

W7800-Type 20 nm Thin-Film, Coarse Wavelength-Division Multiplexers and Demultiplexers



The W7800-type 20 nm thin-film filter, coarse wavelength-division multiplexers (CWD MUXs) and demultiplexers (CWD deMUXs) are characterized by very low, uniform insertion and reflection loss, excellent band shape and thermal stability, and low polarization-dependent loss.

Features

- Excellent band shape
- High channel isolation
- Low insertion loss
- Epoxy-free optical path
- High reliability
- Thermal stability
- Compact design
- High economy

Applications

- CWDM transmission
- CWDM-based add/drop multiplexing
- Wavelength-selective routing

Description

The W7800-type 20 nm thin-film filter, coarse wavelength-division multiplexers (CWD MUXs) and demultiplexers (CWD deMUXs) are part of a family of high-performance, cost-effective MUX/deMUX modules offered by Agere Systems for use in DWDM systems.

Agere Systems' manufacturing capability, which spans filter processing through module and rack-mount assembly, ensures quality and total supply line control. Proprietary, automated, deterministic process control of filter manufacturing enables high-volume production and ensures precise optical performance at the module level.

The thin-film filters used in the CWD MUX/deMUX modules possess very low, uniform insertion and reflection loss, excellent band shape and thermal stability, and low polarization-dependent loss (PDL). When combined with a packaging capability that emphasizes high thermal and mechanical stability, the resulting MUX/deMUX modules exhibit high adjacent and nonadjacent channel isolation, excellent directivity, and very low optical loss values. Devices and modules conform to *Telcordia Technologies*[®] GR-1221 and GR-63 criteria.

Designed to be customized, the modules can be configured to meet customer-specific channel and wavelength plans as well as unique packaging requirements.

Absolute Maximum Ratings

Table 1. Absolute Maximum Ratings

Parameter	Symbol	Min	Max	Unit
Operating Case Temperature Range	T _{OP}	0	70	°C
Storage Temperature Range	T _{stg}	−40	85	°C

Characteristics

Table 2. W7800 Type 20 nm Thin-Film Coarse Wavelength MUX/DeMUX¹

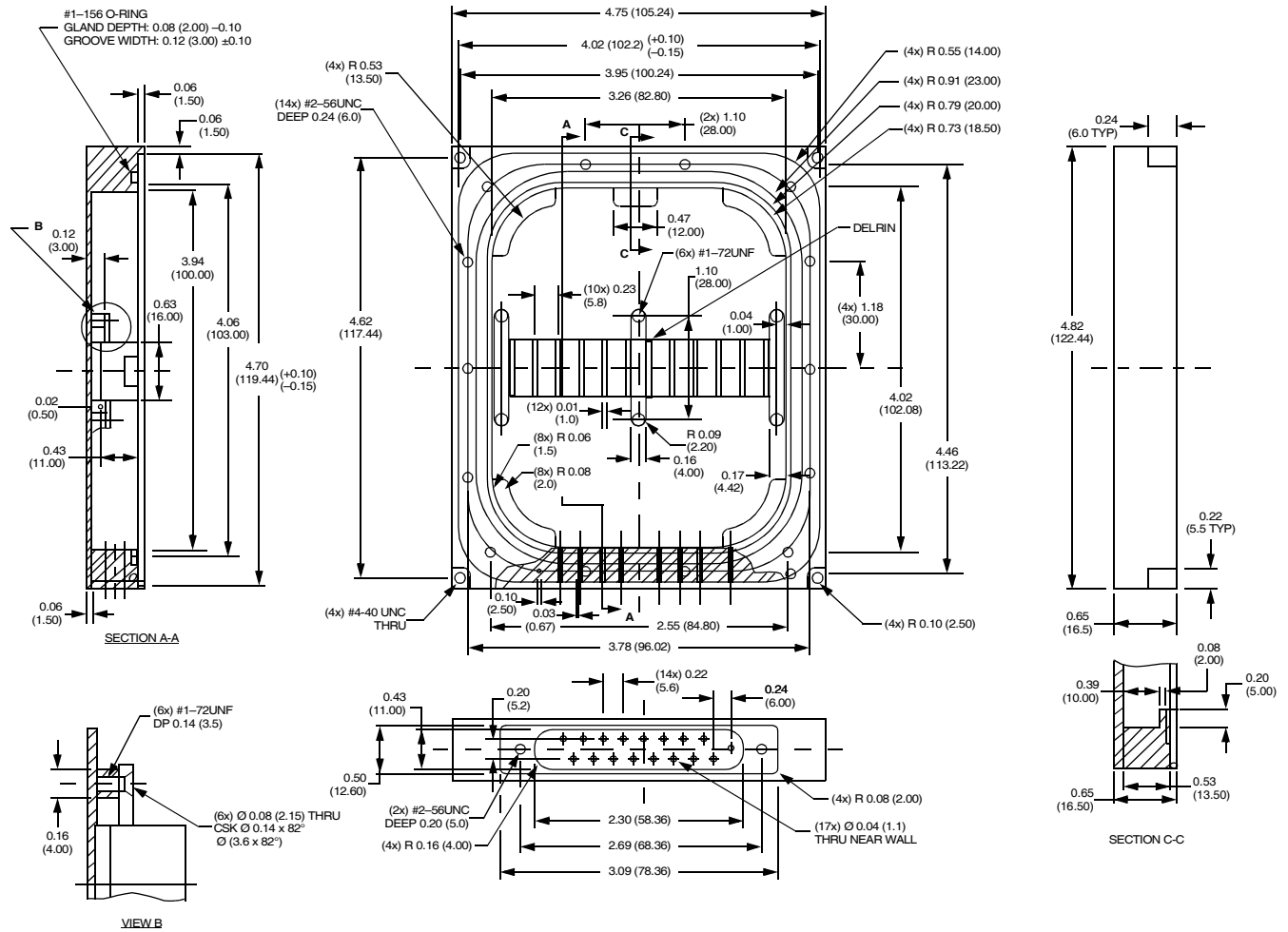
Parameter	Number of Channels			Unit
	1 x 4	1 x 8	1 x 16	
Channel Spacing	20			nm
Center Wavelength Accuracy	±0.1			nm
Channel Pass Band, 0.5 dB Bandwidth (min)	14.0			nm
Insertion Loss (typ)	1.7	2.5	3.2	dB
Insertion Loss (max)	2.0	2.8	3.5	dB
Pass Band Flatness (ripple) (max)	0.5			dB
Channel Uniformity	1.0	1.0	1.0	dB
Adjacent Channel Isolation (min)	28			dB
Nonadjacent Channel Isolation (min)	40			dB
Directivity (min)	55			dB
Optical Return Loss (min)	45			dB
Polarization-dependent Loss (PDL) (max)	0.1			dB
Thermal Stability (max)	0.004			dB/°C
Thermal Wavelength Drift (max)	0.001			nm/°C
Optical Power Handling Capability (max)	500			mW
Module Dimensions	105 x 61 x 12	105 x 61 x 16.5	105 x 122 x 16.5	mm

