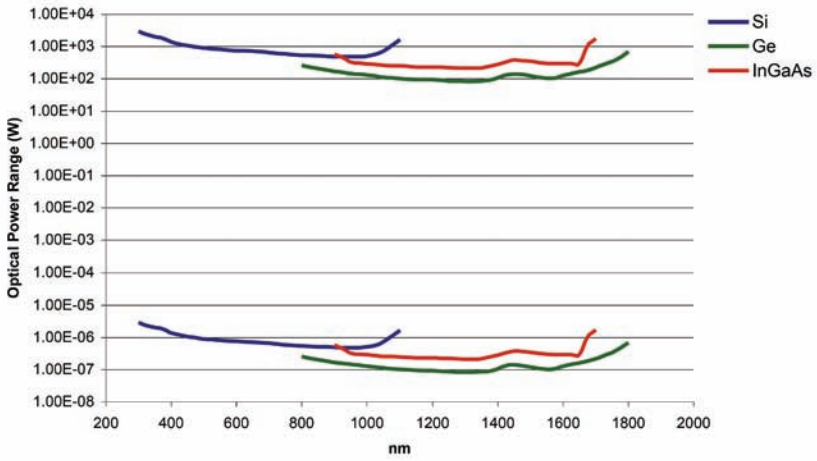
LPMS LASER POWER MEASUREMENT SYSTEMS

Accurate, reproducible method of determining total laser and laser diode power

POWER MEASUREMENT RANGE* FOR LPMS-040-SF-SI SYSTEM (AS-02492-100)



** The above graph indicates the maximum power that can be introduced in the sphere before detector saturation appears. The maximum useable power range for Labsphere's LPMS systems is determined by the thermal stability limits of the sphere coating/material, which should not exceed 400°C for Spectralon, 100°C for Spectraflect, and 500°C for Infragold.*

OPTIMAL DESIGN FOR BEAM POWER MEASUREMENTS

The Labsphere Laser Power Measurement Systems (LPMS) series assures an accurate, reproducible method of determining the total power from a collimated or divergent laser or laser diode. Specifically designed for laser applications, LPMS spheres are ideal for measuring the total power of a beam of optical radiance. Because of the unique geometry of the sphere, beam power measurements are independent of beam polarization, and are insensitive to beam alignment.

The attenuation which accompanies the sphere throughput also alleviates detector saturation. The systems can be used with an open port and can be apertured with an array of optional fiber adaptors for laser diode modules or port reducers.

FEATURES:

Spectraflect, Infragold or Spectralon sphere interiors for reduced alignment sensitivity

Sturdy port frames for mounting fiber accessories

Second detector port for a spectrometer or additional fiber

Three integrating sphere size options

Three detector options

NIST traceable system calibrations

BEST FOR MEASURING:

Lasers

Laser diodes

Laser diode modules

Divergent monochromatic sources

ACCURATE

An input port that permits a beam of radiation is machined into the sphere. A detector, located 45° from the entrance port, views the sphere wall next to the entrance port. The field of view of the detector is designed to limit the viewing area so that highly divergent sources may be input without effecting measurement accuracy.

The systems provide options for laser power measurement over the 300 to 1800 nm wavelength region for optical powers ranging from 0.1uw to hundreds of watts. The system's calibrations are traceable to the National Institute of Standards and Technology (NIST).

The 2-, 4-, or 6-inch diameter integrating spheres are coated with either Labsphere's Spectraflect® or Infragold®, or fabricated from our highly reflective diffuse material Spectralon®. Both durable and highly stable over time, these diffuse reflective interiors ensure the accurate integration of light.

FLEXIBLE DESIGN

Each system consists of a laser power measurement sphere, post, post holder and base assembly, a detector assembly, SC 6000 programmable radiometer/ photometer and multi-wavelength calibration. A second detector port gives the user the flexibility to add an additional detector assembly for broader spectral sensitivity, or add a spectrometer for spectral characterization.

LASER POWER MEASUREMENT SYSTEM

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Specifications

Model	Coating	Si	GE	IN
LPMS-020-XX-YY	SF	AS-02489-100	AS-02489-300	AS-02489-400
	SL	AS-02488-100	AS-02488-300	AS-02488-400
	IG		AS-02490-300	AS-02490-400
LPMS-040-XX-YY	SF	AS-02492-100	AS-02492-300	AS-02492-400
	SL	AS-02491-100	AS-02491-300	AS-02491-400
	IG		AS-02496-300	AS-02496-400
LPMS-060-XX-YY	SF	AS-02495-100	AS-02495-300	AS-02495-400
	SL	AS-02493-100	AS-02493-300	AS-02493-400
	IG		AS-02497-300	AS-02497-400

XX: Coatings: SF Spectraflect, SL Spectralon, IG Infragold
YY: Detectors: (Si) Silicon, (Ge) Germanium, (IN) InGaAs Indium Gallium Arsenide

System Includes:
Laser Power Measurement Sphere: 2 inch, 4 inch, or 6 inch
Detector: Si, Ge, or InGaAs
SCC-PM Calibration
SC 6000 Radiometer/Photometer

System Properties and Performance

System Specifications	LPMS-020	LPMS-040	LPMS-060
Sphere Diameter	2 inch (5 cm)	4 inch (10 cm)	6 inch (14.4 cm)
Entrance Port Frame Diameter	1 inch (2.5 cm)	1 inch (2.5 cm)	1 inch (2.5 cm)
Sphere Coating Reflectance	98% Spectralflect 99% Spectralon 95% Infragold		
Detector Port #1 (holds standard 12.7mm diameter optical filters)	For system detector		
Detector Port #2 (holds standard 12.7mm diameter optical filters)	Use for optional second detector, fiber spectrometer for spectral characterization, or cap when not in use		

Laser Power Measurement System		Standard Calibration
Si Detector System	SCC-PM-SI	300 nm to 1100 nm in 25 nm increments LPMS, Silicon
Ge Detector System	SCC-PM-GE	800 nm to 1800 nm in 25 nm increments LPMS, Germanium
InGaAs Detector System	SCC-PM-IN	900 nm to 1700 nm in 25 nm increments LPMS, InGaAs

Each standard system comes with a multiple wavelength spectral responsivity calibration. The SC 6000 radiometer is programmed to display the laser optical power in units of watts.

Detector	Silicon	Germanium	InGaAs
Active Area	4.5 mm^2	19.6 mm^2	7 mm^2
Range	190 - 1100 nm	800 - 1800 nm	900 - 1700 nm
Peak Responsivity (A/W)	0.5 a/w @950 nm	0.9 a/w @1550 nm	0.9 a/w @1300 nm

Radiometer/Photometer	SC 6000
Power Requirements	110./220 VAC, 50/60 Hz
Current Dynamic Range	1 pA – 20 mA
Computer Interface	Ethernet

Optional Calibration
Single Wavelength Power Calibrations, SCC-PS: Calibration laser power meter at a single wavelength of choice. Specify desired wavelength of calibration when ordering.

Optional Accessories
Fiber Adaptors
Detectors
Optical Filters
Port Plugs
Port Reducers