



ITT

U. S. Customers Only

Image Intensifier, Generation 3 18-mm, MX-10130 (F9810 Series)

For more than 45 years, ITT Night Vision has provided the military with premier vision-enhancing solutions. As the world's leading manufacturer of Generation 3 (Gen 3) image intensification technology, ITT continues to work hand-in-hand with customers to expand night vision and vision-enhancing capabilities, technologies, and resources. ITT also provides technical support, service, training, and maintenance for our products to maximize customer benefits and usability.

ITT's Gen 3 F9810 Series (MX-10130) image intensifier tubes are designed for use in all variants of the AN/PVS-7 night vision goggle. The F9810 is also used in weaponsights where a non-inverting image intensifier is needed. ITT offers a selection of tubes, with different performance levels, to satisfy a wide range of customer specifications. This selection includes ITT's Pinnacle® technology, which surpasses the performance of all other Gen 3 tubes previously and currently fielded.



Description

ITT's F9810 Series Gen 3 18-mm image intensifier consists of a high-efficiency GaAs photocathode bonded to a glass input window, a microchannel plate (MCP) current amplifier, and a P-43 phosphor screen deposited on an inverting fiber-optic output window.

The Gen 3 photocathode is very sensitive to low-radiation levels of visible and, especially, near infrared light. It also provides very high signal-to-noise ratio (SNR) for extended detection ranges at very low light levels. The 6-micron channel spacing in ITT's MCP provides exceptional resolution and extended detection ranges in low-light conditions. The MCP has an ion-barrier film that preserves photocathode sensitivity during operation, greatly extending the life of Gen 3 tubes compared to Gen 2.

ITT continues to improve Gen 3 MX-10130 image intensifier tubes to increase operational range and situational awareness for the user. Equipped with a gated power supply, the Pinnacle versions provide outstanding performance in high-light or light-polluted areas, such as urban environments. In addition, the Pinnacle tube provides a reduced halo.

Models

This image intensifier is available in a wide range of performance levels to meet customer requirements. Tube variants and model numbers are detailed on the back of this sheet. All "G" models feature Pinnacle performance.

Engineered for life

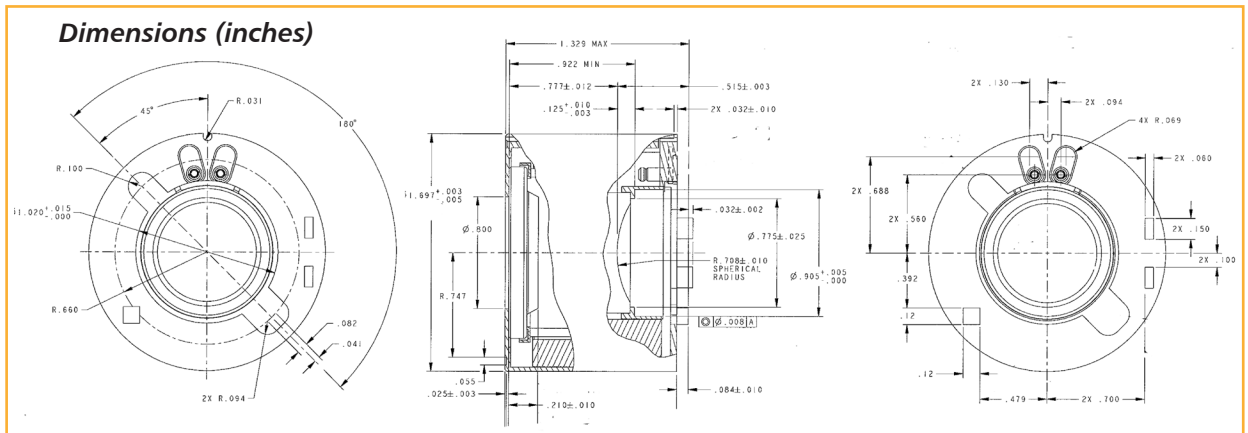
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Performance Levels

Tube Model	Pinnacle®					
	F9810K	F9810DTG2	F9810WG*	F9810UG	F9810VG	F9810YG
Resolution, lp/mm, (Minimum)	64	64	64	64	64	64
High-Light Resolution @ 20 fc (min) lp/mm	12	12	36	36	36	36
Photocathode Sensitivity (Minimum)						
@2856° K, $\mu\text{A}/\text{lm}$	1800	1500	1800	1800	2000	1800
@880 nm	80	77	80	80	100	80
Signal/Noise Ratio (Minimum)	21	19.2	22	25	25	25
Halo, mm (Maximum)	1.25	1.25	1.1-1.25	1.1	1.0	1.0
EBI, $\text{X}10^{-11} \text{Im}/\text{cm}^2$ (Maximum)	2.5	2.5	2.5	2.5	2.5	2.5
Luminous Gain, fl/fc						
@ $2\text{X}10^{-6} \text{fc}$	40000	40000	50000	40000	50000	40000
@ $2\text{X}10^{-4} \text{fc}$	10000	10000	10000	10000	12500	10000
Output Brightness, fl @ 1 and 20 Fc	2.0-4.0	2.0-4.0	2.0-4.0	2.0-4.0	2.5-4.0	1.4-4.2
MTF (Minimum)						
@2.5 lp/mm	92%	Info only	Info only	Info only	Info only	Info only
@7.5 lp/mm	80%	Info only	Info only	Info only	Info only	Info only
@15.0 lp/mm	61%	61%	61%	61%	61%	61%
@25.0 lp/mm	38%	38%	38%	38%	38%	38%
Photocathode Diameter, mm (Minimum)	17.5	17.5	17.5	17.5	17.5	17.5
Maximum Spots Allowed in Each Zone	Zone	Zone	Zone	Zone	Zone	Zone
Spot Size (in.)	1 2 3	1 2 3	1 2 3	1 2 3	1 2 3	1 2 3
>.015 or Larger	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0
>.012 -.015	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0
>.009 -.012	0 0 0	0 0 1	0 0 0	0 0 0	0 0 0	0 0 0
>.006 -.009	0 1 1	0 1 1	0 1 2	0 1 1	0 1 1	0 1 1
>.003 -.006	0 2 2	0 2 3	0 2 3	0 2 2	0 2 2	0 2 2

* Recommended for weaponsight applications.



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Specifications subject to change without notice.

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