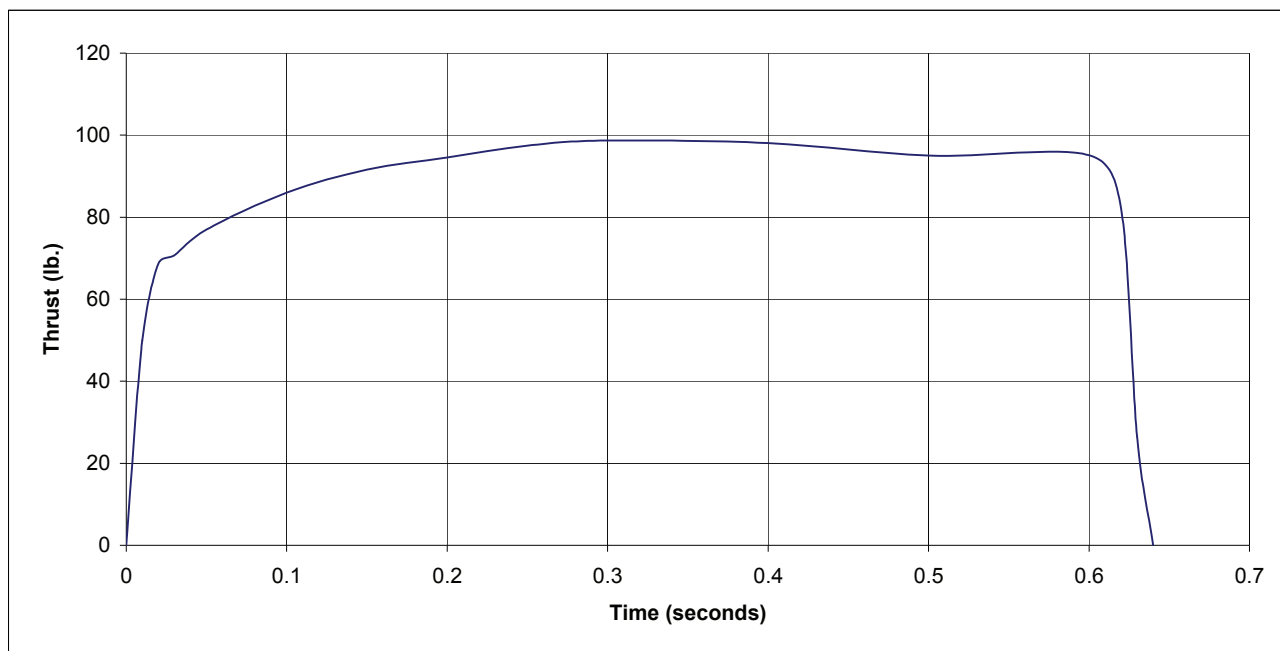
Motor Data

Single-Use/Reload/Hybrid	Reloadable
Loaded Weight	283.6 g (10.00 oz)
Propellant Weight	122.4 g (4.32 oz)
Burnout Weight	148.4 g (5.23 oz)
Delays Tested	4, 6, 8, 10, 13 s, adjustable

Motor Dimensions mm	38.00 x 186.00 mm (1.50 x 7.32 in)
Total Impulse	255 Ns (57.32 lb.s)
Maximum Thrust	448 N (100.7 lb)
Avg Thrust	396 N (89 lb)
ISP	212.5 s
Burntime	0.64 s

Notes

Representative Thrust Curve



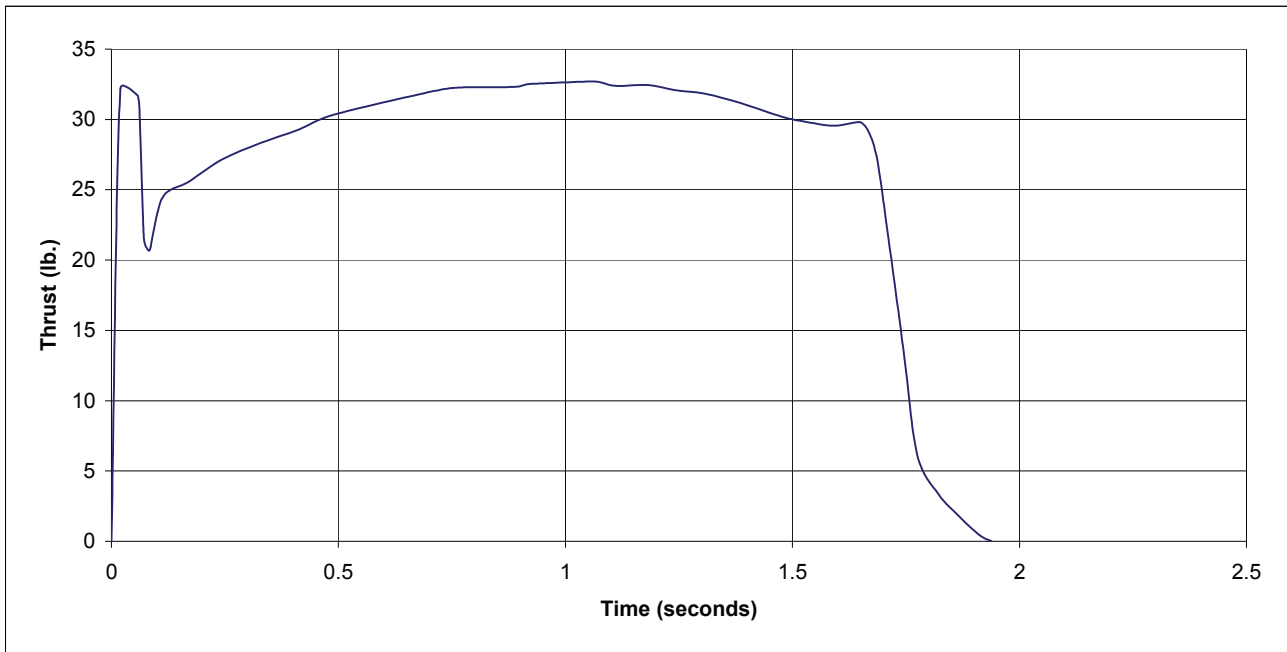
Motor Data

Single-Use/Reload/Hybrid	Reloadable
Loaded Weight	297.00 g (10.40 oz)
Propellant Weight	123.00 g (4.31 oz)
Burnout Weight	155.00 g (5.43 oz)
Delays Tested	5, 7, 9, 11, 14 s, adjustable

Motor Dimensions mm	38.00 x 186.00 mm (1.50 x 7.32 in)
Total Impulse	232.40 Ns (52.29 lb/s)
Maximum Thrust	153.30 N (34.49 lb)
Avg Thrust	122.50 N (27.56 lb)
ISP	192.60 s
Burntime	1.90 s

Notes

Representative Thrust Curve



Ron Dreasher's Quark 7X (photo Ray Lapanse)

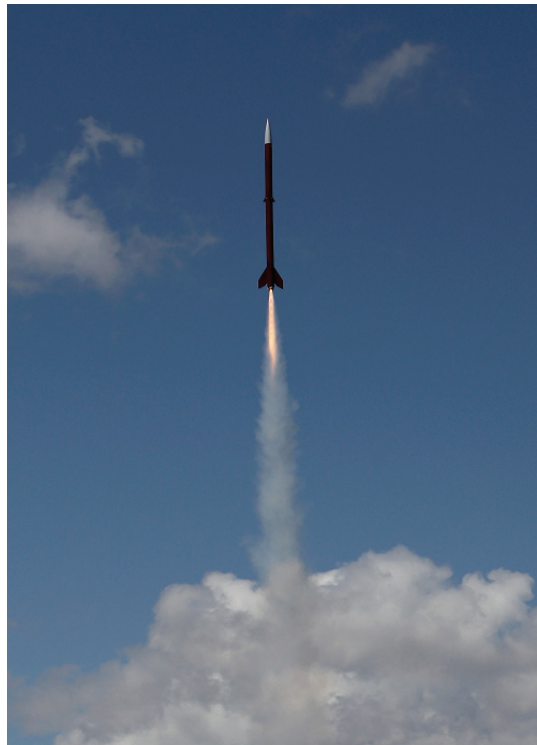
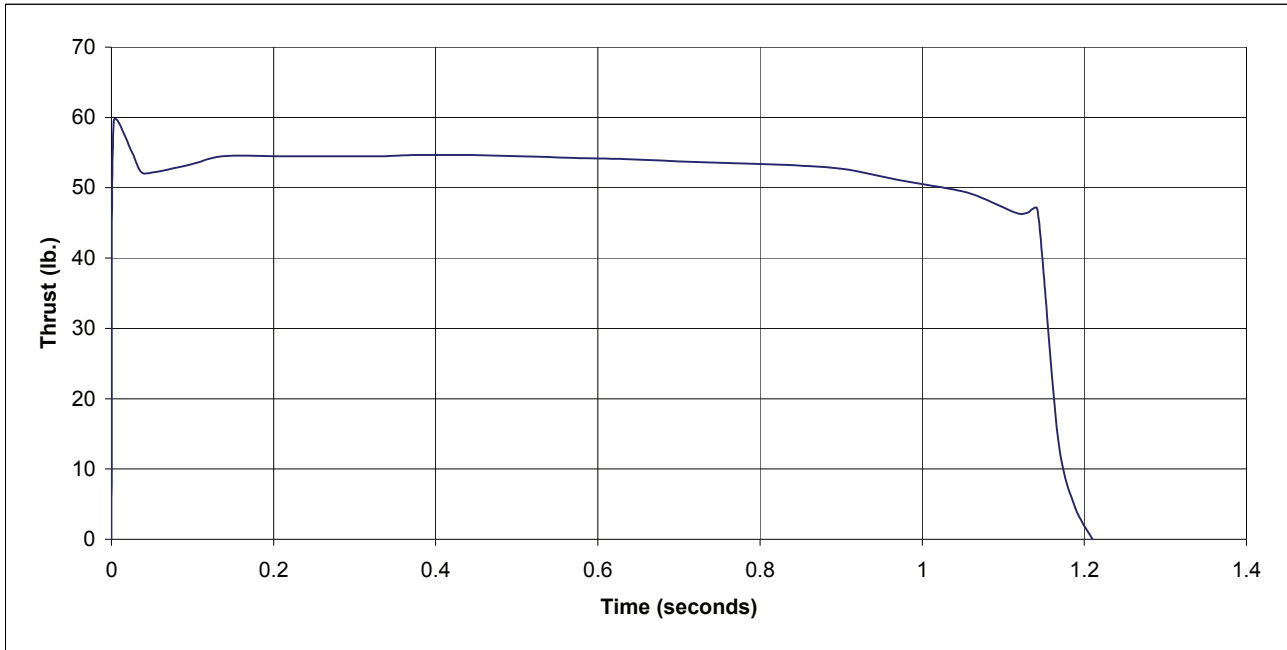
Motor Data

Single-Use/Reload/Hybrid	Reloadable
Loaded Weight	293.00 g (10.3 oz)
Propellant Weight	123.6 g (4.40 oz)
Burnout Weight	152.00 g (5.34 oz)
Delays Tested	5, 7, 9, 11, 14 s, adjustable

Motor Dimensions mm	38.00 x 186.00 mm (1.50 x 7.32 in)
Total Impulse	273.2 Ns (61.40 lb.s)
Maximum Thrust	254.10 N (57.10 lb)
Avg Thrust	226.33 N (50.88 lb)
ISP	225.4 s
Burntime	1.21 s

Notes

Representative Thrust Curve



Richard Fonzi's Mini Black Brant X (photo Ray Lapanse)

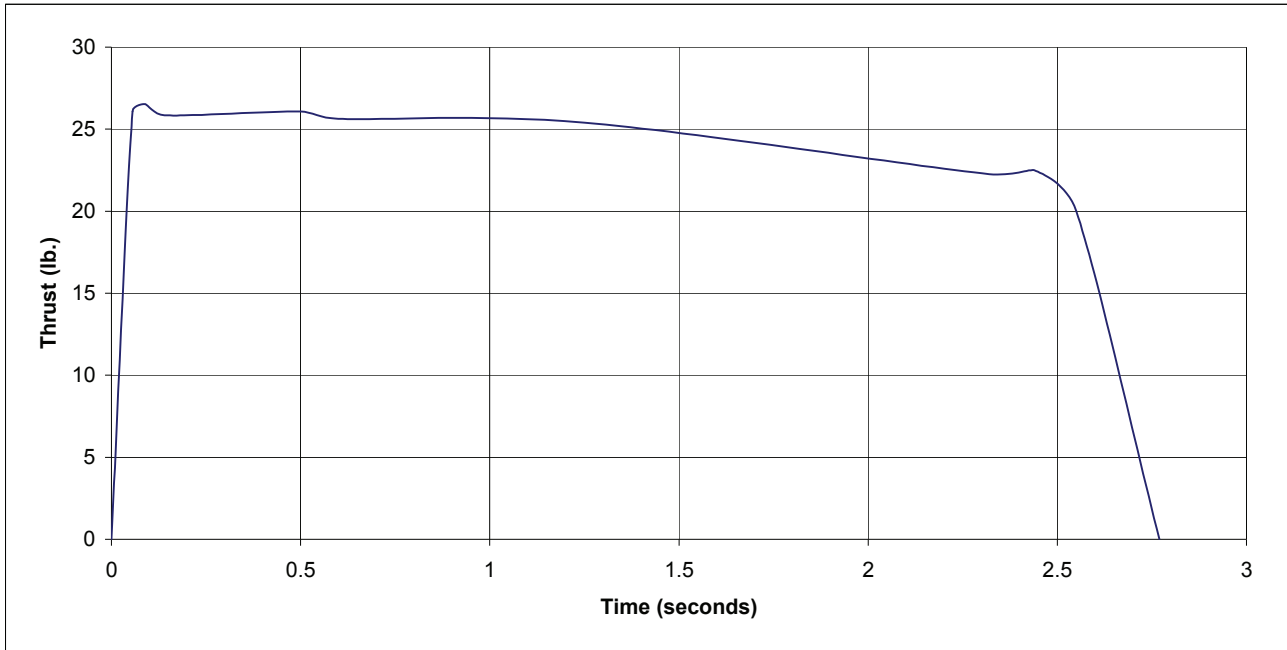
Motor Data

Single-Use/Reload/Hybrid	Reloadable
Loaded Weight	327.00 g (11.45 oz)
Propellant Weight	154.40 g (5.40 oz)
Burnout Weight	154.00 g (5.39 oz)
Delays Tested	6, 8, 10, 12, 15 s, adjustable

Motor Dimensions mm	38.00 x 186.00 mm (1.50 x 7.32 in)
Total Impulse	286.40 Ns (64.44 lb/s)
Maximum Thrust	117.90 N (26.53 lb)
Avg Thrust	101.70 N (22.88 lb)
ISP	189.15 s
Burntime	2.82 s

Notes

Representative Thrust Curve



Ron Dreasher's NCR 3-in rocket (photo Ray Lapanse)

