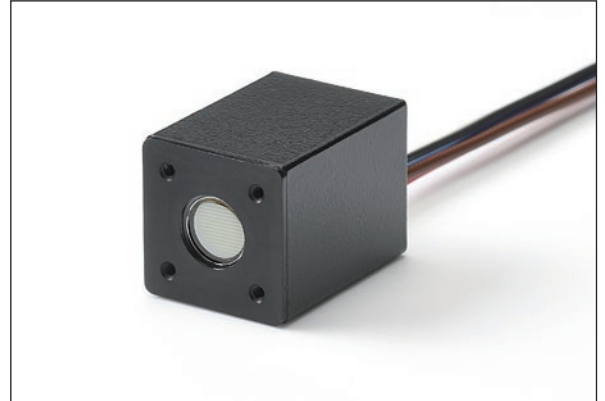


OVERVIEW

The H14990 series is a photomultiplier tube module containing a high-speed response TO-8 type head-on photomultiplier tube and a high-voltage power supply circuit.

FEATURES

- High speed response: Up to 800 MHz
- Large effective area: $\phi 8$ mm
- Current output



SPECIFICATIONS

(at +25 °C)

Parameter		H14990-100-02	H14990-103-02	Unit
Spectral response		300 to 650	185 to 650	nm
Photocathode		Super bialkali		—
Window material		Borosilicate glass	UV glass	—
Input voltage		+4.5 to +5.5		V
Max. input voltage		+5.5		V
Max. input current *1		3.2		mA
Max. average output signal current *2		100		μA
Max. control voltage		+1.0 (Input impedance 1 MΩ)		V
Recommended control voltage adjustment range		+0.5 to +1.0 (Input impedance 1 MΩ)		V
Effective area		φ8		mm
Peak sensitivity wavelength		400		nm
Cathode	Luminous sensitivity	Min.	80	μA/lm
		Typ.	105	
	Blue sensitivity index (Blue filter)	Typ.	13.5	—
	Radiant sensitivity *3	Typ.	110	mA/W
Anode	Luminous sensitivity *2	Min.	0.4	A/lm
		Typ.	2.63	
	Radiant sensitivity *2 *3	Typ.	2.75 × 10 ³	A/W
	Dark current *2 *4	Typ.	0.1	nA
Max.		1		
	Rise time *2	Typ.	370	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	48		g

*1: At +5 V input voltage and +0.8 V control voltage in darkness

*2: Control voltage = +0.8 V

*3: Measured at the peak sensitivity wavelength

*4: After 30 min storage in darkness

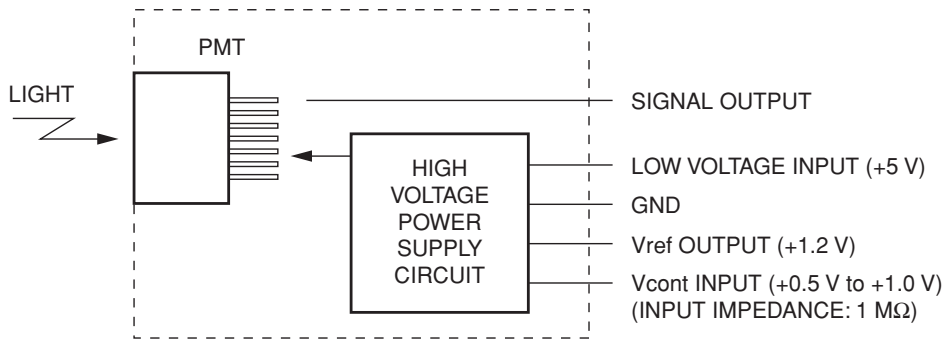
*5: Cable RG-178B/U, Cable length 450 mm, Load resistance = 50 Ω

*6: The time required for the output to reach a stable level following a change in the control voltage from +0.8 V to +0.5 V

*7: No condensation

PHOTOMULTIPLIER TUBE MODULE H14990 SERIES

Figure 1: Schematic diagram



TPMOC0285EA

Figure 2: Time response (Typ.)

