

FEATURES

- High quantum efficiency: GaAsP photocathode
- Large effective area: □14 mm
- Low-noise & high-speed amplifier built-in photosensor



SPECIFICATIONS

GENERAL & CHARACTERISTICS (at 25 °C)

Parameter			Description / Value	Unit		
Input voltage			±4.5 to ±5.5	V		
Max. input voltage			±5.5	V		
Max. input current ^①			+26 / -23	mA		
Max. output signal voltage ^②			+2 (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			□14	mm		
Spectral response range			300 to 740	nm		
Peak quantum efficiency wavelength			520	nm		
Cathode sensitivity	Quantum efficiency	at peak quantum efficiency wavelength	Min.	40	%	
			Typ.	45		
	Radiant sensitivity	at peak quantum efficiency wavelength	Min.	168		mA/W
			Typ.	189		
Anode ^③ sensitivity	Radiant sensitivity	at peak quantum efficiency wavelength	Min.	3.4	V/nW	
			Typ.	7.5		
	Voltage output in darkness ^④		Typ.	0.2	mV	
		Max.	1			
PMT Gain		Min.	1.0 × 10 ⁶	—		
	Typ.	2.0 × 10 ⁶				
Frequency bandwidth (-3 dB)			DC to 30 MHz	—		
Current-to-voltage conversion factor			0.02	V/μA		
Output offset voltage			Typ.	±5	mV	
Ripple noise ^{⑤⑥} (peak to peak)			Max.	1	mV	
Settling time ^⑥			Max.	10	s	
Operating ambient temperature ^⑦			+5 to +50	°C		
Storage temperature ^⑦			-20 to +50	°C		
Weight			Typ.	98	g	

- NOTE:** ① At ±5 V input voltage and +1.0 V control voltage in darkness
 ② At ±5 V input voltage, Averaged over any interval of 30 seconds maximum, Max pulse output signal voltage = +2 V.
 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 = 15 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

