HAMAMATSU

25 mm DIA. PHOTOCATHODE PROXIMITY FOCUSED IMAGE INTENSIFIER

V7670U

Proximity Focused, High Resolution, High Image Quality
10 ns Gate Operation for Scientific Applications

FEATURES

- **High Resolution.....48 Lp/mm Typ.**
- **Gating Operation.....10 ns (Gate width)**
- **High UV Sensitivity & Wide Spectral Response**
- **Compact and Light Weight**
- **No Image Distortion**

APPLICATIONS

- **Shutter Cameras**
- **Time Resolved Low-light-level Imaging**
  (with image sensors such as CCD, vidicon, etc.)
  Microscope, Low-light-level TV, Streak cameras, etc.
- **Time Resolved Low-light-level Multichannel Spectrophotometers**
  (with linear photodiode array, etc.)
  Raman spectroscopy, Emission spectroscopy, etc.

SPECIFICATIONS

GENERAL

Parameter		Description/Value	Unit
Spectral Response		160 to 900	nm
Wavelength of Maximum Response		430	nm
Photocathode	Material	Multialkali	—
	Minimum Effective Diameter	25	mm
Input Window	Material	Synthetic silica ⓐ	—
	Thickness	5.9	mm
	Index of Refraction at 589.6 nm	1.46	—
MCP		Single stage	—
Phosphor Screen	Material	P-43	—
	Minimum Effective Diameter	25	mm
Output Window Material		Fiber optic plate	—
Case Material		Poly Oxy Methylene (POM)	—
Lead Wire Cover Material		Teflon	—
Weight		Approx. 120	g

NOTE: ⓐ A fiber input window type is also available

MAXIMUM RATINGS

Parameter		Value	Maximum Value	Unit
Supply Voltage	Photocathode and MCP-In	150 to 200	230	Vdc
	MCP-In and MCP-Out ⓑ	500 to 1000	1010	Vdc
	MCP-Out and Phosphor-Screen	5000 to 6000	6100	Vdc
Temperature	Storage	—	-55 to +65	°C
	Operating	—	-20 to +40	°C
	Shock	—	12	°C/min

NOTE: ⓑ The maximum supply voltage and recommended supply voltage for the MCP-In and MCP-Out are noted on the test data sheet when the product is delivered. Please refer to the test data sheet for these values.

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CHARACTERISTICS (at 25°C)

Parameter			Min.	Typ.	Max.	Unit
Photocathode Sensitivity	Luminous		150	230	—	μA/lm
	Radiant	at 200 nm	—	22	—	mA/W
		at 430 nm	—	53	—	
		at 550 nm	—	41	—	
		at 700 nm	—	26	—	
		at 800 nm	—	17	—	
Light Gain	Luminous Gain ⓒ		7.0×10^3	1.1×10^4	—	$lm/m^2/lx$
	Radiant Emittance Gain at 430 nm		—	6.8×10^3	—	$W/m^2 / W/m^2$
EBI	Luminous		—	1.0×10^{-11}	4.0×10^{-11}	lm/cm^2
	Radiant at 430 nm		—	3.0×10^{-14}	1.0×10^{-13}	W/cm^2
Limiting Resolution ⓓ			40	48	—	Lp/mm
Response Time (Gate width)			10	—	—	ns

NOTE:

ⓒThe luminous gain has relation to the screen luminance Lo (cd/m^2) and the illuminance Ei (lx) incident on the photocathode, and expressed by:

$$\text{Luminous Gain} = \pi \cdot \frac{Lo}{Ei}$$

1 $lm/m^2/lx$ = 1 ft - L/ft - c

ⓓThe "Lp/mm" means line pairs (one black and one white strip) per millimeter.

Figure 1: Typical Spectral Response

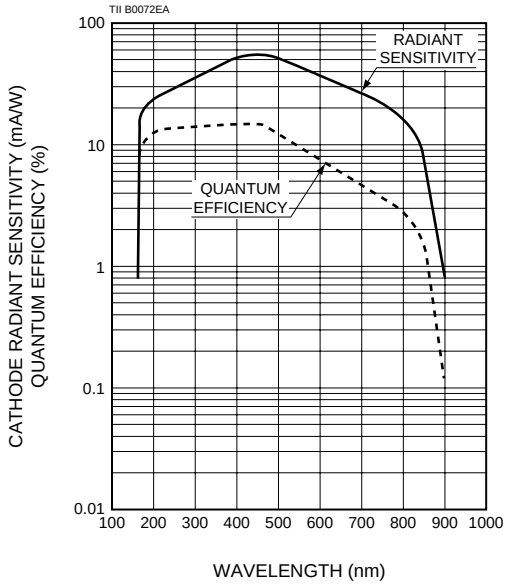


Figure 2: Typical MTF

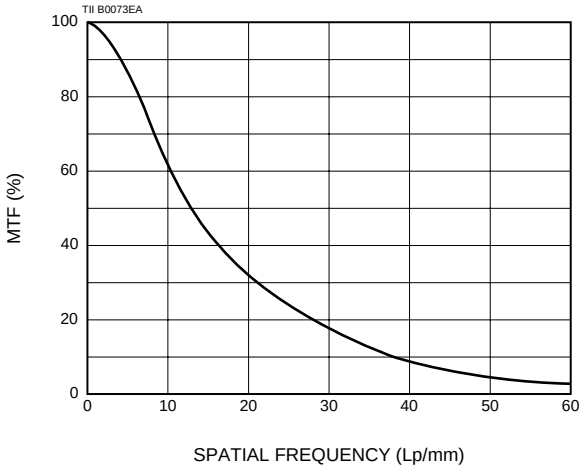
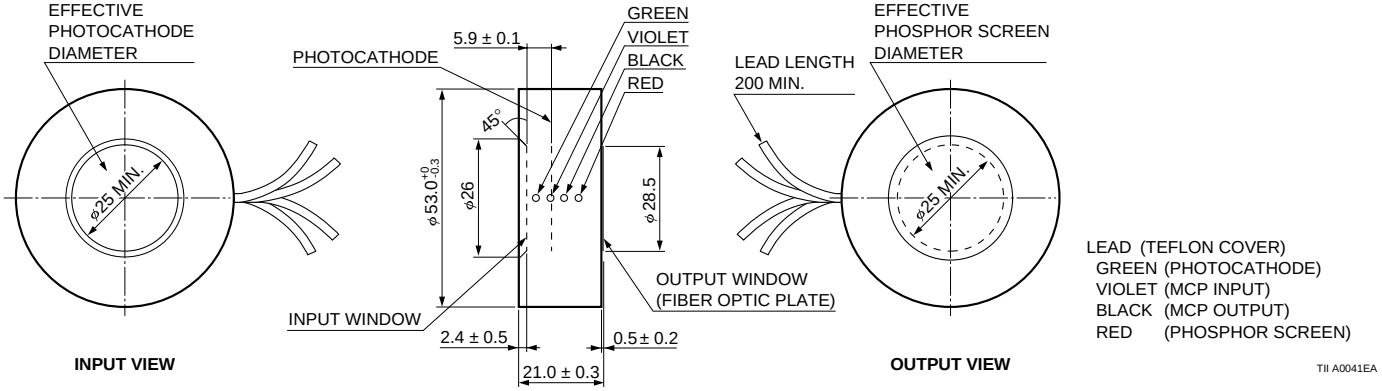


Figure 3: Dimensional Outline (Unit: mm)



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