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# FUTUREENERGY

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## **Specification**

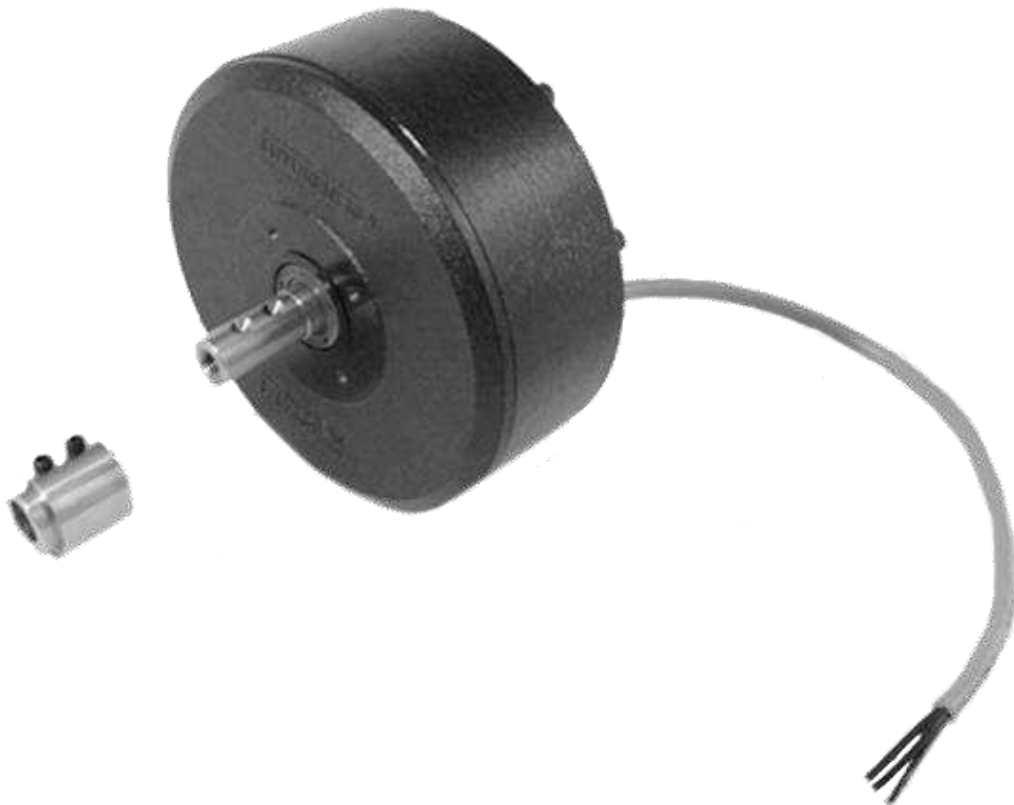
Futureenergy, 12V 1kW Permanent Magnet Generator

