

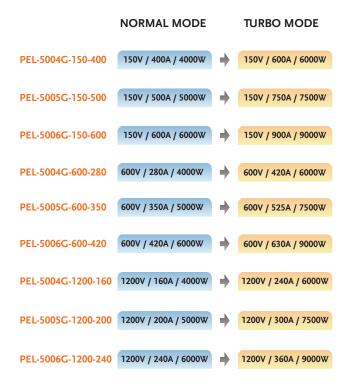
# **PEL-5000G Series**

High Power DC Electronic Load

### **FEATURES**

- 4U/6K High Power Density Design Also for Bench Testing
- Turbo Mode Function, Which Allows 1.5 Times the Rated Power or Current to be Used Within Two Seconds
- Turbo Mode can be Used with OCP/OPP/BMS/Short Mode/ Surge Mode/Hot Plug-In Testing
- High Tolerance to Environmental Temperature, with 4k/5kW Models not Affected by Environmental Temperature in Power Usage
- Can set the Power-on Status Value
- Short Circuit Duration Can be set Within Short Circuit Test
- Voltage Meter Display Can be Configured as Polarity Positive ("+") or Negative("-")
- Optional Interface : GPIB, RS232, USB, LAN
- Protection function Testing for Battery BMS
- Protection Against V, I, W, and  $^\circ\!C$

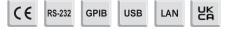








### **PEL-5000G Series**



#### DESCRIPTIONS

- PEL-5000G Series module has its own control and display panel, CC/CR/CV/CP/Dynamic modes, also can be controlled via RS232, Ethernet, USB and GPIB interface
- The new Turbo mode is designed for overload or protection testing, which includes OCP, OPP, Short for AC/DC or DC/DC power source; Over Charge/Discharge and Short for Battery BMS protection; and Blow/Not Blow testing for Fuse, Breaker or PTC Current Protection Components
- Support Short, OCCP and OCDP protection tests for battery BMS protection testing, the peak current before protection and protection response time are measured
- BMS, Fuse, OCP and OPP single-key test functions on the module make test more efficient
- Dynamic can be simulated under CC, CP mode. The current Rise/Fall slew rate can be adjusted individually and there is an external signal input so that load can have a simulated Specific Load Current Waveform
- SHORT duration setting and SHORT\_VH, SHORT\_VL setting function, also can measure Short Voltage and Current
- Programmable LOAD ON/OFF voltage, GO/NG meter check, Voltage meter display " + " or " - " is selectable and 150 sets Store/Recall larger memory is much advance feature for each different application
- 150 sets test parameter and status storage function can call the storage memory real time in accordance with the auto sequence requirement, at any time to tune out the stored memory for use

#### APPLICATIONS

- Voltage/Current Source SMPS Transient Response
- Voltage Source Current Limit Testing and Battery Emulation for Charger Testing
- Battery Discharge Capacity
- Lithium battery BMS Charge and Discharge Protection
- R&D, Quality Control
- ATE System
- Production Testing







