

# SERIES 400 FIBER OPTIC POWER MONITOR ATTENUATORS



**EigenLight's Series 400 Fiber Optic Power Monitor Attenuators** combine the power control capability of a variable attenuator with the measurement capability of an inline power monitor. With a single compact device you can now vary power levels and simultaneously see the absolute optical power being delivered to your lightwave system or fiber optic test set. Series 400 Power Monitor Attenuators are optically passive, featuring low insertion loss, low polarization-dependent loss, and high return loss. Use these devices in place of conventional attenuators for in-line control and monitoring in the field, factory or laboratory.

## FEATURES

- 40 dB Variable Attenuation
- Absolute or Relative Power Readout
- Optional Analog Output for Data Logging
- Typical Battery Life 3 Years
- Auto Power On/Off (Light Activated)
- Dual LCD Displays for Easy Viewing

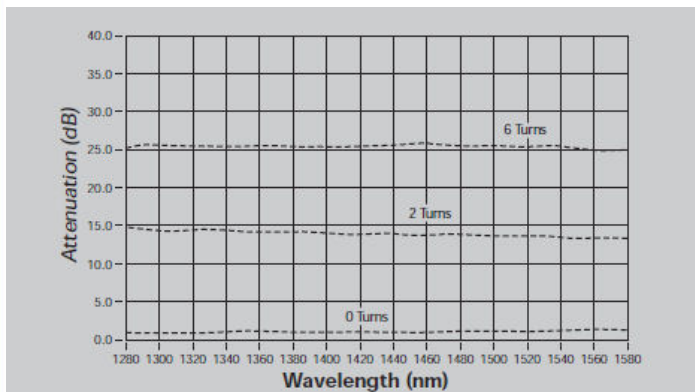
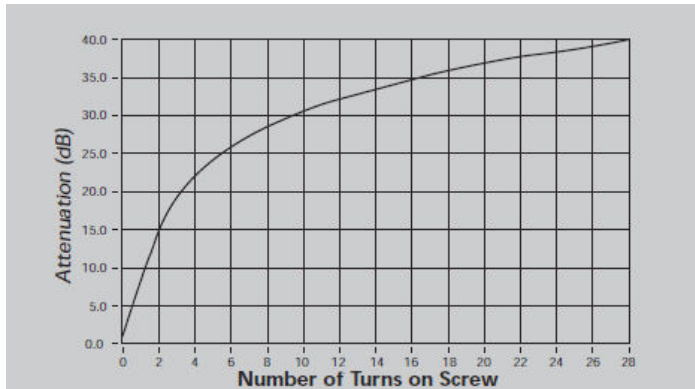
## SPECIFICATIONS

	<b>Model 410</b> Highest Sensitivity	<b>Model 420</b> Lowest Loss
Fiber Type <sup>1</sup>	Single-Mode	Single-Mode
Attenuator Range	40 dB	40 dB
Attenuator Resolution	0.1 dB	0.1 dB
Power Range	-50 dBm to +16 dBm	-40 dBm to +20 dBm
Minimum Insertion Loss	<1.5 dB	<1.0 dB
Absolute Accuracy <sup>2</sup>	+/- 0.2 dB	+/- 0.2 dB
Return Loss	>40 dB	>40 dB
Power	4 Lithium Coin Cells (CR2032)	
Battery Life	3 Years Typical (Slow Mode)	
Display Resolution	0.1 dB	
Display Refresh Rate	0.1 Sec / 0.8 Sec (Fast/Slow Mode)	
Analog Output Voltage	1 millivolt/dBm (0 dBm = 0 millivolt)	
Analog Output Impedance	40 kΩ	
Operating Temperature	0°C to +40 °C	
Storage Temperature	-10°C to +60 °C	
Relative Humidity	<95% Non Condensing	
Size (Housing Only)	9.5 x 3.7 x 3.6 cm	
Weight	140 grams (5 oz.) with Batteries	
Housing Material	Flame Retardant ABS Plastic	

1. Other fiber types available.

2. Measured at Output and Calibrated Wavelengths

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**Ultra-Long Battery Life**

Series 300 power monitors have typical battery life of 3 years as a result of a proprietary detection circuit that samples the optical power for a short time during each measurement cycle.

**Relative or Absolute Power Measurement**

The dB/dBm mode button allows you to measure either absolute or relative optical power.

**Wavelength/Speed Control**

The wavelength select button allows you to choose the operating wavelength within a broad spectral range. It also allows you to switch the response time between a fast and slow mode of operation.