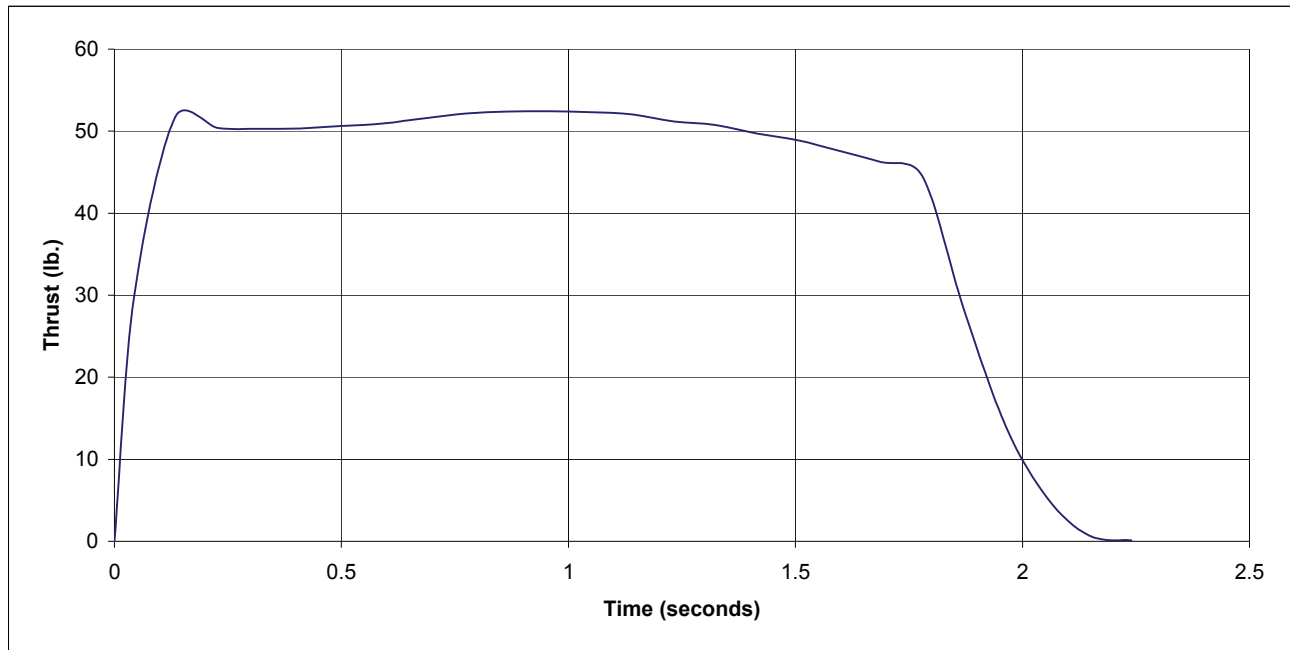
Motor Data

Single-Use/Reload/Hybrid	Reloadable
Loaded Weight	392 g (13.83 oz)
Propellant Weight	187.5 g (6.61 oz)
Burnout Weight	189 g (6.67 oz)
Delays Tested	5, 7, 9, 11, 14 s, adjustable

Motor Dimensions mm	38.00 x 245.00 mm (1.50 x 9.65 in)
Total Impulse	382 Ns (85.78 lb.s)
Maximum Thrust	260.6 N (58.59 lb)
Avg Thrust	169.2 N (38.03 lb)
ISP	207.7 s
Burntime	2.26 s

Notes

Representative Thrust Curve



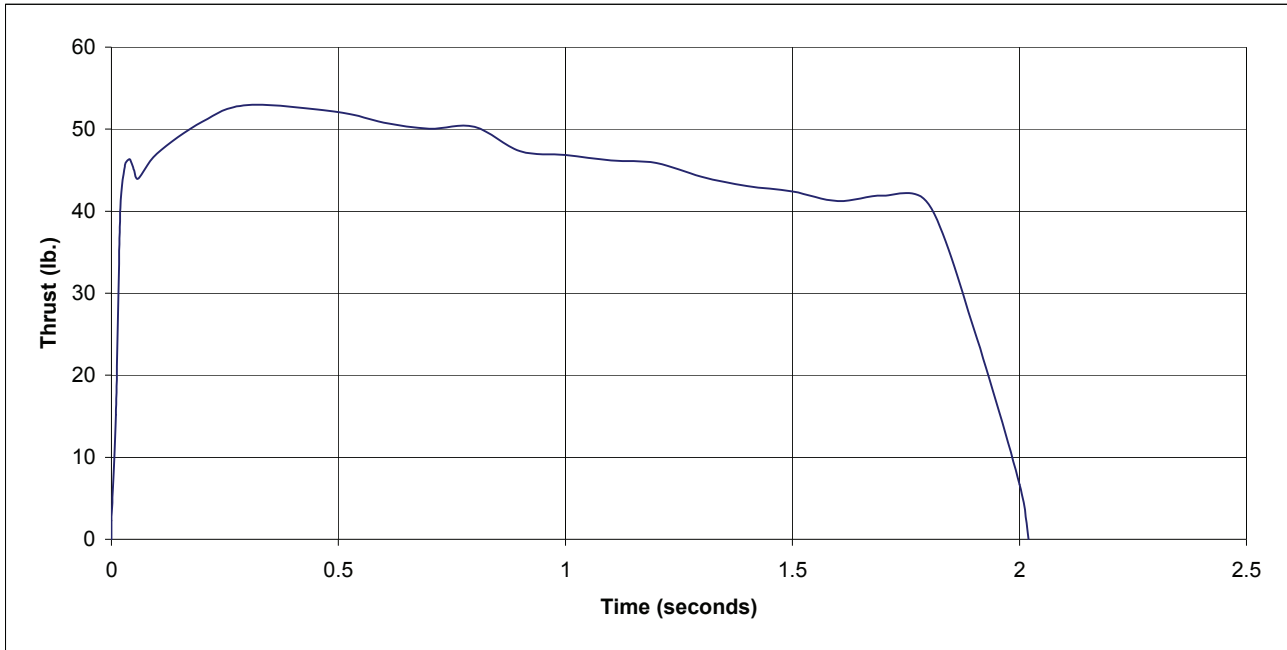
Motor Data

Single-Use/Reload/Hybrid	Reloadable
Loaded Weight	417.0 g (14.71 oz)
Propellant Weight	204.9 g (7.23 oz)
Burnout Weight	191.0 g (6.72 oz)
Delays Tested	7, 9, 11, 13, 16 s, adustable

Motor Dimensions mm	38.00 x 245.00 mm (1.50 x 9.65 in)
Total Impulse	396.2 Ns (89.08 lb.s)
Maximum Thrust	241.5 N (54.29 lb)
Avg Thrust	196.0 N (44.05 lb)
ISP	197.2 s
Burntime	2.02 s

Notes

Representative Thrust Curve



Cathy Miller's Intergalactic Space Traveller at LDRS28 (photo Ray Lapanse)

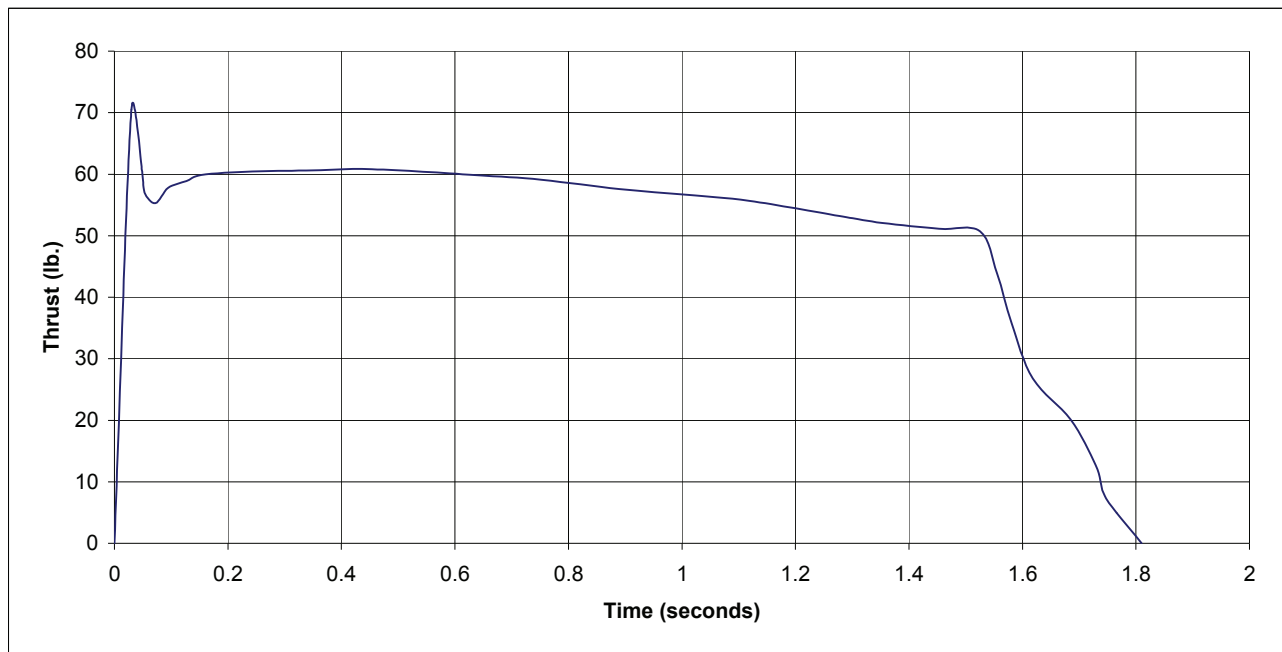
Motor Data

Single-Use/Reload/Hybrid	Reloadable
Loaded Weight	400 g
Propellant Weight	204 g
Burnout Weight	
Delays Tested	8, 10, 12, 14, 17s, adjustable

Motor Dimensions mm	38.00 x 245.00 mm (1.50 x 9.65 in)
Total Impulse	413.0 Ns (92.9 lb.s)
Maximum Thrust	313.7 N (70.5 lb.)
Avg Thrust	236.3 N (53.1 lb.)
ISP	206.37 s
Burntime	1.75 s

Notes

Representative Thrust Curve



Mark Hayes's 4.0" Upscale Estes "Freaky Flyer" (photo: David Pecheo)

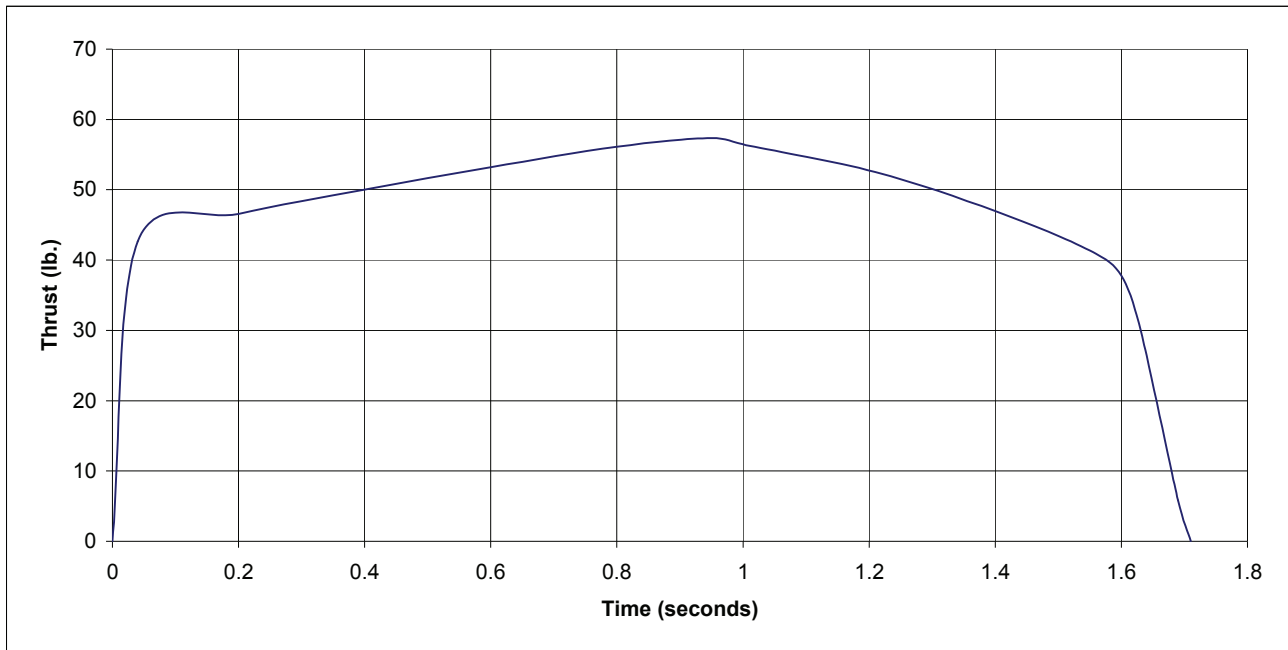
Motor Data

Single-Use/Reload/Hybrid Reloadable
Loaded Weight 475.00 g (16.63 oz)
Propellant Weight 248.10 g (8.68 oz)
Burnout Weight 200.00 g (7.00 oz)
Delays Tested 5, 7, 9, 11, 14 s, adjustable

Motor Dimensions mm 38.00 x 245.00 mm (1.50 x 9.65 in)
Total Impulse 364.00 Ns (81.90 lb.s)
Maximum Thrust 255.16 N (57.41 lb)
Avg Thrust 212.67 N (47.85 lb)
ISP 149.6 s
Burntime 1.71 s

Notes

Representative Thrust Curve



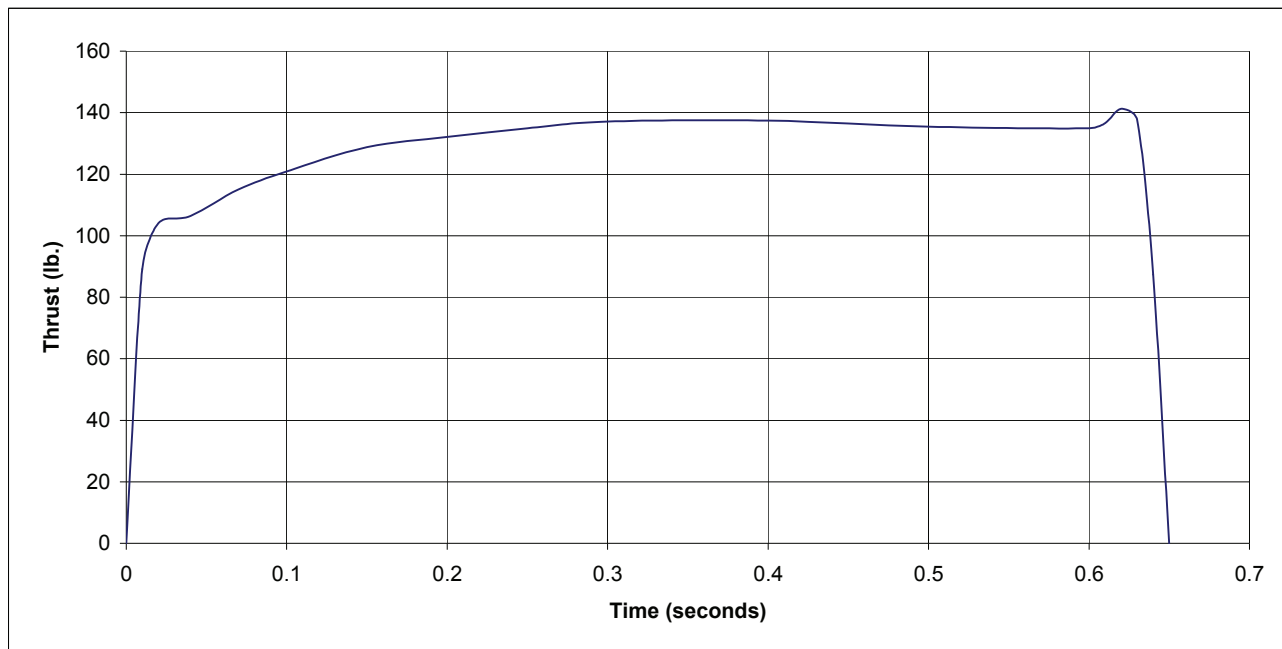
Motor Data

Single-Use/Reload/Hybrid	Reloadable
Loaded Weight	384.2 g (13.55 oz)
Propellant Weight	183.6 g (6.48 oz)
Burnout Weight	186.4 g (6.58 oz)
Delays Tested	6, 8, 10, 12, 15 s, adjustable