PHOTOSENSOR MODULE H15460-40

Figure 1: Spectral response

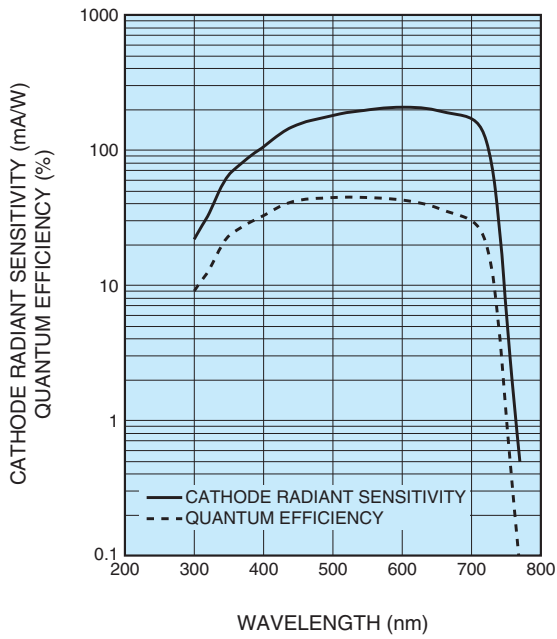


Figure 2: Typical gain

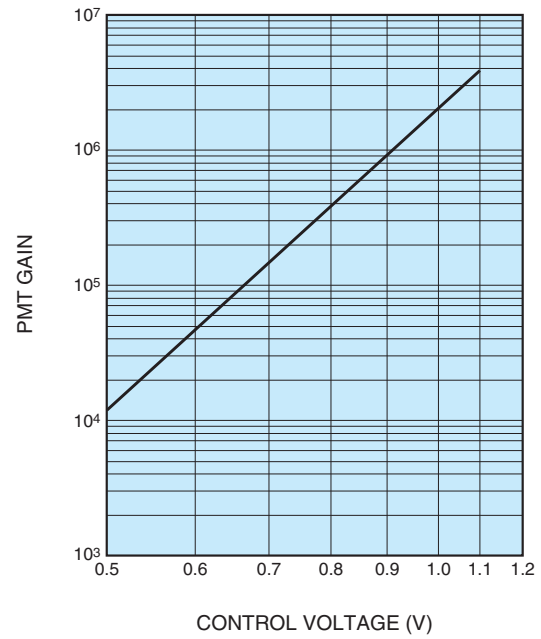


Figure 3: Typical frequency response

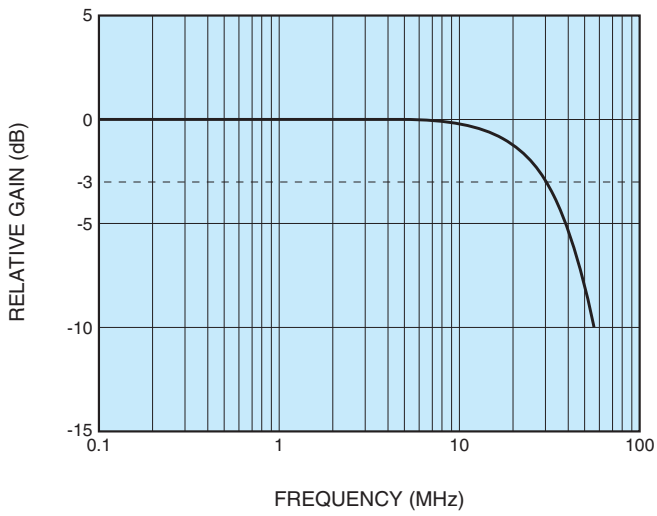


Figure 4: Typical ripple noise

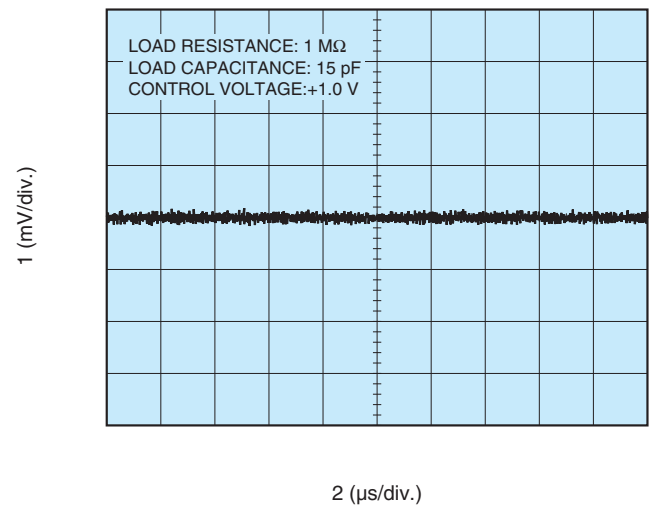


Figure 5: Typical output characteristics

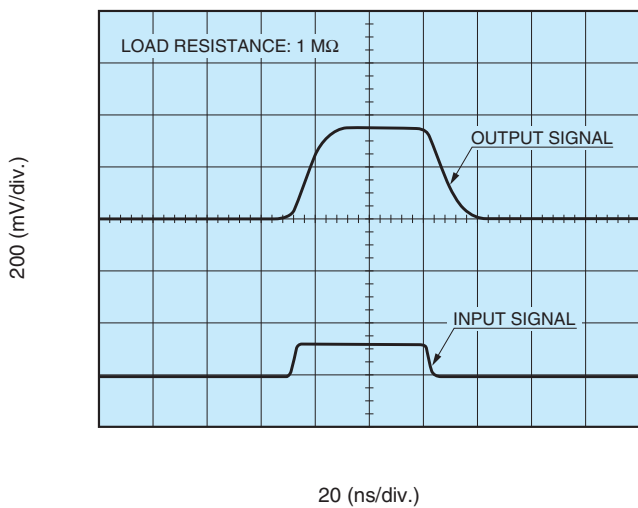


Figure 6: Schematic diagram

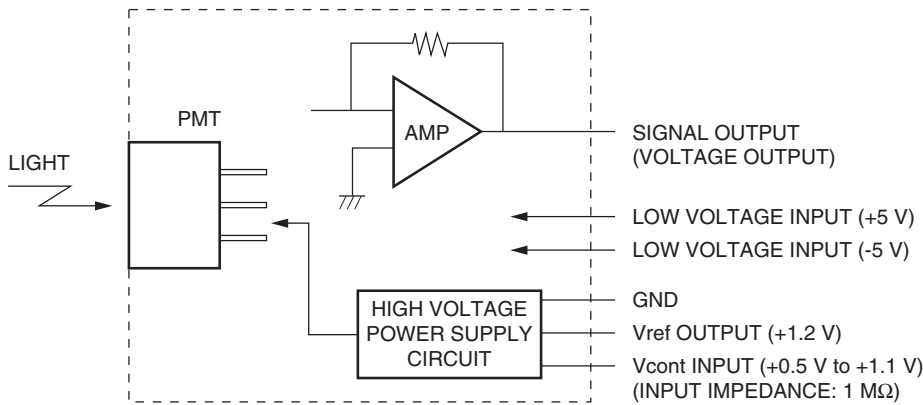


Figure 7: Sensitivity adjustment method

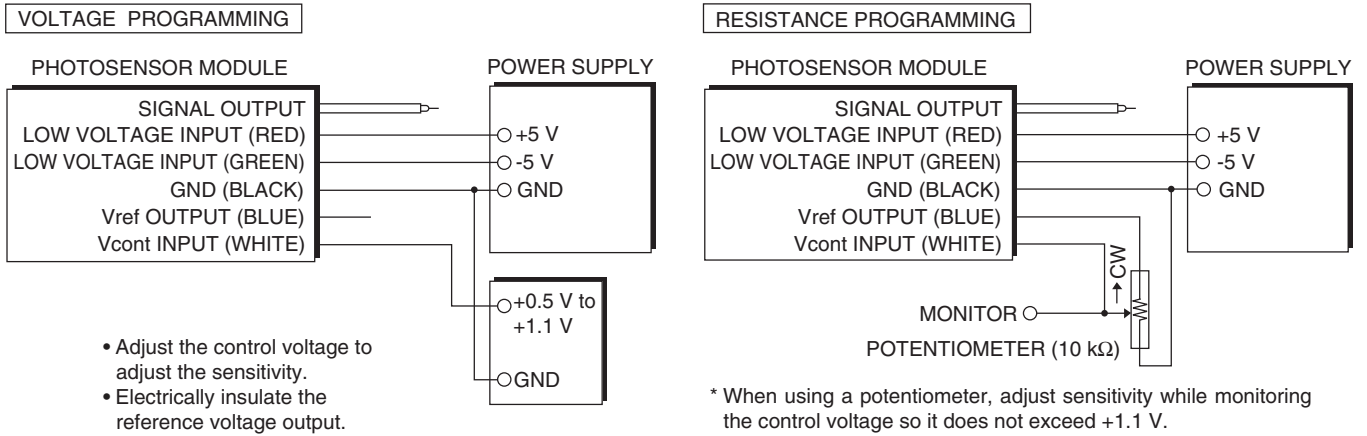
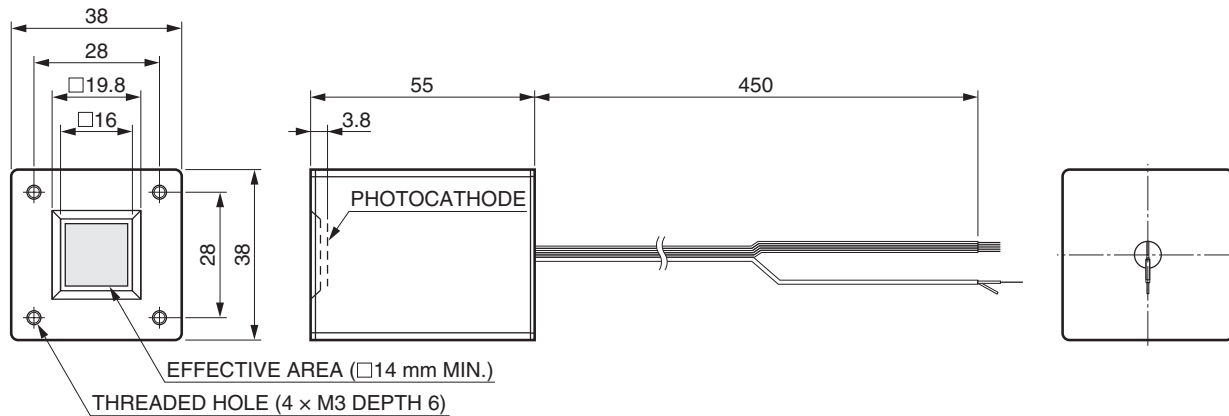


Figure 8: Dimensional outline (Unit: mm)



PHOTOSENSOR MODULE H15460-40

RELATED PRODUCT

POWER SUPPLY FOR PHOTOMULTIPLIER TUBE MODULES C10709

The C10709 is the power supply for photomultiplier tube modules which has 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
Input voltage	AC100 to AC240	V

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

HAMAMATSU PHOTONICS K.K. www.hamamatsu.com

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, NJ 08807, 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)8152-265-8 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: infos@hamamatsu.fr

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

North Europe: Hamamatsu Photonics Norden AB: Torshamnsgatan 35 16440 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)02-93 58 17 33, Fax: (39)02-93 58 17 41 E-mail: info@hamamatsu.it

China: Hamamatsu Photonics (China) Co., Ltd.: 1201 Tower B, Jiaming Center, 27 Dongsanhuan Bellu, Chaoyang District, 100020 Beijing, P.R. 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, Section 2, Gongdao 5th Road, East District, Hsinchu, 300, Taiwan R.O.C. Telephone: (886)3-659-0080, Fax: (886)3-659-0081 E-mail: info@hamamatsu.com.tw

TPMO1096E02
JAN. 2021 IP