

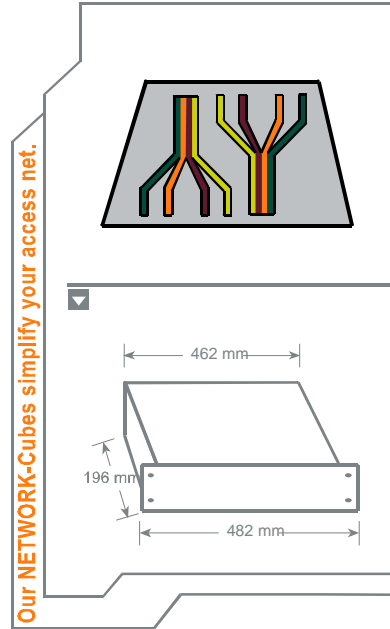
NETWORK CUBE > DWDM-MUX-16+UG Unit

C-1765-Rev. C

Product Description

- Passive DWDM System for 19" rack type installation (1 HU)
 - The module contains 2 pieces of 16 channel + upgrade DWDM multiplexers (1 mux + 1 demux)
 - DWDM multiplexer to mux and demux channels C21-C36, in the C band; Upgrade port for passing channels C44-C59.
 - The DWDM multiplexers are compliant with the ITU standard and Telcordia GR1221 (former Bellcore) standard and are designed to meet NEBS level 3
 - The sub-system interoperates with any router, switch, DSLAM, SFP and GBIC, which supports the DWDM ITU standard
 - The systems comprise fixed (not exchangeable) modules
 - The fixed front panel is equipped with adapters according to customer choice (see below)
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- Product Description: NETWORK CUBE DWDM-MUX-16+UG Unit
 - Product Code: C-1765
 - Connector Code: -XY (choose from table below)
 - Revision Level: -Rev.C

Example Order Code: C-1765-55-Rev.C
for a system with LC/PC on all ports.



| (X) Common ports (Y) DWDM channel ports | Code |
|--|------|
| 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 |

| No. | Description | Date | Created by | Approved by |
|-----|---------------------------------------|----------|------------------|-------------|
| A | Initial release | 24.10.06 | Thomas Paatzsch | |
| B | Changed insertion loss for DWDM ports | 16.01.07 | Thomas Paatzsch | |
| C | Link Loss | 04.12.07 | Carsten Marheine | |
| C | Included typical insertion loss | 24.03.10 | Islah Touhtouh | |

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General Specifications

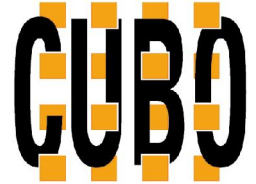
| | |
|------------------------------|--|
| Operating Temperature | -5°C to +70°C |
| Storage Temperature | -40°C to +85°C |
| Max. optical Power | < 300 mW |
| Optical Adapters | |
| Trunk (Dx Input / Mx Output) | According to customer's choice, to be selected with order code |
| DWDM channel ports | According to customer's choice, to be selected with order code |

Optical Performance of the DWDM Mx/Dx

| | | |
|-----------------------------|--|----------------------|
| Operating Channels | please refer to wavelength reference table below | |
| DWDM ports (Z1-Z16) | C21-C36 | |
| Upgrade port | C43-C59 | |
| Channel Spacing | | |
| DWDM channels | 100GHz | |
| Insertion Loss | max ¹ | typical ² |
| DWDM channels | < 4.5 dB | 3.1 dB |
| Upgrade channel | < 1.0 dB | 0.6 dB |
| Link Loss (mux+demux) | max ¹ | typical ² |
| DWDM channels | < 7.2 dB | 6.1 dB |
| Directivity | | |
| Between each channel | > 60 dB | |
| Upgrade channel | > 50 dB | |
| Polarization Dependent Loss | < 0.2 dB | |

Notes:

1. Max. insertion loss over channel bandwidth, valid over full operating temperature range and all states of polarization with optical connectors. The typical connector loss is 0.4 dB for a connector pair
2. Typical insertion loss is defined as typical value over channel bandwidth, full operating temperature range and all states of polarization including optical connectors. Typical values have been derived with statistical methods from actual production data to reflect the majority of cases.



