
FUTUREENERGY

Specification

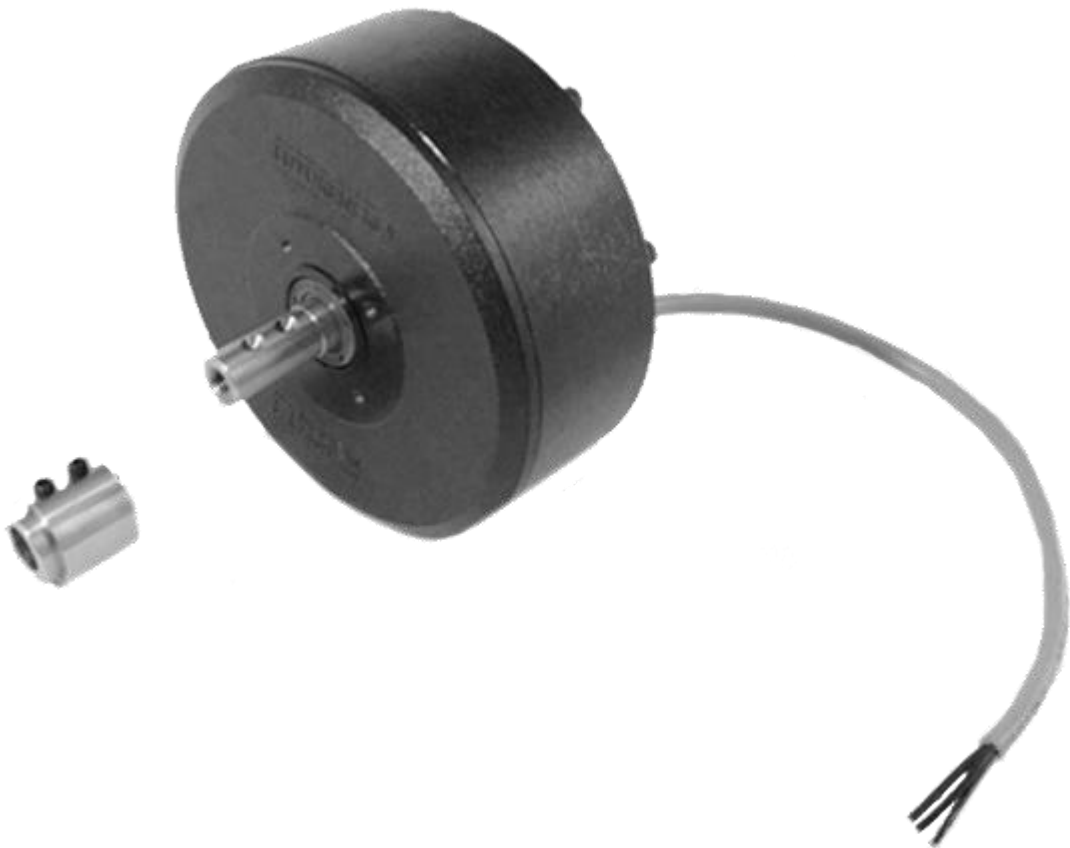
Futureenergy, 48V 1kW Permanent Magnet Generator

