



1002-1.23 Electric Thruster with 19750XLR Motor Performance Table

Speed (RPM)	System Voltage (VDC)	Min Voltage (VDC)	Current (A rms)	Torque		Bollard Thrust		Reverse Thrust		Power Shaft		Power In		Efficiency (Pout/Pin)
				(N-M)	(In-Lbs)	0 (Lbf)	0 (Kgf)	(Lbf)	(Kgf)	(HP)	(Watts)	(Watts)	(HP)	
100	750	24.3	0.5	1.2	10.2	2	0.9	2	0.8	0.02	12	12	0.0	98.7%
200	750	48.5	0.8	1.9	16.8	8	3.5	7	3.2	0.05	40	40	0.1	98.9%
400	750	97.5	2.2	4.9	43.2	31	13.9	28	12.6	0.27	204	207	0.3	98.6%
600	750	147.2	4.4	9.8	87.2	69	31.4	63	28.4	0.83	619	631	0.8	98.1%
800	750	197.6	7.5	16.8	148.7	123	55.8	111	50.5	1.89	1408	1443	1.9	97.6%
1000	750	248.8	11.5	25.7	227.9	192	87.1	174	79.0	3.62	2697	2778	3.7	97.1%
1200	750	300.8	16.4	36.7	324.6	277	125.5	251	113.7	6.18	4611	4774	6.4	96.6%
1500	750	380.2	25.4	56.8	502.7	432	196.1	392	177.7	11.97	8926	9317	12.5	95.8%
1800	750	461.3	36.4	81.4	720.4	622	282.4	564	255.9	20.58	15349	16152	21.7	95.0%
2000	750	516.4	44.8	100.3	887.5	769	348.6	696	315.9	28.16	21011	22229	29.8	94.5%
2200	750	572.2	54.2	121.2	1072.2	930	421.8	843	382.2	37.43	27921	29700	39.8	94.0%
2300	750	600.3	59.2	132.3	1171.2	1016	461.0	921	417.8	42.74	31884	34006	45.6	93.8%
2400	750	628.7	64.4	144.0	1274.5	1107	502.0	1003	454.9	48.53	36206	38719	51.9	93.5%
2450	750	643.0	67.1	150.0	1327.8	1153	523.1	1045	474.1	51.62	38507	41234	55.3	93.4%
2500	750	657.3	69.8	156.2	1382.2	1201	544.7	1088	493.6	54.83	40903	43859	58.8	93.3%

