

Optical CrossLinks, Inc.

Product Brief

Compact Multi-mode Splitters -- Connectorized Packaging and Multiple Custom Options Operation Range 700nm to 1350nm

Product Summary

Compact 1x16 multi-mode splitters are available with unusually small form factor, very low excess optical loss and excellent balanced outputs. The fully connectorized less than 7.5 cm long pencil sized package uses standard ST and MT connectors and industry standard housings for coupling to 62.5 micron core fibers in an 8 over 8 MT ferrule output configuration. One to 32 splitters are 1 cm longer with two 8 over 8 MT outputs. Applications include optical data link interconnections and distribution, such as for industrial, home, school, or central office systems; high-speed computers; or for aerospace flight control and monitoring systems. An application advantage results where weight and size requirements or high performance considerations are paramount.

Packaging and connectorization designs are configurable to meet your current and anticipated application requirements for self-supporting fully robustized components. For direct board or substrate mounting specialized packaging options are available. Both component packaged and board packaged units are shown actual size for 1x16 splitters in Figure 1. In addition to the range of output ports of 4, 8, 16 and 32, multiple inputs with star coupler signal mixing waveguide regions are also available. Array stacking of splitters is also possible using MT and custom ferrules as needed to facilitate handling multiple fibers in typical ribbons.

Thus, the OXL family of splitter configurations is most amenable to a broad range of customer specific designs

and packaging options for meeting diverse application requirements. Representative custom design options are summarized below.

Figure 1: Component packaged 1x16 splitter with flexible connector housings; and special board unit



with only an MT 8/8 connector for direct board mounting.

Key Customer Benefits

- Compact small footprint provides considerable space saving over fiber-based units
- Low weight and shock independence
- Low excess loss relative to fiber based splitters for all data link application wavelengths
- Superior balanced uniform outputs
- Robust packaging with industry standard connector

Optical CrossLinks develops and produces custom optical interconnection point-to-point links, distribution links or waveguide devices using proprietary polymer waveguide technology, materials and custom fiber ribbonization. All are fully connectorized with standard or custom proprietary approaches as needed.

Specification Highlights for 1x16 splitters -----

- Standard fully connectorized 1x16 is < 7.5 cm long and < 1 cm diameter
- Standard connectorization using ST input and MT ferrule style with 8 over 8 output coupling for commercial MT's as shown in Figure 2 with latchable flexible housings like MPX, MPO's etc., all for coupling to/from standard 62.5/125 micron MM fiber
- Excess loss < 2dB over nominal 800 to 850 nm range. For 980nm the excess loss is < 2.5 dB. For 1350 nm the excess is < 3dB. Fundamental split loss for 1x16 split is 12 dB
- No polarization dependent loss measured to date due to unique Optical CrossLinks' waveguide

Additional technical information: -----

- MT style 8 over 8 outputs with pitch 250 by 500 micron compatible to standard MT with 12 over 12 ports is shown in Figure 2
- Balanced output bar graph in Figure 3 shows typical loss for 1x16 splitter at nominal 830nm region with excellent balance within ± 0.5 dB.

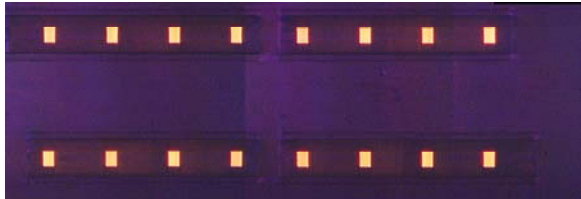
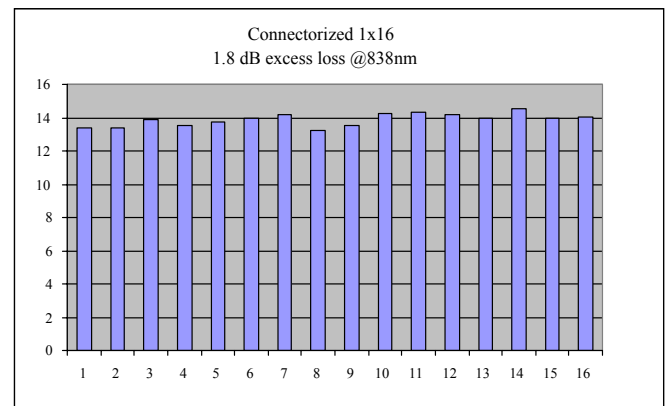


Figure 2: Commercially compatible MT output

formation process producing homogeneous MM polymer waveguides

- Excess loss for 1x32 splitters is ~ 1.2 dB over the 1x16 unit or <3 dB at the 800 to 850nm range but of course with additional splitting loss of 3dB.
- Excellent balance $< \pm 0.5$ dB at all wavelengths as is shown in Figure 3
- Robust component packaging for stand alone components with optional hermetic sealing
- Thermal cycling stability from -45 C to 125 C in hermetic package configuration
- Performance not impacted by shock or inertial issue

Figure 3: Balanced output



Representative Custom Options enabled by OXL's unique technology -----

- Splitters from 1x 4, 8,16 or 32 using MT ferrule style 8 over 8 outputs for the latter with either standard or custom configured coupling
- Multiple input splitters with star coupling mixing distribution built-in such as 2 x 16 etc.
- Custom waveguide designs to provide output variations for unbalanced distribution
- Packaging modifications for custom mounting

and attaching units to boards or substrates

- Unpackaged board or substrate mounting with on or off-board edge connectorization.
- Input / output design variations to optimize for splitter or combiner mode fiber coupling
- Waveguides for non-standard fiber core coupling
- Stacked splitter configurations with common connectors for fiber ribbons

Ordering Information: The 1x16 part number for ordering is OXL-SPL1/16RP-S. Call or email the contacts below for pricing and/or discussion on specific modifications or custom developments.

Contact regarding orders or for more information: Optical CrossLinks, Inc., 206 Gale Lane, Kennett Square, PA, 19348: 610 444 9469 or sales@opticalcrosslinks.com -----see <http://www.opticalcrosslinks.com>

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