

OVERVIEW

The H14950 series / H14951 series are compact photo-multiplier tube modules containing a metal package PMT and a high-voltage power supply circuit. Despite the size nearly equal to photodiodes, this module provides high gain, wide dynamic range, and high-speed response. The H14950 series are pin output type, while the H14951 series are cable output type.



Left: H14950, Right: H14951

PRODUCT VARIATIONS

Type No.	Spectral response	Photocathode material	Input window material
H14950-100 / H14951-100	300 nm to 650 nm	Super bialkali	Borosilicate glass
H14950-103 / H14951-103	185 nm to 650 nm	Super bialkali	UV glass
H14950-200 / H14951-200	300 nm to 650 nm	Ultra bialkali	Borosilicate glass
H14950-01 / H14951-01	300 nm to 870 nm	Multialkali	Borosilicate glass
H14950-04 / H14951-04	185 nm to 870 nm	Multialkali	UV glass
H14950-20 / H14951-20	300 nm to 920 nm	Extended red multialkali	Borosilicate glass

SPECIFICATIONS

Parameter		H14950 series / H14951 series				Unit		
Suffix		-100, -103	-200	-01, -04	-20	—		
Input voltage		+11.5 to +15.5				V		
Max. input voltage		+18.0				V		
Max. input current *1		12.0				mA		
Max. output signal current *2		100				μA		
Max. control voltage		+1.0 (Input impedance 30 kΩ)				V		
Recommended control voltage adjustment range		+0.5 to +1.0 (Input impedance 30 kΩ)				V		
Effective area		φ8				mm		
Peak sensitivity wavelength		400	400	400	630	nm		
Cathode	Luminous sensitivity	Min.	80	100	100	350	μA/lm	
		Typ.	105	135	200	500		
	Blue sensitivity index	Typ.	13.5	15.5	—	—	—	
	Red/White ratio	Typ.	—	—	0.25	0.45	—	
Radiant sensitivity *3		Typ.	110	130	77	78	mA/W	
Anode	Luminous sensitivity *2	Min.	30	40	40	140	A/lm	
		Typ.	105	135	200	500		
	Radiant sensitivity *2*3		Typ.	1.1×10^5	1.3×10^5	0.8×10^5	0.8×10^5	A/W
	Dark current *2*4		Typ.	0.5	0.5	1	10	nA
		Max.	5	5	10	100		
Rise time *2		Typ.	0.6			ns		
Ripple noise *2*5 (peak to peak)		Max.	0.6			mV		
Settling time *6		Max.	0.2			s		
Operating ambient temperature *7		+5 to +50				°C		
Storage temperature *7		-20 to +50				°C		
Weight		32				g		

*1: Input voltage=+15.0 V, Control voltage=+0.9 V, Output current= Dark current *2: Control voltage=+0.9 V

*3: Measured at the peak sensitivity wavelength *4: After 30 min storage in darkness

*5: Cable RG-174/U, Cable length 450 mm, Load resistance=1 MΩ, Load capacitance=14 pF

*6: The time required for the output to reach a stable level following a change in the control voltage from +0.9 V to +0.5 V

