

Optical Modules for the PRO Series

- ▶ WDM B Series • LS B DFB Series • LS B Series • CWDM Series • OSW Series • POL 8000-8



Laser Sources for Telecom Applications

Modules are interchangeable between all PRO Series chassis for flexible test setups. Each module will be automatically identified by the chassis.

WDM B Series Laser Source Modules for DWDM Applications

WDM B Series laser source modules consist of a DFB laser diode with an isolator and sophisticated drive electronics for power/wavelength stabilization and tuning.

The WDM B Series modules are available for center wavelength operation at all wavelengths on the ITU-grid from 1454 nm to 1625 nm at various output powers up to 50 mW. For 10 mW in the C- and L-Band, 2.5 Gbps direct modulation is available.

The careful circuit design assures unbeatable stability in wavelength and power. The wavelength of each laser source module can be tuned over ± 0.85 nm (± 1.25 nm optionally)

with a resolution of 1 pm. All WDM modules are equipped with an adjustable coherence control function featuring sinusoidal, square wave, noise or triangular FM modulation. The laser power can be modulated between 0.02 and 50 kHz with the internal, freely adjustable sine/square/triangular oscillator. All laser modules can be modulated synchronously by an external TTL signal with up to 10 kHz.

The WDM B Series modules can be supplied with polarization maintaining panda fibers and oriented connectors. Manufacturers of telecom laser diodes in 14-Pin BFY package may provide their own laser diodes for integration.

For applications where a defined input polarization is required the PRO 8000 chassis equipped with WDM B Series laser source modules is ideally complemented by the 19 inch rack mountable 8-channel manual polarization controller POL 8000-8.

▶ Features & Benefits

WDM B Series Laser Sources for DWDM Applications

Wavelength/Power Stability with Less than 2 pm/0.01 dB Variation

Versatile Coherence Control of the Laser Line Width

CW DFB Laser Modules on the 50 GHz ITU-T Grid Across S-, C- and L-Bands with up to 50 mW Power

Direct Modulation up to 2.5 Gbps for 10 mW C- and L-Band Modules

Power Tuning Range up to 10 dB : Wavelength Tuning up to ± 1.25 nm

LS B DFB Series Laser Source Modules for Telecom Applications

Outstanding Wavelength and Power Stability at 1310 nm, 1475 nm, 1550 nm, and 1600 nm

LS B Series Laser Source Applications in Visible Range

785 nm and 850 nm Fabry Perot Laser Sources with ± 20 nm Wavelength Tolerance at 1 to 8 mW Output Power

CWDM Series Laser Source Modules for Coarse WDM Applications

DFB Lasers on the CWDM Grid with 10 or 20 mW

Direct Modulation up to 2.5 Gbps for 10 mW Modules

OSW Series Optical Switch Modules

Extremely Reliable, Low Insertion Loss, Fast MEMS Switches

1x2, 2x2, 1x4 and 1x8 Configuration

▶ Applications

WDM Laser Comb for Optical Network Testing

Optical Sources for WDM Components Testing like EDFAs

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LS B DFB Series Laser Source Modules for Telecom Applications

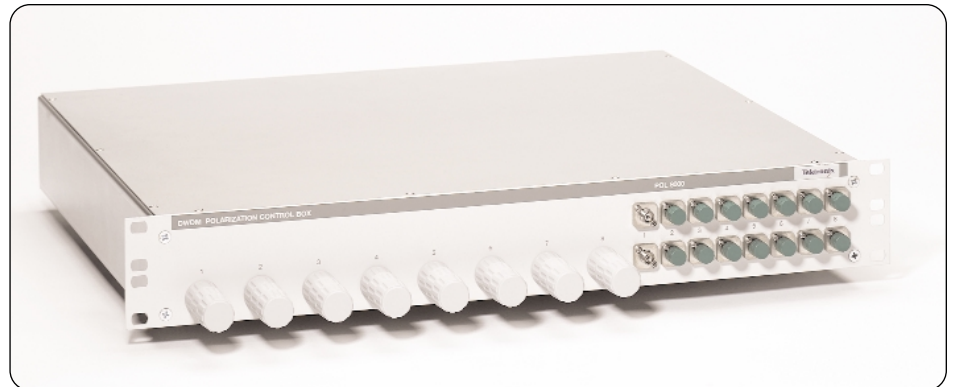
These modules apply to all telecom applications with narrow laser line width, but only moderate center wavelength tolerance requirements, e.g., optical supervisory channels. Users can select from various optical output powers at center wavelengths of 1310 nm, 1475 nm, 1550 nm and 1600 nm.

LS B Series Laser Source Modules

These laser source modules contain a Fabry Perot laser diode and are designed for all applications where stable laser light is required and line width may go up to <3 nm. Users can select between 785 nm and 850 nm with 1 to 8 mW output power.