Prepared By

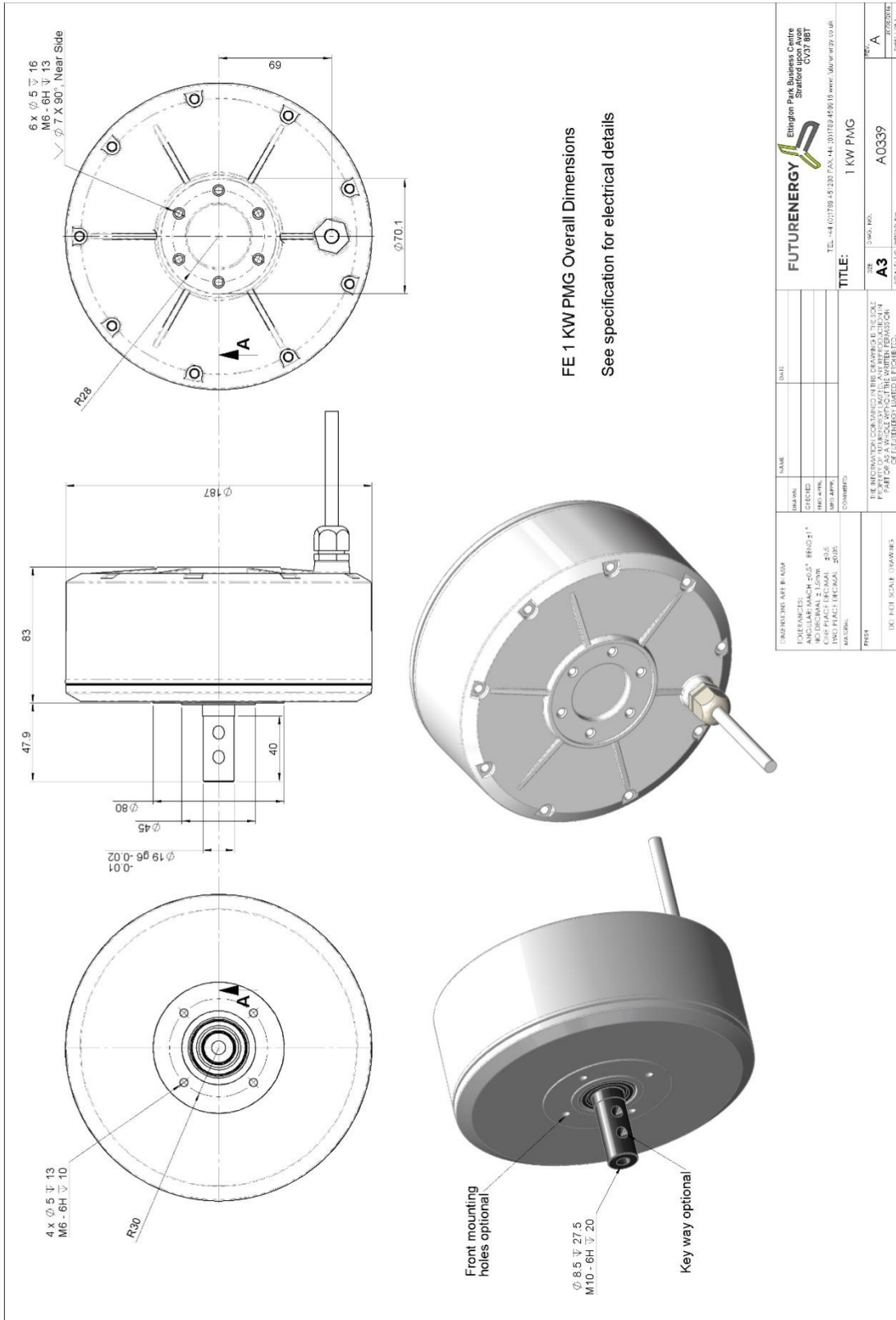
D. Nangle, Sept 2016

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# Dimensions



DESIGNED BY: R. KAWA	DATE:	<b>FUTUREENERGY</b> Etlington Park Business Centre Stallford ST27 8BT	
DRAWN:	CHECKED:	TEL: +44 (0)1789 45 2887 FAX: +44 (0)1789 459515 www.futureenergy.co.uk	REV: A
NO. OF SHEETS: 1	NO. OF PARTS: 1	TITLE: 1 KW PMG	SCALE: 1:1
NO. OF DIMENSIONS: 15	NO. OF DIMENSIONS: 15	SIZE: A3	NO. OF DIMENSIONS: 15
NO. OF DIMENSIONS: 15	NO. OF DIMENSIONS: 15	SCALE: 1:1	NO. OF DIMENSIONS: 15
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF FUTUREENERGY LIMITED. IT IS TO BE USED ONLY FOR THE PROJECT AND FOR WHICH IT WAS PREPARED.			
DATE: 11/01/11			

## Specification

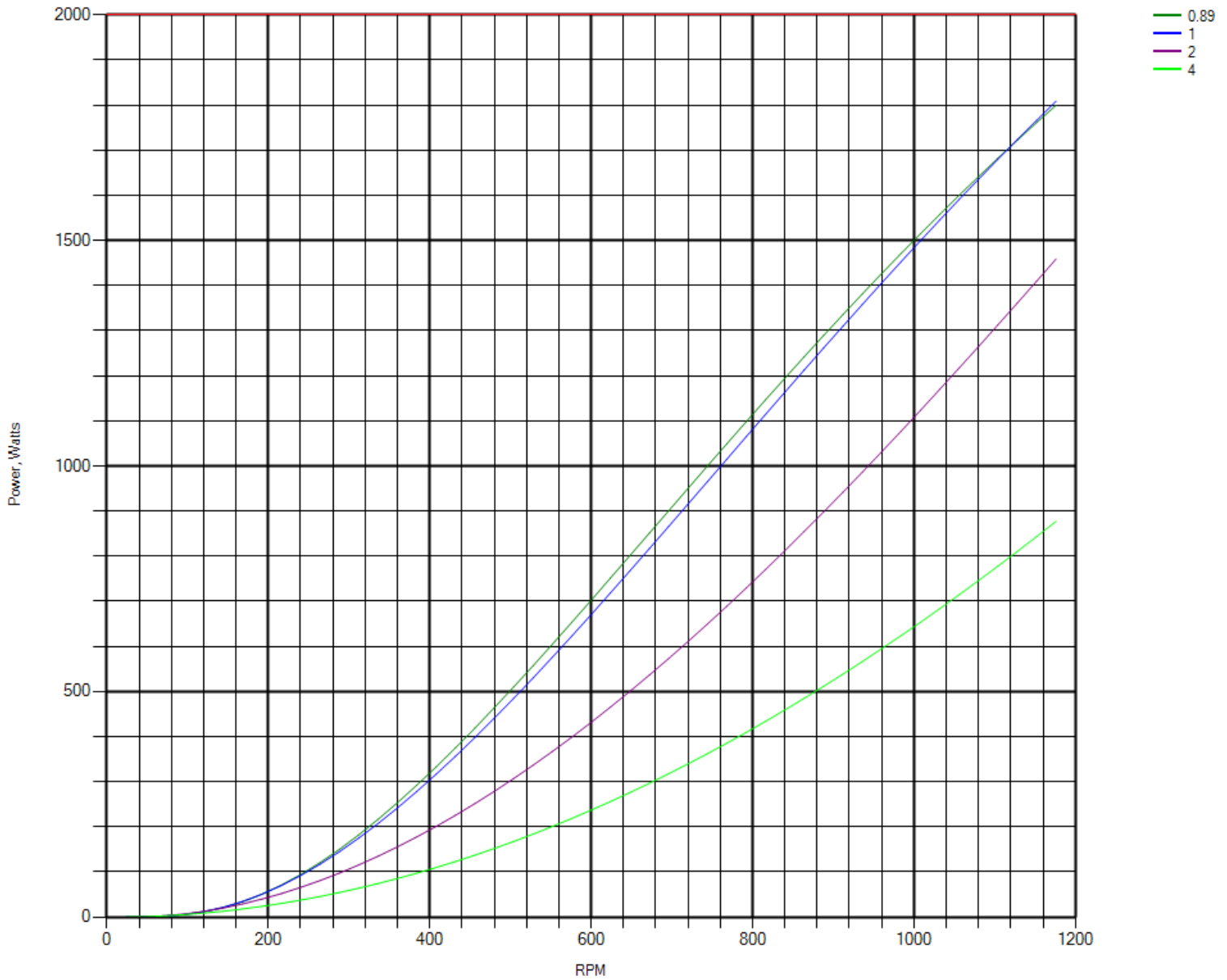
<b>Nominal Rated Power</b>	1 kW
<b>Nominal RPM</b>	750 RPM
<b>Line / Line RMS Open Voltage</b>	30V (12V DC @ 300 RPM)*
<b>Nominal Line Current</b>	34 Amps**
<b>Configuration</b>	3 Phase, Star wound AC output
<b>Line / Line Winding Resistance</b>	0.145 Ohms
<b>Nominal Self Inductance</b>	0.439 mH
<b>Maximum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