*7: No condensation

PHOTOMULTIPLIER TUBE MODULES

H14950 SERIES / H14951 SERIES

Figure 1: Characteristics

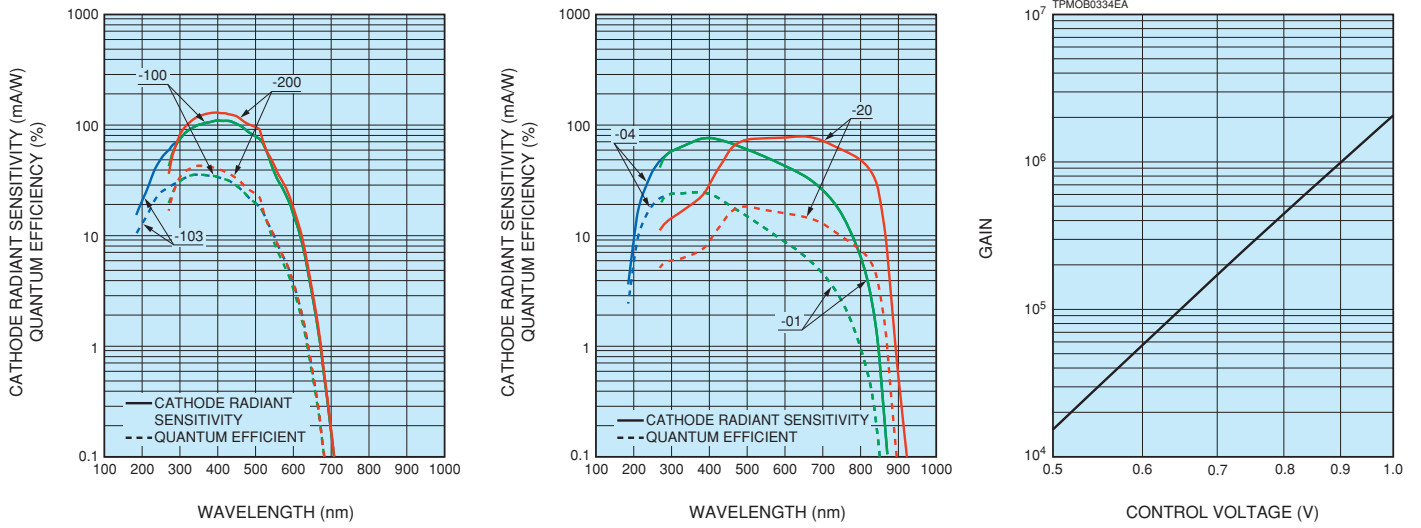
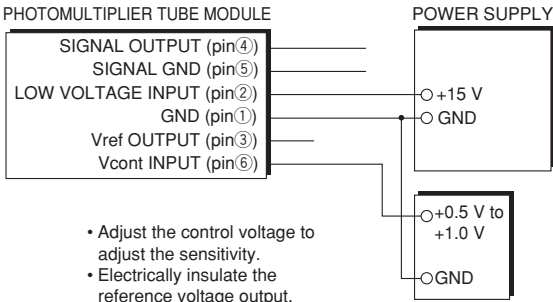


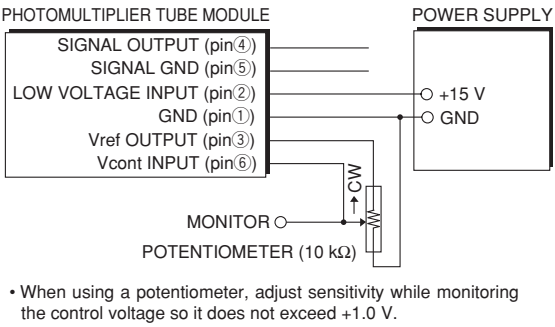
Figure 2: Sensitivity adjustment method

●H14950 series

VOLTAGE PROGRAMMING



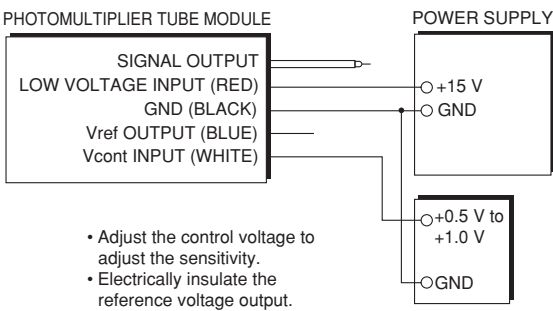
RESISTANCE PROGRAMMING



TPMOC0282EA

●H14951 series

VOLTAGE PROGRAMMING



RESISTANCE PROGRAMMING

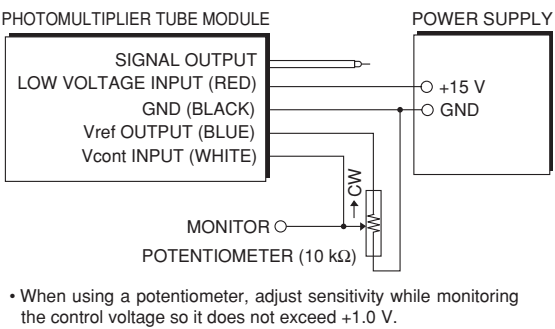
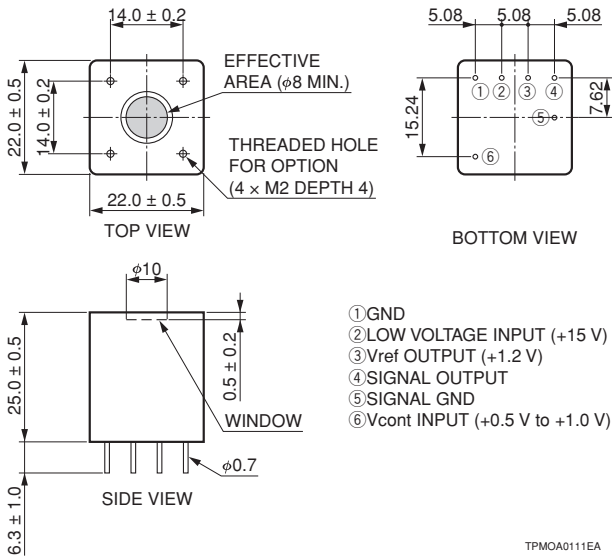


