



Model 8220

A measurement tool for electrical parameters and distribution network disturbances

► SPECIFICATIONS

MODEL	8220
ELECTRICAL	
Voltage (TRMS)	Phase-to-Phase: 660V; Phase-to-Neutral: 600V
Current (TRMS)	MN Clamp: 0.2 to 6A/120A or 2 to 240A MR Clamp: 10 to 1000A _{AC} , 10 to 1400A _{DC} SR Clamp: 3 to 1200A MiniFlex®: 10 to 1000A AmpFlex®: 10 to 6500A ⁽¹⁾
Frequency (Hz)	40 to 70Hz
Other Measurements	kW, kvar, PF, DPF, kVA, kWh, kvarh, VAh, Phase Rotation, Temperature, RPM, Resistance, Continuity, Diode Test
Harmonics	1 st to 50 th
Sampling Frequency	256 samples / cycle
Data Storage	Stores nine sets of readings totaling up to 99 snapshots for volts, amps, power and harmonics
Power Source	Six 1.5V AA Alkaline batteries (included)
Battery Life	≥8 hrs with display on ≥40 hrs with display off (recording mode)
MECHANICAL	
Communication Port	Optically isolated USB
Display	Three-line backlit color LCD digital display with custom icons and adjustable brightness & contrast
Dimensions	8.3 x 4.3 x 2.4" (211 x 108 x 60mm)
Weight	1.9lbs (0.88kg)
Safety Rating	EN 61010, 600V CAT III, IP54, Pollution Degree 2

⁽¹⁾Crest factor at 6500 = 1



► FEATURES

- Measures up to 660Vrms or Vdc
- Measures up to 6500A_{AC} or 1400A_{DC} (probe dependent)
- Displays Min, Max and Average Volts and Amps, Crest Factor, Peak Value and K-Factor
- Calculates and displays Watts, vars and VA, Power Factor and Displacement Power Factor for single-phase and balanced three-phase
- Measures and records power systems (kW, kVA, kvar)
- Energy metering (kAh, kvarh, kWh)
- Displays total harmonic distortion (THD-F and THD-R) for voltage and current
- Displays individual harmonic values and % for volts and amps through the 50th harmonic
- The Max and Min RMS measurements are calculated every half-period
- Captures and displays inrush current
- Calculates and displays phase rotation and RPM
- Displays temperature in both °F and °C
- Displays resistance up to 2000Ω
- Conducts continuity and diode tests
- Stores up to nine complete sets of readings for all volt, amp, power and harmonic measurements
- Operates on batteries or optional power adapter
- Download stored data snapshots to DataView® software via optical USB port (included)
- Includes FREE DataView® software for configuring data storage, real-time waveform display, analysis and report generation

► KIT OPTION INCLUDES

8220 Kit

Current probe with 10ft lead and black connector, black and red 10ft voltage leads and alligator clips, optical USB cable, six 1.5V batteries, two safety test probes, carrying bag, and USB drive supplied with DataView® software and user manual.



8230 Kit (Model 8230 product details on next page)

Current probe with 10ft lead and black connector, black and red 10ft voltage leads and alligator clips, optical USB cable, NiMH battery, 110V US wall charger, carrying bag, and USB drive supplied with DataView® software and user manual.



See last page for more optional accessories

CATALOG NO.	DESCRIPTION
2130.90	Power Quality Meter Model 8220 (no probes)
2130.91	Power Quality Meter Model 8220 w/MN93-BK
2130.93	Power Quality Meter Model 8220 193-24-BK (AmpFlex®)
2130.96	Power Quality Meter Model 8220 w/MN193-BK



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

Single-Phase Power Quality Analyzer

Special product features



PowerPad® Jr. Model 8230

Measure and carry out diagnostic work and power quality work on single- or three-phase balanced load networks

