# LFPM-200K-2CH High Speed Pulsed Optical Power Meter

## High speed, accurate, and stable

The LFPM-200K-2CH from Labsphere is a high speed optical power meter designed for the continuous and pulse measurement of photodetector currents. When paired with laser power measurement sphere sensors, it provides a quick and convenient solution for testing and characterizing laser and laser-based systems. This adaptable instrument is valuable for both continuous and pulsed laser power measurement, catering to the requirements of research and development as well as production line applications.

The LFPM-200K-2CH is equipped with an impressive high-speed detection capability, allowing for sampling frequencies of up to 200 kHz from 2 separate channels. To accommodate signals at various levels, the LFPM-200K-2CH incorporates 6 gains, providing a dynamic range of at least 10^6. The instrument utilizes a 16 bit analog-to-digital (AD) converter ensuring high-resolution data acquisition. Additionally, the LFPM-200K-2CH features an external trigger function that enables synchronized measurements with pulsed power sources, enhancing measurement precision and versatility.

The LFPM-200K-2CH comes with robust software that seamlessly controls the hardware gain, optimizing the readout for the best operational mode. This intelligent feature significantly minimizes the need for manual control and enhances measurement throughput.

The software is designed to be user-friendly and straightforward, enabling easy operation. Measurement results, including the maximum value and mean value, can be conveniently accessed from the software interface. Furthermore, the software allows for data recording and saving onto the hard disk, facilitating post-processing and analysis of the acquired data.

### Features:

- Accurate and fast data acquisition (Max. 200 kHz)
- Synchronous measurement by external trigger
- High dynamic range (10 E6)
- High ADC resolution (16 bits)
- Powered via USB port


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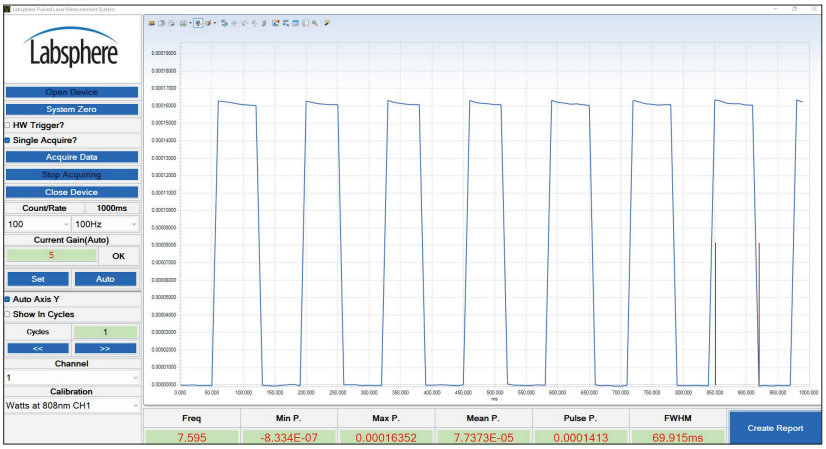
# User Interface




- We can provide SDK in C#/C++/LabView and a demo in Python calling C# API
- 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
- Channel selectable via software
- Easy switch between software trigger and hardware trigger (10 seconds timeout)
- If you need customized software, talk to us

# Ordering Information and Specifications

| | |
|---|---|
| **Model Number:** | **LFPM-200K-2CH** |
| **Order Number:** | **LAS-00129-000** |
| Maximum Sampling Frequency: | 200 kHz |

| Current Range: | 1nA - 10mA Range Specifications: | | |
|---|---|---|---|
| Gain | Resolution | Accuracy (%rdg ± offset) | Bandwidth Hz(-3dB) |
| <± 100 nA | 3 pA | 1% ± 0.2 nA | 20 kHz |
| ± 1 µA ~ ± 100 nA | 30 pA | 0.5% ± 1 nA | 200 kHz |
| ± 10 µA ~ ± 1 µA | 0.3 nA | 0.5% ± 10 nA | 200 kHz |
| ± 100 µA ~ ± 10 µA | 3 nA | 0.5% ± 0.1 µA | 200 kHz |
| ± 1 mA ~ ± 100 µA | 30 nA | 0.5% ± 1 µA | 200 kHz |
| ± 10 mA ~ ± 1 mA | 0.3 µA | 0.5% ± 10 µA | 200 kHz |

| | |
|---|---|
| Ranging: | Auto and Manual |
| Typical RMS Noise: | 0.2 pA |
| Linearity Error: | 0.5% (>1 µA); 1% (<1 µA); 3% (<100 nA) |
| AD Bits: | 16 bit |
| Buffer: | Directly write to RAM |
| ADC Resolution: | 16 bits |
| Significant Figures: | 5 |
| Nonlinearity: | 0.5% (>1 µA); 1% (<1 µA); 3% (<100 nA) |
| Reading Rate: (readings /second) | DC~200 kHz |
| Rise Time: | 3 µs (Range Dependent) |
| Data Storage: | RAM Storage Dependent |
| Compatible Detectors: | Silicon Photodiodes, InGaAs Photodiodes |
| Inputs: | 2 Channels |
| Input Connection: | BNC Coax |
| Noise Correction: | Dark Correction |
| External Trigger: | Yes |
| Trigger Line: | TTL 3 to 5 V |
| Power: | USB, <500 mW |
| Power Input: | USB 2.0 |
| Communication Interface: | USB 2.0 |
| Operating Systems: | Windows 10, Linux (software for windows only) |
| User Interface: | Windows Software UI |
| Software: | Labsphere Pulsed Laser Power Measurement System Software |
| Software Part Number: | LAS-00366-001 |
| Software Customization: | API Included |
| Programming: | C#, C++, LabView |
| Operating Environment: | 10°C ~ 30°C RH<90% |
| Dimensions: | 11.8 in (300 mm) L x 8.26 in (210 mm) W x 3.5 in (90 mm) H |
| Weight: | 2 kg |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