PEL-5004G-150-400

PEL-5005G-150-500

PEL-5006G-150-600



PEL-5004G-600-280





PEL-5005G-600-350

PEL-5006G-600-420



PEL-5004G-1200-160



PEL-5005G-1200-200



PEL-5006G-1200-240

MODEL	PEL-50040	G-150-400	PEL-5005C	-150-500	PEL-5006G	-150-600
Power <sup>91</sup> Current	0 ~ 4kW 0 ~ 400A	0 ~ 6kW max.*1 0 ~ 600A max.*1	0 ~ 5kW 0 ~ 500A	0 ~ 7.5kW max.*1 0 ~ 750A max.*1	0 ~ 6kW 0 ~ 600A	0 ~ 9kW max.*1 0 ~ 900A max.*1
Voltage Min. Operating Voltage Protections	0~ 0.7V@	150V ⊉400A		150V 9500A	0~ 0.7V@	
Over Power Protection(OPP) Over Current Protection(OCP)	105% 104%					
Over Voltage Protection(OVP) Over Temp Protection(OTP) Constant Current Mode			10 90°C			
Range <sup>*2</sup> Resolution	0 ~ 40A 0.64mA	0 ~ 400A 6.4mA	0 ~ 50A 0.80mA	0 ~ 500A 8.0mA	0 ~ 60A 0.96mA	0 ~ 600A 9.6mA
Accuracy <sup>33</sup> Constant Resistance Mode		•		etting + Range)	01201111	
Range Resolution	22.5kΩ ~ 0.375Ω 44μS	0.375Ω ~ 0.0018Ω 6.25μΩ	18k0 ~ 0.30 56µS	0.3Ω ~ 0.0015Ω 5μΩ	15kΩ ~ 0.25Ω 67μS	0.25Ω ~ 0.0012Ω 4.167μΩ
Accuracy Constant Voltage Mode Range	± 0.1%(Vin / Setting)±0.1% IF.S.	± 0.1% of (Setting + Range)±0.1% IF.5	± 0.1%(Vin / Setting)±0.1% IF.S.	± 0.1% of (Setting + Range)±0.1% IF.S 150V	± 0.1%(Vin / Setting) ±0.1% IF.5	± 0.1% of (Setting + Range) ±0.1% IF.5
Resolution Accuracy			2.5	mV etting + Range)		
Constant Power Mode Range	0 ~ 400W	400 ~ 4kW	0 ~ 500W	500 ~ 5kW	0 ~ 600W	600 - 6kW
Resolution Accuracy <sup>34</sup> Constant Voltage Mode + Current Limit Mo	6.4mW	64mW	8mW ± 0.2% of (Se	80mW tting + Range)	9.6mW	96mW
Range Resolution	150V 2.5mV	400A 6.4mA	150V 2.5mV	500A 8mA	150V 2.5mV	600A 9.6mA
Accuracy <sup>*4</sup> Constant Voltage Mode + Power Limit Mod		± 1.0% of (Setting + Range)	± 0.05% of (Setting + Range)	± 1.0% of (Setting + Range)	± 0.05% of (Setting + Range)	± 1.0% of (Setting + Range)
Range Resolution Accuracy <sup>74</sup>	150V 2.5mV ± 0.05% of (Setting + Range)	4kW 64mW ± 1.0% of (Setting + Range)	150V 2.5mV ± 0.05% of (Setting + Range)	5kW 80mW ± 1.0% of (Setting + Range)	150V 2.5mV ± 0.05% of (Setting + Range)	6kW 96mW ± 1.0% of (Setting + Range)
Furbo Mode ** Short / OCP / OPP Test Function	OFF	ON	OFF	ON	OFF	ON
Max. Current Max. Power	400A 4000W	600A 6000W	500A 5000W	750A 7500W	600A 6000W	900A 9000W
Test Accuracy <sup>°6</sup> Short Time	100 – 10000ms Continuous	100 ~ 2000ms	± 1.0% of (Re 100 ~ 10000ms Continuous	ading + Range) 100 ~ 2000ms	100 – 10000ms Continuous	100 ~ 2000ms
Setting. Accuracy Short V Hi	continuous		±5 Setting range : 0.00V - 150	ms .00V / Resolution : 0.0025V	continuous	
Short V Lo OCP Time (Tstep)	100ms	20ms	Setting range : 0.00V - 150 100ms	.00V / Resolution : 0.0025V 20ms	100ms	20ms
Setting. Accuracy OCP ISTAR / ISTEP / ISTOP	Setting range : 0.00A - 400.00A / Resolution : 6.4mA	Setting range : 0.00A + 600.00A / Resolution : 9.6mA	±5 Setting range : 0.00A - 500.00A / Resolution : 8.0mA	ms Setting range : 0.00A - 750.00A / Resolution : 12mA	Setting range : 0.00A - 600.00A / Resolution : 9.60mA	Setting range : 0.00A - 900.00A / Resolution : 14.4mA
OCP VTH OPP Time (Tstep)	100ms	20ms	Setting range : 0.00V - 150 100ms	.00V / Resolution : 0.0025 V 20ms	100ms	20ms
Setting. Accuracy OPP PSTAR / PSTEP / PSTOP	Setting range : 0.00W - 4000.0W /	Setting range : 0.00W - 6000.0W /	±5 Setting range : 0.00W - 5000.0W /	ms Setting range : 0.00W - 7500.0W /	Setting range : 0.00W - 6000.0W /	Setting range : 0.00W - 9000.0W /
OPP VTH	Resolution : 64.0mW	Resolution : 96.0mW	Resolution : 80.0mW Setting range : 0.00V - 150	Resolution : 120mW .00V / Resolution : 0.0025V	Resolution : 96mW	Resolution : 144mW
BMS Test Mode*7 Max. Current Meas. Accuracy <sup>76</sup>	400A	600A	500A ±3.0% of ( Rea	750A ading + Range )	600A	900A
Short test Time Meas. Accuracy			0.05ms~10ms / R ±0.0	esolution : 0.01ms 12ms		
Setting Accuracy Short ITH	Setting range : 0.19A - 200.00A /	Setting range : 0.28A - 300.00A /	Setting range : 0.24A - 250.00A /	5ms Setting range : 0.36A - 375.00A /	Setting range : 0.28A - 300.00A /	Setting range : 0.43A - 450.00A /
