

# Coarse Wavelength Division Multiplexer – CWDM

## > mux & demux, 4 channels, mux & demux in one single housing



### Features

- 4 channel mux and 4 channel demux integrated in a single housing  
(separated mux or demux on request)
- Upgrade channel, integrated bandsplitters and tap ports on request
- Micro-hybrid construction in a sealed metal housing
- Epoxy-free optical path, ITU G.694.2 and Telecording GR1221 compliant
- Extremely small component dimensions: 19 x 15.5 x 9 mm<sup>3</sup>, other dimensions on request
- Flexible Location of Fiber Ports, for details see Products page
- Also available as integrated Patch Cord CWDM for flexible system configurations to enable multiplexing without using any board space
- Single mode and multi mode fibers possible, fiber packaging: loose tube or 250 µm coating
- Packaging on line card or in CWDM sub-system for rack mounting on request

### Applications

- Combines / separates up to 4 channels with a 20 nm spacing
- Metro Core, Metro Access, Metro Enterprise, Cable TV, 3G Telephony (UMTS), Datacomm, WAN, RFTS, Sensor Applications
- Analog and digital transmission systems

### Specifications

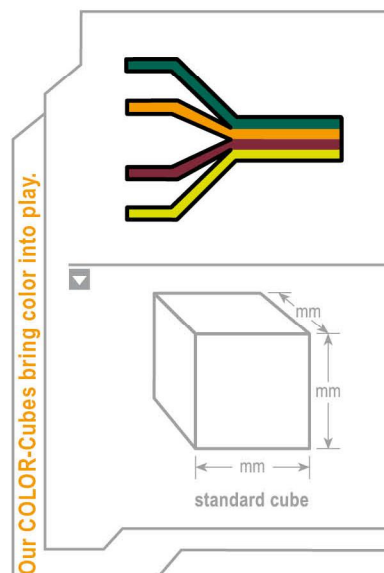
| Parameters                      | Coarse Wavelength Division Multiplexer – mux & demux (all values refer to single mode)       |                                       |
|---------------------------------|--|---------------------------------------|
| Channels                        | 4 channel mux & 4 channel demux  |                                       |
| Center Wavelength [nm]          | choice of 4 wavelengths within <u>one</u> band   |                                       |
| Band 1 (red band)               | 1471 / 1491 / 1511 / 1531 / 1551 / 1571 / 1591 / 1611  |                                       |
| Band 2 (blue band)              | 1271 / 1291 / 1311 / 1331 / 1351 / 1371 / 1391 / 1411 / 1431 / 1451                          |                                       |
|                                 | Upgrade: remaining wavelengths of band<br>other wavelength upon request; please contact CUBO |                                       |
| Optical Bandwidth               | > 13 nm (higher bandwidth on request)  |                                       |
| Insertion Loss *                | 4 channel CWDM   | < 1.9 dB (premium versions available) |
| Link Loss* for mux – demux pair | < 3.8 dB   |                                       |
| Isolation **                    | adjacent channel   | > 30 dB                               |
|                                 | non-adjacent channel   | > 40 dB                               |
|                                 | Isolation Spectral Range Band 1 (red)  | 1460-1620 nm                          |
|                                 | Isolation Spectral Range Band 2 (blue)   | 1260-1460 nm                          |
| Return Loss *                   | > 45 dB (50 dB typ.)   |                                       |
| Directivity (for mux)           | > 50 dB  |                                       |
| Polarization Dependent Loss     | < 0.2 dB   |                                       |
| Max. optical power              | 250 mW   |                                       |
| Operating Temperature           | 0°C to 70°C (-40°C to 85°C on request)   |                                       |
| Storage Temperature             | -40°C to 85°C (when removed from plastic package)  |                                       |
| Package Dimensions              | 19 x 15.5 x 9 mm <sup>3</sup>  |                                       |

\* With passband, valid over full temperature range and at all states of polarization but without connector losses.

\*\* Valid over full temperature range and at all wavelengths across the channel.

Additional components according to your specifications on request! Please contact Cube Optics for further details.

V 12.5 (CMD40\_Demusi) 06/2011



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**Cube Optics AG**



## Ordering Information

Indicate your requirements by selecting one option from each configuration table. Please write the corresponding codes in the available boxes to form your part number. For more information on this or other products and their availability, please contact Cube Optics AG at +49-6131-69851-0 or via e.mail at sales@cubeoptics.com, or visit our website at www.cubeoptics.com.