CWDM Series Laser Source Modules for Coarse WDM Applications

CWDM Series DFB laser source modules are designed for test purposes at the CWDM wavelength grid for metro and access networks with wide channel spacings. They are available with 10 mW or 20 mW output power. For 10 mW modules with direct modulation, 2.5 Gbps can be supplied.



OSW Series Optical Switch Modules

With the optical switches of the OSW Series, the user can selectively distribute the test signals in complex test setups for cost-efficient use of the laser source equipment. The modularity of 1x2, 1x4, 1x8 and 2x2 switches allows flexible routing paths. The bi-directional, ultra-fast and highly reliable switch modules are designed for low insertion loss with excellent repeatability.

POL 8000-8 Manual Polarization Control Box

The POL 8000-8 is a 19 inch rack mountable box with eight polarization controllers for eight light channels based on coiled, birefringent single mode fiber (Lefevre loops). Due to the three-stage design, any input polarization state can be transformed to any output polarization state. The control is enabled by three independent turn knobs at the front for each channel.

► Characteristics

► WDM B Series*¹

	Center Wavelength at 50 GHz spacing* ²	Output Power	Isolation
S-Band	1454 to 1527 nm	10 and 20 mW	30 dB
C-Band	1527 to 1565 nm	10, 20, 40, 50 mW	40 dB
L-Band	1565 to 1615 nm	10 and 20 mW	30 dB
L+-Band	1615 to 1650 nm	10 and 20 mW	30 dB
Tuning Range of Wavelength	±0.85 nm/±1.25 nm optional		
Wavelength Accuracy	for 10 and 20 mW: typical ±10 pm/<±25 pm for 40 and 50 mW <±50 pm		
Wavelength Stability, typical	<2 pm/24 h		
Wavelength Resolution	1 pm		
Absolute/Relative Output Power Accuracy	0.6 dB/0.4 dB		
Stability of Optical Output Power	<0.002/0.005/0.001 dB over 15 s/15 min/24 h		
Output Power Tuning Range* ³	10 dB		
Output Power Resolution	0.01 dB		
Side Mode Suppression Ratio (SMSR)* ⁴	>40 dB, >45 dB typical		
Relative Intensity Noise (RIN)	typical -145 dB·Hz ^{0.5}		
Line Width	Coherence control off: <10 MHz; Coherence control on: typical up to 1 GHz adjustable		
Internal Analog Modulation* ⁵ not for WDM 81xxx-xxD Modules	sine, square, pulse, noise, triangle		
Frequency Range For Internal Analog Modulation	0.02 to 50 kHz; 0.02 to 5 kHz for WDM B 81xxx-10D		
Modulation Depth* ⁶	0.1 to 100%		
Synchronous TTL Modulation* ^{7,8}	DC - 10 kHz		
Direct Modulation	2.5 Gbps for WDM B 81xxx-10D		
Modulation Input	SMA		

*¹All technical data valid for 23 °C ±5 °C and 45% ±15% relative humidity

*²Selectable according to ITU grid, others on request.

*³Wider range on request.

*⁴At P_{max}.

*⁵Triangular modulation optional.

*⁶Depending on modulation form and operating conditions.

*⁷External input synchronous for all modules at the rear of chassis.

*⁸For modules WDM 80000-xxD the frequency is limited to 1 kHz.

Optical Modules for the PRO Series

► WDM B Series • LS B DFB Series • LS B Series • CWDM Series • OSW Series • POL 8000-8

► LS B DFB Series*¹

Center Wavelengths	1310 nm	1475 nm	1550 nm	1600 nm
Output Power	10 mW	10/20 mW	10/20/40/50 mW	10/20 mW
Center Wavelength Tolerance	±20 nm			
Wavelength Stability (typical)	<0.01 nm/24 h			
Setting Range of Laser Temperature	±5 °C			
Stability of Optical Output Power	<0.01 dB over 24 h			
Spectral Line Width	typical <30 MHz			
TTL Modulation* ⁹	DC - 10 kHz			
Analog Modulation Input* ¹⁰	DC - 50 kHz			
Analog Input Impedance	10 kΩ			
RF Modulation Frequency Range* ^{10,11}	0.2 to 500 MHz			
RF Input Impedance	50 Ω			
Modulation Input (Analog/Bias-T)	BNC/SMA			
Ext. TTL Trigger Input/Output* ¹²	BNC/BNC			
Optical Output Connector* ¹³	FC/PC			

