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Find the *Newport / ILX Lightwave FPM-8210 Series* at our website: *Click HERE*

FPM 8210
FPM 8210H

Fiber Optic Power Meters

Product Features

- ±0.001 dB typical polarization dependent response
- Measures up to +33 dBm at pump wavelengths (λ <1000 nm)
- Single input port for both connectors and bare fiber measurements
- Adapters available for most common fiber optic connectors
- Large measurement head for stability on the production bench

Competitive cost-effective fiber optic component manufacturing calls for accurate power measurements that can be easily repeated. For reliable comparison, the FPM-8210 and FPM-8210H Fiber Optic Power Meters measure optical power from bare fiber or connectors through the same input port. Virtually insensitive to polarization state or to pattern changes from fiber orientation, these meters deliver repeatable high resolution results.

ILX Lightwave engineered the FPM-8210 and the FPM-8210H for your production test workstation. The innovative fiber optic head design makes reliable fiber endface positioning a routine task, whether or not the fiber has a connector. With the CA-120 Bare Fiber Adapter, these meters are compatible with either ILX Lightwave or Agilent bare fiber holders.

The FPM-8210 and FPM-8210H Fiber Optic Power Meters are the factory measurement tools to drive down your component PDL specifications while increasing test throughput.



Drive Down Test Time, Costs and PDL Specs

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FPM 8210
FPM 8210H

Fiber Optic Power Meters

Product Overview

These meters combine power measurement accuracy with the industry's lowest polarization dependent response. ILX's innovative detector cavity delivers repeatable and flexible measurements from either bare or connectorized fiber.

Optimized for bare fiber measurements, the integrating cavity detector head delivers the longest bare fiber measurement zone, anywhere from 1–5 mm from the holder, with essentially no change in results. Precise fiber orientation is no longer necessary for repeatable measurements.

ILX Lightwave adapters accommodate the most common fiber optic connectors. The change from bare to connectorized fiber is simple. The connector adapters locate the fiber ferrule in exactly the same place as the bare fiber endface, giving comparable results.

Designed to hold and position a common telecom fiber, the BF-820 Bare Fiber Holder is compatible with both ILX Lightwave and Agilent adapter rings. Inside the BF-820, opposing V-guides facilitate correct fiber positioning. Outside, textured finger grips enable single-handed maneuvering of the fiber holder.



The BF-820 Bare Fiber Holder completely encircles the fiber, prohibiting ambient light from interfering with power measurements.

Specifications

MODEL NUMBER	FPM-8210	FPM-8210H
PERFORMANCE		
Wavelength	850–1650 nm	850–1650 nm
Power Range:[2]	+20 to –70 dBm	+30 to –50 dBm
Damage Threshold:	>+40 dBm	>+40 dBm
Accuracy[3]		
Reference Conditions:[4]	±2.5%	±2.5%
Operating Conditions:[5]	±5.0%	±5.0%
Polarization Dependent Response:[6]	±0.002 dB, typical ±0.001 dB[1]	
Measurement Repeatability:[7]	±0.003 dB, typical ±0.001 dB[1]	
Compatible Connectors:	FC/PC, FC/APC, LC, SC, bare fiber holder[8]	
Entrance Aperture:	2.54 mm	2.54 mm
Sensor Type:	InGaAs	InGaAs
Noise:[9]	≤100 pW p-p (1200 at 1630 nm) typical <40 pW p-p at 1310 and 1550 nm[1]	≤500 pW p-p (1200 at 1630 nm) typical <250 pW p-p at 1310 and 1550 nm[1]
Sample Rate:	50 msec[10]	50 msec[10]
Temperature Coefficient:	±0.2% / °C typical[1]	±0.2% / °C typical[1]
Linearity:[11]	±0.02 dB, ±100pW (–60 dBm to 20 dBm)	±0.04 dB, ±500 pW (–40 dBm to 30 dBm)