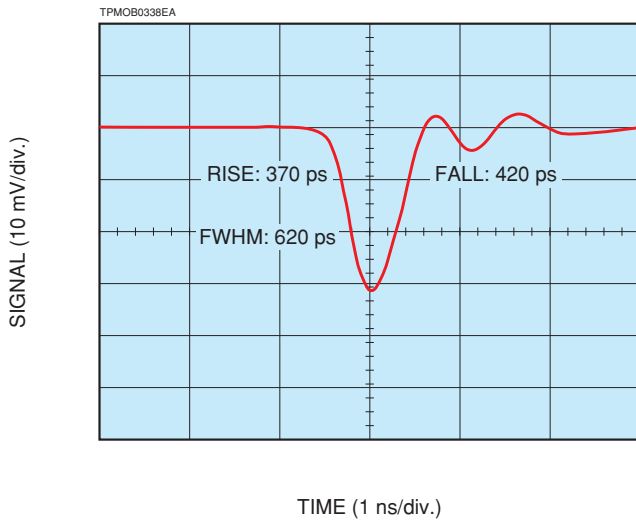


Figure 3: Eye pattern

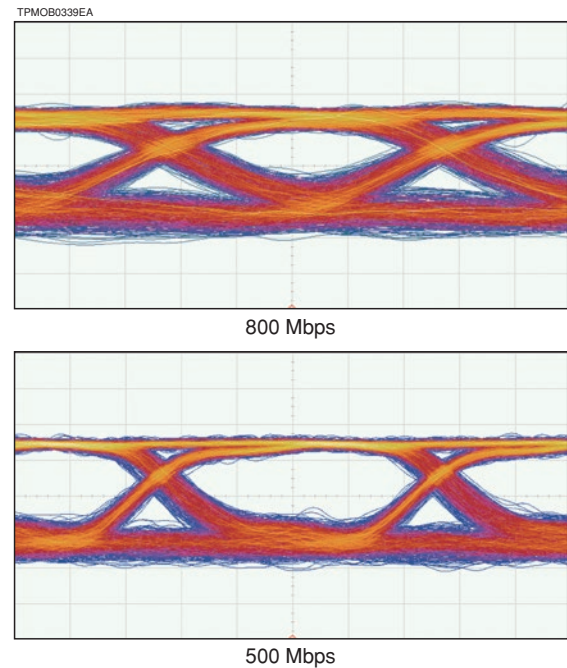
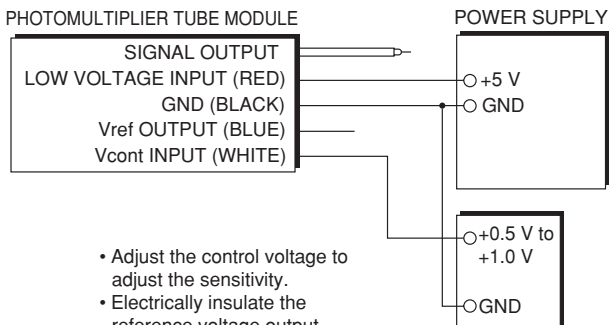
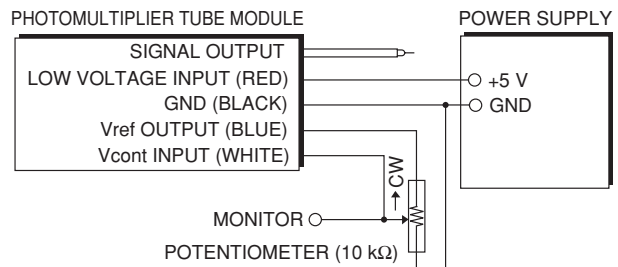


Figure 4: Sensitivity adjustment method

VOLTAGE PROGRAMMING



RESISTANCE PROGRAMMING



* When using a potentiometer, adjust sensitivity while monitoring the control voltage so it does not exceed +1.0 V.

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Figure 5: Spectral response

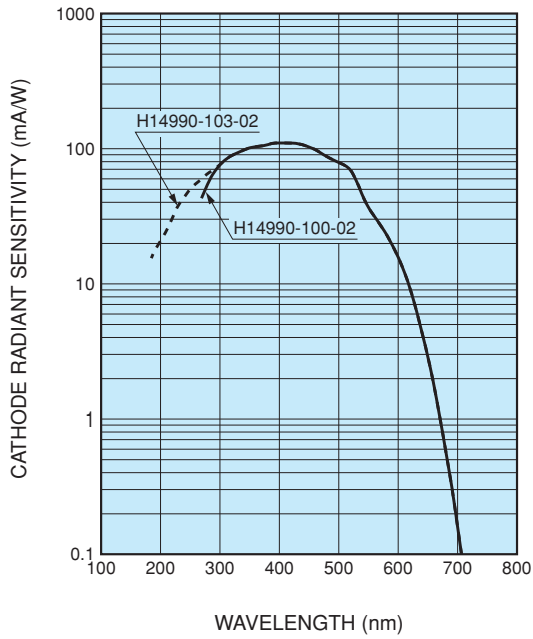


Figure 6: Gain (Typ.)

