

# PMA Series

## Photomultiplier Detector Assembly

- Instrument response < 180 ps (FWHM)
- Internal GHz pre-amplifier & shutter
- Optional thermo-electric cooling
- Simple 12 V DC power supply, no HV supply required
- Spectral ranges from 185 to 920 nm
- RF and magnetic shielding with refined iron or nickel coated aluminum housing

### Applications

- Steady-state and time-resolved fluorescence and luminescence spectroscopy
- Ultra sensitive analysis
- Fluorescence microscopy
- General purpose photon counting and low light level detection



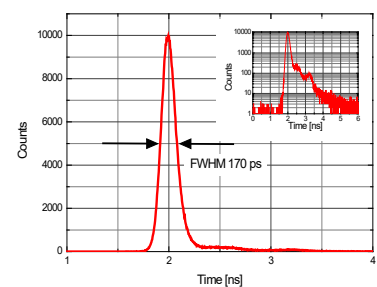
The PMA detector is a single photon sensitive, fully integrated, fast time response and low noise photon sensor from PicoQuant. The PMA integrates a fast Photomultiplier Tube (PMT), a high voltage power supply and pre-amplifier. For selected models thermo-electric cooling and automatic overload protection are available as an option.

These devices are built in an iron or nickel coated aluminum housing with titanium nitride or gold refinement to achieve high level of RF and magnetic shielding and protection against the interference with other devices. The built-in pre-amplifier is specially targeted at timing sensitive applications such as Time-Correlated Single Photon Counting (TCSPC).

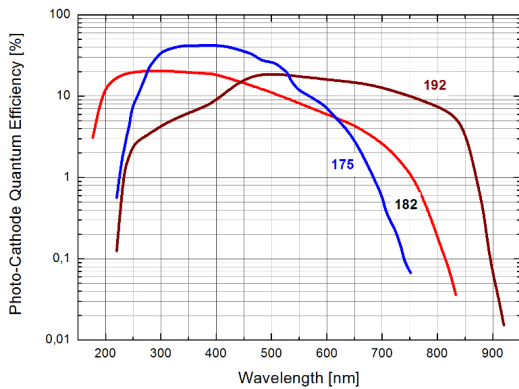
Various photocathodes can be incorporated into the PMA to meet user's needs. Three different cathode versions are available. A blue sensitive, low dark count version with very high detection efficiency covers the spectral range from 230 nm to 700 nm. The standard unit is sensitive in the range from 185 nm to 820 nm and an extended red sensitive cathode covers the 230 nm to 920 nm range. A thermo-electrically cooled housing is available to reduce the dark count rate (recommended for red sensitive versions).

The housing is available in three different versions. The OEM design contains no safety shutter. Standard PMA-M features a security shutter, which can be interlocked with e.g. a sample chamber lid. Cooled versions (PMA-C Series) incorporate in addition an automatic overload detection function that closes the shutter in case of over-illumination.

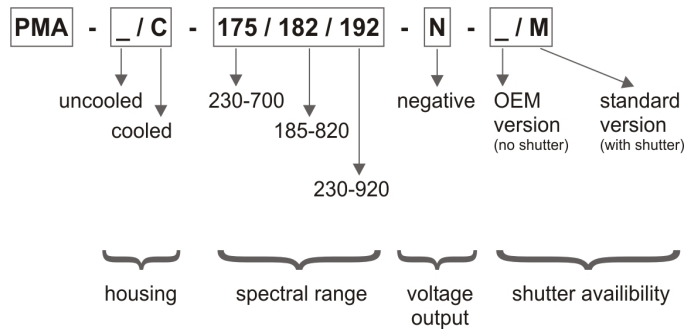
Signal output for all models is a standard 50 Ohms SMA connector. The module only needs a 12 V DC supply line, which is delivered already with the PMA unit.



## Spectral response



## Naming



## Specifications

	PMA 175	PMA 182	PMA 192
<b>Electrical Parameters</b>			
Wavelength range	230-700 nm	185-820 nm	230-920 nm
Dark counts* (uncooled)	< 50 cps	< 900 cps	< 10000 cps**
Dark counts* (cooled)	-	< 200 cps	< 3000 cps**
Transit time spread (FWHM, typ. value)		< 180 ps	
Recommended max. count rate		5 MHz	
Single electron response width		1.5 ns	
Pulse rise / fall time		750 ps	
<b>Signal Output</b>			
Connector		SMA female	
Impedance		50 Ohms	
Polarity		negative	
<b>Power Supply</b>			
Input		12 V DC	
Max. current consumption (uncooled)		200 mA	
Max. current consumption (cooled)		450 mA	
	<b>OEM version</b>		<b>PMA versions</b>
<b>Dimensions</b>			
Uncooled (w × d × h)	134 × 84 × 34 mm		72 × 84 × 83 mm
Cooled (w × d × h)	-		120 × 84 × 110 mm
Detector area diameter		8 mm	

\* typ. value, at 20 °C ambient temperature

\*\* Lower dark counts might be available on special selection. Please contact us for details.



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