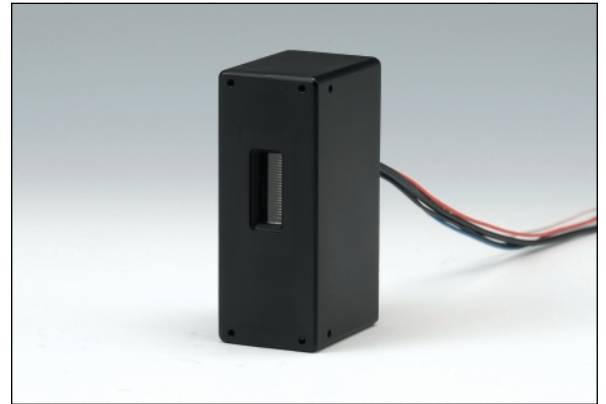


OVERVIEW

The H11462 series photosensor modules incorporate a 28-mm (1-1/8") diameter side-on photomultiplier tube, a high-voltage power supply circuit and a low noise amplifier. Two types of amplifiers are available with a current-to-voltage conversion factor of 1 V/μA or 0.1 V/μA and a frequency bandwidth of DC to 20 kHz or DC to 200 kHz.

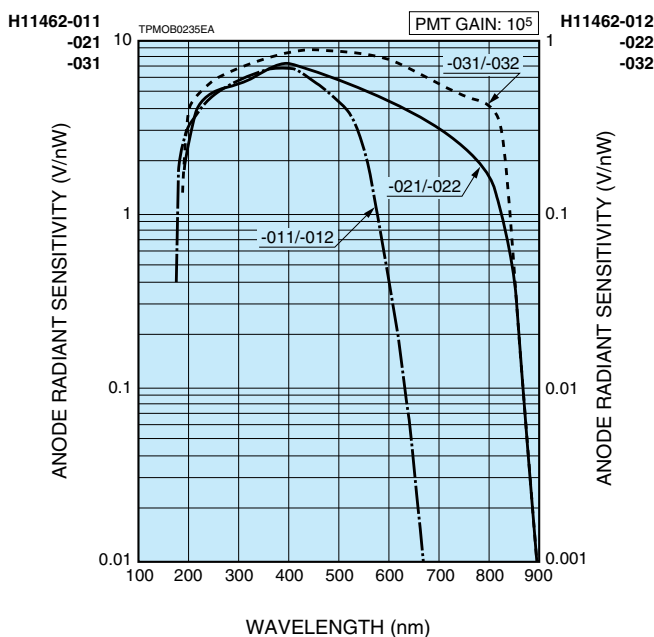


PRODUCT VARIATIONS

Type No.	Spectral response	Photocathode	Window material	Current-to-voltage conversion factor*	Frequency bandwidth*
H11462-011	185 nm to 710 nm	Bialkali	UV glass	1 V/μA	DC to 20 kHz
H11462-021	185 nm to 900 nm	Multialkali	UV glass		
H11462-031	185 nm to 900 nm	Multialkali	UV glass		
H11462-012	185 nm to 710 nm	Bialkali	UV glass	0.1 V/μA	DC to 200 kHz
H11462-022	185 nm to 900 nm	Multialkali	UV glass		
H11462-032	185 nm to 900 nm	Multialkali	UV glass		

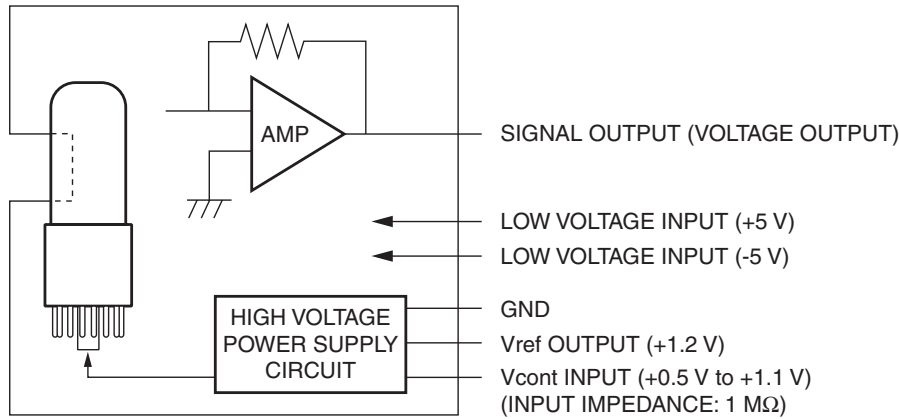
* The amplifier specification can be changed upon request. Feel free to contact our sales office. This product can't be used under vacuum environment or reduced pressure environment. Please pay attention when the H11462 series is used for measuring the light below 190 nm.