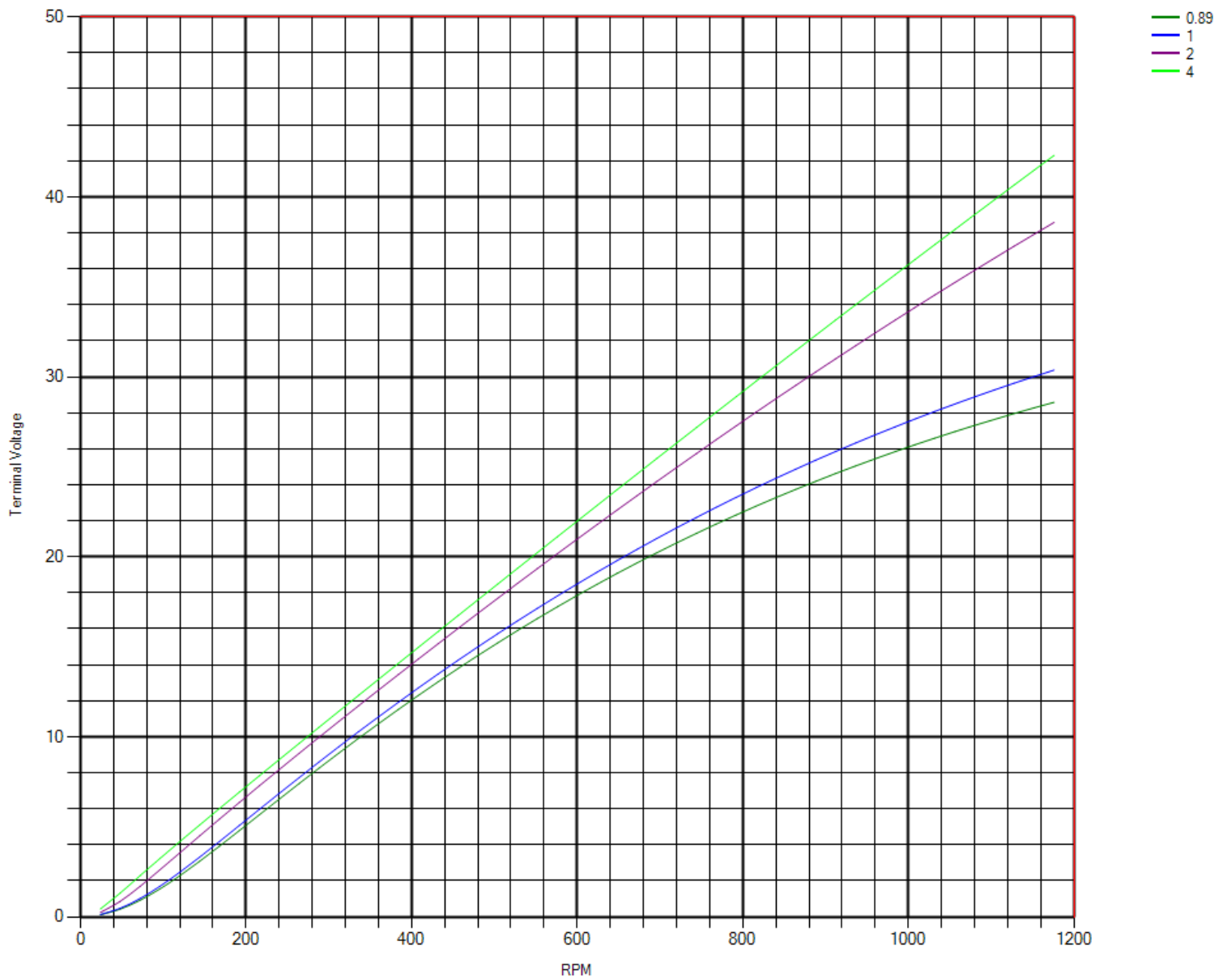
## Graph: Power vs RPM @ Load Resistances ( $\Omega$ )

