FUTURENERGY

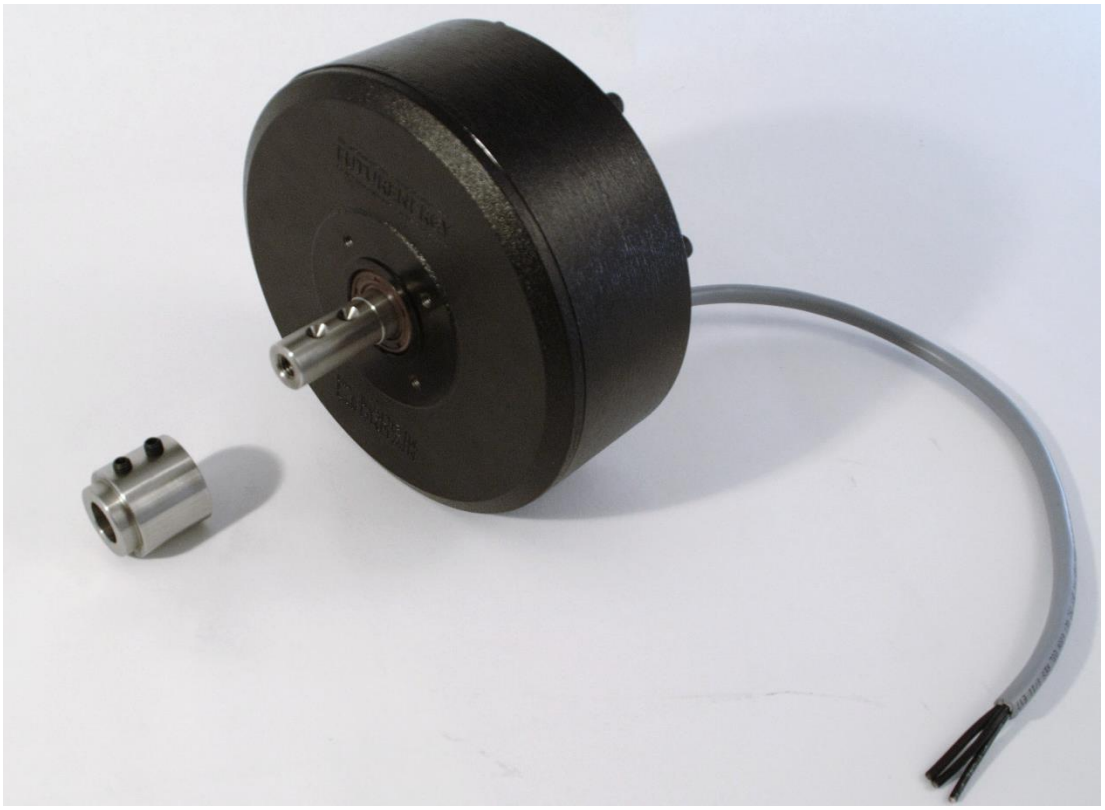
Specification

Futurenergy, High Voltage (167V open L/L at 800 RPM) 1kW
Permanent Magnet Generator