Prepared By

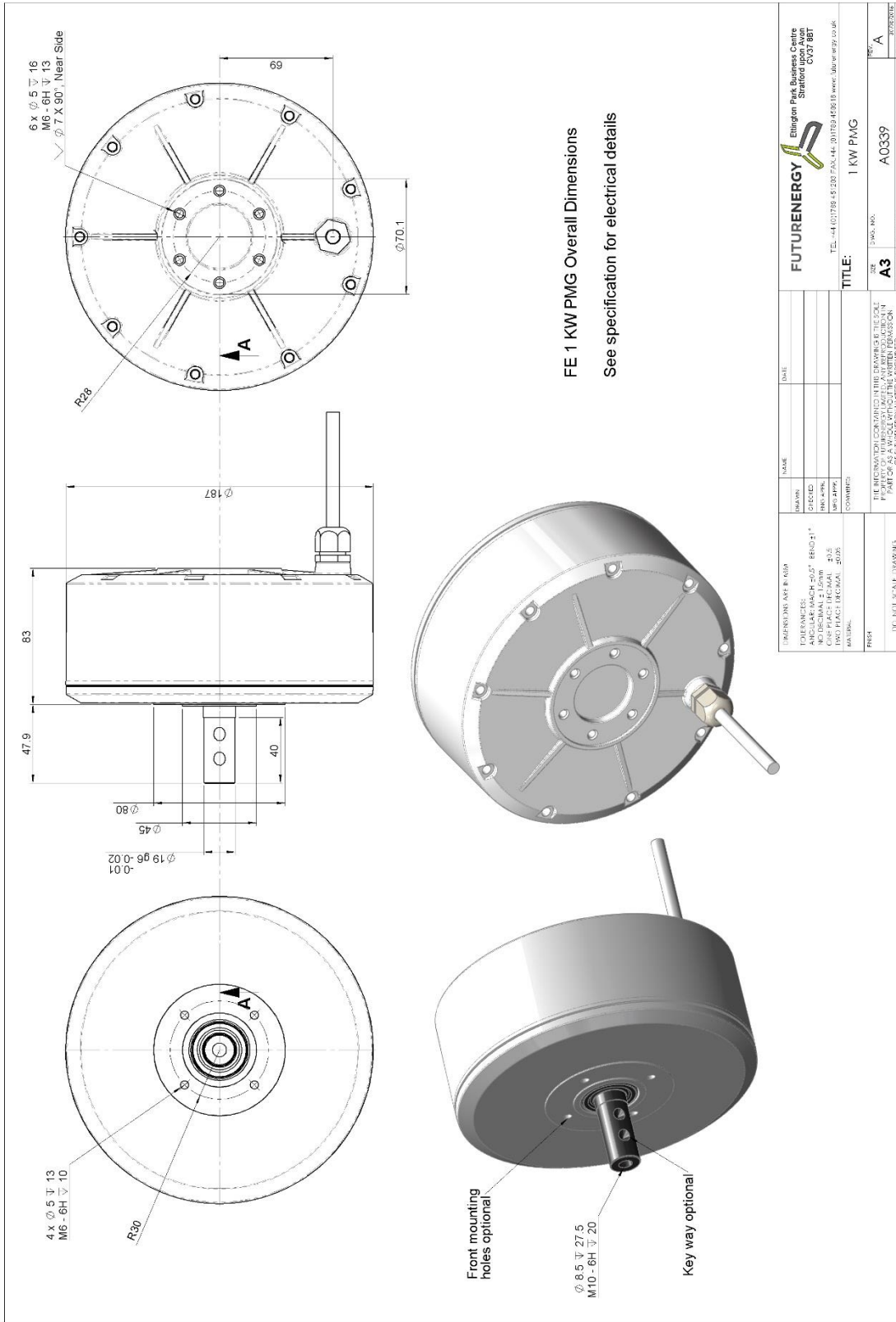
D. Nangle, November 2016

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Dimensions



DESIGNER: APT & MSA	NAME:	DATE:
CHECKED:	DRWING:	
APPROVED:	DATE:	
MATERIAL:	COMMENTS:	
FINISH:	THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FUTUREENERGY LIMITED. IT IS TO BE USED ONLY FOR THE PROJECT AND FOR THE INTENTION SPECIFIED THEREIN. SCALE: 1:1	
REV: 03	REV: A3	REV: A
TITLE: 1 KW PMG		SCALE: 1:1

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Specification

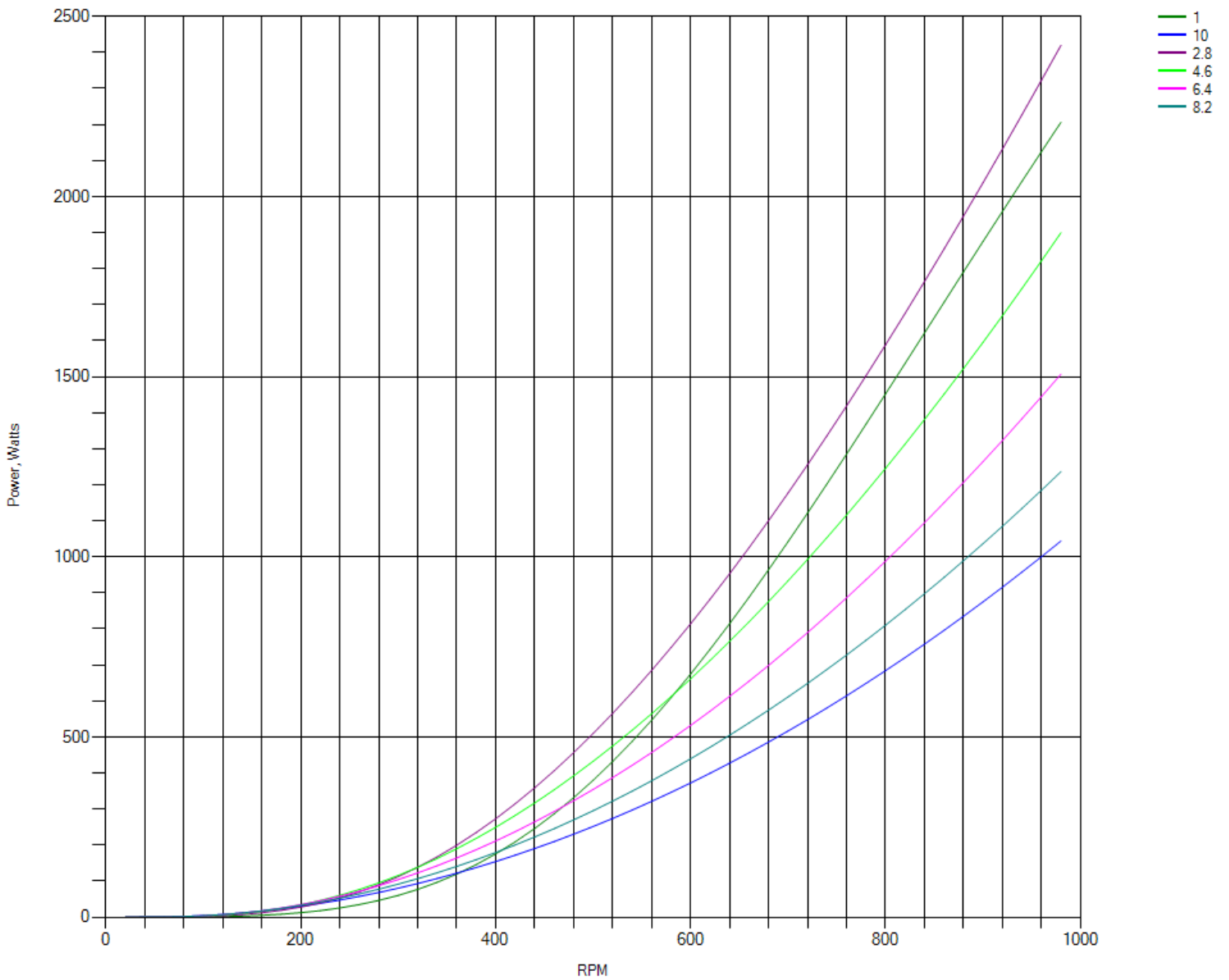
Nominal Rated Power	1 kW (@ 6.4 ohms load)
Nominal RPM	800 RPM
Line / Line RMS Open Voltage	68.3V*
Nominal Line Current	10 Amps**
Maximum Current (100% Duty Cycle / Air Cooled 20°C)	20 Amps
Configuration	3 Phase, Star wound AC output
Line / Line Winding Resistance	0.36 Ohms
Nominal Self Inductance	0.7776 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-T20-W1.5