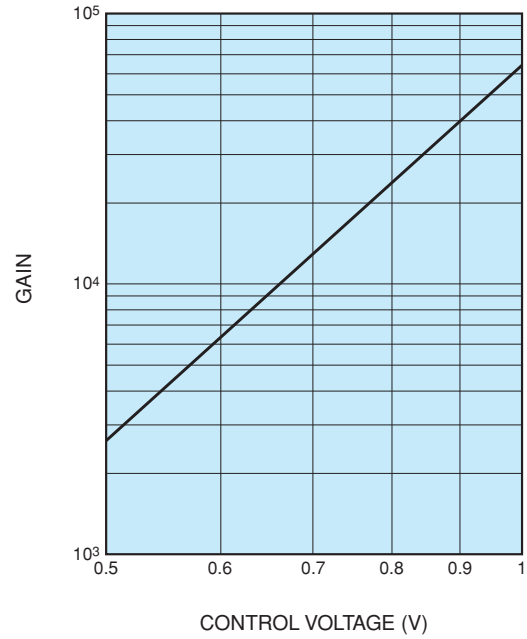
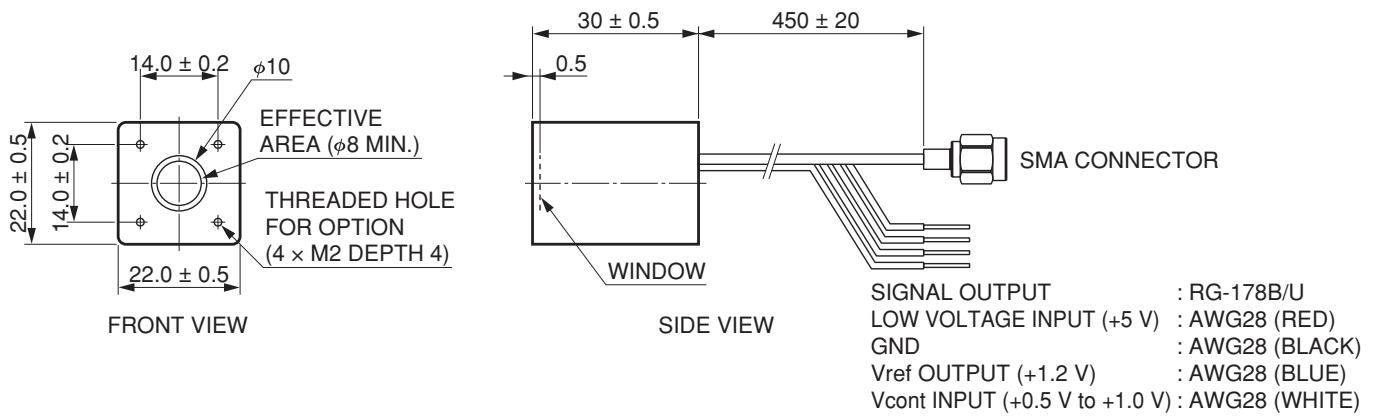


Figure 7: Dimensional outlines (Unit: mm)

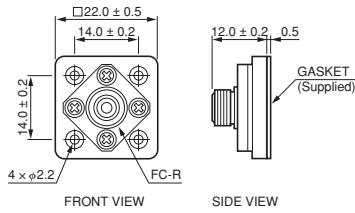


PHOTOMULTIPLIER TUBE MODULE H14990 SERIES

OPTION

OPTICAL FIBER ADAPTER E5776 / E5776-51 (Unit: mm)

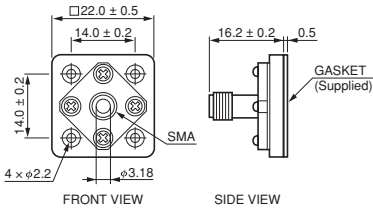
E5776 (FC Type)



* Supplied with M2 screws(4 pcs) for fixing to module

TACCA0055EB

E5776-51 (SMA Type)

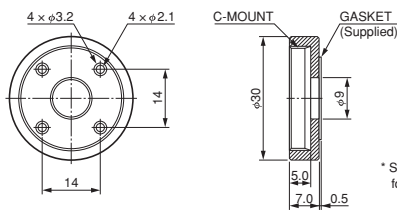


* Supplied with M2 screws(4 pcs) for fixing to module

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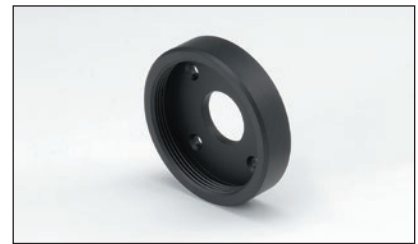


C-MOUNT ADAPTER A9865 (Unit: mm)



* Supplied with M2 screws(4 pcs) for fixing to module

TPMOA0056EB



Note: Optical blocks are available for these photosensor modules to make compact optical systems without light leakage.

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.



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