



Micro-D Filter Connectors Space Grade, Filter Connectors

FILTER CONNECTORS FOR SPACE FLIGHT

Connector Material and Finish Options for Space Applications

- **Cadmium and silver plating are prohibited in space.**
- **Specify electroless nickel or gold for connector finish**

Some types of metals are prohibited for space flight. "Cadmium, zinc, chemically coated cadmium or zinc, or silver shall not be used as a connector or contact finish" (NASA EEE-INST-002: Instructions for EEE Parts Selection, Screening, Qualification, and Derating). NASA recommends electroless nickel or gold plating on connector shells and gold plating for contacts.

Outgassing

- **Standard filter connectors require thermal vacuum bakeout to meet outgassing requirements**
- **NASA screened filter connectors meet outgassing requirements**

Some flight equipment requires low-outgassing components in order to prevent degradation to optics and other sensitive instruments. The space industry has adopted a standardized test procedure, ASTM E595, to evaluate outgassing properties. In order to be considered outgassing compatible, a material must exhibit a total mass loss (TML) of less than 1.0% and a collected volatile condensable material (CVCM) of less than 0.1%. Some of the materials used in filter connectors, like fluorosilicone interfacial seals, must go through special processing to meet TML and CVCM requirements. Per EEE-INST-002, filter connectors subjected to +125° C as part of voltage conditioning do not require additional processing to meet the outgassing requirements. If processing is required, Glenair offers a 24 hour thermal vacuum outgassing at 125° C for filter connectors.

NASA Screening

- **"Mission critical" connectors for space flight should undergo rigorous 100% final inspection.**
- **Modification codes are available to invoke special screening.**

NASA recommends that connectors for space flight be specially screened. EEE-INST-002 contains three levels of screening: Level 1 for highest reliability with the lowest level of risk, Level 2 for high reliability with low to moderate risk, and Level 3 for standard reliability.

NASA Screening Levels and Modification Codes

NASA Screening Level	Screening	Screening & X-Ray Inspection
Level 1: Highest Reliability	Mod 429B	Mod 429R
Level 2: High Reliability	Mod 429	Mod 429S
Level 3: Standard Reliability	Mod 429L	Mod 429T

X-Ray Inspection



Real-Time X-Ray Machine

To reduce risk even further for mission critical applications, x-ray inspection on a real-time x-ray system is available. Samples subject to x-ray inspection per Mod code 844 will be screened for foreign object debris (FOD) and if applicable, broken strands. A minimum of two views for each sample will be stored and are available upon request.

Add the MOD codes listed in the table below to the end of a part number to invoke special test or processing requirements.

Thermal Vacuum Outgassing	Mod 186M
X-Ray Inspection	Mod 844