



### Key Features

- Ultra-Low Insertion Loss
- TFF Free-space Technology
- Passive module, no need electrical power
- Stable Operating Temperatures
- Customized Bands Combination

### Applications

- FTTx , PON Optical Networks, 5G Networks.



# Ultra Low Loss WDM

## NG-PON2 CEx Module

### Parameter Specifications: CEx module - Type 1

Parameters	Performance Specifications	Units
G-PON Band	1290-1330, 1480-1500nm	nm
XG-PON Band	1260~1280, 1575~1580nm	nm
TWDM-PON Band	1524~1539, 1596~1604nm	nm
RF Video Band	1550~1560nm.	nm
PtP WDM-PON Band	1610~1625nm	nm
Insertion Loss@ G-PON Band	≤ 1.0	dB
Insertion Loss@ XG-PON Band	≤ 1.0	dB
Insertion Loss@ TWDM-PON Band	≤ 1.0	dB
Insertion Loss@ RF Video Band	≤ 1.3	dB
Insertion Loss@ PtP WDM-PON Band	≤ 1.3	dB
Isolation @ G-PON	≥ 30 (P1 premium type: ≥ 45dB)	dB
Isolation @ XG-PON	≥ 30	dB
Isolation @ TWDM	≥ 30	dB
Isolation @ RF Video	≥ 30	dB
Isolation @ PtP WDM PON	≥ 30	dB
Insertion Loss Ripple	≤ 0.3	dB
PDL	≤ 0.2	dB
Return Loss	≥ 50	dB
Directivity	≥ 50	dB
Fiber Type	Corning Ultra Fiber (G657.A1)	
Connector Type	Customers' choice: SCA, SCU, LCA, LCU	
Module Package Type	Customers' choice: 1RU standard, HD density	

Notes:

1. The above parameters do not include connector, which is less than 0.25dB for a pair connector.
2. Specifications may change without notice.

### Parameter Specifications: CEx module - Type 2

Parameters	Performance Specifications	Units
G-PON Band	1290-1330, 1480-1500nm	nm
XG-PON Band	1260~1280, 1575~1580nm	nm
TWDM-PON Band	1524~1539, 1596~1604nm	nm
PtP WDM-PON Band	1610~1625nm	nm
OTDR Band	1640~1675nm	nm
Insertion Loss@ G-PON Band	≤ 1.0	dB
Insertion Loss@ XG-PON Band	≤ 1.0	dB
Insertion Loss@ TWDM-PON Band	≤ 1.0	dB
Insertion Loss@ PtP WDM-PON Band	≤ 1.3	dB
Insertion Loss@ OTDR Band	≤ 1.3	dB
Isolation @ G-PON	≥ 30 (P2 premium type: ≥ 45dB)	dB
Isolation @ XG-PON	≥ 30	dB
Isolation @ TWDM	≥ 30	dB
Isolation @ PtP WDM PON	≥ 30	dB
Isolation @ OTDR	≥ 30	dB
Insertion Loss Ripple	≤ 0.3	dB
PDL	≤ 0.2	dB
Return Loss	≥ 50	dB
Directivity	≥ 50	dB
Fiber Type	Corning Ultra Fiber (G657.A1)	
Connector Type	Customers' choice: SCA, SCU, LCA, LCU	
Module Package Type	Customers' choice: 1RU standard, HD density	

Notes:

1. The above parameters do not include connector, which is less than 0.25dB for a pair connector.
2. Specifications may change without notice.

# Ultra Low Loss WDM

## NG-PON2 CEx Module

### Parameter Specifications: CEx module - Type 3

Parameters	Performance Specifications	Units
G-PON Band	1290-1330, 1480-1500nm	nm
XG-PON Band	1260~1280, 1575~1580nm	nm
TWDM-PON Band	1524~1539, 1596~1604nm	nm
RF Video Band	1550~1560nm.	nm
Insertion Loss@ G-PON Band	≤ 1.0	dB
Insertion Loss@ XG-PON Band	≤ 1.0	dB
Insertion Loss@ TWDM-PON Band	≤ 1.0	dB
Insertion Loss@ RF Video Band	≤ 1.3	dB
Isolation @ G-PON	≥ 30 (P3 premium type: ≥ 45dB)	dB
Isolation @ XG-PON	≥ 30	dB
Isolation @ TWDM	≥ 30	dB
Isolation @ RF Video	≥ 30	dB
Insertion Loss Ripple	≤ 0.3	dB
PDL	≤ 0.2	dB
Return Loss	≥ 50	dB
Directivity	≥ 50	dB
Fiber Type	Corning Ultra Fiber (G657.A1)	
Connector Type	Customers' choice: SCA, SCU, LCA, LCU	
Module Package Type	Customers' choice: 1RU standard, HD density	

Notes:

1. The above parameters do not include connector, which is less than 0.25dB for a pair connector.
2. Specifications may change without notice.