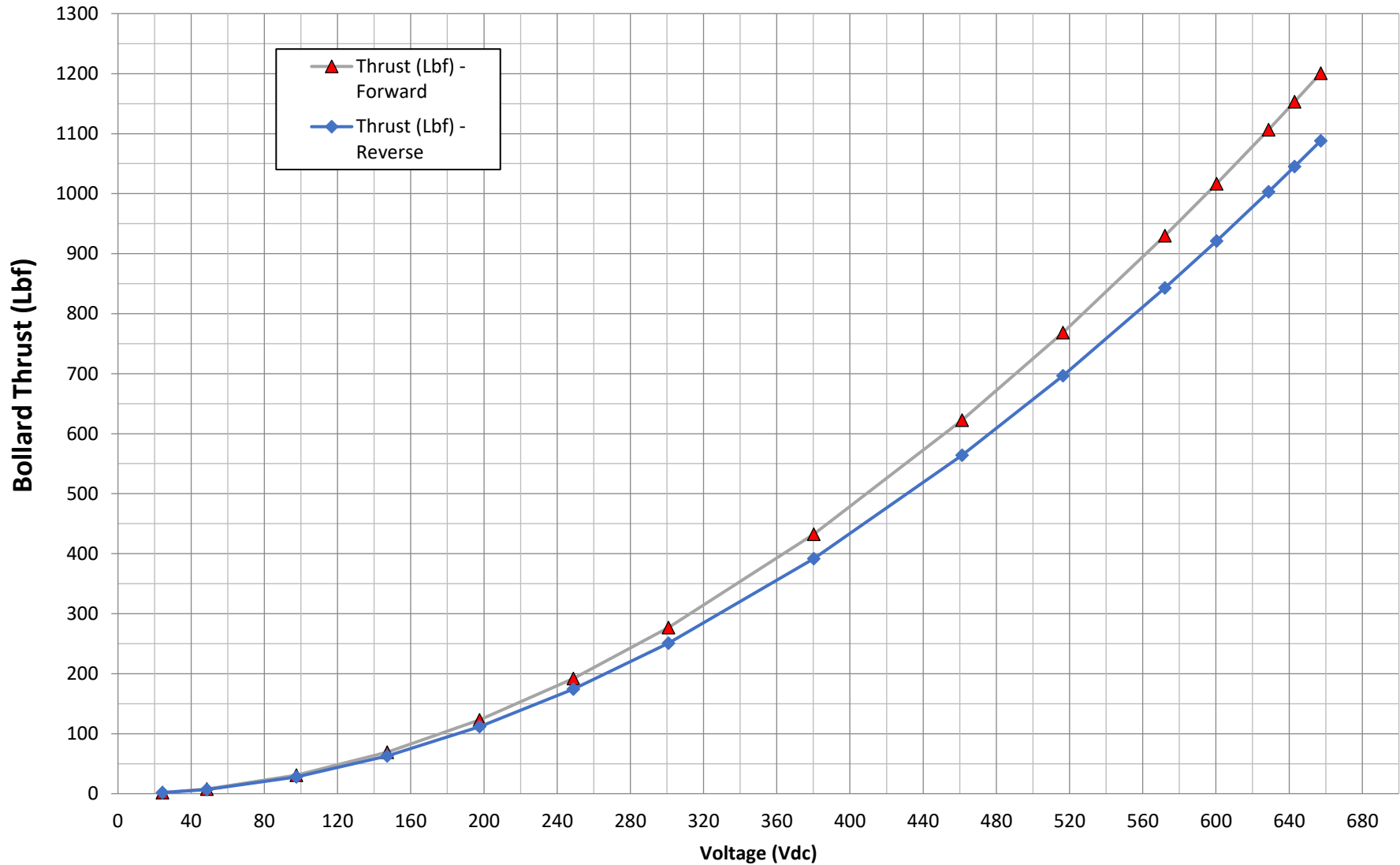
Table Information:

- 1) The Minimum Voltage column in the above table shows the minimum Voltage needed to achieve the performance at that corresponding propeller RPM/Thrust.
- 2) The Current shown represents the continues RMS Current to the motor to achieve the Thrust at the corresponding propeller RPM.
- 3) The Shaft HP developed is a function of the propeller and increases with propeller RPM.
- 4) The maximum performance achieved will depend on the limitations of customers system Voltage and driver Current capacity.
- 5) For Thrust at Forward Vehicle Speed (Kts), anything lower than 500 RPM varies greatly with vehicle design.
- 6) The Current/RPM might need to be limited depending on customer connector spec and or system Current limitations.
- 7) Minimum Voltage to achieve full Thrust is 657 VDC.
- 8) Max Voltage should not exceed 10% of rated Voltage.