OCP ISTAR	Resolution : 6.4mA Setting range : 0.64A - 400.00A / Resolution : 6.4mA	Resolution : 9.6mA Setting range : 0.96A - 600.00A / Resolution : 9.6mA	Resolution : 8.0mA Setting range : 0.80A - 500.00A / Resolution : 8.0mA	Resolution : 12mA Setting range : 1.20A - 750.00A / Resolution : 12mA	Resolution : 9.6mA Setting range : 0.96A - 600.00A / Resolution : 9.6mA	Resolution : 14.4mA Setting range : 1.44A - 900.00A / Resolution : 14.4mA
OCP TSTEP	0.05 ~ 10ms 11 ~ 1000ms	0.05 ~ 10ms	0.05 ~ 10ms 11 ~ 1000ms	0.05 ~ 10ms	0.05 ~ 10ms 11 ~ 1000ms	0.05 ~ 10ms
Meas. Accuracy DCP ISTEP	±0.1ms / ±0.5ms Setting range : 0.00A + 400.00A /	±0.5ms Setting range : 6.00A + 600.00A /	±0.1ms / ±0.5ms Setting range : 0.00A - 500.00A /	±0.5ms Setting range : 7.50A - 750.00A /	±0.1ms / ±0.5ms Setting range : 0.00A - 600.00A /	±0.5ms Setting range : 9.00A + 900.00A /
OCP ISTOP	Resolution : 6.4mA Setting range : 0.64A - 400.00A / Resolution : 6.4mA	Resolution : 9.6mA Setting range : 0.96A - 600.00A / Resolution : 9.6mA	Resolution : 8.0mA Setting range : 0.80A - 500.00A /	Resolution : 12mA Setting range : 1.20A - 750.00A / Resolution : 12mA	Resolution : 9.6mA Setting range : 0.96A - 600.00A /	Resolution : 14.4mA Setting range : 1.44A - 900.00A / Resolution : 14.4mA
ЭСР ІТН	Setting range : 0.19A - 200.00A / Resolution : 6.4mA	Setting range : 0.28A - 300.00A / Resolution : 9.6mA	Resolution : 8.0mA Setting range : 0.24A - 250.00A / Resolution : 8.0mA	Setting range : 0.36A - 375.00A / Resolution : 12mA	Resolution : 9.6mA Setting range : 0.28A - 300.00A / Resolution : 9.6mA	Setting range : 0.43A - 450.00A / Resolution : 14.4mA
Surge Test Mode Surge Current	0~-1	600A	0~	750A	0~5	900A
Normal Current Surge Time Surge Step		300A 000ms - 5	10 ~ 2	375A 000ms ~ 5	0 ~ 4 10 ~ 2	
Batt test Mode Mode CC	· · · · ·	0.00A / Resolution : 6.4mA	Setting range : 0.00A - 50	0.00A / Resolution : 8.0mA	Setting range : 0.00A - 600	0.00A / Resolution : 9.6mA
Mode CP STOP Voltage(UVP)	Setting range : 0.00W - 4000.0W / Resolution : 64.0mW         Setting range : 0.00W - 5000.0W / Resolution : 80.0mW         Setting range : 0.00W - 6000.0W / Resolution : 96mW           Setting range : 0.00V - 150.00V / Resolution : 0.0025V         Setting range : 0.00V - 150.00V / Resolution : 0.0025V         Setting range : 0.00V - 150.00V / Resolution : 0.0025V					
STOP TIME STOP CAP.AH STOP CAP.WH			Setting range : OFF 0.1 - 1	99999s / Resolution : 1s 9999AH / Resolution : 0.1AH 999WH / Resolution : 0.1WH		
SEQ Load Mode ( remode only ) Load mode				/ CP		
Setting STEP Fining			20 - 1000 µs / 2- 65	- 16 535ms / 66 ~ 999sec		
Resolution Dynamic Mode Fiming			10 µs / 1	ms / 1sec		
Thigh & Tlow Resolution			0.001 / 0.0	9 / 999.9 / 9999ms I / 0.1 / 1ms		
Accuracy Slew Rate Resolution	0.0256~1.600A / µs	0.2560-16.000A / µs	0.0320-2.000A / µs	μs / 1ms + 50ppm 0.3200-20.000A / μs	0.0384~2.400A / µs	0.384024.000A / µs
Resolution Min. Rise Time Accuracy	0.0064A / μs	0.064A / µs	0.008A / μs 25 μs( ±(5% of Se	0.08A / μs typical) tting )±10 μs	0.0096A / µs	0.096A / µs
Current Range	0 ~ 40A	40 ~ 400A	0 ~ 50A	50 ~ 500A	0 ~ 60A	60 ~ 600A
Resolution Conf Key Parameter	0.64mA	6.4mA	0.8mA	8mA	0.96mA	9.6mA
LDon Voltage LDOFF Voltage Average Time			Setting range : 0.000V - 62.	2.50V / Resolution : 0.25V 250V / Resolution : 0.0025V - 64		
CV Res. Speed Measurement			1~4 (	Fastest)		
Voltage Read Back Range (5 Digital) Resolutior	0 ~ 15V 0.25mV	15 ~ 150V 2.5mV	0~15V 0.25mV + 0.025% of (P	15 ~ 150V 2.5mV eading + Range)	0 ~ 15V 0.25mV	15 ~ 150V 2.5mV
Accuracy Current Read Back Range (5 Digital) Resolutior	0 ~ 40A 0.64mA	40 ~ 400A 6.4mA	± 0.025% of (R 0 ~ 50A 0.8mA	eading + Range) 50 ~ 500A 8mA	0 ~ 60A 0.96mA	60 ~ 600A 9.6mA
Accuracy Power Read Back Range (5 Digital)		W	± 0.05% of (Re	ading + Range) W	•	W Storing
Resolutior Accuraci <sup>94</sup>				11W ading + Range)		
Typical Short Resistance Maximum Short Current	1.8mΩ         1.5mΩ         1.2mΩ           400A         500A         600A					
Load ON Voltage Load OFF Voltage	0.25 ~ 62.5V 0 - 62.25V					
Power Consumption Dimension(H x W x D) Weight	550/A 177mm x 440mm x 745mm 28kg					
Veignt Temperature <sup>®</sup> Safety & EMC			0 ~	40°C		
			(			

