FUTURENERGY

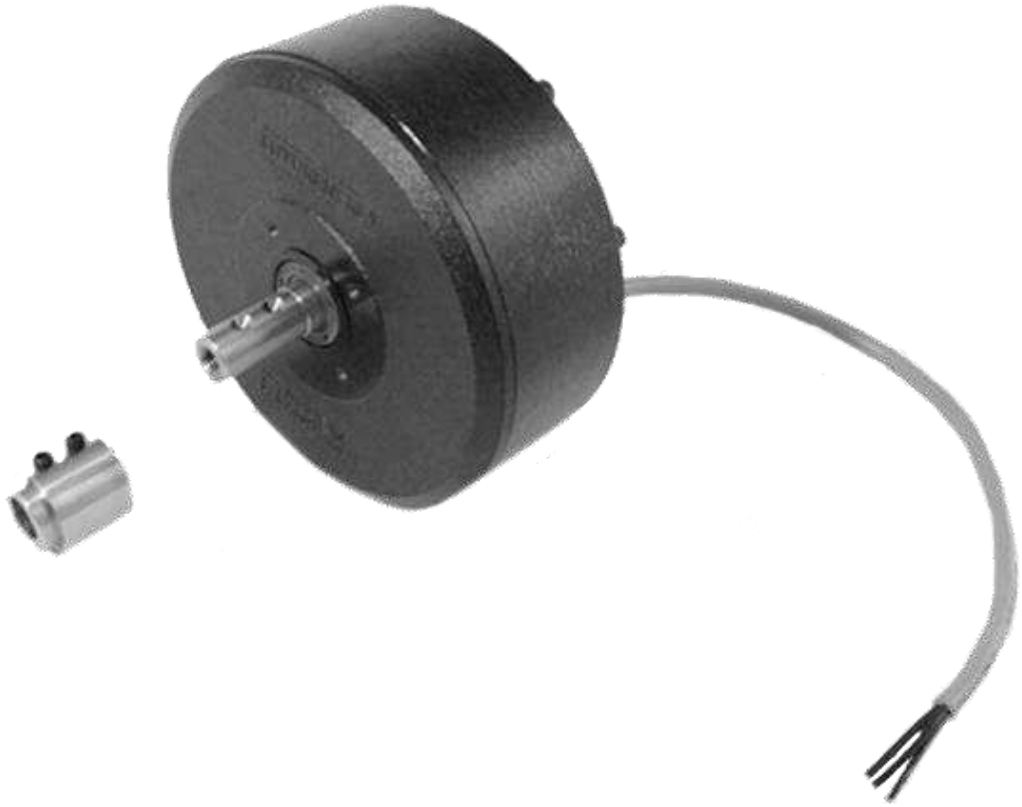
Specification

Futurenergy, 12V 1kW Permanent Magnet Generator

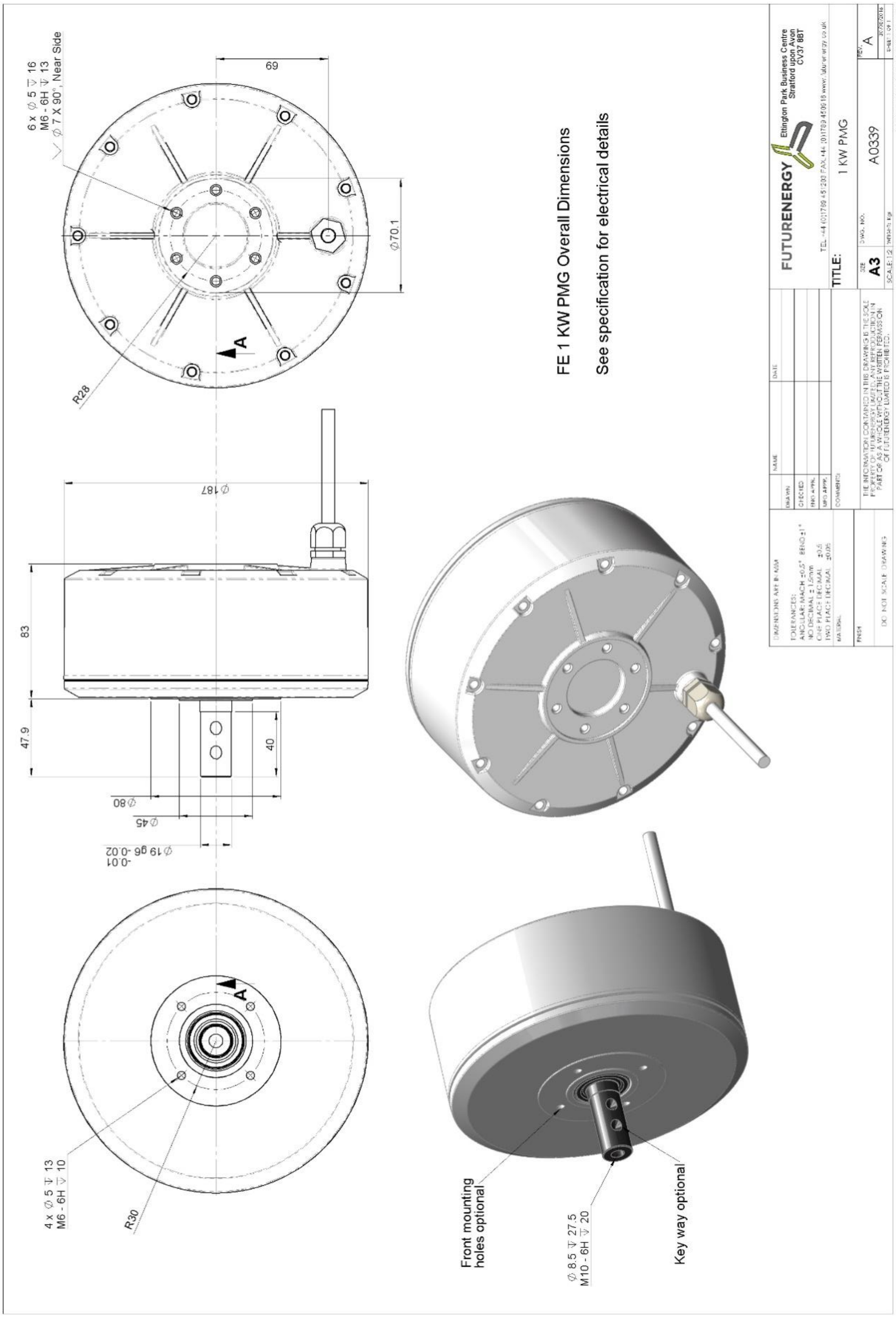
Prepared By

D. Nangle, Sept 2016

Contents



Dimensions



FE 1 KW PMG Overall Dimensions
See specification for electrical details
6 x ⌀ 5 ↧ 16
M6 - 6H ↧ 13
⌀ 7 X 90°, Near Side
69
⌀70.1
R28
⌀187
83
47.9
40
⌀80
⌀45
⌀19 g6 -0.02 -0.01
4 x ⌀ 5 ↧ 13
M6 - 6H ↧ 10
R30
Front mounting holes optional
⌀ 8.5 ↧ 27.5
M10 - 6H ↧ 20
Key way optional
FUTURENERGY
Ettington Park Business Centre
Stratford upon Avon
CV37 8BT
TITLE:
1 KW PMG
A3
A0339
A