Figure 1: Typical spectral response



PHOTOSENSOR MODULES H11462 SERIES

Figure 2: Schematic diagram



TPM00272EA

SPECIFICATIONS

Parameter		H11462 series			Unit	
Suffix		-011 / -012	-021 / -022	-031 / -032	—	
Input voltage		±4.5 to ±5.5			V	
Max. input voltage		±6			V	
Max. input current *1		+7 / -3 (-011/-021/-031), +11 / -7 (-012/-012/-032)			mA	
Max. control voltage		+1.2 (Input impedance 1 MΩ)			V	
Recommended control voltage adjustment range		+0.5 to +1.1			V	
Effective area		4 × 20			mm	
Peak sensitivity wavelength		410	400	450	nm	
Cathode	Luminous sensitivity	Min.	80	140	475	μA/lm
		Typ.	100	250	525	
	Blue sensitivity index (CS 5-58)	Typ.	8	—	—	—
	Red/White ratio	Typ.	—	0.3	0.4	—
Radiant sensitivity *2		Typ.	70	74	90	mA/W
Suffix (with internal 20 kHz amp)		-011	-021	-031	—	
Anode	Luminous sensitivity *3	Min.	1.0 × 10 ⁹	4.0 × 10 ⁸	3.0 × 10 ⁹	V/lm
		Typ.	1.2 × 10 ⁹	2.5 × 10 ⁹	5.0 × 10 ⁹	
	Radiant sensitivity *2 *3	Typ.	840	740	855	V/nW
	Voltage output depending on PMT dark current *3 *4	Typ.	0.2	3	10	mV
Max.		2	50	50		
Max. output signal voltage *5		+4 (Load resistance 10 kΩ)			V	
Current-to-voltage conversion factor		1			V/μA	
Suffix (with internal 200 kHz amp)		-012	-022	-032	—	
Anode	Luminous sensitivity *3	Min.	1.0 × 10 ⁸	4.0 × 10 ⁷	3.0 × 10 ⁸	V/lm
		Typ.	1.2 × 10 ⁸	2.5 × 10 ⁸	5.0 × 10 ⁸	
	Radiant sensitivity *2 *3	Typ.	84	74	85.5	V/nW
	Voltage output depending on PMT dark current *3 *4	Typ.	0.02	0.3	1	mV
Max.		0.2	5	5		
Max. output signal voltage *5		+4 (Load resistance 10 kΩ)			V	
Current-to-voltage conversion factor		0.1			V/μA	
		H11462 series				
Offset voltage		Typ.	±1		mV	
Ripple noise *3 *6 (peak to peak)		Max.	0.5		mV	
Settling time *7		Max.	14		s	
Operating ambient temperature *8		+5 to +50			°C	
Storage temperature *8		-20 to +50			°C	
Weight		225			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.

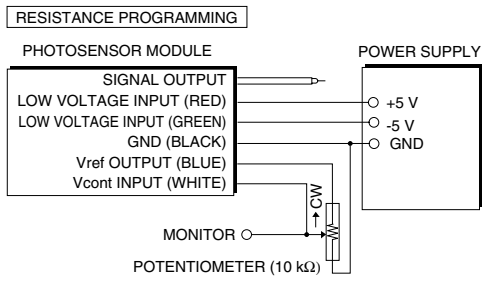
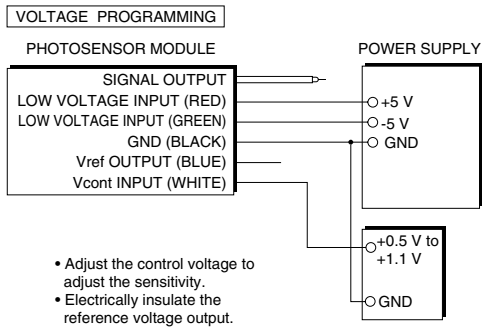
*5: At ±5 V input voltage

*6: Cable RG-174/U, Cable length 450 mm, Load resistance = 1 MΩ, Load capacitance = 22 pF

*7: 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.