Note \*1 : The power rating specifications at ambient temperature = 25 °C Note \*2 : The range is automatically or forcing to range II only in CC mode Note \*3 : If the operating current is below range 0.1%, the accuracy specification is 0.1% F.S. Note \*4 : Power range = Vrange x Irange

Note \*5 : Turbo mode for up to 1.5X Current rating & Power rating support Surge, Bms, Short /OCP /OPP test function Note \*6 : The best accuracy of OCP /OPP test is Istep /Pstep=1%FS Note \*7 : Bms Test function for Battery Management System Board SHORT, OCCP and OCDP Test Note \*8 : Operating temperature range is 0–40°C, All specifications apply for 25°C±5°C, Except as noted

MODEL	PEL-50040	G-600-28 <u>0</u>	PEL-5005G	-600-350	PEL-5006G	-600-420
Power <sup>*1</sup> Current	0 ~ 4kW 0 ~ 280A	0 ~ 6kW max. *1 0 ~ 420A max. *1	0 ~ 5kW 0 ~ 350A	0 ~ 7.5kW max.*1 0 ~ 525A max.*1	0 ~ 6kW 0 ~ 420A	0 ~ 9kW max. *1 0 ~ 630A max. *1
foltage Ain. Operating Voltage Protections	0~ 10V@	600V 0280A	0 ~ ( 10V@	00V 350A	0 ~ 10V(	600V @420A
Iver Power Protection(OPP) Iver Current Protection(OCP) Iver Voltage Protection(OVP) Iver Temp Protection(OTP)	105% 104% 105% 90°C±5°C					
onstant Current Mode	0 ~ 28A	0 ~ 280A	0 ~ 35A	0 350A	0 ~ 42A	0 ~ 420A
esolution ccuracy <sup>33</sup> onstant Resistance Mode	0.448mA	4.48mA	0.56mA ± 0.05% of (Se	5.6mA tting + Range)	0.672mA	6.72mA
ange esolution	128610Ω ~ 2.1435Ω 8 μS	2.1435Ω ~ 0.0357Ω 35.73μΩ	102888Ω ~ 1.7148Ω 10 μS	1.7148Ω ~ 0.0285Ω 28.584μΩ	85740Ω ~ 1.4290Ω 12 μS	1.4290Ω ~ 0.0238Ω 23.82μΩ
ccuracy onstant Voltage Mode	± 0.1%(Vin / Setting)±0.1% IF.S.	± 0.1% of (Setting + Range)±0.1% IF.S	± 0.1%(Vin / Setting)±0.1% IF.S.	± 0.1% of (Setting + Range)±0.1% IF.S	± 0.1%(Vin / Setting) ±0.1% IF.S	± 0.1% of (Setting + Range) ±0.1% IF.
ange esolution ccuracy			± 0.05% of (Se	mV		
onstant Power Mode ange esolution	0 ~ 400W 6.4mW	400 ~ 4kW 64mW	0~500W 8mW	500~5kW 80mW	0~600\₩ 9.6m\₩	600~6kW 96mW
ccuracy <sup>54</sup> constant Voltage Mode + Current Limit M		bamw	± 0.2% of (Set	tting + Range)	9.0mw	90mw
ange esolution *4	600V 10mV	280A 4.48mA	600V 10mV	350A 5.6mA	600V 10mV	420A 6.72mA
ccuracy <sup>*4</sup> constant Voltage Mode + Power Limit Mo ange	± 0.05% of (Setting + Range) de 600V	± 1.0% of (Setting + Range) 4kW	± 0.05% of (Setting + Range) 600V	± 1.0% of (Setting + Range) 5kW	± 0.05% of (Setting + Range) 600V	± 1.0% of (Setting + Range) 6kW
esolution ccuracy <sup>°4</sup>	10mV ± 0.05% of (Setting + Range)	64mW ± 1.0% of (Setting + Range)	10mV ± 0.05% of (Setting + Range)	80mW ± 1.0% of (Setting + Range)	10mV ± 0.05% of (Setting + Range)	96mW ± 1.0% of (Setting + Range)
urbo Mode <sup>*3</sup> hort / OCP / OPP Test Function lax. Current	280A	420A	0FF 350A	0N 525A	0FF 420A	630A
1ax. Power est Accuracy <sup>°6</sup>	4000W	6000W	5000W ± 1.0% of (Rea	7500W	6000W	9000W
hort Time etting. Accuracy	100 ~ 10000ms Continuous	100 ~ 2000ms	100 ~ 10000ms Continuous ±5	100 ~ 2000ms	100 ~ 10000ms Continuous	100 ~ 2000ms
hort V Hi hort V Lo			Setting range : 0.00V - 60 Setting range : 0.00V - 60	0.00V / Resolution : 0.01V 0.00V / Resolution : 0.01V		
CP Time (Tstep) etting. Accuracy	100ms Setting range : 0.00A - 280.00A /	20ms Setting range : 0.00A - 420.00A /	100ms ±5 Setting range : 0.00A - 350.00A /	20ms ms Setting range : 0.00A - 525.00A /	100ms Setting range : 0.00A - 420.00A /	20ms Setting range : 0.00A - 630.00A /
CP ISTAR / ISTEP / ISTOP	Resolution : 4.48mA	Resolution : 6.72mA	Resolution : 5.6mA	Resolution : 8.4mA	Resolution : 6.72mA	Resolution : 10.08mA
PPP Time(Tstep) etting. Accuracy	100ms	20ms	100ms ±5	20ms ms Setting range : 0.00W - 7500.0W /	100ms	20ms
PPP PSTAR / PSTEP / PSTOP	Setting range : 0.00W - 4000.0W / Resolution : 64.0mW	Setting range : 0.00W - 6000.0W / Resolution : 96.0mW	Setting range : 0.00W - 5000.0W / Resolution : 80.0mW Setting range : 0.00V - 600	Resolution : 120mW	Setting range : 0.00W - 6000.0W / Resolution : 96mW	Setting range : 0.00W - 9000.0W / Resolution : 144mW
MS Test Mode*7 fax. Current	280A	420A	350A	525A	420A	630A
leas. Accuracy <sup>®</sup> hort test Time leas. Accuracy			±3.0% of ( Rea 0.05ms~10ms / R ±0.0	esolution : 0.01ms		
