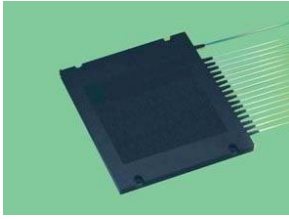


LEAD Fiber Optics PRODUCT CATALOGUE

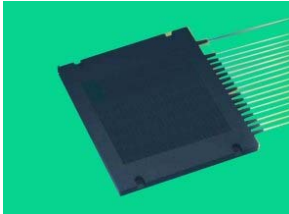
DWDM

LFO DWDM Series



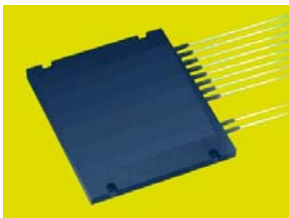
100 GHz DWDM

The DWDM modules with 100GHz channel spacing can be used to combine or separate wavelength channels at standard ITU grid. The minimum channel spacing between neighbor channels is 100GHz. Our 100 GHz DWDM module features narrow channel bandwidth (0.2nm) in ITU channel allocation. Their isolation is greater than 30dB for adjacent channels, and greater than 40dB for non-adjacent channels. They have also high thermal stability.



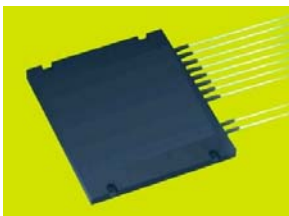
200 GHz DWDM

The DWDM modules with 200GHz channel spacing can be used to combine or separate wavelength channels at standard ITU grid. The minimum channel spacing between neighbor channels is 200GHz. Our 200 GHz DWDM module features narrow channel bandwidth (0.5nm) in ITU channel allocation. Their isolation is greater than 30dB for adjacent channels, and greater than 40dB for non-adjacent channels. They have also high thermal stability.



100 GHz DWDM Add/Drop Module

The 100 GHz DWDM Add/Drop Unit is designed to add and drop an individual channel flexibly at an optical node of a 100 GHz DWDM network system. Our 100 GHz DWDM Add/Drop Module Features narrow channel bandwidth (0.2nm) in ITU channel allocation. They have low insertion Loss (IL), low IL Uniformity and high Isolation. The central wavelength of each channel can be specified to one of the ITU-T grid wavelengths.



200 GHz DWDM Add/Drop Module

The 200 GHz DWDM Add/Drop Unit is designed to add and drop an individual channel flexibly at an optical node of a 200 GHz DWDM network system. Our 200 GHz DWDM Add/Drop Module Features narrow channel bandwidth (0.5nm) in ITU channel allocation. They have low insertion Loss (IL), low IL Uniformity and high Isolation. The central wavelength of each channel can be specified to one of the ITU-T grid wavelengths.



100 GHz DWDM Add/Drop Unit

The DWDM Add/Drop Unit with 200GHz is designed to add or drop one single DWDM wavelength at any node location of the network. The central wavelength and channel spacing of this component are at ITU grid. This component is the basic building block of multiple-channel DWDM mux/demux modules. Customers can specify the central wavelength of the add/drop channel of this component.



200 GHz DWDM Add/Drop Unit

The DWDM Add/Drop Unit with 200GHz is designed to add or drop one single DWDM wavelength at any node location of the network. The central wavelength and channel spacing of this component are at ITU grid. This component is the basic building block of [multiple-channel](#) DWDM mux/demux modules. Customers can specify the central wavelength of the add/drop channel of this component.

