

Photon Counting Head

HAMAMATSU

H7155 Series



The H7155 series are compact photon counting head devices consisting of a metal package photomultiplier tube along with a high-speed photon counting circuit and a high-voltage power supply circuit. The high voltage supply for photomultiplier tube and the discriminator level are preset to optimum values, allowing photon counting measurement by just connecting a +5 V supply. The H7155-20/H7155-21 has an internal prescaler of division by 4. This pre-scaler improves the count linearity compared to the H7155/H7155-01.

Product Variations

Type No.	Spectral Response	Prescaler
H7155	300 nm to 650 nm	no
H7155-01	300 nm to 850 nm	
H7155-20	300 nm to 650 nm	yes
H7155-21	300 nm to 850 nm	

Specifications

Parameter			H7155	H7155-20	H7155-01	H7155-21	Unit
Input Voltage			+4.5 to +5.5				V
Max. Input Voltage			+6				V
Max. Input Current			50	70	50	70	mA
Effective Area			φ8				mm
Peak Sensitivity Wavelength			420		400		nm
Count Sensitivity	Typ.	300 nm	1.2 × 10 ⁵	1.2 × 10 ⁵ *2	1.2 × 10 ⁵	1.2 × 10 ⁵ *2	s ⁻¹ ·pW ⁻¹
		400 nm	2.7 × 10 ⁵	2.7 × 10 ⁵ *2	2.7 × 10 ⁵	2.7 × 10 ⁵ *2	
		500 nm	2.2 × 10 ⁵	2.2 × 10 ⁵ *2	2.0 × 10 ⁵	2.0 × 10 ⁵ *2	
		600 nm	2.1 × 10 ⁴	2.1 × 10 ⁴ *2	1.4 × 10 ⁵	1.4 × 10 ⁵ *2	
		700 nm	—	—	6.7 × 10 ⁴	6.7 × 10 ⁴ *2	
Count Linearity *1			1.5 × 10 ⁶	10 × 10 ⁶ *2	1.5 × 10 ⁶	10 × 10 ⁶ *2	s ⁻¹
Dark Count *3		Typ.	50	50 *2	600	600 *2	s ⁻¹
		Max.	100	100 *2	1000	1000 *2	
Pulse-pair Resolution			70	10	70	10	ns
Output Pulse Width			30	Depends on count rate	30	Depends on count rate	ns
Output Pulse Height *4	Min.	3.0	2.0	3.0	2.0	V	
	Typ.	3.6	2.2	3.6	2.2		
Recommended Load Resistance			50				Ω
Signal Output Logic			Positive logic				—
Operating Ambient Temperature *5			+5 to +40				°C
Storage Temperature *5			-20 to +50				°C
Weight			75				g

*1: Random pulse, at 10 % count loss

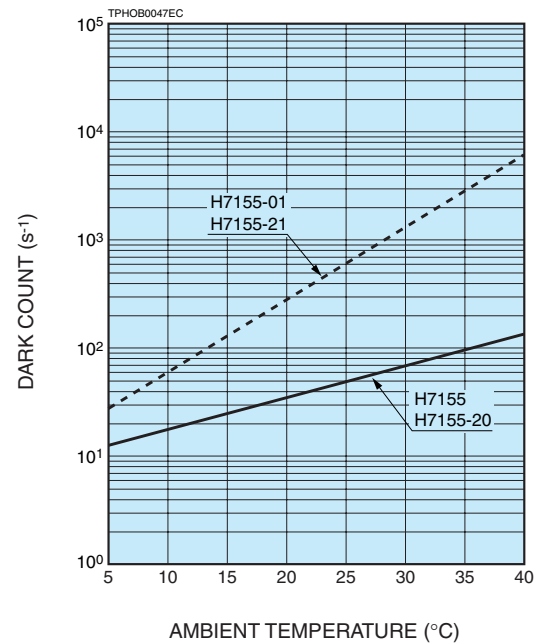
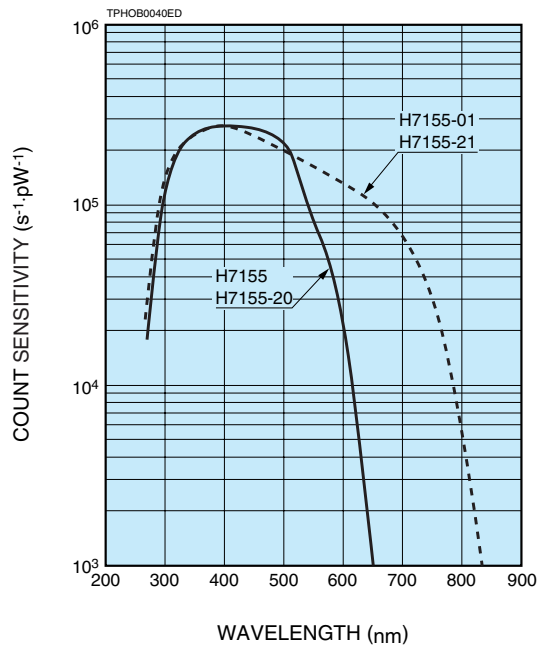
*2: Output count will be decreased to 1/4 after the prescaler.

