

SCATTERED LIGHT SEPARATION AND PHOTODETECTOR SYSTEM MODEL PDM



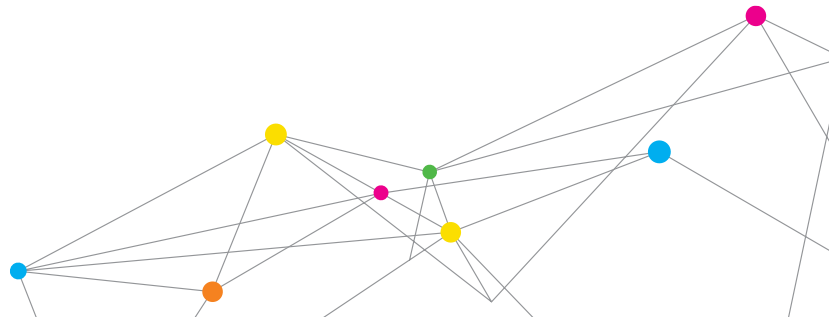
TSI's Photodetector Module (PDM) system combines an enhanced scattered light separation unit with high performance photodetectors for Phase Doppler Particle Analyzer (PDPA) and Laser Doppler Velocimeter (LDV) applications. The system is optimized for the best dynamic and operating size ranges, yet allows the freedom to adjust system parameters easily. System operation is controlled by TSI's FlowSizer™ Data Acquisition, Analysis and Display Software.

Features and Benefits

- + Compact size and easy operation
- + High-efficiency color separation
- + Front panel status lights
- + Complete package can be upgraded from 1D LDV through 3D PDPA
- + Fully automated calibration diode system for PDPA applications
- + Matched set of PMTs for particle size measurements
- + Intensity output for size separation in multi-phase flows



UNDERSTANDING, ACCELERATED



SPECIFICATIONS

SCATTERED LIGHT SEPARATION AND PHOTODETECTOR SYSTEM MODEL PDM

Number of Photodetectors

1 to 5

Photodetector Type

High sensitivity photon counting

Bandwidth

DC to 300 MHz

Maximum Anode Voltage

1000 V

High Pass Filters

5 or 20 MHz (software-selectable)

Intensity Measurement

12 bit A/D

Optical Design

Removable/replaceable optics module

Upgradable from LDV to PDPA

Yes

Upgradable from 1D to 2D

Yes

Upgradable from 2D to 3D

Yes

Dimensions (H x W x D)

35.5 × 11.5 × 23 cm (14 × 4.5 × 9 in.)

Specifications are subject to change without notice.

FlowSizer is a trademark, and TSI, and the TSI logo are registered trademarks of TSI Incorporated.

Operation

The PDM unit uses high-frequency-response photodetectors to convert scattered light to electrical signals. This unit can be used with the PowerSight module or argon-based systems. A matched set of PMTs is used for phase Doppler measurements. A computer-controlled diode calibration system removes the effects of electronic delays between the three sizing channels and optimizes PDM system operation for particle sizing applications. The diode calibration system generates simulated bursts at any frequency, with very high resolution, to cover the amplitude and frequency range of the signal processor. The FlowSizer™ software provides a convenient user interface for operating the diode calibration system.

The PDM system requires no alignment. Simply connect the receiving fiber to the PDM and the color-separated signal outputs are available for sending to the signal processor. Scattered light from the receiving fiber (fibers) is separated by wavelength, with color filters eliminating potential color contamination before the scattered light reaches the photodetectors.

The photodetector voltage is controlled and monitored via software to optimize the signal quality. A built-in control circuit prevents saturation of the photomultiplier tubes. The PDM also includes a 12-bit A/D converter used to measure pedestal intensity (for phase/Doppler and two-phase flow applications).

TO ORDER

PDM Scattered Light Separation and Photodetector System

Specify	Description
PDM 1000-1 or PDM 1000-1ss	One-channel system for velocity (LDV) measurements
PDM 1000-2 or PDM 1000-2	Two-channel system for velocity (LDV) measurements
PDM 1000-3 or PDM 1000-3ss	Three-channel system for velocity (LDV) measurements
PDM 1000-1P or PDM 1000-1Pss	One-channel system for size (PDPA) and velocity (LDV) measurements
PDM 1000-2P or PDM 1000-2Pss	Two-channel system for size (PDPA) and velocity (LDV) measurements
PDM 1000-3P or PDM 1000-3Pss	Three-channel system for size (PDPA) and velocity (LDV) measurements



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