PRELIMINARY

DATASHEET

MP 96X-2/ MP 97X-2 CPM Module

Single Photon Counting Module for Particle Measurement



Description

The Photon Counting module series MP96X-2 / MP97X-2 is specially designed for particle measurement with 530 nm and 632 nm lasers. Based on the standard multialkali photocathode, the sensitive diameter is reduced to 2mm in order to achieve an excellent low dark count performance. With an optional SMA adapter, also a fiber read out is possible.

The MP96X-2/MP97X-2 series satisfies by exceptional low after pulses. It is an easy to use module, containing the Channel Photomultiplier, a high voltage power supply, a discrimination amplifier and a pulse shaper for fast output pulses. An installed active quenching system avoids over- illumination to the detector.

Features

- Specially selected for best performance @ 530 nm / 632 nm
- Low dark counts
- Very high stability in noise level
- Exceptional low after pulses
- Extended red sensitivity
- No cooling required
- Active quenching circuit for high light protection
- Optical fiber read-out possible
- 5 volts operating voltage

PerkinElmer™ optoelectronics.

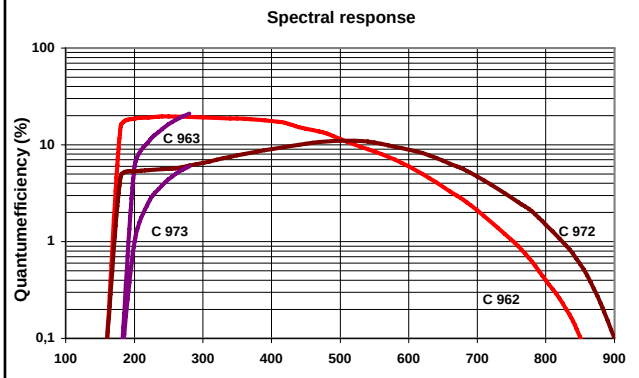
Technical Specifications

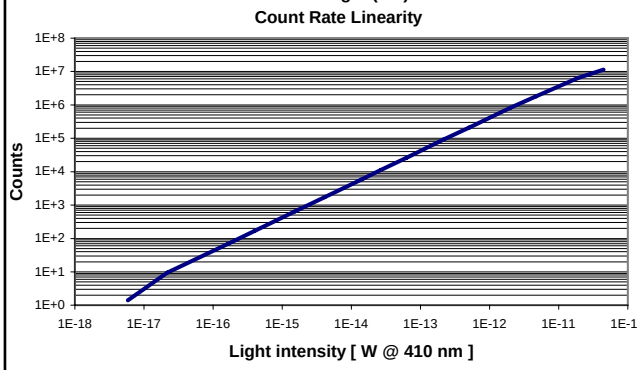
Model (also order no.)	Detector type	Installed CPM type	Photocathode diameter	Photocathode material	Window material	Spectral response / nm	Quantum efficiency @ 530nm	Quantum efficiency @ 630nm	Dark counts per second (cps)
MP 962-2	CPM-Channel Photomultiplier	C962-2	2 mm	Multialk.	Quartz	165-850	9%	4%	40
MP 963-2		C963-2		Multialk.	UV glass	185-850	9%	4%	40
MP 972-2		C972-2		Extended red Multialk.	Quartz	165-900	10%	8%	160
MP 973-2		C973-2		Extended red Multialk.	UV glass	185-900	10%	8%	160

Operating Specifications

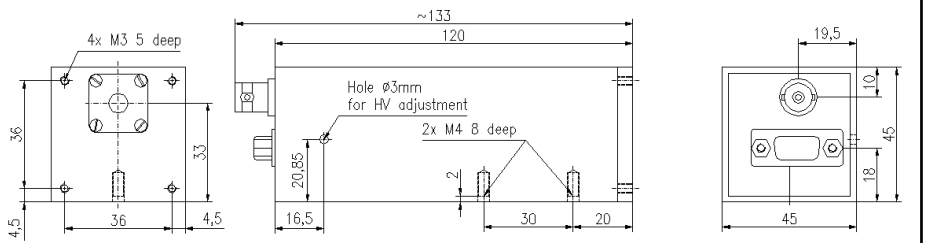
Supply voltage	5 V dc
Input current at max. count rate	< 280 mA
Settling time	< 1s (time to stabilize HV after supply voltage applied)
Over-illumination protection:	active quenching control (internal)
Linear count rate:	5 MHz
Output pulse:	TTL, positive
Active Quenching Control	TTL-Pulse, active high, RESET:internal via timer, typ. 2,5 s, external via 5 V-pulse
Output pulse width	15 ns, (opt. 130 ns)
GATE voltage Vgate	5 V: h to l set time Vca to Vch-ent +100 V : ~ 150 µs 5 V: l to h set time Vca to Vch-ent - 100 V : ~ 150 µs
Maximum ratings	
Input voltage	+5.5 V
Operating temperature	5 to 40 °C
Storage temperature	-20 to 50 °C
Weight	~ 350 g

Performance Characteristics





Dimensions (mm)



Connections

Red:	Vcc, input (+5 V to +5.5 V DC)
Black:	GND
Coax:	External Gate in (TTL,active high)
Yellow:	Monitor voltage output ($\|V_{ch\text{-}ent}$ /1000|)
Green:	Control voltage input via ext. OpAmp (ref. to manual)

BNC Connector:

- TTL Signal Output
- GND



CAUTION: HIGH VOLTAGE WARNING

This product operates at high voltage. Extreme care must be taken to ensure operator safety and to avoid damage to other instruments. Avoid direct contact with the entrance window of the built in CPM when high voltage is applied. Avoid placing conductive material close to the cathode. Ensure that no light levels are applied, generating higher anode currents than specified.
All given values are nominal/typical @ 20 °C ambient temperature; specification subject to change without notice

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