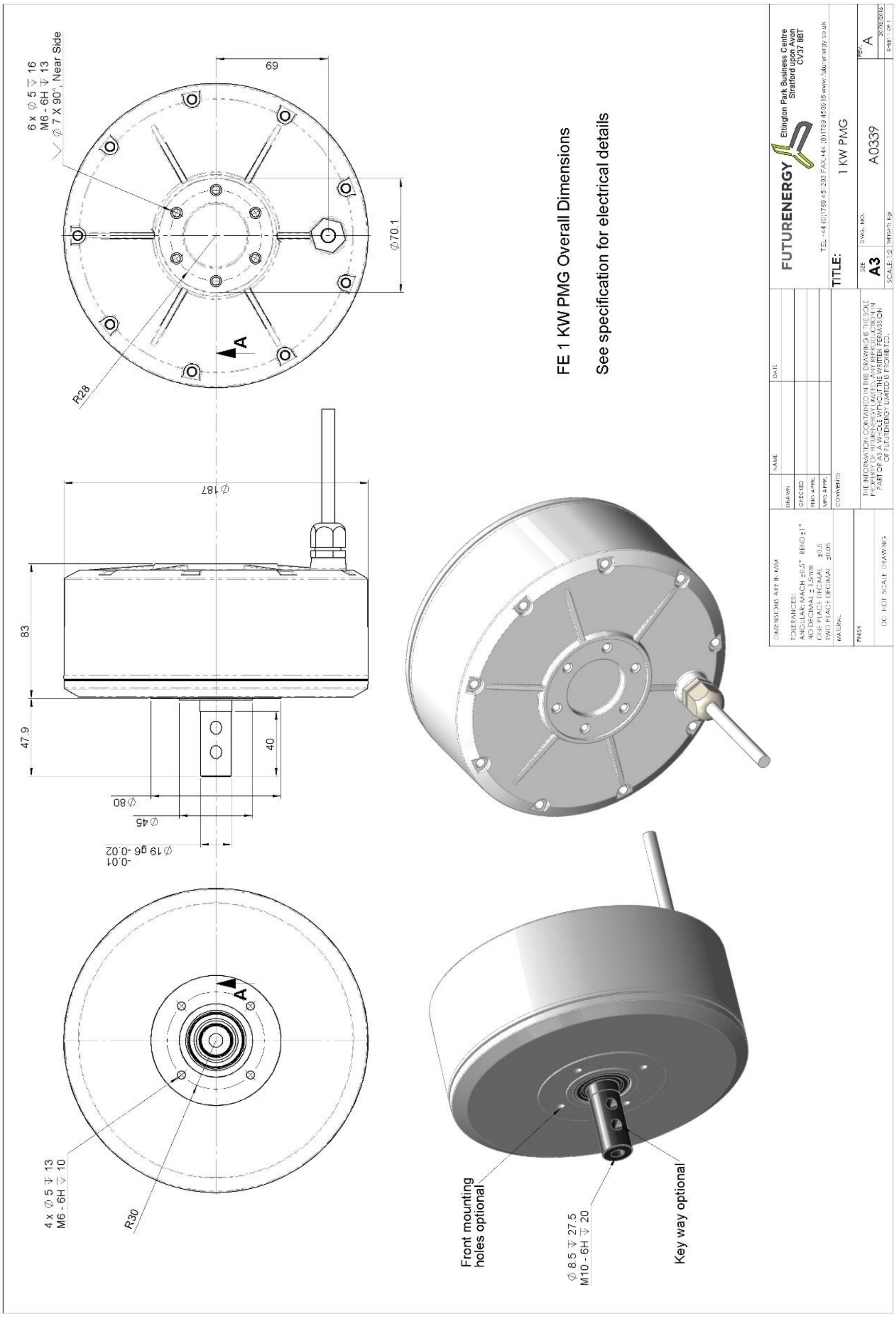
Prepared By

D Nangle, November 2016

Contents



Dimensions



FE 1 KW PMG Overall Dimensions
See specification for electrical details
6 x Ø 5 ⊽ 16
M6 - 6H ⊽ 13
Ø 7 X 90°, Near Side
69
Ø70.1
R28
Ø187
83
47.9
40
Ø80
Ø45
Ø19 g6 -0.01 -0.02
4 x Ø 5 ⊽ 13
M6 - 6H ⊽ 10
R30
Front mounting holes optional
Ø 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
DO NOT SCALE DRAWINGS