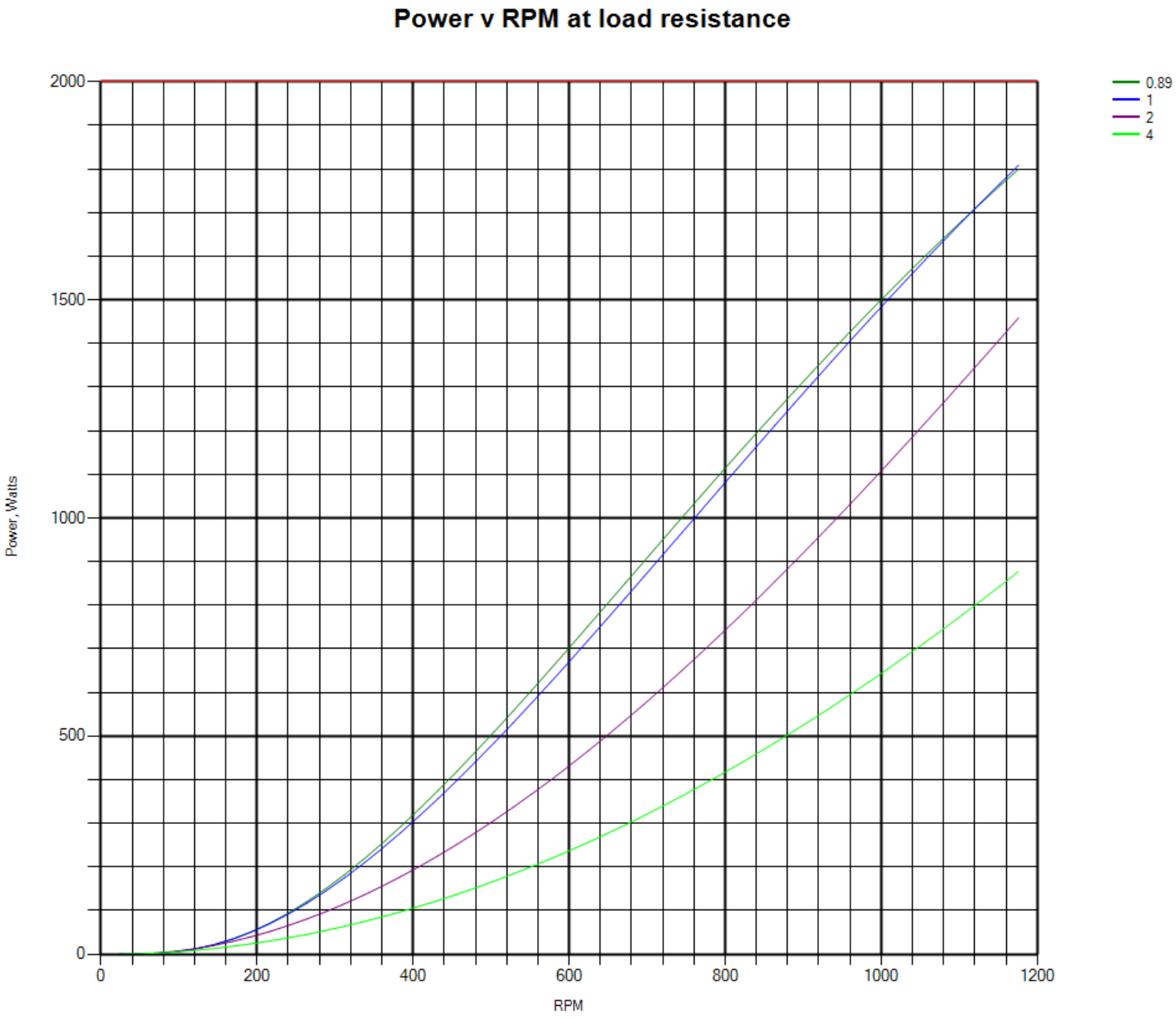
Specification

Nominal Rated Power	1 kW
Nominal RPM	750 RPM
Line / Line RMS Open Voltage	30V (12V DC @ 300 RPM)*
Nominal Line Current	34 Amps**
Configuration	3 Phase, Star wound AC output
Line / Line Winding Resistance	0.145 Ohms
Nominal Self Inductance	0.439 mH
Maximum Over-Load Power	1.5 kW
Efficiency	92 %
Maximum Cogging Torque (Excluding Shaft Seals)	<0.5 Nm
Duty @ Nominal Power	100%
Insulation Class	H
Mounting	Any
