



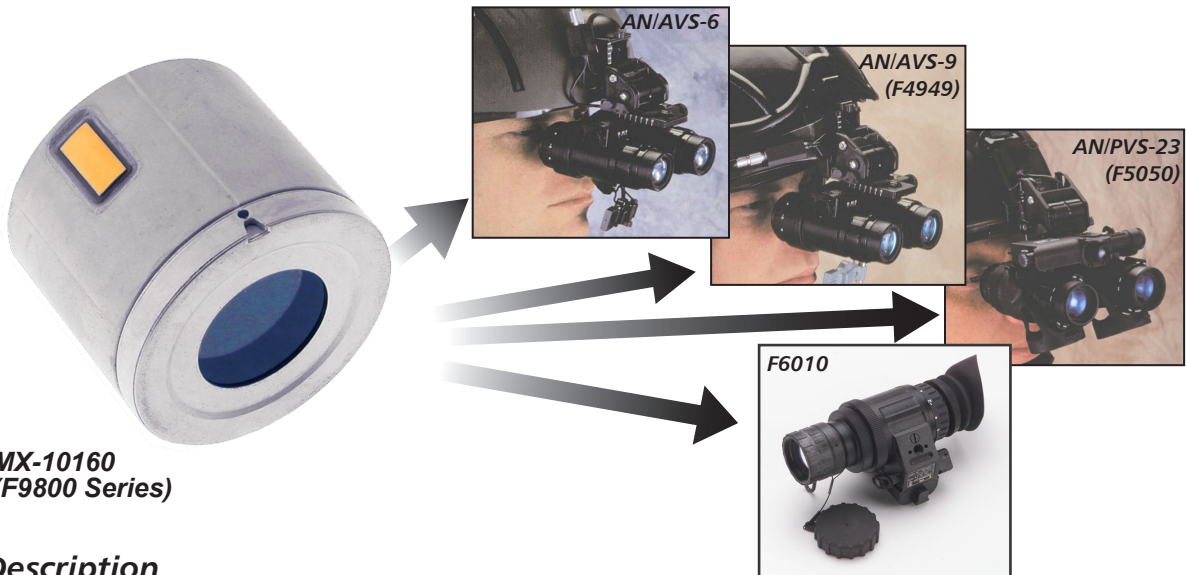
ITT

Unlimited Distribution

Image Intensifier, Generation 3 18-mm, MX-10160 (F9800 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 F9800 Series (MX-10160) image intensifier tubes are designed for use in all night vision systems that use an inverting tube, such as aviator goggles, ground systems, and weaponsights. ITT offers two tube options with different performance levels that comply with the U.S. DoS and DoD guidelines for Gen 3 export.



**MX-10160
(F9800 Series)**

Description

Each model in ITT's F9800 Series of Gen 3 18-mm image intensifier tubes 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 fiberoptic 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.

Export Models

ITT offers two F9800 models for export. A Figure of Merit (FOM) is an important consideration in determining the maximum level of tube performance allowed for export. FOM is the product of resolution, in line pairs per millimeter (lp/mm) multiplied by SNR as measured by U.S. industry standards.* Two important FOM thresholds are 1250 and 1600.

- The F9800P tube has 1600 FOM and meets the Omnibus V specifications.
- The F9800J tube is similar to the F9800P tube, but has a reduced SNR to meet 1250 FOM.

* Resolution and signal-to-noise ratio calculated by other methods may not be equivalent.

Engineered for life

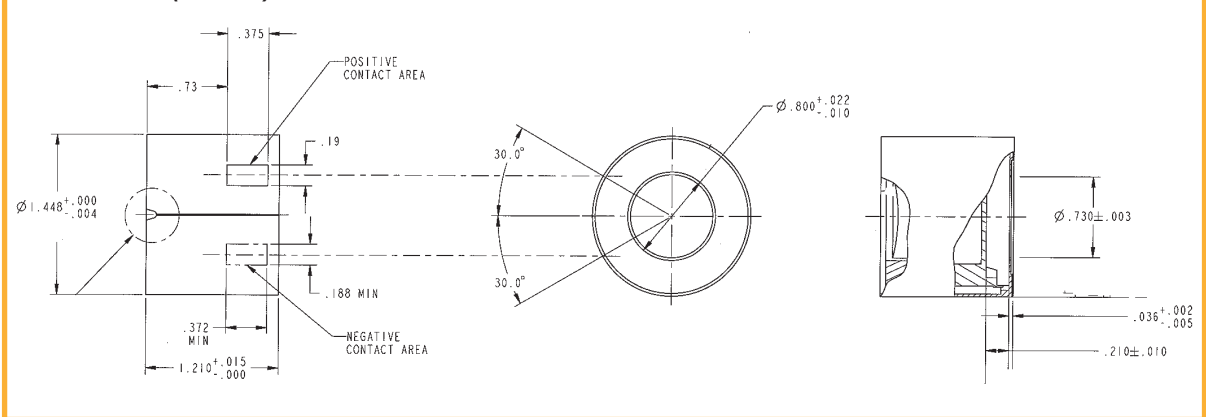
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Performance Levels

Tube Model	F9800J	F9800P	
Resolution, lp/mm, (Minimum)	64	64	
High-Light Resolution @ 20 fc (min) lp/mm	12	12	
Photocathode Sensitivity (Minimum)			
2856° K, $\mu\text{A}/\text{lm}$	1350	1800	
@ 880nm, mA/W	65	80	
Signal/Noise Ratio (Minimum)	18	21.0	
FOM (Maximum)	1250	1600	
EBI, $\text{X}10^{-11} \text{ lm}/\text{cm}^2$ (Maximum)	2.5	2.5	
Luminous Gain, fL/fc			
@ $2\text{X}10^{-6}$ fc	40000 – 70000	40000 – 70000	
@ $2\text{X}10^{-4}$ fc	10000 – 20000	10000 – 20000	
Output Brightness, fL @ 1 and 20 fc	2.0 – 4.0	2.0 – 4.0	
Output Brightness Uniformity (Maximum)			
@2856°K and @880 nm	3.1	3.1	
MTF (Minimum)			
@2.5 lp/mm	92%	92%	
@7.5 lp/mm	80%	80%	
@15.0 lp/mm	61%	61%	
@25.0 lp/mm	38%	38%	
Reliability, Hrs. (Minimum)	10000	10000	
Maximum Spots Allowed in Each Zone	Zone	Zone	
Spot Size (in.)	1	2	3
>.012 or Larger	0	0	0
>.009 –.012	0	0	0
>.006 –.009	0	1	1
>.003 –.006	0	2	2

Dimensions (inches)



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Export of this product is regulated by the U.S. Dept. of State in accordance with guidelines of "International Traffic in Arms Regulations (ITAR)" per Title 22, Code of Federal Regulations, Parts 120-130.

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Specifications subject to change without notice.
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