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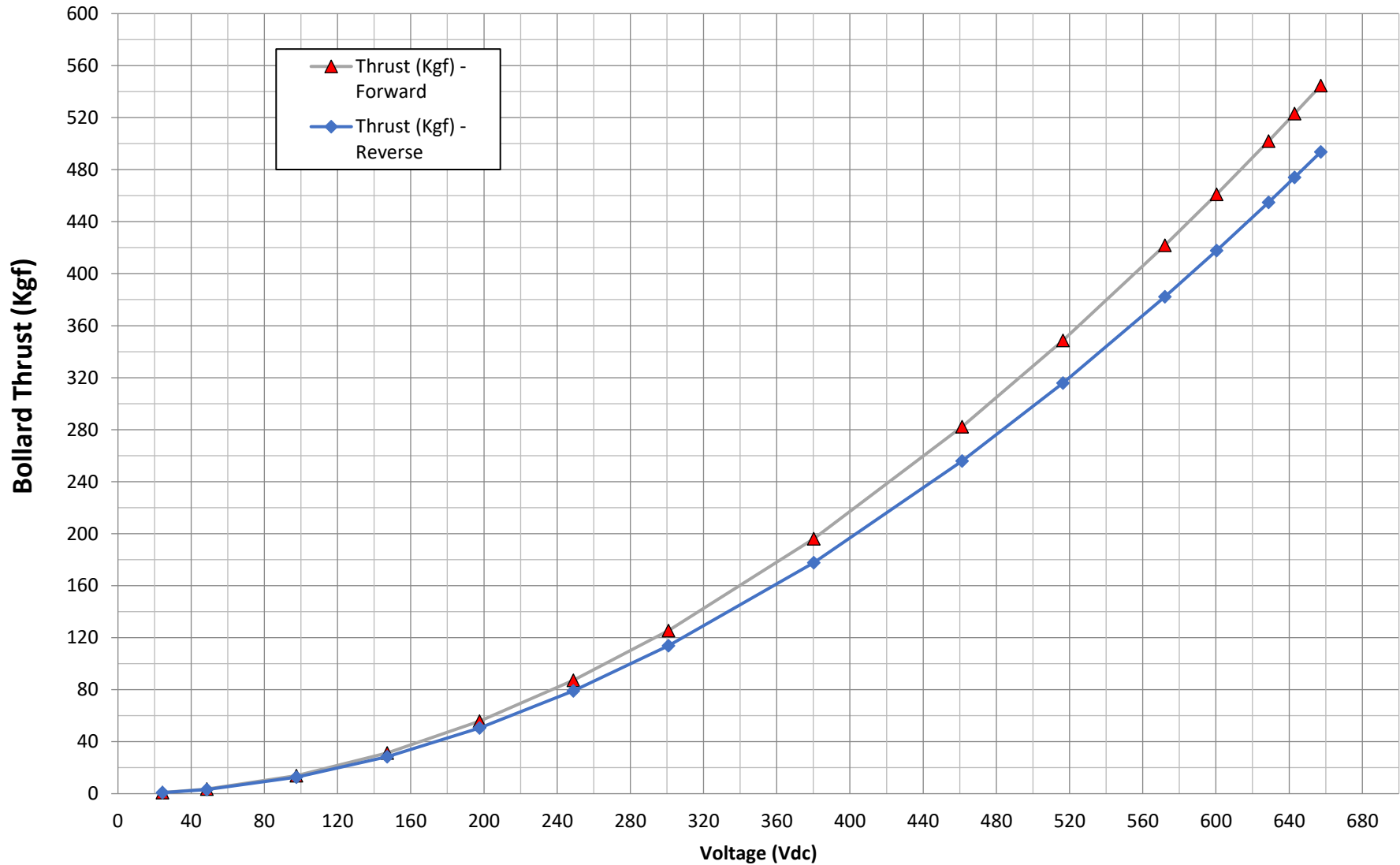
1002-1.23-19750XLR Electric Thruster Thrust (Lbf) vs Voltage (Vdc)



Note:
System Voltage equals 750VDC. Graph shows Thrust with Voltages below 750VDC.



1002-1.23-19750XLR Electric Thruster Thrust (Kgf) vs Voltage (Vdc)