Shaft Material	Stainless Steel
Magnet Material	NdFeB
Shell Material	LM25 Aluminium
Protection	IP54
Poles	12
Winding code	P123-T9-W2.24

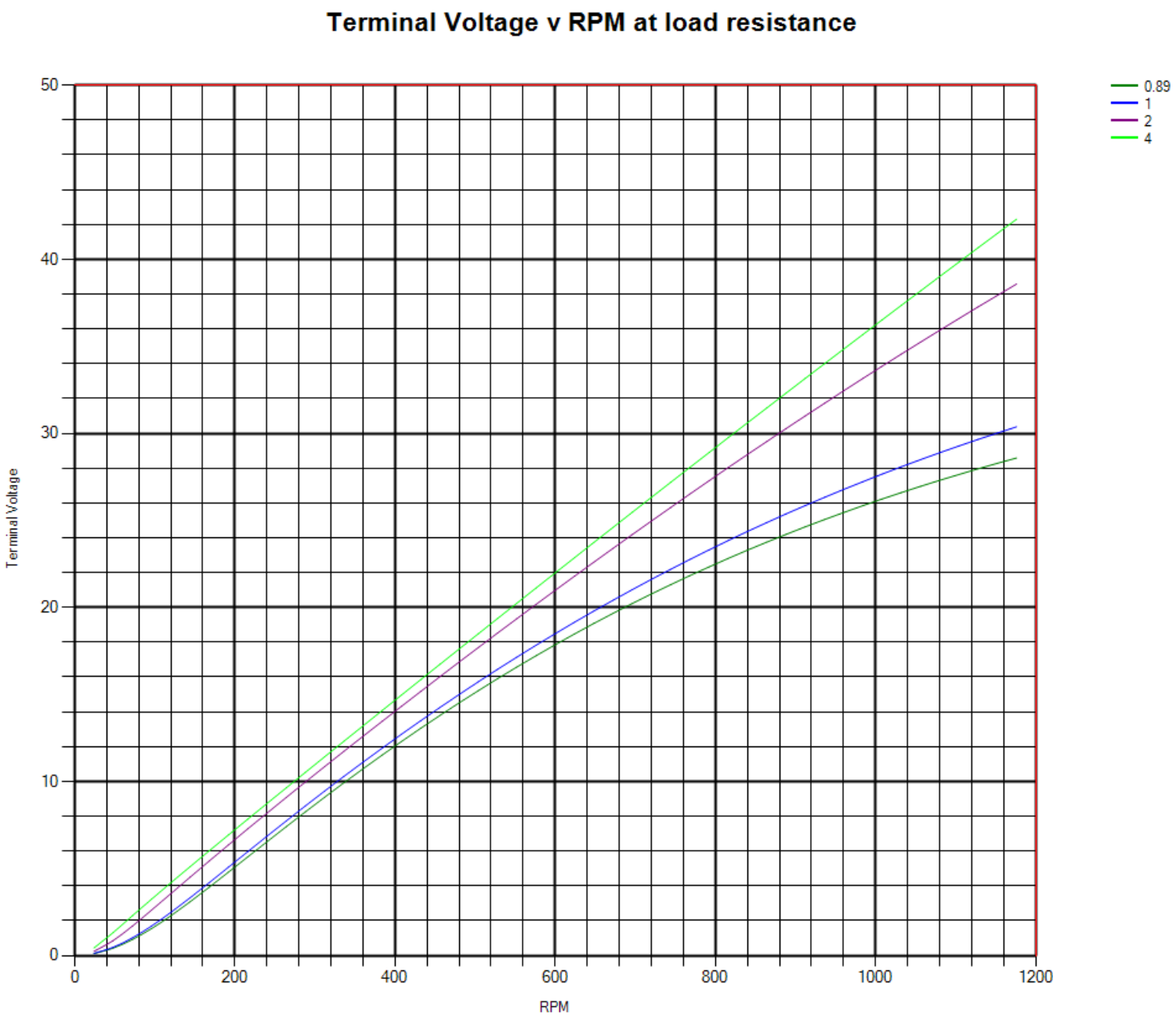
* DC Voltage requires an additional bridge rectifier

** Voltage and current will depend on connected electrical system. For example; a system charging 12V battery bank will reduce generator voltage to the battery charge voltage and increase current. Values quoted assume fixed resistance loads.