* 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.

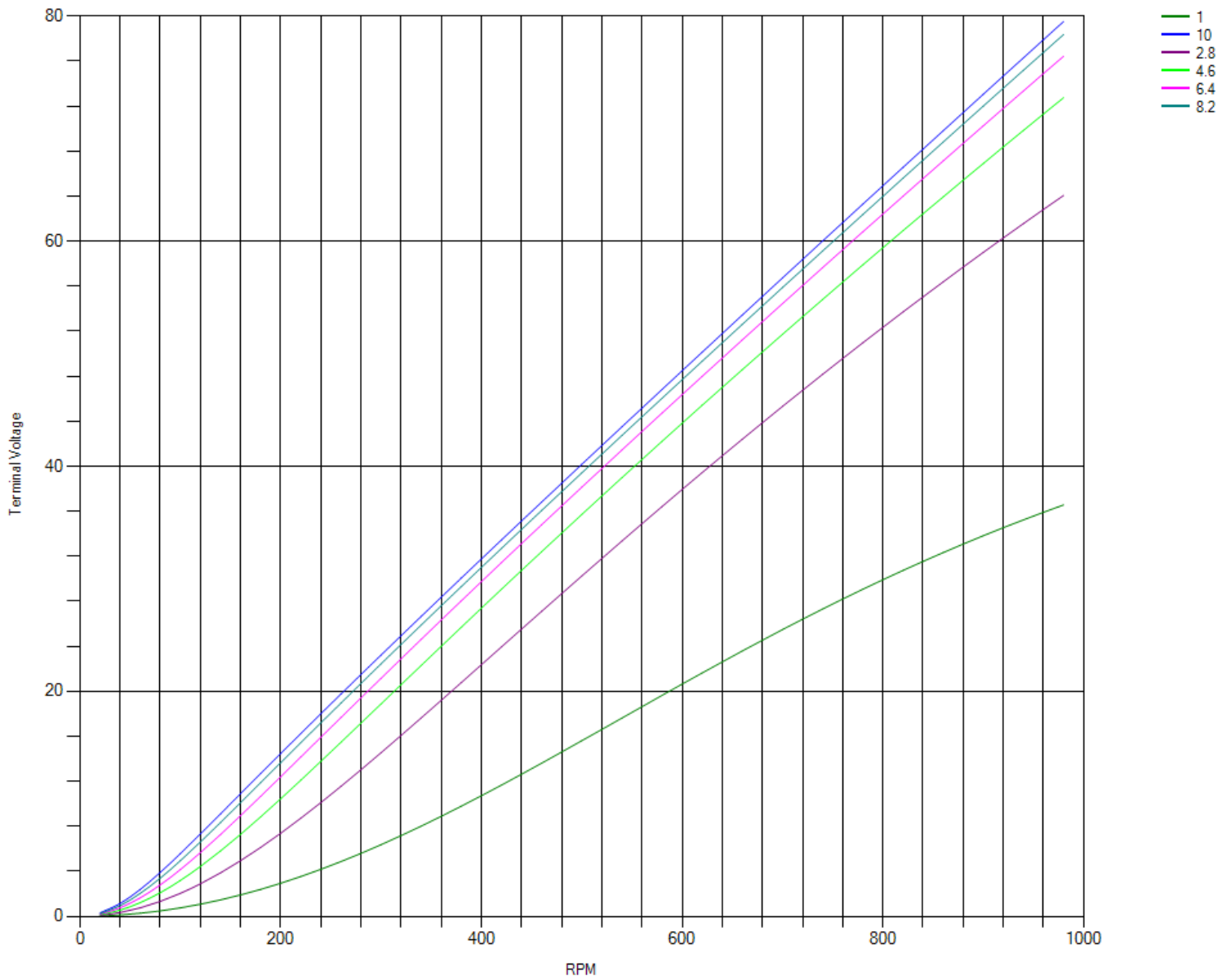
Graph: Power vs RPM @ Load Resistances (Ω)

