

## Image Intensifier, Generation 3 18-mm MX-11769 (F9815 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.

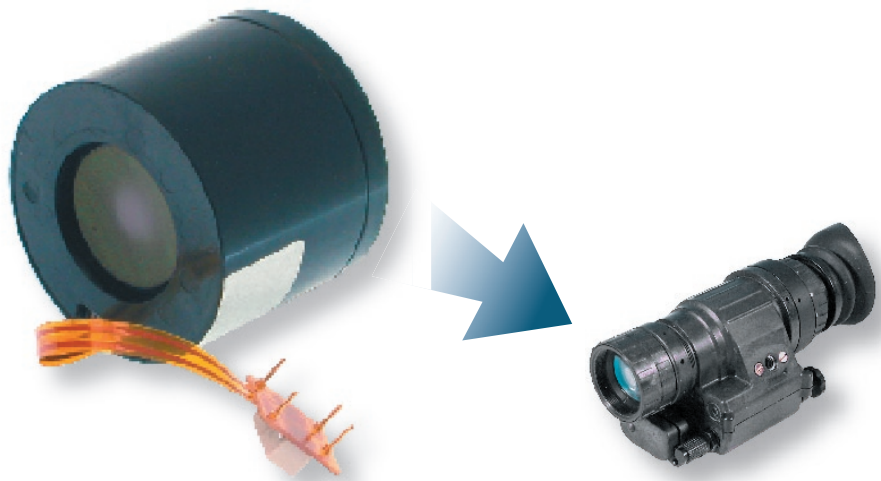
ITT's Gen 3 F9815 Series (MX-11769) image intensifier tubes are designed for use in the AN/PVS-14 Monocular Night Vision Device. ITT offers a selection of tubes, with different performance levels, to satisfy a wide range of customer specifications. This selection includes ITT's Pinnacle™ technology which surpasses the performance of all other Gen 3 tubes previously and currently fielded.

### Description

ITT's F9815 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 as well as variable gain to optimize performance in the AN/PVS-14. The 6-micron channel spacing in ITT's MCP provides exceptional resolution and extended detection ranges in low-light conditions. 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-11769 image intensifier tubes to increase operational range and situational awareness for the user. Equipped with a gated power supply, the Pinnacle



AN/PVS-14

versions provide truly 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.



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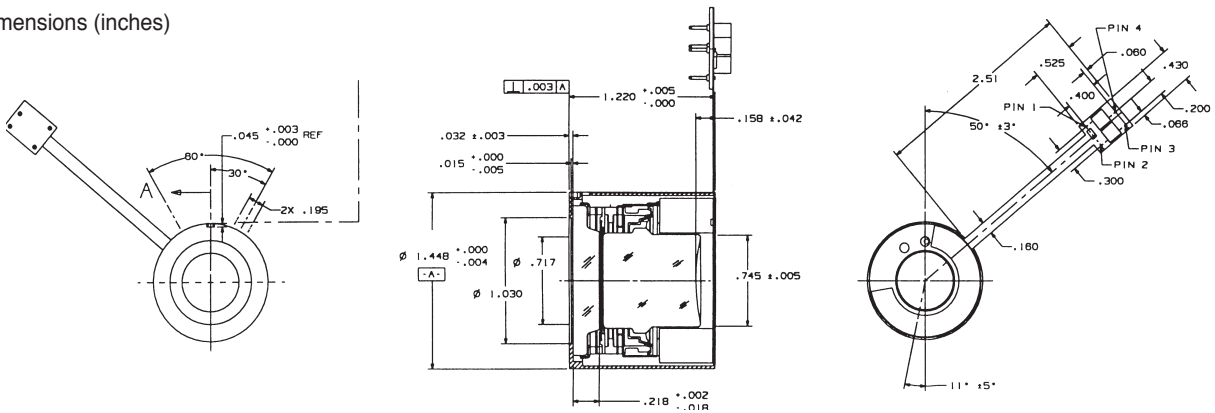
# Image Intensifier, Generation 3 18-mm MX-11769 (F9815 Series)

## Performance Levels

| Tube Model   | Pinnacle™ |           |           |           |           |
|--|-----------|-----------|-----------|-----------|-----------|
|  | F9815L    | F9815AG   | F9815WG*  | F9815UG   | F9815VG   |
| Resolution, lp/mm, (Minimum)                         | 64        | 64        | 64        | 64        | 64        |
| High-Light Resolution @ 20 fc (min) lp/mm            | 12        | 36        | 36        | 36        | 36        |
| Photocathode Sensitivity (Minimum)                   |           |           |           |           |           |
| 2856°K uA/lm)  | 1500      | 1800      | 2000      | 1800      | 2000      |
| @880 nm  | 77        | 80        | 100       | 80        | 100       |
| Signal/Noise Ratio (Minimum)                         | 19.2      | 22        | 25        | 25        | 25        |
| Halo, mm (Maximum)                                   | 1.25      | 1.1       | 1.1-1.25  | 1.1       | .90       |
| EBI, X10 <sup>-11</sup> lm/cm <sup>2</sup> (Maximum) | 2.5       | 2.5       | 2.5       | 2.5       | 2.5       |
| Luminous Gain, fL/fc                                 |           |           |           |           |           |
| @2X10 <sup>-6</sup> fc                               | N/A*      | 40000     | 40000     | 40000     | 50000     |
| @2X10 <sup>-4</sup> fc                               | N/A**     | 10000     | 22500     | 10000     | 12500     |
| Allowable Output, fL @ 1 and 20 fc                   | 2.0-4.0   | 2.0-4.0   | 4.5-5.5   | 2.0-4.0   | 2.5-4.0   |
| MTF (Minimum)  |           |           |           |           |           |
| @2.5 lp/mm   | Info only | Info only | Info only | Info only | Info only |
| @7.5 lp/mm   | Info only | Info only | Info only | Info only | Info only |
| @15.0 lp/mm  | 61%       | 61%       | 61%       | 61%       | 61%       |
| @25.0 lp/mm  | 38%       | 38%       | 38%       | 38%       | 38%       |
| Photocathode Diameter, mm (Minimum)                  | 17.5      | 17.5      | 17.5      | 17.5      | 17.5      |
| Maximum Spots Allowed in Each Zone                   | Zone      | Zone      | Zone      | Zone      | Zone      |
| Spot Size (in.)                                      | 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     |
| >.012 -.015  | 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     |
| >.006 -.009  | 0 1 2     | 0 1 2     | 0 1 1     | 0 1 1     | 0 1 1     |
| >.003 -.006  | 0 2 3     | 0 2 3     | 0 2 2     | 0 2 2     | 0 2 2     |

\* Recommended for weaponsight applications.

Dimensions (inches)



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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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