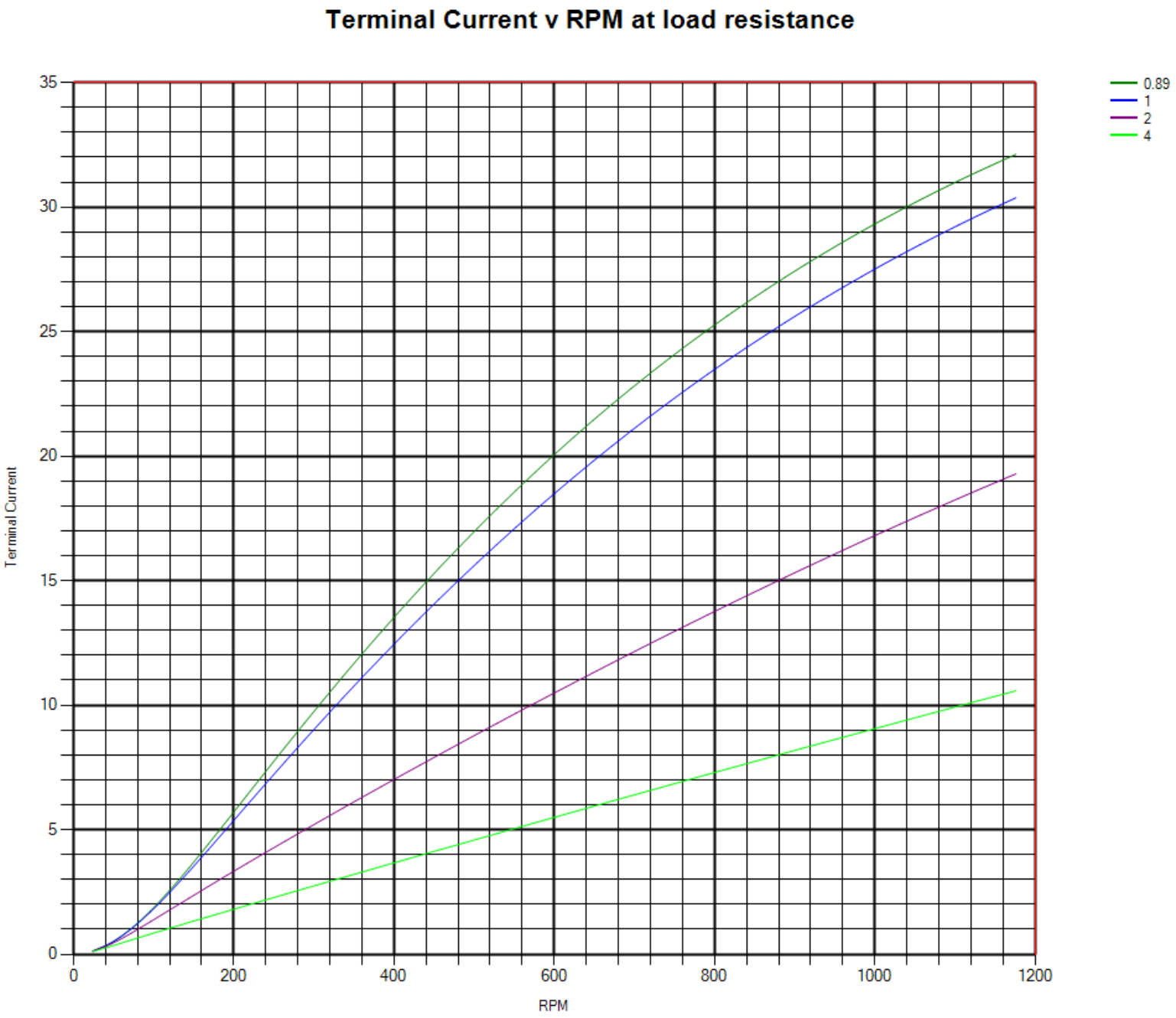
Graph: Power vs RPM @ Load Resistances (Ω)



