Metal Package PMT

Photosensor Modules H10722 Series

HAMAMATSU

The H10722 series are photosensor modules containing a metal package PMT, a low-power consumption high-voltage power supply circuit, and a low-noise amplifier. The amplifier converts the PMT current output to a voltage output so that the signal can be easily processed. Also, the amplifier is connected close to the PMT anode output pin in order to make the signal less affected by external noise.
Four types of photocathodes are available, including a super bialkali photocathode that has higher sensitivity than conventional bialkali photocathodes, an ultra bialkali photocathode that offers even higher sensitivity, a multialkali photocathode with sensitivity extending to the near infrared region, and a red sensitivity enhanced multialkali photocathode.

Product Variations

Parameter	Spectral Response	Current-to-Voltage Conversion Factor*	Frequency Bandwidth*	Features
H10722-110	230 nm to 700 nm	1 V/µA	DC to 20 kHz	Super bialkali photocathode, for visible range
H10722-210	230 nm to 700 nm			Ultra bialkali photocathode, for visible range
H10722-01	230 nm to 870 nm			For visible to near IR range
H10722-20	230 nm to 920 nm			Infrared-extended multialkali photocathode with enhanced sensitivity

* The amplifier specification can be changed upon request. Feel free to contact our sales office.

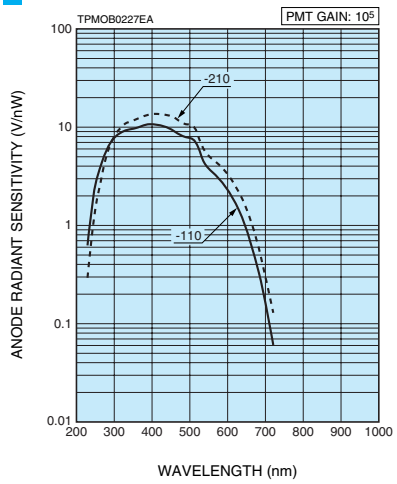
Specifications

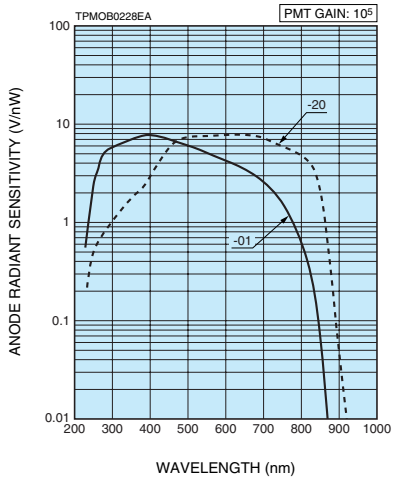
(at +25 °C)

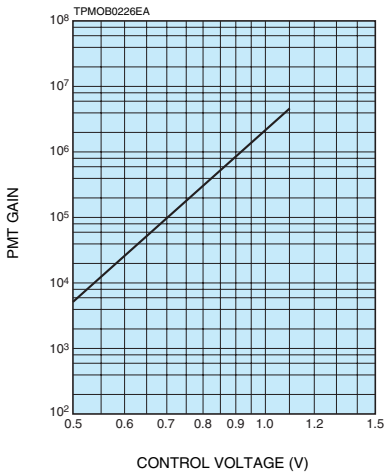
Parameter			H10722-110	H10722-210	H10722-01	H10722-20	Unit
Input Voltage			±4.5 to ±5.5				V
Max. Input Voltage			±5.5				V
Max. Input Current *1			+6.2 / -3.5				mA
Max. Output Signal Voltage			+4 (Load resistance 10 kΩ)				V
Max. Control Voltage			+1.1 (Input Impedance 1 MΩ)				V
Recommended Control Voltage Adjustment Range			+0.5 to +1.1 (Input Impedance 1 MΩ)				V
Effective Area			ϕ8				mm
Peak Sensitivity Wavelength			400	400	400	630	nm
Cathode	Luminous Sensitivity	Min.	80	100	100	350	µA/lm
		Typ.	105	135	200	500	
	Blue Sensitivity Index (CS 5-58)	Typ.	13.5	15.5	—	—	—
	Red / White Ratio	Typ.	—	—	0.2	0.45	—
	Radiant Sensitivity *2	Typ.	110	130	77	78	mA/W
Anode	Luminous Sensitivity *3	Min.	8.0×10^7	1.0×10^8	1.0×10^8	3.5×10^8	V/lm
		Typ.	2.1×10^8	2.7×10^8	4.0×10^8	1.0×10^9	
	Radiant Sensitivity *2 *3	Typ.	220	260	150	150	V/nW
	Voltage Output Depending on PMT Dark Current *3 *4	Typ.	1	1	1	10	mV
		Max.	10	10	10	100	
Current-to-Voltage Conversion Factor			1				V/µA
Output Offset Voltage		Typ.	±1				mV
Ripple Noise *3 *5 (peak to peak)		Max.	0.5				mV
Settling Time *6		Max.	10				s
Operating Ambient Temperature *7			+5 to +50				°C
Storage Temperature *7			-20 to +50				°C
Weight		Typ.	100				g