*8: No condensation

Figure 3: Sensitivity adjustment method



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Figure 4: Typical gain

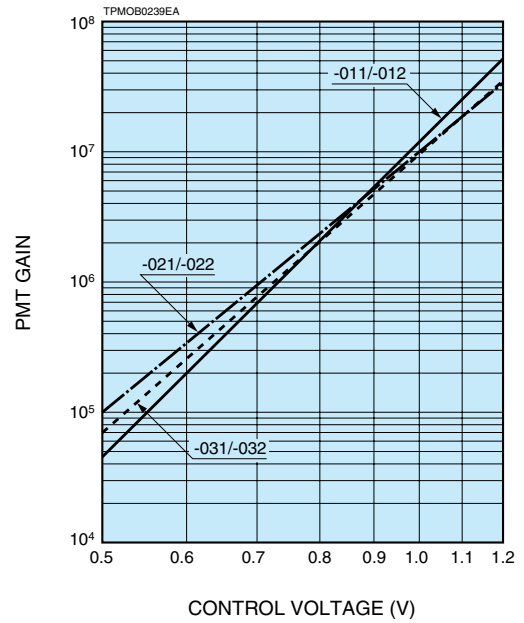


Figure 5: Typical frequency characteristics

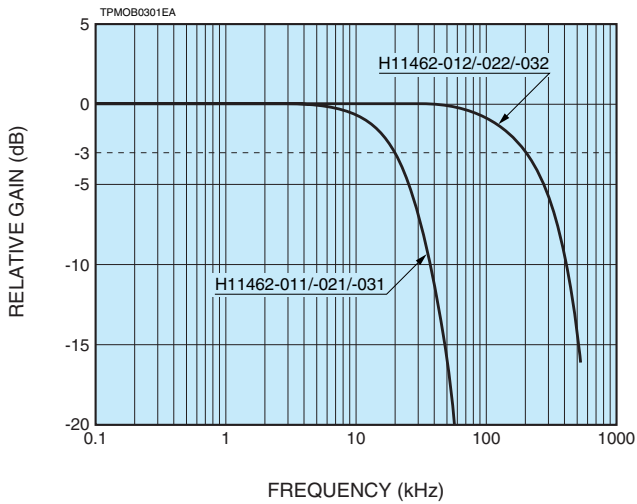


Figure 6: Typical ripple noise

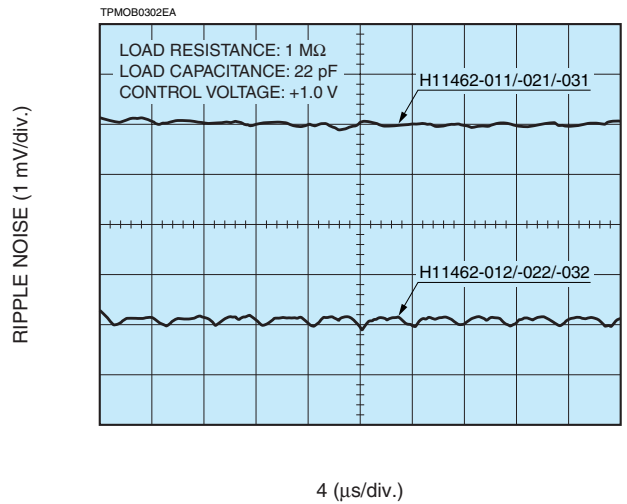
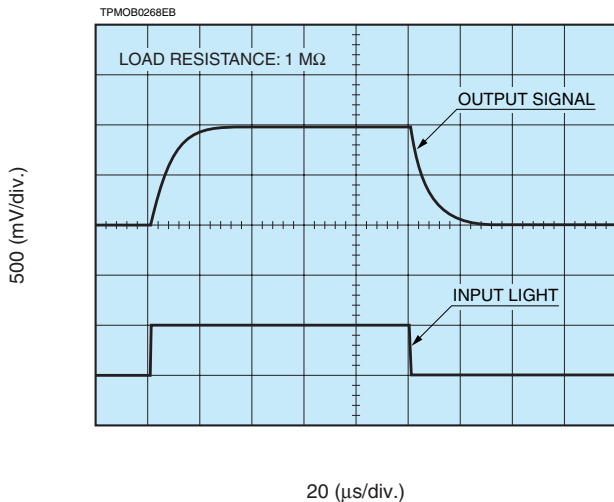
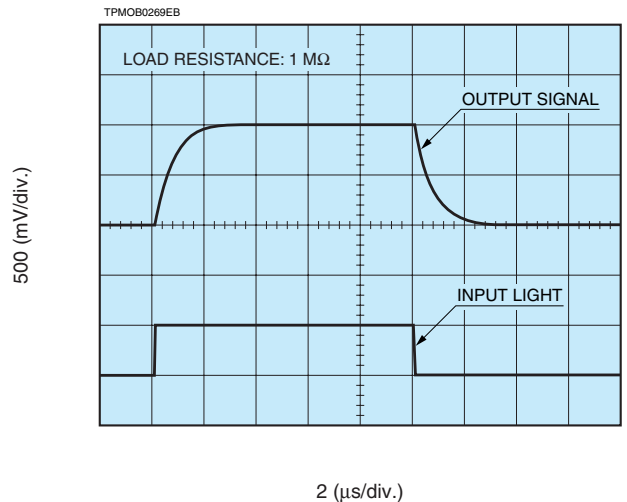


