



EVERYTHING

IN A

NEW

LIGHT.

MP 900

Ultra High Sensitivity Gateable Photon Counting Module

Description

The Photon Counting Head MP 900 series is designed for applications in all fields of single photon detection, e.g. chemoluminescence, bioluminescence, in-vitro assay, environmental measurements or pure research. 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 systems avoids over-illumination to the detector. It is also possible to apply an external gate function for time correlated photon counting. Strong variations in light levels are possible due to the high dynamic range of the installed CPM. The exceptional low noise and high sensitivity facilitates detection of extremely low light levels.

Features

- Very low noise, typical 10 cps,
- High dynamic range up to 6 orders of magnitude
- High reliability
- No cooling requirement
- Very high stability in noise level, no sudden "bursts"
- High stability over time
- Rugged and compact design
- Gateable CPM input for time resolved measurements
- Active quenching circuit for high light protection
- Extremely fast high light recovery times
- 5 volts supply voltage

Specification *)

Detector

| Detector type | CPM-Channel Photomultiplier | | | | |
|------------------------|-----------------------------|----------|----------|-------------|-------------|
| Model *) | MP 942 | MP 943 | MP 944 | MP 952 | MP 962 |
| Installed CPM type | C 942 P | C 943 P | C 944 P | C 952 P | C 962 P |
| Photocathode diameter | min. 5 mm | | | | |
| Photocathode material | Bialkali | Bialkali | Bialkali | Multialkali | Multialkali |
| Window material | Quartz | UV-glass | Boro | Quartz | Quartz |
| Spectral response / nm | 165-650 | 185-650 | 300-650 | 165-750 | 165-850 |
| Quantum efficiency | 20% typical | | | | |
| Dark counts (typ.) | 10 cps | 10 cps | 10 cps | 50 cps | 100 cps |

P Version

| Model | MH 942P | MH 943 P | MH 944 P | MH 952 P | MH 962 P |
|--------------------|---------|----------|----------|----------|----------|
| Installed CPM type | C 942 P | C 943 P | C 944 P | C 952 P | C 962 P |
| Dark counts (typ.) | 10 cps | 10 cps | 10 cps | 50 cps | 100 cps |

*) Additional models on request

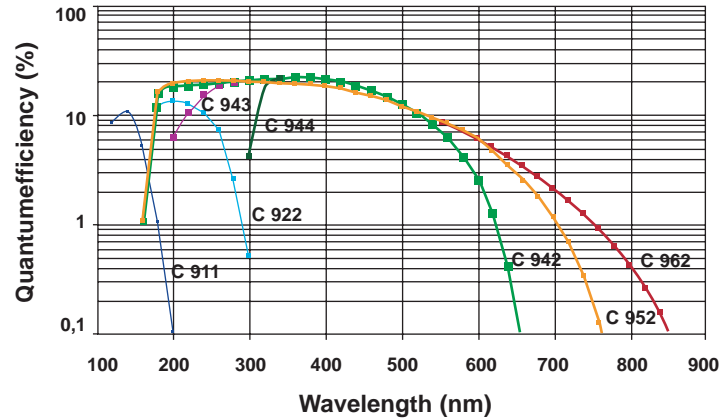
Photon Counting Electronics Data

| | | |
|----------------------------------|--|---|
| Linear count rate | 5 MHz | |
| Output pulse | TTL, positive | |
| Over-illumination protection | active quenching control | |
| Output impedance | 50 ohms | |
| Supply voltage | +5 to +5.5 V DC | |
| Active Quenching Control | TTL-Pulse, active high, RESET: internal via timer, typ. 0,5 s external via TTL-pulse | |
| Output pulse width | adjustable, min. 15 ns, max. 1 μ s | |
| Input current at max. count rate | < 250 mA | |
| GATE voltage V_{gate} | TTL-level: h to l | set time V_{ca} to V_{ch-ent} +100 V : \approx 150 μ s |
| | TTL-level: l to h | set time V_{ca} to V_{ch-ent} - 100 V : \approx 150 μ s |

Maximum Ratings

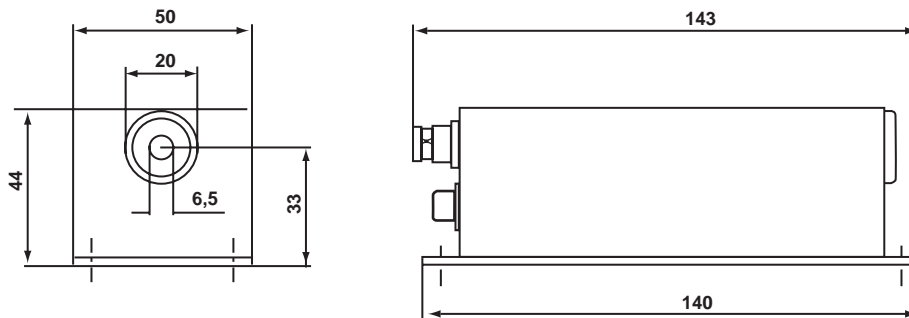
| | |
|-----------------------|---------------|
| Input voltage | +5.5 V |
| Operating temperature | 5 to 40 °C |
| Storage temperature | -20 to 50 °C |
| Weight | approx. 390 g |

Typical Spectral Response



Mechanical Specifications

Dimensions in (mm)



Input/Output Signals: Connections

DB Connector

- 1 (red) 5V
- 3 (black) Gnd
- A1 (coax) External Gate In
- 2 (yellow) Monitor voltage (V_{ch-ent})
- 4 (green) Not connected

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.

For more information e-mail us at opto@perkinelmer.com or visit our web site at www.perkinelmer.com/opto

All values are nominal; specifications subject to change without notice.