

# Photon Detector

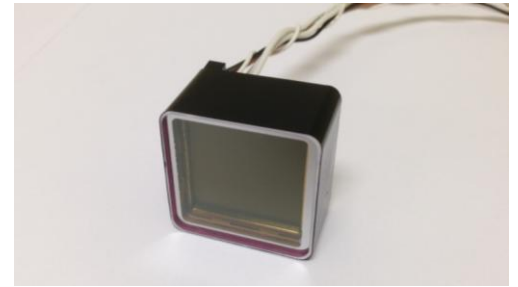
# XPM85112

10 $\mu$ m MCP-PMT

25 mm Square, 4x4 Anode

- Superior Magnetic Field Immunity
- Enhanced Timing Performance

miniPLANACON<sup>®</sup>



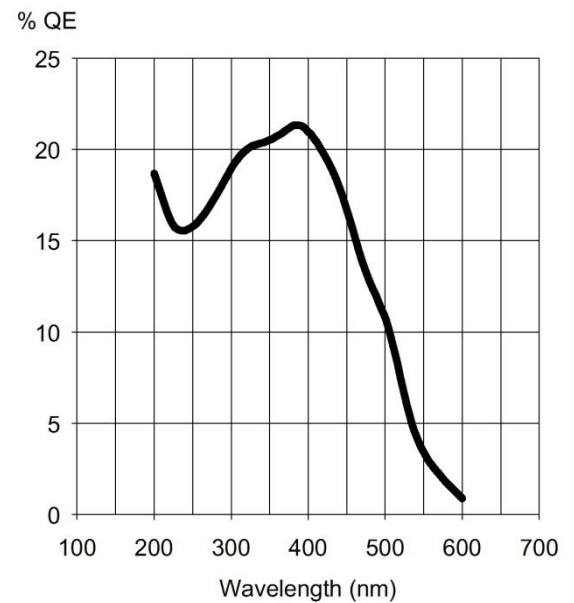
## Applications

- ✓ Specialized Medical Imaging
- ✓ Cherenkov – RICH, TOF, TOP, DIRC
- ✓ High Energy Physics Detectors
- ✓ Homeland Security

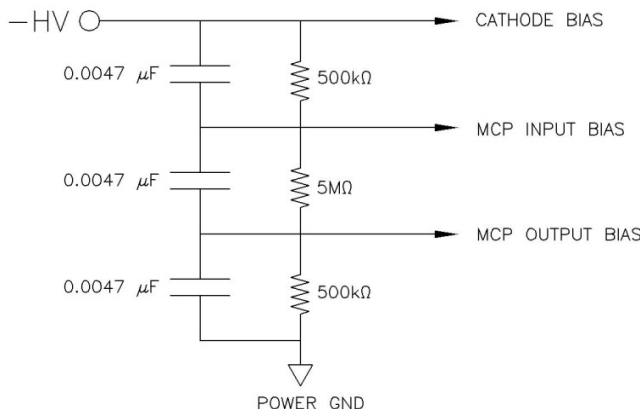
Description	
Window	Synthetic Fused Silica
Photocathode	Bialkali
Multiplier structure	MCP chevron (2), 10 $\mu$ m pore, 60:1 L:D ratio
Anode structure	4x4 array, 5.8 / 6.4 mm (size / pitch)
Active area	25x25 mm
Package Dimensions	32mm x 32mm x 24mm

Photocathode characteristics	Min	Typ	Max	Unit
Spectral range:	200		650	nm
Peak Quantum Efficiency at 380 nm*	18	22		%
Operating Characteristics	Min	Typ	Max	Unit
Overall Voltage for 10 <sup>5</sup> Gain *		FIG	2800	V
Total anode dark current @ 10 <sup>5</sup> gain *		< 1	10	nA
Spatial Uniformity		< 1.5:1	2:1	
Rise time**		0.5		ns
Pulse width**		0.7		ns
Transit time spread ( $\sigma_{tts}$ )**		< 35	50	ps
Maximum Magnetic Field Operation		2		T

Typical spectral response

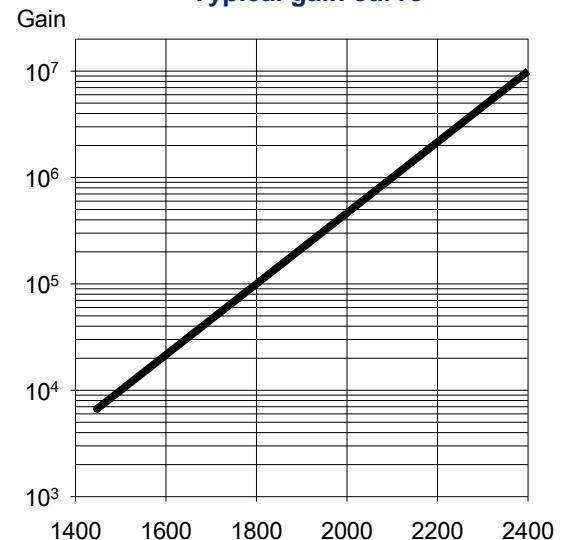


## Recommended Voltage Divider (not included)



CAUTION: POWER GROUND CONNECTION AND UNUSED ANODES MUST BE CONNECTED TO GROUND FOR SAFETY AND PROPER TUBE OPERATION

Typical gain curve



\* Characteristic measured and recorded on the test ticket of each tube

\*\* Characteristic for single photoelectrons at 405 nm.