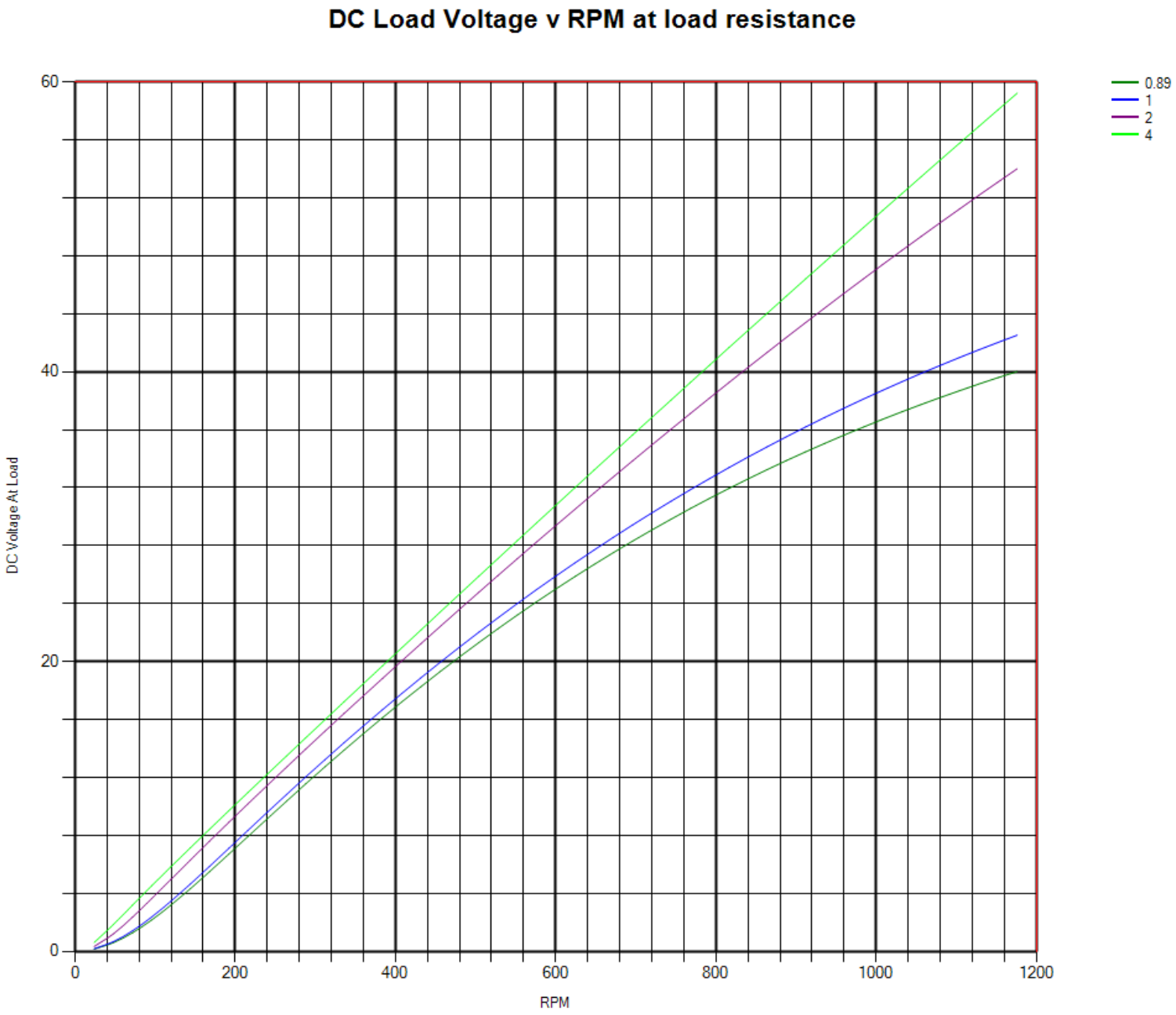
Graph: Terminal Voltage vs RPM @ Load Resistances



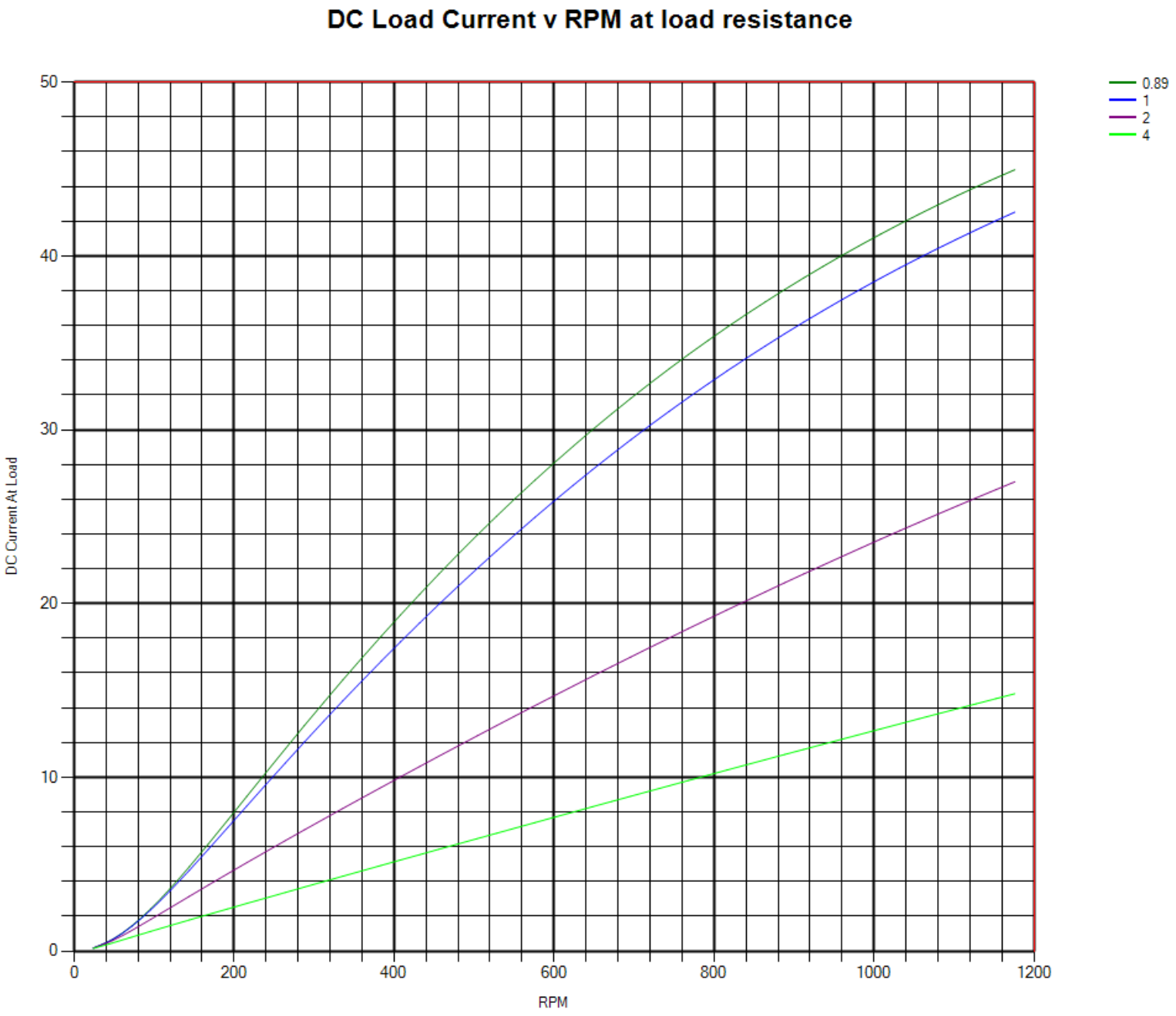
Graph: Terminal Current vs RPM @ Load Resistances