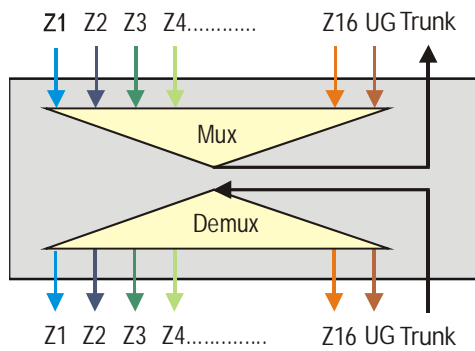
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Package Dimensions and Front Plate design

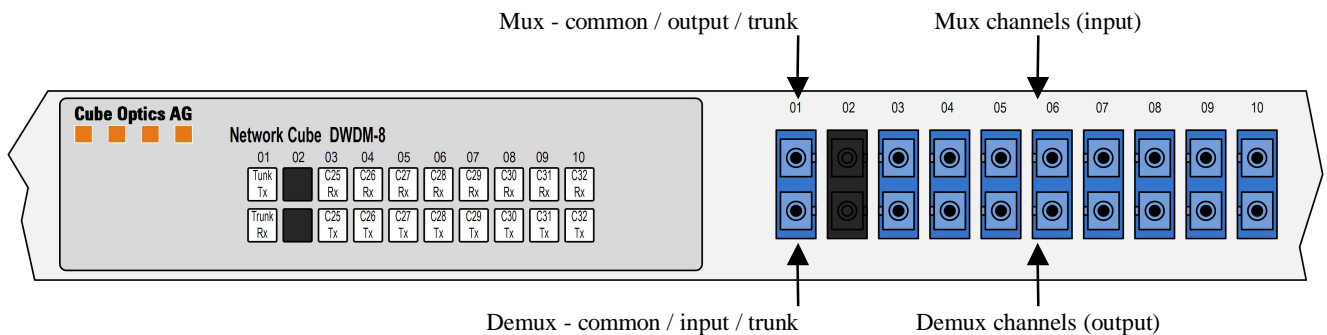
Logical setup:



The descriptions Z1-Z16 correspond to above specified DWDM channel numbers

Connection Scheme:

- The module contains the adapters for one multiplexer at the top and one demultiplexer at the bottom.
- The channels are marked with above specified ITU channel numbers (e.g. C24, C25, ...), respectively as “UG” for the extension port.
- The common ports are marked as “Trunk”.



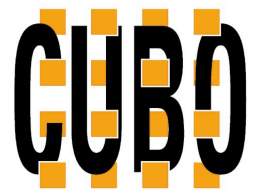
Please, note that above layout refers to a DWDM-MUX-8 Unit and is taken only as example. The actual layout of the unit described in this document depends on a number of factors such as channel number and connector type. However, the principal scheme will stay the same.

Layout and dimensions (see also next page)

