

SFW-D

Dense Wavelength Division Multiplexer (DWDM)

Description:

SFW-D series dense wavelength division multiplexer and demultiplexer (DWDM) modules are reliable solutions to multiservice applications. They multiply the capacity of existing singlemode fibers, based on 100 or 200 GHz channel spacing. The **SFW-D** are available in a variety of packaging options for standard configurations of 4, 8, 16, 32 and 40 channels. Custom devices can be configured to meet customer demands concerning channel counts, wavelength plan and packaging requirements.

Features:

- Wide channel bandwidth
- High adjacent channel isolation
- Low polarization dependent loss
- Low chromatic dispersion
- Customer solutions
- Compact size

Applications:

- Metro and long haul Mux/Demux
- OADM network nodes
- Original equipment manufacturer (OEM) applications



16-channels DWDM

Technical specifications:

Feature	Specification				
Channel wavelength, nm	ITU 100 GHz Grid				
Channel spacing, GHz	100				
Pass bandwidth (@ -0.5 dB), nm	> 0.3				
Channel ripple, dB	< 0.5				
Channel number	4	8	16	32	40
Insertion Loss, dB (typ)	1.6	2.6	3.8	4.8	5.2
Insertion Loss, dB (max)	1.8	3.0	4.5	5.5	6.0
Channel uniformity, dB	≤ 0.6	≤ 1.0	≤ 1.5	≤ 1.0	≤ 1.0
PDL, dB	≤ 0.10	≤ 0.10	≤ 0.20	≤ 0.20	≤ 0.20
PMD, ps	≤ 0.10	≤ 0.10	≤ 0.20	≤ 0.20	≤ 0.30
Isolation – adjacent channel, dB	≥ 30 dB				
Isolation – non adjacent channel, dB	≥ 40 dB				
Maximum optical power, mW	≤ 300				
Return loss	≥ 45 dB				
Directivity	≥ 50 dB				
Operating temperature, °C	-5 to +75				
Storage temperature, °C	-40 to +85				
Reliability	Telcordia GR-1209, GR-1221				

Ordering Code:

(2x)¹ SFW - DX-XX - XX - XXX - AAA (-LL)²

DX		XX	
Channel spacing		Type examples	
D1	100 GHz	4M	4 Channels Mux
		4D	4 Channels Demux
		16M	16 Channels Mux
		16D	16 Channels Demux
On request:		8M+8D	8 Channels Mux+Demux
D2	200 GHz	32M+32D	32 Channels Mux+Demux
D50	50 GHz	AD	Add/Drop

Number of first channel according to ITU Grid
Or on request

Package version I (Basic type)-Examples

FP3 0.9 mm fiber, ABS box 100x80x10 mm
FP4 0.9 mm fiber, ABS box 120x80x18 mm
FP5 0.9 mm fiber, ABS box 140x80x18 mm

Package version II (Optional)

CAPM OPTOKON cassette (up to 6 channels)
LGX LGX box (customized by a client)
XXX Part number of relevant ODF (e.g. **MCNP, TMVJ, MCPJ**)

AAA – Input and output connectors
Standard connector types:

Code	Description
UPC	FC/UPC
NPC	FC/APC (2.05 standard)
USC	SC/USC
NSC	SC/APC
NE2S	LSH (E2000)/APC standard
NE2P	LSH (E2000)/APC premium
ULC	LC/UPC
NLC	LC/APC
NC	No connectors

Standard fiber / Cable length = 1 m

Note:
 1) „2x“ => 2 fibers variant
 (two multiplexes in one package, f.e. in MCNP)
 2) Low Loss filter module with the lowest IL ≤1.5dB

ITU Grid Channels (100 GHz Spacing)

Channel	Frequency (THz)	Wavelength (nm)	Channel	Frequency (THz)	Wavelength (nm)	Channel	Frequency (THz)	Wavelength (nm)
1	190,100	1577.03	26	192,600	1556.55	51	195,100	1536.61
2	190,200	1576.20	27	192,700	1555.75	52	195,200	1535.82
3	190,300	1575.37	28	192,800	1554.94	53	195,300	1535.04
4	190,400	1574.54	29	192,900	1554.13	54	195,400	1534.25
5	190,500	1573.71	30	193,000	1553.33	55	195,500	1533.47
6	190,600	1572.89	31	193,100	1552.52	56	195,600	1532.68
7	190,700	1572.06	32	193,200	1551.72	57	195,700	1531.90
8	190,800	1571.24	33	193,300	1550.92	58	195,800	1531.12
9	190,900	1570.42	34	193,400	1550.12	59	195,900	1530.33
10	191,000	1569.59	35	193,500	1549.32	60	196,000	1529.55
11	191,100	1568.77	36	193,600	1548.51	61	196,100	1528.77
12	191,200	1567.95	37	193,700	1547.72	62	196,200	1527.99
13	191,300	1567.13	38	193,800	1546.92	63	196,300	1527.22
14	191,400	1566.31	39	193,900	1546.12	64	196,400	1526.44
15	191,500	1565.50	40	194,000	1545.32	65	196,500	1525.66
16	191,600	1564.68	41	194,100	1544.53	66	196,600	1524.89
17	191,700	1563.86	42	194,200	1543.73	67	196,700	1524.11
18	191,800	1563.05	43	194,300	1542.94	68	196,800	1523.34
19	191,900	1562.23	44	194,400	1542.14	69	196,900	1522.56
20	192,000	1561.42	45	194,500	1541.35	70	197,000	1521.79
21	192,100	1560.61	46	194,600	1540.56	71	197,100	1521.02
22	192,200	1559.79	47	194,700	1539.77	72	197,200	1520.25
23	192,300	1558.98	48	194,800	1538.98	73	197,300	1519.48
24	192,400	1558.17	49	194,900	1538.19			
25	192,500	1557.36	50	195,000	1537.40			

Packaging variants:



SFW-D1-4M+4D-30-MCNP-NSC



SFW-D1-4M-30-CAPM-NE2P

Block diagram of typical applications:

