

Fiberoptic Bundles and Arrays



DESCRIPTION

Bundles and arrays are simply fiberoptic assemblies comprised of multiple fibers. Using multiple fibers provides several important benefits:

- Apertures over 1mm in diameter are easily and cost effectively accommodated.
- The flexibility of a bundle of multiple smaller core fibers is superior to the flexibility from a single larger diameter fiber.
- Multiple fibers can be configured in virtually any cross section imaginable and the two ends may have different cross sections.

RoMack fabricates bundles or arrays using all of the standard types of fibers. These include silica core/silica clad, silica core/plastic clad, all plastic, borosilicate glass or other more exotic constructions. These fibers exhibit NAs of 0.12 to 0.66. RoMack offers one of the widest range of materials possible in order to tailor products to both technical and economic requirements.

RoMack can provide standard end fittings like ferrules or fiberoptic connectors but can also provide custom end fittings to suit your specialty or OEM applications.

APPLICATIONS

- Emission, Fluorescence and Absorption Spectroscopy
- Illumination
- Splitters – Single input to multiple outputs
- Combiners – Multiple inputs to a single output
- Mapped arrays for position sensing or generating specific output or input distributions
- Linear arrays for spectrometer slit matching
- Precision spaced arrays for diode array coupling or optical switching

FEATURES

- Flexibility and excellent throughput by using multiple fibers of the highest quality.
- Can be shape changed, meaning the cross section, or aperture, of each end may be different, e.g., spot to slit.
- Aperture shaping allows for aperture matching.
- Transmission from 180nm through 2200nm and longer.
- Standard and custom end fittings available.
- Harsh environments (high temperature, high vacuum etc.).

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ORDERING/SPECIFYING INFORMATION

Fiberoptic bundles and arrays need to be specified with regard to their aperture shapes and sizes, lengths, fiber type and end terminations, along with providing any specialty information.

The specifying system is an effort to accommodate the most commonly ordered bundles and arrays, but the possible configurations that fall under this product area are limited only by the imagination and the diverse applications

that require fiberoptic assemblies like these. If the desired product does not conform to the specifying system please give RoMack a call and one of our application specialists will help you.

The possible end terminations or end fittings are also unlimited. Some standard fittings are shown here but we are able to provide virtually any configuration that can be made. Please call us to discuss your needs.

NOTES

- For any configuration that is not accommodated by the specifying system, please call RoMack.
- To discuss high temperature, vacuum or other environmental concerns please call RoMack.
- Fiber transmission curves and other performance details can be provided as required.

<p>A Fiber Type</p> <ol style="list-style-type: none"> 1) Silica/Silica (UV/VIS) 2) Silica/Silica Low Solarization (UV) 3) Silica/Silica (VIS/NIR) 4) Polymer Clad Silica(UV/VIS High NA) 5) Polymer Clad Silica(VIS/NIR High NA) 6) Plastic (PMMA) 7) Other _____ 	<p>B Fiber Size</p> <table border="0"> <tr> <td>1) 50µm</td> <td>6) 500µm</td> </tr> <tr> <td>2) 100µm</td> <td>7) 600µm</td> </tr> <tr> <td>3) 200µm</td> <td>8) 800µm</td> </tr> <tr> <td>4) 300µm</td> <td>9) 1,000µm</td> </tr> <tr> <td>5) 400µm</td> <td>10) Other _____</td> </tr> </table>	1) 50µm	6) 500µm	2) 100µm	7) 600µm	3) 200µm	8) 800µm	4) 300µm	9) 1,000µm	5) 400µm	10) Other _____	<p>C Connector</p> <table border="0"> <tr> <td>1) SMA-905</td> <td>6) ST</td> </tr> <tr> <td>2) O-ring SMA</td> <td>7) Biconic</td> </tr> <tr> <td>3) Std. Ferrule*</td> <td>8) Ø0.250" Ferrule</td> </tr> <tr> <td>4) FC</td> <td>9) Ø10mm Ferrule</td> </tr> <tr> <td>5) Housing - 0.313" x 0.75" x 1.5"</td> <td>10) Other _____</td> </tr> </table>	1) SMA-905	6) ST	2) O-ring SMA	7) Biconic	3) Std. Ferrule*	8) Ø0.250" Ferrule	4) FC	9) Ø10mm Ferrule	5) Housing - 0.313" x 0.75" x 1.5"	10) Other _____	<p>D Sheathing</p> <ol style="list-style-type: none"> 1) PVC Tubing 2) PVC/Kevlar Furcation Tubing 3) PVC Monocoil 4) Stainless Steel BX 5) Braided SSTL/PTFE Hose 6) Teflon Tubing 7) Other _____
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<p>E Aperture Size or Number of Fibers</p> <ol style="list-style-type: none"> 1) 0.75mm Round 2) 1.25mm Round 3) 1.75mm Round 4) 2.2mm Round 5) 2.7mm Round 6) 0.6mm x 5mm Rectangle 7) 1.1mm x 5mm Rectangle 8) Other _____ <p>Temperature Requirements: _____</p> <p>Other Requirements: _____</p>	<p>F Number of Legs</p> <p>Specify _____</p>	<p>G Aperture or Number of Fibers per leg</p> <p>Specify _____</p>																					

RoMack offers a wide variety of assembly options. Please contact one of our technical sales associates to assist you in defining the configuratoin that really works in your application.

*Std Ferrule pictured at Top drawing, left letter C

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