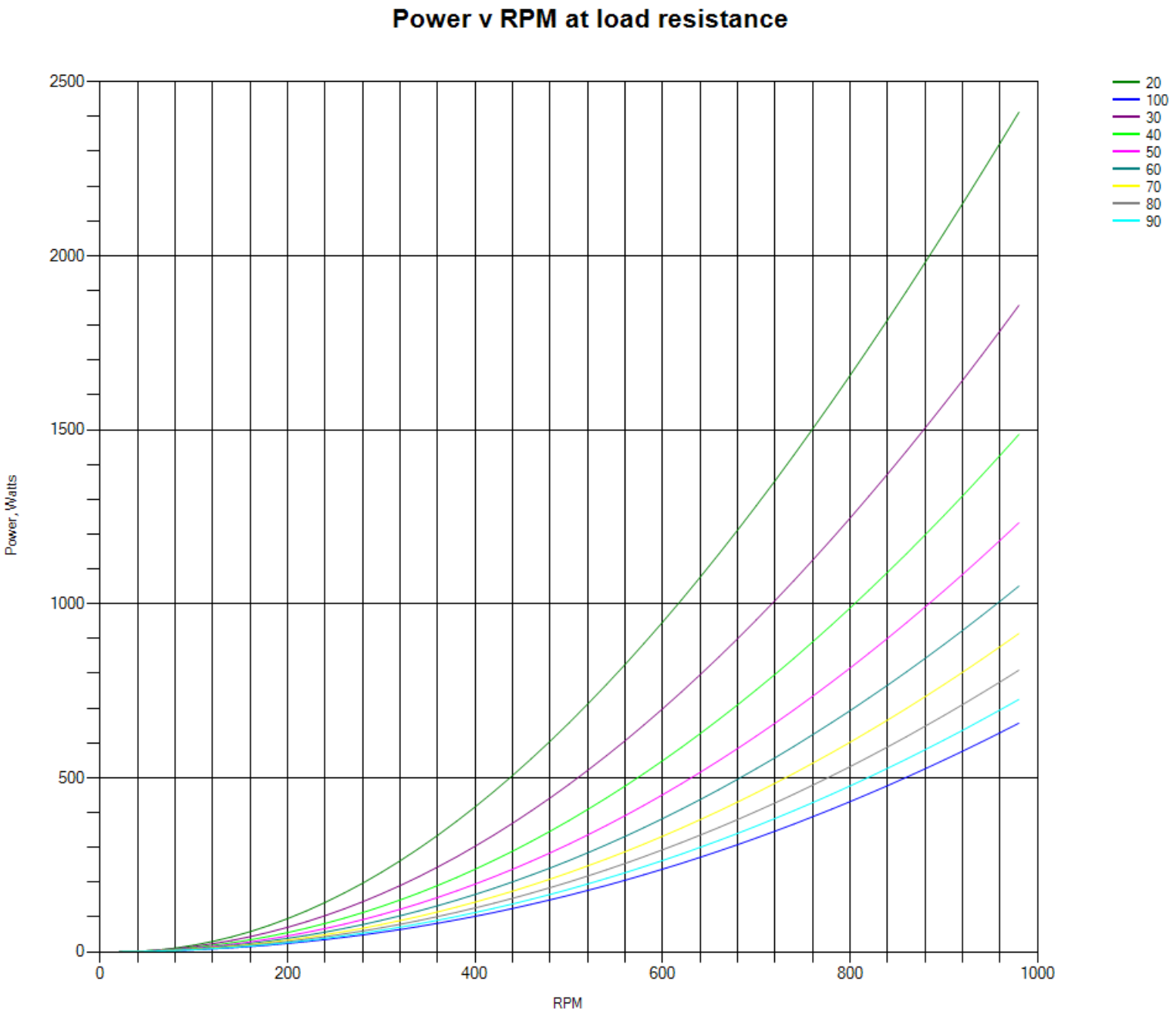
Specification

Nominal Rated Power	1 kW (@ 40 ohms load)
Nominal RPM	800 RPM
Line / Line RMS Open Voltage	167V*
Nominal Line Current	5.1 Amps**
Maximum Current (100% Duty Cycle / Air Cooled 20°C) *Generator output ±10% depending of duty cycle temp*	7 Amps
Configuration	3 Phase, Star wound AC output
Line / Line Winding Resistance	2.18 Ohms
Nominal Self Inductance	4.86 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-T50-W1-★

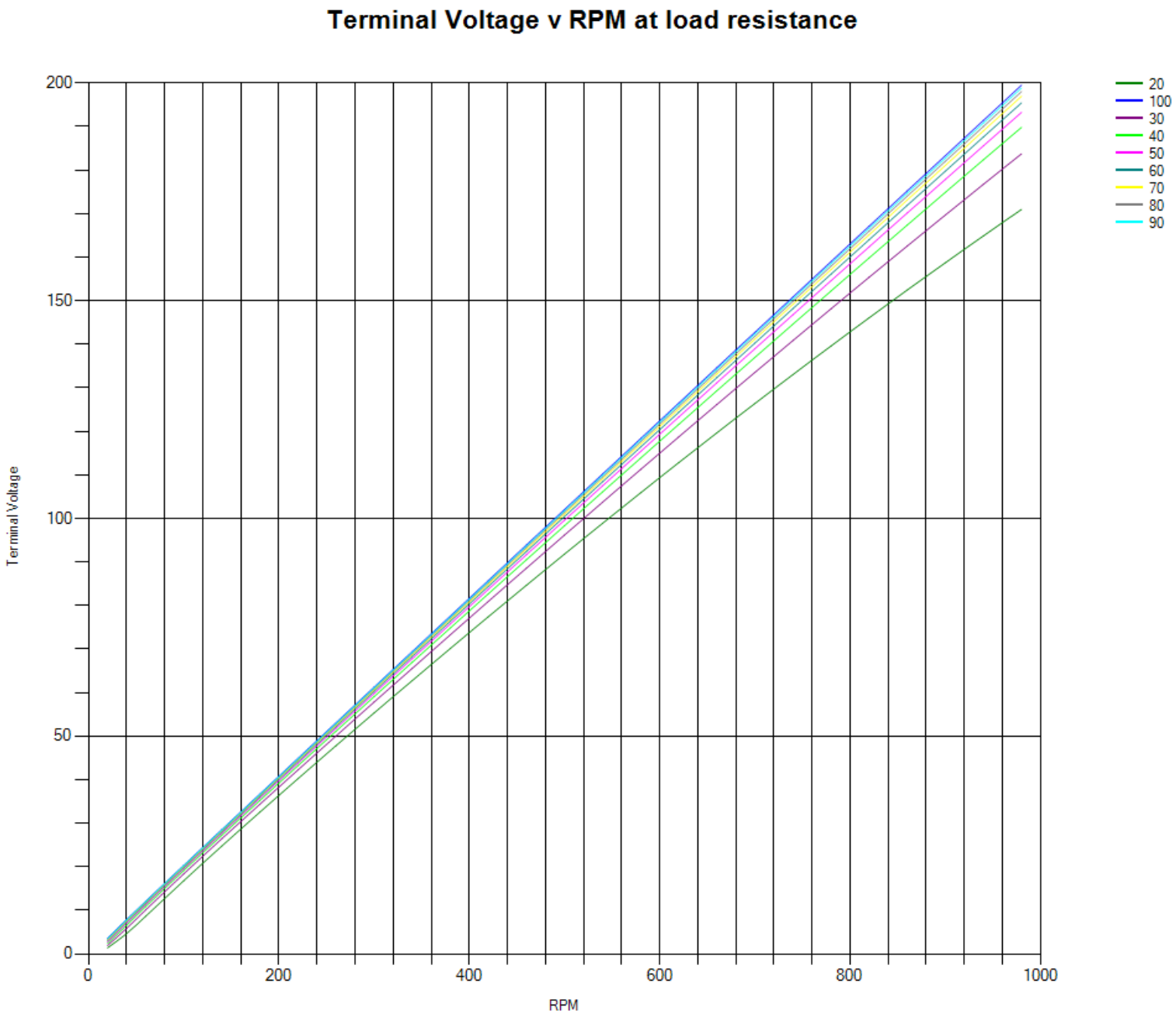
* DC Voltage requires an additional bridge rectifier

** Voltage and current will depend on connected electrical system. For example; a system charging 48V battery bank will reduce generator voltage to the battery charge voltage and increase current. Values quoted assume fixed resistance loads.

