

# Photon Detector

# XP85112

10µm MCP-PMT

53 mm Square, 8x8 Anode

- Superior Magnetic Field Immunity
- Enhanced Timing Performance

PLANACON®



## Applications

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

## Description

Window options	Schott 8337B or equivalent, UVFS (-Q)
Photocathode	Bialkali
Multiplier structure	MCP chevron (2), 10 µm pore, 60:1 L:D ratio
Anode structure	8x8 array, 5.9 / 6.5 mm (size / pitch)
Active area	53x53 mm
Package open-area-ratio	80%

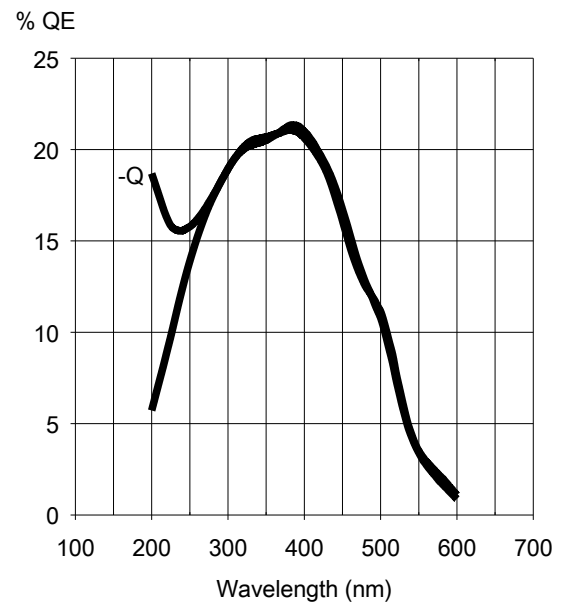
## Photocathode characteristics

	Min	Typ	Max	Unit
Spectral range:	200		650	nm
Peak Quantum Efficiency at 380 nm*	18	22		%

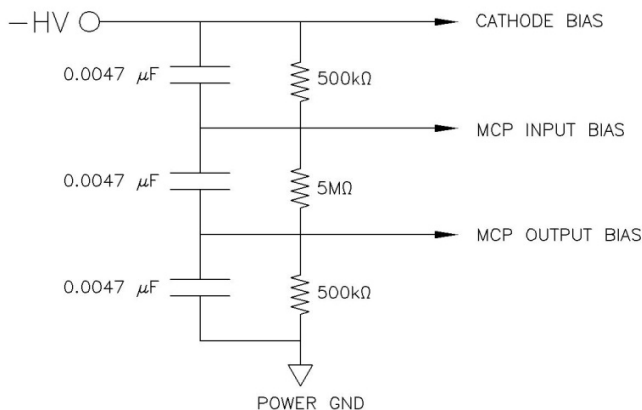
## Operating Characteristics

	Min	Typ	Max	Unit
Overall Voltage for 10 <sup>5</sup> Gain *		FIG	2800	V
Total anode dark current @ 10 <sup>5</sup> gain *		2	10	nA
Spatial Uniformity		2:1		
Rise time**		0.5		ns
Pulse width**		0.7		ns
Transit time spread (σ <sub>tts</sub> )**		35	60	ps
Maximum Magnetic Field Operation		2		T

Typical spectral response

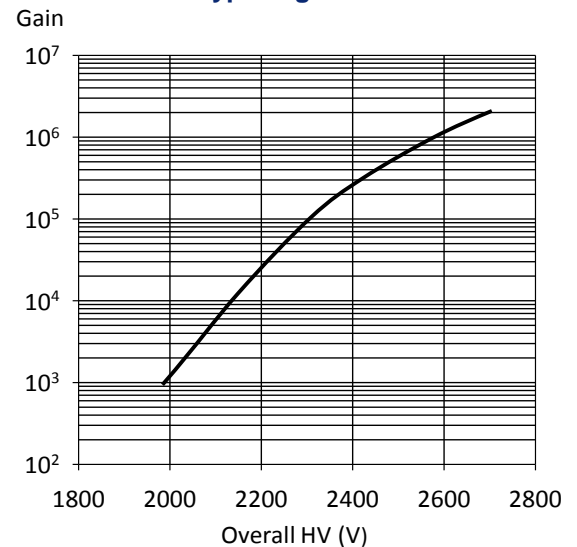


## Recommended Voltage Divider (not included)



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.

