AVIO/AVIM are multipurpose, Commercial Off-The-Shelf fiber optic connectors offering high optical performance and qualified for the dynamic environments of mobile platforms, including avionics and space flight. Multi-purpose in that these connectors are compatible with the widest range of optical fibers, including singlemode (SM), multimode (MM) fibers of all core/cladding sizes. Commercial Off-The-Shelf (COTS) availability and economy backed by component availability from stock and quick turnaround of terminations and assemblies. High performance in the form of lowest insertion loss provided by Diamond SA’s unique Active Core Alignment termination process as well as Ultra PC/Angled PC high return loss for the most demanding, high bandwidth transmission systems. Qualified to the highly dynamic vibration and shock environments of military and commercial mobile platforms, including land transportation, avionics, shipboard, downhole, weapon systems, missiles and space launch. Avionics-grade AVIO connector and aerospace-qualified AVIM.

By design, the AVIO/AVIM is the sum of several engineering achievements:
- Compact, low profile and lightweight
- Typical 0.2dB loss for most common SM/MM applications
- 45+dB Ultra PC or 65+dB Angled PC SM return loss performance
- Miniaturized MIL-style ratchet system with vibration/shock tolerance to 46 G’s
- Unique AVIM 2-piece cleanable adapter for mounting on aerospace “black” boxes offers external access for cleaning and maintenance of internal connector without compromising tamper seals
- Right angle boot available for facilitating unique installation and routing requirements

STANDARDS
- CECC 86 130 “Selectional specification-connector sets for optical fiber and cables - Type LSA”

AVAILABLE AS
- Terminated connector
- Connector set, (to be terminated with Diamond special equipment)

AVIO CONNECTOR TYPES AND DIMENSIONS
Connectors 900 µm - 3 mm boot style
Available types: AVIM PC, AVIM APC
Ferrule material: Zirconia/metal insert
External parts: Copper-nickel alloy

Connectors 900 µm - 1.2 mm 90° boot style

AVIM ADAPTER TYPES AND DIMENSIONS
External parts: Copper-nickel alloy
Mating sleeve: Zirconia
AVIM mating adapter hexagonal flange
AVIM mating adapter square flange

NOTE Diamond’s standard boot colors are as follows: Black for MM and SM PC, and green for SM APC.

ORDER INFORMATION
Please refer to the part numbers provided in the separate P/N list. For assemblies or other configurations, please contact your nearest local Diamond representative or fill in the contact form available on the www.diamond-fo.com website.
### AVIO Connector Types and Dimensions

Connectors 900 µm - 3 mm boot style

Available types:
- AVIO PC
- AVIO APC

Ferrule material: Zirconia/metal insert
External parts: Copper-nickel alloy

Connectors 900 µm - 1.2 mm 90° boot style

### Specications

#### Single Mode*

<table>
<thead>
<tr>
<th>Parameter</th>
<th>AVIM-C</th>
<th>AVIM/S</th>
<th>Square Flange Adapter 0624</th>
<th>Cable Strain Relief</th>
</tr>
</thead>
<tbody>
<tr>
<td>Insertion Loss</td>
<td>&lt;0.5dB (0.2dB, typ.)</td>
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</tr>
<tr>
<td>Return Loss</td>
<td>&gt;40dB (50dB, typ.)</td>
<td>&gt;60dB (60dB, typ.)</td>
<td>&gt;30dB (50dB, typ.)</td>
<td>&gt;30dB (50dB, typ.)</td>
</tr>
<tr>
<td>Concentricity</td>
<td>≤0.5µm (0.25µm, typ.)</td>
<td>≤0.5µm (0.25µm, typ.)</td>
<td>≤3µm (2µm, typ.)</td>
<td>≤3µm (2µm, typ.)</td>
</tr>
<tr>
<td>Change in Optical Transmittance</td>
<td>Per EIA/TIA - 456-20, ≤0.4 dB (Insertion Loss not to exceed the maximum of 0.74dB when applied to any mechanical or environmental test, as specified herein)</td>
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</tr>
<tr>
<td>Shock (G’S Peak, Q = 10)</td>
<td>Shock Power Spectral Density Table: 11G at 100Hz 0.58G/Hz to 3550 Hz 2000 G over 3550 - 10,000 Hz</td>
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</tr>
<tr>
<td>Weight:</td>
<td>6.20g (max)</td>
<td>5.90g (max)</td>
<td>7.80g (max)</td>
<td>9.00g (max)</td>
</tr>
</tbody>
</table>

* Singlemode optical performance measured with SMF-28 9/125 at 1310nm and 1550nm.
** Multimode optical performance measured with 50/125 GI at 1300nm.
*** Temperature Test issued with appropriate cable/fiber.

Temperature, Vibration and Shock Acceptance Testing has been performed by our Customer as part of a DoD Classified Space Program. The test results are not available for distribution. Specifications subject to change without notice.

### AVIO Adapter Type and Dimensions

AVIO mating adapters

External parts: Copper-nickel alloy, incl. “O-Ring” seal
Mating sleeve: Hard metal