

NOTICE ON MULTIMODE MONITORS

Series 300 and 400 multimode power monitors are designed to measure broadband (i.e. LED) optical power being carried by multimode fiber. The two primary factors affecting the accuracy of the monitors are the bandwidth of the optical source and the mode filling of the fiber. At the factory, the monitors are calibrated at the design wavelengths with complete mode filling of the fiber using LED sources. Under these conditions, the monitors produce reliable and accurate measurements provided sources with an optical bandwidth of greater than 5nm are used. Most LEDs satisfy this requirement.

When operating the monitors in an "under-filled" condition (i.e. where only a few low-order modes of the fiber are excited) the monitor reading may deviate from the actual power by as much as 1 dB. This is caused by the modal sensitivity of the optical tap that is used. For example, coupling to the monitor input using single-mode fiber would cause an under-filled condition and a deviation from calibration. Under most launch conditions where LED sources are used, the monitors provide absolute accuracy of ± 0.3 dBm.

Standard Specifications¹:

PARAMETER/MODEL	MM31XB/C	MM41XB/C
Insertion Loss	<1.5 dB	<2 dB
Measurement Range	-50 to +16 dBm	-50 to +16 dBm
Attenuation Range	N/A	>20 dB
Directivity (approx.) ²	0 dB	0 dB
Wavelength Range	1250 – 1600 nm (B) 800 – 1000 nm (C)	1250 – 1600 nm (B) 800 – 1000 nm (C)
Max. Optical Power	+20 dBm	+20 dBm

X = fiber type. 0 = 50/125, 2 = 62.5/125, 4 = 100/125

1. Other specifications same as for standard M310/M410.

2. Sensitivity to forward directed light relative to backward directed light.

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5/00

DEVICE: MM410C Power Monitor SN: 106125823 Date: 12/04/2006
Fiber Type: SM725 µm
Detector Type: 106125823

Certificate of Calibration

Description: In-Line Fiber Optic Power Monitor**Model Number: MM410C****Serial Number: 106125823****Calibration Date: 12/04/2006****Recommended Re-calibration Date: 12/2007****Certified by: jlm**

This instrument has been tested for compliance with all product specifications published by EIGENLIGHT CORPORATION. Calibration of this instrument is traceable to the National Institute of Standards and Technology (NIST), Boulder, Colorado, USA through equipment that is calibrated on a scheduled basis and in accordance with Measurement Assurance Program (MAP) of NIST.

NIST Transfer Standard Used: Hewlett Packard Model 8153A with 81532A detector module.

Effective date: 03/26/2004

Test I.D. No.: 814556/814557

Next Scheduled NIST Calibration: 03/26/2007

EIGENLIGHT CORPORATION recommends that this instrument be re-calibrated on an annual basis as indicated by the "Recommended Re-calibration Date" shown above, and on the calibration sticker located on the underside of the instrument. Calibration service is provided by EIGENLIGHT CORPORATION at a nominal fee.

QF 009

Rev 1

07/09/2001

DEVICE: MM410C Power Monitor S/N: 106125823 Date: 12/04/2006
Fiber Type: 50/125 μm
Detector Type: Silicon

wavelength (nm)	850
insertion loss (dB) ¹	1.95
modal sensitivity (dB) ²	0.3

CONNECTOR LOSS (dB)³

Input connector: 0.15
Output connector: 0.22

¹ At minimum attenuation, connector loss not included.

² Maximum change in monitor reading when changing from complete mode filling to lowest-order mode filling.

³ At 850 nm, measured against a master jumper.