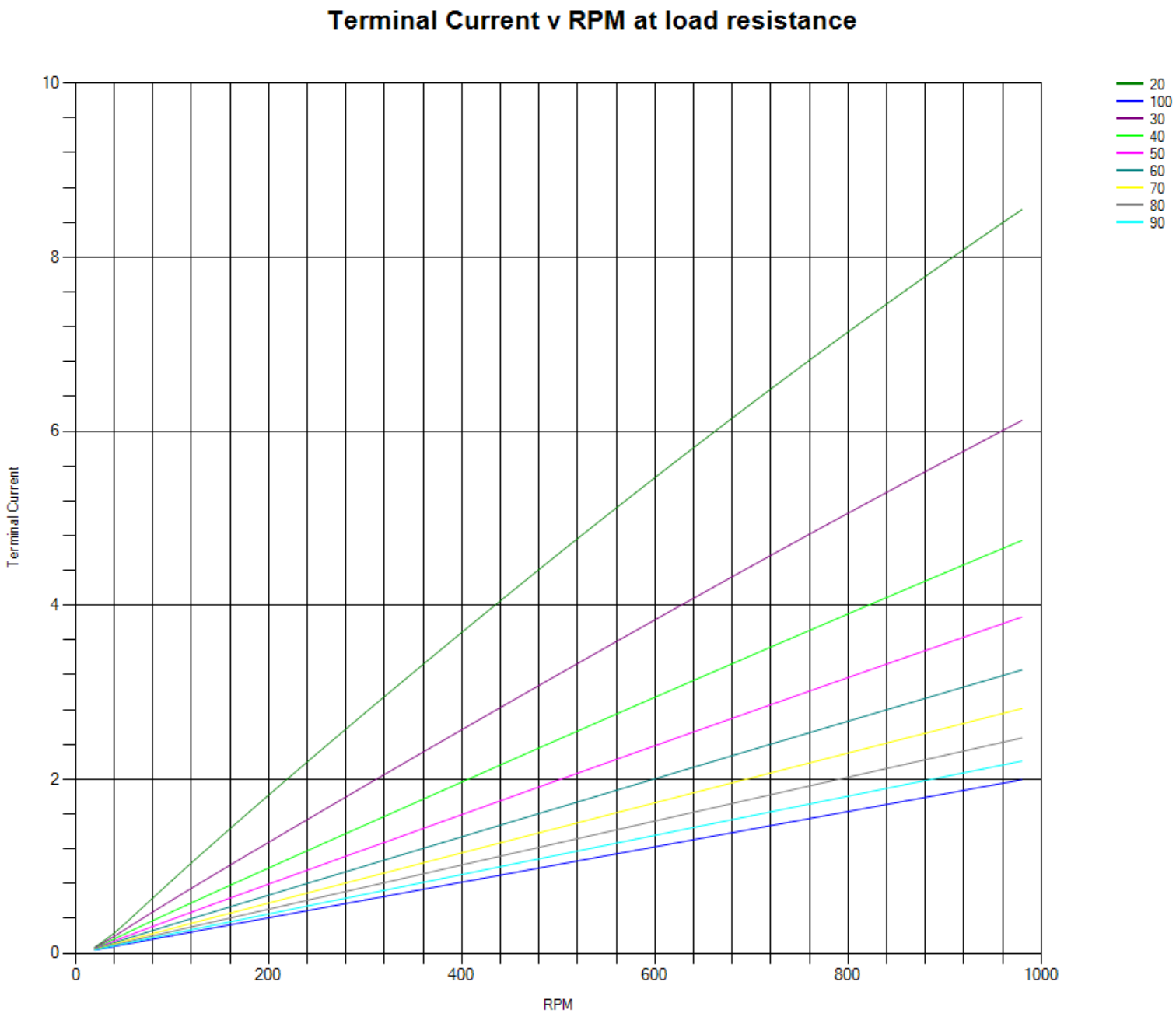
Graph: Power vs RPM @ Load Resistances (Ω)



