

Special product features



# POWER QUALITY ANALYZERS, METERS & LOGGERS

## Three-Phase Power Quality Analyzer

### PowerPad® III Model 8333

**SD card for trend recordings, and up to 12 snapshot, 51 captured transients and 4000 alarm events**



\* Registration must take place within 30 days of purchase

**Four voltage and three current input terminals**

#### ► SPECIFICATIONS

MODEL	8333
Input Terminals	4 voltage / 3 current
Inputs	3 voltage / 3 current
Voltage (TRMS AC+DC)	2 to 1000V
Voltage Ratio	up to 500kV
Current (TRMS AC+DC)	MN93: 500mA to 200Aac; MN193: 0.005 to 100Aac SR193 Clamp: 1A to 1000Aac AmpFlex® or MA193 Clamps: 100mA to 10000Aac MR193 Clamp: 1A to 1300Aac/bc SL261 Clamp: 50mA to 100Aac/bc J93: 50 to 3500Aac/bc Current Ratio: up to 60kA
Frequency (Hz)	40 to 69Hz
Distribution Systems	1P 2W, 1P 3W, 2P 2W, 2P 3W, 2P 4W, 3P 3W, 3P 4W, Split-Phase 2W & 3W & Aron meters
Power Values	W, VA, var, VAD, PF, DPf, cos φ, tan φ
Energy Values	Wh, varh, VAh, VADh
Harmonics	1 <sup>st</sup> to 50 <sup>th</sup> , Direction, Sequence; THD: 0 to 50, phase
Transients	up to 51
Flicker (Pst)	Yes
Unbalance	Yes
Recording	Yes
Alarm Mode	10 types; 4000 recorded
Peak	Yes
Phasor Display	Automatic
Display	Color ¼ VGA TFT screen (320 x 240) diagonal 5.82" (148mm)
Snapshots	12
Electrical Safety	IEC 61010, 1000V CAT III / 600V CAT IV
Protection	IP53
Languages	more than 27
Communication Interface	USB
Battery Life	>13 hrs, 25 hrs in Record Mode
Power Supply	9.6V NiMH rechargeable battery pack (included) External AC supply: 110/230VAc ±10% (50/60Hz)
Dimensions / Weight	9.8 x 7.8 x 2.6" (240 x 180 x 55mm) / 4.3lbs (1.95kg)



#### ► KIT INCLUDES

Three current probes, four black 10ft voltage leads, 5ft USB cable, four black alligator clips, twelve color-coded input ID markers, NiMH battery, 110/240V power adapter with US power cord, carrying bag, soft carrying pouch, and USB drive supplied with product user manual and DataView® software.



#### ► ACCESSORIES

► Phase Power Adapter for Models 8333 & 8336  
Catalog #2140.77 (optional)



#### ► KIT INCLUDES

**AmpFlex® 193 flexible current probe (6500A)**  
24" or 36", rated 600V CAT IV

**MN193 current probe (5A/100A)**  
Rated 600V CAT III

OR



**CALRIGHT INSTRUMENTS**

The Right Source For Your Test & Measurement Needs

8715 Mesa Point Terrace San Diego, CA 92154  
Toll Free: 1.866.363.6634 Tel: 1.619.429.4545 Fax: 1.619.374.7012  
Email: sales@calright.com <http://www.calright.com>