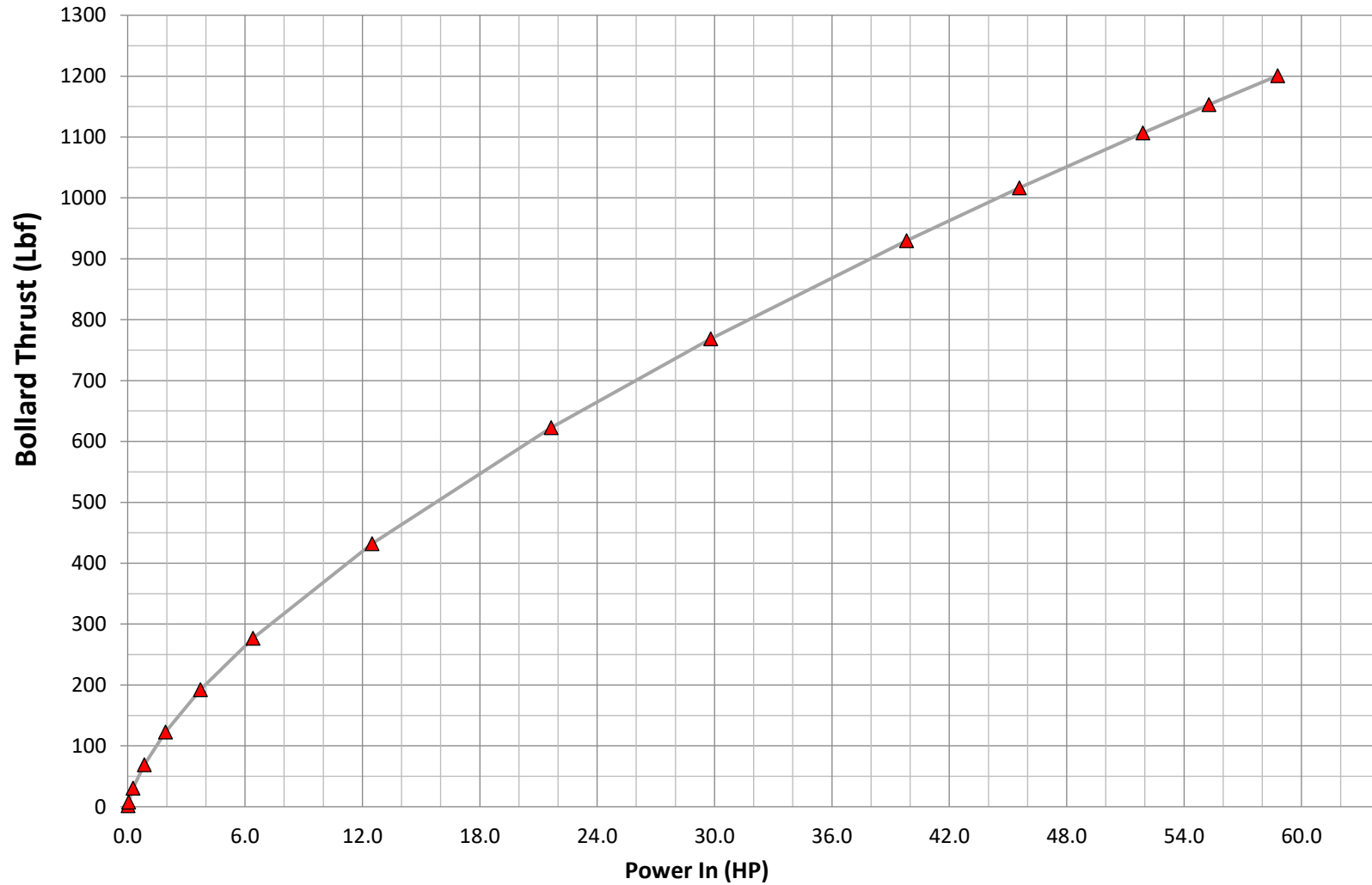


Note:
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