LS B Series*¹

Center Wavelengths	785 nm	850 nm
Output Power	1 to 8 mW	1 to 8 mW
Center Wavelength Tolerance	±20 nm	
Wavelength Stability (typical)	<0.01 nm/24 h	
Setting Range of Laser Temperature	±5 °C	
Stability of Optical Output Power	<0.01 dB over 24 h	
Spectral Line Width	<3 nm	
TTL Modulation* ¹⁴	DC - 10 kHz	
Ext. TTL Trigger Input/Output* ¹⁵	BNC/BNC	
Optical Output Connector* ¹⁶	FC/PC	

CWDM Series*¹

Center Wavelengths	1470, 1490, 1510, 1530, 1550, 1570, 1590, 1610 nm
Output Power	10 or 20 mW
Center Wavelength Tolerance	±3 nm/±1 nm Option
Direct Modulation	2.5 Gbps for CWDM 8000-10D
Other Specs	See WDM B Series

*⁹External input synchronous for all modules at the rear of chassis.

*¹⁰Either analog or RF modulation only.

*¹¹Integrated Bias-T only for some laser types possible.

*¹²At the rear of the chassis.

*¹³Others upon request.

*¹⁴External input synchronous for all modules at the rear of chassis.

*¹⁵At the rear of chassis.

*¹⁶Others upon request.

Optical Modules for the PRO Series

► WDM B Series • LS B DFB Series • LS B Series • CWDM Series • OSW Series • POL 8000-8

► General data for WDM B Series, LS B DFB Series, LS B Series, CWDM Series

Operating Temperature	0 °C to +35 °C, noncondensing
Storage Temperature	-40 °C to +60 °C
Warm-up Time For Rated Accuracy	15 min
Optical Output	FC/APC
Fiber* ¹⁷	SMF or PMF (Option)
Width	1-slot
Weight	<0.5 kg
Laser Safety Class	1 M

OSW Series*¹

OSW Module	OSW 8108	OSW 8104	OSW 8102	OSW 8202
Switching Configuration	1x8	1x4	1x2	2x2
Insertion Loss* ¹⁸				
Typical	1.6 dB	1.2 dB	0.7 dB	0.7 dB
Maximum	<2.6 dB	<2.1 dB	<1.5 dB	<1.5 dB
Crosstalk Maximum	-60 dB	-60 dB	-50 dB	-50 dB
PDL* ¹⁹	<0.2 dB	<0.15 dB	<0.1 dB	<0.15 dB
Return Loss	-45 dB	-50 dB	-50 dB	-50 dB
Repeatability	±0.01 dB			
Switching Time	typ. 0.5 ms/<1 ms			
Wavelength Range	1240 to 1610 nm			
Input Power Maximum	+17 dBm			
Lifetime	No wear out measurable (MEMS technology)			
Connectors	FC/APC			
Operating Temperature	0 °C to +60 °C			
Storage Temperature	-40 °C to +70 °C			
Width	1-slot			
Weight	<0.5 kg			

POL 8000-8*¹

Wavelength Range	1450 to 1620 nm
Extinction Ratio (typical)* ²⁰	35 dB
Insertion Loss (typical)* ²¹	≤1 dB
Connectors* ²²	FC/APC or E2000/HRL
Dimensions (W x H x D)	445 x 425 x 65 mm ³
Weight	6.5 kg

*¹⁷PMF Option not for CWDM 8000 Series nor LS B Series.

*¹⁸Including connectors.

*¹⁹Measured at 1550 nm.

*²⁰Measured at 1550 nm.

*²¹Including connectors.

*²²Either at front panel or at rear panel.

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► Ordering Information

WDM B Series Laser Source Modules

WDM B 81475-10 – S-Band (1454 to 1527 nm, 50 GHz channel spacing) 10 mW, Isolator, FC/APC Connector.

WDM B 81475-20 – S-Band (1454 to 1527 nm, 50 GHz channel spacing) 20 mW, Isolator, FC/APC Connector.

WDM B 81550-10 – C-Band (1527 to 1565 nm, 50 GHz Channel Spacing) 10 mW, Isolator, FC/APC Connector.

WDM B 81550-10D – C-Band (1527 to 1565 nm, 50 GHz channel spacing) 10 mW, Isolator, FC/APC Connector for 2.5 Gbps direct modulation.

WDM B 81550-20 – C-Band (1527 to 1565 nm, 50 GHz channel spacing) 20 mW, Isolator, FC/APC Connector.

WDM B 81550-40 – C-Band (1527 to 1565 nm, 50 GHz channel spacing) 40 mW, Isolator, FC/APC Connector.

WDM B 81550-50 – C-Band (1527 to 1565 nm, 50 GHz channel spacing) 50 mW, Isolator, FC/APC Connector.

WDM B 81600-10 – L-Band (1565 to 1625 nm, 50 GHz channel spacing) 10 mW, Isolator, FC/APC Connector.

WDM B 81600-10D – L-Band (1565 to 1625 nm, 50 GHz channel spacing) 10 mW, Isolator, FC/APC Connector for 2.5 Gbps direct modulation.