Power v RPM at load resistance



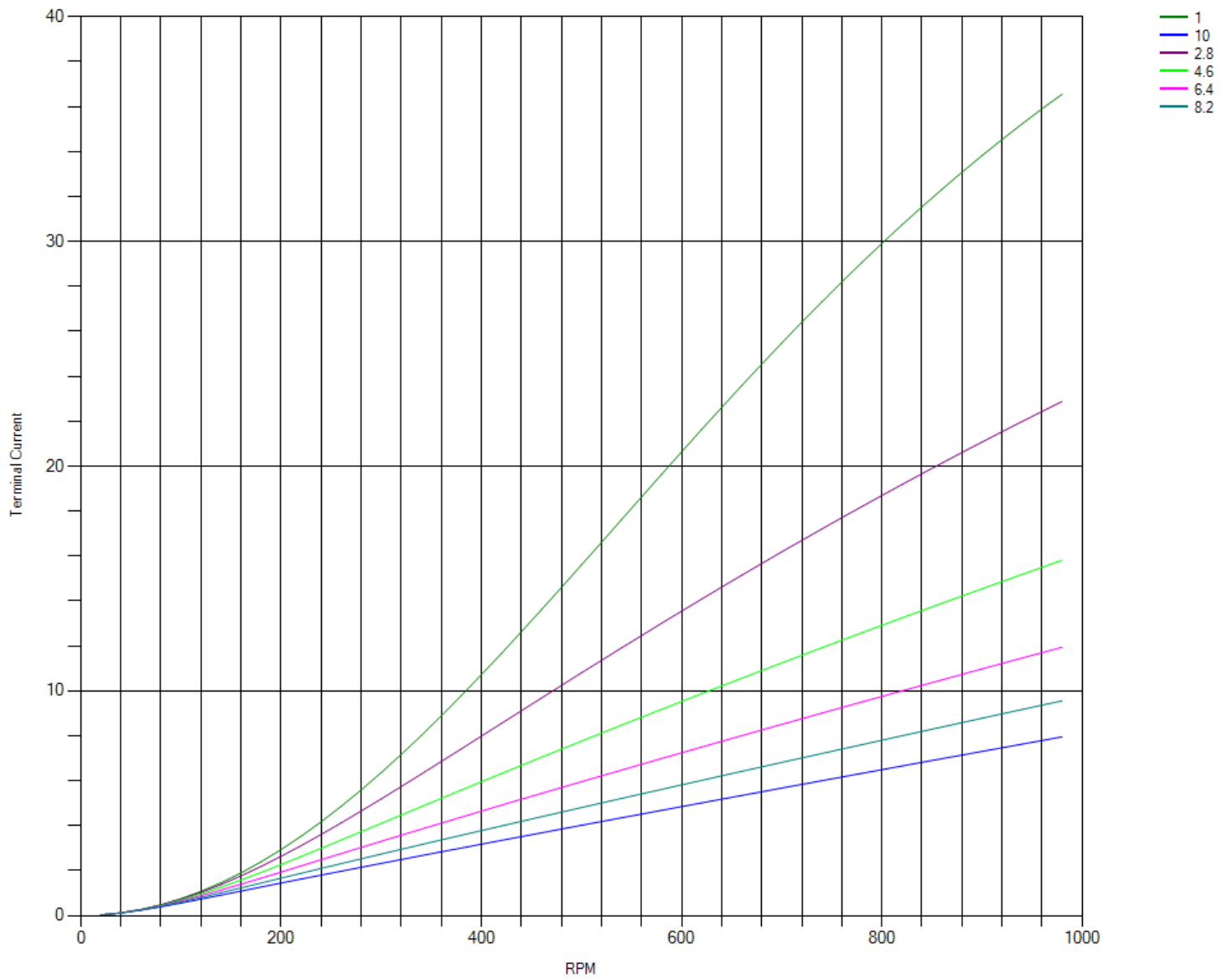
Graph: Terminal Voltage vs RPM @ Load Resistances

Terminal Voltage v RPM at load resistance



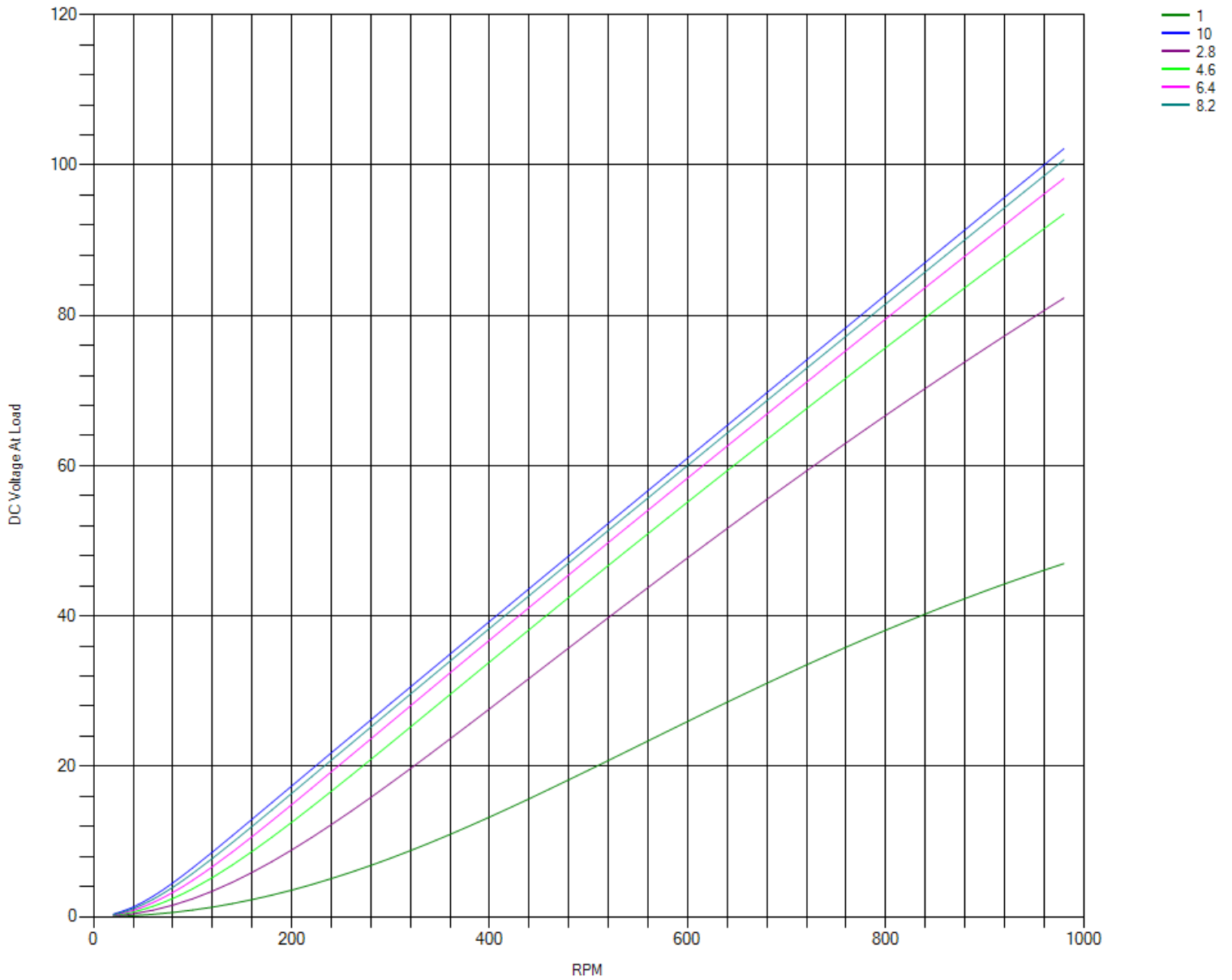
Graph: Terminal Current vs RPM @ Load Resistances