Power v RPM at load resistance



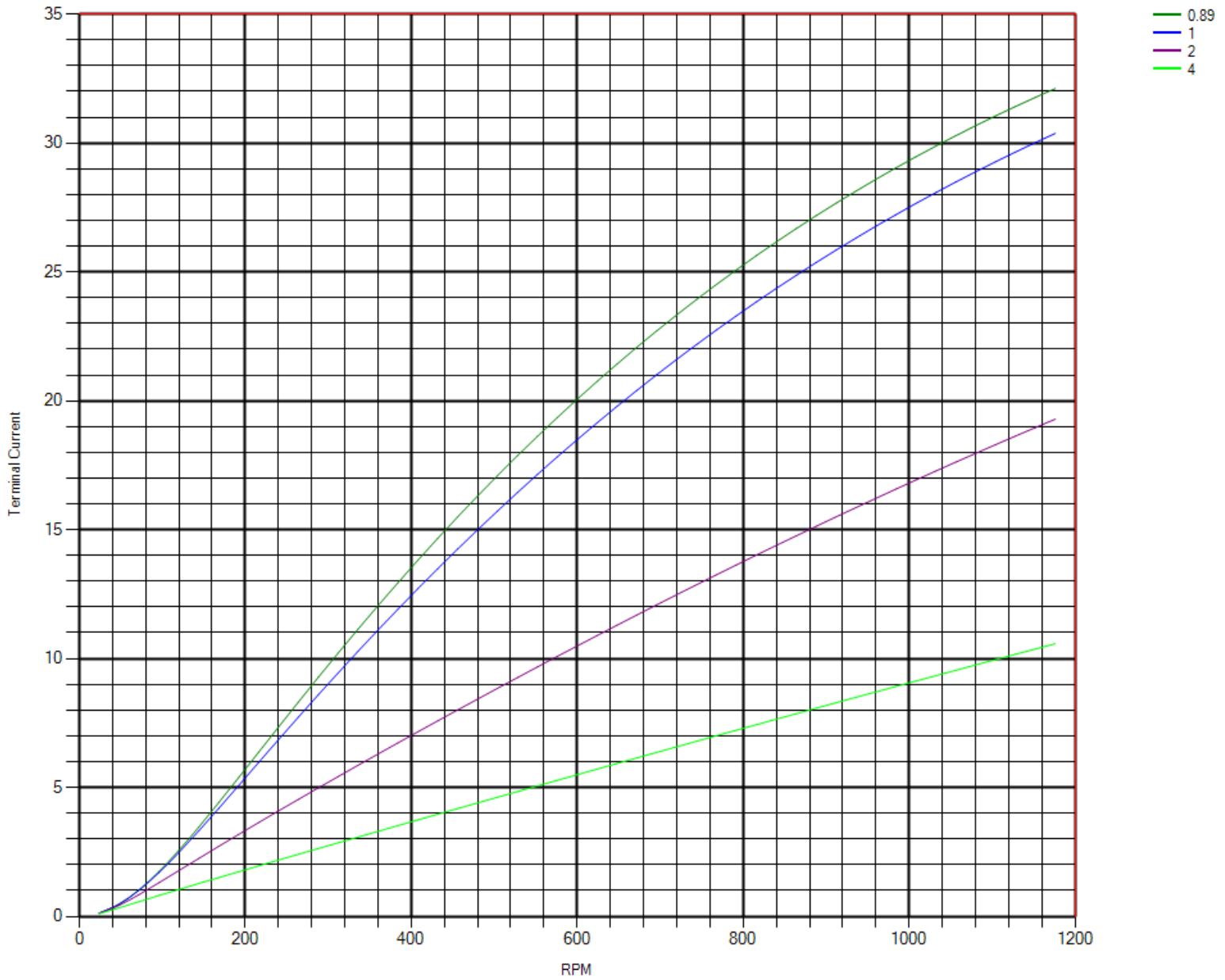
## Graph: Terminal Voltage vs RPM @ Load Resistances

Terminal Voltage v RPM at load resistance



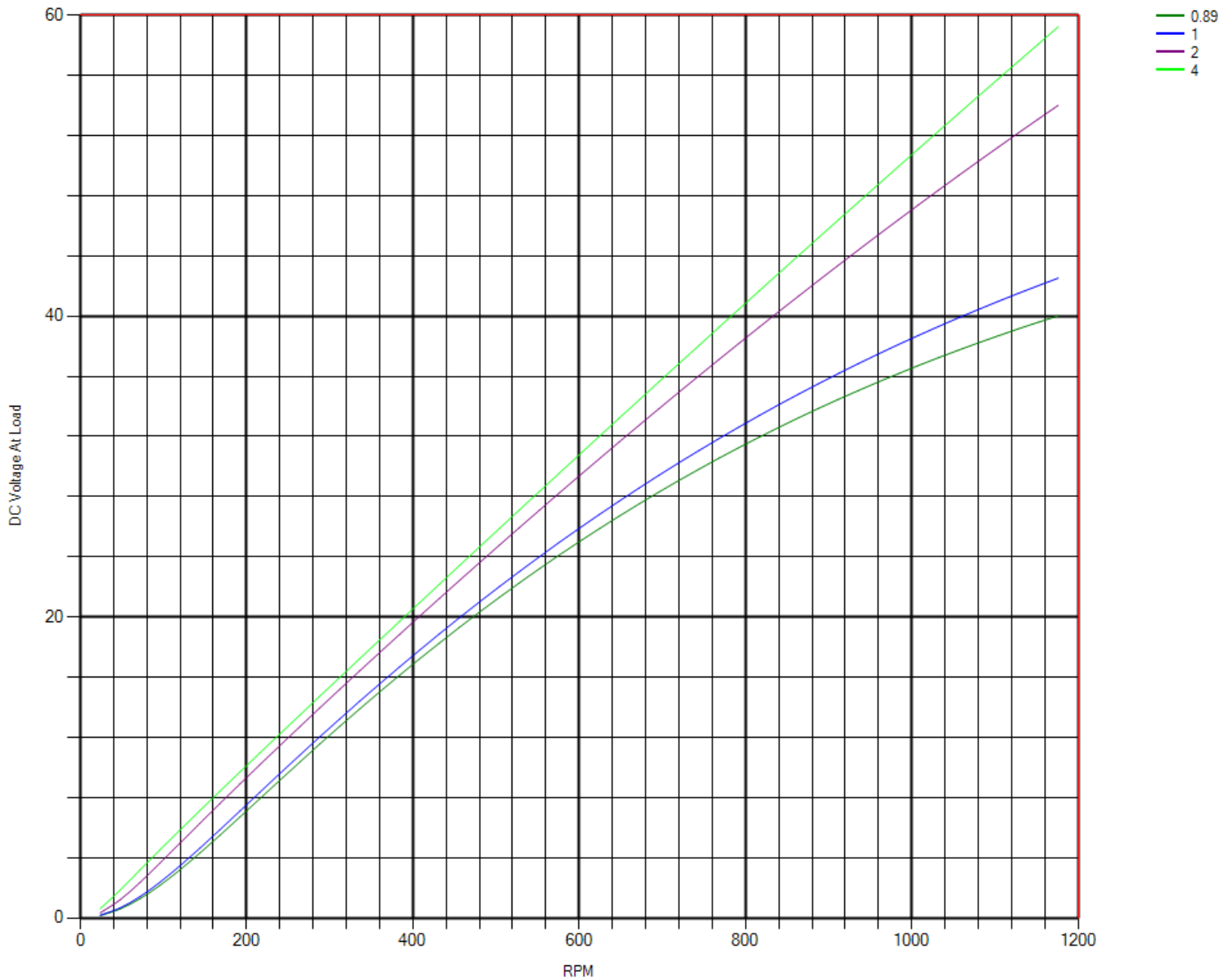
## Graph: Terminal Current vs RPM @ Load Resistances