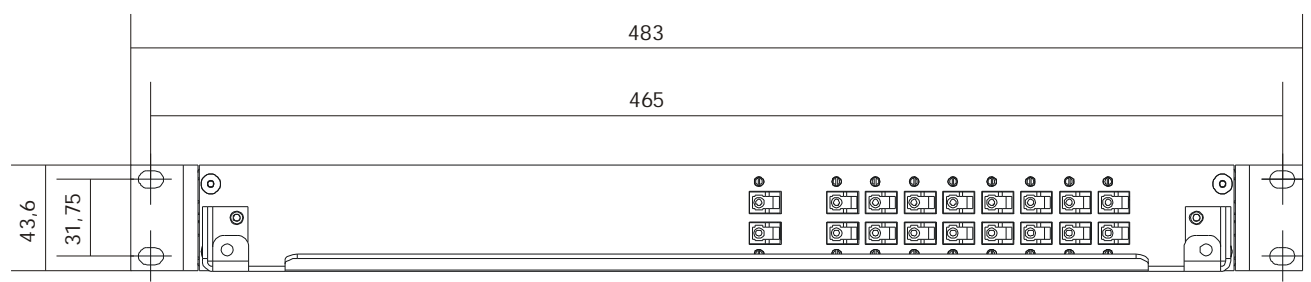
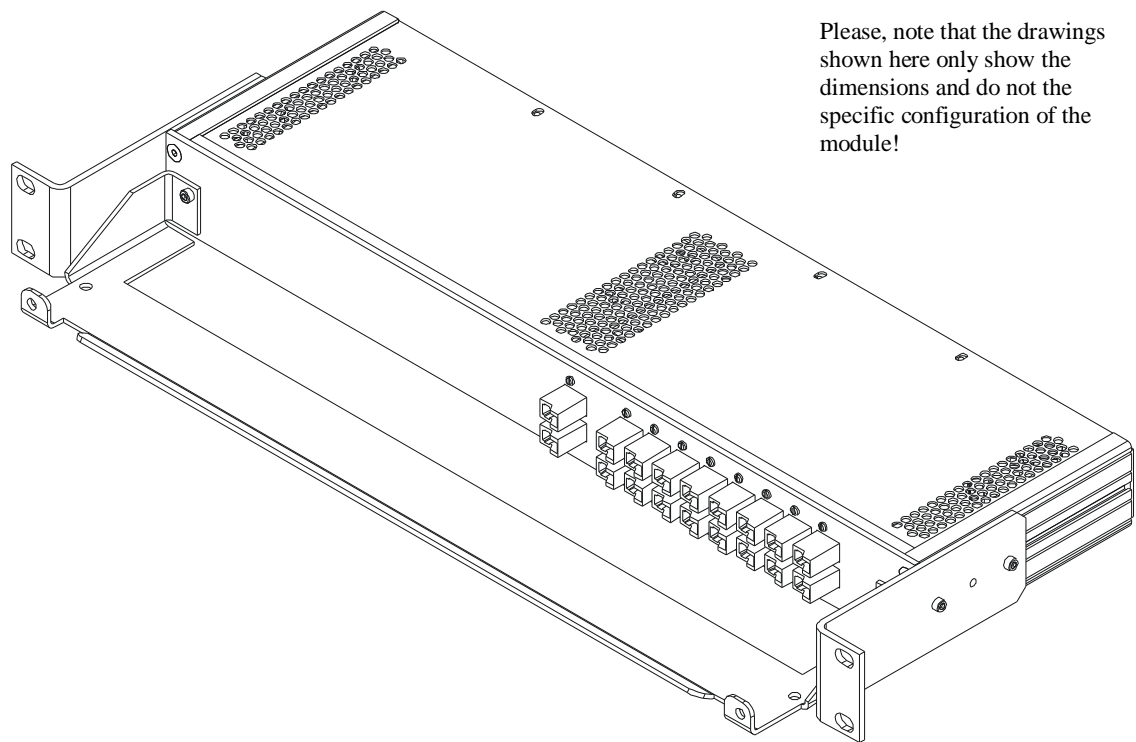
- Width: 483 mm (19”), 532 mm (ETSI)
- Height: 43.6 mm (1.732”) / 1HU
- Depth: 125 / 214.2 mm (without / with patch cord shelf)
- The color of the module is light gray
- All fonts and labels are printed in black.

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Please, note that the drawings shown here only show the dimensions and do not the specific configuration of the module!





ITU Grid Standard Wavelength Reference Table

| Channel Number | Frequency (GHz) | Wavelength (nm) | Channel Number | Frequency (GHz) | Wavelength (nm) |
|----------------|-----------------|-----------------|----------------|-----------------|-----------------|
| C21 | 192100 | 1560.61 | C41 | 194100 | 1544.53 |
| C22 | 192200 | 1559.79 | C42 | 194200 | 1543.73 |
| C23 | 192300 | 1558.98 | C43 | 194300 | 1542.94 |
| C24 | 192400 | 1558.17 | C44 | 194400 | 1542.14 |
| C25 | 192500 | 1557.36 | C45 | 194500 | 1541.35 |
| C26 | 192600 | 1556.55 | C46 | 194600 | 1540.56 |
| C27 | 192700 | 1555.75 | C47 | 194700 | 1539.77 |
| C28 | 192800 | 1554.94 | C48 | 194800 | 1538.98 |
| C29 | 192900 | 1554.13 | C49 | 194900 | 1538.19 |
| C30 | 193000 | 1553.33 | C50 | 195000 | 1537.40 |
| C31 | 193100 | 1552.52 | C51 | 195100 | 1536.61 |
| C32 | 193200 | 1551.72 | C52 | 195200 | 1535.82 |
| C33 | 193300 | 1550.92 | C53 | 195300 | 1535.04 |
| C34 | 193400 | 1550.12 | C54 | 195400 | 1534.25 |
| C35 | 193500 | 1549.32 | C55 | 195500 | 1533.47 |
| C36 | 193600 | 1548.51 | C56 | 195600 | 1532.68 |
| C37 | 193700 | 1547.72 | C57 | 195700 | 1531.90 |
| C38 | 193800 | 1546.92 | C58 | 195800 | 1531.12 |
| C39 | 193900 | 1546.12 | C59 | 195900 | 1530.33 |
| C40 | 194000 | 1545.32 | C60 | 196000 | 1529.55 |

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