

# Photomultiplier module

*High dynamic range detectors for analog + photon counting measurements*



## The best choice for pulsed dynamic signals

The High Dynamic Range Photomultiplier from Licel has been specifically optimized to enhance the results of your measurements in pulsed applications. The compact design combines a stabilized dynode chain for strong light pulses with fast rise times and narrow pulse widths for high single photon count rates. This combination allows high dynamic range measurements by using both analog and

photon counting measurements together, thus extending the linear dynamic range to 5 orders of magnitude. Additional advantages are reduced space charge effects and higher light levels that can be measured without suffering from nonlinearities. These qualities make the Licel High Dynamic Range Photomultiplier your ideal detector for applications such as Lidar, fluorescence detection and other spectroscopic methods

## Features:

- stabilized dynode chain
- overcurrent protection
- single photon pulse width <2.2 ns
- high pulse load stability
- HV remote control option
- compact design
- interface to lens tube system

## Specifications

### Detector:

cathode diameter: 8 mm  
spectral sensitivity./dark counts:  
Bialkali cathode-06: 160-650 nm/ 500cps  
Bialkali cathode-03: 185-650 nm/ 80 cps  
Multialkali cathode-01: 300-850 nm/ 80 cps  
Multialkali cathode-02: 300-880nm  
Multialkali cathode-04: 185-850 nm/ 500 cps  
max. average anode current: 0.1 mA  
gain:  $10^5$ - $10^6$

### Signal specs:

single photon rise time: <1.3 ns  
single photon width (FWHM) <2.2 ns  
pulse load stability, HV=850V,  
100mV signal / 60µs <0.15%

### HV supply:

voltage range: -100...-1kV  
max. current: 2 mA  
voltage ripple: <1mV (DC to 20 MHz)  
remote control voltage 0..+5V

### Mechanics:

PMT module size: 60.7 x 25mm  
PMT module weight: 50 g  
Optical interface: O-ring sealed mount or  
adapter for 1" Thorlabs lens  
tube system  
High voltage supply: 50.5x128.4x103mm  
3 height units, 10 width units  
standard cassette

### Connectors:

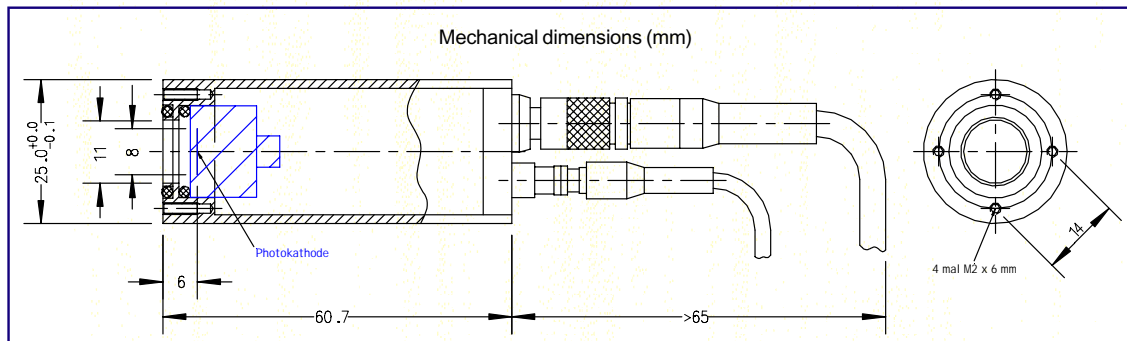
Signal out: Minax/BNC  
HV to PMT: Lemo Camac  
HV power supply: H11 connector

### Power supply:

15V DC, 250mA

### Environmental conditions:

Operating temperature: 0°C to 30°C (non  
condensing)  
Storage temperature: -40°C to 70°C



### International distribution:

#### USA:

Boston Electronics Corp.  
91 Boylson Street  
Brookline MA 02445

phone (800)347-5445  
fax (617)731-0935  
e-mail: boselec@world.std.com  
www.boselec.com

#### Japan:

Electronics Optics Res., Ltd.  
3-fl., Onoda Building,  
4-26-19, Koenzi-Minami-Ku  
Tokyo 166, Japan

phone 03-3314-5699  
fax 03-3314-2333  
email eor@tkd.att.ne.jp

#### United Kingdom:

Photonic Solutions PLC  
Gracemount Business Pavillions,  
40 Captains Road,  
Unit A2/A3, Edinburgh, EH17 8QF

phone: 0131 664 8122  
fax: 0131 664 8144  
email: sales@psplc.com  
www.psplc.com

#### other countries:

Licel GbR  
Chausseestr. 34/35  
D-10115 Berlin

phone +49.30.283 917 37  
fax +49.30.283 917 38  
e-mail: info@licel.com  
www.licel.com