Terminal Current v RPM at load resistance



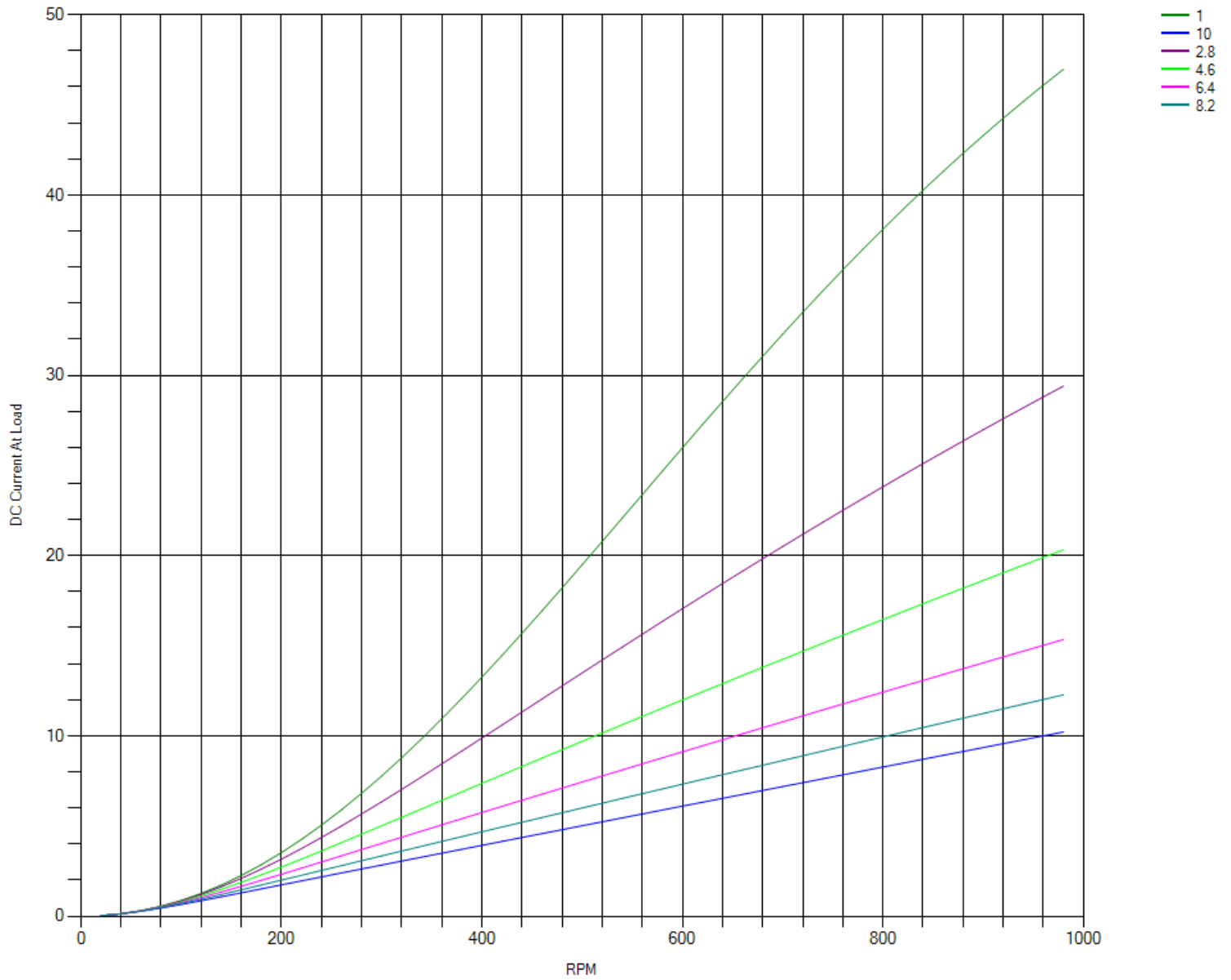
Graph: DC Load Voltage vs RPM @ Load Resistances