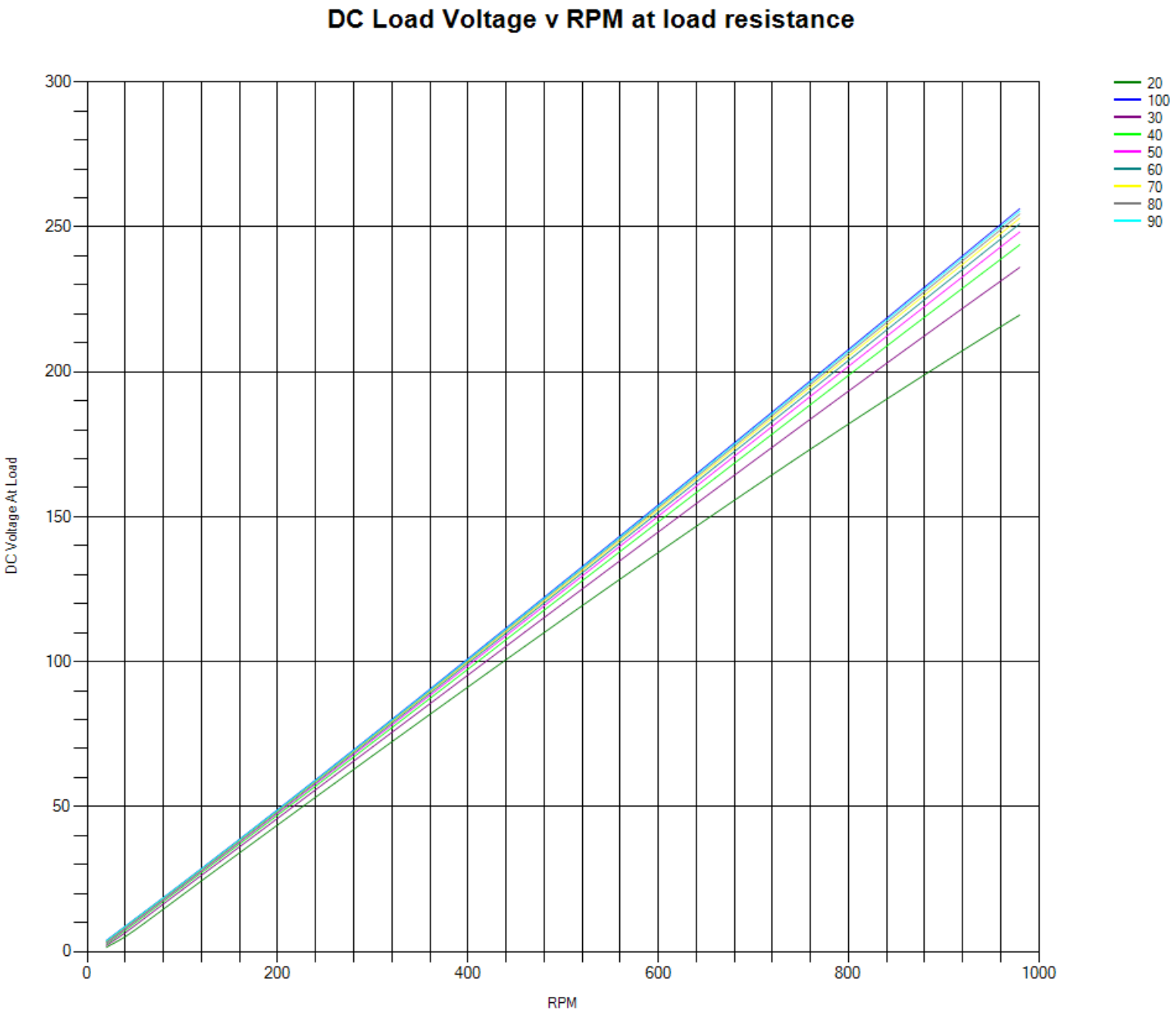
Graph: Terminal Voltage vs RPM @ Load Resistances



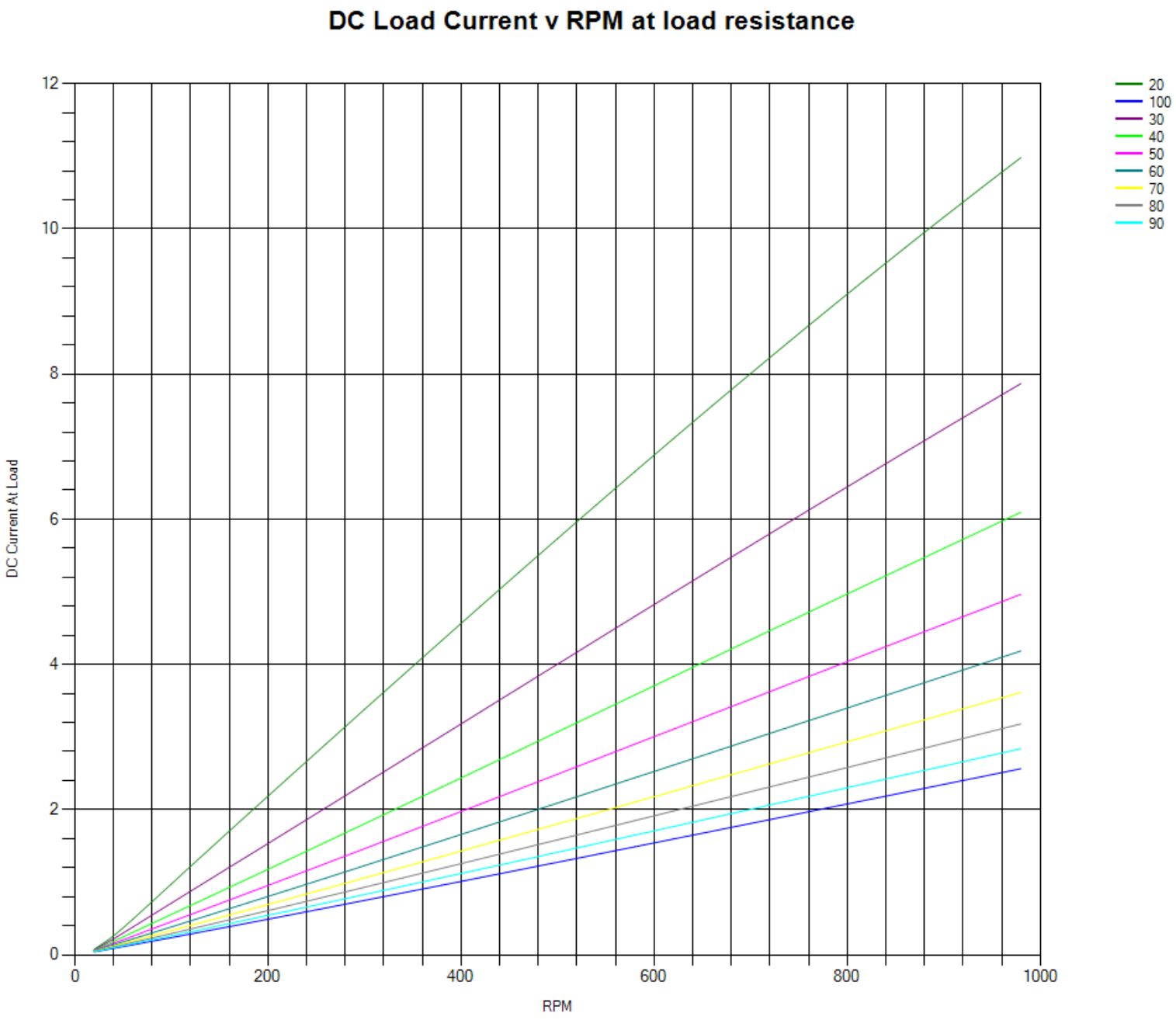
Graph: Terminal Current vs RPM @ Load Resistances