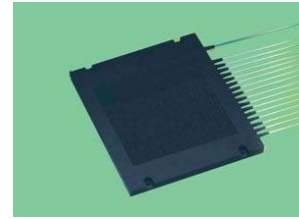
100 GHZ DWDM

Features

- Environmentally stable
- Easy installation
- Custom-defined specifications
- Low return Loss
- Low Loss, Low cross Talk
- ITU standard

Applications

- Telecommunication
- Local area network
- DWDM & FTTH



Specifications

| ITEM | VALUES | |
|--|--|-------|
| | Mux | Demux |
| Type | Mux | Demux |
| Channel | 4/8/16 | |
| Central Wavelength, nm | Ch 21~60 or ITU Standard (Customer specify) | |
| Channel Space, nm | 0.8 | |
| Channel Space, GHz | 100 | |
| Pass band@ 0.5dB,nm | ITU±0.1nm | |
| Insert Loss, dB for 4 channel | ≤2.8 | |
| Insert Loss, dB for 8 channel | ≤4.0 | |
| Insert Loss, dB for 16 channel | ≤5.0 | |
| Adjacent Channel isolation, dB | N/A | ≥25 |
| Non-adjacent Channel isolation, dB | N/A | ≥35 |
| Uniformity, dB | Minimize Pair Loss or ≤1.5 | |
| Directivity, dB | ≥40 | |
| Optical Input Return Loss, dB | ≥45 | |
| Polarization Dependent Loss, dB | ≤0.15 | |
| Polarization Mode Dispersion (PMD), ps | ≤0.1 | |
| Thermal Stability Drift, pm /°C | ≤1 | |
| Max. Optical Power, mW | 300 | |
| Max. Tensile Load, N | 5 | |
| Storage Temperature, °C | -40°C ~ 85°C | |
| Operating Temperature, °C | 0 ~ 65°C | |
| Package size,mm ³ | M4(1×4, 1×8 standard);M5(1×16 standard, Mux+Demux 1×8 standard), A2,A3 | |

100 GHz DWDM Ordering information

WD-D1 XX/XX XX XX X X XX XXX(cm)

Connector type
 11-ST
 21-FC/PC
 22-FC/APC
 31-SC/PC
 32-SC/APC
 41-LC/PC
 51-MU/PC
 00-None
 XX-Others

Pigtail length
 050- 50cm
 100- 100cm
 150- 150cm
 200- 200cm
 000- Modulized
 XXX-Others

Central wavelength
 11- ch 21/22/23/24
 12- ch 25/26/27/28
 13- ch 29/30/31/32
 14- ch 33/34/35/36
 15- ch 21/22/23/24/25/26/27/28/29/30/31/32/33/34/35/36
 16- ch 43/44/45/46/47/48/49/50/51/52/53/54/55/56/57/58
 XX- Others

No.of channels
 04- 4 channel, ITU Standard
 06- 6 channel, ITU Standard
 08- 8 channel, ITU Standard
 16- 16 channel, ITU Standard
 XX- Others

Package option(for both ends)
 C1-Coated fiber(250um)
 L1-Loose tube cable (900um)
 XX-Others

Type
 M-Mux
 D-Demux
 U-Mux/Demux
 X-Others

Channel spacing
 1- 100 GHz
 2- 200 GHz
 X- Others

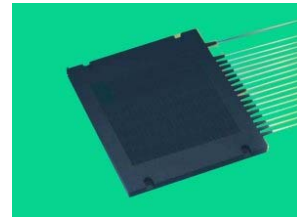
200 GHZ DWDM

Features

- Environmentally stable
- Easy installation
- Custom-defined specifications
- Low return Loss
- Low Loss, Low cross Talk
- ITU standard