### Terminal Current v RPM at load resistance



## Graph: DC Load Voltage vs RPM @ Load Resistances

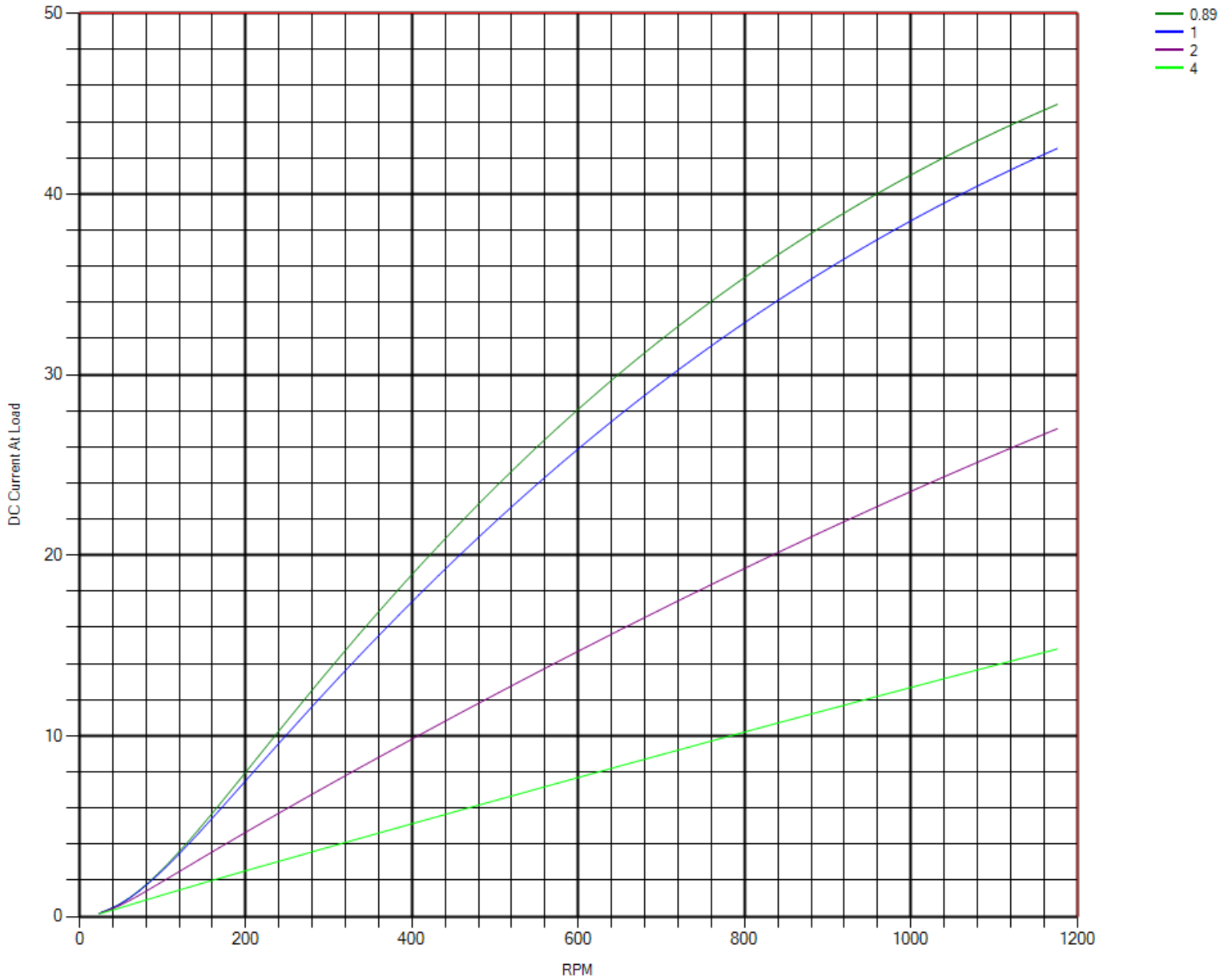
### DC Load Voltage v RPM at load resistance