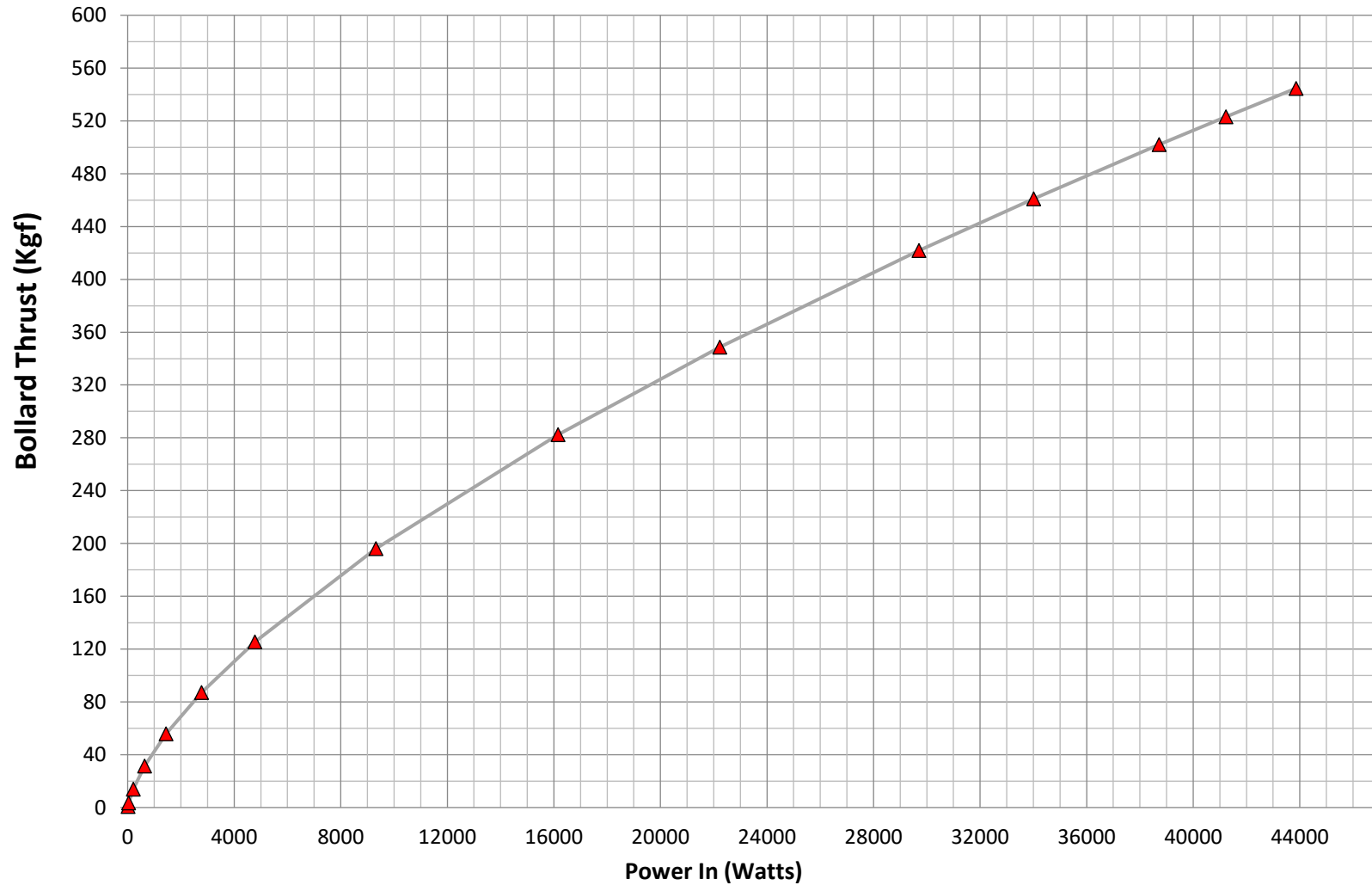
1002-1.23-19750XLR Electric Thruster Thrust (Lbf) vs Power In (HP)





