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Model 840-C

Hand-Held Optical Power Meter



(Detector not included)

- Power and precision typical of a benchtop meter
- Includes both DC and AC peak-to-peak measurement modes
- Power sensitivity from 100 pW to 2 W (-70 to +33 dBm)
- Wavelength and range settings
- Linear, dB, dBm and linear ratio readouts
- Background subtraction and digital averaging

The Model 840-C hand-held optical power meter is fully compatible with all of Newport's 818 Series Low-Power Si, Ge and InGaAs detectors. Detectors connect to the power meter through an in-line calibration module that is dedicated to each detector (see System Specifications Table below for all compatible detectors). These detachable modules provide the Model 840-C with calibration and operating information specific to the assigned detector. Various detector accessories allow for free-space, as well as for fiber coupled power measurements. DC and AC peak-to-peak power measurements can be displayed in units of W and dBm on the instrument's 4 digit, backlit LCD.

Instrument Specifications

Display Type	4-digit LCD w/ backlight
Sampling Rate (Hz)	2.5
Gain Ranges	6 decades, DC; 4 decades, AC Pk-Pk
Full Scale Readings, Low-Power Detector	100 nA–5 mA
DC Accuracy, 100 nA range, full scale	±(0.5% + 50 pA)
DC Accuracy, 1 µA to 5 mA range, full scale	±(0.25% + offset) See Manual
Peak-to-Peak Accuracy, 50 Hz to 1 kHz	Squarewave ±5%, Sinewave ±1%
Peak-to-Peak Accuracy, 1 kHz to 2 kHz	Squarewave ±1%, Sinewave ±2%
Peak-to-Peak Accuracy, 2 kHz to 5 kHz	Squarewave ±2%, Sinewave ±5%
Analog Output Accuracy, 100 nA range	±(2.5% + 15 mV)
Analog Output Accuracy, 1 µA to 5 mA range	±(2% + 10 mV)
Analog Output	BNC, 0–1 V into 1 MΩ
Temperature Coefficient	0.1 x Accuracy/°C
Battery Life	18 hours (backlight on)
Battery	Ni-Cd rechargeable
Wall Power	AC adaptor/Charger
Dimensions (H x W x D) [in. (mm)]	7.2 (183) x 3.0 (76) x 1.5 (38)
Weight [lb (kg)]	1.1 (0.5)
Operating Temperature	0°C to 50°C, <80% RH
Storage Temperature Range	-25°C to 60°C, <90% RH

Additional Benefits

- Wavelength selection in 1 nm steps
- Audible tone for no-look tuning
- Rechargeable batteries for full portability
- Travel case included with power meter
- Most recent operating parameters are saved when unit is turned off

System Specifications

The 840-C is compatible with Newport's Ge, Si and InGaAs detectors, allowing both free-space and fiber pigtailed measurements in the 200–1800 nm range. When using 818 Series detectors with the 840-C, a calibration module needs to be attached to the detector (818-xx/CM), assuring the correct reading at any pre-selected wavelength. Newport's new 918D and 918L Series detectors can also be used with the 840-C, in combination with the 818P-DIN adapter.

Model	818-UV/CM	818-SL/CM	818-F-SL	818-ST/CM	818-ST-UV/CM	818-IR/CM 818-F-IR	818-IG/CM	818-IS-1
Material	Silicon	Silicon	Silicon	Silicon	Silicon (UV Enhanced)	Germanium	Indium Gallium Arsenide	InGaAs/Si
Diameter (cm)	1.13	1.13	0.3	1 x 1	1 x 1	0.3	0.3	N/A
Wavelength (nm)	200–1100	400–1100	400–1100	400–1100	200–1100	780–1800	800–1650	400–1650
Power Range[W (dBm) per cm^2]	5 pW to 200 mW (-83 to +23)	1 pW to 2 W (-90 to +33)	1 pW to 2 mW (-90 to +3)	100 pW to 2 W (-70 to +33)	100 pW to 2 W (-70 to +33)	100 pW to 140 mW (-70 to +21.5)(2)	1 pW to 140 mW (-90 to +21.5)	100 pW to 200 mW (-70 to +23)
Display Resolution	0.01 dB or dBm							
Display Resolution (pW)	0.1	0.1	0.1	0.1	0.1	10	0.1	0.1
Accuracy (%)(1)	±2	±2	±2	±2	±2	±3	±2	±2.5
Applicable Wavelength Range (nm)	200–1100	400–1100	400–1100	400–1100	200–1100	780–1700	800–1650	400–1650
Linearity (%)	±0.5							
NEP @ 5 Hz and 1 A/W	50 fW/√Hz	50 fW/√Hz	50 fW/√Hz	3 pW/√Hz	3 pW/√Hz	4 pW/√Hz	30 fW/√Hz	3 pW/√Hz(3)

1) At calibration temperature maintained to ± 0.2°C, -20 dBm level having 99% encircled energy on detector with no optical attenuator
2) -70 to +3 dBm for 818-F-IR
3) 0.01 A/W for the 818-IS-1
4) Append /220 for 220V version

Ordering Information

Model	Description
840-C(4)	Hand-held Power Meter
840-C-CAL(4)	840-C with test data and certificate
840-C/220	Hand-held Power Meter, 220V Version
840-C/220-CAL	840-C with test data and certificate

For more details on Newport's low-power detectors and fiber optic accessories compatible with the 840-C, please see page 1090 thru page 1095.

Call Newport's Application Sales Engineers to help you select the optical detector that best meets your application requirements.

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