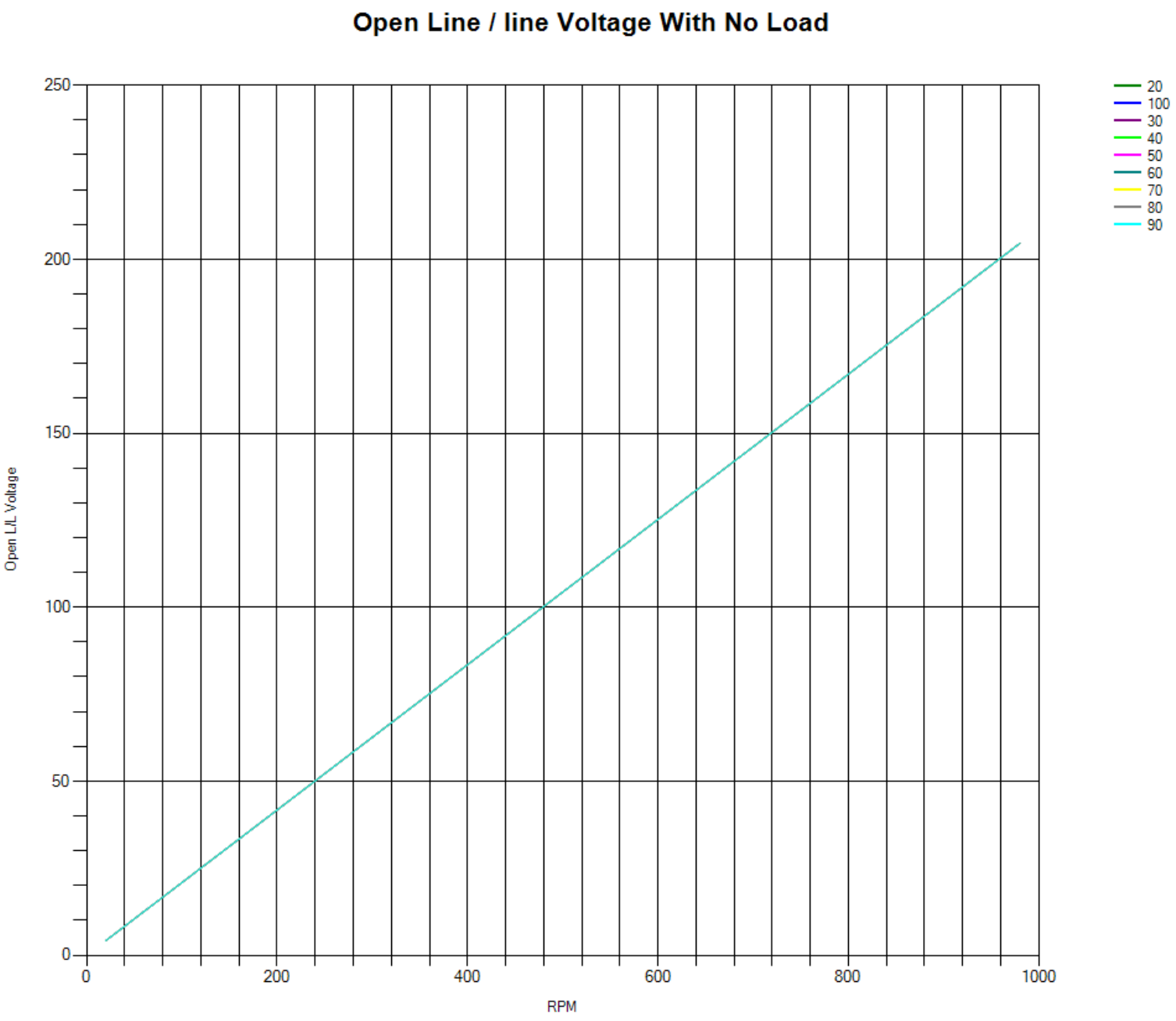
Graph: DC Load Voltage vs RPM @ Load Resistances