Motor Dimensions mm	38.00 x 245.00 mm (1.50 x 9.65 in)
Total Impulse	370 Ns (83.14 lb.s)
Maximum Thrust	640.9 N (144 lb)
Avg Thrust	566 N (127.1 lb)
ISP	205.7 s
Burntime	0.65 s

Notes

Representative Thrust Curve



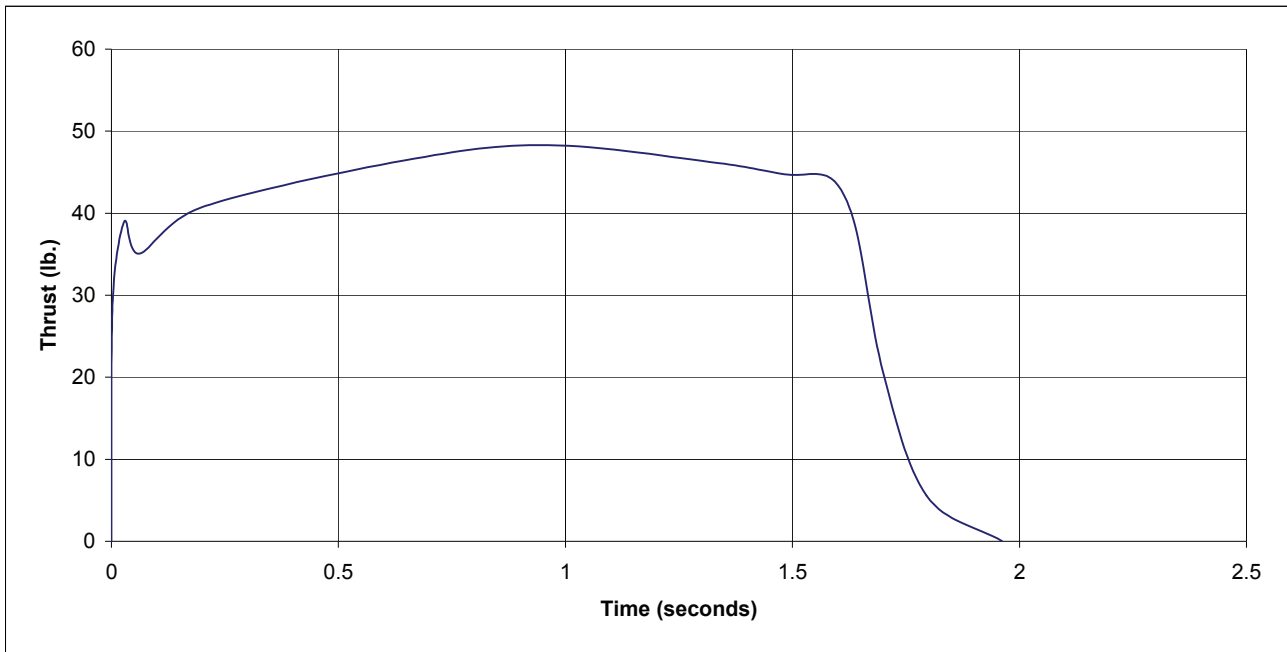
Motor Data

Single-Use/Reload/Hybrid	Reloadable
Loaded Weight	394 g
Propellant Weight	200 g
Burnout Weight	
Delays Tested	5, 7, 9, 11, 14 s, adjustable

Motor Dimensions mm	38.00 x 245.00 mm (1.50 x 9.65 in)
Total Impulse	338.42 Ns
Maximum Thrust	212.96 N
Avg Thrust	180.9 N
ISP	172.49 s
Burntime	1.87 s

Notes

Representative Thrust Curve



Boris Kitan's Saucer Of Doom LDR28 (photo Ray Lapanse)

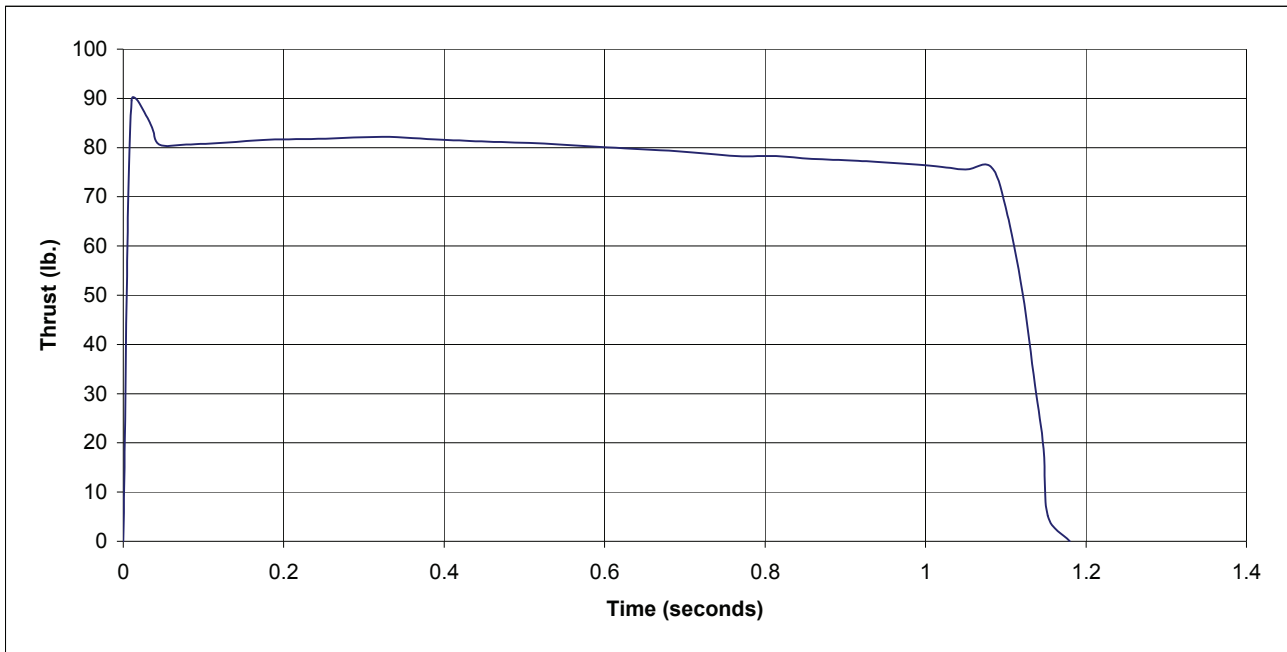
Motor Data

Single-Use/Reload/Hybrid	Reloadable
Loaded Weight	395.00 g (13.93 oz)
Propellant Weight	185.40 g (6.54 oz)
Burnout Weight	190.00 g (6.70 oz)
Delays Tested	6, 8, 10, 12, 15 s, adjustable

Motor Dimensions mm	38.00 x 245.00 mm (1.50 x 9.65 in)
Total Impulse	407.58 Ns (91.63 lb.s)
Maximum Thrust	402.62 N (90.51 lb)
Avg Thrust	345.06 N (77.57 lb)
ISP	224.2 s
Burntime	1.18 s

Notes

Representative Thrust Curve



Devin Stevens's PML Tethus (photo: Ray Lapanse)

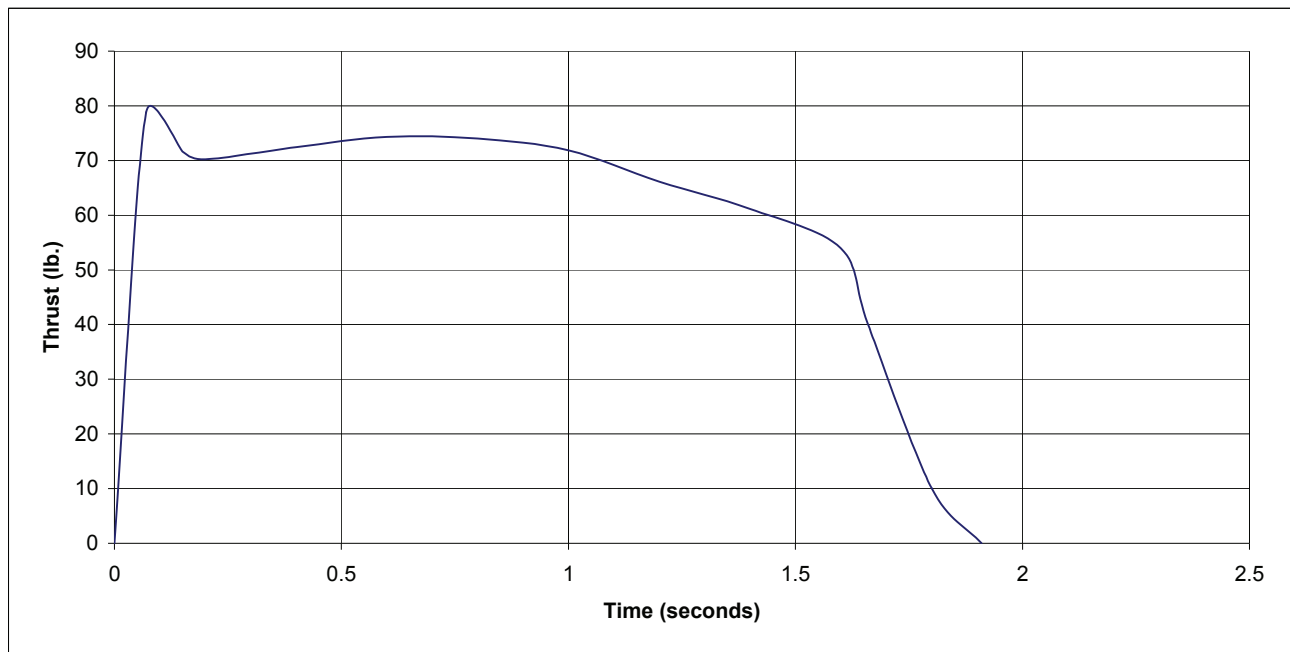
Motor Data

Single-Use/Reload/Hybrid	Reloadable
Loaded Weight	
Propellant Weight	272.4 g
Burnout Weight	
Delays Tested	6, 8, 10, 12, 15 s, adjustable

Motor Dimensions mm	38.00 x 303.00 mm (1.50 x 11.93 in)
Total Impulse	510.1 Ns (114.7 lb-sec)
Maximum Thrust	350.6 N (78.8 lb)
Avg Thrust	267.0 N (60 lb)
ISP	191 s
Burntime	1.91

Notes

Representative Thrust Curve



Frank de Brouwer's "Carbon Raptor", NSSL002 2009 (photo: Frank de Brouwer)

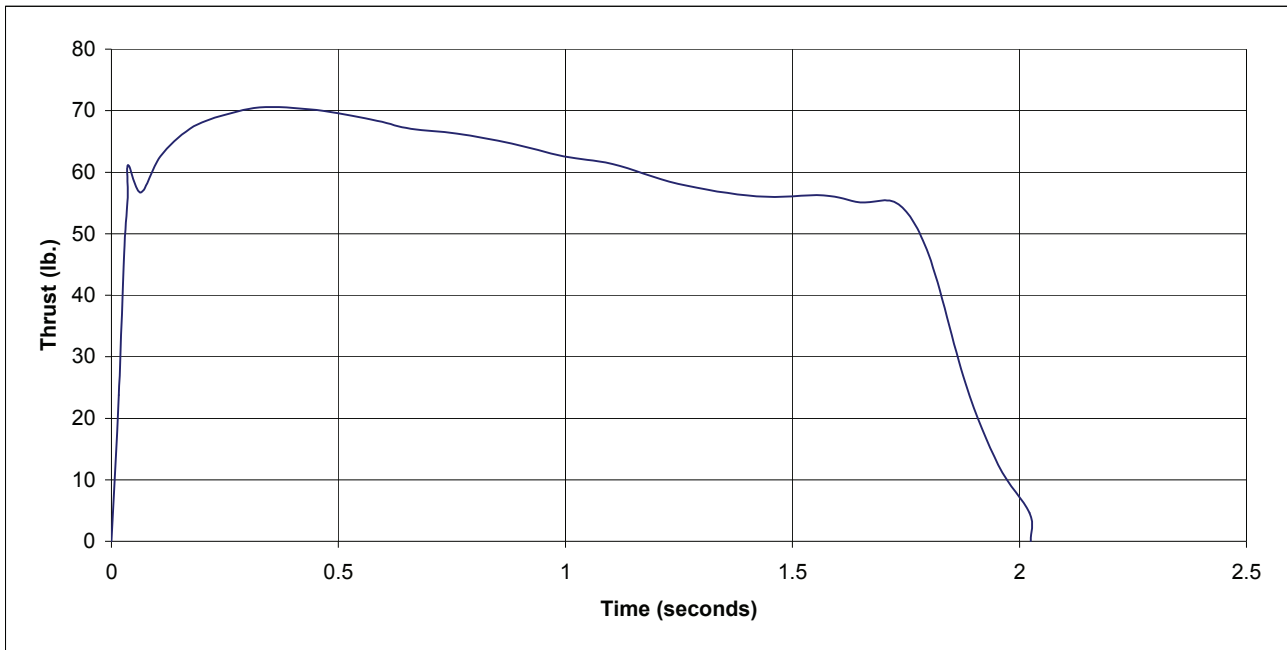
Motor Data

Single-Use/Reload/Hybrid Reloadable
Loaded Weight 516.0 g (18.20 oz)
Propellant Weight 273.2 g (9.64 oz)
Burnout Weight 226.0 g (7.97 oz)
Delays Tested 7, 9, 11, 13, 16 s, adjustable

Motor Dimensions mm 38.00 x 303.00 mm (1.50 x 11.93 in)
Total Impulse 517.3 Ns (116.29 lb.s)
Maximum Thrust 313.9 N (70.57 lb)
Avg Thrust 253.0 N (56.87 lb)
ISP 193.1 s
Burntime 2.04 s