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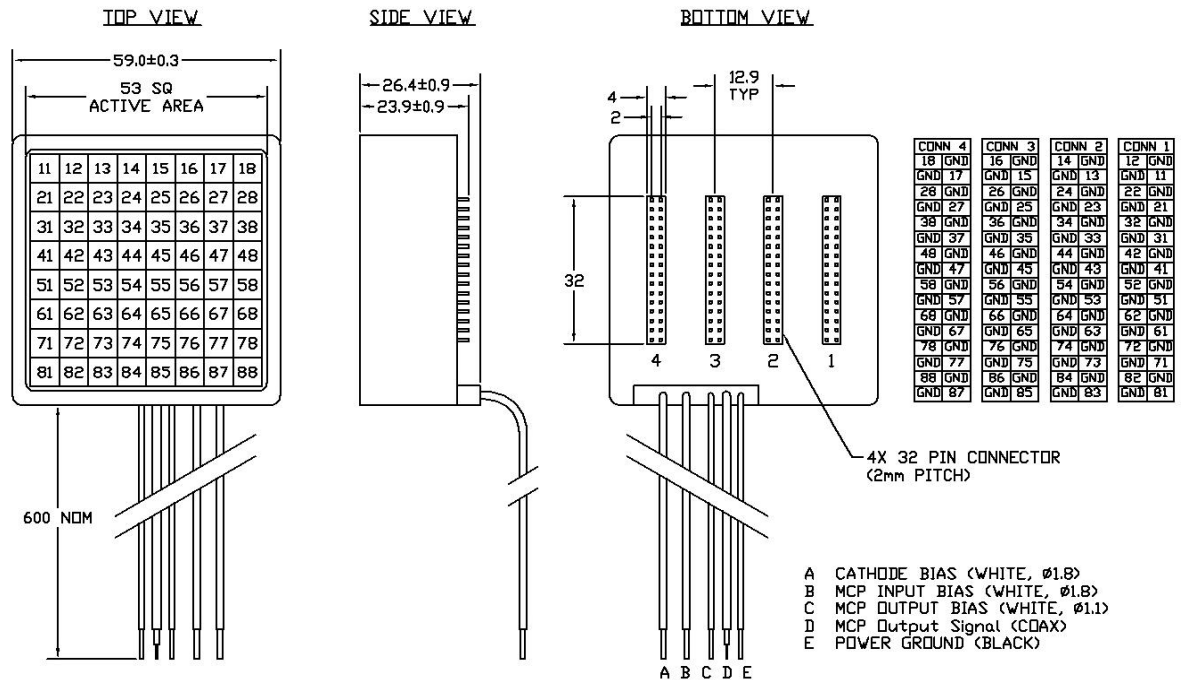
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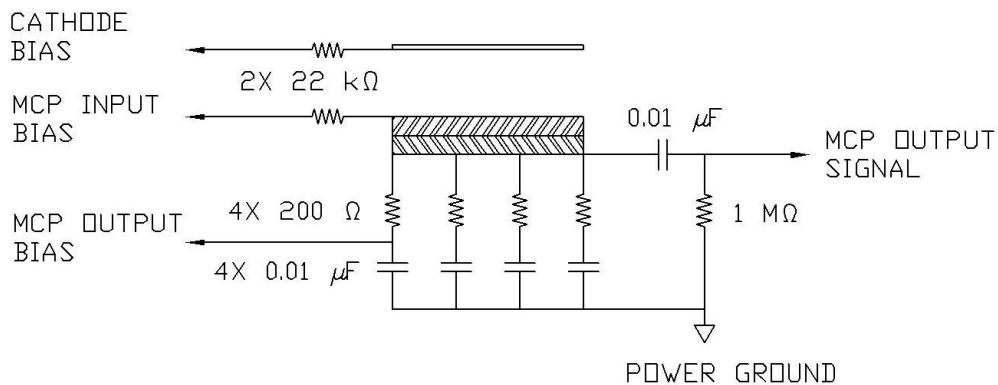
Outline (dimensions in mm)

XP85112/A1



Mass: ~128g

## Internal Connection Schematic – XP85112/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	μA
Ambient temperature:			
Operating Temperature	0	+50	°C
Storage Temperature (for extended periods)	-15	+50	°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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