1. Values are referenced without connector loss.

Outline Diagrams

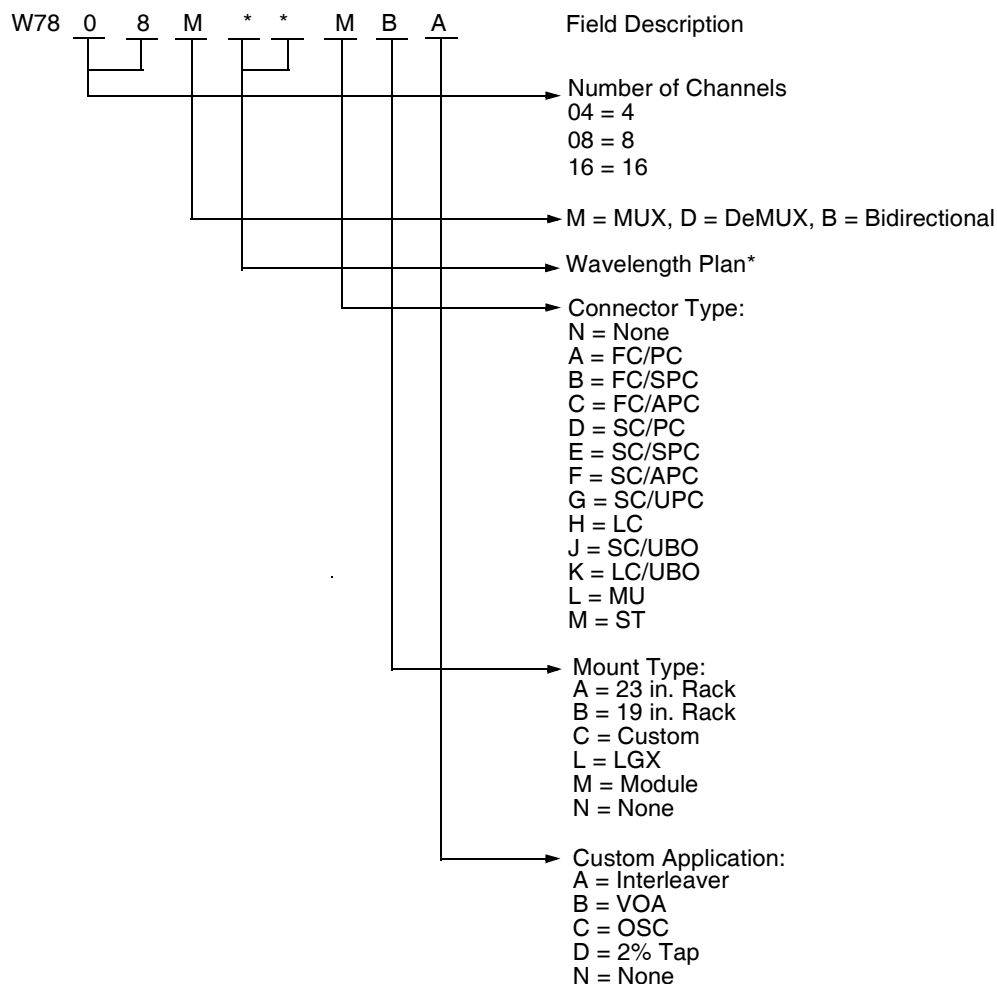
W7800-Type 1 x 16 MUX and DeMUX Mechanical Dimensions

Dimensions are in inches and (millimeters).



Ordering Information

Product Code Definitions



Example: W7808M**MBA represents an eight-channel multiplexer with custom wavelength plan, ST connector, and 19 in. mounting rack; intended for interleaver applications.

* Wavelength plan subcode is generated from customer specifications. Please contact your Agere Systems account manager for further information.

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