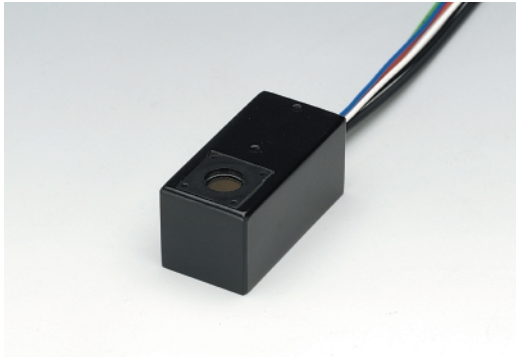


# Metal Package PMT

**HAMAMATSU**

## Photosensor Modules H10723 Series



The H10723 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 signal can be easily processed. Also, the amplifier is connected close to the PMT anode output pin to make the signal less affected by external noise. The H10723 series cover a frequency bandwidth from DC to 200 MHz, which is wider than that for the H10722 series.

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
H10723-110	230 nm to 700 nm	0.1 V/μA	DC to 200 kHz	Super bialkali photocathode, for visible range
H10723-210	230 nm to 700 nm			Ultra bialkali photocathode, for visible range
H10723-01	230 nm to 870 nm			For visible to near IR range
H10723-20	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		H10723-110	H10723-210	H10723-01	H10723-20	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	
		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 <sup>6</sup>	1.0 × 10 <sup>7</sup>	1.0 × 10 <sup>7</sup>	3.5 × 10 <sup>7</sup>	
		Typ.	2.1 × 10 <sup>7</sup>	2.7 × 10 <sup>7</sup>	4.0 × 10 <sup>7</sup>	1.0 × 10 <sup>8</sup>	
	Radiant Sensitivity *2 *3	Typ.	22	26	15	15	V/nW
	Voltage Output Depending on PMT Dark Current *3 *4	Typ.	0.1	0.1	0.1	1	
Max.		1	1	1	10	mV	
Current-to-Voltage Conversion Factor		0.1				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		90				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

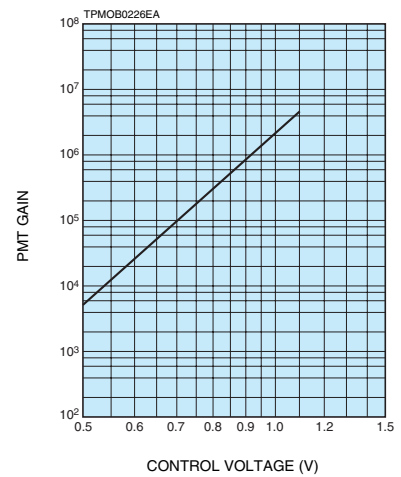
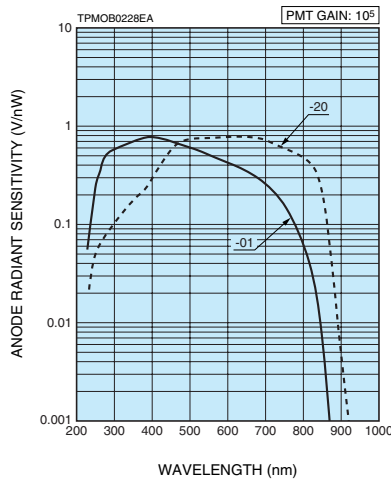
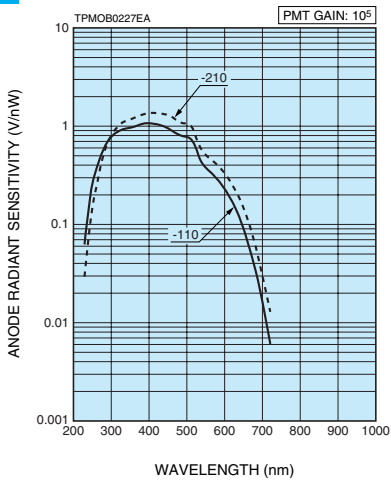
\*4: After 30 minutes storage in darkness. The actual output value in darkness is the sum of dark current and offset voltage.

\*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.