Notes

Representative Thrust Curve



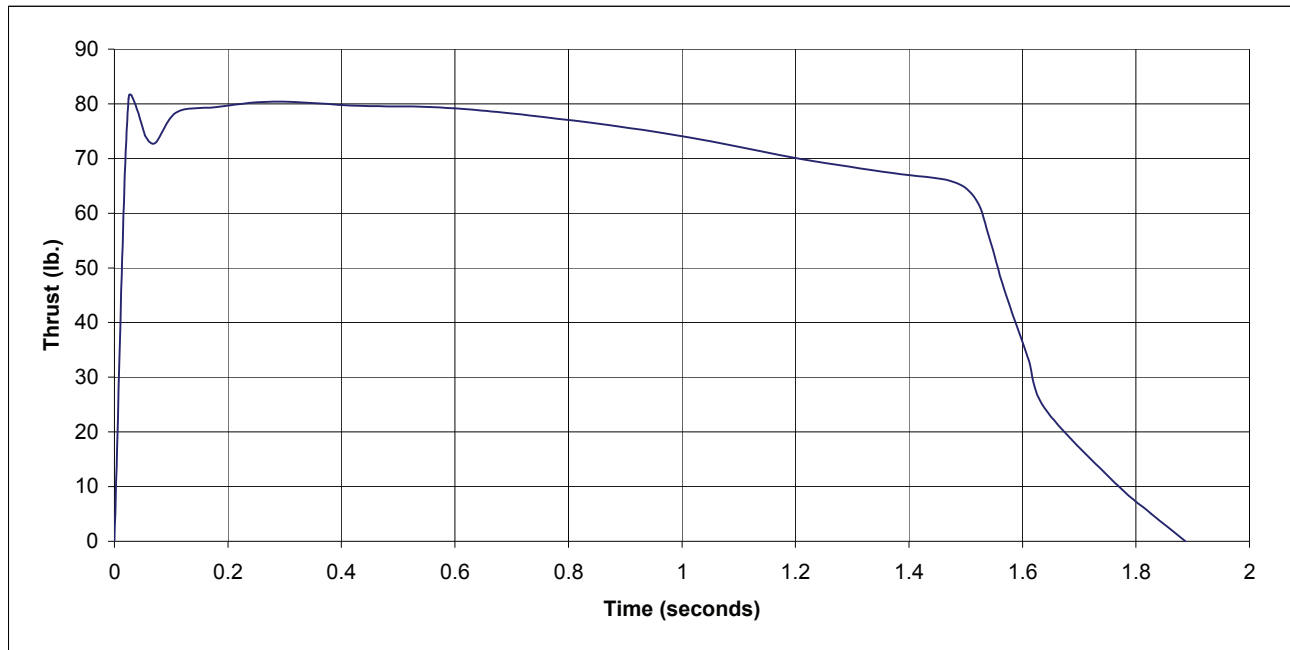
Motor Data

Single-Use/Reload/Hybrid	Reloadable
Loaded Weight	500 g
Propellant Weight	270 g
Burnout Weight	
Delays Tested	7, 9, 11, 13, 16 s, adjustable

Motor Dimensions mm	38.00 x 303.00 mm (1.50 x 11.93 in)
Total Impulse	537.6 Ns (120.9 lb.s)
Maximum Thrust	415.6 N (93.4 lb.)
Avg Thrust	303.2 N (68.2 lb.)
ISP	202.97 s
Burntime	1.77 s

Notes

Representative Thrust Curve



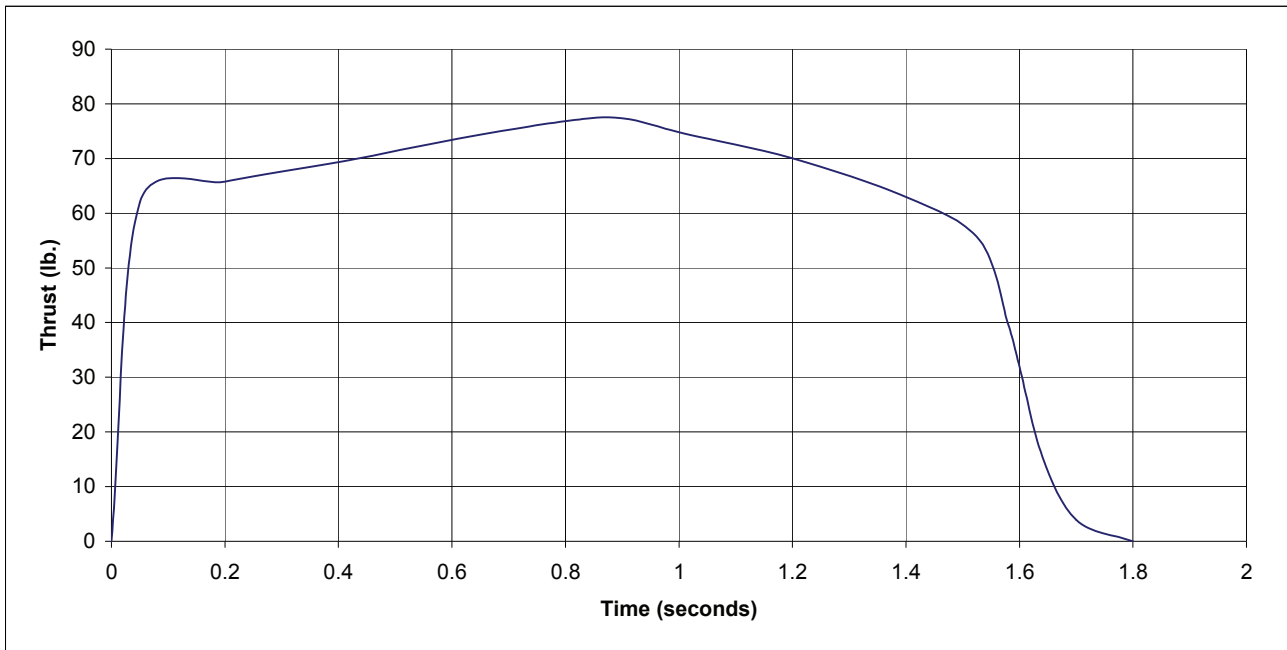
Motor Data

Single-Use/Reload/Hybrid Reloadable
Loaded Weight 605.00 g (21.18 oz)
Propellant Weight 330.80 g (11.58 oz)
Burnout Weight 242.00 g (8.47 oz)
Delays Tested 6, 8, 10, 12, 15 s, adjustable

Motor Dimensions mm 38.00 x 303.00 mm (1.50 x 11.93 in)
Total Impulse 486.00 Ns (109.35 lb.s)
Maximum Thrust 344.20 N (77.44 lb)
Avg Thrust 286.18 N (64.39 lb)
ISP 149.8 s
Burntime 1.70 s

Notes

Representative Thrust Curve



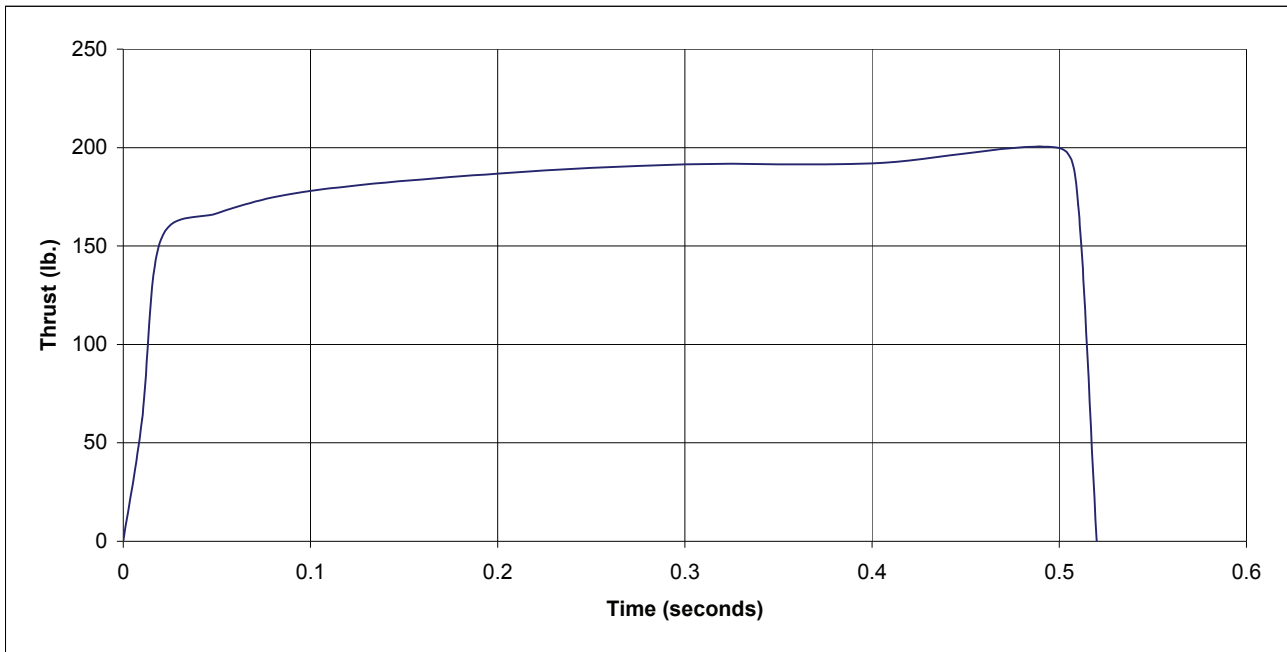
Motor Data

Single-Use/Reload/Hybrid	Reloadable
Loaded Weight	457 g (16.12 oz)
Propellant Weight	221.3 g (7.81 oz)
Burnout Weight	224.5 g (7.92 oz)
Delays Tested	6, 8, 10, 12, 15 s, adjustable

Motor Dimensions mm	38.00 x 303.00 mm (1.50 x 11.93 in)
Total Impulse	419.2 Ns (94.21 lb.s)
Maximum Thrust	932.5 N (209.6 lb)
Avg Thrust	805.3 N (181.03 lb)
ISP	193.2 s
Burntime	0.52 s

Notes

Representative Thrust Curve



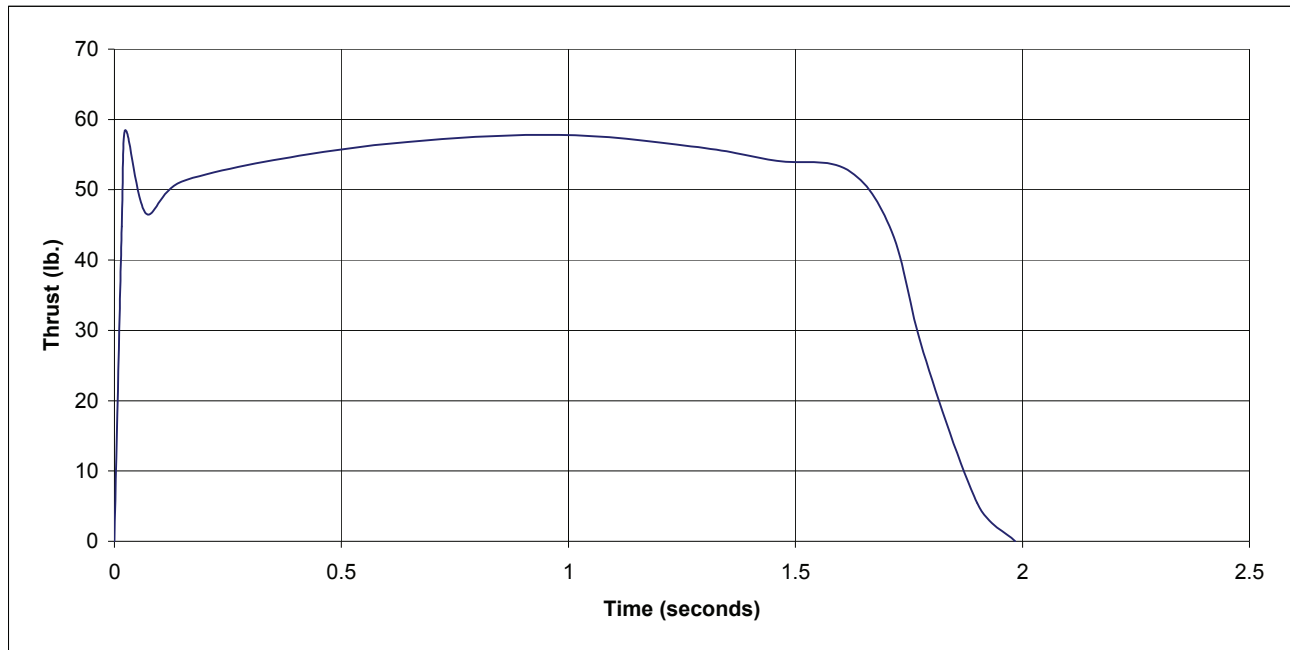
Motor Data

Single-Use/Reload/Hybrid	Reloadable
Loaded Weight	494 g
Propellant Weight	266 g
Burnout Weight	not recorded by TMT
Delays Tested	5, 7, 9, 11, 15 s, adjustable

Motor Dimensions mm	38.00 x 303.00 mm (1.50 x 11.93 in)
Total Impulse	434.05 Ns
Maximum Thrust	259.6 N
Avg Thrust	223.39 N
ISP	166.34 s
Burntime	1.94 s

Notes

Representative Thrust Curve



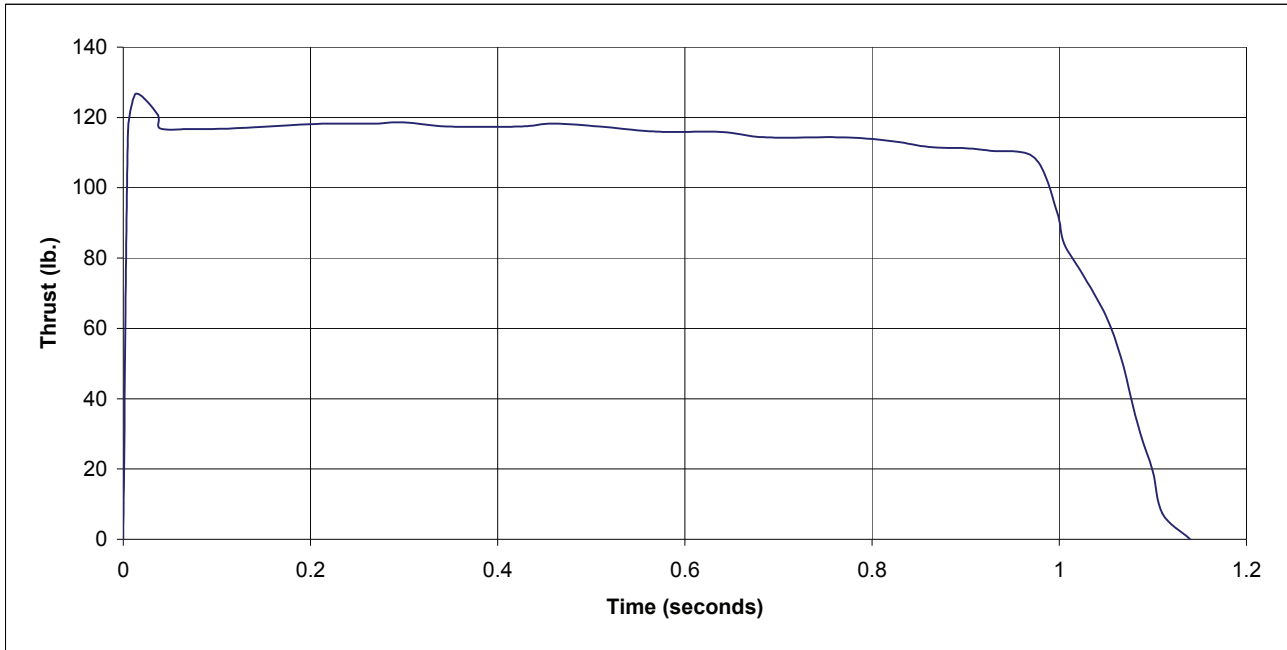
Motor Data

Single-Use/Reload/Hybrid Reloadable
Loaded Weight 495 g (17.46 oz)
Propellant Weight 247.2 g (8.72 oz)
Burnout Weight 228.00 g (8.04 oz)
Delays Tested 6, 8, 10, 12, 15 s, adjustable

