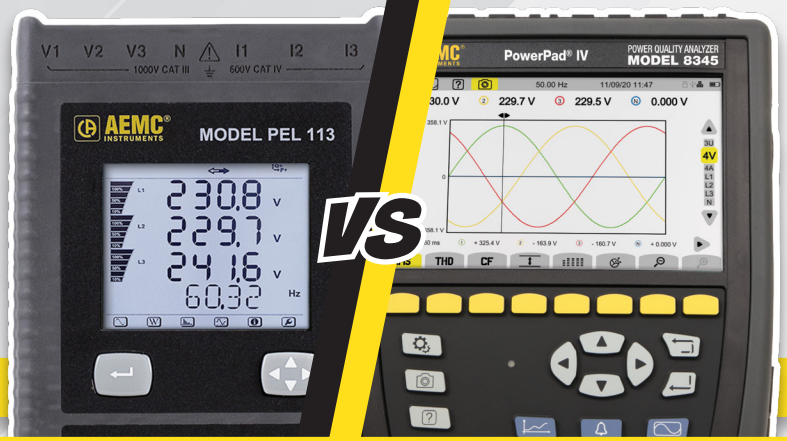
AEMC® INSTRUMENTS
CHAUVIN ARNOUX GROUP

Power Energy Logger VS Power Quality Analyzer



Model PEL113		Model 8345
2137.64	**Catalog Number**	2136.35
4 V / 3 A	**Number of inputs (V/A)**	5 V / 4 A
3 V / 4 A	**Number of input channels (V/A)**	4 V / 4 A
1000 V	**Voltage - AC *(Phase-to-Neutral)***	1000 V
1000 V	**Voltage - AC *(Phase-to-Phase)***	2000 V
1000 V	**Voltage - DC**	1200 V
13,000:1 (up to 650 kV)	**Voltage Ratio - AC**	up to 173 MV
± 0.2 % + 0.2 V	**Voltage Accuracy**	**±0.1 %**
12,000 AAC / 5000 ADC *(probe dependent)*	**Current AC/DC**	10,000 AAC / 5000 ADC *(probe dependent)*
up to 25 kA - with MN193 probe in 5 A range	**Current Ratio - AC**	up to 60 kA
(42.5 to 69) Hz (50/60) Hz, (340 to 460) Hz (400 Hz), DC	**Frequency**	(42.5 to 69) Hz, DC
Orders 0 to 50 for Voltage and Current *(each phase)*	**Harmonics Recorded**	**Orders 0 to 127 *(plus inter-harmonics 0 to 126)***
W, VA, var	**Power Units Recorded**	W, VA, var, VAD
Wh, VAh, varh	**Energy Units Recorded**	Wh, VAh, varh, VADh
PF, DPF(cos φ), tan Φ, CF, THD-F (V,I), F(Hz)	**Other Parameters Recorded**	PF, DPF, cos φ, tan Φ, CF, FHL, K factor, THD-f (V,I), THD-r (V,I), Distorting RMS values, Pst, Plt, F(Hz)
17	**# Of Distribution Systems**	**25**
No	**Transient Detection**	**Yes**
No	**InRush® Capture**	**Yes**
Yes	**Alarm Mode**	**Yes *(20,000+ of 40 types)***
200 mS to 60 min *(2 fixed and 12 selectable options)*	**Aggregations *(User Selectable)***	200 mS to 2 hrs *(19 options)*
Yes - using DataView® Software *(Included)* or the PEL App for Android™ Devices *(Google® Play)*	**Phasor *(Fresnel)* Diagram**	Yes- directly on display, through DataView® Software *(Included)*, or Web Server
SD card - 8 GB Shipped *(SD-HC up to 32 GB upgradeable)*	**Storage Of Recordings**	Limited by SD card size
USB, Ethernet/Wi-Fi LAN, Ethernet/Wi-Fi Direct, DataViewSync®	**Communications**	USB, Ethernet/Wi-Fi LAN, Ethernet/Wi-Fi Direct, DataViewSync®, Web Server
Yes - DataView® Included	**Software**	Yes - DataView® Included
Yes - Backlit LCD Monochrome	**Display**	**7 in color LCD touch screen: 800 x 480 (WVGA)**
Yes - with optional 600 V power adapter	**Powered From Phase**	Power from phase from 100 to 1000 VAC/DC with external supply block *(Included)*
Line Power with internal NiMH battery pack	**Power Source**	External adapter with Li-ion battery pack
NiMH Battery Pack (8.4 V) ~1 hour	**Battery Backup For Ride-Through**	**Li-ion Battery (10.9 V) ~ 10 hours *(with display off)* or 6 hours *(with display on)***
600 V CAT IV, 1000 V CAT III	**Electrical Safety**	1000 V CAT IV
No	**Screenshots**	Yes
IP 54	**Protection**	IP 54
(10.08 x 4.92 x 1.46) in (256 x 125 x 37) mm	**Dimensions**	(7.87 x 11.22 x 2.17) in (200 x 285 x 55) mm
2.2 lb (1 kg)	**Weight**	4.19 lb (1.9 kg)
2 years	**Warranty**	2 years; extended to 3 years if registered
	Current Probes	
200 mA to 12,000 AAC @ (50/60) Hz (Ranges reduced by 50% at 400 Hz)	**AmpFlex & MiniFlex *(AC only)***	100 mA to 10,000 AAC @ (50/60) Hz
1 A to 1200 AAC	**SR193 *(AC only)***	1 A to 1000 AAC
500 mA to 240 AAC	**MN93 *(AC only)***	200 mA to 200 AAC
N / A	**MN94 *(AC Only)***	50 mA to 200 AAC
5 mA to 6 A (5 A), 200 mA to 120 AAC (100 A)	**MN193 *(AC Only) (dual range)***	5 mA to 5 A (5 A), 200 mA to 100 AAC (100 A)
1 A to 1000 AAC/1300 ADC	**MR193 *(AC/DC)***	1 to 1000 AAC/1300 ADC
50 mA to 10 AAC/DC (10 A), 5 A to 100 AAC/DC (100 A)	**SL261 *(AC/DC) (dual range)***	50 mA to 10 AAC/DC (10 A), 5 A to 100 AAC/DC (100 A)
50 mA to 10 AAC (10 A), 50mA to 100 AAC (100 A)	**E94 *(AC/DC) (dual range)***	100 mA to 10 AAC (10 A), 500 mA to 100 AAC (100 A)