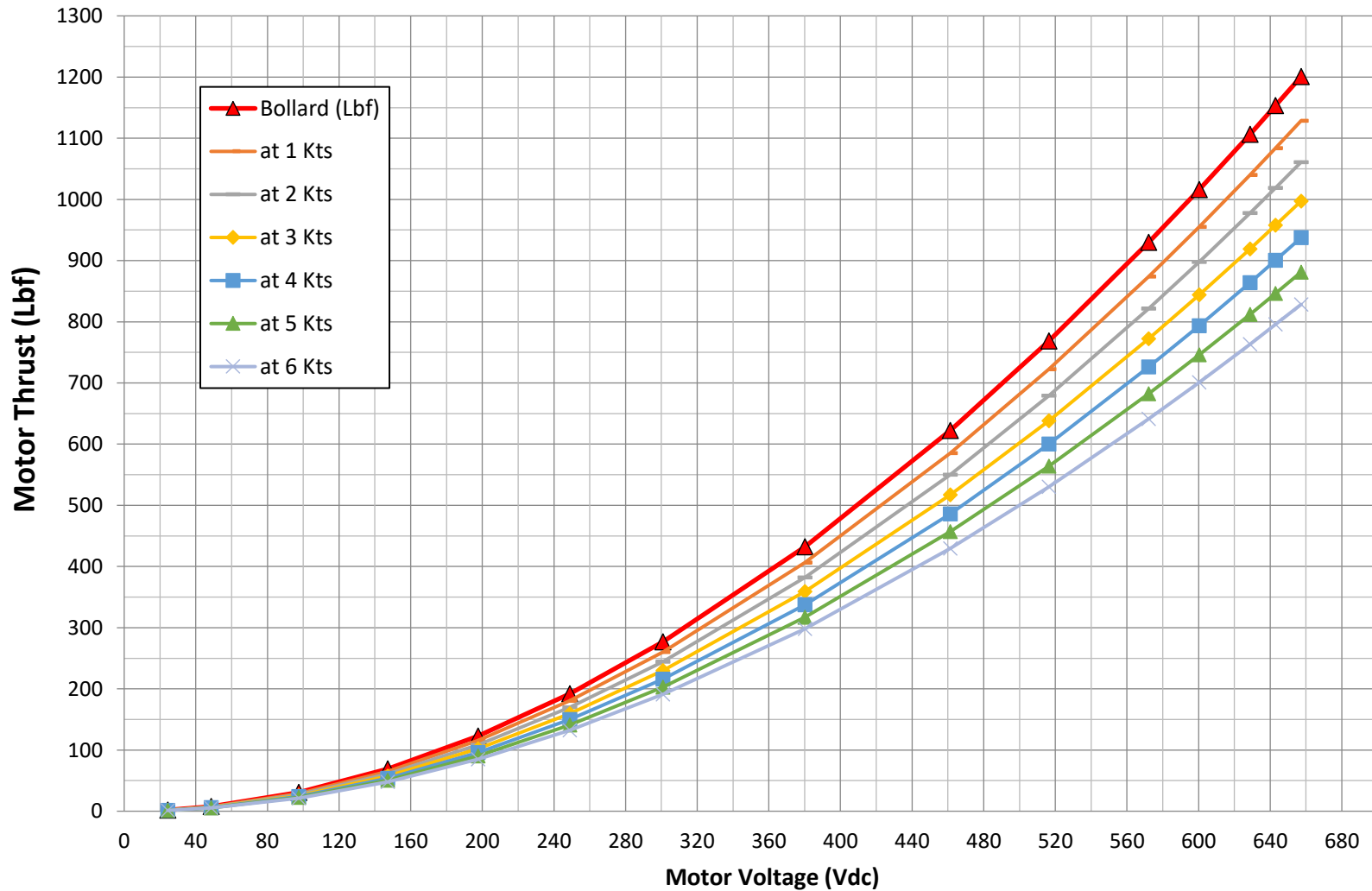
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1002-1.23-19750XLR Electric Thruster Thrust (Kgf) vs Power In (Watts)





1002-1.23-19750XLR Electric Thruster Thrust (Lbf) vs Voltage (Vdc)