WDM B 81600-20 – L-Band (1565 to 1625 nm, 50 GHz channel spacing) 20 mW, Isolator, FC/APC Connector.

WDM B 80000 – Module without Laser Diode (BFY Laser to be supplied by the customer).

WDM Module Options

WDM S-TUNE – Wavelength tuning range 2.5 nm (± 1.25 nm).

WDM PMF – Polarization maintaining fiber output with PM orientation.

WDM TRI – Additional internal triangle modulation.

LS B DFB Series Laser Source Modules

LS B 81310 DFB-10 – 1310 nm DFB Module, 10 mW, Isolator, FC/PC Connector.

LS B 81475 DFB-10 – 1475 nm DFB Module, 10 mW, Isolator, FC/PC Connector.

LS B 81475 DFB-20 – 1475 nm DFB Module, 20 mW, Isolator, FC/PC Connector.

LS B 81550 DFB-10 – 1550 nm DFB Module, 10 mW, Isolator, FC/PC Connector.

LS B 81550 DFB-20 – 1550 nm DFB Module, 20 mW, Isolator, FC/PC Connector.

LS B 81550 DFB-40 – 1550 nm DFB Module, 40 mW, Isolator, FC/PC Connector.

LS B 81550 DFB-50 – 1550 nm DFB Module, 50 mW, Isolator, FC/PC Connector.

LS B 81600 DFB-10 – 1600 nm DFB Module, 10 mW, Isolator, FC/PC Connector.

LS B 81600 DFB-20 – 1600 nm DFB Module, 20 mW, Isolator, FC/PC Connector.

LS-BIAS-T-RF – Analog Modulation Input 0.2 to 500 MHz (limited warranty for Laser Diode).

MOD-LF – Analog modulation input 0 to 50 kHz.

LS PMF – Polarization maintaining fiber output with PM orientation.

LS B Series Laser Source Modules

LS B 8000 – Fabry Perot laser source, wavelength tolerance ± 20 nm, 1 to 8 mW, FC/PC Connector.

FP 785 – 785 nm wavelength for LS B 8000 Module.

FP 850 – 850 nm wavelength for LS B 8000 Module.

CWDM Series Laser Source Modules

CWDM 8000-10 – CWDM DFB Source, wavelength tolerance ± 3 nm, 10 mW, FC/APC.

CWDM 8000-10D – CWDM DFB Source, wavelength tolerance ± 3 nm, 10 mW, FC/APC; for 2.5 Gbps direct modulation.

CWDM 8000-20 – CWDM DFB Source, wavelength tolerance ± 3 nm, 20 mW, FC/APC.

CWDM 8000-20D – CWDM DFB Source, wavelength tolerance ± 3 nm, 20 mW, FC/APC; for 2.5 Gbps direct modulation.

610 – 1470 nm wavelength for CWDM 8000 Module.

630 – 1490 nm wavelength for CWDM 8000 Module.

650 – 1510 nm wavelength for CWDM 8000 Module.

710 – 1530 nm wavelength for CWDM 8000 Module.

730 – 1550 nm wavelength for CWDM 8000 Module.

810 – 1570 nm wavelength for CWDM 8000 Module.

830 – 1590 nm wavelength for CWDM 8000 Module.

850 – 1610 nm wavelength for CWDM 8000 Module.

CWDM Options

Opt. CWDM SEL-1 – Wavelength selection ± 1 nm instead of ± 3 nm.

Opt. CWDM SEL-2 – Wavelength selection ± 2 nm instead of ± 3 nm.

Connector Options for WDM B, LS B DFB, LS B and CWDM Series

FC/PC – FC/PC Connector instead of FC/APC Connector.

SC/APC – SC Connector, angle polished instead of FC/APC Connector.

SC/PC – SC Connector instead of FC/APC Connector.

E2000 – E-2000 Connector instead of FC/APC Connector.

E2000/HRL – E-2000 Connector, angle polished instead of FC/APC Connector.

DIN – DIN Connector instead of FC/APC Connector.

DIN/HRL – DIN Connector, angle polished instead of FC/APC Connector.

FC/APC SHUT – Protection Shutter at the optical output with FC/APC Connector.

FC/PC SHUT – Protection Shutter at the optical output with included FC/PC Connector instead of FC/APC Connector.

PIG 8000 – 1 m, 900 μ m pigtail without connector.

OSW Series Optical Switch Modules

OSW 8102 – 1x2 Optical Switch, FC/APC Connector.

OSW 8104 – 1x4 Optical Switch, FC/APC Connector.

OSW 8108 – 1x8 Optical Switch, FC/APC Connector.

OSW 8202 – 2x2 Optical Switch, FC/APC Connector.