Motor Dimensions mm 38.00 x 303.00 mm (1.50 x 11.93 in)
Total Impulse 540.10 Ns (121.42 lb.s)
Maximum Thrust 555.21 N (124.82 lb)
Avg Thrust 472.18 N (106.15 lb)
ISP 222.8 s
Burntime 1.14 s

Notes

Representative Thrust Curve



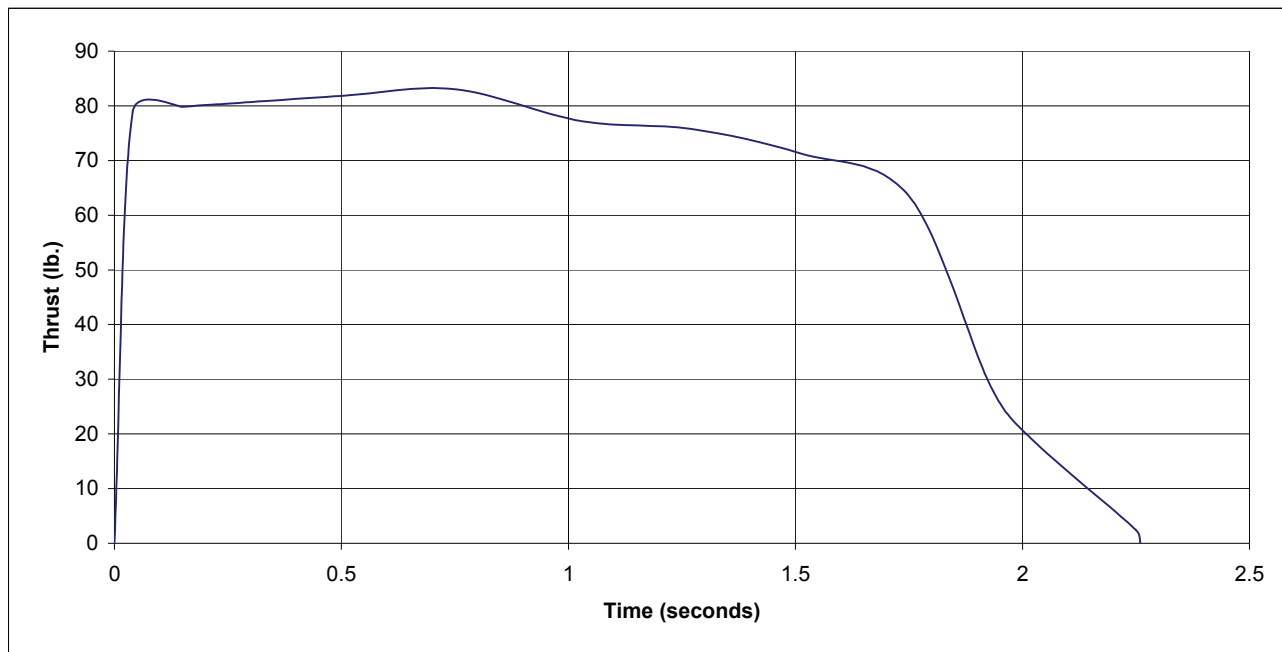
Motor Data

Single-Use/Reload/Hybrid	Reloadable
Loaded Weight	595.00 g (20.83 oz)
Propellant Weight	312.50 g (10.94 oz)
Burnout Weight	268.00 g (9.38 oz)
Delays Tested	6, 8, 10, 12, 15 s, adjustable

Motor Dimensions mm	38.00 x 367.00 mm (1.50 x 14.45 in)
Total Impulse	648.00 Ns (145.80 lb.s)
Maximum Thrust	369.26 N (83.08 lb)
Avg Thrust	287.51 N (64.69 lb)
ISP	211.8 s
Burntime	2.26 s

Notes

Representative Thrust Curve



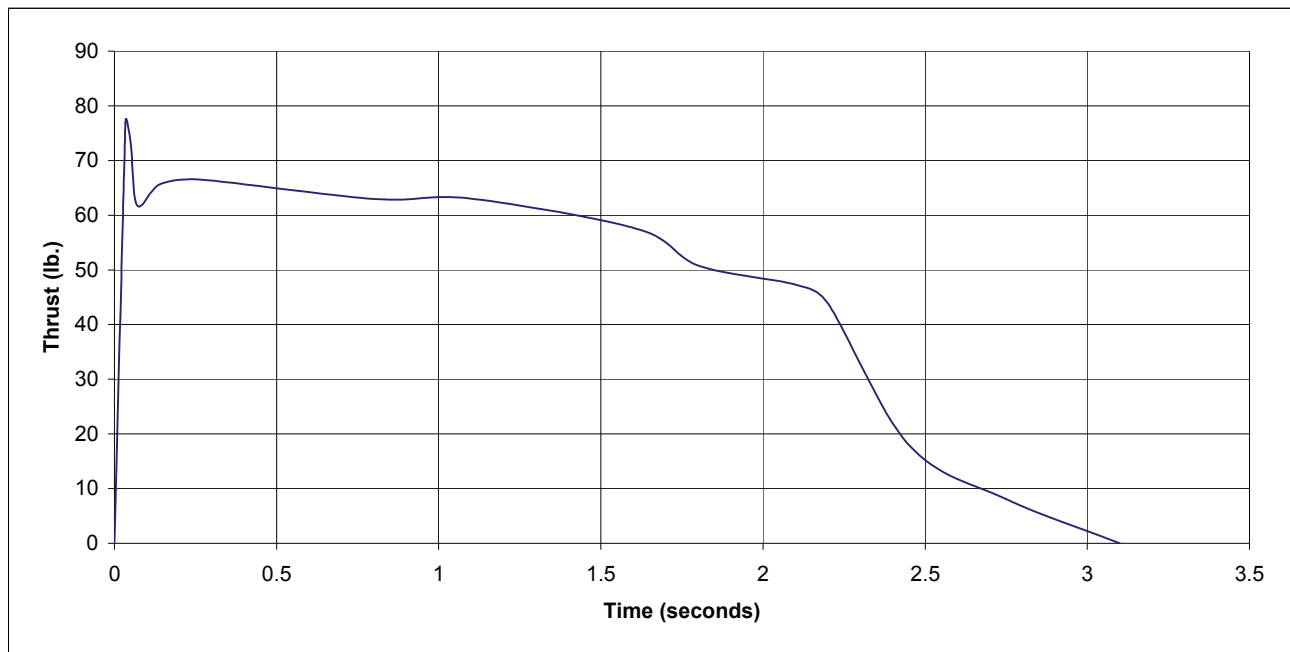
Motor Data

Single-Use/Reload/Hybrid Reloadable
Loaded Weight 601.00 g (21.04 oz)
Propellant Weight 312.50 g (10.94 oz)
Burnout Weight 264.00 g (9.24 oz)
Delays Tested 5, 7, 9, 11, 14 s, adjustable

Motor Dimensions mm 38.00 x 367.00 mm (1.50 x 14.45 in)
Total Impulse 636.10 Ns (143.12 lb/s)
Maximum Thrust 379.50 N (85.39 lb)
Avg Thrust 216.10 N (48.62 lb)
ISP 207.58 s
Burntime 2.94 s

Notes Longer burning version of the J285. Full 'I'. Available with tapered closure.

Representative Thrust Curve



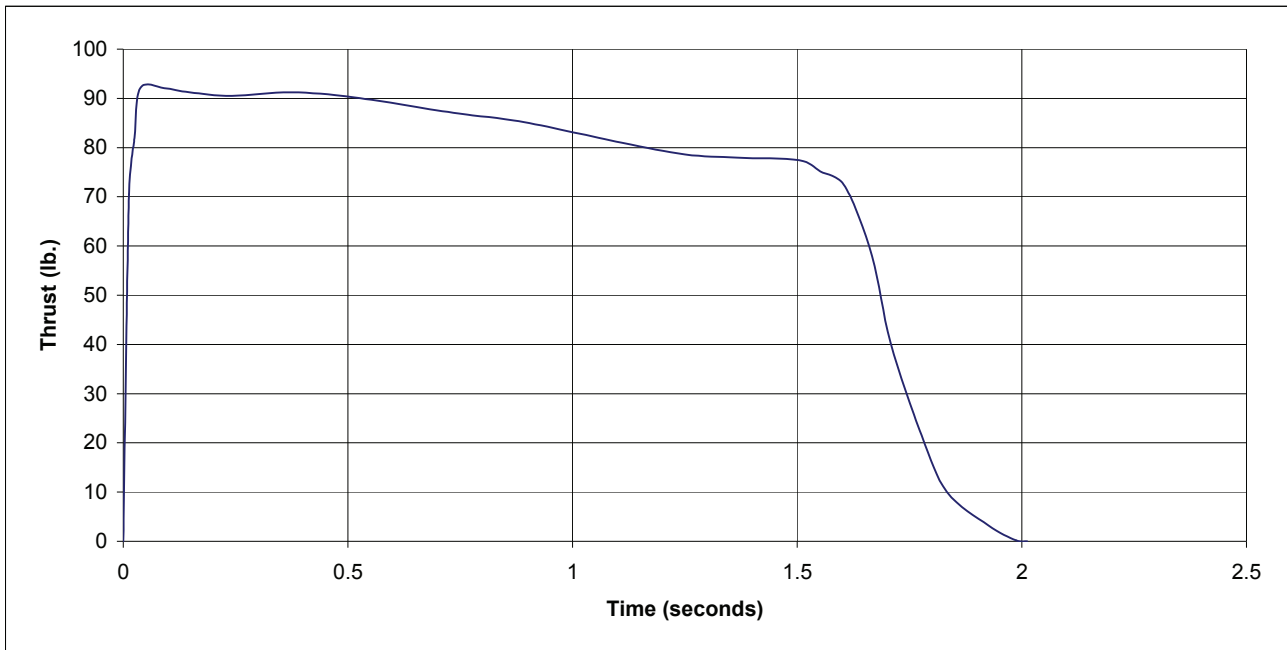
Motor Data

Single-Use/Reload/Hybrid	Reloadable
Loaded Weight	627.0 g (22.12 oz)
Propellant Weight	341.5 g (12.05 oz)
Burnout Weight	261.0 g (9.21 oz)
Delays Tested	6, 8, 10, 12, 15 s, adjustable

Motor Dimensions mm	38.00 x 367.00 mm (1.50 x 14.45 in)
Total Impulse	649.2 Ns (145.94 lb.s)
Maximum Thrust	410.6 N (92.30 lb)
Avg Thrust	335.5 N (75.41 lb)
ISP	193.8 s
Burntime	1.93 s

Notes

Representative Thrust Curve



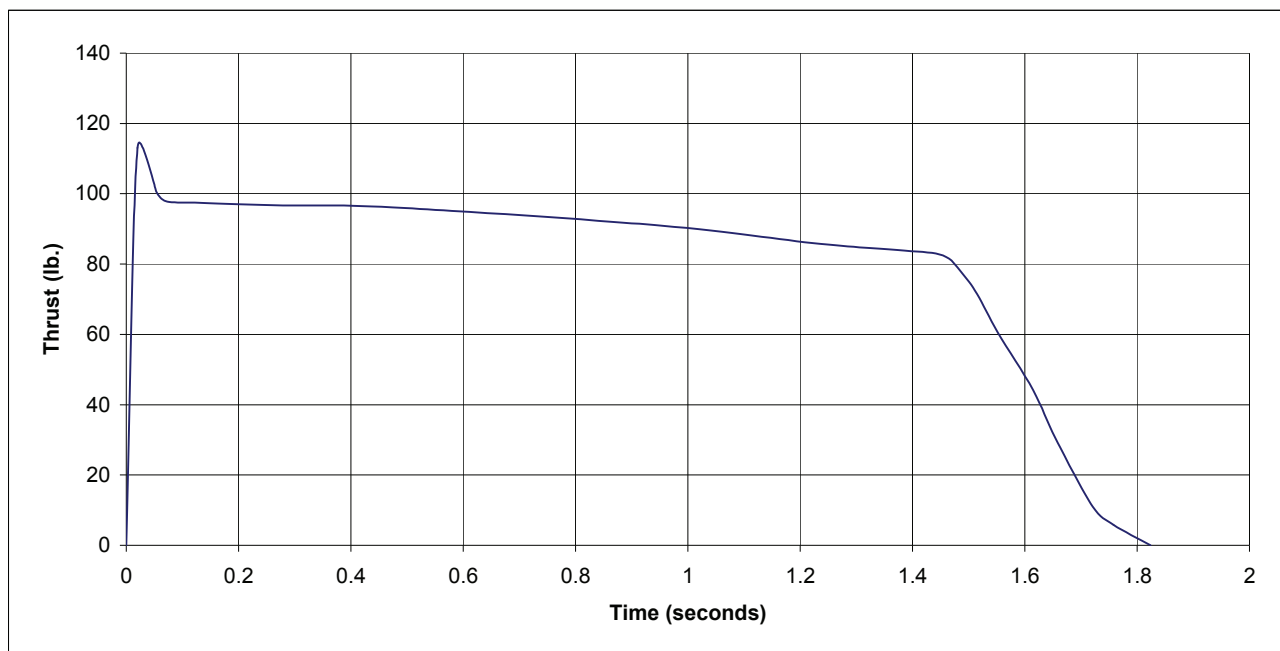
Motor Data

Single-Use/Reload/Hybrid	Reloadable
Loaded Weight	601 g
Propellant Weight	337 g
Burnout Weight	
Delays Tested	8, 10, 12, 14, 17s, adjustable

Motor Dimensions mm	38.00 x 367.00 mm (1.50 x 14.45 in)
Total Impulse	657.6 Ns (147.8 lb.s)
Maximum Thrust	512.3 N (115.2 lb.)
Avg Thrust	357.0 N (80.3 lb.)
ISP	198.91 s
Burntime	1.85 s