DC Load Voltage v RPM at load resistance



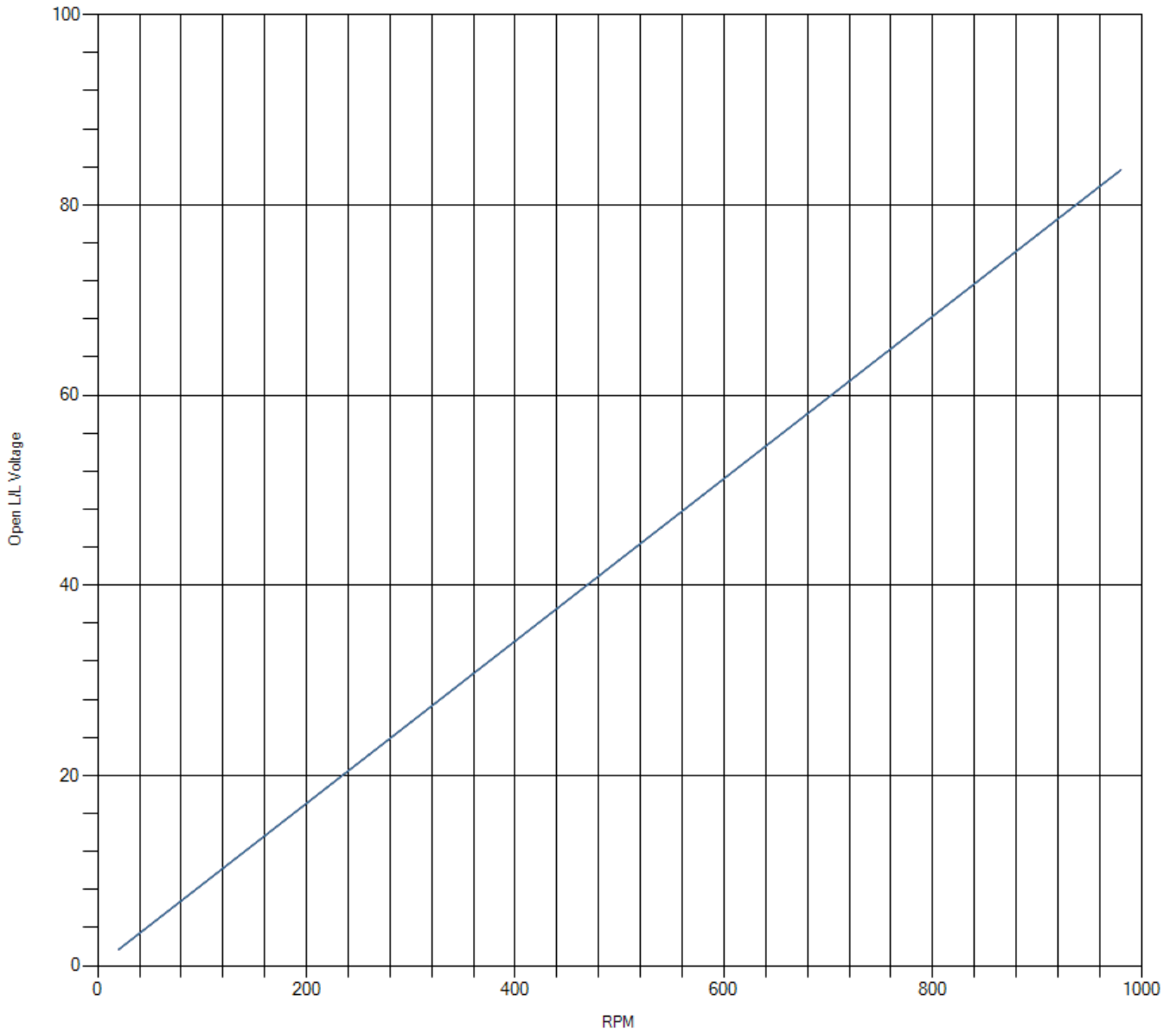
Graph: DC Load Current vs RPM @ Load Resistances