POL 8000-8 Polarization Control Box

POL 8000-8 – 8-fold Polarization Controller (Lefevre loops) in 19-inch housing.

POL-FC/APC-F – FC/APC Connectors at the front of POL 8000-8.

POL-FC/APC-R – FC/APC Connectors at the rear of POL 8000-8.

POL-E-2000/HRL-R – E-2000/HRL Connectors at the rear of POL 8000-8.

Service Options for DWDM Modules

CAL DWDM – Recalibration of a WDM B module.

Order Codes

► Order Codes for S-Band Frequencies (THz)/Wavelengths (nm)

Code Freq.	Wavelength	Code Freq.	Wavelength	Code Freq.	Wavelength
6000	206.75 / 1450.02	6070	203.25 / 1474.99	6140	199.75 / 1500.84
6001	206.70 / 1450.37	6071	203.20 / 1475.36	6141	199.70 / 1501.21
6002	206.65 / 1450.73	6072	203.15 / 1475.72	6142	199.65 / 1501.59
6003	206.60 / 1451.08	6073	203.10 / 1476.08	6143	199.60 / 1501.97
6004	206.55 / 1451.43	6074	203.05 / 1476.45	6144	199.55 / 1502.34
6005	206.50 / 1451.78	6075	203.00 / 1476.81	6145	199.50 / 1502.72
6006	206.45 / 1452.13	6076	202.95 / 1477.17	6146	199.45 / 1503.10
6007	206.40 / 1452.48	6077	202.90 / 1477.54	6147	199.40 / 1503.47
6008	206.35 / 1452.83	6078	202.85 / 1477.90	6148	199.35 / 1503.85
6009	206.30 / 1453.19	6079	202.80 / 1478.27	6149	199.30 / 1504.23
6010	206.25 / 1453.54	6080	202.75 / 1478.63	6150	199.25 / 1504.60
6011	206.20 / 1453.89	6081	202.70 / 1479.00	6151	199.20 / 1504.98
6012	206.15 / 1454.24	6082	202.65 / 1479.36	6152	199.15 / 1505.36
6013	206.10 / 1454.60	6083	202.60 / 1479.73	6153	199.10 / 1505.74
6014	206.05 / 1454.95	6084	202.55 / 1480.09	6154	199.05 / 1506.12
6015	206.00 / 1455.30	6085	202.50 / 1480.46	6155	199.00 / 1506.49
6016	205.95 / 1455.66	6086	202.45 / 1480.82	6156	198.95 / 1506.87
6017	205.90 / 1456.01	6087	202.40 / 1481.19	6157	198.90 / 1507.25
6018	205.85 / 1456.36	6088	202.35 / 1481.55	6158	198.85 / 1507.63
6019	205.80 / 1456.72	6089	202.30 / 1481.92	6159	198.80 / 1508.01
6020	205.75 / 1457.07	6090	202.25 / 1482.29	6160	198.75 / 1508.39
6021	205.70 / 1457.43	6091	202.20 / 1482.65	6161	198.70 / 1508.77
6022	205.65 / 1457.78	6092	202.15 / 1483.02	6162	198.65 / 1509.15

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► Order Codes for S-Band Frequencies (THz)/Wavelengths (nm) (continued)

Code Freq.	Wavelength	Code Freq.	Wavelength	Code Freq.	Wavelength
6023	205.60 / 1458.13	6093	202.10 / 1483.39	6163	198.60 / 1509.53
6024	205.55 / 1458.49	6094	202.05 / 1483.75	6164	198.55 / 1509.91
6025	205.50 / 1458.84	6095	202.00 / 1484.12	6165	198.50 / 1510.29
6026	205.45 / 1459.20	6096	201.95 / 1484.49	6166	198.45 / 1510.67
6027	205.40 / 1459.55	6097	201.90 / 1484.86	6167	198.40 / 1511.05
6028	205.35 / 1459.91	6098	201.85 / 1485.22	6168	198.35 / 1511.43
6029	205.30 / 1460.27	6099	201.80 / 1485.59	6169	198.30 / 1511.81
6030	205.25 / 1460.62	6100	201.75 / 1485.96	6170	198.25 / 1512.19
6031	205.20 / 1460.98	6101	201.70 / 1486.33	6171	198.20 / 1512.58
6032	205.15 / 1461.33	6102	201.65 / 1486.70	6172	198.15 / 1512.96
6033	205.10 / 1461.69	6103	201.60 / 1487.07	6173	198.10 / 1513.34
6034	205.05 / 1462.05	6104	201.55 / 1487.43	6174	198.05 / 1513.72
6035	205.00 / 1462.40	6105	201.50 / 1487.80	6175	198.00 / 1514.10
6036	204.95 / 1462.76	6106	201.45 / 1488.17	6176	197.95 / 1514.49
6037	204.90 / 1463.12	6107	201.40 / 1488.54	6177	197.90 / 1514.87
6038	204.85 / 1463.47	6108	201.35 / 1488.91	6178	197.85 / 1515.25
6039	204.80 / 1463.83	6109	201.30 / 1489.28	6179	197.80 / 1515.63
6040	204.75 / 1464.19	6110	201.25 / 1489.65	6180	197.75 / 1516.02
6041	204.70 / 1464.55	6111	201.20 / 1490.02	6181	197.70 / 1516.40
6042	204.65 / 1464.90	6112	201.15 / 1490.39	6182	197.65 / 1516.78
6043	204.60 / 1465.26	6113	201.10 / 1490.76	6183	197.60 / 1517.17
6044	204.55 / 1465.62	6114	201.05 / 1491.13	6184	197.55 / 1517.55
6045	204.50 / 1465.98	6115	201.00 / 1491.50	6185	197.50 / 1517.94
6046	204.45 / 1466.34	6116	200.95 / 1491.88	6186	197.45 / 1518.32
6047	204.40 / 1466.70	6117	200.90 / 1492.25	6187	197.40 / 1518.71
6048	204.35 / 1467.05	6118	200.85 / 1492.62	6188	197.35 / 1519.09
6049	204.30 / 1467.41	6119	200.80 / 1492.99	6189	197.30 / 1519.48