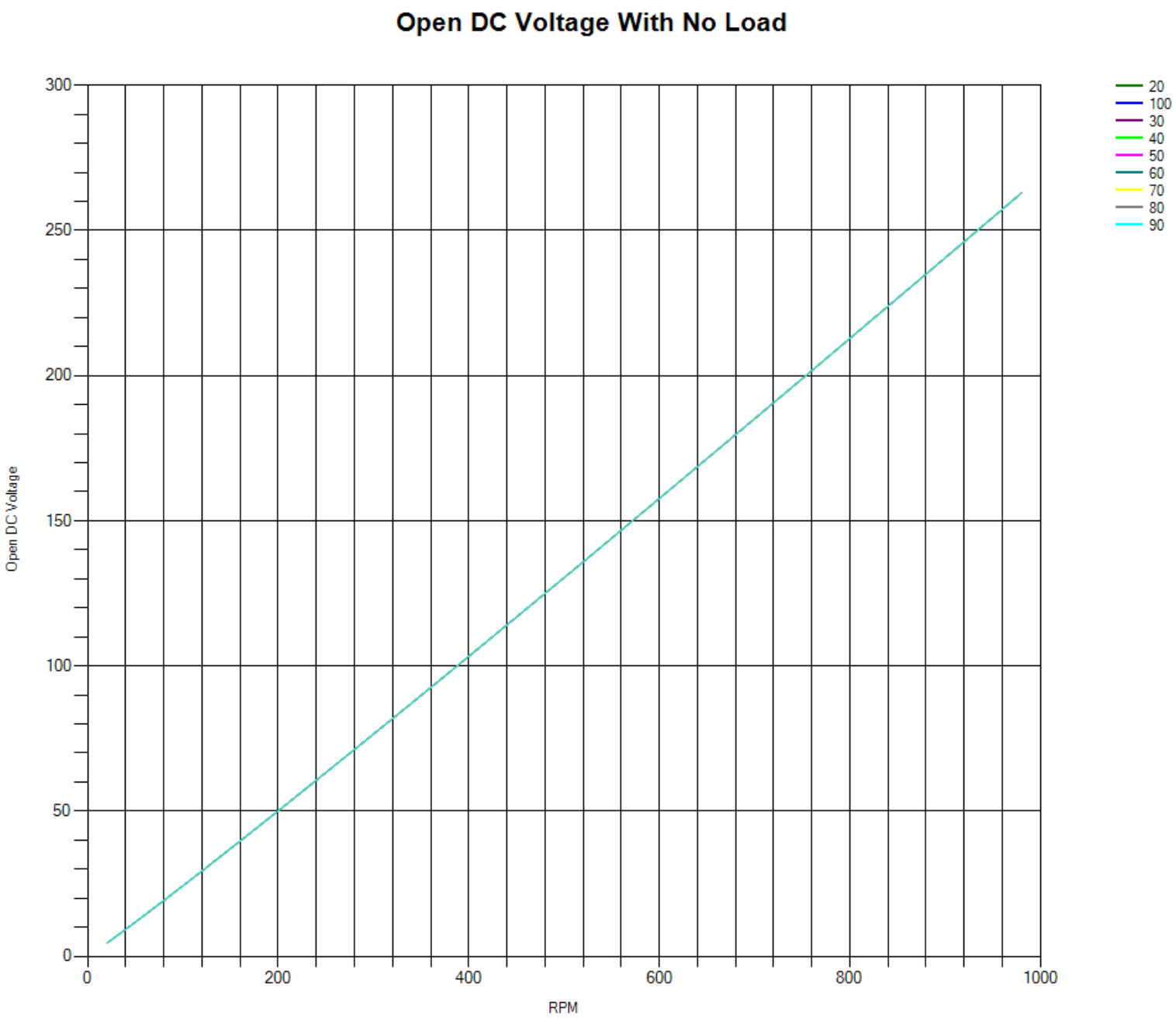
Graph: DC Load Current vs RPM @ Load Resistances



