

Shown is our LM-4Z-S
Zenith Laser Power
Measurement System



LM Series Laser Power Measurement Systems

SphereOptics offers a wide selection of Laser Power Measurement Systems for precise measurement of the total output power of lasers and laser diodes. The systems are available with various detector options to meet an extended range of applications. Each system consists of an integrating sphere with mounting post and base, a detector assembly, and a picoammeter. Sphere sizes include a choice of 2, 4 or 6-inch diameters in either Optowhite® or Zenith® interior materials. System calibration options, described on the reverse of this data sheet, are traceable to national laboratory standards.

FEATURES

- Sphere design spatially insensitive to $\pm 40^\circ$ H and $\pm 85^\circ$ V
- Signal from sphere/detector combination is independent of input beam geometry
- Multiple detector options:
 - Silicon, Germanium and InGaAs
- Multiple detector ports for pulsed and average power characterization
- Fiber adaptors for spectral distribution analysis
- Precision picoammeter provides up to 1000 readings per second
- NIST traceable system calibrations

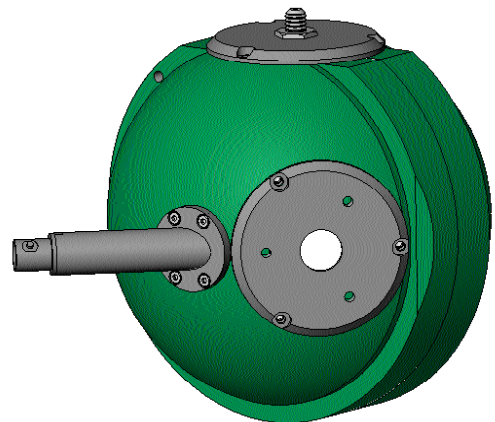
APPLICATIONS

- Measure
 - collimated & divergent lasers and light sources
 - laser diode devices
 - laser output

Integrating Sphere Design

Our *LP Series* laser power measurement sphere design incorporates a forward-offset detector port. This 0.50 inch port has a special adapter to baffle the field-of-view, allowing $< 1\%$ angular responsivity variation over $\pm 40^\circ$ horizontally and $\pm 85^\circ$ vertically. The adapter features an inset area that allows filters to be placed in front of the detector.

The design incorporates two additional ports; one at north pole and one 90° clockwise from the input port. The north pole port accepts any of our SMA, FC/PC or ST fiber adapters for looking at the spectral distribution of the input energy. The 90° port may be used for additional detectors, and is supplied with a port plug. The LP series spheres are also available individually or as sphere/detector assembly models. See our LP Series Laser Power Measurement Sphere data sheet for additional information.



SYSTEM POWER SOURCE

Each system includes a 5 1/2 digit, Model 6485 Keithley picoammeter that features eight current measurement ranges and high-speed auto-ranging. This cost-effective instrument measures currents from 20fA to 20mA, with speeds up to 1000 readings per second. The instrument includes both RS-232 and IEEE 488.2 interfaces providing easy integration for automated readings.

SYSTEM CALIBRATION OPTIONS

Systems can be calibrated for spectral power responsivity by purchasing one or more of the following optional calibrations. A calibration certificate and tabular data are included with each calibration purchased.

Custom calibrations are available upon request.

SR-5-S	Full range 250 to 1100 nm, every 10 nm (A/W) Silicon spectral power responsivity
SR-5-S-1	Single wavelength, Silicon spectral power responsivity
SR-5-G	Full range, 800 to 1800 nm, every 10 nm (A/W) Germanium spectral power responsivity
SR-5-G-1	Single wavelength, Germanium spectral power responsivity
SR-5-I	Full range, 900 to 1700 nm, every 10 nm (A/W) InGaAs spectral power responsivity
SR-5-I-1	Single wavelength, InGaAs spectral power responsivity

SPECIFICATIONS AND ORDERING INFORMATION

SINGLE DETECTOR SYSTEMS

Order Number	Sphere Dia. (in)	Port Dia. (in)	Sphere Interior	Detector Type	Calibration Range	Noise Equivalent Power
LM-2-S	2	0.50	Optowhite	Silicon	250 - 1100 nm	1E-10W at 850 - 980 nm
LM-2Z-S	2	0.50	Zenith	Silicon	250 - 1100 nm	3E-11W at 850 - 980 nm
LM-2Z-G	2	0.50	Zenith	Germanium	800 - 1800 nm	1E-10W at 860 - 980 nm
LM-2Z-I	2	0.50	Zenith	InGaAs	900 - 1700 nm	5E-11W at 850 - 980 nm
LM-4-S	4	1.00	Optowhite	Silicon	250 - 1100 nm	4E-10W at 850 - 980 nm
LM-4Z-S	4	1.00	Zenith	Silicon	250 - 1100 nm	1E-10W at 850 - 980 nm
LM-4Z-G	4	1.00	Zenith	Germanium	800 - 1800 nm	4E-10W at 850 - 980 nm
LM-4Z-I	4	1.00	Zenith	InGaAs	900 - 1700 nm	2E-10W at 850 - 980 nm
LM-6Z-S	6	1.50	Zenith	Silicon	250 - 1100 nm	7E-11W at 850 - 980 nm
LM-6Z-G	6	1.50	Zenith	Germanium	800 - 1800 nm	2E-10W at 850 - 980 nm
LM-6Z-I	6	1.50	Zenith	InGaAs	900 - 1700 nm	4E-10W at 850 - 980 nm

DUAL DETECTOR SYSTEMS

LM-4Z-ISI	4	1.00	Zenith	InGaAs/Si	900 - 1700 nm 250 - 1100 nm	2E-10W at 850 - 980 nm
LM-6Z-ISI	6	1.50	Zenith	InGaAs/Si	900 - 1700 nm 250 - 1100 nm	4E-10W at 850 - 980 nm



USA
SphereOptics, LLC
Tel: 603-715-3000 • US Sales 858-695-2895
Fax: 603-225-3089
Email: sales@sphereoptics.com

GERMANY
SphereOptics GmbH
Tel: +49 (0) 7556 929 9666
Fax: +49 (0) 7556 50108
Email: infode@sphereoptics.com

FRANCE
SphereOptics SARL
Tel: +33 (0) 1 69 07 21 84
Fax: +33 (0) 1 69 07 71 38
Email: infofr@sphereoptics.com

As part of our product improvement program, specifications are subject to change without notice.

08-05/LPMS