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together



WaveArray™ High Channel AWG

Product Capabilities and Value

Building on established capabilities, WaveSplitter Technologies is currently developing its latest addition to an expanding portfolio of fiber optic products, adding Planar Lightguide Circuit (PLC) technology. The WaveArray™ High-Channel-Count Arrayed Waveguide Grating is designed to meet the needs of DWDM system designers by offering a range of channel count products with narrow channel spacings. The WaveArray allows multiplexing and demultiplexing of densely packed wavelength channels on a very large scale in a cost efficient manner.

WaveSplitter intends to launch the WaveArray product line with the introduction of 100GHz Arrayed WaveGuide Grating products with a combination of low and uniform insertion loss, low polarization dependent loss and low channel cross-talk. Additionally, the WaveArray maintains a compact footprint for ease of system integration.

The WaveArray product portfolio is based on mature silica-on-silicon wafer technology utilizing highly scalable manufacturing processes. The platform technology consists of light-guiding structures and channels that exhibit high wavelength resolution which allow narrow-channel-spacing, high-channel-count devices in a small package. Silica based integrated waveguides provide the ideal match with standard singlemode optical fiber, creating low insertion loss for the device.

Features

- High channel count
- Dense channel spacing
- Excellent loss uniformity
- Low insertion loss

Benefits

- Scalable
- High level of integration
- Easily customized
- Economical

Preliminary Performance Specifications for WaveArray™ High Channel AWG

| Parameters | Gaussian Profile | Flat - Top |
|----------------------------------|-----------------------------------|------------|
| Channel Count | 16, 32, 40 | |
| Channel Spacing (GHz) | 100 | |
| Wavelength Range (Band) | C or L Band | |
| Channel Wavelength (nm) | 1530 to 1562 and 1575 to 1608 | |
| Frequency Range (THz) | 186.4 to 190.4 and 191.4 to 195.5 | |
| Passband: (ITU Grid, pm) | ± 50 | ± 100 |
| Ripple (dB) | ≤ 0.8 | ≤ 0.5 |
| Polarization Dependent Loss (dB) | ≤ 0.35 | ≤ 0.35 |
| Insertion Loss (dB) | ≤ 4.8 | ≤ 7.5 |
| Insertion Loss Uniformity (dB) | ≤ 1.7 | ≤ 1.7 |
| 1dB Bandwidth (nm) | ≥ 0.2 | ≥ 0.35 |
| 3dB Bandwidth (nm) | ≥ 0.35 | ≥ 0.55 |
| Adjacent Channel CrossTalk (dB) | ≤ -25 | ≤ -25 |
| Total Optical Cross Talk (dB) | ≤ -22 | ≤ -22 |
| Return Loss (dB) | ≥ 40 | |
| Optical Input Power Range (mW) | ≤ 400 | |
| Optical Fiber Characteristics | | |
| Fiber Type | SMF | |
| Fiber Length (mm) | 1300 ± 100 | |
| Optical Fiber Terminations | SC Connectors | |
| Fiber Tensile Strain (N) | ≥ 5 | |
| Fiber Bend Radius (mm) | ≥ 30 | |
| Operating Conditions | | |
| Temperature (°C) | 0 to 65 | |
| Relative Humidity (% RH) | 85 | |
| Storage Conditions | | |
| Temperature (°C) | -40 to 85 | |
| Relative Humidity (% RH) | ≤ 90 | |
| Vibration (Hz) | 10 to 55, Amplified 1.5mm | |
| Mechanical Shock | 500G | |

Electrical Characteristics

| Gaussian Profile | Peltier |
|-------------------------------|------------------|
| Power Consumption (Watts) | ≤ 4.5 |
| Resistance (ohms) | ≤ 3.1 @ 25°C |
| Thermister Resistance (Kohms) | 10 ± 2% @ 25°C |
| Thermister B value (K) | 3450 ± 2% |
| Module Size | |
| Foot Print (WxLxH) (mm) | 65 x 94 x 16 |
| Gaussian Profile / Flat - Top | Resistive Heater |
| Power Consumption (Watts) | ≤ 10 @ -5°C |
| Resistivity (ohms) | 2.75 ± 15% |
| RTD (ohms) | 100 ± 7% |
| Voltage (Volts d.c.) | 5.5 |
| Current (Amps) | 1.5 |
| Warm-Up Time (minutes) | ≤ 7.0 |
| Module Size | |
| Foot Print (WxLxH) (mm) | 53 x 89 x 8.5 |

Preliminary WaveArray Ordering Information: Standard WaveArray devices are specified with appropriate model number options. If you require devices with different specifications, please see below for more information.*

| | Channel Spacing | Channel Count | Gaussian/ Flat-Top | Starting Wavelength | Peltier/Heater | Termination Type |
|-------------|---------------------------|--|------------------------------|----------------------|---------------------------|--|
| WAD (demux) | --- | --- | --- | ----- | --- | --- |
| WAM (mux) | --- | --- | --- | ----- | --- | --- |
| | 05 = 50GHz 10 = 100GHz | 16 = 16 Ch 32 = 32 Ch 40 = 40 Ch | G = Gaussian F = Flat-Top | Ex. 1530.33nm=153033 | P = Peltier H = Heater | 0 = None 1 = Standard 2 = Custom |

* Custom orders are those that require a specification or configuration other than what is printed. Add "9's" to the appropriate section of the order number.

For more information on any WaveSplitter product contact your sales representative listed on our web site www.wavesplitter.com. Or contact WaveSplitter Technologies, Inc. directly at 510.580.8888.



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