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▶ Order Codes for S-Band Frequencies (THz)/Wavelengths (nm) (continued)

Code Freq.	Wavelength	Code Freq.	Wavelength	Code Freq.	Wavelength
6050	204.25 / 1467.77	6120	200.75 / 1493.36	6190	197.25 / 1519.86
6051	204.20 / 1468.13	6121	200.70 / 1493.73	6191	197.20 / 1520.25
6052	204.15 / 1468.49	6122	200.65 / 1494.11	6192	197.15 / 1520.63
6053	204.10 / 1468.85	6123	200.60 / 1494.48	6193	197.10 / 1521.02
6054	204.05 / 1469.21	6124	200.55 / 1494.85	6194	197.05 / 1521.40
6055	204.00 / 1469.57	6125	200.50 / 1495.22	6195	197.00 / 1521.79
6056	203.95 / 1469.93	6126	200.45 / 1495.60	6196	196.95 / 1522.18
6057	203.90 / 1470.29	6127	200.40 / 1495.97	6197	196.90 / 1522.56
6058	203.85 / 1470.65	6128	200.35 / 1496.34	6198	196.85 / 1522.95
6059	203.80 / 1471.01	6129	200.30 / 1496.72	6199	196.80 / 1523.34
6060	203.75 / 1471.37	6130	200.25 / 1497.09	6200	196.75 / 1523.72
6061	203.70 / 1471.74	6131	200.20 / 1497.46	6201	196.70 / 1524.11
6062	203.65 / 1472.10	6132	200.15 / 1497.84	6202	196.65 / 1524.50
6063	203.60 / 1472.46	6133	200.10 / 1498.21	6203	196.60 / 1524.89
6064	203.55 / 1472.82	6134	200.05 / 1498.59	6204	196.55 / 1525.27
6065	203.50 / 1473.18	6135	200.00 / 1498.96	6205	196.50 / 1525.66
6066	203.45 / 1473.54	6136	199.95 / 1499.34	6206	196.45 / 1526.05
6067	203.40 / 1473.91	6137	199.90 / 1499.71	6207	196.40 / 1526.44
6068	203.35 / 1474.27	6138	199.85 / 1500.09	6208	196.35 / 1526.83
6069	203.30 / 1474.63	6139	199.80 / 1500.46		

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► Order Codes for C-Band Frequencies (THz)/Wavelengths (nm)

