

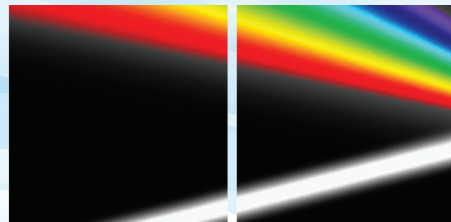


PMT Housings

Ambient PMT Detection System

ELEMENTAL ANALYSIS
FLUORESCENCE
GRATINGS & OEM SPECTROMETERS
OPTICAL COMPONENTS
FORENSICS
PARTICLE CHARACTERIZATION
RAMAN
SPECTROSCOPIC ELLIPSOMETRY
SPR IMAGING

PDS-3000 ambient PMT housing



For spectroscopy and microscopy experiments in the UV/Vis/NIR region of the spectrum, a photomultiplier tube (PMT) is the ideal detector for quantitative low light level measurements. A PMT is extremely sensitive, with very wide dynamic range so it can also measure high levels of light. PMT's are also very fast so rapid changes in optical signals can be reliably monitored. As a practical matter, PMTs are durable, long-lived, and economical.

Optical Building Blocks provides a simple, self-contained PMT housing that operates in either analog or photon counting modes with the flick of a switch. This ambient PMT housing is ideal for standard side-on PMTs that are used from 185 to 900 nanometers. It has a very low dark count for a non-cooled PMT housing providing a dark count of only ~ 50 to 500 counts per second (cps) depending on the PMT selected.

Features and Benefits

- Compact size
- Inexpensive
- Operates in Analog or Photon Counting Modes
- Detection from 185 to 900 nm
- Complete package
- LCD display of output signal
- Easy to Use

The OBB ambient PMT housing includes the following

- On/off switch
- Complete analog and photon counting circuitry
- Analog or photon counting mode/output switch
- Line voltage power supply
- High voltage power supply
- LCD display of PMT high voltage or measured analog signal
- Signal out BNC connection
- High voltage adjustment knob
- External high voltage control input BNC connection (for optional external control)
- RF shielded case
- Internal socket for most 1 1/8-inch side-on photomultiplier tubes

Optional PMTs

- Photon Counting or Analog PMT, 185 - 900 nm
- Photon Counting or Analog PMT, 185 - 680 nm



Specifications (single, dual or triple detector)

Control Specifications

Display LCD display of high voltage or signal

Controls On/Off switch
Analog/Digital Mode switch
Voltage/Signal Display switch
Voltage Adjust potentiometer
Analog Gain selection
Analog Time Constant selection
Analog Offset

BNC Connectors Signal out
External voltage control

High Voltage Power Supply Specifications

Input ± 15 VDC, 250 mA

High voltage -200 to -1,100 VDC manually adjustable LCD displays actual cathode voltage

External high 0 to +5 VDC (0 = -200 V, 5 = -1,100 V)

Voltage adjust Continuously adjustable

Input regulation $\pm 0.05\%$ max. (for 15 V ± 1 V input).

Load regulation $\pm 0.05\%$ max.

Ripple 100 mV p-p max.

Temperature coefficient $\pm 0.01\%$ max. (+5 to 40°C)

Drift $\pm 0.03\%/hr.$ max. (after 15 minute warm-up)

AC Adapter Specifications

Input 115 or 220 VCA (specify at time of order)

Output ± 15 VDC, 250 mA

Analog Mode Specifications

Gain settings 1 μ A = 1 V, 0.1 μ A = 1 V, 0.01 μ A = 1 V, 0.001 μ A = 1 V

Time constant settings 0.05 msec, 0.5 msec, 5 msec, 50 msec, 500 msec (0.5 sec)

Offset correction ± 50 nA

Signal output on BNC connector Analog voltage

Photon Counting Mode Specifications

Linear dynamic range 5 orders of magnitude*

Dead time 250 ns

Signal output on BNC connector TTL

* Linear dynamic range of the OBB photon counting PMT housing. The intensities were produced by attenuating the fluorescence emission of a fluorescein sample with neutral density filters.



OPTICAL BUILDING BLOCKS



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