HAMAMATSU

PHOTON IS OUR BUSINESS

PHOTOSENSOR MODULE
H14447

OVERVIEW

The H14447 is a photosensor module containing a high-speed response 28-mm diameter head-on photomultiplier tube and a high-voltage power supply circuit.

FEATURES

- **High speed response: Up to 1.0 GHz**
- **Large effective area: ϕ25 mm**
- **Current output**

SPECIFICATIONS

(at +25 °C)

Parameter			Description / Value	Unit
Spectral response			300 to 650	nm
Photocathode			Bialkali	—
Window material			Borosilicate glass	—
Input voltage			+4.8 to +5.5	V
Max. input voltage			+6.0	V
Max. input current *1			6	mA
Max. average output signal current *2			100	µA
Max. control voltage			+2.1 (Input impedance 1 MΩ)	V
Recommended control voltage adjustment range			+1.6 to +2.0 (Input impedance 1 MΩ)	V
Effective area			ϕ25	mm
Peak sensitivity wavelength			420	nm
Cathode	Luminous sensitivity	Min.	70	µA/lm
		Typ.	95	
	Blue sensitivity index (CS 5-58)	Typ.	10	—
	Radiant sensitivity *3	Typ.	80	mA/W
Anode	Luminous sensitivity *2	Min.	0.1	A/lm
		Typ.	0.8	
	Radiant sensitivity *2 *3	Typ.	670	A/W
	Dark current *2 *4	Typ.	0.1	nA
		Max.	1	
Rise time *2		Typ.	350	ps
Ripple noise *2 *5 (peak to peak)		Max.	0.1	mV
Settling time *6		Max.	10	s
Operating ambient temperature *7			+5 to +50	°C
Storage temperature *7			-20 to +50	°C
Weight			105	g

*1: At +5 V input voltage, +2.0 V control voltage, and output current equal to dark current.
*2: Control voltage = +2.0 V
*3: Measured at the peak sensitivity wavelength
*4: After 30 minutes storage in darkness
*5: Cable RG-174/U, Cable length 450 mm, Load resistance = 50 Ω, Load capacitance = 22 pF
*6: The time required for the output to reach a stable level following a change in the control voltage from +2.0 V to +1.6 V
*7: No condensation

Figure 1: Schematic diagram

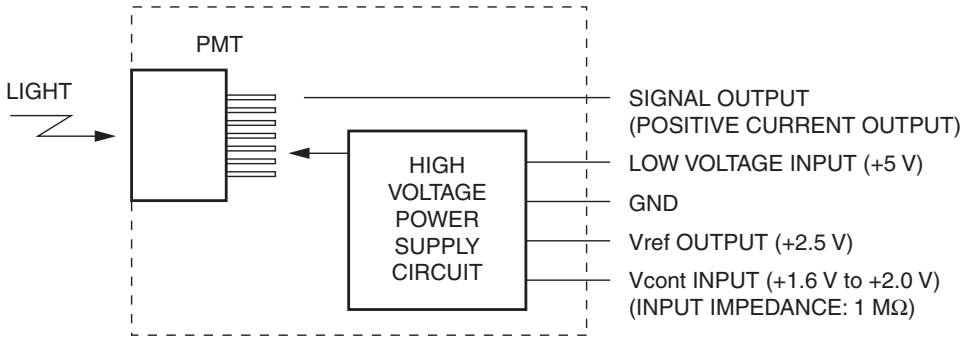

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Figure 2: Time response (Typ.)

