

HAMAMATSU

PRELIMINARY DATA
SEPT. 2000

GaAsP PHOTOCATHODE (18 mm DIA.) PROXIMITY FOCUSED IMAGE INTENSIFIER V8070U-64-G130

Superior Sensitivity Imaging Device for Visible Region GaAsP(Cs) Photocathode(Typ.) : QE---50 % at 530 nm and Low Noise

FEATURES

- Superior Sensitivity in Visible Region
Quantum Efficiency(Typ.).....50 % at 530 nm
- High Resolution(Typ.).....45 Lp/mm
- Gating Operation.....5 ns (Gate width)
- Low Noise/ EBI(Typ.)..... 2×10^{-14} W/cm²

APPLICATIONS

- Bio-imaging for Fluorescence/Luminescence
- Shutter Cameras
- Time Resolved Low-light-level Imaging
(with image sensors such as CCD, etc.)
Microscopes, Low-light-level TV, etc.



TII F0029

GENERAL

Parameter	Description/Value	Unit
Spectral Response (See Fig. 1)	360 to 720	nm
Wavelength of Maximum Response	530	nm
Photo-cathode	Material: GaAsP (Cs)	—
Minimum Effective Diameter	18	mm
Input Window Material	Borosilicate Glass	—
MCP ^(A)	Single Stage	—
Output Window Material ^(A)	Fiber Optic Plate	—
Phosphor Screen Material ^(A)	P-43	—
Case Material	Poly Oxy Methylene (POM)	—
Lead Wire Cover	Teflon	—
Weight (Approx.)	80	g

NOTE: (A) Please refer to "SELECTION GUIDE BY SUFFIX NUMBER".
Variety of options are available for any applications.

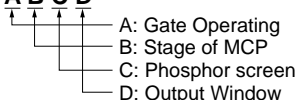
MAXIMUM RATINGS (Absolute Maximum Values)

Parameter	Ratings	Maximum Value	Unit
Supply Voltage	Photocathode-MCPin ^(B)	750 to 800	780 to 830 V dc
	MCPin-MCPout ^(B)	500 to 1000	710 to 1010 V dc
	MCPout-Phosphor Screen ^(B)	5000 to 6000	5100 to 6100 V dc
Temperature	Storage	—	-55 to +65 °C
	Operating	—	-20 to +40 °C

NOTE: (B) The maximum and recommended supply voltage are noted on the test data sheet when the product is delivered.
Please refer to the test data sheet for these values.

SELECTION GUIDE BY SUFFIX NUMBER

V8070 U - 64 - A B C D



Suffix No.	Gate Type
N	Non-Gate
G	Gateable (5ns)

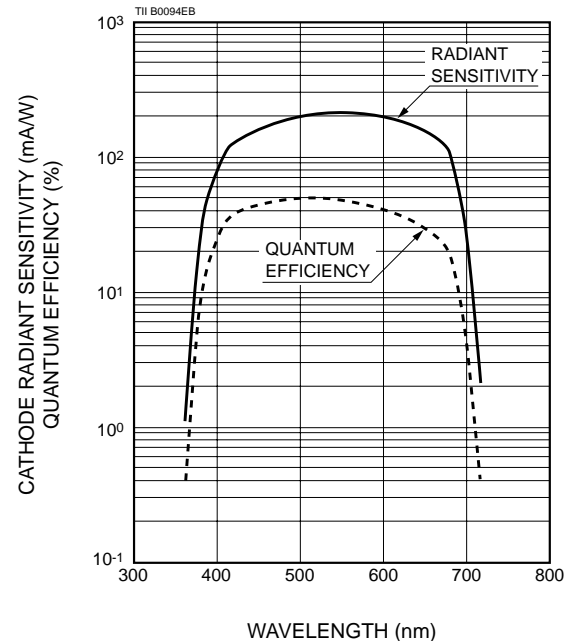
Suffix No.	Stage of MCP
1	1
2	2
3	3

Suffix No.	Phosphor Screen
0	P-20
1	P-11
3	P-43
4	P-24
6	P-46
7	P-47

Suffix No.	Output Window
0	Fiber Optic Plate
1	Fiber Optic Plate W/NESA*
2	Borosilicate Glass

* With Transparent Conductive Coating

Figure 1: Typical Spectral Response



PROXIMITY FOCUSED IMAGE INTENSIFIER V8070U-64-G130

CHARACTERISTICS

Parameter		Min.	Typ.	Max.	Unit	
Photocathode	Luminous Sensitivity	400	700	—	$\mu\text{A}/\text{lm}$	
	Radiant (Quantum Efficiency)	at 400 nm	—	80 (25)	—	mA/W (%)
		at 500 nm	—	202 (50)	—	
		at 530 nm	—	214 (50)	—	
		at 600 nm	—	210 (43)	—	
at 650 nm	—	160 (30)	—			
Light Gain	Luminous Gain	1×10^4	2.2×10^4	—	$(\text{lm}/\text{m}^2)/\text{lx}$	
	Radiant Emittance Gain at 530 nm	—	1.4×10^4	—	$(\text{W}/\text{m}^2)/(\text{W}/\text{m}^2)$	
EBI	Luminous	—	8×10^{-12}	3×10^{-11}	lm/cm^2	
	Radiant at 530 nm	—	2×10^{-14}	—	W/cm^2	
Limiting Resolution		40	45	—	Lp/mm	
Response Time (Gate Width)		5	—	—	ns	