*3: After 30 minutes storage in darkness

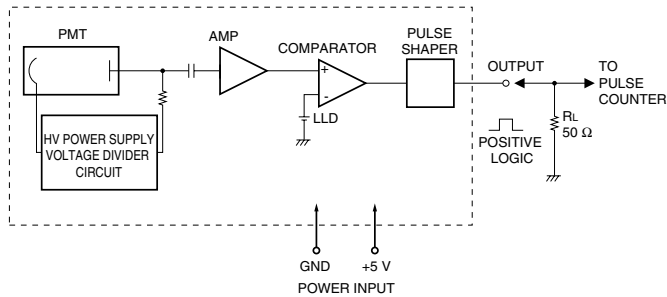
*4: With input voltage +5 V, Load resistance 50 Ω and Coaxial cable RG-174/U (450 mm)

*5: No condensation

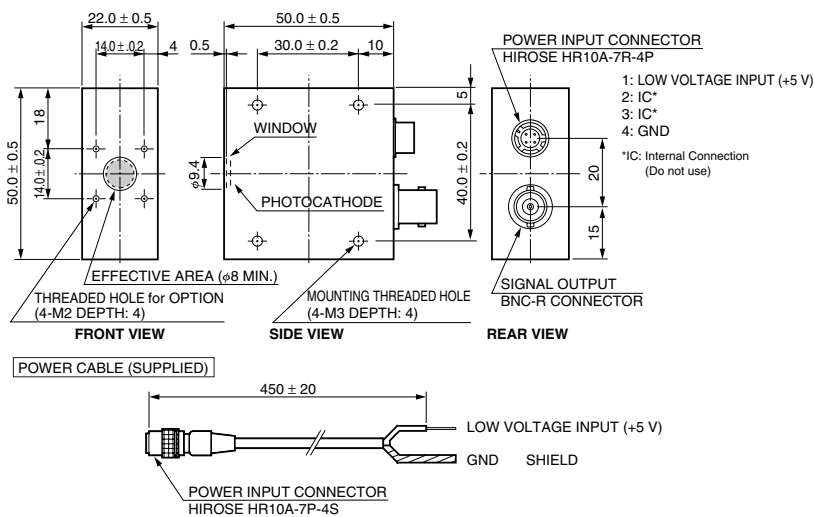
Characteristics (Count sensitivity, Dark count)



Block Diagram



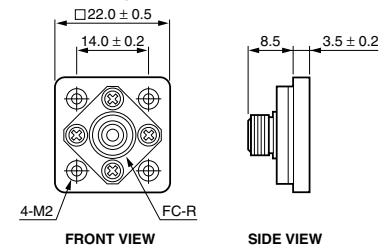
Dimensional Outlines (Unit: mm)



Options

(Optical Fiber Adapter) (Unit: mm)

E5776 (FC Type)



E5776-51 (SMA Type)