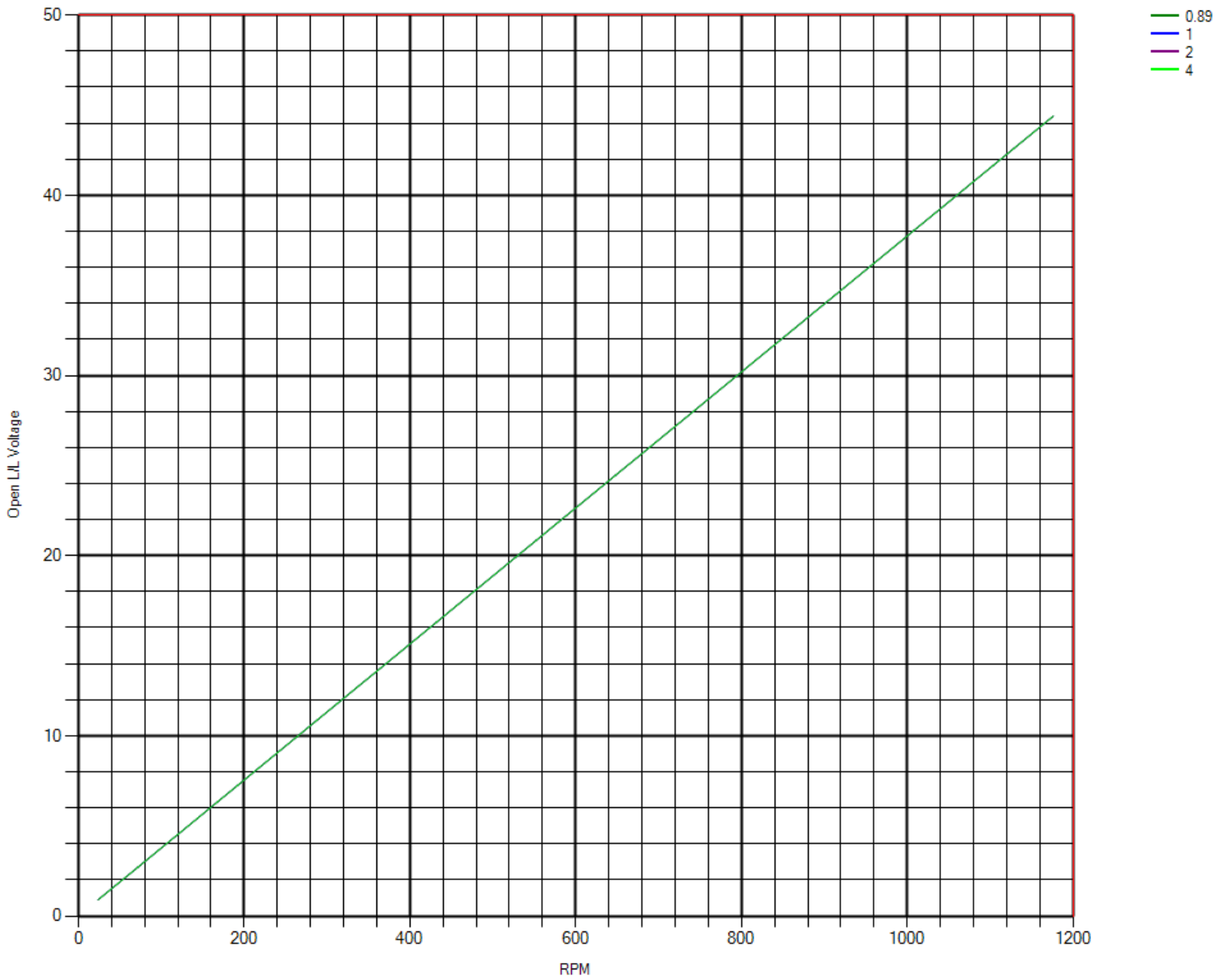
## Graph: DC Load Current vs RPM @ Load Resistances

