



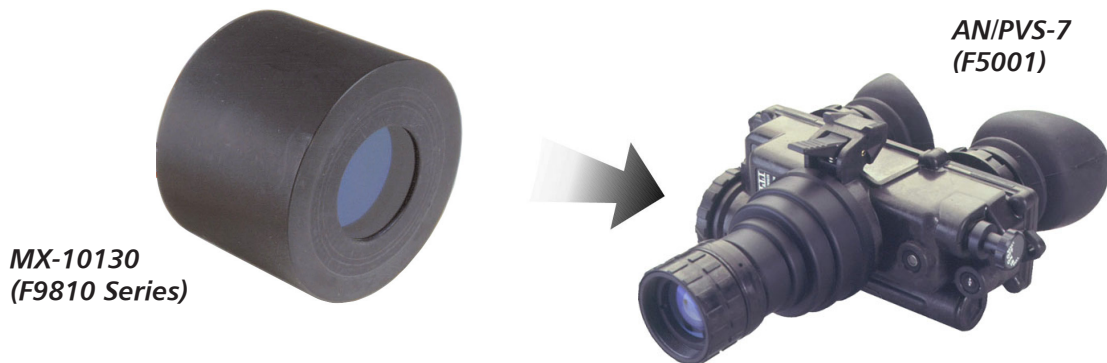
ITT

Unlimited Distribution

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 goggles and are supplied with new AN/PVS-7 systems or retrofitted to older Gen 2 or Gen 3 models. ITT offers two tube options with different performance levels that comply with the U.S. DoS and DoD guidelines for Gen 3 export.



Description

Each model in ITT's F9810 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 a 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.

Export Models

ITT offers two F9810 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 F9810P tube has 1600 FOM and meets the Omnibus V specifications.
- The F9810J tube is similar to the F9810P 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

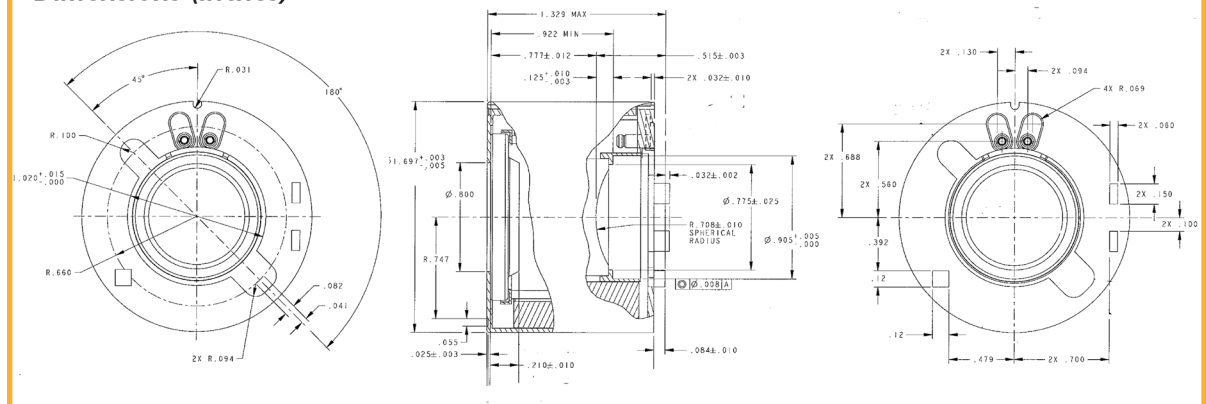
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Performance Levels

Tube Model	F9810J	F9810P
Resolution, lp/mm, (Minimum)	57	64
High-Light Resolution @ 20 fc (min) lp/mm	12	12
Photocathode Sensitivity (Minimum)		
@ 2856° K, $\mu\text{A}/\text{lm}$	1350	1500
@ 830nm, mA/W	135	155
Signal/Noise Ratio (Minimum)	18	19.2
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	2.1	2.1
MTF (Minimum)		
@2.5 lp/mm	90%	92%
@7.5 lp/mm	70%	80%
@15.0 lp/mm	54%	61%
@25.0 lp/mm	27%	38%
Photocathode Diameter, mm (Minimum)	17.5	17.5
Reliability, Hrs. (Minimum)	10000	10000
Maximum Spots Allowed in Each Zone	Zone	Zone
Spot Size (in.)	1 2 3	1 2 3
> .015 or Larger	0 0 0	0 0 0
> .012 - .015	0 0 0	0 0 0
> .009 - .012	0 0 0	0 0 0
> .006 - .009	0 1 2	0 1 2
> .003 - .006	0 2 3	0 2 3

Dimensions (inches)



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For further information contact:

ITT Night Vision
 7635 Plantation Road, Roanoke, VA 24019
 Attention: Marketing Department
 Telephone: 800-533-5502 or 540-563-0371
 Fax: 540-366-9015
 E-mail: nvsales@itt.com
www.nightvision.com

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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