HORIBA Scientific

# PMT Micro-Photometer

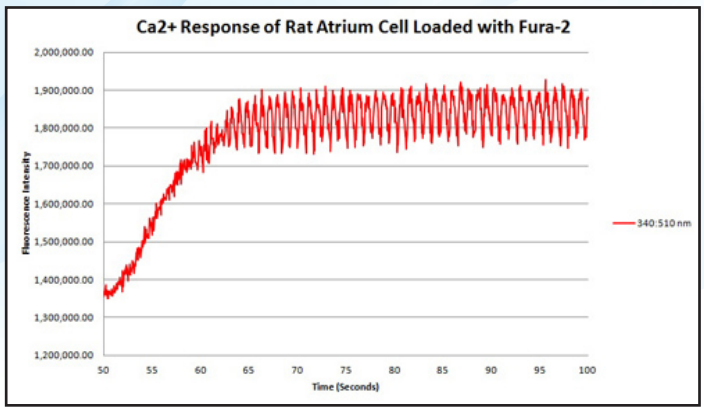
## Microscope PMT Photometer

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

**Designed for intracellular $Ca^{2+}$. Ideal for low light, high speed detection**

HORIBA PTI

OBB's microscope photometers are ideal for any lab wishing to quantify light intensity from a sample on a microscope stage. Initially designed for the most demanding low light level fluorescence kinetics of labeled mammalian cells, these photometers are also just as well suited for mineral analysis or transmission studies.




## Features and Benefits

- Compact, easy to use and very affordable
- Couples to any microscope C-mount
- BNC signal output to any A/D interface
- Analog PMT output signal connects directly to BNC input on any DAC (no software is required)
- Analog signal LCD display provides light measurement without A/D or software
- Analog or photon-counting detection
- Adjustable target aperture
- Single, dual or triple detector channels
- PMT detection is 10,000 times more sensitive than a photodiode for low light level detection
- Wide spectral range from the UV to the NIR

## Applications

- Intracellular $Ca^{2+}$ research
- Simultaneous measurement of $Ca^{2+}$ and myocyte cell length
- Patch clamp electrophysiology research
- Vitrinite coal reflectometry
- Nanoparticles
- Quantum dots
- Materials research

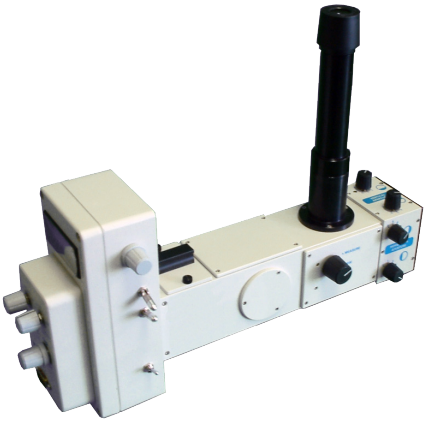


Image courtesy of, Prof. Dr. György Panyi, Department of Biophysics and Cell Biology, University of Debrecen

### Ideal for Patch Clamp Electrophysiology Research

Shown is a picture of a PTI/OBB dual emission photometer attached to the C-mount of an inverted fluorescence microscope. The microscope is also equipped with electrophysiology recording devices and perfusion apparatus. The entire setup is inside a Faraday cage for electrical isolation.

## Specifications (single, dual or triple detector)

| | |
|---|---|
| **Detector Control Specifications** | |
| **Display** | LCD display of high voltage or signal |
| **Controls** | On/Off switch<br>Analog/Digital mode switch<br>Voltage/Signal display switch<br>Voltage Adjust potentiometer<br>Analog Gain selection<br>Analog Time constant selection<br>Analog Offset |
| **BNC connectors** | Signal out<br>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** | ± 0.05% max. (for 15 V ± 1 V input). |
| **Load regulation** | ± 0.05% max. |
| **Ripple** | 100 mV p-p max. |
| **Temperature coefficient** | ± 0.01% max. (+5 to 40°C) |
| **Drift** | ± 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 Detection Unit Specifications** | |
| **Gain settings** | 1 µA = 1 V, 0.1 µA = 1 V, 0.01 µA = 1 V, 0.001 µA = 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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