Notes

Representative Thrust Curve



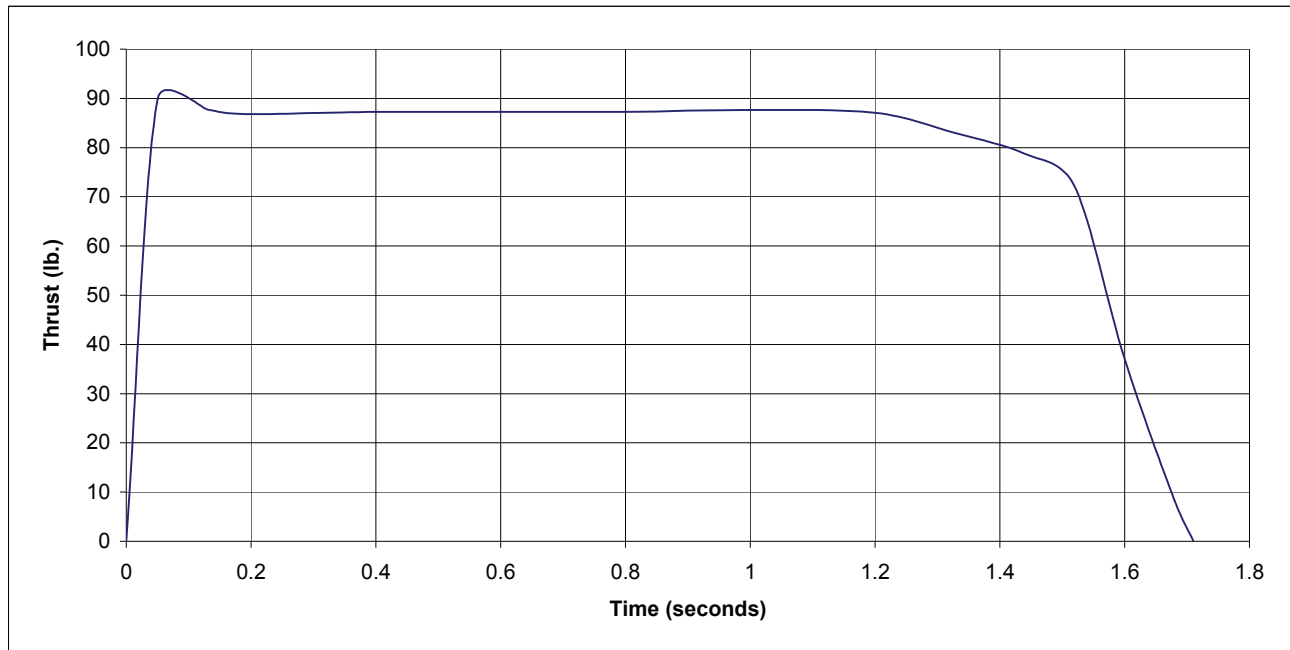
Motor Data

Single-Use/Reload/Hybrid	Reloadable
Loaded Weight	782.00 g (27.37 oz)
Propellant Weight	413.50 g (14.47 oz)
Burnout Weight	275.00 g (9.63 oz)
Delays Tested	7, 9, 11, 13, 16 s, adjustable

Motor Dimensions mm	38.00 x 367.00 mm (1.50 x 14.45 in)
Total Impulse	601.00 Ns (135.22 lb.s)
Maximum Thrust	399.74 N (89.94 lb)
Avg Thrust	352.13 N (79.23 lb)
ISP	16.00 s
Burntime	1.71 s

Notes

Representative Thrust Curve



Mike Shinn's Cheyenne (photo: Ray Lapanse)

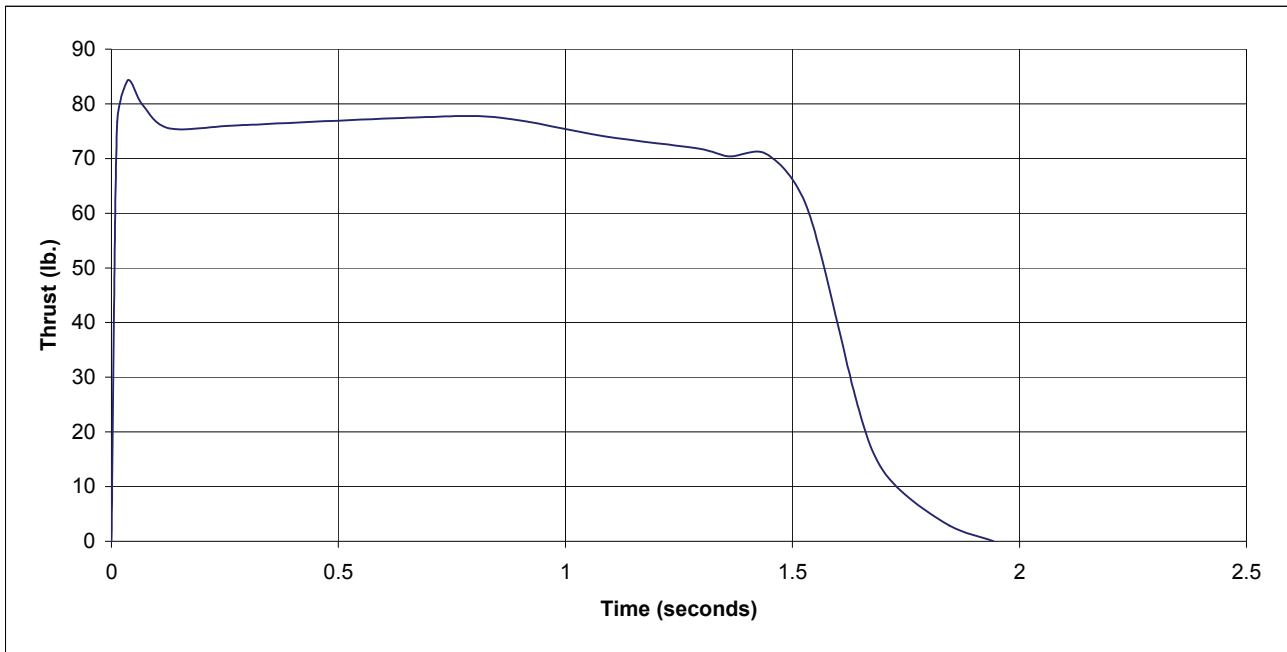
Motor Data

Single-Use/Reload/Hybrid	Reloadable
Loaded Weight	591 g
Propellant Weight	329 g
Burnout Weight	
Delays Tested	6, 8, 10, 12, 15 s, adjustable

Motor Dimensions mm	38.00 x 367.00 mm (1.50 x 14.45 in)
Total Impulse	542.75 Ns
Maximum Thrust	375.93 N
Avg Thrust	296.72 N
ISP	168.16 s
Burntime	1.83 s

Notes

Representative Thrust Curve



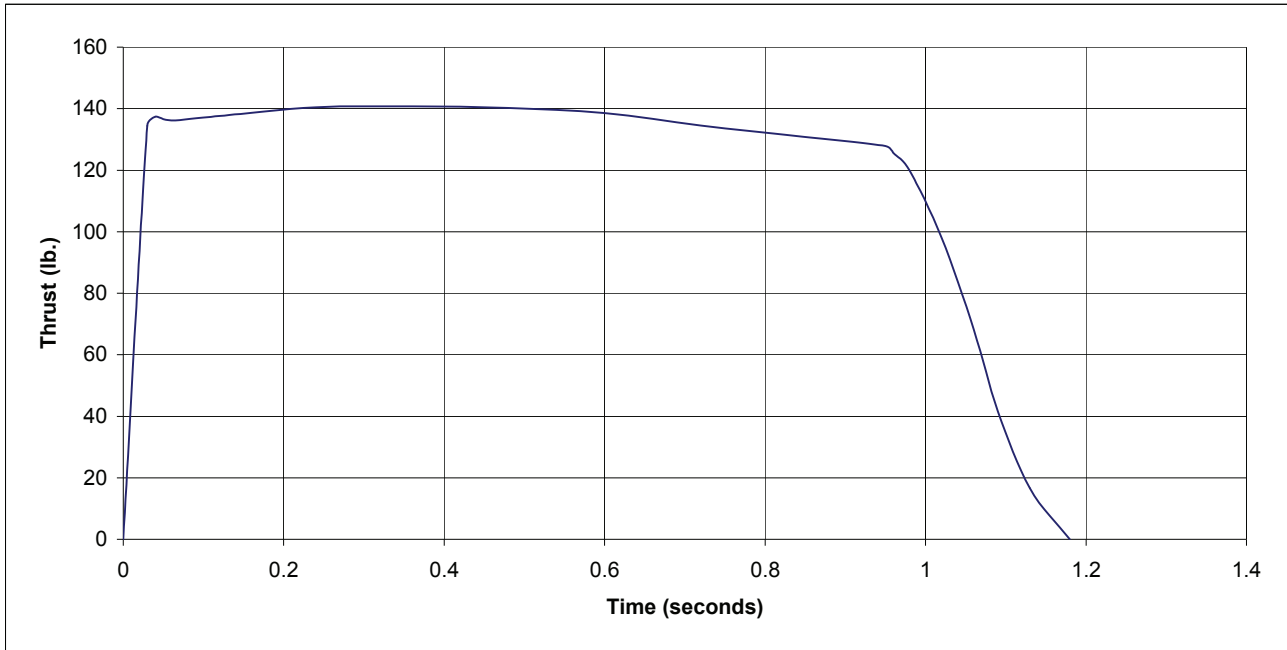
Motor Data

Single-Use/Reload/Hybrid	Reloadable
Loaded Weight	598.20 g (21.10 oz)
Propellant Weight	309.00 g (10.90 oz)
Burnout Weight	269.40 g (9.50 oz)
Delays Tested	7, 9, 11, 13, 16 s, adjustable

Motor Dimensions mm	38.00 x 367.00 mm (1.50 x 14.45 in)
Total Impulse	635.00 Ns (142.69 lb.s)
Maximum Thrust	625.93 N (140.66 lb)
Avg Thrust	540.80 N (121.52 lb)
ISP	209.4 s
Burntime	1.18 s

Notes

Representative Thrust Curve



Tim Moore's Talon 3 (photo: Ray Lapanse)

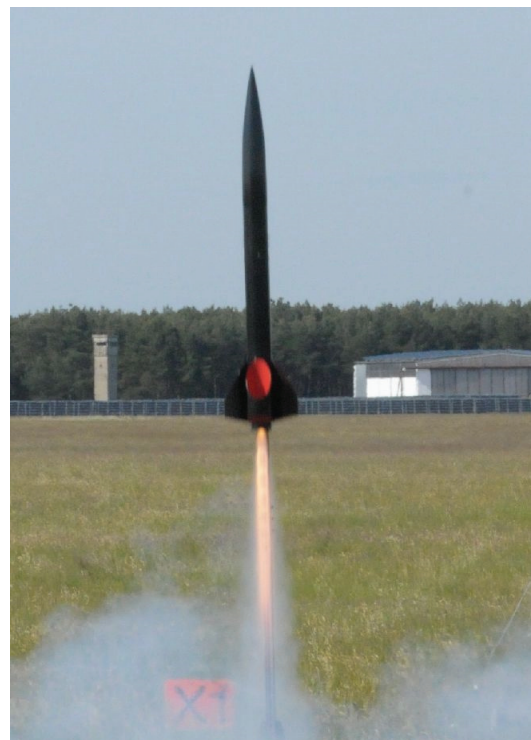
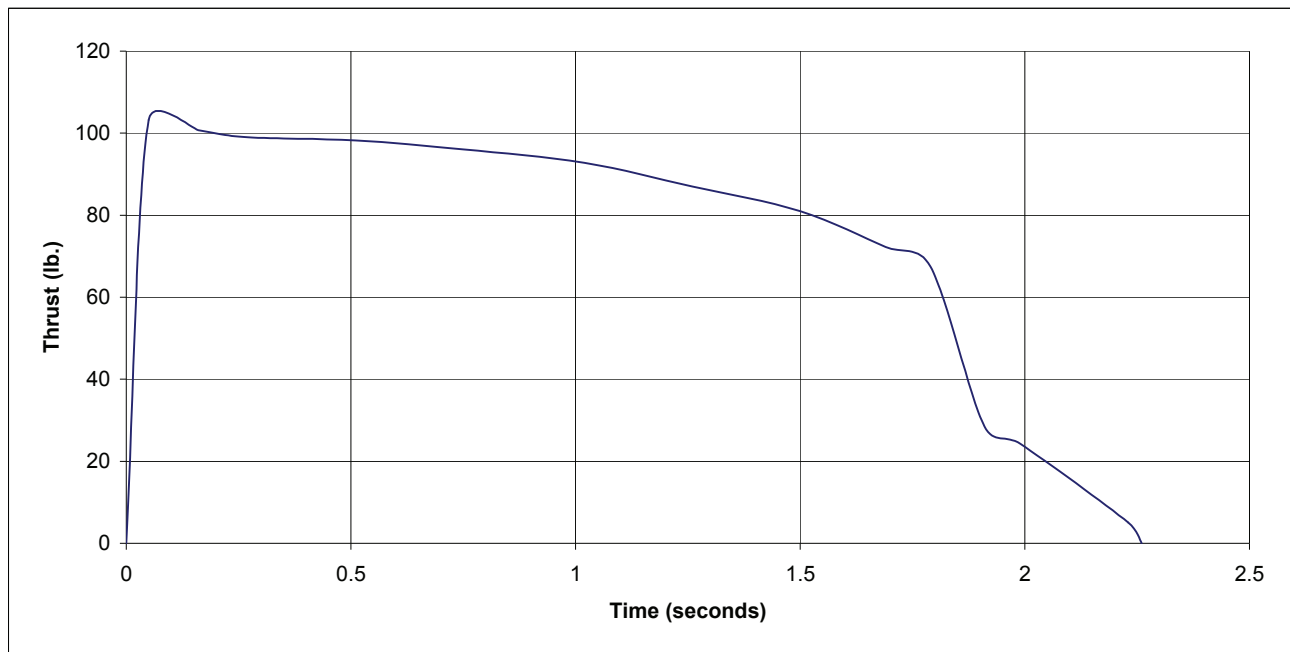
Motor Data

Single-Use/Reload/Hybrid	Reloadable
Loaded Weight	702.00 g (24.57 oz)
Propellant Weight	375.00 g (13.13 oz)
Burnout Weight	310.00 g (10.85 oz)
Delays Tested	7, 9, 11, 13, 16 s, adjustable

Motor Dimensions mm	38.00 x 421.00 mm (1.50 x 16.57 in)
Total Impulse	765.00 Ns (172.13 lb.s)
Maximum Thrust	459.32 N (103.35 lb)
Avg Thrust	325.29 N (73.19 lb)
ISP	208.0 s
Burntime	2.26 s

Notes

Representative Thrust Curve



Frank de Brouwer's "Valkyre", Rote Jahne 2009 (photo: Frank de Brouwer)

