

Image Intensifier specification  
18 millimetre micro-channel wafer  
**ECHO**  
**ZW1059A**



184-7380A2

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 : P45  
Input window : Glass  
Output window : Non-Inverting fibre-optic

## Construction

The assembly shall be fabricated in accordance with the applicable drawing 183-1059A\*.

## 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 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

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

Date  
May 03, 2019

Signed  
BJE

Checked  
OR

184-7380A2

Image Intensifier specification  
18 millimetre micro-channel wafer  
**ECHO**  
**ZW1059A**



184-7380A2

Page 2 of 2

	Minimal	Typical	Maximal	UNIT
FOM	1600		2000	
Signal to noise ratio (Photocathode illuminance 108 $\mu$ lx)	23			
Gain at $2 \cdot 10^{-5}$ lx	8000		12000	cd/m <sup>2</sup> /lx
Gain at $2 \cdot 10^{-6}$ fc	(25120)		(37680)	fL/fc
Maximum Output Brightness	4		8	cd/m <sup>2</sup>
Maximum Output Brightness	(1.2)		(2.3)	fL
Input current at $2 \cdot 10^{-5}$ 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			50	$\mu$ m
Gross distortion			50	$\mu$ m
Useful cathode diameter	17.0			mm
Halo (illumination spot 0.35mm)			0.95	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 Ø75-150 $\mu$ m] dark spots in zone 2 instead of the [4 Ø75-150 $\mu$ m + 2 Ø150-230 $\mu$ m] specified ones, the tube will be considered to be compliant with the specification.

Date  
May 03, 2019

Signed  
BJE

Checked  
OR

184-7380A2