hort ITH	Setting range : 0.13A - 140.00A /	Setting range : 0.20A - 210.00A /	±0.0 Setting range : 0.16A - 175.00A /	5ms Setting range : 0.25A - 262.50A /	Setting range : 0.20A - 210.00A /	Setting range : 0.30A - 315.0 A /
DCP ISTAR	Resolution : 4.48mA Setting range : 0.44A - 280.00A /	Resolution : 6.72mA Setting range : 0.67A - 420.00A /	Resolution : 5.6mA Setting range : 0.56A - 350.00A /	Resolution : 8.4mA Setting range : 0.84A - 525.00A /	Resolution : 6.72mA Setting range : 0.67A - 420.00A /	Resolution : 10.08mA Setting range : 1.00A - 630.00A /
CP TSTEP	Resolution : 4.48mA 0.05 ~ 10ms 11 ~ 1000ms	Resolution : 6.72mA 0.05 ~ 10ms	Resolution : 5.6mA 0.05 ~ 10ms 11 ~ 1000ms	Resolution : 8.4mA 0.05 ~ 10ms	Resolution : 6.72mA 0.05 ~ 10ms 11 ~ 1000ms	Resolution : 10.08mA 0.05 10ms
feas. Accuracy DCP ISTEP	±0.1ms / ±0.5ms Setting range : 0.00A · 280.00A /	±0.5ms Setting range : 4.20A - 420.00A /	±0.1ms / ±0.5ms Setting range : 0.00A - 350.00A /	±0.5ms Setting range : 5.25A - 525.00A /	±0.1ms / ±0.5ms Setting range : 0.00A - 420.00A /	±0.5ms Setting range : 6.30A - 630.00A /
DCP ISTOP	Resolution : 4.48mA Setting range : 0.44A - 280.00A / Resolution : 4.48mA	Resolution : 6.72mA Setting range : 0.67A - 420.00A / Resolution : 6.72mA	Resolution : 5.6mA Setting range : 0.56A - 350.00A / Resolution : 5.6mA	Resolution : 8.4mA Setting range : 0.84A - 525.00A / Resolution : 8.4mA	Resolution : 6.72mA Setting range : 0.67A - 420.00A / Resolution : 6.72mA	Resolution : 10.08mA Setting range : 1.00A - 630.00A / Resolution : 10.08mA
ОСР ІТН	Setting range : 0.13A + 140.00A / Resolution : 4.48mA	Setting range : 0.20A - 210.00A / Resolution : 6.72mA	Setting range : 0.16A - 175.00A / Resolution : 5.6mA	Setting range : 0.25A - 262.50A / Resolution : 8.4mA	Setting range : 0.20A - 210.00A / Resolution : 6.72mA	Setting range : 0.30A - 315.00A / Resolution : 10.08mA
urge Test Mode urge Current Iormal Current	0~	420A 210A	0~3 0~2			630A 315A
urge Time urge Step	10~2	~ 5	10~2	000ms	10~:	~ 5
att test Mode 1ode CC 1ode CP		.00A / Resolution : 4.48mA 0.0W / Resolution : 64.0mW		0.00A / Resolution : 5.6mA 0.0W / Resolution : 80.0mW	Setting range : 0.00A - 420 Setting range : 0.00W - 60	0.00A / Resolution : 6.72mA 100.0W / Resolution : 96mW
TOP Voltage (UVP) TOP TIME			Setting range : 0.00V - 60 Setting range : OFF 1 -	0.00V / Resolution : 0.01V 99999s / Resolution : 1s	eening tanger ereet to	
TOP CAP.AH TOP CAP.WH EQ Load Mode ( remode only )			Setting range : OFF 0.1 - 19 Setting range : OFF 0.1 - 19	999AH / Resolution : 0.1AH 999WH / Resolution : 0.1WH		
oad Mode etting STEP	CC/CP 2~16					
iming esolution <b>ynamic Mode</b>			20 ~ 1000 μs / 2~ 65 10 μs / 1	535ms / 66 ~ 999sec ms / 1sec		
iming high & Tlow			0.010~9.999 / 99.9	9 / 999.9 / 9999ms		
esolution ccuracy lew Rate	0.01792~1.120A / μs	0.1792~11.200A / µs	0.001 / 0.01 1 μs / 10 μs / 100 0.0224~1.400A / μs		0.02688~1.680A / μs	0.2688~16.800A / µs
esolution Ain. Rise Time	0.001992~1.120A / μs 0.00448A / μs	0.0448A / μs	0.0056A / μs 25 μs(t	0.056A / μs typical)	0.002088~1.080A / μs 0.00672A / μs	0.2088~10.800A / μs 0.0672A / μs
ccuracy Current	0~28A	28 ~ 280A	±( 5% of Set 0 ~ 35A	tting )±10 μs 35 ~ 350A	0 ~ 42A	42 ~ 420A
ange esolution <b>onf Key Parameter</b>	0~28A 0.45mA	28 ~ 280A 4.48mA	0.56mA	5.6mA	0~42A 0.67mA	42 ~ 420A 6.72mA
Don Voltage DoFF Voltage			Setting range : 0.4V - 10 Setting range : 0.000V - 9 0 ~	9.60V / Resolution : 0. 01V		
verage Time V Res. Speed <b>feasurement</b>			1 ~ 4 (f	astest)		
oltage Read Back Range (5 Digital) Resolution	0 ~ 60V 1.00mV	60~ 600V 10.0mV	0 ~ 60V 1.00mV ± 0.025% of (Re	60 ~ 600V 10.0mV	0 ~ 60V 1.00mV	60 ~ 600V 10.0mV
Accuracy Current Read Back Range (5 Digital) Resolution	0 ~ 28A 0.448mA	28 ~ 280A 4.48mA	0 35A 0.56mA	35 - 350A 5.6mA	0 ~ 42A 0.672mA	42 ~ 420A 6.72mA
Accuracy Power Read Back Range (5 Digital)	4	Ŵ	± 0.05% of (Re 5k	W	•	kW
Resolution Accuracy <sup>°4</sup> General			0.0 ± 0.06% of (Re	1W ading + Range)		
ypical Short Resistance faximum Short Current		3mΩ 0A	35			82mΩ 20A
.oad ON Voltage .oad OFF Voltage ?ower Consumption	0.4 - 100V 0 ~ 99.6V/ 550VA					
Dimension(H x W x D) Veight			177mm x 440 29	mm x 745mm kg		
emperature <sup>®</sup> Safety & EMC			0~·· C	40°C E		