Applications

- Telecommunication
- Local area network
- DWDM & FTTH



Specifications

| ITEM | VALUES | |
|--|---|-------|
| | Mux | Demux |
| Type | Mux | Demux |
| Channel | 4/8/16 | |
| Central Wavelength ,nm (4 channel) | (21)Ch 21/23/25/27 (22)Ch 29/31/33/35 (23)Ch 43/45/47/49 (24)Ch 51/53/55/57 or ITU Standard (Customer specify) | |
| Central Wavelength ,nm (8 channel) | (25)ch 21/23/25/27/29/31/33/35 (26)ch 43/45/47/49/51/53/55/57 | |
| Central Wavelength ,nm (16 channel) | (27)ch 21/23/25/27/29/31/33/35/43/45/47/49/51/53/55/57 | |
| Channel Space, nm | 1.6 | |
| Channel Space, GHz | 200 | |
| Pass band@ 0.5dB,nm | ITU±0.25nm | |
| Insert Loss, dB for 4 channel | ≤ 2.8 | |
| Insert Loss, dB for 8 channel | ≤ 4.0 | |
| Insert Loss, dB for 16 channel | ≤ 5.0 | |
| Adjacent Channel isolation, dB | N/A | ≥ 30 |
| Non-adjacent Channel isolation, dB | N/A | ≥ 40 |
| Uniformity, dB | Minimize Pair Loss or ≤ 1.5 | |
| Optical Input Return Loss, dB | ≥ 45 | |
| Polarization Dependent Loss, dB | ≤ 0.15 | |
| Polarization Mode Dispersion (PMD), ps | ≤ 0.15 | |
| Thermal Stability Drift, pm /°C | ≤ 2 | |
| Max. Optical Power, mW | 300 | |
| Max. Tensile Load, N | 5 | |
| Storage Temperature, °C | -40°C ~ 85°C | |
| Operating Temperature, °C | 0 ~ 65°C | |
| Package size,mm ³ | M4(1×4, 1×8 standard);M5(1×16 standard,Mux+Demux 1×8 standard), A2,A3 | |

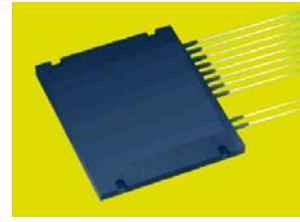
100 GHz DWDM Add/Drop Module

Features

- Environmentally stable
- Easy installation
- Custom-defined specifications
- Low return Loss
- Low Loss, Low cross Talk
- ITU standard

Applications

- Telecommunication
- Local area network
- DWDM & FTTH



Specifications

| ITEM | VALUES |
|---|--|
| Channel No. | 1/2/4/8 or Customer Specify |
| Starting Wavelength, nm | Channel 21 to 60 or Customer specify |
| Channel Space, nm | 0.8(100GHz) |
| Pass band@ 0.5dB, nm | ITU±0.1nm |
| Operation Wavelength, nm | 1500-1610 |
| Insertion Loss (Com In→N Drop Ch.) | $0.4 \times (N-1) + 1.5$ |
| Insertion Loss(M Add Ch. →Com Out) | $0.4 \times (M-1) + 1.5$ |
| Insertion Loss(In→Out) | $0.4 \times (N+M)$ |
| Adjacent Channel isolation, dB | ≥ 25 |
| Non-adjacent Channel isolation, dB | ≥ 35 |
| Thermal Stability, Wavelength Drift, pm /°C | ≤ 1 |
| Thermal Stability, Insertion Loss Variation | ≤ 0.5 (over operating temperature) |
| Directivity, dB | ≥ 40 |
| Return Loss, dB | ≥ 45 |
| Uniformity, dB | 1.5 or Customer Specify |
| Polarization Mode Dispersion (PMD), ps | ≤ 0.15 |
| Polarization Dependent Loss, dB | ≤ 0.1 |
| Max. Optical Power, mW | 300 |
| Max. Tensile Load, N | 5 |
| Storage Temperature, °C | -40°C ~ 85°C |
| Operating Temperature, °C | 0°C ~ 65°C |
| Package size,mm ³ | M4(1/2/4,channel standard);M5(8 channel standard), A2,A3 |

100 GHz DWDM Add/Drop Module Ordering information

WD-DM XX/XX/XX XX XX XX XX XXX(cm)

Connector (in/common/out)

- 11-ST
- 21-FC/PC
- 22-FC/APC
- 31-SC/PC
- 32-SC/APC
- 41-LC/PC
- 51-MU/PC
- 00-None
- XX-Others

Pigtail length

- 050- 50cm
- 100- 100cm
- 150- 150cm
- 200- 200cm
- 000- Modulized
- XXX-Others

Starting wavelength

- | | |
|-----------------------------|-----------------------------|
| 21- ITU standard channel 21 | 30- ITU standard channel 30 |
| 22- ITU standard channel 22 | 31- ITU standard channel 31 |
| 23- ITU standard channel 23 | 32- ITU standard channel 32 |
| 24- ITU standard channel 24 | 33- ITU standard channel 33 |
| 25- ITU standard channel 25 | 34- ITU standard channel 34 |
| 26- ITU standard channel 26 | |
| 27- ITU standard channel 27 | XX-Others |
| 28- ITU standard channel 28 | |
| 29- ITU standard channel 29 | |