Code Freq.	Wavelength	Code Freq.	Wavelength	Code Freq.	Wavelength
7000	196.30 / 1527.22	7032	194.70 / 1539.77	7064	193.10 / 1552.52
7001	196.25 / 1527.60	7033	194.65 / 1540.16	7065	193.05 / 1552.93
7002	196.20 / 1527.99	7034	194.60 / 1540.56	7066	193.00 / 1553.33
7003	196.15 / 1528.38	7035	194.55 / 1540.95	7067	192.95 / 1553.73
7004	196.10 / 1528.77	7036	194.50 / 1541.35	7068	192.90 / 1554.13
7005	196.05 / 1529.16	7037	194.45 / 1541.75	7069	192.85 / 1554.54
7006	196.00 / 1529.55	7038	194.40 / 1542.14	7070	192.80 / 1554.94
7007	195.95 / 1529.94	7039	194.35 / 1542.54	7071	192.75 / 1555.34
7008	195.90 / 1530.33	7040	194.30 / 1542.94	7072	192.70 / 1555.75
7009	195.85 / 1530.72	7041	194.25 / 1543.33	7073	192.65 / 1556.15
7010	195.80 / 1531.12	7042	194.20 / 1543.73	7074	192.60 / 1556.55
7011	195.75 / 1531.51	7043	194.15 / 1544.13	7075	192.55 / 1556.96
7012	195.70 / 1531.90	7044	194.10 / 1544.53	7076	192.50 / 1557.36
7013	195.65 / 1532.29	7045	194.05 / 1544.92	7077	192.45 / 1557.77
7014	195.60 / 1532.68	7046	194.00 / 1545.32	7078	192.40 / 1558.17
7015	195.55 / 1533.07	7047	193.95 / 1545.72	7079	192.35 / 1558.58
7016	195.50 / 1533.47	7048	193.90 / 1546.12	7080	192.30 / 1558.98
7017	195.45 / 1533.86	7049	193.85 / 1546.52	7081	192.25 / 1559.39
7018	195.40 / 1534.25	7050	193.80 / 1546.92	7082	192.20 / 1559.79
7019	195.35 / 1534.64	7051	193.75 / 1547.32	7083	192.15 / 1560.20
7020	195.30 / 1535.04	7052	193.70 / 1547.72	7084	192.10 / 1560.61
7021	195.25 / 1535.43	7053	193.65 / 1548.11	7085	192.05 / 1561.01
7022	195.20 / 1535.82	7054	193.60 / 1548.51	7086	192.00 / 1561.42
7023	195.15 / 1536.22	7055	193.55 / 1548.91	7087	191.95 / 1561.83
7024	195.10 / 1536.61	7056	193.50 / 1549.32	7088	191.90 / 1562.23
7025	195.05 / 1537.00	7057	193.45 / 1549.72	7089	191.85 / 1562.64
7026	195.00 / 1537.40	7058	193.40 / 1550.12	7090	191.80 / 1563.05
7027	194.95 / 1537.79	7059	193.35 / 1550.52	7091	191.75 / 1563.45
7028	194.90 / 1538.19	7060	193.30 / 1550.92	7092	191.70 / 1563.86
7029	194.85 / 1538.58	7061	193.25 / 1551.32	7093	191.65 / 1564.27
7030	194.80 / 1538.98	7062	193.20 / 1551.72	7094	191.60 / 1564.68
7031	194.75 / 1539.37	7063	193.15 / 1552.12		

Optical Modules for the PRO Series

► WDM B Series • LS B DFB Series • LS B Series • CWDM Series • OSW Series • POL 8000-8

► Order Codes for L-Band Frequencies (THz)/Wavelengths (nm)

Code Freq.	Wavelength	Code Freq.	Wavelength	Code Freq.	Wavelength
8000	191.55 / 1565.09	8048	189.15 / 1584.95	8096	186.75 / 1605.31
8001	191.50 / 1565.50	8049	189.10 / 1585.36	8097	186.70 / 1605.74
8002	191.45 / 1565.90	8050	189.05 / 1585.78	8098	186.65 / 1606.17
8003	191.40 / 1566.31	8051	189.00 / 1586.20	8099	186.60 / 1606.60
8004	191.35 / 1566.72	8052	188.95 / 1586.62	8100	186.55 / 1607.04
8005	191.30 / 1567.13	8053	188.90 / 1587.04	8101	186.50 / 1607.47
8006	191.25 / 1567.54	8054	188.85 / 1587.46	8102	186.45 / 1607.90
8007	191.20 / 1567.95	8055	188.80 / 1587.88	8103	186.40 / 1608.33
8008	191.15 / 1568.36	8056	188.75 / 1588.30	8104	186.35 / 1608.76
8009	191.10 / 1568.77	8057	188.70 / 1588.73	8105	186.30 / 1609.19
8010	191.05 / 1569.18	8058	188.65 / 1589.15	8106	186.25 / 1609.62
8011	191.00 / 1569.59	8059	188.60 / 1589.57	8107	186.20 / 1610.06
8012	190.95 / 1570.01	8060	188.55 / 1589.99	8108	186.15 / 1610.49
8013	190.90 / 1570.42	8061	188.50 / 1590.41	8109	186.10 / 1610.92
8014	190.85 / 1570.83	8062	188.45 / 1590.83	8110	186.05 / 1611.35
8015	190.80 / 1571.24	8063	188.40 / 1591.26	8111	186.00 / 1611.79
8016	190.75 / 1571.65	8064	188.35 / 1591.68	8112	185.95 / 1612.22
8017	190.70 / 1572.06	8065	188.30 / 1592.10	8113	185.90 / 1612.65
8018	190.65 / 1572.48	8066	188.25 / 1592.52	8114	185.85 / 1613.09
8019	190.60 / 1572.89	8067	188.20 / 1592.95	8115	185.80 / 1613.52
8020	190.55 / 1573.30	8068	188.15 / 1593.37	8116	185.75 / 1613.96
8021	190.50 / 1573.71	8069	188.10 / 1593.79	8117	185.70 / 1614.39
8022	190.45 / 1574.13	8070	188.05 / 1594.22	8118	185.65 / 1614.83
8023	190.40 / 1574.54	8071	188.00 / 1594.64	8119	185.60 / 1615.26
8024	190.35 / 1574.95	8072	187.95 / 1595.06	8120	185.55 / 1615.70
8025	190.30 / 1575.37	8073	187.90 / 1595.49	8121	185.50 / 1616.13
8026	190.25 / 1575.78	8074	187.85 / 1595.91	8122	185.45 / 1616.57
8027	190.20 / 1576.20	8075	187.80 / 1596.34	8123	185.40 / 1617.00
8028	190.15 / 1576.61	8076	187.75 / 1596.76	8124	185.35 / 1617.44
8029	190.10 / 1577.03	8077	187.70 / 1597.19	8125	185.30 / 1617.88
8030	190.05 / 1577.44	8078	187.65 / 1597.62	8126	185.25 / 1618.31
8031	190.00 / 1577.86	8079	187.60 / 1598.04	8127	185.20 / 1618.75
8032	189.95 / 1578.27	8080	187.55 / 1598.47	8128	185.15 / 1619.19
8033	189.90 / 1578.69	8081	187.50 / 1598.89	8129	185.10 / 1619.62
8034	189.85 / 1579.10	8082	187.45 / 1599.32	8130	185.05 / 1620.06
8035	189.80 / 1579.52	8083	187.40 / 1599.75	8131	185.00 / 1620.50