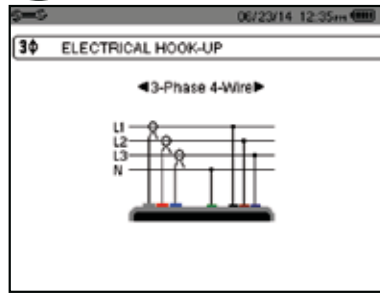
# PowerPad® III Model 8333

## Large Color Functional Displays

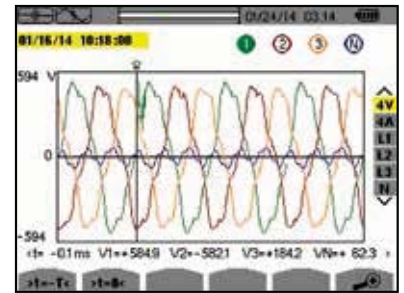
### FEATURES

- True RMS single-, two- and three-phase measurements at 256 samples/cycle, plus DC
- Real-time color waveforms
- Easy-to-use on-screen setup
- Automatic current probe recognition and scaling
- True RMS voltage and current measurement
- Measures DC volts, amps and power
- Displays and captures voltage, current and power harmonics to 50<sup>th</sup> order, including direction, in real-time
- Captures transients down to 1/256<sup>th</sup> of a cycle
- Stores comprehensive data base of logged data
- Phasor diagram display
- kVA, kvar and kW per phase and total
- kVAh, kvarh and kWh per phase and total
- Neutral current calculated and displayed for three-phase
- Transformer K-Factor display
- Power Factor, displacement PF display
- Captures up to 51 transients
- Short term flicker display
- Phase unbalance (current and voltage)
- Harmonic Distortion (total and individual) from 1<sup>st</sup> to 50<sup>th</sup>
- Alarms, surges and sags
- Screen snapshot function captures waveforms or other information on the display
- Includes FREE DataView® software for configuring data storage, real-time display, analysis and report generation

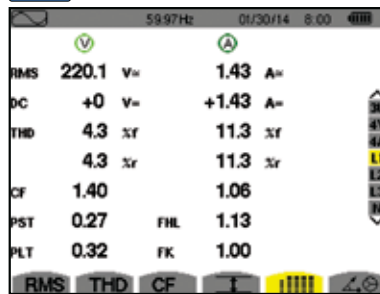
### Configuration



### Transient Mode



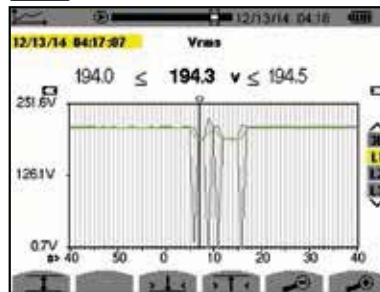
### Power and Energy Mode



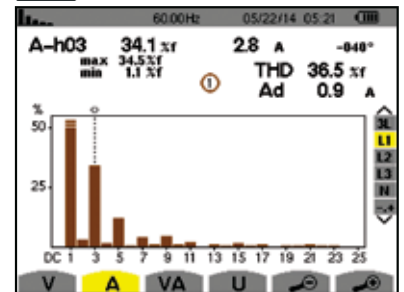
### Phasor Diagram



### Recording Mode



### Harmonics Mode



### CATALOG NO.

### DESCRIPTION

2136.10	PowerPad® III Model 8333 (no probes)
2136.11	PowerPad® III Model 8333 w/3 193-24-BK AmpFlex® Sensors
2136.12	PowerPad® III Model 8333 w/3 MN193-BK Probes
<b>Accessories (Optional) See pages 3-4 &amp; 6 for more optional current probes</b>	
2133.73	Extra Large Classic Tool Bag
2140.28	AC Current Probe Model MR193-BK
2140.32	AC Current Probe Model MN93-BK
2140.33	AC Current Probe Model SR193-BK
2140.34	AmpFlex® Sensor 24" Model 193-24-BK
2140.35	AmpFlex® Sensor 36" Model 193-36-BK
2140.36	AC Current Probe Model MN193-BK
2140.44	Lead, 1 10ft (3m) black lead w/black alligator clip
2140.48	MiniFlex® Sensor 10" Model MA193-10-BK
2140.49	AC/DC Current Probe Model J93-BK
2140.50	MiniFlex® Sensor 14" Model MA193-14-BK
2140.77	Adapter – Phase Power Adapter for use with PowerPad Models 8333 & 8336



The Right Source For Your Test & Measurement Needs

8715 Mesa Point Terrace San Diego, CA 92154  
 Toll Free: 1.866.363.6634 Tel: 1.619.429.4545 Fax: 1.619.374.7012  
 Email: sales@calright.com http://www.calright.com





