

## 77mm (3 Inch) Square Envelope Position-Sensitive PMT with Crossed Wire Anodes Good Uniformity, Wide Effective Area

### GENERAL

Parameter		Description/Value	Unit
Spectral Response		300 to 650	nm
Wavelength of Maximum Response		420	nm
Photocathode	Material	Bialkali	—
	Typical Effective Area *	66 (X) × 55 (Y)	mm
Window	Material	Borosilicate glass	—
	Shape	Plano-plano	—
	Thickness	2.8 ± 0.3	mm
Dynode	Structure	Proximity mesh	—
	Number of Stages	16	—
Anode	Number of Wires	18 (X) + 16 (Y)	—

\* Control grid when adjusting

### MAXIMUM RATINGS (Absolute Maximum Values)

Parameter		Value	Unit
Supply Voltage	Between Anode and Cathode	1300	Vdc
Average Anode Current		0.1	mA
Ambient Temperature		-80 to +50	°C

### CHARACTERISTICS (at 25°C)

Parameter		Min.	Typ.	Max.	Unit
Cathode Sensitivity	Quantum Efficiency at 420nm	—	23	—	%
	Luminous (2856K)	—	80	—	μA/lm
	Radiant at 420nm	—	77	—	mA/W
	Blue (CS-5-58 filter)	—	9.0	—	μA/lm-b
Anode Sensitivity	Luminous (2856K)	—	32	—	A/lm
	Radiant at 420nm	—	31 × 10 <sup>3</sup>	—	A/W
Gain		—	4.0 × 10 <sup>5</sup>	—	—
Anode Dark Current (after 30min. storage in darkness)		—	20	—	nA
Time Response	Anode Pulse Rise Time	—	6.0	—	ns
	Electron Transit Time	—	20	—	ns

### VOLTAGE DISTRIBUTION RATIO AND SUPPLY VOLTAGE

Electrodes	K	F	Dy1	Dy2	Dy3	Dy4	Dy5	Dy6	Dy7	Dy8	Dy9	.....	Dy16	P
Ratio	1	1	1	1	1	1	1	VR	VR	1	.....	1	1	

Supply Voltage: 1250Vdc, K: Cathode, Dy: Dynode, P: Anode, VR: Variable

# PHOTOMULTIPLIER TUBE R3941-10

Figure 1: Typical Spectral Response

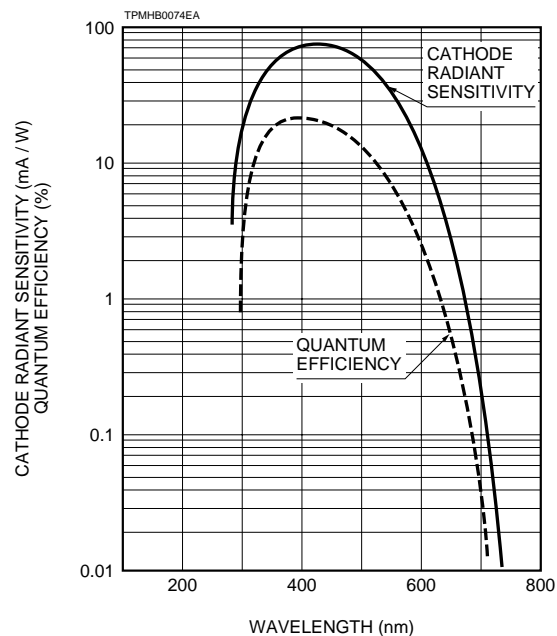
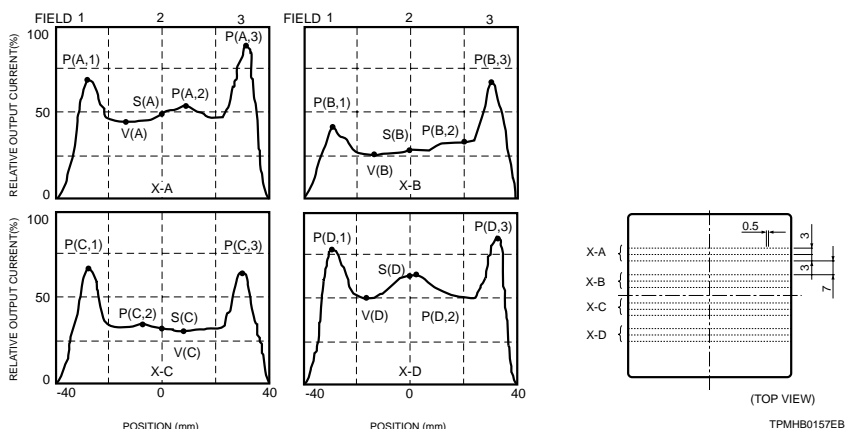


