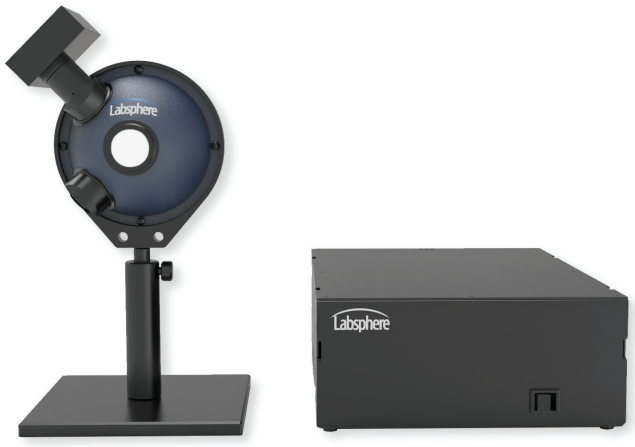
LPMS-200M 200 MHz High Speed Pulsed Laser Power Detection Systems

Exceptional sensitivity and precise measurements



Laser technologies can be categorized based on their working methods, specifically as continuous lasers and pulsed lasers. Pulsed lasers are known for their short pulses and high peak power. In recent years, the applications of pulsed lasers have expanded significantly, finding use in optical communication, high precision processing, biomedical applications, spatial three-dimensional sensing, and various other domains.

Due to the characteristics of pulsed lasers, it also brings new challenges to traditional optical inspection systems. If the power of the pulsed laser changes with the time cycle, it is necessary to sample and analyze the laser power in one or more cycles, and then obtain the peak power, average power, pulse width, duty cycle and other characteristics of the laser. As the frequency of pulsed lasers gradually increases, the performance requirements for all aspects of the system gradually increase.

Based on more than 40 years of experience in the development of optical inspection systems, Labsphere has developed the LPMS-200M high speed pulsed laser power detection systems. These systems can provide a complete set of optical inspection solutions for high-speed pulsed lasers, which is ideal for product development and production line quality inspection.

The LPMS-200M systems use a highly sensitive, highly stable high-speed detector with extremely low dark current and spectral response ranging from ultraviolet cover to infrared. The systems feature a high speed power meter specially developed by Labsphere for high speed pulsed laser detection, which can achieve a sampling rate of 500 M/s.

This hardware can be coupled with Labsphere's standard or custom integrating spheres featuring one of our proprietary coatings such as Infragold®, Spectralon®, or Spectraflect® for a complete solution. The measurement results are stable and reliable and traceable to NIST.

In addition, the systems are equipped with powerful and easy-to-use power test software. The software can measure a range of parameters such as laser peak power, average power, frequency, pulse width and more. Measurement results can be saved and exported for analysis. The software provides an open API that allows customers to engage in secondary development as per their specific requirements. This flexibility enables customers to customize and extend the software's functionality according to their unique needs.

The LPMS-200M systems compact size allows for easy line integration and lab development.

Features:

- High speed sampling, up to 500M S/s sampling rate
- Bandwidth 200 MHz
- High hardware resolution (Up to 16 bit resolution)
- Dual simultaneous sampling and compatible with external triggers
- Powerful software features with open APIs

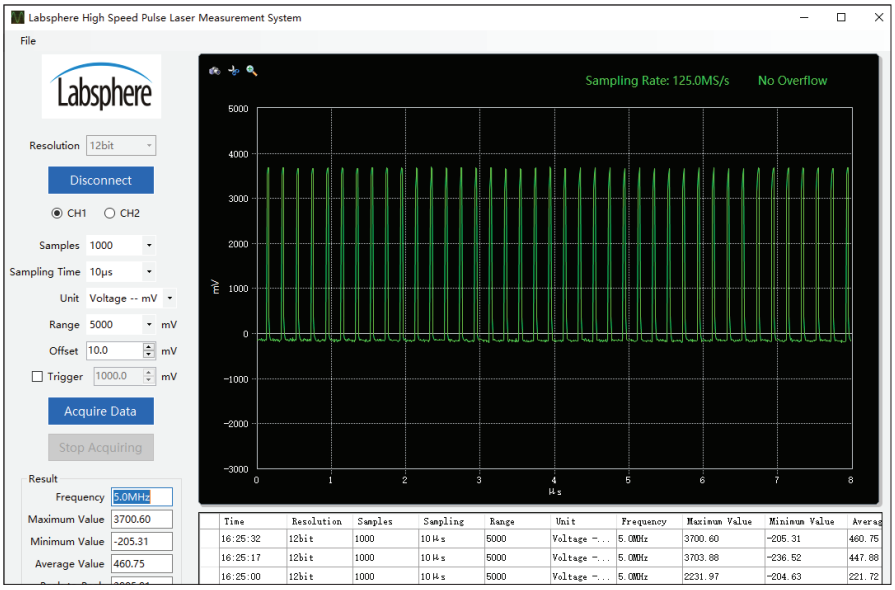
HSD-VIS/NIR
High-Speed Visible/Infrared Detectors