*1: At ±5 V input voltage, +1.0 V control voltage, and output current equal to dark current
*2: Measured at the peak sensitivity wavelength
*3: Control voltage = +1.0 V
*4: After 30 minutes storage in darkness. The actual output value in darkness is the sum of dark current and offset voltage.
*5: Cable RG-174/U, Cable length 450 mm, Load resistance = 1 MΩ, Load capacitance = 22 pF
*6: The time required for the output to reach a stable level following a change in the control voltage from +1.0 V to +0.5 V.
*7: No condensation

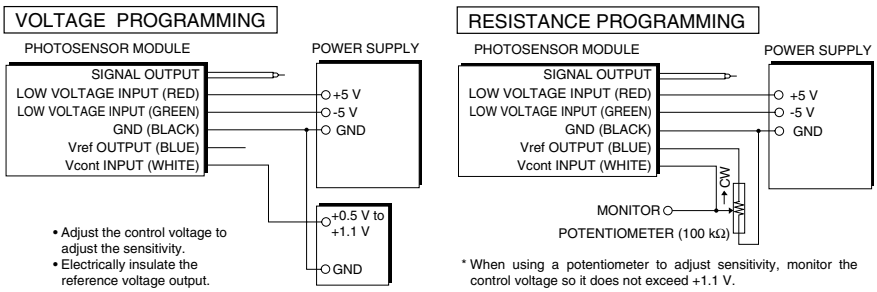
Characteristics (Anode radiant sensitivity, PMT gain)







Sensitivity Adjustment Method



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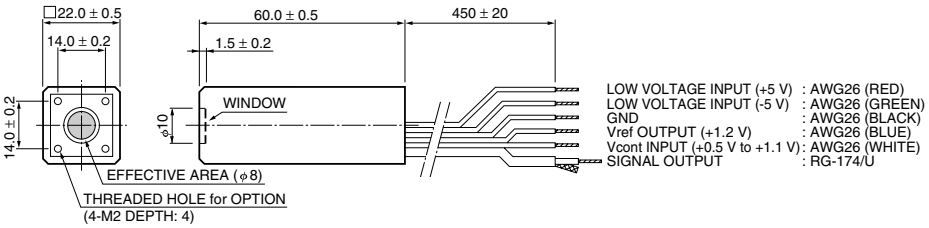
Dimensional Outlines (Unit: mm)



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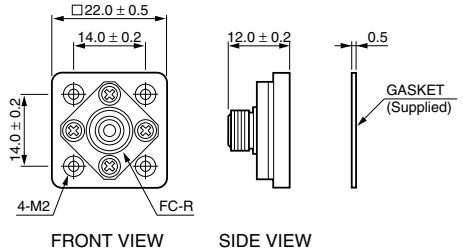
Options (Optical Fiber Adapter) (Unit: mm)

E5776 (FC Type)



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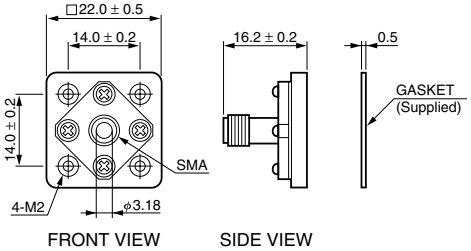
E5776-51 (SMA Type)



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