

Product Features

NIST traceable calibration

Up to 30W of continuous optical power measurement

Simultaneous wavelength measurement from 800 to 1100 nm

Convenient fiber light exit port for external measurements

Integrating sphere based measurements

The OMH-67452B High Power measurement head provides the capability to measure up to 30 watts from today's high power laser diodes including high power single emitters and fiber lasers while simultaneously measuring wavelength from 800nm to 1100nm. The use of an integrating sphere and photodiode improves throughput in your device characterization stations by saving time in device measurement.

The 67452B measurement head is designed for the OMM-6810B Optical Power and Wavelength Meter. The measurement head provides the flexibility to quickly and accurately measure the optical power and wavelength through connectorized fiber devices. A one inch water cooled front integrating sphere and a temperature controlled photodetector provide continuous optical power measurement up to 30W with NIST traceable accuracy of $\pm 5.0\%$. 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 67452B

High Power / Wavehead



Measure up to 30 Watts
for today's high power laser diodes.

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

OMH 67452B

High Power /
Wavehead

Simultaneously Measure Power and Wavelength of High Power Laser Diodes

Combine precision power measurement capability with ILX Lightwave's unique wavelength measurement capability to deliver a cost effective laser diode measurement tool. With wavelength accuracy of ± 1.0 nm, the need for additional wavelength measurements in laser diode testing is eliminated, saving time and money. The combination of the OMM-6810B Optical Power/Wavelength Meter and the OMH-67452B provides the unique capability to "self calibrate" the wavelength dependent response of the 67452B. There is no need to enter a wavelength for an accurate power measurement; the instrument does it automatically by sensing the wavelength.

Specifications

WAVELENGTH MEASUREMENT

Wavelength Range:	800 to 1100 nm
Accuracy: ^{1,2}	± 1.0 nm
Minimum Power Required:	3 mW
Temperature Coefficient: ³	< -0.03 nm/ $^{\circ}$ C (typical)

POWER MEASUREMENT

Power Range: ⁴	3 μ W to 30W
Damage Threshold:	50W
Accuracy: ⁵	± 5.0 %
Polarization Dependent Response: ⁶	± 0.002 dB
Numerical Aperture (NA):	0.1 to 0.3 NA
Noise: ⁸	≤ 150 nW p-p
Continuous Duty with Water Cooling:	30W
10% Duty Cycle Intermittent Use w/o Water Cooling:	30W
Linearity (3 μ W to 30W): ⁹	± 0.05 dB, ± 180 nW
Entrance Aperture:	Fiber input, 2.54 mm
Sensor Type:	Silicon Photodiode
Temperature Coefficient:	0.15%/ $^{\circ}$ C (typical)
Fiber Exit Port:	60 dB attenuation using 62.5 μ m FC/PC receptacle

GENERAL

Operating Temperature:	+10 $^{\circ}$ C to 40 $^{\circ}$ C
Storage Temperature:	-20 $^{\circ}$ C to +60 $^{\circ}$ C
Humidity:	< 85 % RH, non-condensing

Compatible Connector Types:	FC/PC, FC/APC, LC, SC, E2000
Cooling:	Water cooled
Water Connections:	3/8" OD, 1/4" ID, 2 meter length
Size (HxWxD):	86mm x 86mm x 100mm (3.4" x 3.4" x 4.0")
Weight:	3.25 pounds (1.47 kg)

Increase Your Characterization Testing Throughput

Unlike thermal heads with delays of 10s of seconds before it can accurately measure power, the OMH-67452B measurements are instantaneous. The 67452B can quickly measure power and wavelength through the use of photodiode and integrating sphere technology. The OMH-67452B comes standard with a fiber pickoff to connect your OSA for spectral analysis. This eliminates additional process steps for generating spectral plots of your devices.

Measure With Confidence

The detectors in the OMH-67452B 30W power/wavehead are temperature-controlled to ensure that repeatable measurements are made independent of the measurement environment. The OMH-67452B is calibrated to NIST traceable standards in ILX's own calibration laboratory where accuracy and traceability are its primary concerns.

NOTES

1. Absolute wavelength measurement accuracy is specified for the range of 830nm to 1100 nm.
2. This instrument's wavelength measure 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 measurement not stable for linewidths < 1 GHz.
3. Measured with a 975 nm source at 1W optical input for the OHM-67452B.
4. 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 up to 30W.
5. Includes traceability to NIST. Calibrated at 21 $^{\circ}$ C $\pm 3^{\circ}$ C, at 10nm intervals, uncertainty evaluated according to NIST Technical Note #1297: "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Results". Accuracy specifications are verified with the wavelength entered manually (Instrument not in auto-wavelength mode). For auto-wavelength mode, add ± 0.7 % to the accuracy uncertainty.
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 $^{\circ}$ 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 to 5 mm from the holder. Add ± 0.003 dB for NA > 0.20 .
8. Measure over 1 minute, in medium filter mode at 975 nm.
9. Total variation from straight-line response. Valid across range limits if measured in auto-range mode. Measured at 975 nm, 23 $\pm 5^{\circ}$ C, constant temperature. Add ± 0.005 dB/dB for input power > 20 dBm.

ORDERING INFORMATION

OMM-6810B	Optical Multimeter (GPIB included)
OMH-67452B	30W Power/Wave Head
BF-820	Bare Fiber Holder
CA-100	FC Adapter
CA-120	Bare Fiber Adapter Ring
CA-150	SC Adapter
CA-20001	LC Adapter

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


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