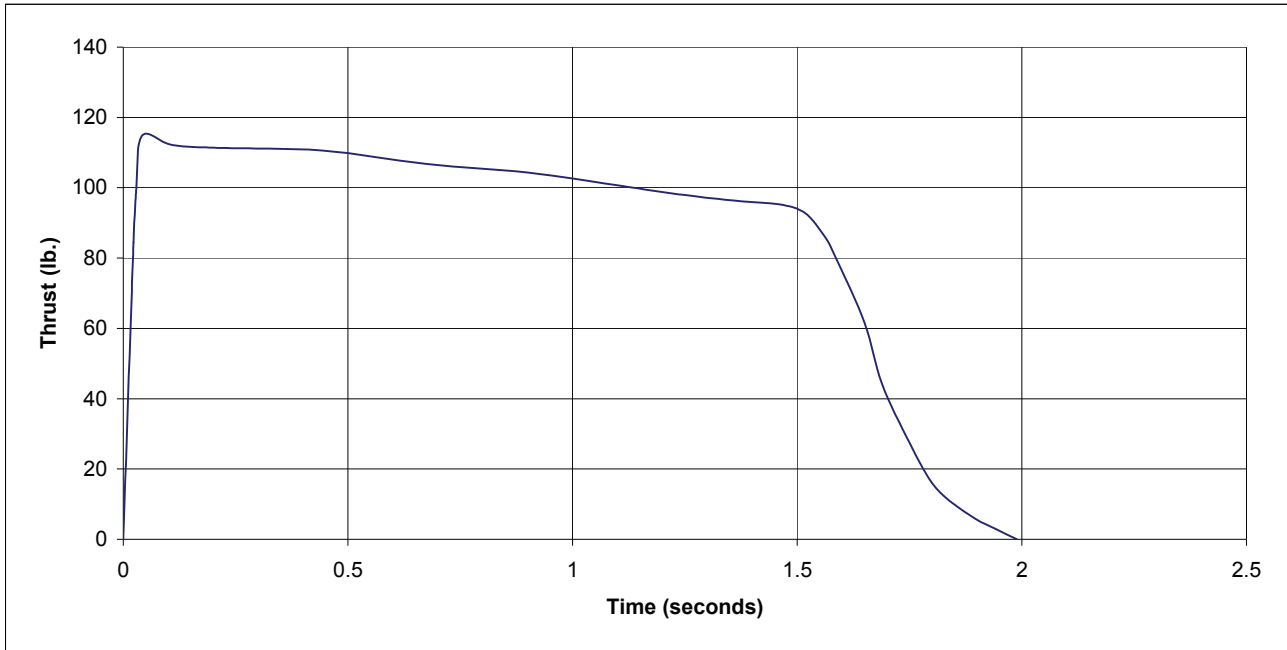
Motor Data

Single-Use/Reload/Hybrid Reloadable
Loaded Weight 735.0 g (25.93 oz)
Propellant Weight 409.8 g (14.46 oz)
Burnout Weight 301.0 g (10.60 oz)
Delays Tested 7, 9, 11, 13, 16 s, adjustable

Motor Dimensions mm 38.00 x 421.00 mm (1.50 x 16.57 in)
Total Impulse 773.8 Ns (173.95 lb.s)
Maximum Thrust 512.1 N (115.13 lb)
Avg Thrust 408.9 N (91.92 lb)
ISP 192.5 s
Burntime 1.89 s

Notes

Representative Thrust Curve



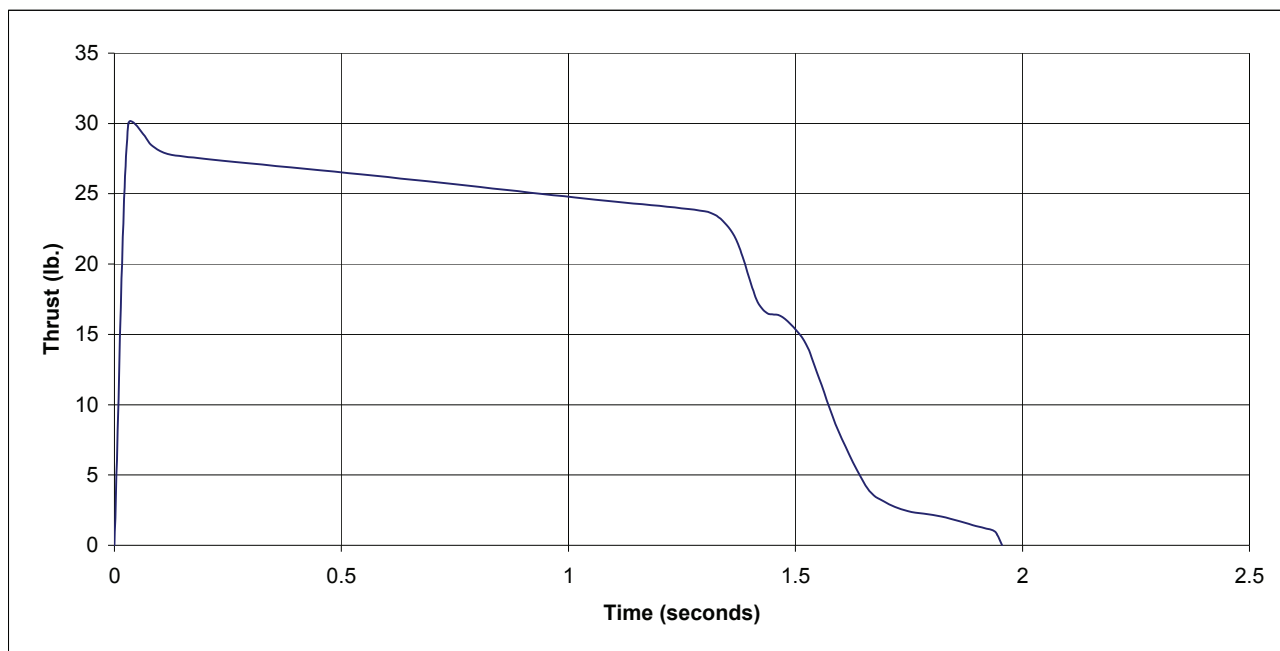
Motor Data

Single-Use/Reload/Hybrid	Reloadable
Loaded Weight	700 g
Propellant Weight	405 g
Burnout Weight	
Delays Tested	7, 9, 11, 13, 16 s, adjustable

Motor Dimensions mm	38.00 x 421.00 mm (1.50 x 16.57 in)
Total Impulse	783.9 Ns (176.2 lb.s)
Maximum Thrust	631.0 N (141.9 lb.)
Avg Thrust	426.9 N (96.0 lb.)
ISP	197.30 s
Burntime	1.84 s

Notes

Representative Thrust Curve



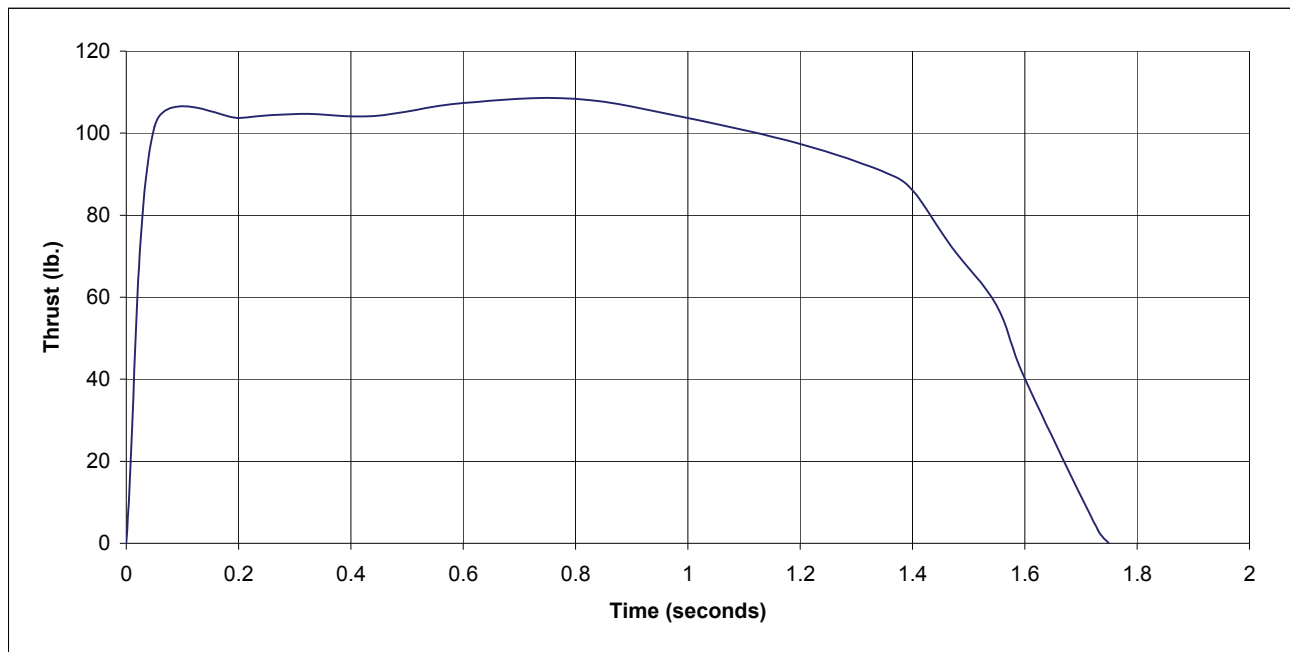
Motor Data

Single-Use/Reload/Hybrid	Reloadable
Loaded Weight	702.00 g (24.57 oz)
Propellant Weight	489.60 g (17.14 oz)
Burnout Weight	310.00 g (10.85 oz)
Delays Tested	7, 9, 11, 13, 16 s, adjustable

Motor Dimensions mm	38.00 x 421.00 mm (1.50 x 16.57 in)
Total Impulse	700.00 Ns (157.50 lb.s)
Maximum Thrust	482.15 N (108.48 lb)
Avg Thrust	402.01 N (90.45 lb)
ISP	145.7 s
Burntime	1.75 s

Notes

Representative Thrust Curve



Tim Thomas's Talon (photo: Ray Lapanse)

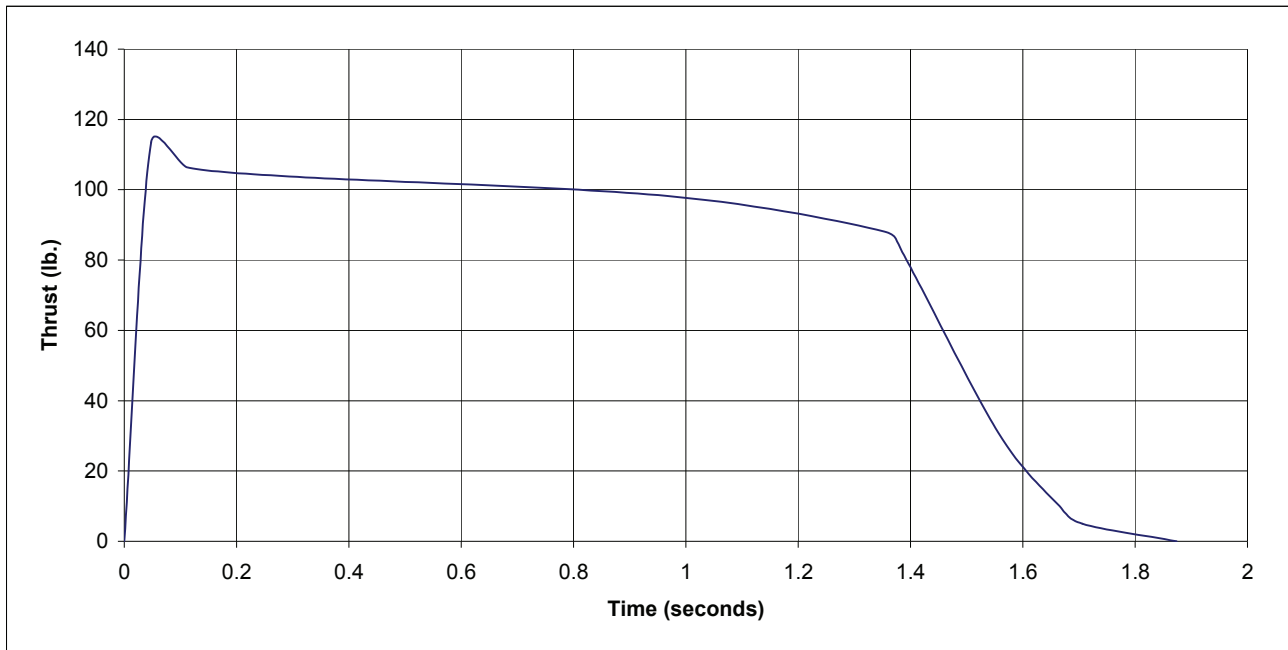
Motor Data

Single-Use/Reload/Hybrid	Reloadable
Loaded Weight	688 g
Propellant Weight	396 g
Burnout Weight	
Delays Tested	6, 8, 10, 12, 15 s, adjustable

Motor Dimensions mm	38.00 x 421.00 mm (1.50 x 16.57 in)
Total Impulse	659.86 Ns
Maximum Thrust	503.10 N
Avg Thrust	380.56 N
ISP	169.86 s
Burntime	1.73 s

Notes

Representative Thrust Curve



Mark Hayes' "4.0" Upscale Estes Citation Patriot", October 2009 (photo: Larry Johnson)

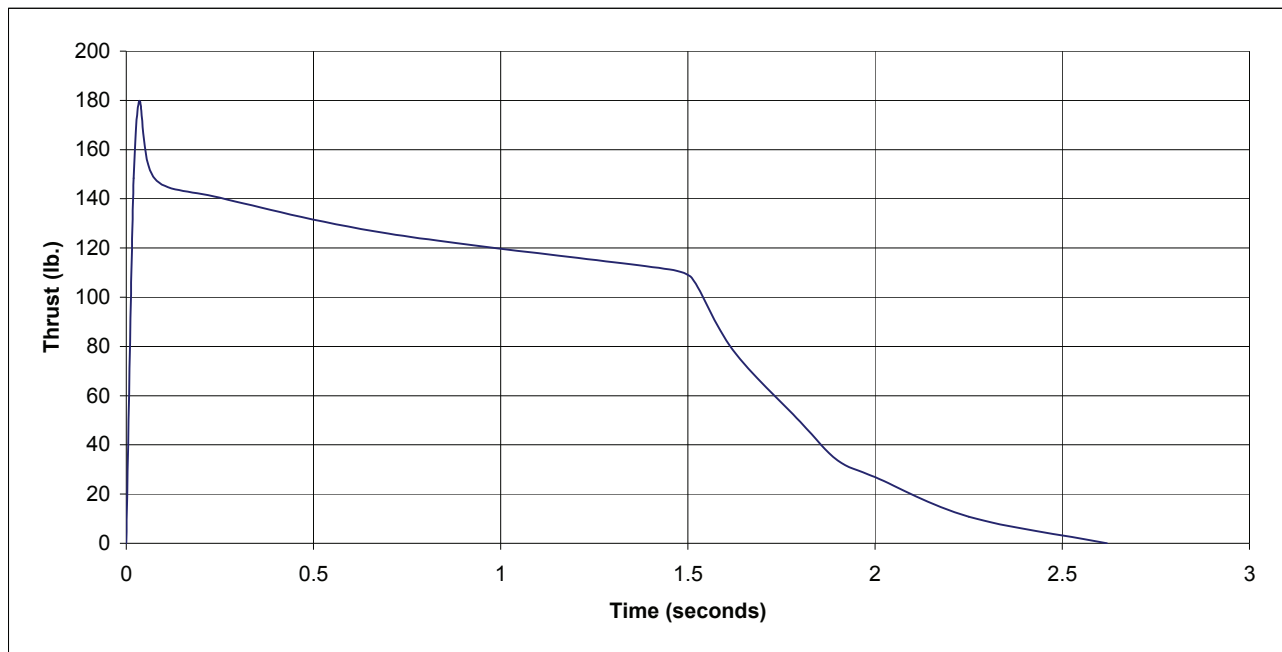
Motor Data

Single-Use/Reload/Hybrid	Reloadable
Loaded Weight	874 g (30.83 oz)
Propellant Weight	479.6 g (16.92 oz)
Burnout Weight	352 g (12.42 oz)
Delays Tested	6, 8, 10, 12, 15 s, adjustable