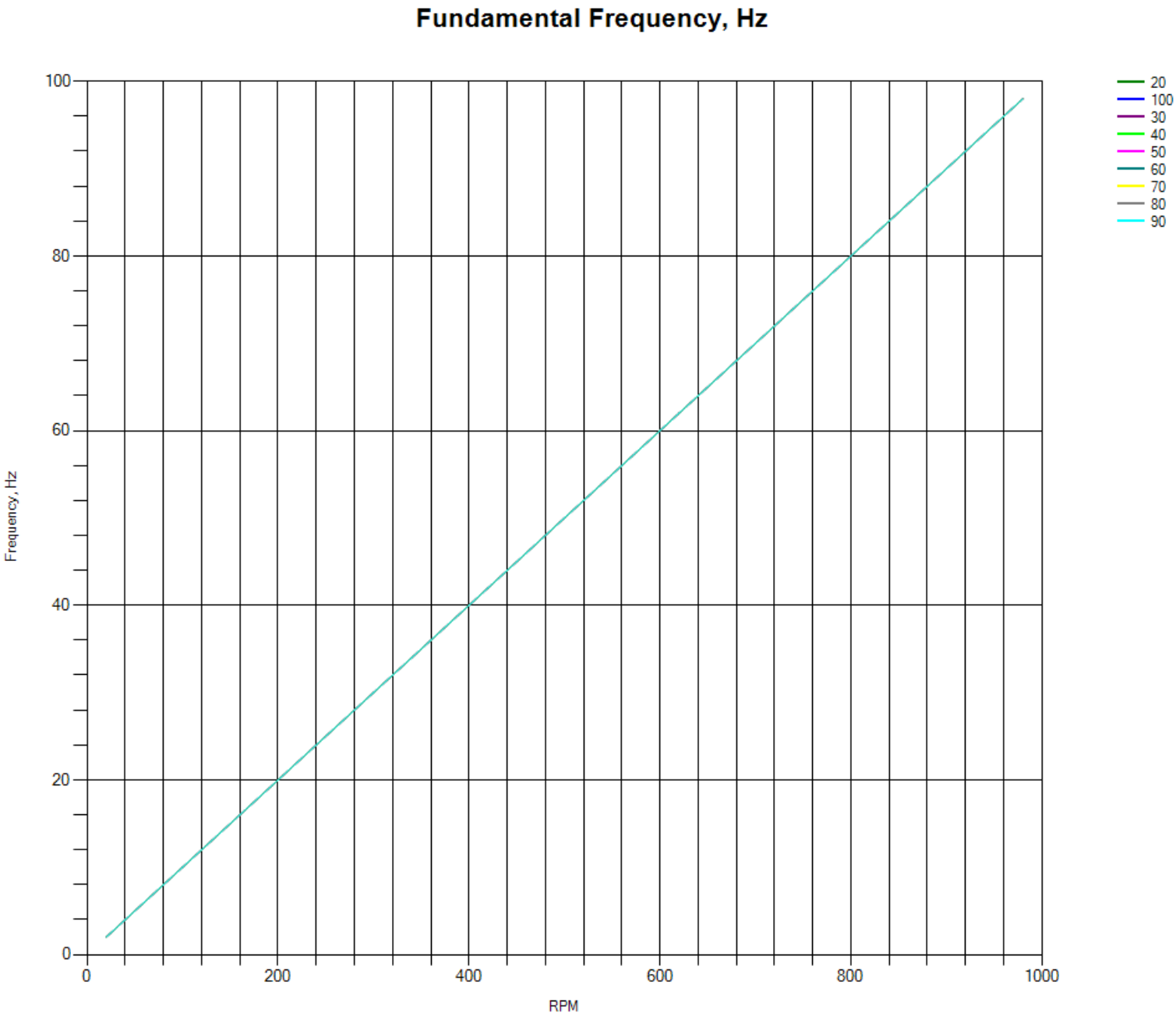
Graph: Open RMS L/L Voltage vs RPM



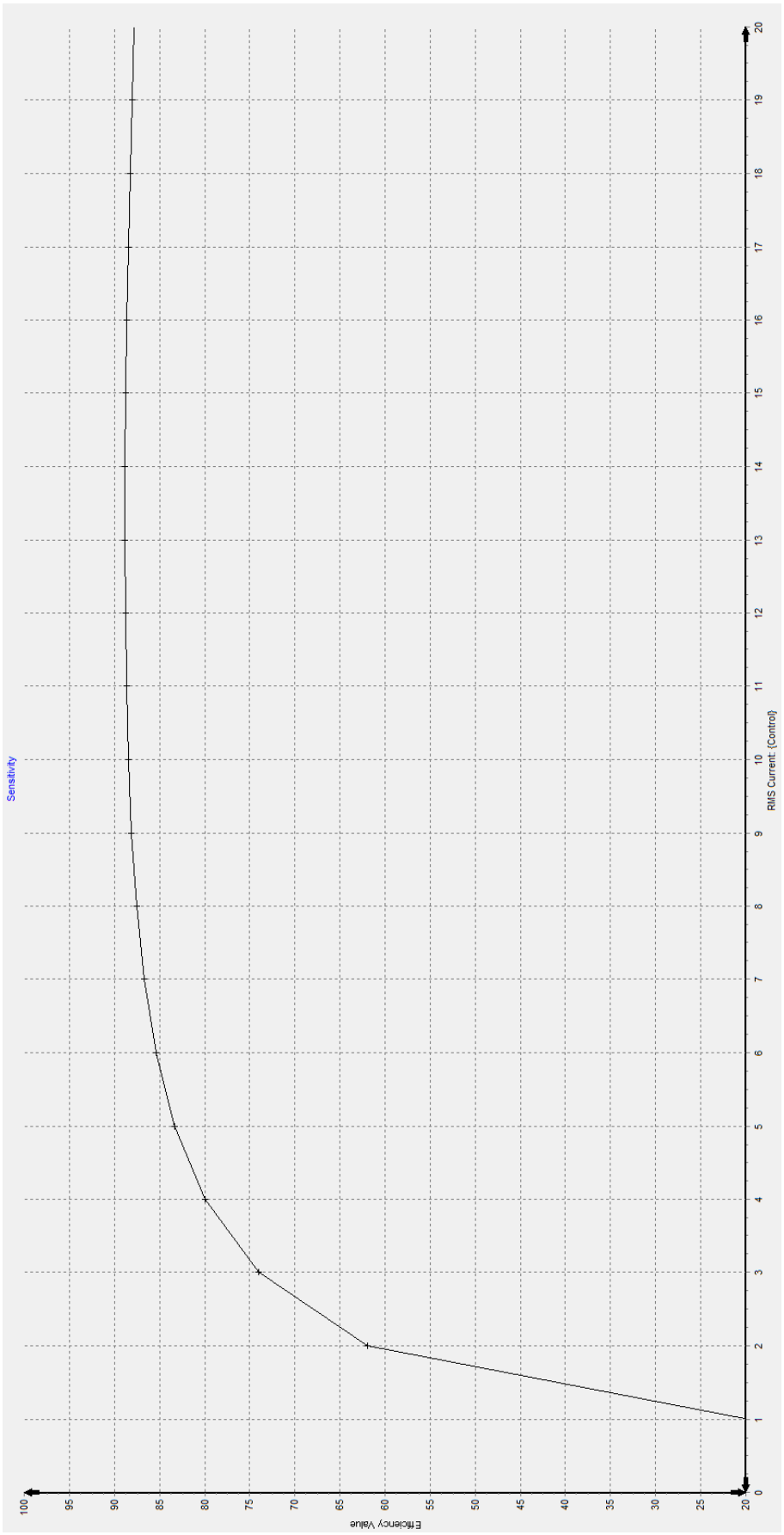
Graph: Open DC Voltage vs RPM



Graph: Fundamental Frequency vs RPM



Graph: Efficiency vs Current @ 750 RPM Constant



Graph: Cogging Torque