Note \*1 : The power rating specifications at ambient temperature = 25 °C Note \*2 : The range is automatically or forcing to range II only in CC mode Note \*3 : If the operating current is below range 0.3%, the accuracy specification is 0.1% F.S. Note \*4 : Power range = Vrange x Irange

Note \*5 : Turbo mode for up to 1.5X Current rating & Power rating support Surge, Bms, Short /OCP /OPP test function Note \*6 : The best accuracy of OCP /OPP test is Istep /Pstep=1%FS Note \*7 : Bms Test function for Battery Management System Board SHORT, OCCP and OCDP Test Note \*8 : Operating temperature range is 0-40°C, All specifications apply for 25°C±5°C, Except as noted

MODEL	PEL-5	6004G-1200-160	PEL-50050	G-1200-200	PEL-5006G-12	00-240
Power <sup>∛1</sup> Current Voltage	0 ~ 4kW 0 ~ 160A	0 ~ 6kW max.*1 0 ~ 240A max.*1 200V	0 ~ 5kW 0 ~ 200A	0 ~ 7.5kW max.*1 0 ~ 300A max.*1 200V	0 ~ 6kW 0 ~ 240A 0 ~	0 ~ 9kW max. *1 0 ~ 360A max.*1 1200V
Min. Operating Voltage Protections		0100A	15V@	0200A		@240A
Over Power Protection(OPP) Over Current Protection(OCP) Over Voltage Protection(OVP)	105% 104% 105%					
Over Temp Protection(OTP) Constant Current Mode	0.164	0.1004	90°C		0.34	0.2404
Range <sup>®2</sup> Resolution Accuracy <sup>33</sup>	0 ~ 16A 0.256mA	0 ~ 160A 2.56mA	0 ~ 20A 0.32mA ± 0.05% of (Se	0 ~ 200A 3.2mA etting + Range)	0 ~ 24A 0.384mA	0 ~ 240A 3.84mA
Constant Resistance Mode Range	450kΩ ~ 7.5Ω	7.5Ω ~ 0.0937Ω	360kΩ ~ 6Ω	6Ω ~ 0.075Ω 100μΩ	300kΩ ~ 5Ω	5Ω ~ 0.0625Ω 83.34μΩ
Resolution Accuracy <b>Constant Voltage Mode</b>	2.2 μS ± 0.1%(Vin / Setting)±0.1% IF.S.	125μΩ ± 0.1% of (Setting + Range)±0.1% IF.S	2.8 μS ± 0.1%(Vin / Setting)±0.1% IF.S.	± 0.1% of (Setting + Range)±0.1% IF.S	3.3 μS ± 0.1%(Vin / Setting) ±0.1% IF.S	83.34µ11 ± 0.1% of (Setting + Range) ±0.1% IF.S
Range Resolution			20	200V mV etting + Range)		
Accuracy Constant Power Mode Range	0 ~ 400W	400 ~ 4kW	0~500W	500~5kW	0~600W	600~6kW
Resolution Accuracy <sup>34</sup> <b>Constant Voltage Mode + Current Limit M</b> e	6.4mW	64mW	8mW ± 0.2% of (Se	80mW tting + Range)	9.6mW	96mW
Range Resolution	1200V 20mV	160A 2.56mA	1200V 20mV	200A 3.2mA	1200V 20mV	240A 3.84mA
Accuracy <sup>74</sup> Constant Voltage Mode + Power Limit Mod	± 0.05% of (Setting + Range) de 1200V	± 1.0% of (Setting + Range) 4kW	± 0.05% of (Setting + Range)	± 1.0% of (Setting + Range) 5kW	± 0.05% of (Setting + Range) 1200V	± 1.0% of (Setting + Range) 6kW
Range Resolution Accuracy <sup>24</sup>	20mV ± 0.05% of (Setting + Range)	64mW ± 1.0% of (Setting + Range)	1200V 20mV ± 0.05% of (Setting + Range)	80mW ± 1.0% of (Setting + Range)	20mV ± 0.05% of (Setting + Range)	96mW ± 1.0% of (Setting + Range)
Furbo Mode "> Short / OCP / OPP Test Function	0FF 160A	ON	0FF	ON 2000	OFF	ON
Max. Current Max. Power Fest Accuracy <sup>°5</sup>	4000W	240A 6000W		300A 7500W ading + Range)	240A 6000W	360A 9000W
Short Time Setting. Accuracy	100 ~ 10000ms Continuous	100 ~ 2000ms	100 ~ 10000ms Continuous +5	100 ~ 2000ms	100 ~ 10000ms Continuous	100 ~ 2000ms
Short V Hi Short V Lo			Setting range : 0.000V - 12	00.0V / Resolution : 0.02V 00.0V / Resolution : 0.02V		
OCP Time(Tstep) Setting. Accuracy	100ms Setting range : 0.00A - 160.00A /	20ms Setting range : 0.00A - 240.00A /	100ms ±5 Setting range : 0.00A - 200.00A /	20ms ms Setting range : 0.00A - 300.00A /	100ms Setting range : 0.00A - 240.00A /	20ms Setting range : 0.00A - 360.00A /
OCP ISTAR / ISTEP / ISTOP OCP VTH	Resolution : 2.56mA	Resolution : 3.84mA	Resolution : 3.2mA Setting range : 0.00V - 120	Resolution : 4.8mA 0.00V / Resolution : 0.02V	Resolution : 3.84mA	Resolution : 5.76mA
OPP Time(Tstep) Setting. Accuracy	100ms Setting range : 0.00W - 4000.0W /	20ms Setting range : 0.00W - 6000.0W /	100ms ±5 Setting range : 0.00W - 5000.0W /	20ms ms Setting range : 0.00W - 7500.0W /	100ms Setting range : 0.00W - 6000.0W /	20ms Setting range : 0.00W - 9000.0W /
OPP PSTAR / PSTEP / PSTOP OPP VTH	Resolution : 64.0mW	Resolution : 96.0mW	Resolution : 80.0mW Setting range : 0.00V - 120	Resolution : 120mW 00.00V / Resolution : 0.02V	Resolution : 96mW	Resolution : 144mW
BMS Test Mode*7 Max. Current	160A	240A	200A ±3.0% of ( Rea	300A	240A	360A
Meas. Accuracy ® Short test Time Meas. Accuracy			0.05ms~10ms / R ±0.0	esolution : 0.01ms 12ms		
Setting Accuracy Short ITH	Setting range : 0.07A - 80.00A /	Setting range : 0.11A - 120.00A /	Setting range : 0.09A - 100.00A /	5ms Setting range : 0.14A - 150.00A /	Setting range : 0.11A - 120.00A /	Setting range : 0.17A - 180.00A /