POWER DISPLAY	
Type:	5-digit, 7-segment LED, log or linear
Resolution:	0.001 unit (log or linear)

WAVELENGTH DISPLAY (INPUT)	
Type:	4-digit, 7-segment LED
Range:	850–1650 nm
Resolution:	1 nm
Power Level Bargraph:	Relative to full scale, fast update

Display Filter Update Rate[12]		
Slow:	100 measurements	5s
Medium:	10 measurements	0.50s
Fast:	1 measurement	0.05s

ANALOG OUTPUT (REAR PANEL)	
Bandwidth:	0–10 Hz (typical)[1]
Voltage:	0–10 V
Impedance:	1000 Ω (typical)[1]

GENERAL	
Operating Temperature:	10°C to 40°C
Storage Temperature:	–40°C to 70°C
Humidity:	<85% RH, noncondensing
Line Voltage:	100 V ±10%, 120 V ±10%, 220 V ±10%, 230-240 V ±10%
Line Frequency:	50–60 Hz
Size (HxWxD)	
Meter:	88mm x 212mm x 270mm, 3.5" x 8.4" x 10.6"
Detector Head:	86mm x 86mm x 100mm, 3.4" x 3.4" x 3.9"
Cable:	2 meters
Weight:	4.6 kg, 10.2 lbs, (Meter + Head & Cable)

NOTES

1 Typical values provide supplemental information beyond guaranteed specification limits.
2 FPM-8210: +23 dBm to –60 dBm for λ <1000 nm.
FPM-8210H: +33 dBm to –40 dBm for λ <1000 nm.
3 950–1630 nm. Includes traceability to NIST. Calibrated at 23°C ±3°C, at 10 nm intervals. Uncertainty evaluated according to NIST Technical Note #1297: "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Results".
4 Temperature 23°C ±2°C, λ 1000–1600 nm, spot diameter 1.1 mm, power –20 dBm (10 µW).
5 Within operating power and temperature ranges specified above. Add 1% for NA >0.2. Maximum NA ≤0.30.
6 Variation in meter response associated with changes in input polarization state. Specification is for flat endface (cleaved) fiber. Add PDL for connectors or angled-cleave measurements. For example, 8° cleave in SMF-28 fiber typically adds 0.015 dB PDL.
7 Variation in response from removing and replacing the fiber or connector into the detector head. Includes effects of variation in fiber orientation and bare fiber extension 1–5 mm from the holder. Add ±0.003 dB for NA >0.20.
8 Compatible with ILX Lightwave BF-820 or Agilent 81000BA bare fiber holders. ILX Lightwave BF-820 fiber holders are designed for fiber diameter 125 µm (250 µm or 900 µm buffer).
9 Measured over 1 minute, in medium filter mode. Typical noise at 980 nm <150 pW for FPM-8210 and <700 pW for FPM-8210H.
10 GPIB data transfer rate is faster than measurement sample rate.
11 920–1630 nm. Total variation from straight-line response. Valid across range limits if measured in auto-range mode. Measured at 23°C ±5°C, constant temperature. Add ±0.005 dB/dB for input power >0 dBm.
12 Applies to measurements taken within the same gain range. Display update rates will increase if changing gain ranges is required during measurements.

In keeping with our commitment to continuous improvement, ILX Lightwave reserves the right to change specifications without notice and without liability for such changes.

ORDERING INFORMATION

FPM-8210	Fiber Optic Power Meter (+20 to –70 dBm)
FPM-8210H	Fiber Optic Power Meter (+30 to –50 dBm)
BF-820	Bare Fiber Holder (requires CA-120)
CA-100	FC Adapter
CA-120	Bare Fiber Adapter Ring
CA-150	SC Adapter
CA-20001	LC Adapter
CA-500	Accessory Case

Note: CA-500 Accessory Case may be included for no charge with BF-820 or any two CA-series adapters.

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Rev. 10/19/04

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