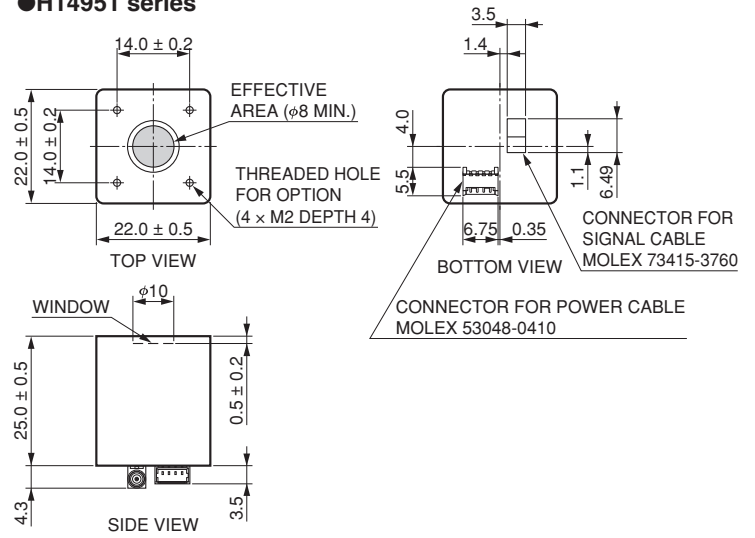
Figure 3: Dimensional outline (Unit: mm)

●H14950 series



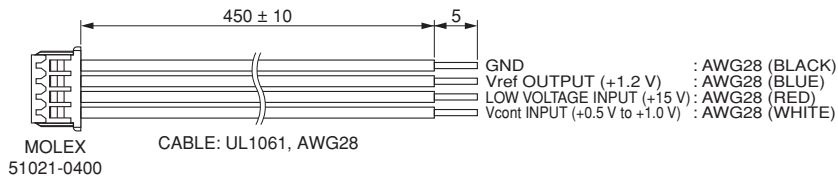
Note: Optical blocks are available for these photomultiplier tube modules to make compact optical systems without light leakage.

●H14951 series

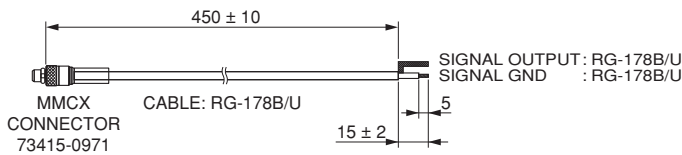


Note: Secure insulation space to avoid contact with printed circuit board pads.

Power cable (Supplied)



Signal cable (Supplied)



TPMOA0115EA

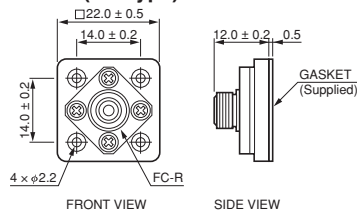
PHOTOMULTIPLIER TUBE MODULES

H14950 SERIES / H14951 SERIES

OPTION

OPTICAL FIBER ADAPTER E5776 / E5776-51

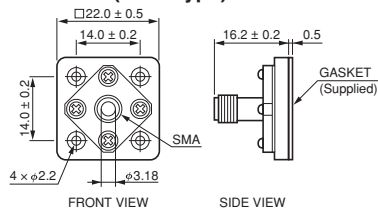
E5776 (FC Type)



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

TACCA0055EB

E5776-51 (SMA Type)

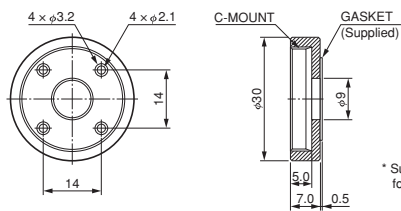


* Supplied with M2 screws(4 pcs) for fixing to module

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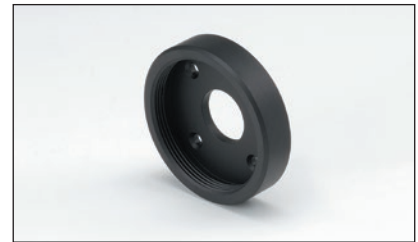


C-MOUNT ADAPTER A9865



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

TPMOA0056EB



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

RELATED PRODUCT

POWER SUPPLY FOR PHOTOMULTIPLIER TUBE MODULES C7169

The C7169 is the power supply for photomultiplier tube modules which has 15 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	+15 / -15	V
Output current	Max. 0.3 (+15 V) / 0.2 (-15 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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