Figure 2: Typical Spatial Uniformity



**Condition:** Control grid (Dy7, Dy7) to be a middle potential between Dy6 and Dy8

**Specifications:**

- 1) Max./min. (SR) of the sensitivity at the center in region 2 to be within 3.5
- 2) Minimum value (PSR min.) of the ratio of maximum sensitivity in region 1, 3/ sensitivity at the center (PSR) to be more than 0.8 and its standard deviation/average value ( $\sigma/m$ ) to be less than 0.4
- 3) Average value (PVRm) of the ratio of max./min. sensitivity in region 2 to be less than 1.8 and its standard deviation (PVR $\sigma$ ) to be less than 0.3

**S (i)** : Sensitivity at the center of axis i  
i = A - D, j = 1 - 3

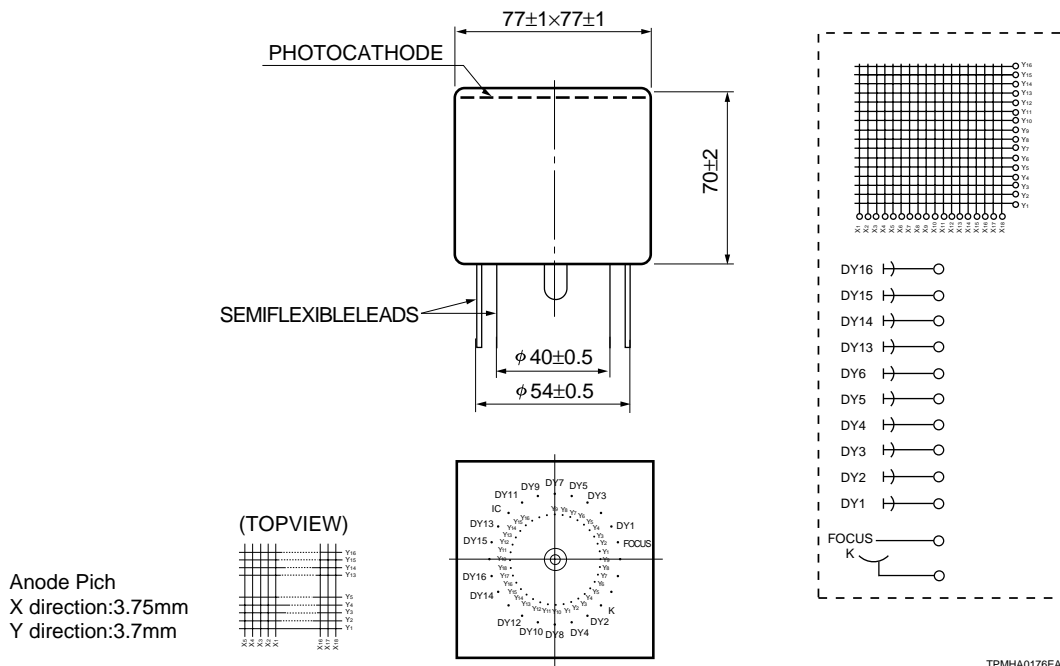
**P (i, j)** : Max. sensitivity in region j of axis i  
**V (i)** : Min. sensitivity in region 2 of axis i

$$SR = \frac{\text{MAX} [S(i)] i}{\text{MIN} [S(i)] i}$$

$$PSR (i, j) = \frac{P (i, j)}{S (i)} \quad (i = A - D, j = 1, 3)$$

$$PVR (i) = \frac{P (i, 2)}{V (i)} \quad (i = A - D)$$

Figure 3: Dimensional Outline (Unit: mm)



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