Ordering example: CMD-40-A-0-S-12-1-B-15

CMD -  -  -  -  -  - 1 2 -  -  -

| no. of channels | code |
|-----------------|------|
| 4               | 40   |

| optional features | code |
|-------------------|------|
| none              | 0    |

| housing            | code |
|--------------------|------|
| Standard 4 channel | S*   |

| Center wavelengths [nm]   | code |
|---------------------------|------|
| 1511 / 1531 / 1551 / 1571 | A    |
| 1471 / 1491 / 1591 / 1611 | B    |
| 1271 / 1291 / 1311 / 1331 | C    |
| 1351 / 1371 / 1391 / 1411 | D    |
| 1551 / 1571 / 1591 / 1611 | E    |
| 1471 / 1491 / 1511 / 1531 | F    |

| Fiber length | code |
|--------------|------|
| 0.5 m        | A    |
| 1 m          | B    |

| Connector in/out | code |
|------------------|------|
| none             | 0    |
| SC/PC            | 1    |
| FC/PC            | 2    |
| SC/APC**         | 3    |
| FC/APC**         | 4    |
| LC/PC            | 5    |
| MU/PC            | 6    |
| E2000            | 7    |
| E2000/HRL**      | 8    |
| ST/PC            | 9    |

| fiber type and packaging                                | code |
|---|------|
| Corning SMF-28™ (9,125,250 μm) 900 μm loose tube        | 1    |
| Corning SMF-28™ (9,125,250 μm) 250 μm coating           | 2    |
| Multi mode fiber GI (50,125,250 μm) 900 μm loose tube   | 3*   |
| Multi mode fiber GI (50,125,250 μm) 250 μm coating      | 4*   |
| Multi mode fiber GI (62.5,125,250 μm) 900 μm loose tube | 5*   |
| Multi mode fiber GI (62.5,125,250 μm) 250 μm coating    | 6*   |

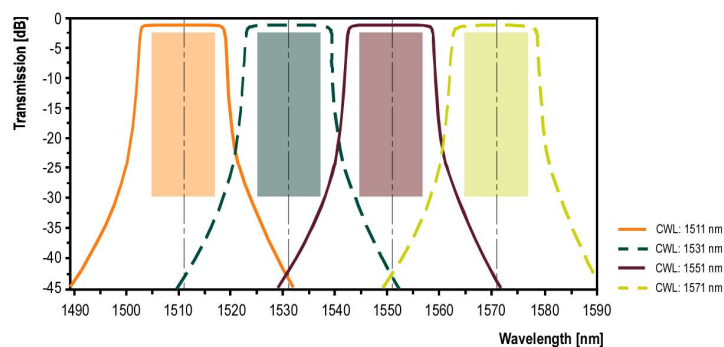
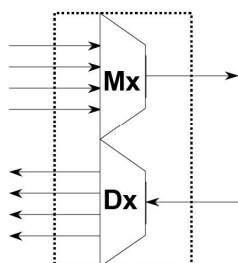
in/out put if the device is regarded as demultiplexer connectors only available in combination with loose tube fiber protection  
\*\* 8° angular polishing

\* Configuration is not reflected by this datasheet.

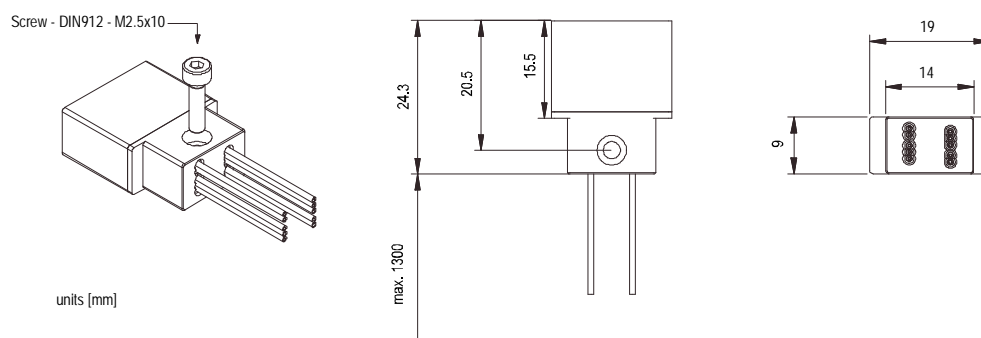
Further configuration on request!

## Port Configuration and Spectral Performance

Port Configuration



## Standard 4 channel mux & 4 channel demux housing



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