Figure 2: Radiant Emittance Gain vs. Wavelength

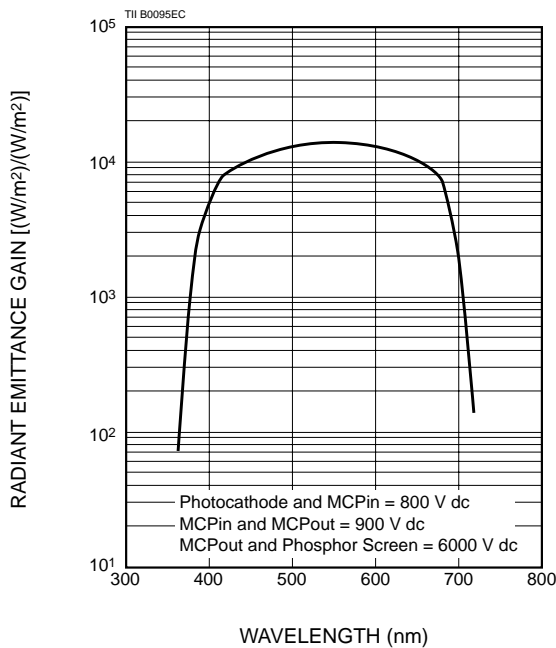


Figure 3: Typical Luminous Gain and EBI vs. MCP Voltage

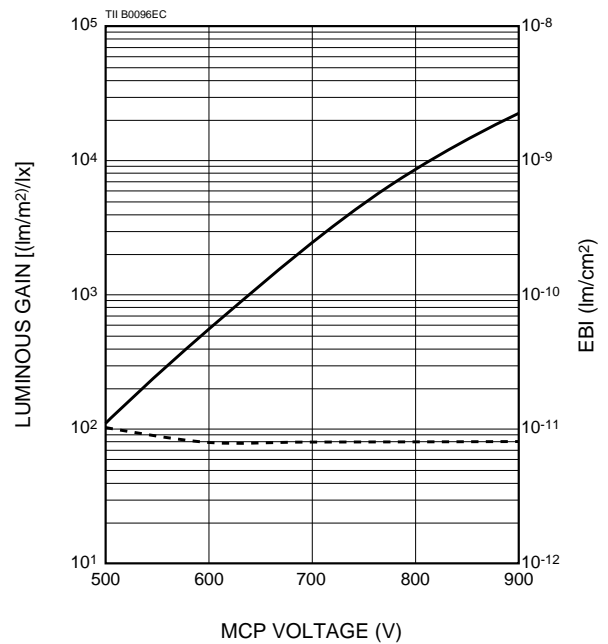
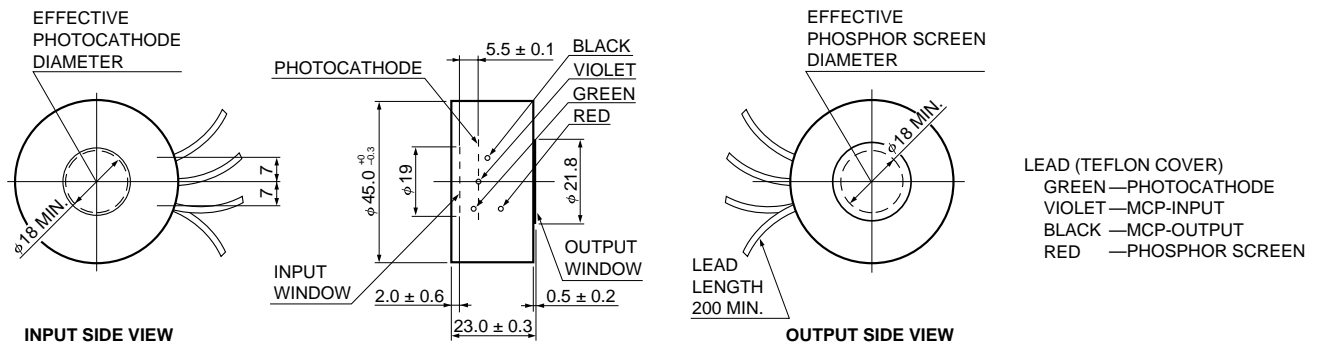


Figure 4: Dimensional Outline (Unit: mm)



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