



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 *)	<b>MP 942</b>	<b>MP 943</b>	<b>MP 944</b>	<b>MP 952</b>	<b>MP 962</b>
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

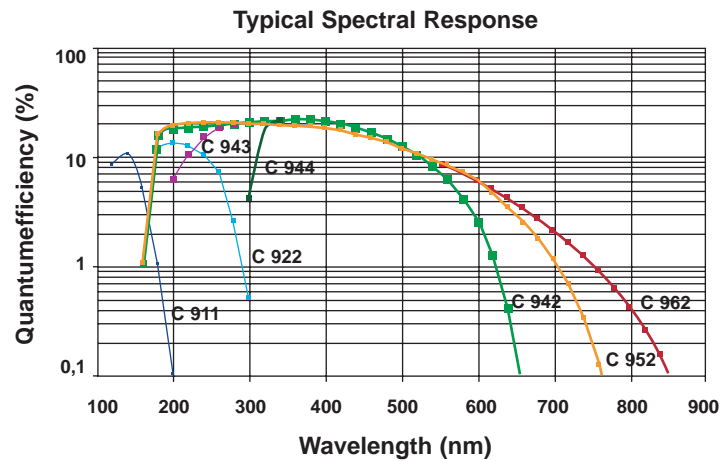
\*) Additional models on request

## 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 $\mu$ 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 $\mu$ s
	TTL-level: l to h	set time $V_{ca}$ to $V_{ch-ent}$ - 100 V : $\approx$ 150 $\mu$ s

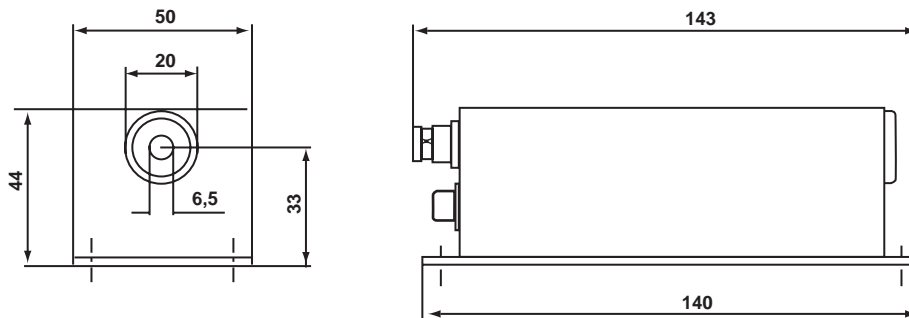
## Maximum Ratings

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



## 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](mailto:opto@perkinelmer.com) or visit our web site at [www.perkinelmer.com/opto](http://www.perkinelmer.com/opto)

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




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