DC Load Current v RPM at load resistance



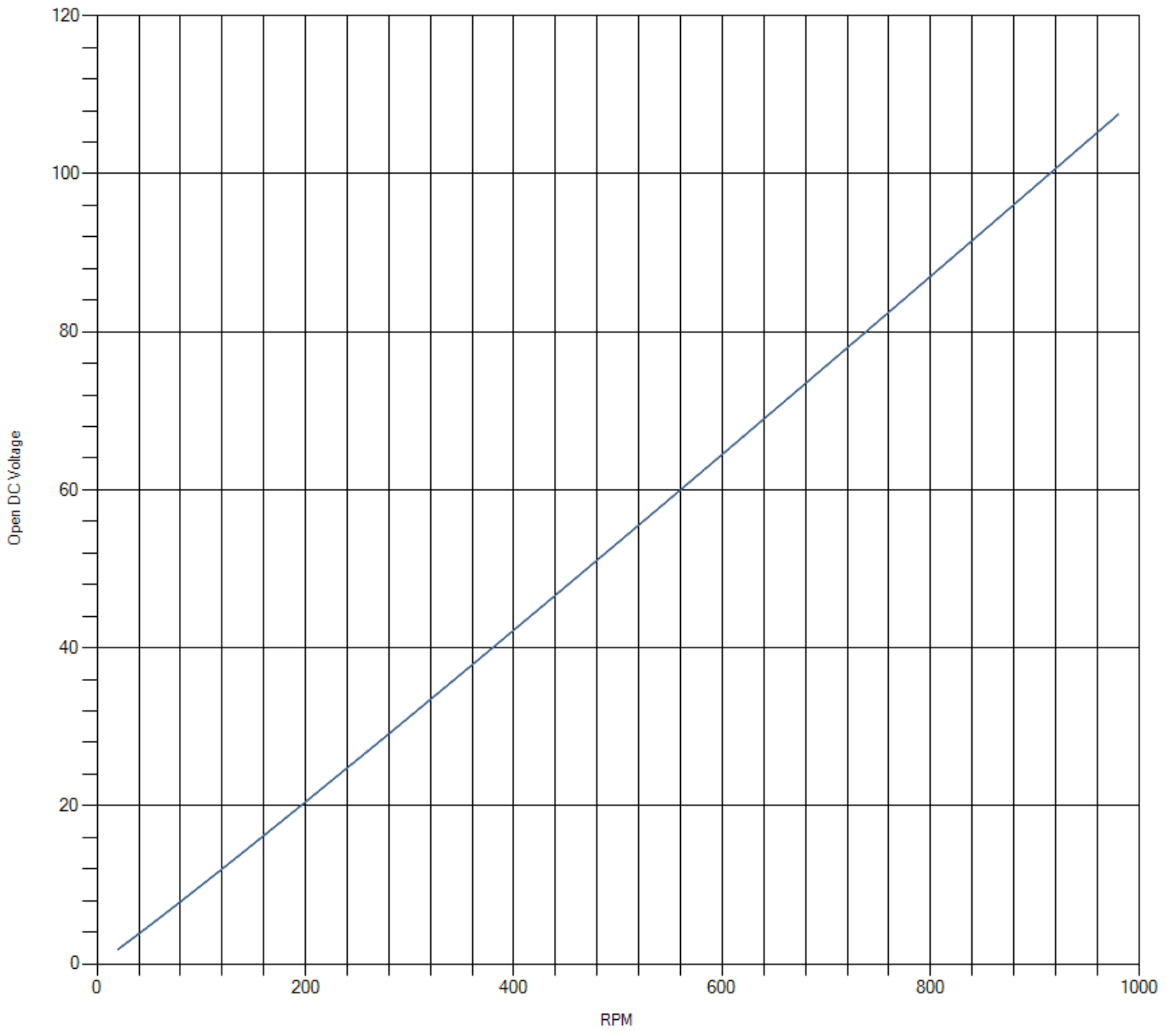
Graph: Open RMS L/L Voltage vs RPM

Open Line / line Voltage With No Load

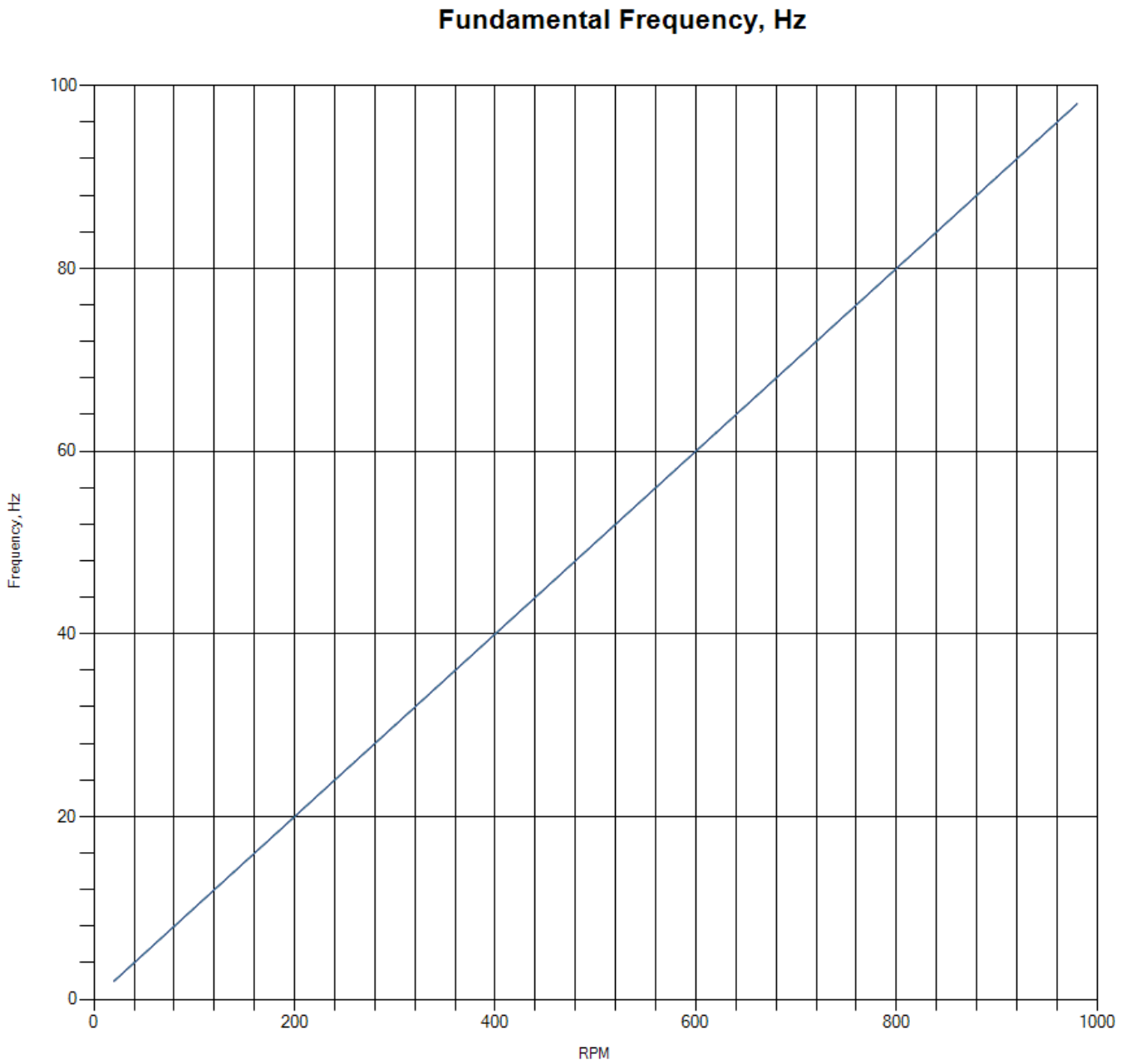