Key Differences & Advantages

Primary Function and Use Case

PEL 113: Designed primarily for long-term energy monitoring and energy audits. These loggers focus on recording power consumption and energy data over extended periods, making them ideal for energy efficiency projects and utility monitoring.

PowerPad® IV Model 8345: Built for detailed power quality analysis. It focuses on diagnosing electrical disturbances, power quality issues *(like transients, harmonics, voltage sags/swells)*, and system performance in real-time. This makes it better for troubleshooting and compliance with power quality standards like IEC 61000-4-30.

Display and User Interface

PEL 113: Features a monochrome display for simple on-site checks.

PowerPad® IV 8345: Equipped with a large 7-inch full-color touchscreen, the Model 8345 enables real-time analysis and visualization of waveforms, harmonic bar graphs, phasor diagrams, and more. It also offers 19 selectable aggregation options, surpassing the 12 provided by the PELs, and includes 40 alarm modes capable of storing over 20,000 triggered events per alarm recording. The visual feedback and interaction capabilities are far superior on the Model 8345.

Measurement Capabilities

PEL 113: Measures parameters such as voltage, current, power *(active, reactive, apparent)*, energy, harmonics, and power factor, suitable for energy logging.

PowerPad® IV 8345: Measures the same basic parameters of the PEL 113 but offers a more precise voltage accuracy of +/- of 1%. It can measure on a greater number of distribution systems and measures a wider range of parameters including transients, inrush current, flicker, voltage dips, swells, and interruptions, along with detailed harmonic analysis up to the 127th order *(plus inter-harmonics 0 to 126)*. It can capture and analyze waveforms and detect shock waves of up to 12 kV.

Data Logging vs. Real-Time Power Quality

PEL 113: Primarily focused on continuous data logging for energy monitoring with long-term trend analysis.

PowerPad® IV 8345: Not only does it log data, but it also provides real-time insights and detailed event capture like transients, allowing for immediate troubleshooting. The Model 8345 is designed to provide deeper diagnostics for power quality events as they occur.

Power Quality Standards and Compliance

PEL 113: Focus on basic energy metrics and does not provide detailed compliance with power quality standards.

PowerPad® IV 8345: Complies with IEC 61000-4-30, Class A, meaning it meets strict international standards for power quality measurement and is ideal for power quality studies that require compliance with these standards.

Connectivity and Communication

PEL 113: With multiple connectivity options including USB, Ethernet, Wi-Fi, and remote access with DataViewSync™, these loggers enable remote monitoring and data-driven decision-making, ensuring smarter energy management and long-term savings.

PowerPad® IV 8345: In addition to USB, Ethernet, and Wi-Fi, it also supports remote control via PC, tablet, or smartphone, which allows for real-time remote monitoring and control with DataViewSync®, making it more versatile for fieldwork.

Battery and Power Supply

PEL 113: Can be powered via 120 VAC supply line cord, power line adapter *(CAT #2137.90)* or internal battery, suitable for long-duration logging.

PowerPad® IV 8345: Similarly using its AC adapter/power supply, power line adapter *(built into the AC adapter)*, or internal Li-ion rechargeable battery *(provides up to 8 hours recording time).*

In summary, the PEL 113 is better for long-term, large-scale energy consumption monitoring, while the PowerPad® IV 8345 excels in real-time power quality analysis with advanced diagnostic tools for compliance and troubleshooting power disturbances. If precise, real-time diagnostics and compliance with power quality standards are required, the PowerPad® IV 8345 offers a more advanced solution.