SPECIFICATIONS

MODEL	8230
ELECTRICAL	
Voltage (TRMS)	Phase-to-Phase: 660V; Phase-to-Neutral: 600V
Current (TRMS)	MN Clamp: 0.2 to 6A/120A or 2 to 240A MR Clamp: 10 to 1000Aac, 10 to 1400Aac SR Clamp: 3 to 1200A MiniFlex®: 10 to 1000A AmpFlex®: 10 to 6500A ⁽¹⁾
Frequency (Hz)	40 to 70Hz
Other Measurements	kW, kvar, PF, DPF, kWh, kvarh, kVAh, K-Factor, Flicker, Harmonic Phase Shift, Phase Rotation
Harmonics	THD-R, THD-F, V, A, VA, 1 st to 50 th , Direction, Sequence
Sampling Frequency	256 samples/cycle
Data Storage	1.5MB partitioned for waveforms, alarms and trend recording
Power Source	NiMH rechargeable battery pack (included) AC Supply: 120/230VAC (50/60Hz)
Battery Life	≥8 hrs with display on ≥40 hrs with display off (recording mode)
MECHANICAL	
Communication Port	Optically isolated USB
Display	¼ VGA (320 x 240) full color LCD digital & graphical display with adjustable brightness & contrast
Dimensions	8.3 x 4.3 x 2.4" (211 x 108 x 60mm)
Weight	1.9lbs (0.88kg)
Safety Rating	EN 61010, 600V CAT III, IP54, Pollution Degree 2

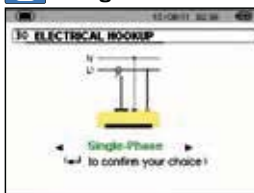
⁽¹⁾Crest factor at 6500 = 1

FEATURES

- Measures up to 660Vrms or VDC
- Measures up to 6500Aac or 1400Aac (probe dependent)
- Displays Min, Max and Average Volts and Amps, Crest Factor, Peak Value and K-Factor
- Calculates and displays Watts, vars and VA, Power Factor and Displacement Power Factor for single-phase and balanced three-phase
- Measures and records power systems (kW, kVA, kvar)
- Energy metering (kAh, kvarh, kWh)
- Displays total harmonic distortion (THD-F and THD-R) for voltage and current
- Displays individual harmonic values and % for Volts and Amps through the 50th harmonic
- Captures, displays and stores inrush current waveforms and statistics
- Stores up to eight screen captures
- Stores up to 1MB of trend recorded data
- Configurable from DataView® software or front panel
- Download stored data to DataView® software via optical USB port (included)
- Captures up to 4096 alarm events from up to 10 different thresholds
- Displays and records up to 17 different power quality parameters
- Includes FREE DataView® software for configuring data storage, real-time waveform display, analysis and report generation
- The Max and Min RMS measurements are calculated every half-period



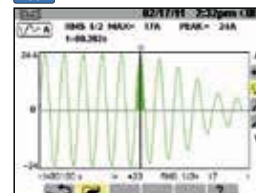
Configuration



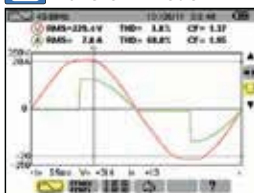
Recording Setup



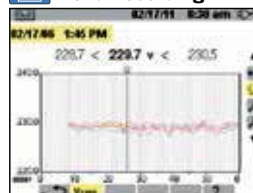
Inrush Mode



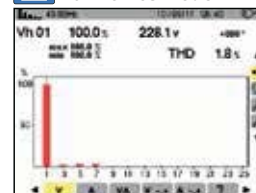
Waveform Mode



Trend Recording



Harmonics Mode



CATALOG NO.

DESCRIPTION

2130.81	PowerPad® Jr. Model 8230 (no probes)
2130.82	PowerPad® Jr. Model 8230 w/MN93-BK
2130.87	PowerPad® Jr. Model 8230 w/MN193-BK



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DataView®

Data Analysis and Reporting Software



Configure all functions of the Power & Energy Loggers

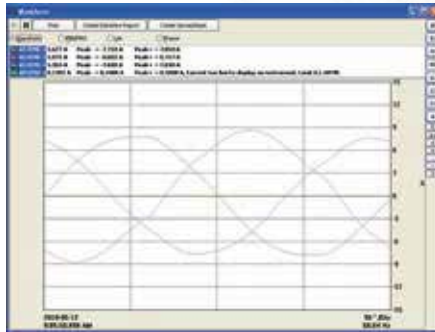


- Display and analyze real-time data on your PC
- Configure functions and parameters from your PC
- Customize views, templates and reports to your exact needs
- Create and store a complete library of configurations that can be uploaded as needed
- Zoom in and out and pan through sections of the graph 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