Motor Dimensions mm	38.00 x 500.00 mm (1.50 x 19.67 in)
Total Impulse	1007.8 Ns (226.56 lb.s)
Maximum Thrust	783.1 N (178.30 lb)
Avg Thrust	419.9 N (94.40 lb)
ISP	214.27 s
Burntime	2.400 s

Notes

Representative Thrust Curve



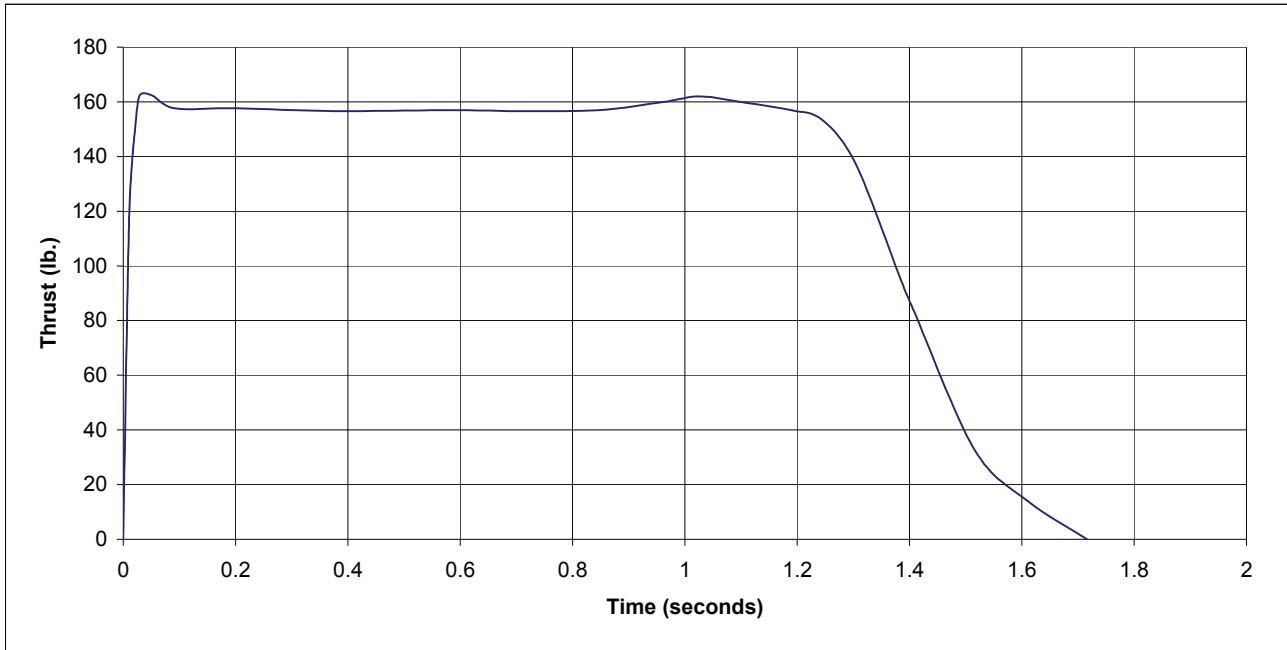
Motor Data

Single-Use/Reload/Hybrid	Reloadable
Loaded Weight	906 g
Propellant Weight	551 g
Burnout Weight	
Delays Tested	7, 9, 11, 13, 16 s, adjustable

Motor Dimensions mm	38.00 x 500.00 mm (1.50 x 19.67 in)
Total Impulse	998.6 Ns (224.5 lb.s)
Maximum Thrust	721.0 N (162.1 lb.)
Avg Thrust	603.5 N (135.7 lb.)
ISP	184.74 s
Burntime	1.66 s

Notes

Representative Thrust Curve



Bdale Garbee's Trick-O-Treat (photo Ray Lapanse)

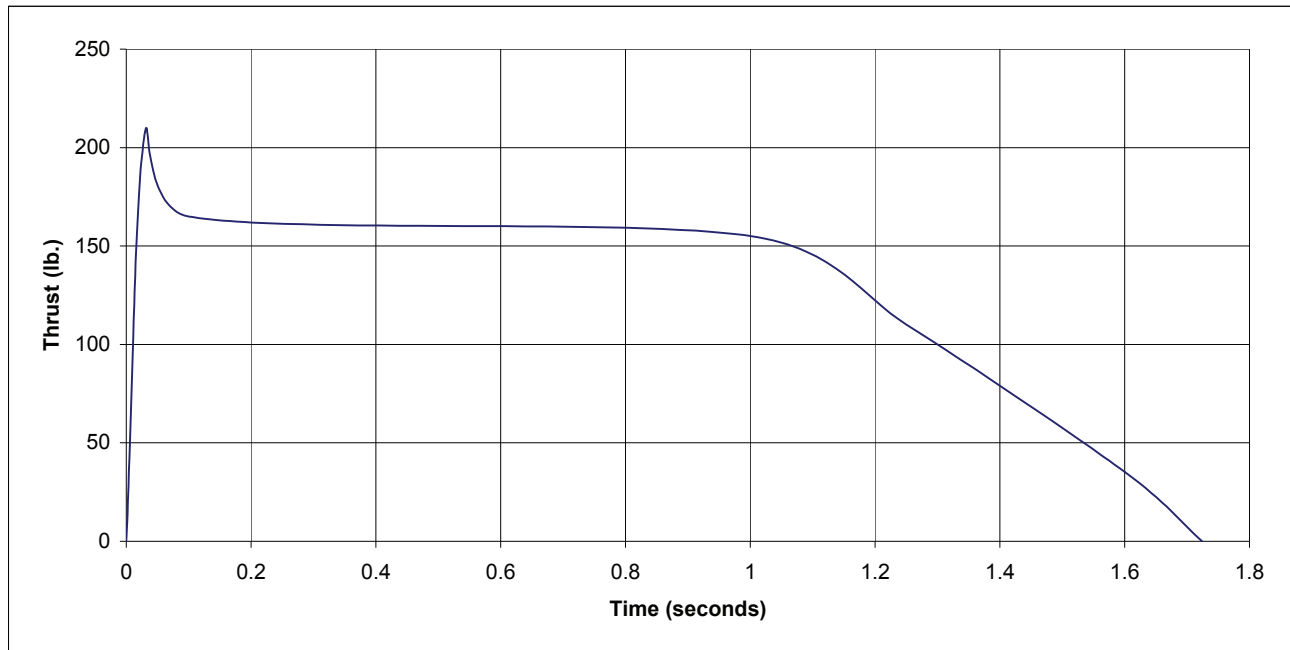
Motor Data

Single-Use/Reload/Hybrid	Reloadable
Loaded Weight	866 g
Propellant Weight	511 g
Burnout Weight	
Delays Tested	7, 9, 11, 13, 16 s, adjustable

Motor Dimensions mm	38.00 x 500.00 mm (1.50 x 19.67 in)
Total Impulse	985.0 Ns (221.4 lb.s)
Maximum Thrust	925.4 N (208.0 lb.)
Avg Thrust	595.4 N (133.9 lb.)
ISP	196.49 s
Burntime	1.65 s

Notes

Representative Thrust Curve



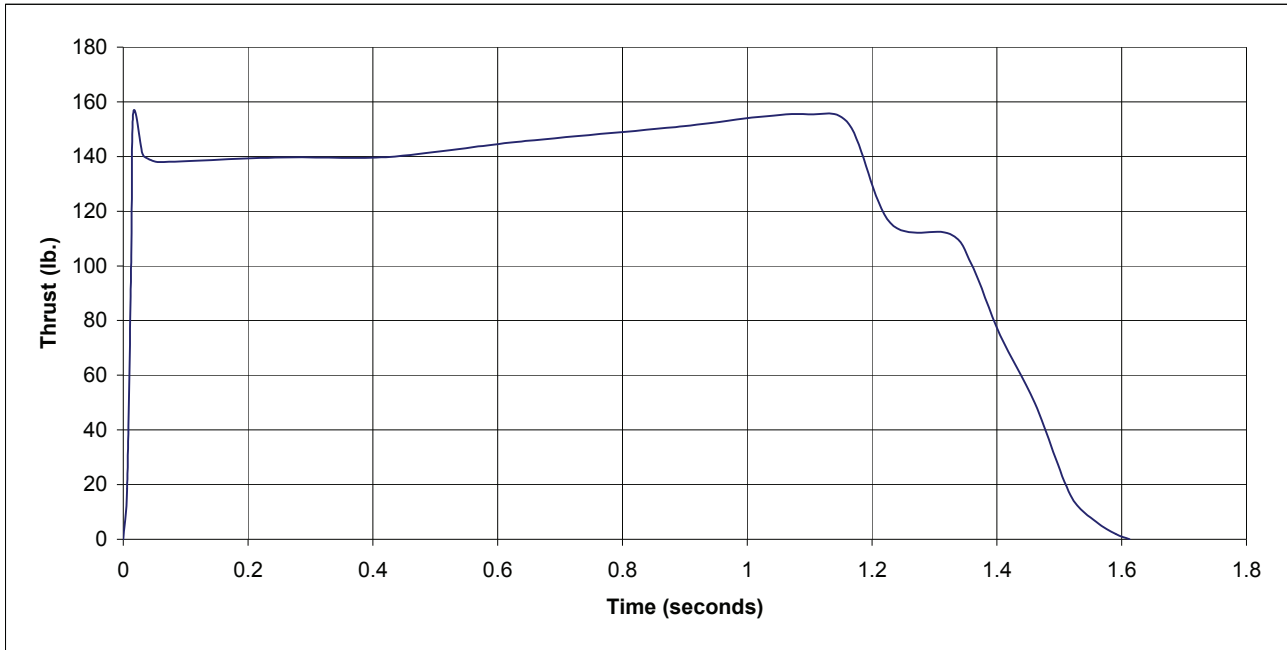
Motor Data

Single-Use/Reload/Hybrid	Reloadable
Loaded Weight	1044 g
Propellant Weight	688 g
Burnout Weight	
Delays Tested	8, 10, 12, 14, 17s, adjustable

Motor Dimensions mm	38.00 x 500.00 mm (1.50 x 19.67 in)
Total Impulse	896.3 Ns (201.5 lb.s)
Maximum Thrust	691.5 N (155.5 lb.)
Avg Thrust	577.3 N (129.8 lb.)
ISP	132.80 s
Burntime	1.55 s

Notes

Representative Thrust Curve



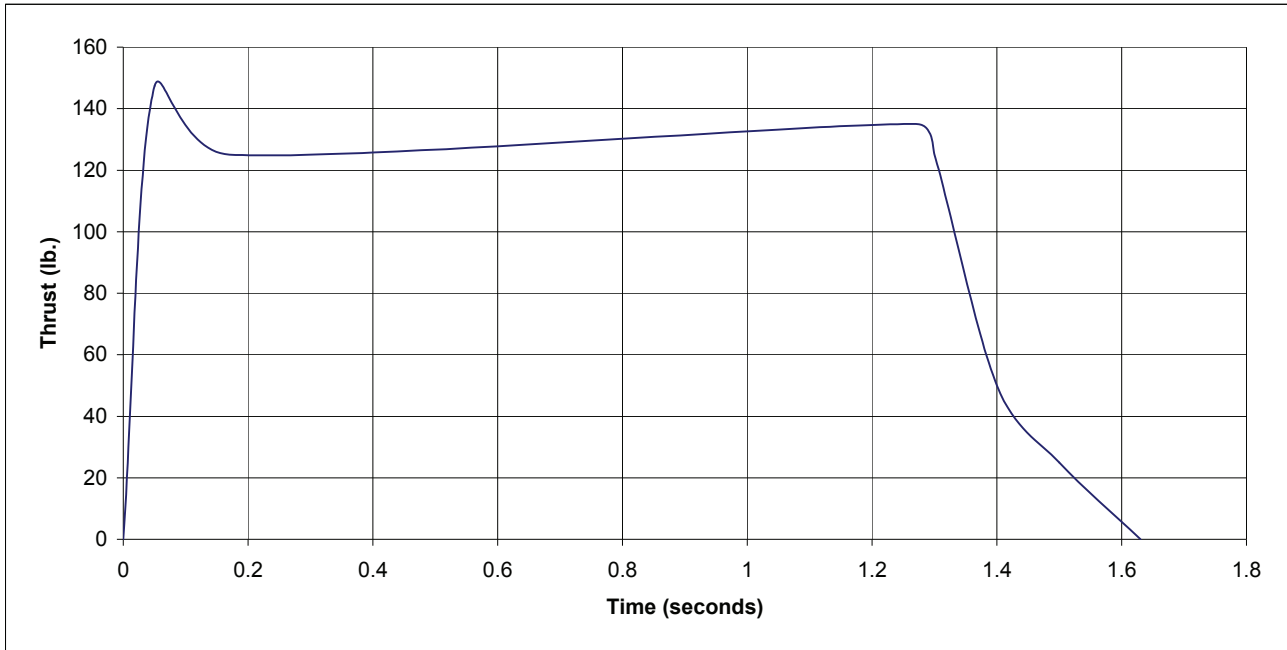
Motor Data

Single-Use/Reload/Hybrid	Reloadable
Loaded Weight	850 g
Propellant Weight	498 g
Burnout Weight	
Delays Tested	7, 9, 11, 13, 16 s

Motor Dimensions mm	38.00 x 500.00 mm (1.50 x 19.67 in)
Total Impulse	848.43 Ns
Maximum Thrust	658.16 N
Avg Thrust	519.40 N
ISP	173.67 s
Burntime	1.63 s

Notes

Representative Thrust Curve



Jason Chamberlin's Mosquito (photo Ray Lapanse)

Motor Data

Single-Use/Reload/Hybrid	Reloadable
Loaded Weight	977 g (34.46 oz)
Propellant Weight	576.5 g (20.34 oz)
Burnout Weight	352 g (12.42 oz)
Delays Tested	6, 8, 10, 12, 15 s, adjustable

Motor Dimensions mm	38.00 x 500.00 mm (1.50 x 19.67 in)
Total Impulse	1115.5 Ns (250.77 lb.s)
Maximum Thrust	828.8 N (186.32 lb)
Avg Thrust	531.2 N (119.42 lb)
ISP	197.30 s
Burntime	2.100 s

Notes

Representative Thrust Curve