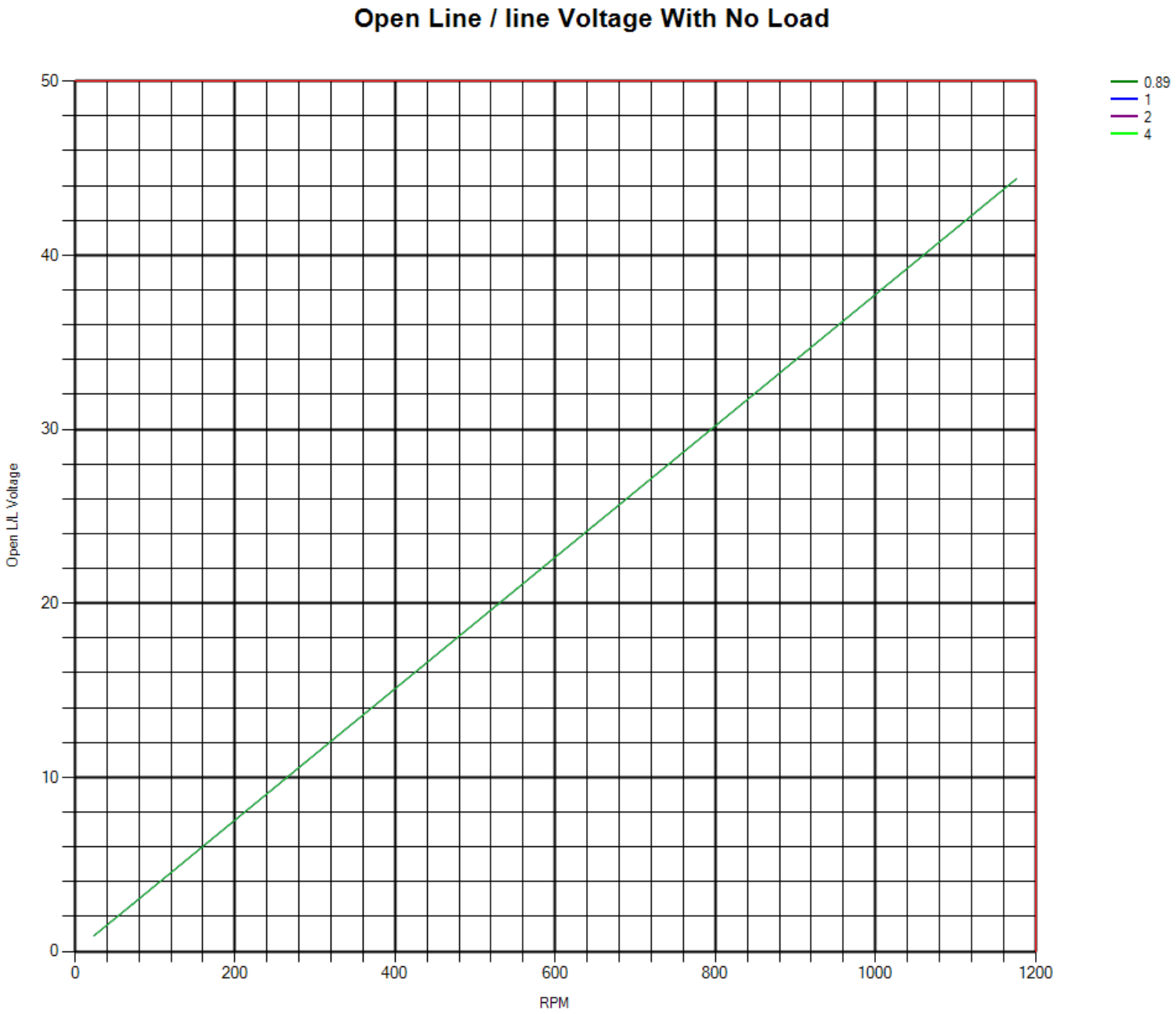
Graph: DC Load Voltage vs RPM @ Load Resistances