**Analog Output (Optional)**

Optional micro phone jack provides analog voltage output for data logging.

**Power-Level Control**

Variable air-gap attenuator provides fingertip control of power level, while angled interfaces maintain a greater than 40 dB return loss.

**Dual LCD Displays**

LCD displays on both front and back allow easy viewing of the readout in any configuration, and eliminate the need to bend or loop the cable in order to view the display.

**Pigtail Interface**

Pigtails on input and output allow you to install power monitor in place of jumper cable. All industry-standard fiber optic connectors are available.

**Durable Construction**

Internal steel-tube construction provides excellent durability for field, factory or laboratory environment.

**Directivity**

Each device transmits light in both directions but detects light propagating in the forward direction only.



## APPLICATIONS

**LIGHTWAVE SYSTEMS**

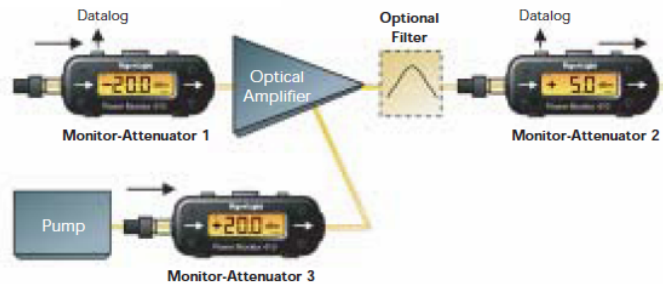


Monitor Reading = Attenuated Power Delivered to Receiver

**APPLICATIONS**

- In-System Power Control
- System Margin Testing
- Alarm Threshold Testing
- Manual Bit-Error Measurement

**OPTICAL AMPLIFIERS**



Monitor 2 Reading - Monitor 1 Reading = Amplifier Gain (dB)

**APPLICATIONS**

- In-system Gain Measurement
- Amplifier Parameter Control
- Saturation Testing
- Alarm Threshold Testing

# SERIES 400 POWER MONITOR ATTENUATORS

## POWER MONITOR ACCESSORIES



**SERIES 400 MONITOR MOUNT**  
Anodized aluminum mount with magnetic base for mounting. Product Code: M4

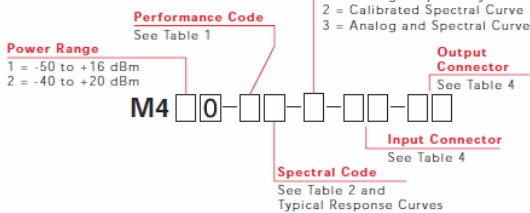


**CARRYING CASE**  
High-impact plastic carrying case for field transport and storage of power monitors and accessories. Product Code: C3

### Ordering Information and Accessories

1.5 meter pigtail on input/output standard on all models. Specify model, options and fiber optic connector type when ordering, as shown below (use tables on right).

**Ordering Information:**



**TABLE 1: Performance Code**

Code	Description	Polarization Stability <sup>1</sup>	PDL <sup>2</sup>	Directivity <sup>3</sup>
0	Standard	<0.2 dB	<0.2 dB	>20 dB
2	Low Polarization Dependence	<0.1dB	<0.1 dB	>20 dB

**TABLE 2: Spectral Code**

Code	Description	Fiber Type	Range	Calibration
0	Standard	Single Mode	1280 – 1580 nm <sup>4</sup>	1310, 1550 nm
1	WDM	Single Mode	1520 – 1620 nm <sup>5</sup>	1550 nm

**TABLE 3: Accessories** (See Accessories Brochure)

M4	Anodized aluminum mount with magnetic base for mounting (Series 400)
C3	High-Impact plastic carrying case for field transport and storage

**TABLE 4: Connectors<sup>6</sup>**

Code	Connector Type
10	FC
15	FC/APC
20	ST
25	ST/APC
30	SC
35	SC/APC
40	LC
50	MU
90	Bare Fiber

For more information on all of our products visit our website:

[www.eigenlight.com](http://www.eigenlight.com)

1. Maximum Change in Monitor Reading with Polarization  
2. Polarization Dependent Loss  
3. Sensitivity to Forward Directed Light Relative to Backward Directed Light at Minimum Attenuation

4. See Graph on Series 300 Brochure: Spectral Code 0 Typical Response  
5. See Graph on Series 300 Brochure: Spectral Code 1 Typical Response  
6. Super PC Polish Standard