# POWER QUALITY ANALYZERS, METERS & LOGGERS

## Optional Accessories

SENSOR TYPE	CURRENT RANGE	ACCURACY (TYPICAL)	TYPICAL ERROR ON $\Phi$ AT 50/60Hz	MAX CONDUCTOR SIZE	USED WITH MODEL	LIMITED RANGE IF USED WITH MODEL	CATALOG NUMBER
 <p>10" or 14" sensor</p>	100mA to 3000A <sub>AC</sub>	±1%	0°	2.75" (70mm)	PEL 102 PEL 103 PEL 105** 8333 8336	8220 8230 8435	2140.48 (10" sensor)
							2140.50 (14" sensor)
 <p>Battery operated</p>	1 to 1000A <sub>AC</sub> 1 to 1300A <sub>DC</sub>	±2.5%	-0.80°	1.6" (41mm)	8220 8230 PEL 102 PEL 103 PEL 105** 8333 8336 8435**	N/A	2140.28
	1 to 1200A <sub>AC</sub>	±0.3%	0.2°	2.05" (52mm)	8220 8230 PEL 102 PEL 103 PEL 105** 8333 8336 8435**	N/A	2140.33
 <p>24" or 36" sensor</p>	100mA to 12,000A <sub>AC</sub>	±1%	0°	7.64" (190mm) or 11.46" (290mm)	PEL 102 PEL 103 PEL 105** 8333 8336	8220 8230 8435	2140.34 (24" sensor)
							2140.35 (36" sensor)
 <p>24" sensor IP67</p>	100mA to 12,000A <sub>AC</sub>	±2%	0°	5.73" (145mm)	PEL 105 8435	N/A	2140.75 (24" sensor)

\* Maximum current reduced by a factor of 2 for 400Hz fundamental frequency.

\*\* Not waterproof with Model 8435 & PEL 105.

SENSOR TYPE	CURRENT RANGE		ACCURACY (TYPICAL)	TYPICAL ERROR ON $\Phi$ AT 50/60Hz	MAX CONDUCTOR SIZE	USED WITH MODEL	LIMITED RANGE IF USED WITH MODEL	CATALOG NUMBER
 MN93-BK	0.5 to 240Aac		±1%	0.8°	0.78" (20mm)	PEL 102 PEL 103 PEL 105** 8333 8336 8435**	8220 8230	2140.32
 MN193-BK	<b>100A</b>	200mA to 120Aac	±1%	0.75°	0.78" (20mm)	8220 8230 PEL 102 PEL 103 PEL 105** 8333 8336 8435**	N/A	2140.36
	<b>5A</b>	5mA to 6Aac	±1%	1.7°				
 SL261 ** Battery operated	<b>100A</b>	5 to 100Aac/dc	±4%	±0.5°	0.46" (11.8mm)	8220 8230 PEL 102 PEL 103 PEL 105** 8333 8336 8435**	N/A	1201.51
	<b>10A</b>	50mA to 10Aac/dc	±3%	±1°				
 J93 Battery operated	50 to 3500Aac 50 to 5000Aac		±1%	±1°	2.83" (72mm)  Busbar: 5 x 1.69" (127 x 43mm)	PEL 102 PEL 103 PEL 105** 8333 8336 8435**	N/A	2140.49

**Note: Refer to the Power Meter's product user manual for complete specifications.**

All current sensors can be used with the Models 8435 and PEL 105.

However, only the 196A flexible sensors are waterproof.

Power Adapter for Models PEL 102 & PEL 103 only  
Catalog #2137.77



\*\* AC/DC Current Probe BNC Adapter for Model SL261 only  
Catalog #2140.40



CATALOG NO.	DESCRIPTION
1201.51	AC/DC Current Probe Model SL261 (BNC)
2137.77	Adapter – Power Adapter <b>PEL 102 &amp; PEL 103 only</b>
2140.28	AC/DC Current Probe Model MR193-BK
2140.32	AC Current Probe Model MN93-BK
2140.33	AC Current Probe Model SR193-BK
2140.34	AmpFlex® Sensor 24" Model 193-24-BK
2140.35	AmpFlex® Sensor 36" Model 193-36-BK
2140.36	AC Current Probe Model MN193-BK
2140.37	Adapter – US 110V Power Adapter (eliminates need for batteries) <b>8220 &amp; 8230 only</b>
2140.48	MiniFlex® Sensor 10" Model MA193-10-BK
2140.49	AC/DC Current Probe Model J93-BK
2140.50	MiniFlex® Sensor 14" Model MA193-14-BK
2140.75	AmpFlex® Sensor 24" (waterproof - IP67) Model 196A-24-BK
2140.77	Adapter – Phase Power Adapter for use with PowerPad Models 8333 & 8336



