PHOTONIS

Image Intensifier specification **ECHO14** **ZBG1577B**	184-8861A0 Page 1 of 3

Description

The Image Intensifier Assembly, shall have a minimum useful photocathode and phosphor screen diameter of 14.0 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 : P43
Input window : Glass
Output window : Inverting fibre-optic

Construction

The assembly shall be fabricated in accordance with the applicable drawing 183-1577*.

Limiting values	Minimal	Maximal	Unit
Continuous input Supply voltage	2.0	3.5	V
Reversed Polarity (60 sec)	-3.7	+3.7	V
Storage temperature long term	-35	+35	°C
Operating temperature (4 hours max.)	-33	+49	°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)

For the PVS14 EGAC version, the characteristic has been made compatible for the PVS14 goggle which is equipped with a 180kOhm resistor. The goggle features a potentiometer which results in a maximum gain when the resistance is at 175kOhm or higher and a minimum gain when the resistance is 0 Ohm. The minimum gain is about 100 times less than the maximum gain. The maximum gain is configured per tube type, per application, per customer. The drop in gain shows an exponential behaviour (see gain curve), with a factor two reduction roughly every 25kOhm.

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

	Minimal	Typical	Maximal	UNIT
FOM	1400		1800	
Signal to noise ratio (Photocathode illuminance 108 µlx)	20			
Gain at 2.10^{-5} lx	9000		15000	cd/m^2/lx
Maximum Output Brightness	6		10	cd/m^2
Input current at 2.10^{-5} lx			35	mA
Limiting resolution at centre	57			lp/mm
Shear distortion			75	µm
Gross distortion			90	µm
Useful cathode diameter	14.0			mm
Output uniformity over Ø14.0 mm at 2850K			5:1	
Fixed Pattern Noise at 2mlx (mean luminance deviations)	-15		+15	%
Image alignment			1.0	mm
Mass			80	Gram

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-17.0mm
➢ 300	0	0	n.a.
230 – 300	0	2	n.a.
150 – 230	1	4	n.a.
75 – 150	2	7	n.a.

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 [11 Ø75-150µm] dark spots in zone 2 instead of the [7 Ø75-150µm + 4 Ø150-230µm] specified ones, the tube will be considered to be compliant with the specification.

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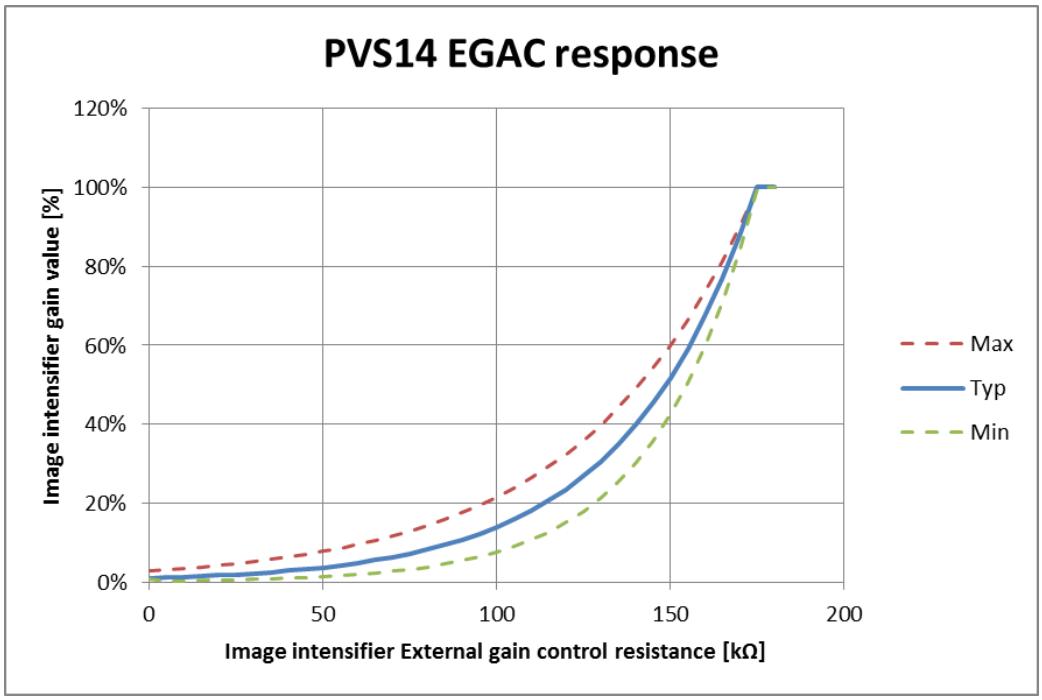
Gain curve:



Date	Signed	Checked	184-8861A0
12-09-2023	OR	BJE	