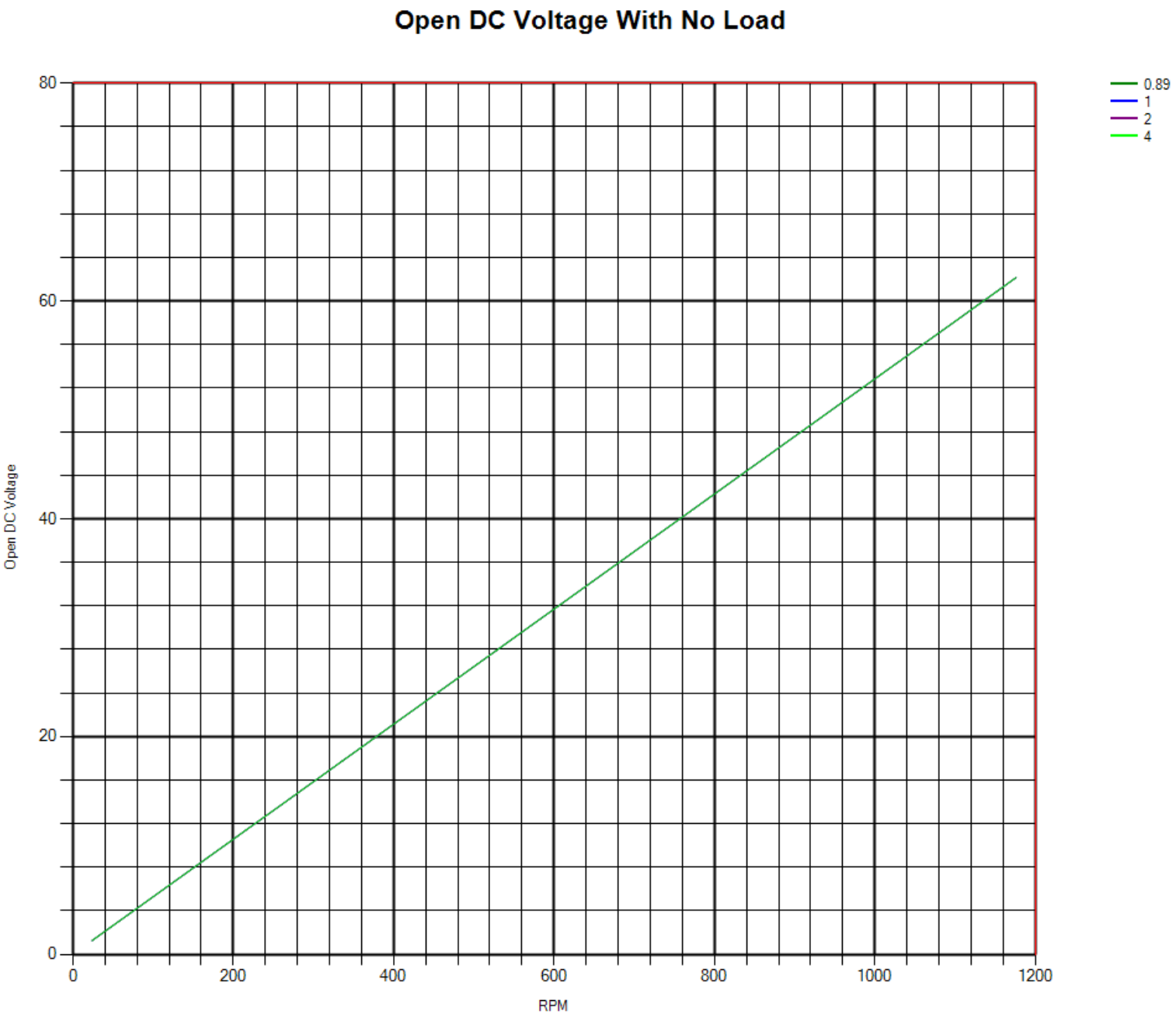
Graph: DC Load Current vs RPM @ Load Resistances