Figure 7: Typical output characteristics

● H11462-011/-021/-031

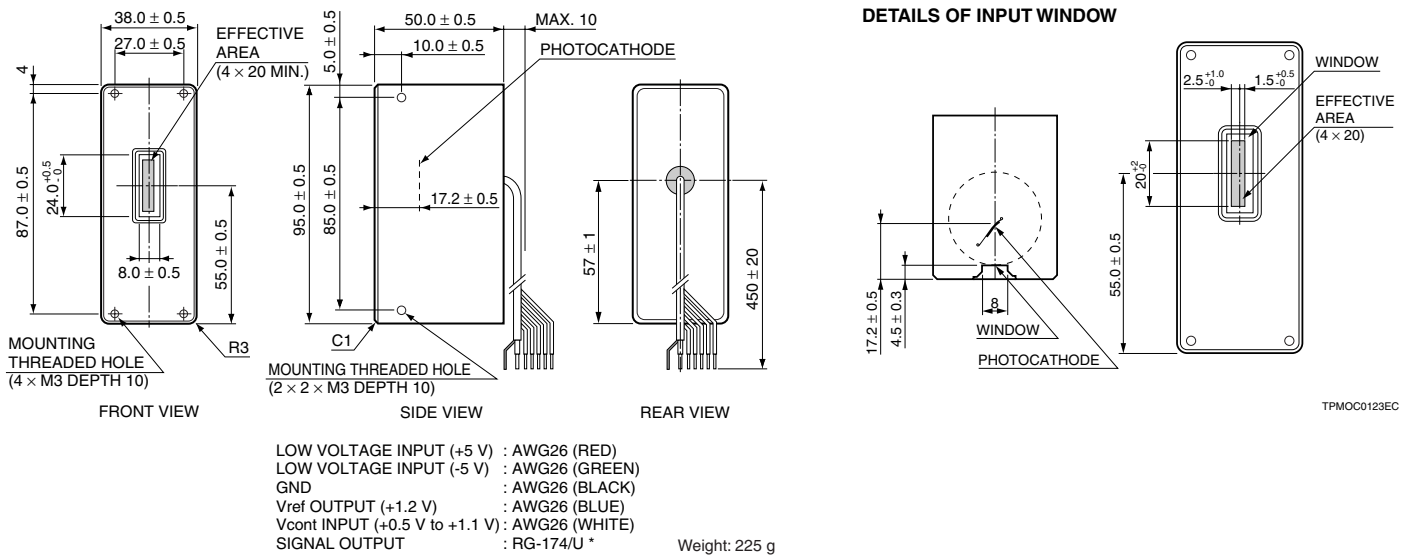


● H11462-012/-022/-032



PHOTOSENSOR MODULES H11462 SERIES

Figure 8: Dimensional outlines (Unit: mm)



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RELATED PRODUCT

POWER SUPPLY FOR PHOTOMULTIPLIER TUBE MODULES C10709

The C10709 is the power supply for photomultiplier tube modules with 5 V input voltage.

This unit can provide both the driving voltage and the control voltage. This feature enables users to operate the modules easily.



Parameter	Description / Value	Unit
Output voltage	±5	V
Output current	Max. 2.0 (+5 V), 0.2 (-5 V)	A
Control voltage ^(A) (variable voltage range)	+0.25 to +1.8	V
Terminal connection method	Binding post	—
Input voltage	AC100 to AC240	V
Operating ambient temperature	+5 to +50	°C
Dimensions (W × H × D) ^(B)	147 × 61 × 200	mm
Weight	Approx. 1.2	kg

NOTE: ^(A)Adjust within the recommended control voltage range for the photomultiplier tube module being used.

^(B)Excluding protuberance

HAMAMATSU PHOTONICS K.K. 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, Bridgewater, N.J. 08807-0910, U.S.A., Telephone: (1)908-231-0960, Fax: (1)908-231-1218 E-mail: 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

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: info@hamamatsu.fr

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

North Europe: Hamamatsu Photonics Norden AB: Torshamnsgatan 35 SE-164 40 Kista, Sweden, Telephone: (46)8-509-031-00, Fax: (46)8-509-031-01 E-mail: info@hamamatsu.se

Italy: Hamamatsu Photonics Italia S.r.l.: Strada della Moia, 1 int. 6, 20020 Arese (Milano), Italy, Telephone: (39)02-93581733, Fax: (39)02-93581741 E-mail: info@hamamatsu.it

China: Hamamatsu Photonics (China) Co., Ltd.: B1201, Jiaming Center, No.27 Dongsanhuan Beilu, Chaoyang District, Beijing 100020, China, Telephone: (86)10-6586-6006, Fax: (86)10-6586-2866 E-mail: hpc@hamamatsu.com.cn

Taiwan: Hamamatsu Photonics Taiwan Co., Ltd.: 8F-3, No.158, Section2, Gongdao 5th Road, East District, Hsinchu, 300, Taiwan R.O.C. Telephone: (886)03-659-0080, Fax: (886)07-811-7238 E-mail: info@tw.hpk.co.jp

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