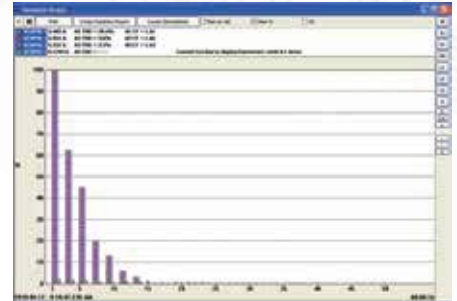
Typical DataView® Functional, Digital & Graphical Displays



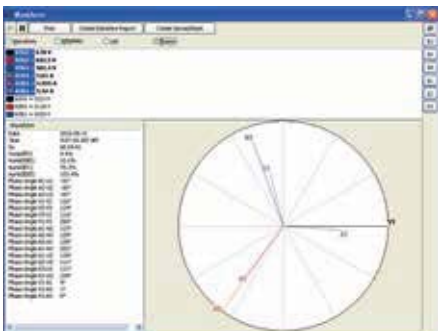
Clear and easy setup of all functions from one tabbed dialog box.



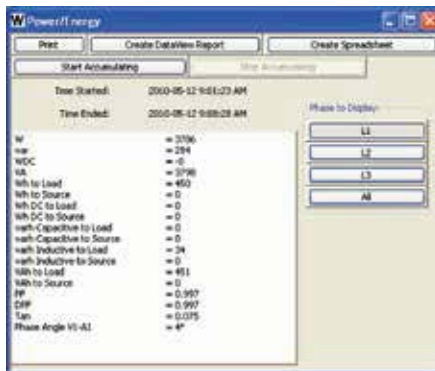
Display real-time waveforms by phase, parameter or total.



Display all harmonics from 1st to 50th 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.

Harmonic	Voltage	Current	Power
0 (DC)	120.0	0.0	0.0
1	120.0	10.0	1200.0
2	5.0	0.5	2.5
3	3.0	0.3	0.9
4	2.0	0.2	0.4
5	1.5	0.15	0.225
6	1.0	0.1	0.1
7	0.8	0.08	0.064
8	0.6	0.06	0.036
9	0.5	0.05	0.025
10	0.4	0.04	0.016
11	0.35	0.035	0.01225
12	0.3	0.03	0.009
13	0.27	0.027	0.00729
14	0.25	0.025	0.00625
15	0.23	0.023	0.00529
16	0.21	0.021	0.00441
17	0.19	0.019	0.00361
18	0.18	0.018	0.00324
19	0.17	0.017	0.00289
20	0.16	0.016	0.00256
21	0.15	0.015	0.00225
22	0.14	0.014	0.00196
23	0.13	0.013	0.00169
24	0.12	0.012	0.00144
25	0.11	0.011	0.00121
26	0.11	0.011	0.00121
27	0.10	0.010	0.00100
28	0.10	0.010	0.00100
29	0.09	0.009	0.00081
30	0.09	0.009	0.00081
31	0.09	0.009	0.00081
32	0.08	0.008	0.00064
33	0.08	0.008	0.00064
34	0.08	0.008	0.00064
35	0.08	0.008	0.00064
36	0.07	0.007	0.00049
37	0.07	0.007	0.00049
38	0.07	0.007	0.00049
39	0.07	0.007	0.00049
40	0.07	0.007	0.00049
41	0.06	0.006	0.00036
42	0.06	0.006	0.00036
43	0.06	0.006	0.00036
44	0.06	0.006	0.00036
45	0.06	0.006	0.00036
46	0.06	0.006	0.00036
47	0.05	0.005	0.00025
48	0.05	0.005	0.00025
49	0.05	0.005	0.00025
50	0.05	0.005	0.00025

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

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, 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	None	External adapter with internal NiMH battery pack
PEL 103	2137.52		Yes	No	No	No	No	No	Yes	Monochrome LCD	
PEL 105	2137.57		Yes	No	No	No	No	No	Yes		Power phase input or external adapter with internal NiMH battery pack