

Image Intensifier, Generation 3 18-mm MX-10160 (F9800 Series) - U.S. Customers Only

ITT Industries Night Vision, the world's leading producer of Generation (Gen) 3 image intensification devices, offers the highest performance image intensifier tubes available.

ITT's Gen 3 F9800 Series (MX-10160) image intensifier tubes are designed for use in all night vision systems that use an inverting tube, such as aviators' goggles, ground binoculars, and weaponsights. 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 F9800 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. The MCP has a thin ion-barrier film that preserves photocathode sensitivity during operation, thereby greatly extending the life of Gen 3 tubes compared to Gen 2.

ITT continues to improve Gen 3 MX-10160 image intensifier tubes to increase operational range and situational awareness for the user. Equipped with a gated power supply, the Pinnacle versions provide truly outstanding performances in high-light or light-polluted areas, such as urban environments. In addition, the Pinnacle tube provides a much 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.

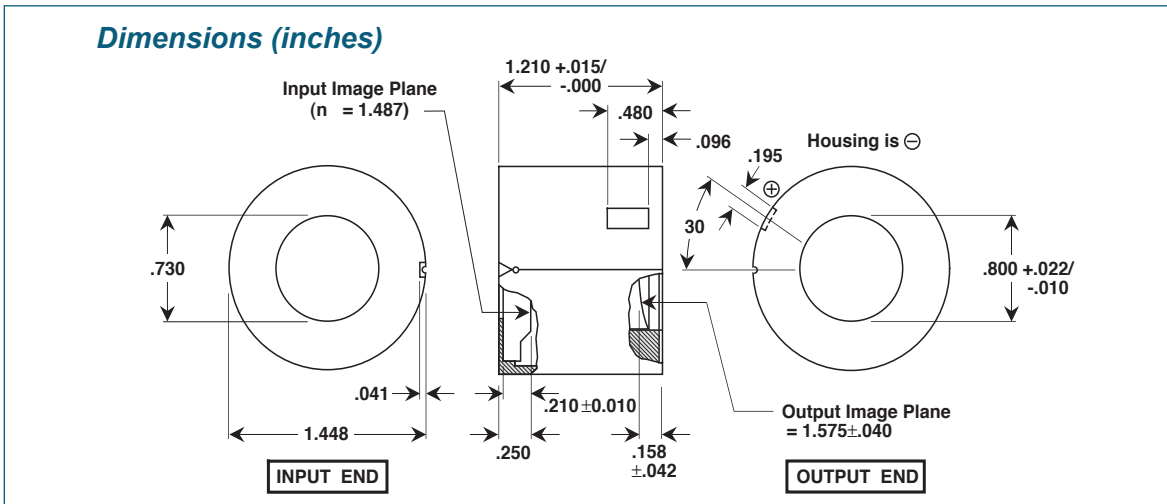


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Performance Levels

Tube Model	Pinnacle™					
	F9800K	F9800L	F9800AG	F9800WG*	F9800RG	F9800VG
Resolution, lp/mm, (Minimum)	64	64	64	64	64	64
Bright-Light Resolution @20 fc(min) lp/mm	12	12	36	36	36	45
Photocathode Sensitivity (Minimum)						
@ 2856° K, $\mu\text{A}/\text{lm}$	1800	1800	1800	1800	2000	2200
@ 880 nm	80	80	80	80	120	120
Signal/Noise Ratio (Minimum)	21	21	23	22	26	28
Halo, mm (max.)	1.25	1.25	0.90	1.1-1.25	0.90	0.70
EBI, $\text{X}10^{-11} \text{ lm}/\text{cm}^2$ (Maximum)	2.5	2.5	2.5	2.5	2.5	2.5
Luminous Gain, fL/fc						
@ $2\text{X}10^{-6}$ fc	40000	40000	40000	50000	40000	50000
@ $2\text{X}10^{-4}$ fc	10000	10000	10000	10000	10000	12500
Output Brightness, fL @1 and 20 Fc	2.0-4.0	2.0-4.0	2.0-4.0	2.0-4.0	2.0-4.0	2.5-4.2
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 0	0 0 0	0 0 0	0 0 0	0 0 0
>.006 – .009	0 1 1	0 1 2	0 1 1	0 1 1	0 1 1	0 0 1
>.003 – .006	0 2 2	0 2 3	0 2 2	0 2 2	0 2 2	0 0 2

* Recommended for weaponsight applications



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Intelligence for Critical Missions . . . Innovative Solutions on Demand

ITT Industries is the leading developer and supplier of Generation 3 image intensifier devices for U.S. and international military forces, federal agencies and law enforcement. We continue to advance the state of the art in low-light sensing technology. Our engineering expertise, customer responsiveness and commitment to quality assure our customers intelligence for critical missions with innovative solutions on demand.



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