Side-on PMT

Photosensor Modules H11462 Series

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	Current-to-Voltage Conversion Factor	Frequency Bandwidth	Features
H11462-011	185 nm to 710 nm	1 V/µA	DC to 20 kHz	For UV to visible range, low noise
H11462-021	185 nm to 900 nm			For UV to near IR range
H11462-031	185 nm to 900 nm			For UV to near IR range, high sensitivity
H11462-012	185 nm to 710 nm	0.1 V/µA	DC to 200 kHz	For UV to visible range, low noise
H11462-022	185 nm to 900 nm			For UV to near IR range
H11462-032	185 nm to 900 nm			For UV to near IR range, high sensitivity

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

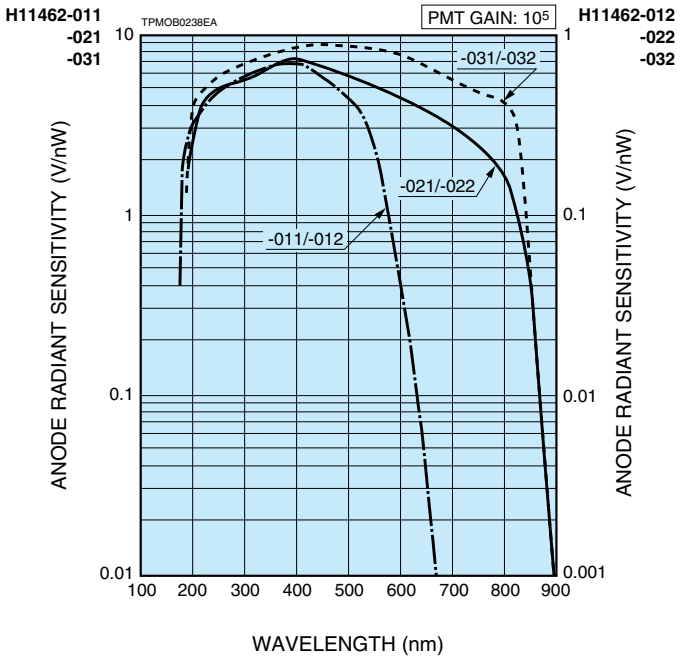
Specifications

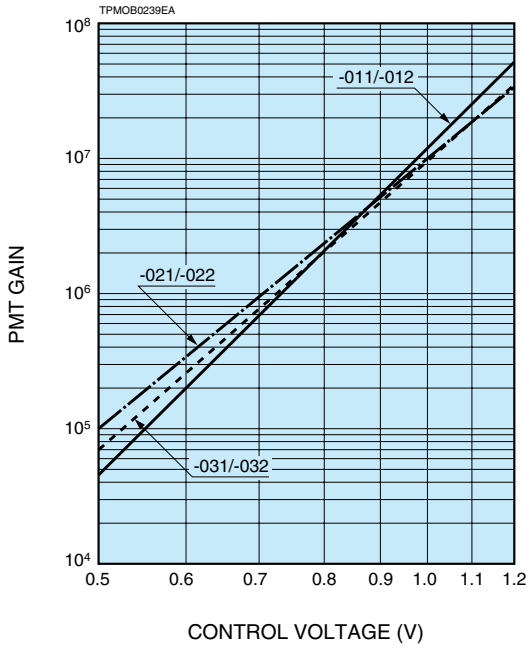
(at +25 °C)

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.	10			s
Operating Ambient Temperature *8			+5 to +50			°C
Storage Temperature *8			-20 to +50			°C
Weight			225			g

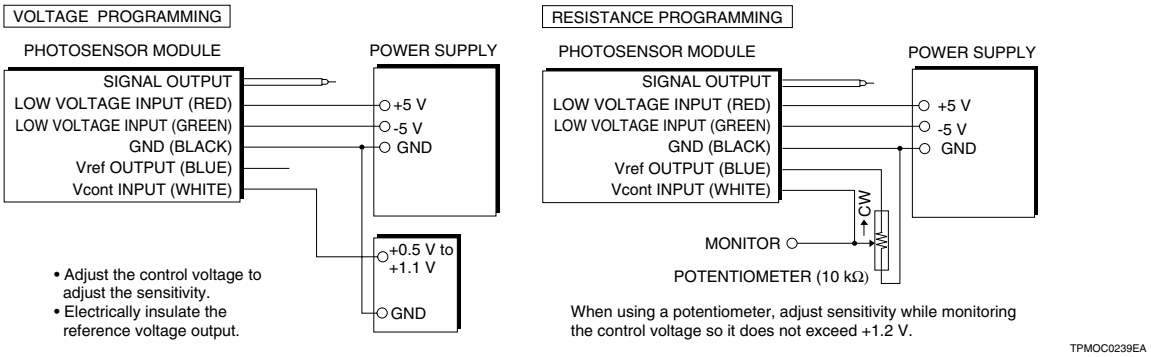
*1: At ±5 V input voltage, +1.0 V control voltage, and output current equal to dark current *2: Measured at the peak sensitivity wavelength
*3: Control voltage = +1.0 V *4: Output of anode dark current *5: At ±5 V input voltage
*6: Cable RG-174/U, Cable length 450 mm, Load resistance = 1 MΩ, Load capacitance = 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

Characteristics (Anode radiant sensitivity, PMT gain)





Sensitivity Adjustment Method



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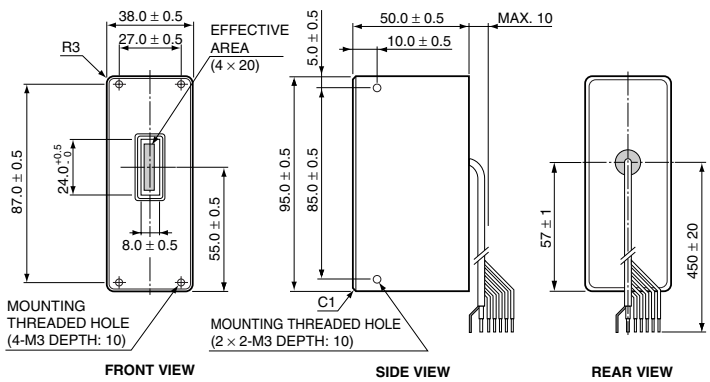
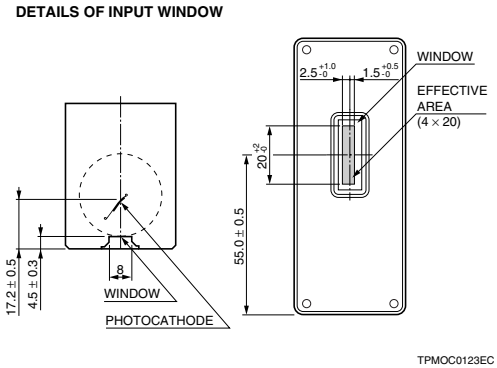
Dimensional Outlines (Unit: mm)





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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

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