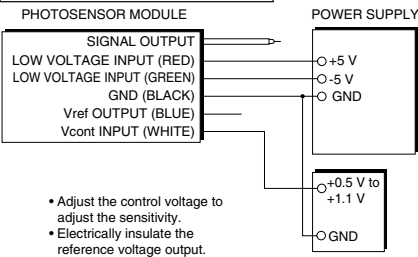
\*7: No condensation

### Characteristics (Anode radiant sensitivity, PMT gain)

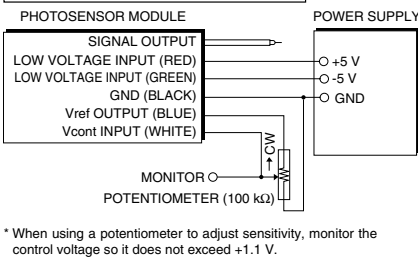


### Sensitivity Adjustment Method

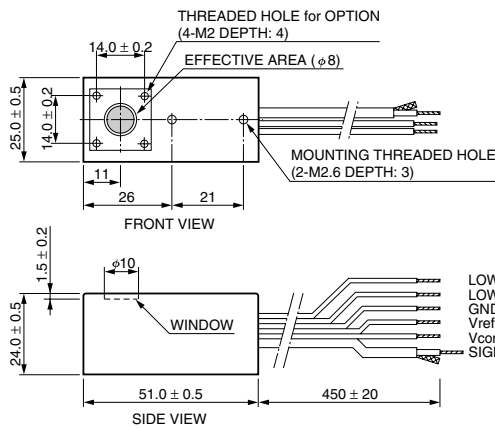
#### VOLTAGE PROGRAMMING



#### RESISTANCE PROGRAMMING



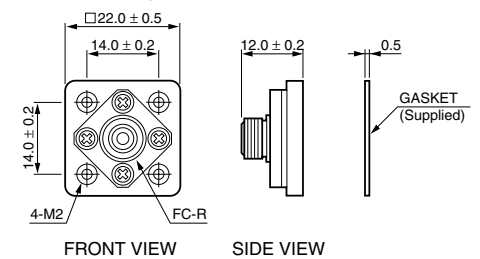
### Dimensional Outlines (Unit: mm)



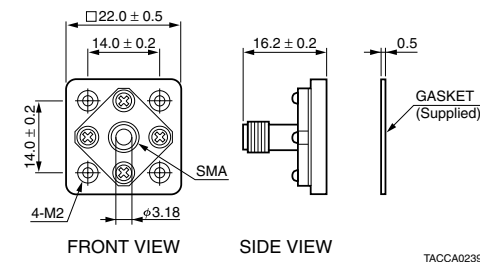
- LOW VOLTAGE INPUT (+5 V) : AWG26 (RED)
- LOW VOLTAGE INPUT (-5 V) : AWG26 (GREEN)
- GND : AWG26 (BLACK)
- Vref OUTPUT (+1.2 V) : AWG26 (BLUE)
- Vcont INPUT (+0.5 V to +1.1 V) : AWG26 (WHITE)
- SIGNAL OUTPUT : RG-174/U

### Options (Optical Fiber Adapter) (Unit: mm)

#### E5776 (FC Type)



#### E5776-51 (SMA Type)



# HAMAMATSU

WEB SITE [www.hamamatsu.com](http://www.hamamatsu.com)

HAMAMATSU PHOTONICS K.K., Electron Tube Division

314-5, Shimokanzo, Iwata City, Shizuoka Pref., 438-0193, Japan, Telephone: (81)539/62-5248, Fax: (81)539/62-2205

U.S.A.: Hamamatsu Corporation: 360 Foothill Road, P. O. Box 6910, Bridgewater, N.J. 08807-0910, U.S.A., Telephone: (1)908-231-0960, Fax: (1)908-231-1218 E-mail: [usa@hamamatsu.com](mailto:usa@hamamatsu.com)

Germany: Hamamatsu Photonics Deutschland GmbH: Arzbergerstr. 10, D-82211 Herrsching am Ammersee, Germany, Telephone: (49)8152-375-0, Fax: (49)8152-2658 E-mail: [info@hamamatsu.de](mailto:info@hamamatsu.de)

France: Hamamatsu Photonics France S.A.R.L.: 19, Rue du Saule Trapu, Parc du Moulin de Massy, 91882 Massy Cedex, France, Telephone: (33)1 69 53 71 00, Fax: (33)1 69 53 71 10 E-mail: [infos@hamamatsu.fr](mailto:infos@hamamatsu.fr)

United Kingdom: Hamamatsu Photonics UK Limited: 2 Howard Court, 10 Tewin Road Welwyn Garden City Hertfordshire AL7 1BW, United Kingdom, Telephone: 44-(0)1707-294888, Fax: 44-(0)1707-325777 E-mail: [info@hamamatsu.co.uk](mailto:info@hamamatsu.co.uk)

North Europe: Hamamatsu Photonics Norden AB: Smidesvägen 12, SE-171-41 SOLNA, Sweden, Telephone: (46)8-509-031-00, Fax: (46)8-509-031-01 E-mail: [info@hamamatsu.se](mailto:info@hamamatsu.se)

Italy: Hamamatsu Photonics Italia: S.R.L.: Strada della Moia, 1/E, 20020 Arese, (Milano), Italy, Telephone: (39)02-935 81 733, Fax: (39)02-935 81 741 E-mail: [info@hamamatsu.it](mailto:info@hamamatsu.it)

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