### Parameter Specifications: CEx module - Type 4

Parameters	Performance Specifications	Units
G-PON Band	1290-1330, 1480-1500nm	nm
XG-PON Band	1260~1280, 1575~1580nm	nm
TWDM-PON Band	1524~1539, 1596~1604nm	nm
Insertion Loss@ G-PON Band	≤ 1.0	dB
Insertion Loss@ XG-PON Band	≤ 1.0	dB
Insertion Loss@ TWDM-PON Band	≤ 1.0	dB
Isolation @ G-PON	≥ 30	dB
Isolation @ XG-PON	≥ 30	dB
Isolation @ TWDM	≥ 30	dB
Insertion Loss Ripple	≤ 0.3	dB
PDL	≤ 0.2	dB
Return Loss	≥ 50	dB
Directivity	≥ 50	dB
Fiber Type	Corning Ultra Fiber (G657.A1)	
Connector Type	Customers' choice: SCA, SCU, LCA, LCU	
Module Package Type	Customers' choice: 1RU standard, HD density	

Notes:

1. The above parameters do not include connector, which is less than 0.25dB for a pair connector.
2. Specifications may change without notice.

### Parameter Specifications: CEx module - Type 5

Parameters	Performance Specifications	Units
G-PON Band	1260-1360, 1480-1500nm	nm
TWDM-PON Band	1524~1539, 1596~1604nm	nm
RF Video Band	1550~1560nm.	nm
PtP WDM-PON Band	1610~1625nm	nm
Insertion Loss@ G-PON Band	≤ 1.0	dB
Insertion Loss@ TWDM-PON Band	≤ 1.0	dB
Insertion Loss@ RF Video Band	≤ 1.2	dB
Insertion Loss@ PtP WDM-PON Band	≤ 1.0	dB
Isolation @ G-PON	≥ 30	dB
Isolation @ TWDM	≥ 30	dB
Isolation @ RF Video	≥ 30	dB
Isolation @ PtP WDM PON	≥ 30	dB
Insertion Loss Ripple	≤ 0.3	dB
PDL	≤ 0.2	dB
Return Loss	≥ 50	dB
Directivity	≥ 50	dB
Fiber Type	Corning Ultra Fiber (G657.A1)	
Connector Type	Customers' choice: SCA, SCU, LCA, LCU	
Module Package Type	Customers' choice: 1RU standard, HD density	

Notes:

1. The above parameters do not include connector, which is less than 0.25dB for a pair connector.
2. Specifications may change without notice.

### Parameter Specifications: CEx module - Type 6

Parameters	Performance Specifications	Units
G-PON Band	1260-1360, 1480-1500nm	nm
TWDM-PON Band	1524~1539, 1596~1604nm	nm
RF Video Band	1550~1560nm.	nm
OTDR Band	1640~1675nm	nm
Insertion Loss@ G-PON Band	≤ 1.0	dB
Insertion Loss@ TWDM-PON Band	≤ 1.0	dB
Insertion Loss@ RF Video Band	≤ 1.2	dB
Insertion Loss@ OTDR Band	≤ 1.0	dB
Isolation @ G-PON	≥ 30	dB
Isolation @ TWDM	≥ 30	dB
Isolation @ RF Video	≥ 30	dB
Isolation @ OTDR	≥ 30	dB
Insertion Loss Ripple	≤ 0.3	dB
PDL	≤ 0.2	dB
Return Loss	≥ 50	dB
Directivity	≥ 50	dB
Fiber Type	Corning Ultra Fiber (G657.A1)	
Connector Type	Customers' choice: SCA, SCU, LCA, LCU	
Module Package Type	Customers' choice: 1RU standard, HD density	

Notes:

1. The above parameters do not include connector, which is less than 0.25dB for a pair connector.
2. Specifications may change without notice.

