

## Product Features

NIST traceable calibration

Up to 10 W optical power measurement

Simultaneous wavelength measurement from 1200 to 1650 nm

$\pm 0.002$  dB polarization dependent response

Convenient fiber light exit port

The OMH-6795B High Power Measurement Head provides the capability to measure up to 10 W from today's high power laser diodes including Raman pumps and Fiber lasers while simultaneously measuring wavelength from 1200—1650 nm.

The integrating sphere design eliminates expensive coupling optics and provides industry best low polarization dependent response for today's communications products testing needs. These measurement heads can be used with the OMM-6810B Optical Multimeter and any of the LPA-9080 Series Laser Diode Parameter Analyzers.

These measurement heads provide the flexibility to quickly and accurately measure the optical power and wavelength through connectorized fiber devices. Bare fiber measurements can also be made with a series of connector adapters including the ILX BF-820 bare fiber holder and the Ericsson® clip holder. More versatility was designed into this measurement head with the addition of a fiber light exit port to connect to an OSA or other measurement instrument.

# OMH 6795B

## High Power Measurement Head



Measure up to 10 Watts  
for today's high power laser diodes.

 **ILX Lightwave**  
Laser Diode Instrumentation & Test Systems

# OMH 6795B

## High Power Measurement Head

### Low Polarization Dependent Response

The unique integrating sphere design incorporated in these measurement heads allows for industry best 0.002 dB polarization dependent response. Optimized for quick bare fiber measurements, the head tolerates a wide measurement zone allowing fiber extension from the BF-820 bare fiber adapter of 1 to 5 mm with no change in measurement results.

### Specifications

#### WAVELENGTH MEASUREMENT

Range:	1200—1650 nm
Accuracy: <sup>1</sup>	±2.0 nm (typ. @ 1480 nm <±1.0 nm)
Detection:	-10 dBm

#### POWER MEASUREMENT

Range <sup>2</sup>	950—1650 nm:	-30 to +40 dBm
Damage Threshold:		+42 dBm
Accuracy <sup>3</sup>	Reference Conditions:	±2.5%
	Operating Conditions:	±5.0%
Polarization Dependent Response: <sup>4</sup>		±0.002 dB
Measurement Repeatability: <sup>5</sup>		±0.003 dB
Compatible Connector:		FC/PC, FC/APC, LC, SC, bare fiber holder
Numerical Aperture (NA):		0.1 to 0.3
Fiber Core Size:		SMF to 110 µm
Sensor type:		InGaAs
Noise: <sup>6</sup>		≤60 nW peak- to-peak (1200 to 1650 nm) typical 30 nW peak-to-peak @ 1480 nm
Temperature Coefficient <sup>7</sup>		
Power:		±0.1% /°C typical
Wavelength:		0.07 nm/°C typical (10°C—25°C) 0.03 nm/°C typical (25°C—40°C)

Linearity <sup>8</sup>		±0.1 dB, ±60 nW
-20 dBm to +40 dBm:		For 1 W of input power, ≥1 µW output (60 dB attenuation) Fiber Core: 62.5 µm FC/PC receptacle
Fiber Exit Port:		

#### GENERAL

Operating Temperature:	10°C—40°C
Storage Temperature:	-30°C to +70°C
Humidity:	<85% RH, non-condensing

Size (HxWxD):	86mm x 86mm x 100mm (3.4" x 3.4" x 4.0")
Weight:	1.34 kg (2.95 lbs)

### Fiber Optic Measurements

The OMH-6795B High Power Measurement Heads offer high sensitivity, wide-dynamic-range power and wavelength measurement of high power fiber optic sources. The low-noise detectors used in the heads are temperature controlled, ensuring high linearity and sensitivity. These heads support a variety of fiber optic adapters including FC, SC, LC and bare fiber.

#### NOTES

Typical values provide supplemental information beyond guaranteed specification limits.

- 1 This instrument's wavelength measurement technology provides "mean" wavelength i.e., all spectral contributions to which detectors are sensitive are measured. Stability of wavelength measurement increases with source linewidth i.e., wavelength measurements not stable for linewidths <1 GHz.
- 2 Typical photodiode response is linear over a 60 to 70 dB range between the effects of thermal noise and saturation of the diode. ILX power meter heads are calibrated above the noise threshold and linearity is verified in order to produce an accurate calibration for optical power measurements to 10 W.
- 3 950—1650 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 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.
- 5 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 to 5 mm from the holder. Add ±0.003 dB for NA >0.20.
- 6 Measured over 1 minute, in medium filter mode.
- 7 Measured in gain range 4
- 8 950 nm to 1650 nm. Total variation from straight-line response. Valid across range limits if measured in auto-range mode. Measured at 23 ±5°C, constant temperature. Add ±0.005 dB/dB for input power >20 dBm.

#### ORDERING INFORMATION

OMM-6810B	Optical Multimeter (GPIB included)
OMH-6795B	High Power/Wave head
BF-820	Bare Fiber Holder (requires CA-120 bare fiber adapter ring)
BF-601E	Ericsson® Clip Holder
CA-100	FC Adapter
CA-120	Bare Fiber Adapter Ring
CA-150	SC Adapter
CA-20001	LC Adapter
CA500	Accessory Case

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