### DC Load Current v RPM at load resistance



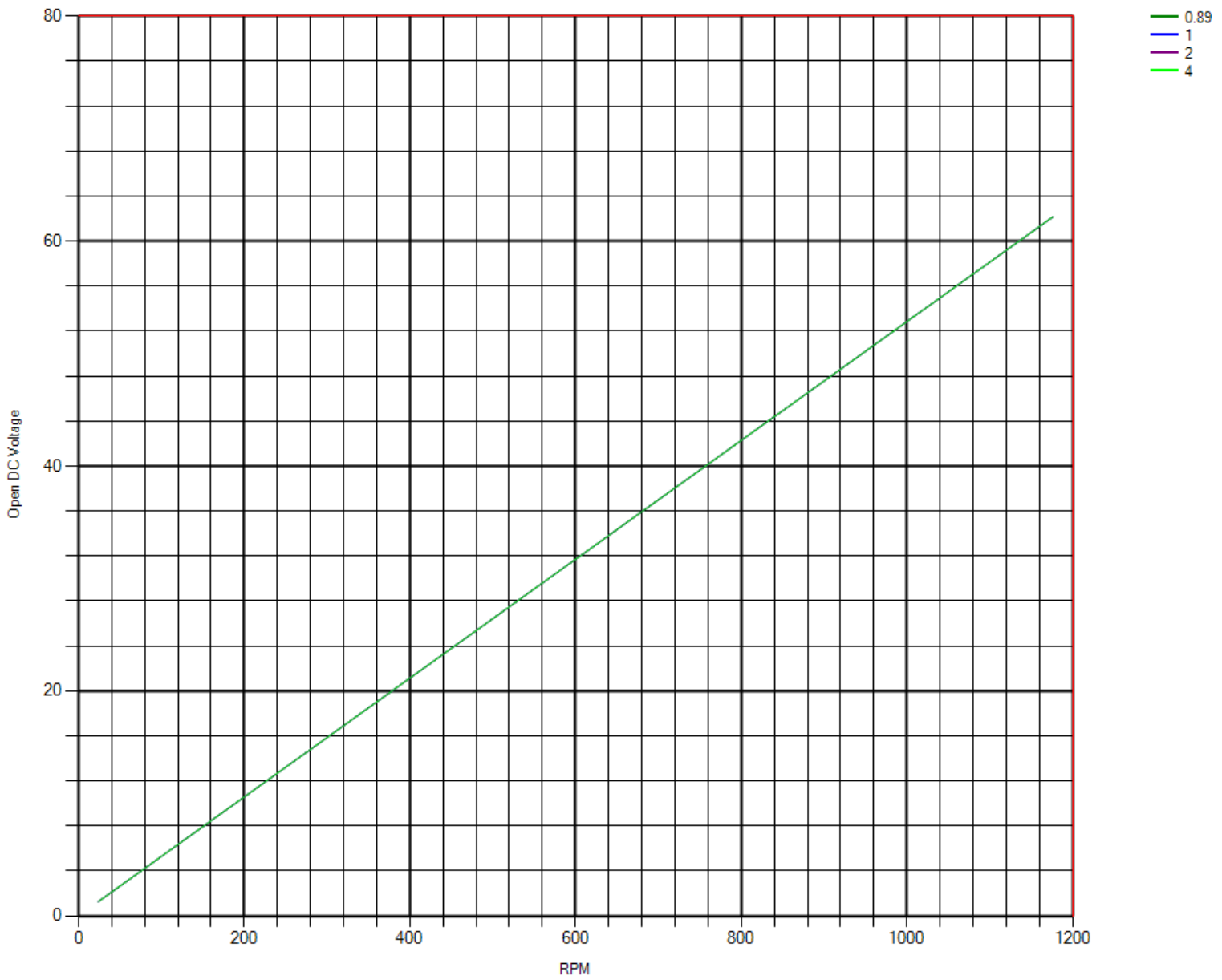
## Graph: Open RMS L/L Voltage vs RPM

### Open Line / line Voltage With No Load

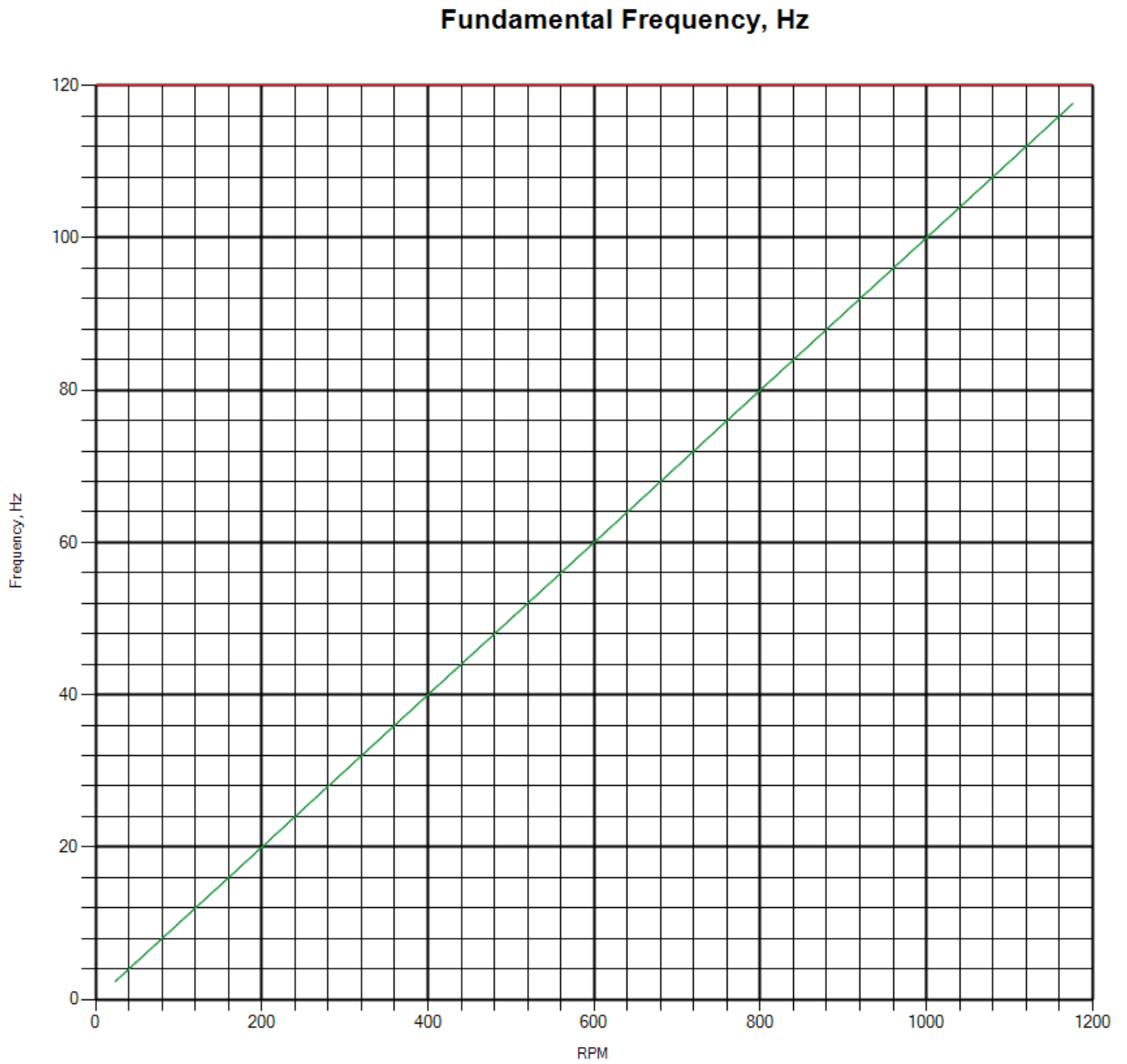


