

PHOTONIS

Property of the Photonis Group.
Reproduction, or disclosure to third parties,
in any form whatsoever not allowed without
written consent of Photonis.

Propriété du groupe Photonis.
La reproduction ou la diffusion à une tierce partie,
sous quelque forme que ce soit, sans accord écrit
de Photonis, est strictement interdite.

Eigendom van de Photonis Groep.
Vernieuwvuldigen of mededeling aan derden, in
welke vorm ook is zonder schriftelijke toestemming
van Photonis niet geoorloofd.

Image Intensifier specification
18 millimetre micro-channel wafer
XR5™ Technology
XW2540BP



184-4011A2

Page 1 of 3

Description

The Image Intensifier Assembly, 18 millimetres micro-channel wafer, shall have a minimum useful photocathode and phosphor screen diameter of 17.5 millimetres (mm). The assembly shall employ a micro-channel 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 : P45
Input window : Glass
Output window : Inverting fibre-optic

Construction

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

Limiting values

	<u>Minimal</u>	<u>Maximal</u>	<u>Unit</u>
Continuous input Supply voltage	2.0	3.5	V
Reversed Polarity (60 sec)	-3.7	+3.7	V
Storage temperature (4 hours max.)	-56	+65	°C
Storage temperature long term	-35	+35	°C
Operating temperature (4 hours max.)	-52	+52	°C
Force on bearing surface		200	N

Operating conditions and characteristics

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

External gain control (EGAC)

The tube gain can be adjusted with an external potentiometer in the goggle using the external connector. This results in a gain range with a maximum gain at the factory set value of the tube, when the external applied resistance is at 180kOhm (or higher) and a minimum gain when the external resistance is 0 Ohm. The minimum gain is about 80 times less than the factory set gain.

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

Date
June 17, 2016

Signed
PB

Checked
OR


184-4011A2

PHOTONIS

Property of the Photonis Group.
 Reproduction, or disclosure to third parties,
 in any form whatsoever not allowed without
 written consent of Photonis.

Propriété du groupe Photonis.
 La reproduction ou la diffusion à une tierce partie,
 sous quelque forme que ce soit, sans accord écrit
 de Photonis, est strictement interdite.

Eigendom van de Photonis Groep.
 Vermenigvuldigen of mededeling aan derden, in
 welke vorm ook is zonder schriftelijke toestemming
 van Photonis niet geoorloofd.

Image Intensifier specification 18 millimetre micro-channel wafer XR5™ Technology XW2540BP					184-4011A2
					Page 2 of 3
	Minimal	Typical	Maximal	UNIT	
Cathode sensitivity at 2850K	700			μA/lm	
Radiant sensitivity at 830nm	60			mA/W	
Signal to noise ratio (Photocathode illuminance 108 μlx)	23				
Operational life time	10000			hours	
Gain at 2.10 ⁻⁵ lx	7000	8500	10000	cd/m ² /lx	
Gain at 2.10 ⁻⁶ fc	(22000)	(26700)	(31400)	fl/fc	
Maximum Output Brightness	4	6	8	cd/m ²	
Maximum Output Brightness	(1.2)	(1.7)	(2.3)	fl	
Input current at 2.10 ⁻⁵ lx			35	mA	
Limiting resolution at centre	64			lp/mm	
M.T.F. at 2.5 lp/mm		94		%	
at 7.5 lp/mm		85		%	
at 15 lp/mm		70		%	
at 25 lp/mm		50		%	
at 30 lp/mm		40		%	
E.B.I.		0.15	0.25	μlx	
Burn-in	50			hours	
Image inversion	179		181	°	
Shear distortion			50	μm	
Gross distortion			65	μm	
Useful cathode diameter	17.5			mm	
Output uniformity over Ø17.0 mm at 2850K		2:1	3:1		
Bright source protection 50 millilumens on an area of 1 mm ²	60			sec	
Fixed Pattern Noise at 2mlx (mean luminance deviations)	-10		+10	%	
Halo (illumination spot 0.35mm)			0.95	mm	
Image alignment			0.3	mm	
Mass		80	95	gram	

Date
June 17, 2016

Signed
PB

Checked
OR

184-4011A2

Image Intensifier specification
18 millimetre micro-channel wafer
XR5™ Technology
XW2540BP



184-4011A2

Page 3 of 3

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 5 to 55 hertz (Hz), 2.54mm amplitude 10 cycles in each plane.

Spots:

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

SPOTS DIAMETER IN MICROMETERS	ZONE 1 dia. 5.6mm	ZONE 2 dia. 5.6mm-14.7mm	ZONE 3 dia 14.7mm-17.5mm
> 380	0	0	0
300 – 380	0	0	0
230 – 300	0	0	0
150 – 230	0	1	1
75 – 150	0	2	2
< 75	Minimal	Minimal	Minimal

In case the assembly has more numerous dark spots of smaller dimension within a zone, the total quantity of dark spots in the zone should be within the total quantity of dark spots in the considered zone as specified in the above table.

For example, if a tube is showing [3 Ø75-150µm] dark spots in zone 2 instead of the [2 Ø75-150µm + 1 Ø150-230µm] specified ones, the tube will be considered to be compliant with the specification.

Date
June 17, 2016

Signed
PB

Checked
OR

184-4011A2