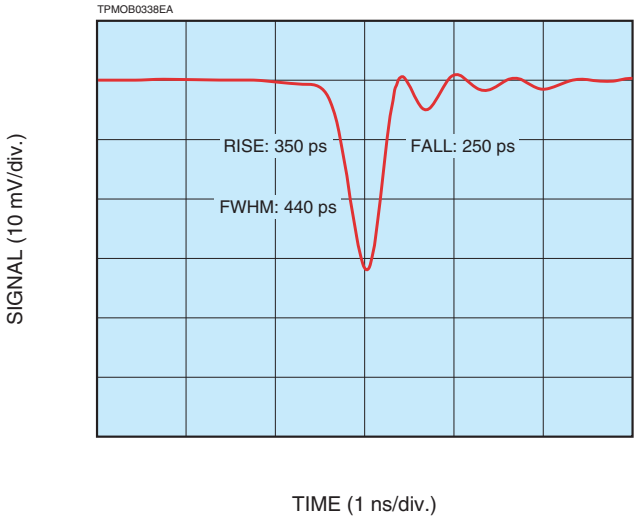

Figure 3: Eye pattern

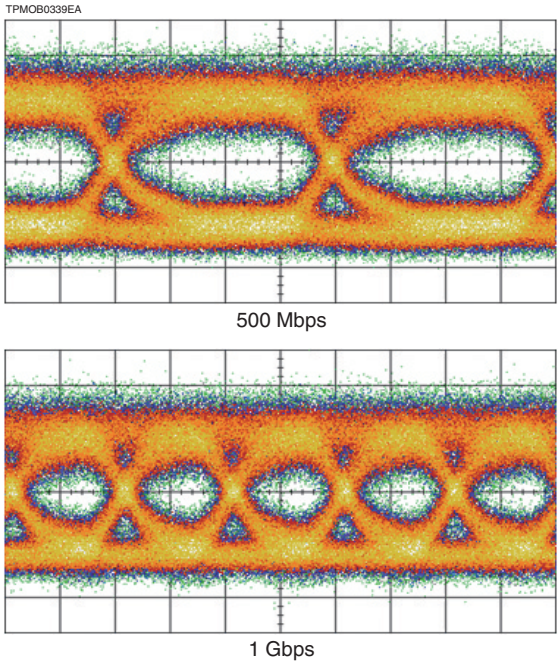

Figure 4: Sensitivity adjustment method

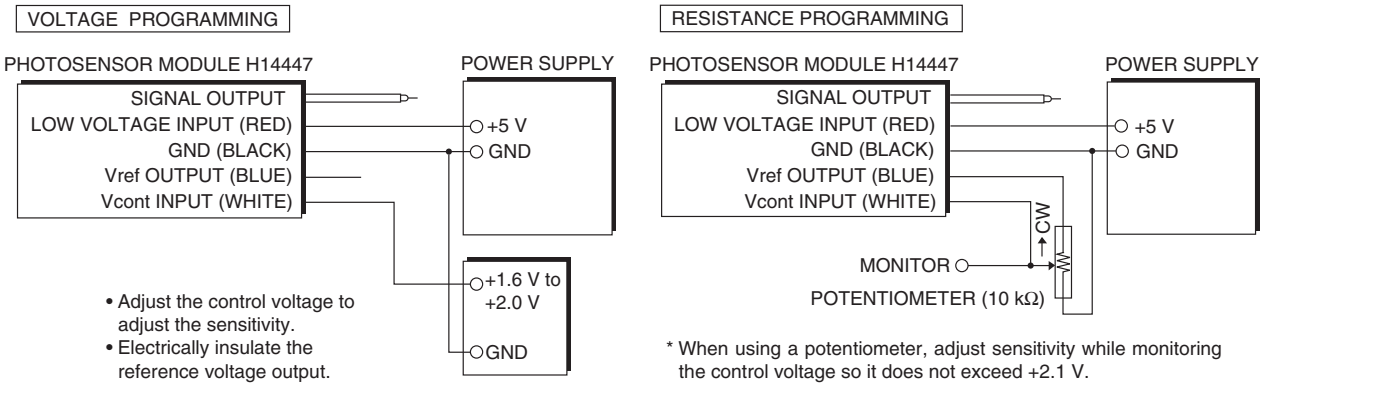

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Figure 5: Spectral response

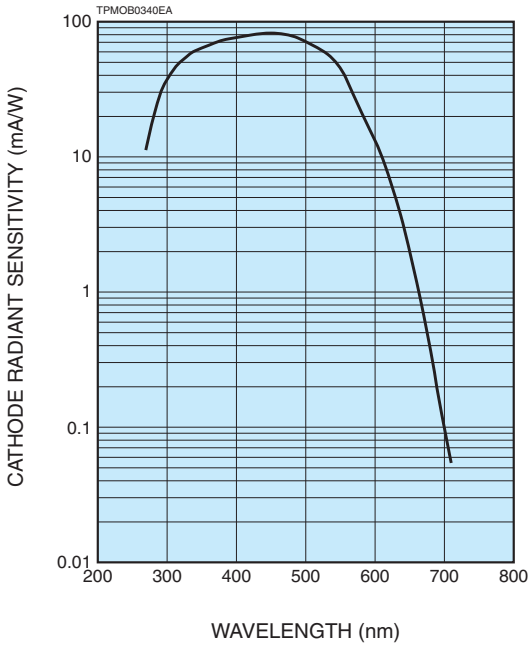


Figure 6: Gain (Typ.)

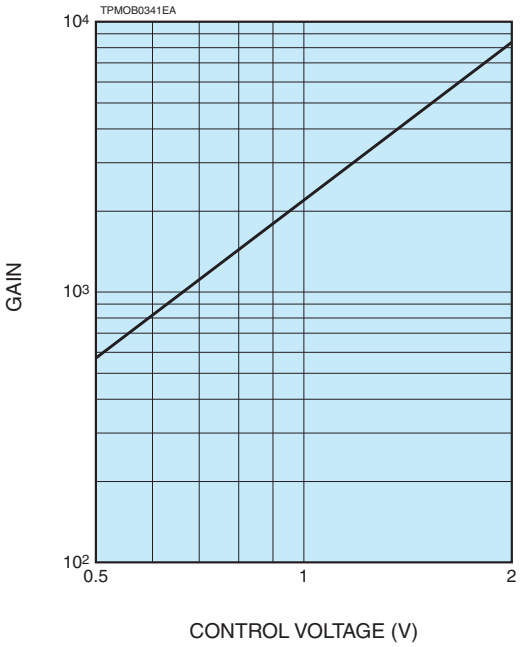
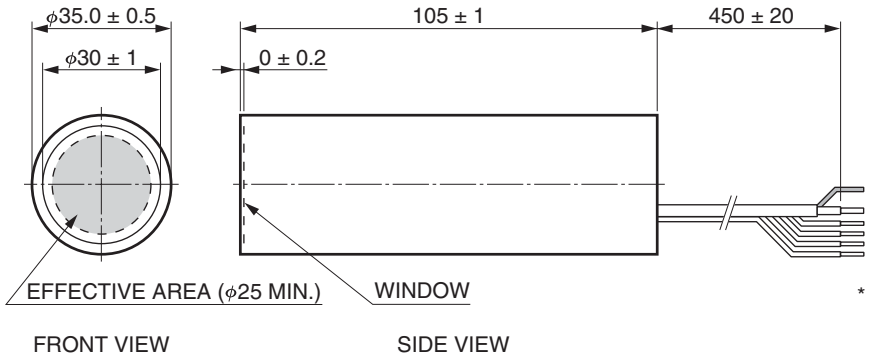


Figure 7: Dimensional outlines (Unit: mm)



SIGNAL OUTPUT	: RG-174/U *
LOW VOLTAGE INPUT (+5 V)	: AWG26 (RED)
GND	: AWG26 (BLACK)
Vref OUTPUT (+2.5 V)	: AWG26 (BLUE)
Vcont INPUT (+1.6 V to +2.0 V)	: AWG26 (WHITE)

* Option: Available with BNC/SMA connector

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PHOTOSENSOR MODULE H14447

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