Sets of wavelengths

- 01- 1 set of wavelengths
- 02- 2 set of wavelengths
- 04- 4 set of wavelengths
- XX-Others

Channel spacing

- 1S- 0.8 nm, single directional (100 GHz)
- 1D- 0.8 nm, dual directional (100 GHz)
- 2S- 1.6 nm, single directional (200 GHz)
- 2D- 1.6 nm, dual directional (200 GHz)
- XX- Others

Cable type (for both ends)

- S1-Singlemode bare fiber
- L1-Loose tube cable (900um)
- XX-Others

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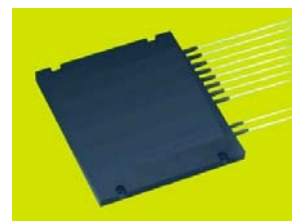
200 GHz DWDM Add/Drop Module

Features

- Environmentally stable
- Easy installation
- Custom-defined specifications
- Low return Loss
- Low Loss, Low cross Talk
- ITU standard

Applications

- Telecommunication
- Local area network
- DWDM & FTTH



Specifications

| ITEM | VALUES |
|---|---|
| Channel No. | 1/2/4/8 or Customer Specify |
| Starting Wavelength, nm | Channel 21 to 60 or Customer Specify |
| Channel Space, nm | 1.6(200GHz) |
| Pass band@ 0.5dB, nm | ITU±0.25nm |
| Operation Wavelength, nm | 1500~1610 |
| Insertion Loss (Com In→N Drop Ch.) | $0.4 \times (N-1) + 1.2$ |
| Insertion Loss(M Add Ch. →Com Out) | $0.4 \times (M-1) + 1.2$ |
| Insertion Loss(In→Out) | $0.4 \times (N+M)$ |
| Adjacent Channel isolation, dB | ≥ 30 |
| Non-adjacent Channel isolation, dB | ≥ 40 |
| Thermal Stability, Wavelength Drift, pm /°C | ≤ 2 |
| Thermal Stability, Insertion Loss Variation | ≤ 0.5 (over operating temperature) |
| Directivity, dB | ≥ 40 |
| Return Loss, dB | ≤ 45 |
| Uniformity, dB | 1.5 or Customer Specify |
| Polarization Mode Dispersion (PMD), ps | ≤ 0.15 |
| Polarization Dependent Loss, dB | ≤ 0.1 |
| Max. Optical Power, mW | 300 |
| Max. Tensile Load, N | 5 |
| Storage Temperature, °C | -40°C ~ 85°C |
| Operating Temperature, °C | 0°C ~ 65°C |
| Package size,mm ³ | M4(1/2/4,channel standard);M5(8 channel standard), A2,A3 |

200 GHz DWDM Add/Drop Module Ordering information

WD-DM XX/XX/XX XX XX XX XX XXX(cm)

Connector (in/common/out)

- 11-ST
- 21-FC/PC
- 22-FC/APC
- 31-SC/PC
- 32-SC/APC
- 41-LC/PC
- 51-MU/PC
- 00-None
- XX-Others

Pigtail length

- 050- 50cm
- 100- 100cm
- 150- 150cm
- 200- 200cm
- 000- Modulized
- XXX-Others

Starting wavelength

- | | |
|---|--|
| <ul style="list-style-type: none"> 21- ITU standard channel 21 22- ITU standard channel 22 23- ITU standard channel 23 24- ITU standard channel 24 25- ITU standard channel 25 26- ITU standard channel 26 27- ITU standard channel 27 28- ITU standard channel 28 29- ITU standard channel 29 | <ul style="list-style-type: none"> 30- ITU standard channel 30 31- ITU standard channel 31 32- ITU standard channel 32 33- ITU standard channel 33 34- ITU standard channel 34 XX-Others |
|---|--|