DCP ISTAR	Resolution : 2.56mA Setting range : 0.25A - 160.00A / Resolution : 2.56mA	Resolution : 3.84mA Setting range : 038A - 240.00A / Resolution : 3.84mA	Resolution : 3.2mA Setting range : 0.32A - 200.00A / Resolution : 3.2mA	Resolution : 4.8mA Setting range : 048A - 300.00A / Resolution : 4.8mA	Resolution : 3.84mA Setting range : 0.38A - 240.00A / Resolution : 3.84mA	Resolution : 5.76mA Setting range : 057A - 360.00A / Resolution : 5.76mA
DCP TSTEP	0.05 ~ 10ms 11 ~ 1000ms ±0.1ms / ±0.5ms	0.05 ~ 10ms ±0.5ms	0.05 ~ 10ms 11 ~ 1000ms	0.05 ~ 10ms	0.05 ~ 10ms 11 ~ 1000ms ±0.1ms / ±0.5ms	0.05 ~ 10ms
Meas. Accuracy DCP ISTEP	±0.1ms / ±0.5ms Setting range : 0.00A - 160.00A / Resolution : 2.56mA	±0.5ms Setting range : 2.40A - 240.00A / Resolution : 3.84mA	±0.1ms / ±0.5ms Setting range : 0.00A - 200.00A / Resolution : 3.2mA	±0.5ms Setting range : 3.00A - 300.00A / Resolution : 4.8mA	±0.1ms / ±0.5ms Setting range : 0.00A - 240.00A / Resolution : 3.84mA	±0.5ms Setting range : 3.60A - 360.00A / Resolution : 5.76mA
OCP ISTOP	Setting range : 0.25A - 160.00A / Resolution : 2.56mA	Setting range : 0.38A - 240.00A / Resolution : 3.84mA	Setting range : 0.32A - 200.00A / Resolution : 3.2mA	Setting range : 0.48A - 300.00A / Resolution : 4.8mA	Setting range : 0.38A - 240.00A / Resolution : 3.84mA	Setting range : 0.57A - 360.00A / Resolution : 5.76mA
DCP ITH Surge Test Mode	Setting range : 0.07A - 80.00A / Resolution : 2.56mA	Setting range : 0.11A - 120.00A / Resolution : 3.84mA	Setting range : 0.09A - 100.00A / Resolution : 3.2mA	Setting range : 0.14A - 150.00A / Resolution : 4.8mA	Setting range : 0.11A - 120.00A / Resolution : 3.84mA	Setting range : 0.17A - 180.00A / Resolution : 5.76mA
Surge Current Normal Current	0~	240A 120A	0~ 0~	150A	0~	360A 180A
Gurge Time Gurge Step Batt test Mode	1	2000ms ~ 5	1.	000ms ~ 5	1	2000ms ~ 5
Mode CC Mode CP	Setting range : 0.00A - 160 Setting range : 0.00W - 400	1.00A / Resolution : 2.56mA 0.0W / Resolution : 64.0mW	Setting range : 0.00W - 500	1.00A / Resolution : 3.2mA 0.0W / Resolution : 80.0mW 00.00V / Resolution : 0.02V	Setting range : 0.00A - 240 Setting range : 0.00W - 60	0.00A / Resolution : 3.84mA 00.0W / Resolution : 96mW
STOP Voltage (UVP) STOP TIME STOP CAP.AH			Setting range : OFF 1 -	99999s / Resolution : 0.02V 99999k / Resolution : 1s 9999AH / Resolution : 0.1AH		
STOP CAP.WH SEQ Load Mode ( remode only )			Setting range : OFF 0.1 - 19	999WH / Resolution : 0.1WH / CP		
Load Mode Setting STEP Fiming			2 ~ 20 ~ 1000 μs / 2~ 65	- 16 535ms / 66 ~ 999sec		
Resolution Dynamic Mode Timing			10 μs / 1	ms / 1sec		
Fhigh & Tlow Resolution			0.001 / 0.01	9 / 999.9 / 9999ms / 0.1 / 1ms		
Accuracy Slew Rate Resolution	0.01024 ~ 0.640A / μs 0.00256A / μs	0.1024 ~ 6.400A / μs 0.0256A / μs	1 μs / 10 μs / 100 0.0128~0.800A / μs 0.0032A / μs	μs / 1ms + 50ppm 0.1280~8.000A / μs 0.032A / μs	0.01536~0.960A / μs 0.00384A / μs	0.1536~9.600A / μs 0.0384A / μs
Ain. Rise Time Accuracy	5.00250 χ. γ μ3		25 μs(	typical) tting )±10 μs		. στου στη μα
Current Range Resolution	0 ~ 16A 0.26mA	16 ~ 160A 2.56mA	0 ~ 20A 0.32mA	20 ~ 200A 3.2mA	0 ~ 24A 0.38mA	42 ~ 240A 3.84mA
Conf Key Parameter Don Voltage		. Base 491101	Setting range : 1V - 25	i0.0V / Resolution : 1V	• • • • • • • • • • • • • • • • • • •	
DoFF Voltage werage Time CV Res. Speed	Setting range : 0.000V · 249.0V / Resolution : 0.02V           0 ~ 64           1 - 4 (fastest)					
Aeasurement /oltage Read Back Range (5 Digital)	0~120V	120 ~ 1200V	0 ~ 120V	120 ~ 1200V	0~120V	120 ~ 1200V
Resolution Accuracy Current Read Back Range (5 Digital)	2.00mV 0 ~ 16A	20.0mV 16 ~ 160A	2.00mV ± 0.025% of (R 0 ~ 20A	20.0mV eading + Range) 20 ~ 200A	2.00mV 0 ~ 24A	20.0mV 24 ~ 240A
Resolution Accuracy	0.256mA	2.56mA	0.32mA ± 0.05% of (Re	3.2mA ading + Range)	0.384mA	3.84mA
Power Read Back Range (5 Digital) Resolution Accuracy <sup>°4</sup>	4kW         5kW         6kW           0.01W         0.01W         ± 0.06% of (Reading + Range)         100% of (Reading + Range)					
Seneral Typical Short Resistance		'5mΩ 50A	75	mΩ 10A		05mΩ 40A
Maximum Short Current Load ON Voltage Load OFF Voltage			1~ 0~:	250V 249V	2	4VA
Power Consumption Dimension(H x W x D)	550VA 177mm x 440mm x 745mm 28kg					
Weight Femperature <sup>78</sup> Safety & EMC			0 ~			
	•					