# DataView®

## Data Analysis and Reporting Software



### Configure all functions of the Power & Energy Loggers

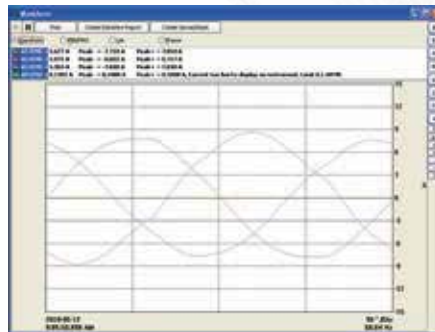


- Display and analyze real-time data on your PC
- Configure functions and parameters from your PC
- Customize views, templates and reports to your exact needs
- Create and store a complete library of configurations that can be uploaded as needed
- Zoom in and out and pan through sections of the graph to analyze the data
- Download, display and analyze recorded data
- Display waveforms, trend graphs, harmonic spectrums, text summaries, transients, event logs and stored alarms
- Print reports using standard or custom templates you design
- Free updates are available on our website [www.aemc.com](http://www.aemc.com)

### Typical DataView® Functional, Digital & Graphical Displays



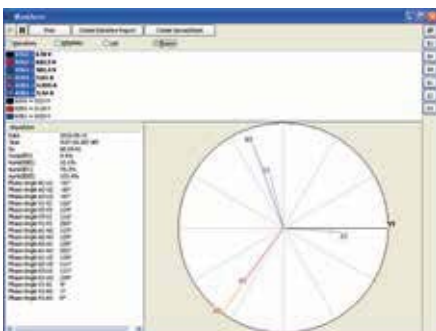
Clear and easy setup of all functions from one tabbed dialog box.



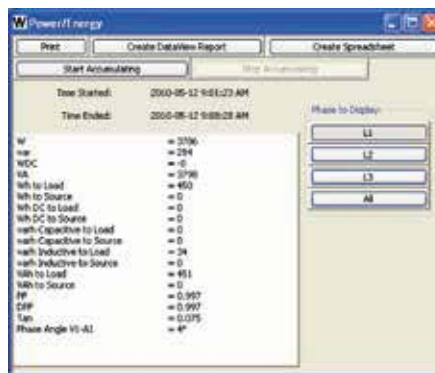
Display real-time waveforms by phase, parameter or total.



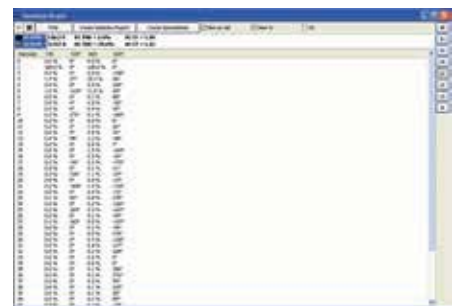
Display all harmonics from 1<sup>st</sup> to 50<sup>th</sup> in bargraph form for voltage, current and power.



Display real-time Phasor diagrams. Includes unbalance for both voltage and current.



Display power and energy parameters – both instantaneous and total.



Display harmonics in a text table from harmonic 0 (DC) through the 50<sup>th</sup>.