Optical Modules for the PRO Series

▶ WDM B Series • LS B DFB Series • LS B Series • CWDM Series • OSW Series • POL 8000-8

▶ Order Codes for L-Band Frequencies (THz)/Wavelengths (nm) (continued)

Code. Freq	Wavelength	Code Freq.	Wavelength	Code Freq.	Wavelength
8036	189.75 / 1579.93	8084	187.35 / 1600.17	8132	184.95 / 1620.94
8037	189.70 / 1580.35	8085	187.30 / 1600.60	8133	184.90 / 1621.38
8038	189.65 / 1580.77	8086	187.25 / 1601.03	8134	184.85 / 1621.81
8039	189.60 / 1581.18	8087	187.20 / 1601.46	8135	184.80 / 1622.25
8040	189.55 / 1581.60	8088	187.15 / 1601.88	8136	184.75 / 1622.69
8041	189.50 / 1582.02	8089	187.10 / 1602.31	8137	184.70 / 1623.13
8042	189.45 / 1582.44	8090	187.05 / 1602.74	8138	184.65 / 1623.57
8043	189.40 / 1582.85	8091	187.00 / 1603.17	8139	184.60 / 1624.01
8044	189.35 / 1583.27	8092	186.95 / 1603.60	8140	184.55 / 1624.45
8045	189.30 / 1583.69	8093	186.90 / 1604.03	8141	184.50 / 1624.89
8046	189.25 / 1584.11	8094	186.85 / 1604.46	8142	184.45 / 1625.33
8047	189.20 / 1584.53	8095	186.80 / 1604.88		

Contact Tektronix:

- ASEAN / Australasia / Pakistan (65) 6356 3900
- Austria +43 2236 8092 262
- Belgium +32 (2) 715 89 70
- Brazil & South America 55 (11) 3741-8360
- Canada 1 (800) 661-5625
- Central Europe & Greece +43 2236 8092 301
- Denmark +45 44 850 700
- Finland +358 (9) 4783 400
- France & North Africa +33 (0) 1 69 86 80 34
- Germany +49 (221) 94 77 400
- Hong Kong (852) 2585-6688
- India (91) 80-2275577
- Italy +39 (02) 25086 1
- Japan 81 (3) 3448-3010
- Mexico, Central America & Caribbean 52 (55) 56666-333
- The Netherlands +31 (0) 23 569 5555
- Norway +47 22 07 07 00
- People's Republic of China 86 (10) 6235 1230
- Poland +48 (0) 22 521 53 40
- Republic of Korea 82 (2) 528-5299
- Russia, CIS & The Baltics +358 (9) 4783 400
- South Africa +27 11 254 8360
- Spain +34 (91) 372 6055
- Sweden +46 8 477 6503/4
- Taiwan 886 (2) 2722-9622
- United Kingdom & Eire +44 (0) 1344 392400
- USA 1 (800) 426-2200
- USA (Export Sales) 1 (503) 627-1916

For other areas contact Tektronix, Inc. at: 1 (503) 627-7111

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