Photomultiplier module

High dynamic range detectors for analog + photon counting measurements

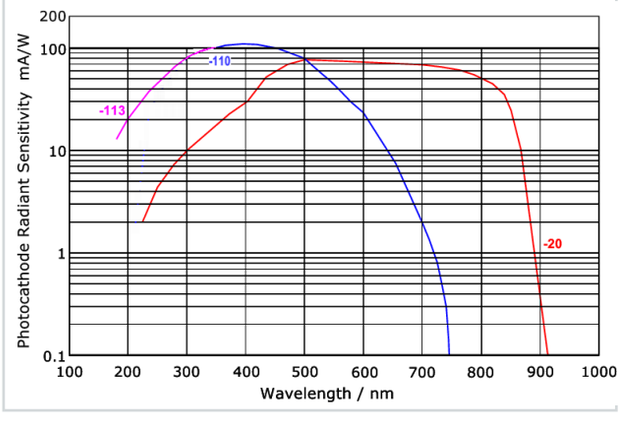
The best choice for pulsed dynamic signals

The high dynamic range photomultipliers from Licel have been 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 features make the Licel high dynamic range photomultipliers your ideal detector for applications such as Lidar, fluorescence detection and other pulsed signal methods.

Features:

- stabilized dynode chain
- overcurrent protection
- single photon pulse width <2 ns
- high pulse load stability
- HV remote control option
- interface to lens tube system
- gated versions available

Spectral Sensitivity:



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Specifications

Detector:

cathode diameter:	8 mm
cathode types:	
Bialkali UV-glass -113:	185-700 nm
Bialkali borosilicate-glass -110:	350-700 nm
Multialkali -20:	350-920 nm
max. average anode current:	0.1 mA
gain:	$2x10^5$-$2x10^6$

Signal specs:

single photon rise time:	< 0.7 ns
single photon width (FWHM):	< 2 ns
pulse load stability @100mV/60µs:	< 0.15%
automatic overcurrent protection:	>0.5mA for 1 second

For gated version (-g) only:

Note: The gated PMT cannot be used in ungated mode

Gating type: Active ON	
Gate pulse input:	>2.5V into 50Ω
Suppression, Gate OFF :	$< 1.2*10^{-3}$
Rise time:	<10 ns
Settling time (99%):	<200 ns
Settling time (99.9%):	<5 µs
Max. ON time:	1 ms
Max. duty cyle (ON/OFF):	1/100
Switching noise:	<10mV for <200 ns
High voltage range:	750-850V

HV supply:

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

Mechanics:

PMT module size:	65.4 (gated: 74.7) x 25mm
PMT module weight:	50 g
Optical interface:	O-ring sealed mount and adapter for 1" Thorlabs lens tube system
High voltage supply:	50.5 x 128.4 x 103mm 3 HU, 10 width units cassette

Connectors:

Signal out:	Lemo Minax to BNC
Gate in (-g version only):	Lemo Minax to BNC
HV to PMT:	Lemo Camac
HV power supply:	H11 connector

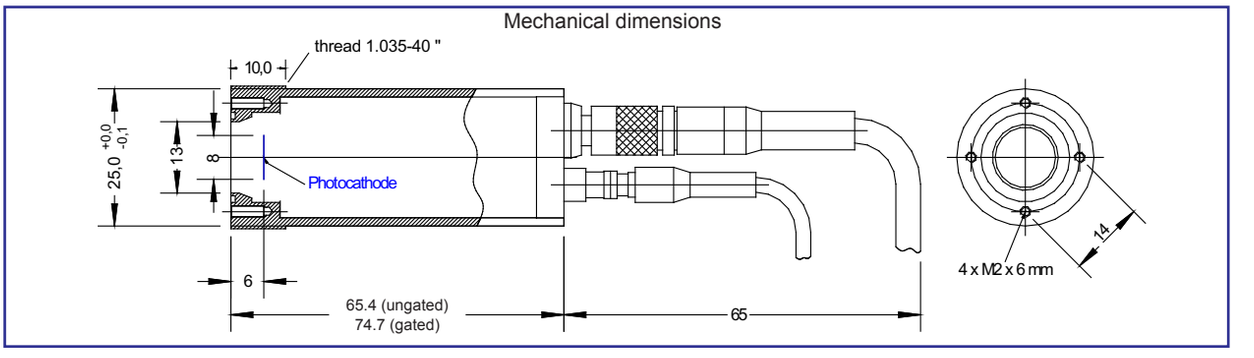
Power supply:	+15V DC, 250mA

Environmental conditions:

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

options:	-g: gated version

Mechanical dimensions



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