

Image Intensifier specification
 18 millimetre micro-channel wafer
XR5™ Technology
 XX2550



184-3104A4

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Description

The Image Intensifier Assembly, 18 millimetres microchannel wafer, shall have a minimum useful photocathode and phosphor screen diameter of 17.5 millimeters (mm). The assembly shall employ a microchannel electron multiplier plate with proximity focus on the input and output. The assembly shall include the high voltage multiplier and oscillator and shall be encapsulated within a hard surface insulating sleeve or boot and assembled in a hard plastic housing. The tube is equipped with **AUTO-GATING**

- Phosphor : P22
- Input window : Glass
- Output window : Non-inverting fibre-optic

Construction

The assembly shall be fabricated in accordance with the applicable drawing.

<u>Limiting values</u>	<u>Minimal</u>	<u>Maximal</u>	<u>Unit</u>
Continuous input Supply voltage	2.0	3.7	V
Reversed Polarity (60 sec)	-3.7	+3.7	V
Storage temperature (8 hours)	-51	+65	°C
Operating temperature (2 hours max.)	-45	+52	°C

Operating conditions and characteristics

- Operating Supply voltage : 2.7 V
- Ambient temperature : 20 ± 1°C

When the image intensifier is operated under the conditions mentioned above, unless otherwise specified, the characteristic values that follow are attainable:

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	<u>Minimal</u>	<u>Typical</u>	<u>Maximal</u>	<u>Unit</u>
Cathode sensitivity at 2850K	700			µA/lm
Radiant sensitivity at 830 nm	60			mA/W
Signal to noise ratio (Photocathode illuminance 108 µlx)	25	28		
Operational life T =15000 hours (signal to noise ratio)	11			
Gain at 2.10 ⁻⁶ fc	30.000		50.000	fI/fc
(Gain at 2.10 ⁻⁵ lx)	10.000		16.000	cd/m ² /lx)
Maximum Output Brightness	6,8		13,6	cd/m ²
Luminance dynamic range	1x10 ⁻⁶		5x10 ⁴	lux
Input current			35	mA
Limiting resolution	64	70		lp/mm
E.B.I.			0.25	µlx
Burn-in	50			hours
Useful cathode diameter	17.5			mm
M.T.F. at 2.5 lp/mm	90	93		%
at 7.5 lp/mm	74	82		%
at 15 lp/mm	54	67		%
at 25 lp/mm	40	46		%
at 30 lp/mm	30	35		%
Output uniformity over Ø17.0 mm at 2850K		1.8:1	3:1	
Fixed Pattern Noise at 2 mlx (mean luminance deviations)	8		8	%
Mass		80	95	gram
Shear distortion			50	µm
Gross distortion			50	µm

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Shock:

The Image Intensifier tube shall comply with the performance specifications after being exposed to 6 shock impacts parallel to and 6 shock impacts perpendicular to the optical axis. Impacts shall be half sine waves with a minimum peak amplitude of 500 g's and a duration of 2 ± 0.2 milliseconds.

Vibration:

The Image Intensifier tube shall comply with the performance specifications after being subjected to vibration conditions parallel to and perpendicular to the optical axis over a frequency range of 5Hz to 55Hz, 2.54 mm amplitude, 10 cycles in each plane.

Spots:

Maximum number of dark spots will be according to the following table:

SPOTS DIAMETER IN MICRONS	ZONE 1 dia. 5.6mm	ZONE 2 dia. 5.6mm-14.7mm	ZONE 3 dia 14.7mm-17.5mm
> 230	0	0	0
150 – 230	0	1	1
75 – 150	0	2	2
< 75	Minimal	Minimal	minimal