Graph: Open DC Voltage vs RPM

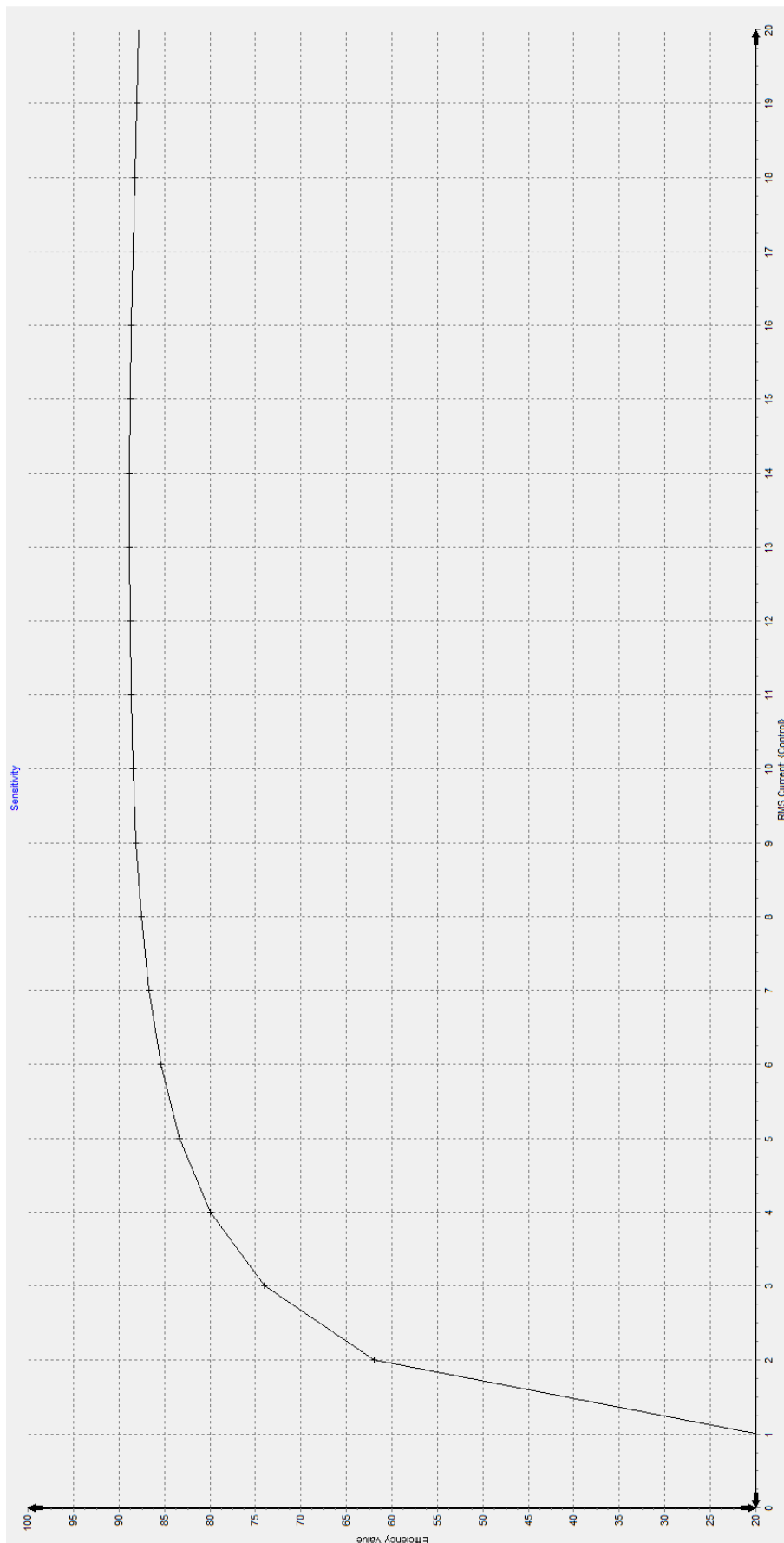
Open DC Voltage With No Load



Graph: Fundamental Frequency vs RPM



Graph: Efficiency vs Current @ 750 RPM Constant



Graph: Cogging Torque