To complement your LPMS-200M, we offer two detector options that provide exceptional performance. These detectors offer high frequency response, low noise level, high linearity, high sensitivity, and consistently reliable test results. With spectral response ranging from the visible to the infrared band, these detectors cater to a wide range of applications, from research and development to production requirements.

Features:

- High frequency response
- High signal-to-noise ratio
- High linearity
- High gain

User Interface



- Simple one page software to set all the parameters and read results
- Text based calibration file for easier customer modification
- Dark noise subtraction by software
- Single measurement and continuous scanning
- Easily switch between software trigger and hardware trigger
- Standard and customized solutions available

Ordering Information and Specifications

System Model Number:	**LPMS-200M-VIS-040-SL**	**LPMS-200M-NIR-040-SL**
System Order Number:	**AA-01624-040**	**AA-01624-041**
Photosensitivity Area:	ϕ0.4 mm	ϕ0.5 mm
Calibration Wavelengths: (nm)	450, 520, 635, 650, 780, 810, 850, 905, 940, and 980	850, 905, 940, 980, 1064, 1310, and 1550
Software Part Number:	LAS-00366-002	LAS-00366-002
PreAmp	**LFPM-200M**	**LFPM-200M**
Bandwidth:	200 MHz	200 MHz
Maximum Sampling Rate:		
Sampling at 8 bit resolution:	500M Samples per second (S/s)	500M S/s
Sampling at 12 bit resolution:	250M S/s	250M S/s
Sampling at 14 bit resolution:	125M S/s	125M S/s
Sampling at 16 bit resolution:	62.5M S/s	62.5M S/s
Number of Channels:	2	2
AD Conversion:	8 bit, 12 bit, 14 bit, 16 bit	8 bit, 12 bit, 14 bit, 16 bit
Hardware resolution:	BNC	BNC
Data Transmission Interface:	USB 3.0	USB 3.0
Dimensions:	12 in (30 cm) x 8 in (21 cm) x 3.5 in (9 cm)	12 in (30 cm) x 8 in (21 cm) x 3.5 in (9 cm)
Power Meter Weight:	3.3 kg	3.3 kg
Detector	**HSD-200-VIS**	**HSD-200-NIR**
Detectable Wavelength Range:	450 nm - 980 nm	850 nm - 1550 nm
Bandwidth:	200 MHz	200 MHz
Sensor:	Silicon	InGaAs
Spectral Response:	320 nm - 1000 nm	800 nm - 1700 nm
Gain:	10000 V/A	10000 V/A
Output Noise RMS:	5 mV	5 mV
Maximum Output Voltage:	2 V	2 V
I-V Conversion Linearity Error:	<0.2%	<0.2%
Dimensions:	3 in (7 cm) x 2 in (5.5 cm) x 1 in (3 cm)	3 in (7 cm) x 2 in (5.5 cm) x 1 in (3 cm)
Weight:	0.15 k g	0.15 kg
Integrating Sphere	**3P-LPM-040-SL**	**3P-LPM-040-SL**
Sphere Material:	Spectralon	Spectralon
Sphere Diameter:	4 in (10 cm)	4 in (10 cm)
Sphere Entrance Port Dia: (port frame)	1 in (2.5 cm)	1 in (2.5 cm)
Sphere Sensor Port: (nominal)*	2, 0.5 port frames	2, 0.5 port frames
Post:	4 in (10 cm)	4 in (10 cm)
Post Holder:	4 in (10 cm)	4 in (10 cm)
Base:	6 in (15 cm)	6 in (15 cm)

* A second sensor port on the sphere is provided for the purpose of axillary measurements such as a spectrometer or wavemeter to measure peak wavelength and other spectral quantities.