PHOTONIS

Image Intensifier specification 18 millimetre micro-channel wafer **ECHO** **ZG0973C**	ECHO	184-7375A0 Page 1 of 2

Description

The Image Intensifier Assembly, 18 millimetres micro-channel wafer, shall have a minimum useful photocathode and phosphor screen diameter of 17.0 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 or P22
Input window : Glass
Output window : Inverting fibre-optic

Construction

The assembly shall be fabricated in accordance with the applicable drawing 183-0973A*.

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)

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:

	Minimal	Typical	Maximal	UNIT
FOM	1500		1800	
Signal to noise ratio (Photocathode illuminance 108 µlx)	24			
Gain at 2.10^{-5} lx	9000		15000	cd/m^2/lx
Gain at 2.10^{-6} fc	(28260)		(47100)	fL/fc
Maximum Output Brightness	6		10	cd/m^2
Maximum Output Brightness	(1.8)		(2.9)	fL
Input current at 2.10^{-5} lx			35	mA
Limiting resolution at centre	57		74	lp/mm
Limiting resolution at >200 lux (=autogating mode)	50			lp/mm
Burn-in	50			hours
Shear distortion			60	µm
Gross distortion			75	µm
Useful cathode diameter	17.0			mm
Halo (illumination spot 0.35mm)			0.95	mm
Image alignment			0.5	mm

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	0
230 – 300	0	1	2
150 – 230	1	2	4
75 – 150	2	4	6

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