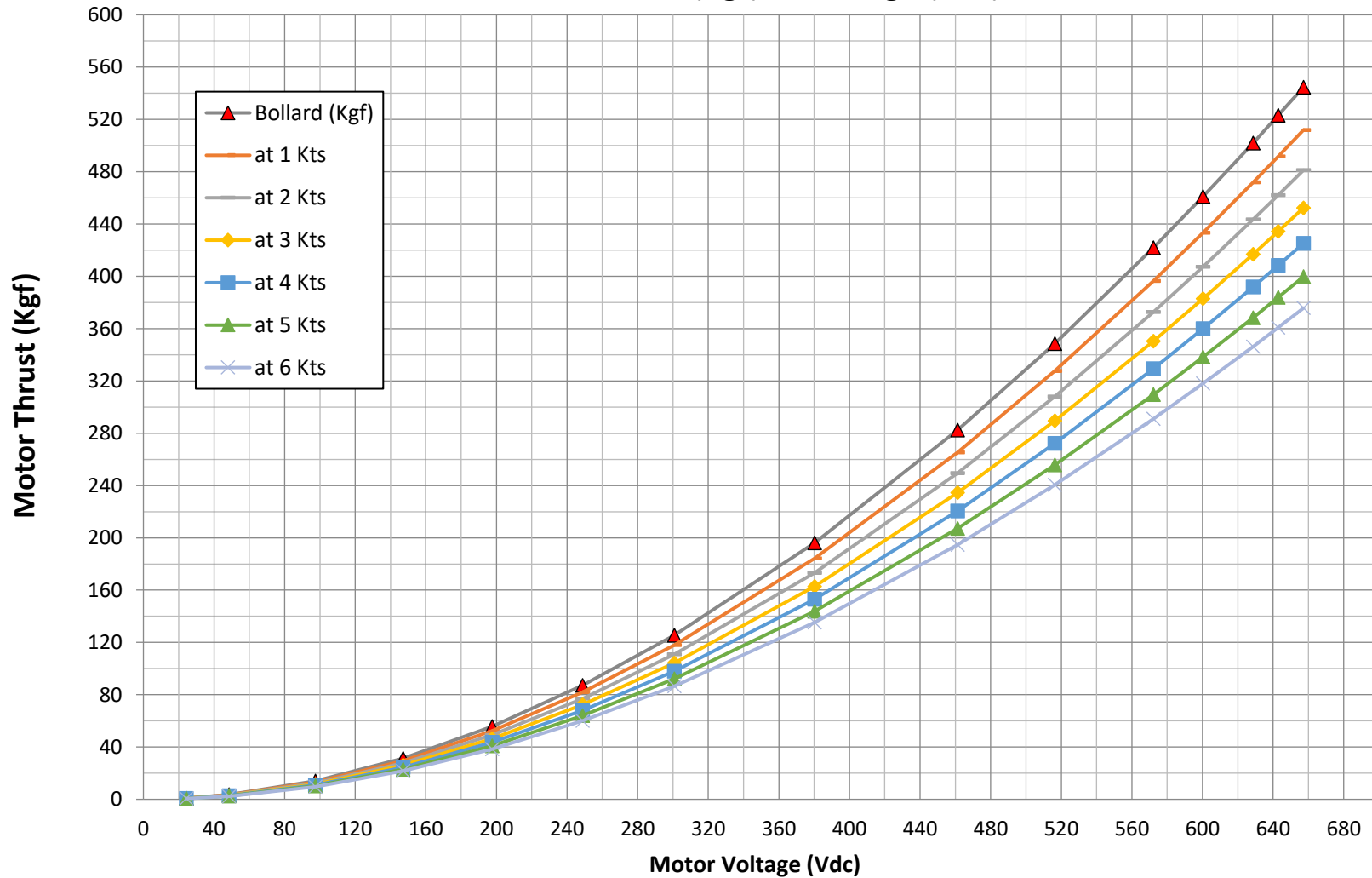


Note:

- 1) For Thrust at Forward Vehicle Speed (Kts), anything lower than 500 RPM varies greatly with vehicle design.
- 2) Thrust at forward vehicle speed from 1 Kts to 6 Kts is based on a local water speed with a very conservative vehicle wake factor.
- 3) System Voltage equals 750VDC. Graph shows Thrust with Voltages below 750VDC.



1002-1.23-19750XLR Electric Thruster Thrust (Kgf) vs Voltage (Vdc)



Note:

- 1) For Thrust at Forward Vehicle Speed (Kts), anything lower than 500 RPM varies greatly with vehicle design.
- 2) Thrust at forward vehicle speed from 1 Kts to 6 Kts is based on a local water speed with a very conservative vehicle wake factor.
- 3) System Voltage equals 750VDC. Graph shows Thrust with Voltages below 750VDC.