Sets of wavelengths

- 01- 1 set of wavelengths
- 02- 2 set of wavelengths
- 04- 4 set of wavelengths
- XX-Others

Channel spacing

- 1S- 0.8 nm, single directional (100 GHz)
- 1D- 0.8 nm, dual directional (100 GHz)
- 2S- 1.6 nm, single directional (200 GHz)
- 2D- 1.6 nm, dual directional (200 GHz)
- XX- Others

Cable type (for both ends)

- S1-Singlemode bare fiber
- L1-Loose tube cable (900um)
- XX-Others

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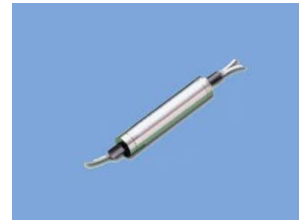
100 GHz DWDM Add/Drop Unit

Features

- Environmentally stable
- Easy installation
- Custom-defined specifications
- Low return Loss
- Low Loss, Low cross Talk
- ITU standard

Applications

- Telecommunication
- Local area network
- DWDM & FTTH



Specifications

| ITEM | VALUES |
|--|--|
| Pass band@ 0.5dB,nm | ITU±0.1nm |
| Channel Space, GHz | 100 |
| Add/Drop Channel Insertion Loss(C-P ₁), dB | ≤ 1.2 |
| Express Channel Insertion Loss(C-P ₂), dB | ≤ 0.5 |
| Add/Drop Channel Ripple, dB | ≤ 0.3 |
| Isolation(C-P ₁), dB | ≤ 25 |
| Isolation(C-P ₂), dB | ≥ 10 |
| Directivity, dB | ≥ 40 |
| Optical Input Return Loss, dB | ≥ 45 |
| Polarization Dependent Loss, dB | ≤ 0.1 |
| Polarization Mode Dispersion (PMD), ps | ≤ 0.1 |
| Thermal Stability, dB /°C | ≤ 0.005 |
| Thermal Stability Drift, pm /°C | ≤ 1 |
| Max. Optical Power, mW | 300 |
| Max. Tensile Load, N | 5 |
| Storage Temperature, °C | -40°C ~ 85°C |
| Operating Temperature, °C | 0 ~ 65°C |
| Package size,mm | φ 5.5×34mm for coated fiber(250 μ m) φ 5.5×39mm for Loose tube cable(900 μ m) |

200 GHz DWDM Add/Drop Unit

Features

- Environmentally stable
- Easy installation
- Custom-defined specifications
- Low return Loss
- Low Loss, Low cross Talk
- ITU standard

Applications

- Telecommunication
- Local area network
- DWDM & FTTH



Specifications

| ITEM | VALUES |
|--|--|
| Pass band@ 0.5dB, nm | ITU±0.25nm |
| Channel Space, GHz | 200 |
| Add/Drop Channel Insertion Loss(C-P ₁), dB | ≤ 1.2 |
| Express Channel Insertion Loss(C-P ₂), dB | ≤ 0.4 |
| Add/Drop Channel Ripple, dB | ≤ 0.3 |
| Isolation(C-P ₁), dB | ≤ 30 |
| Isolation(C-P ₂), dB | ≥ 10 |
| Directivity, dB | ≥ 40 |
| Optical Input Return Loss, dB | ≥ 45 |
| Polarization Dependent Loss, dB | ≤ 0.1 |
| Polarization Mode Dispersion (PMD), ps | ≤ 0.15 |
| Thermal Stability, dB /°C | ≤ 0.005 |
| Thermal Stability Drift, pm /°C | ≤ 2 |
| Max. Optical Power, mW | 300 |
| Max. Tensile Load, N | 5 |
| Storage Temperature, °C | -40°C ~ 85°C |
| Operating Temperature, °C | 0 ~ 65°C |
| Package size, mm | φ 5.5×34mm for coated fiber(250 μ m) φ 5.5×39mm for Loose tube cable(900 μ m) |