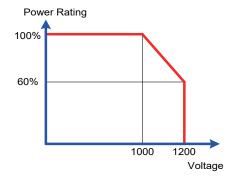
Note \*1 : The power rating specifications at ambient temperature = 25 °C Note \*2 : The range is automatically or forcing to range II only in CC mode Note \*3 : If the operating current is below range 0.1%, the accuracy specification is 0.1% F.S. Note \*4 : Power range = Vrange x Irange

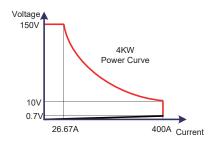
Note \*5 : Turbo mode for up to 1.5X Current rating & Power rating support Surge, Bms, Short /OCP /OPP test function Note \*6 : The best accuracy of OCP /OPP test is Istep /Pstep=1%FS Note \*7 : Bms Test function for Battery Management System Board SHORT, OCCP and OCDP Test Note \*8 : Operating temperature range is 0-40°C, All specifications apply for 25°C±5°C, Except as noted

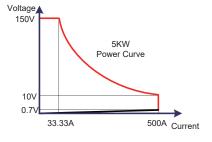
Power Rating 100% (6kW) 83% (5000W) 0 10 20 30 40 °C 6kW Only

**Power Curve** 







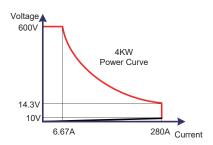


Voltage 150V 6KW Power Curve 10V 0.7V 40A 600A Current

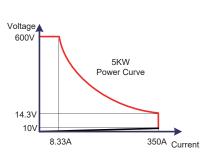
PEL-5004G-150-400

PEL-5005G-150-500

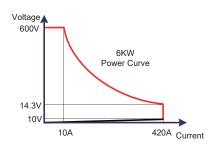
PEL-5006G-150-600







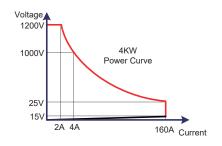
PEL-5005G-600-350



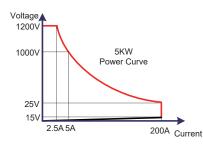
PEL-5006G-600-420

Voltage

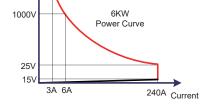
1200V





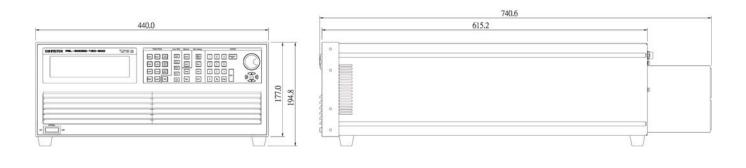


PEL-5005G-1200-200



#### PEL-5006G-1200-240

#### **EXTERNAL DIMENSIONS**





#### ORDERING INFORMATION

PEL-5004G-150-400	150V/400A/4000W	High Power DC Electronic Load	
PEL-5005G-150-500	150V/500A/5000W	High Power DC Electronic Load	
PEL-5006G-150-600	150V/600A/6000W	High Power DC Electronic Load	
PEL-5004G-600-280	600V/280A/4000W	High Power DC Electronic Load	
PEL-5005G-600-350	600V/350A/5000W	High Power DC Electronic Load	
PEL-5006G-600-420	600V/420A/6000W	High Power DC Electronic Load	
PEL-5004G-1200-160	1200V/160A/4000W	/ High Power DC Electronic Load	
PEL-5005G-1200-200	1200V/200A/ 5000W	/ High Power DC Electronic Load	
PEL-5006G-1200-240	1200V/240A/6000W	/ High Power DC Electronic Load	15463
PEL-5006G-120	0 240	STANDARD ACCESSORIES	<u>.</u>
FLL-30000-120	10-240	PEL-5000G Series operation manual	35.741 P/
+	Maximum output current:	BANANA PLUGS : Please refer to Fig.1 x 1	19720.5 Mill.5
Powerrating: 6-> 6AkW	1240 - > 240A	BNC – BNC CABLE : BNC to BNC CABLE, 1m x 1	2 2 mm
	Maximum output voltage:		
	1200->1200V	HD-DSUB : 15PIN Parallel wire Parallel Wire x 1	$\sim$
		PEL-028 HANDLES, U-shaped Handle	

(fixed to the bracket)

Rack Mount Kit For PEL-5000G

#### OPTIONAL ACCESSORIES

OPTIONA	L ACCESSORIES				
PFI -022	GPIB Card	PFI -025	USB Card	CTL-246	USB Cable, USB 2.0, A-B Type, 1200mm
		1 22 025	05b Card		
PEL-023	RS-232 Card	PEL-030	GPIB+RS-232 Card	GTL-248	GPIB Cable, Double Shielded, 2000mm
PEL-024	LAN Card	PEL-032	9923 Current Waveform Generator + RS232 Interface	GTL-250	GPIB Cable, Double Shielded, 600mm

PEL-031

Note: \* Regarding the product delivery date, please contact your regional sales representative.

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CE2

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