# POWER QUALITY ANALYZERS, METERS & LOGGERS

## Selection Chart

AEMC MODEL NUMBER	AEMC CATALOG NUMBER	INPUT TERMINALS	CHANNELS	RMS VOLTAGE MAX PHASE-TO-NEUTRAL	RMS VOLTAGE MAX PHASE-TO-PHASE	PEAK VOLTAGE MAX PHASE-TO-NEUTRAL	PEAK VOLTAGE MAX PHASE-TO-PHASE	DC VOLTAGE MAX	AC CURRENT MAX (PROBE DEPENDENT)	DC CURRENT MAX (PROBE DEPENDENT)	RATIOS VOLT	RATIOS AMPERE
8220	2130.90	1V/1A	1V/1A	600Vrms	660Vrms	850Vpk	935Vpk	600Vdc	6500Aac	1400Adc	Yes	No
8230	2130.81	1V/1A	1V/1A	600Vrms	660Vrms	850Vpk	935Vpk	600Vdc	6500Aac	1400Adc	Yes	No
8333	2136.10	4V/3I	3V/4I	1000Vrms	2000Vrms	1414Vpk	2828Vpk	1200Vdc	10,000Aac	5000Adc	Yes	Yes
8336	2136.30	5V/4I	4V/4I	1000Vrms	2000Vrms	1414Vpk	2828Vpk	1200Vdc	10,000Aac	5000Adc	Yes	Yes
8435	2136.41	5V/4I	4V/4I	1000Vrms	2000Vrms	1697Vpk	3394Vpk	1697Vdc	10,000Aac	5000Adc	Yes	Yes
PEL 102	2137.51	4V/3I	3V/3I	1000Vrms	1700Vrms	1414Vpk	2400Vpk	1000Vdc	10,000Aac	5000Adc	Yes	Yes
PEL 103	2137.52	4V/3I	3V/3I	1000Vrms	1700Vrms	1414Vpk	2400Vpk	1000Vdc	10,000Aac	5000Adc	Yes	Yes
PEL 105	2137.57	4V/3I	3V/3I	1000Vrms	1000Vrms	1414Vpk	2400Vpk	1000Vdc	10,000Aac	5000Adc	Yes	Yes

AEMC MODEL NUMBER	AEMC CATALOG NUMBER	DISTRIBUTION SYSTEMS	PHASE ROTATION	WAVEFORM MODE	TRANSIENT MODE	TRUE INRUSH MODE/ TYPE/ DURATION	ALARM MODE	SNAPSHOT MODE	HARMONIC MODE	TYPE LCD	POWER SOURCE
8220	2130.90	1P-2W 3P-3W DB	Yes, 2-Wire Method	Yes, Realtime through DataView® (recordable to PC)	No	Yes (RMS) duration: unspecified	No	Yes (9)	Yes	Backlit LCD	6 x AA batteries or external adapter
8230	2130.81	1P-2W 3P-3W DB	Yes, 2-Wire Method	Yes	No	Yes (RMS) <15 seconds at 60Hz	18 types/ up to 10 active/ 4096 recorded	Yes (8)	Yes	Color LCD	External adapter with internal NiMH battery pack
8333	2136.10	1P-2W, 2P-3W, 3P-3W, 3P-4W	Yes	Yes	Yes	No	10 types/ up to 2 active/ 4662 recorded	Yes (12)	Yes	TFT - 5.7" diagonal 320 x 240 resolution	External adapter with internal NiMH battery pack
8336	2136.30	1P-2W, 1P-3W, 2P-2W, 2P-3W, 2P-4W, 3P-3W, 3P-4W, 3P-5W	Yes	Yes	Yes	Yes (RMS+PEAK & RMS) up to 1 & 10 mins	40 types/ up to 7 active/ 16,362 recorded	Yes (50)	Yes	TFT - 5.7" diagonal 320 x 240 resolution	External adapter with internal NiMH battery pack
8435	2136.41	1P-2W, 1P-3W, 2P-2W, 2P-3W, 2P-4W, 3P-3W, 3P-4W, 3P-5W	Yes	Yes	Yes	Yes (RMS+PEAK & RMS) up to 1 & 10 mins	40 types/ up to 7 active/ 16,362 recorded	Yes (50)	Yes	STN	External adapter with internal NiMH battery pack
PEL 102	2137.51	1P-2W, 1P-3W, 3P-3W D2, 3P- 3W O2, 3P-3W Y2, 3P-3W D3, 3P-3W O3,	Yes	No	No	No	No	No	Yes	None	External adapter with internal NiMH battery pack
PEL 103	2137.52	3P-3W Y, 3P-3W DB, 3P-4W Y, 3P-4W YB, 3P-4W Y2 1/2, 3P-4W D, 3P- 4WOD, DC-2W DC-3W, DC-4W	Yes	No	No	No	No	No	Yes	Monochrome LCD	
PEL 105	2137.57		Yes	No	No	No	No	Yes			