### Parameter Specifications: CEx module - Type 7

Parameters	Performance Specifications	Units
G-PON Band	1260-1360, 1480-1500nm	nm
TWDM-PON Band	1524~1539, 1596~1604nm	nm
RF Video Band	1550~1560nm.	nm
PtP WDM PON	1610~1625nm	nm
OTDR Band	1640~1675nm	nm
Insertion Loss@ G-PON Band	≤ 1.0	dB
Insertion Loss@ TWDM-PON Band	≤ 1.0	dB
Insertion Loss@ RF Video Band	≤ 1.0	dB
Insertion Loss@ PtP WDM PON	≤ 1.3	dB
Insertion Loss@ OTDR Band	≤ 1.3	dB
Isolation @ G-PON	≥ 30	dB
Isolation @ TWDM	≥ 30	dB
Isolation @ RF Video	≥ 30	dB
Isolation @ PtP WDM PON	≥ 30	dB
Isolation @ OTDR	≥ 30	dB
Insertion Loss Ripple	≤ 0.3	dB
PDL	≤ 0.2	dB
Return Loss	≥ 50	dB
Directivity	≥ 50	dB
Fiber Type	Corning Ultra Fiber (G657.A1)	
Connector Type	Customers' choice: SCA, SCU, LCA, LCU	
Module Package Type	Customers' choice: 1RU standard, HD density	

Notes:

1. The above parameters do not include connector, which is less than 0.25dB for a pair connector.
2. Specifications may change without notice.

### Parameter Specifications: CEx module - Type 8

Parameters	Performance Specifications	Units
TWDM-PON Band	1524~1539, 1596~1604nm	nm
RF Video Band	1550~1560nm.	nm
PtP WDM PON	1610~1625nm	nm
OTDR Band	1640~1675nm	nm
Insertion Loss@ TWDM-PON Band	≤ 1.0	dB
Insertion Loss@ RF Video Band	≤ 1.0	dB
Insertion Loss@ PtP WDM PON	≤ 1.0	dB
Insertion Loss@ OTDR Band	≤ 1.0	dB
Isolation @ TWDM	≥ 30	dB
Isolation @ RF Video	≥ 30	dB
Isolation @ PtP WDM PON	≥ 30	dB
Isolation @ OTDR	≥ 30	dB
Insertion Loss Ripple	≤ 0.3	dB
PDL	≤ 0.2	dB
Return Loss	≥ 50	dB
Directivity	≥ 50	dB
Fiber Type	Corning Ultra Fiber (G657.A1)	
Connector Type	Customers' choice: SCA, SCU, LCA, LCU	
Module Package Type	Customers' choice: 1RU standard, HD density	

Notes:

1. The above parameters do not include connector, which is less than 0.25dB for a pair connector.
2. Specifications may change without notice.

## Ultra Low Loss WDM NG-PON2 CEx Module

### Operating Conditions

Parameters	Performance Specifications	Units
Maximum Power handling	500	mW
Operating Temperature	-5 ~ +70	°C
Storage Temperature	-40 ~ +85	°C
Operation Humidity	5 to 95 % Relative Humidity	
Materials of the Module	Full RoHS compliance	

### Mechanical Box Size Information

Parameters	Performance Specifications	Units
Bare Ultra Compact Module	21 x 14 x 7	mm
ABS Box	100 x 80 x 10	mm
1RU LGX Box	129 x 160 x 28.6	mm
½ RU High Density Cassette	137 x 165 x 19	mm
Materials of the Module	Full RoHS compliance	

**Part Number Scheme: NG-PON2 CEx Module**



**Product Type**  
Free space technology & Ultra-compact

**Premium Isolation**  
SD = Standard Isolation  
P1 = type1, GPON iso. ≥ 45dB  
P2 = type2, GPON iso. ≥ 45dB  
P3 = type3, GPON iso. ≥ 45dB

**Fiber Length**  
10 = 1.0 m  
15 = 1.5 m  
30 = 3.0 m  
mn = m.n meters  
00 = None

**Wavelength Band Type**  
01=GPON,XGPON,TWDM,RF,PtP  
02 = GPON,XGPON,TWDM,PtP,OTDR  
03 = GPON,XGPON,TWDM,RF  
04 = GPON,XGPON,TWDM  
05 = GPON,TWDM,RF,PtP  
06 = GPON,TWDM,RF,OTDR  
07 = GPON,TWDM,RF,PtP,OTDR  
08 = TWDM, RF, PtP, OTDR

**Package Type**  
U = Ultra-Compact  
A = ABS Box  
G = 1RU LGX  
H = High Density x4(LC) x2(SC)  
K = High Density x6(LC) x3(SC)  
C = customized

If you cannot find what you want, please contact us for a customized module.

**Connector Type**  
0 = None      M = MTP 12P  
2 = FC/UPC    N = MTP 24P  
3 = FC/APC    O = MPO 12P  
4 = SC/UPC    P = MPO 24P  
5 = SC/APC    H = MU/UPC  
6 = ST/UPC  
7 = LC/UPC  
8 = LC/APC