## Graph: Open DC Voltage vs RPM

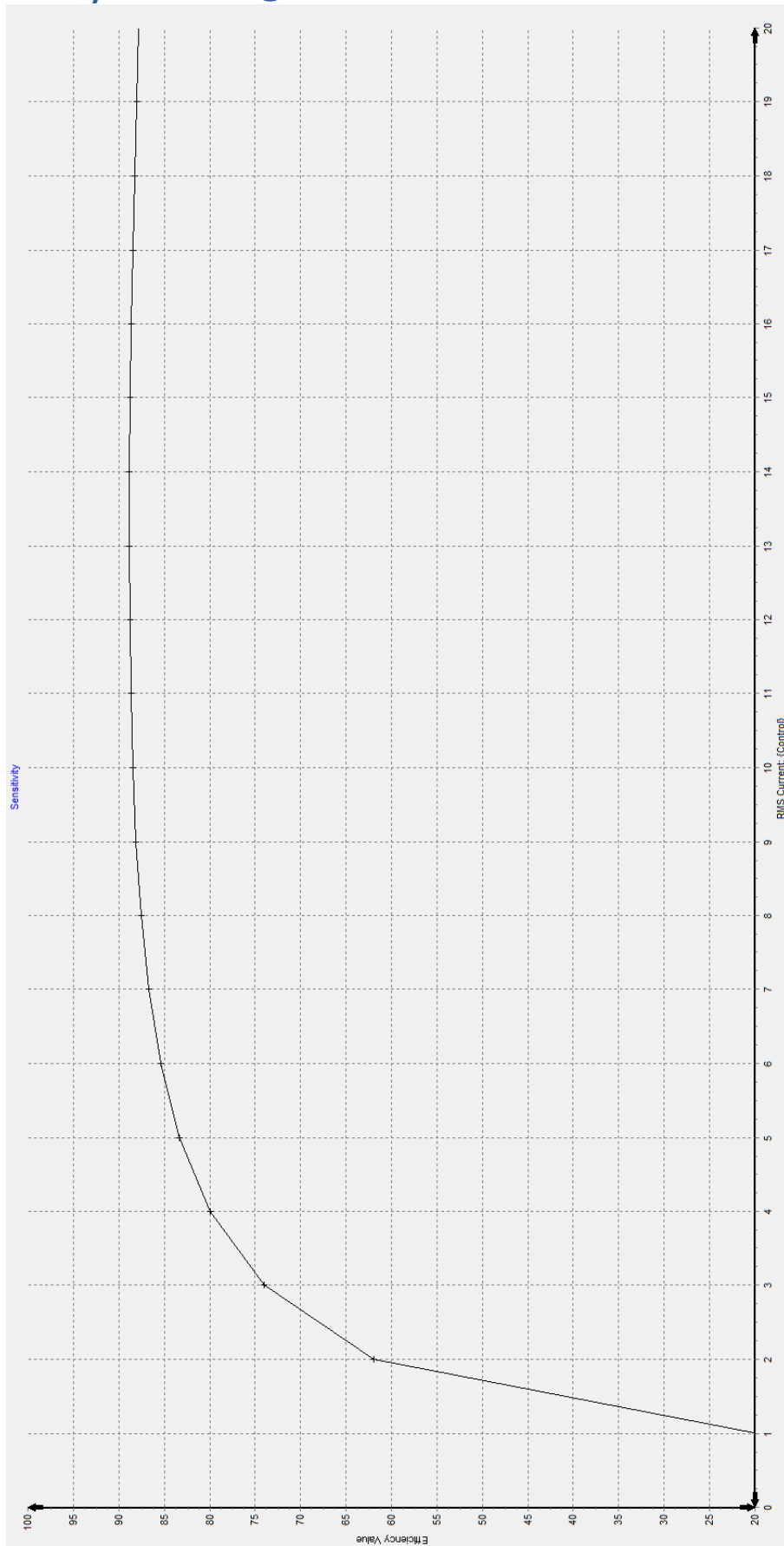
### Open DC Voltage With No Load



## Graph: Fundamental Frequency vs RPM



Graph: Efficiency vs Current @ 750 RPM Constant



# Graph: Cogging Torque