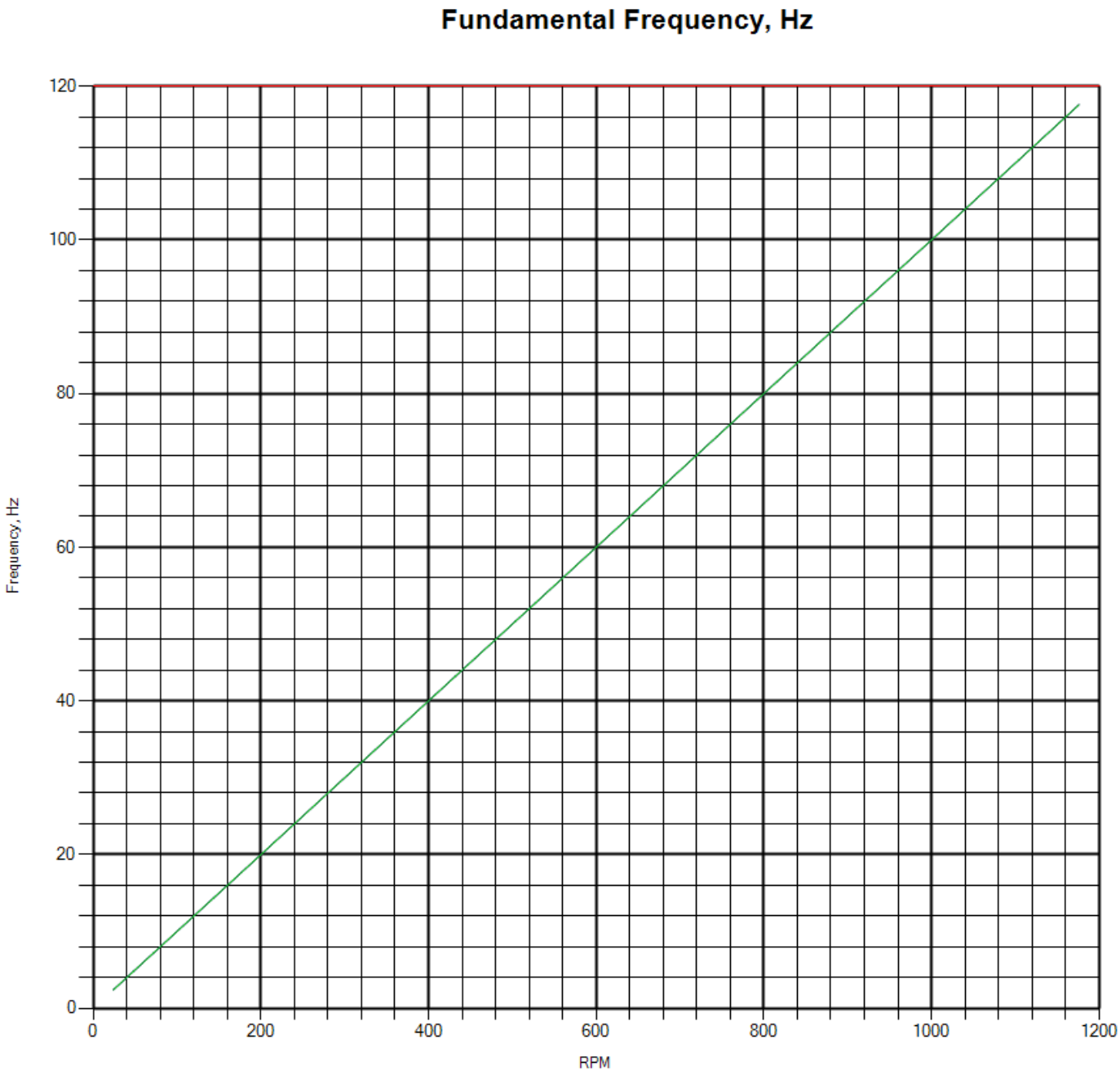
Graph: Open RMS L/L Voltage vs RPM



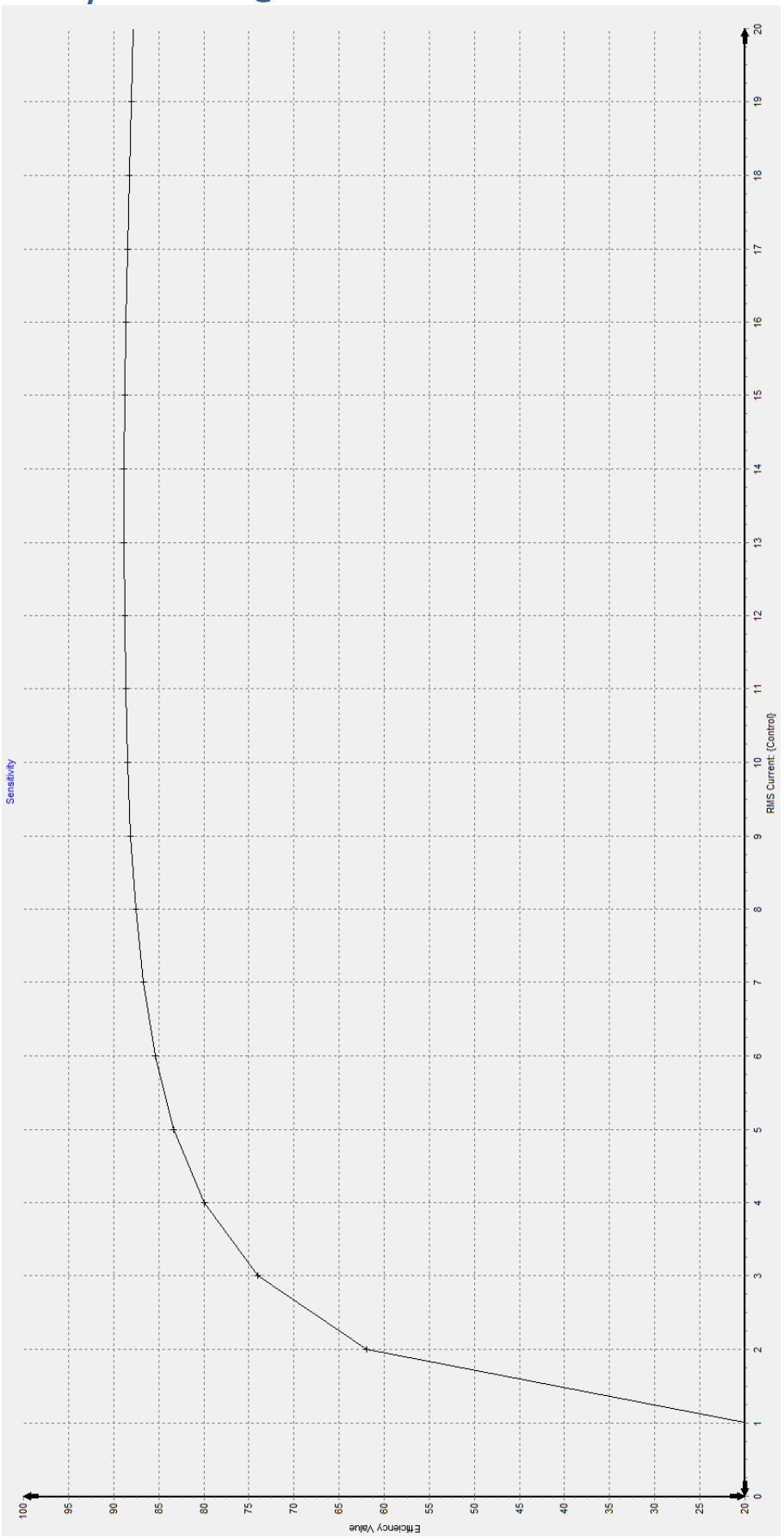
Graph: Open DC Voltage vs RPM



Graph: Fundamental Frequency vs RPM



Graph: Efficiency vs Current @ 750 RPM Constant



Graph: Cogging Torque