**PHOTONIS**

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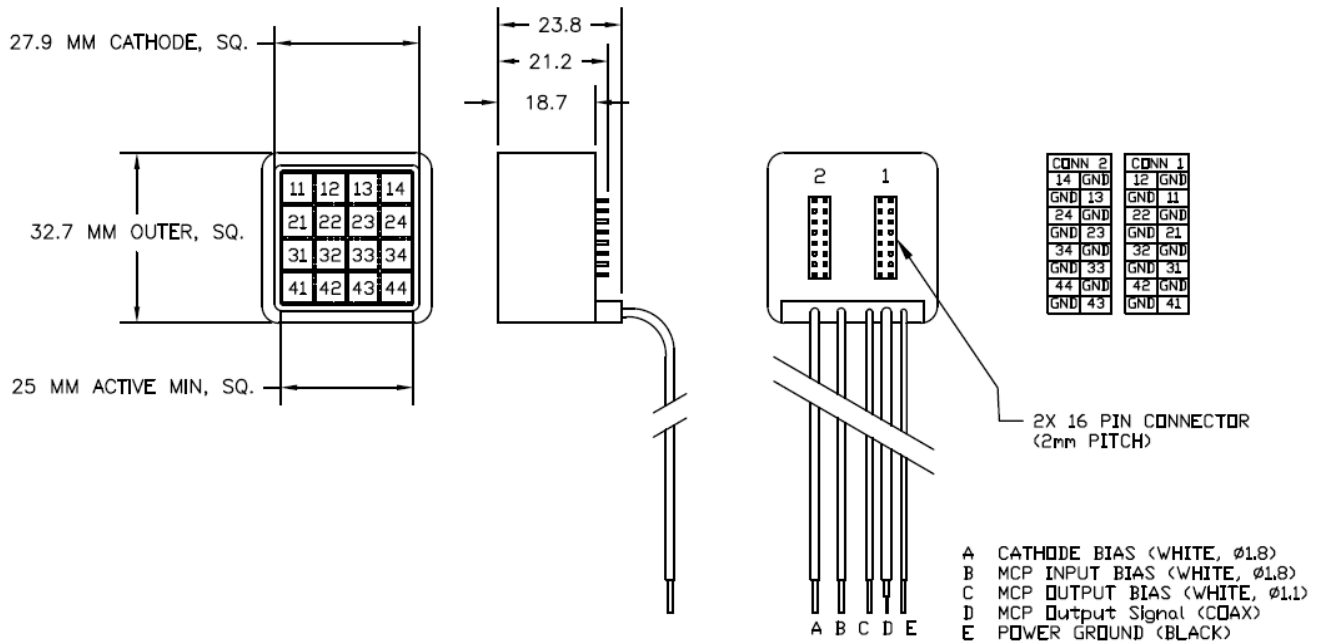
Rev01-2014

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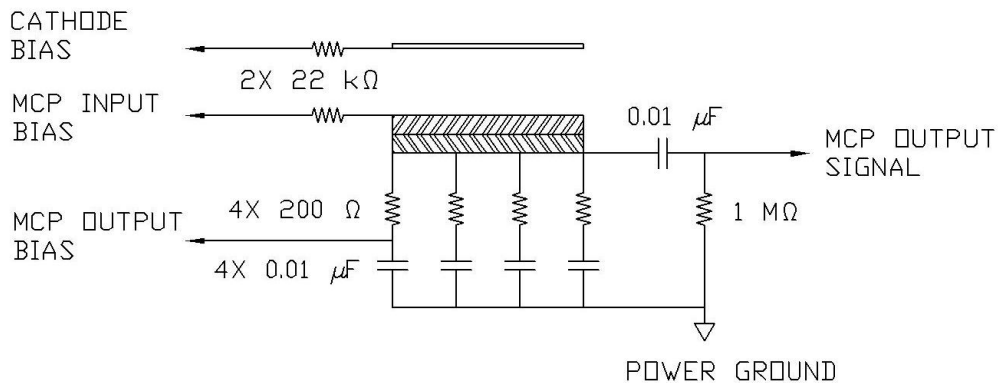
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Outline (dimensions in mm)

## XPM85112/A1



## Internal Connection Schematic – XPM85112/A1 \*



Limiting values	Min	Max	Unit
Cathode to MCP <sub>in</sub> voltage		500	V
MCP <sub>in</sub> to MCP <sub>out</sub> voltage		2400	V
MCP <sub>out</sub> to Anode voltage		500	V
Overall HV when using recommended voltage divider		2800	V
Total anode current under uniform illumination		2	$\mu A$
Ambient temperature:			
Operating Temperature	0	+50	$^{\circ}C$
Storage Temperature (for extended periods)	-15	+50	$^{\circ}C$

\* Custom or unfurnished external connections are available upon request.

\*\* Warning: Continuous operation at maximum ratings may result in shorter product life or unreliable performance.

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