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# 79800D/315 Series WDM DFB Fiber Optic Source Modules



Model 79800D/315 Series WDM DFB Fiber Optic Source Modules are designed for the most demanding WDM system and component test applications. The 315X1 Series Source Modules supply a minimum of 10 dBm output power, while the 315X2 Source Modules supply a minimum of 13 dBm. The modules permit user-selected center wavelengths from 1528 nm to 1610 nm on ITU grid points or the user's custom specification.

This fourth-generation source module platform provides high power, excellent stability and reliability, coherence control, and accurate attenuation. In addition, an optional source shutter simplifies tasks such as channel equalization.When installed in the 7900B Fiber Optic System Mainframe, module control is facilitated via simple front panel menu entries or a full-featured GPIB remote interface. Mainframe trigger capabilities allow the user to synchronize output modulation of multiple modules.

## 79800D/315 Series Modules Specifications

| Model Number | 79000D/315C1 | 79800D/315L1 | 79800D/315C2 | 79800D/315L2 |
|---|---|---|---|---|
| Wavelength Output Power | 1528-1564 nm | 1564-1610 nm | 1528-1564 nm | 1564-1610 nm |
| Level at full power:[1] | > or = 10 dBm | > or = 10 dBm | > or = 13 dBm | > or = 13 dBm |
| Stability[2] | | | | |
| 15 minutes (spec): | < or =0.005 dB rms | < or =0.005 dB rms | < or =0.005 dB rms | < or =0.005 dB rms |
| Typical: | < or =0.002 dB rms | < or =0.002 dB rms | < or =0.002 dB rms | < or =0.002 dB rms |
| 24 hours: | ±0.03 dB | ±0.03 dB | ±0.03 dB | ±0.03 dB |
| with Source Shutter | ±0.07 dB | ±0.07 dB | ±0.07 dB | ±0.07 dB |
| Attenuation | | | | |
| Calibrated Range: | 10 dB | 10 dB | 10 dB | 10 dB |
| Full Range (typical): | 15 dB | 15 dB | 15 dB | 15 dB |
| Accuracy:[3] | ±0.1 dB | ±0.1 dB | ±0.1 dB | ±0.1 dB |
| Wavelength | | | | |
| Available Center Wavelength:4 | C-band | L-band | C-band | L-band |
| Accuracy:[2] | ±0.05 nm | ±0.05 nm | ±0.05 nm | ±0.05 nm |
| Stability[2,5] | | | | |
| 15 minutes: | ±0.003 nm | ±0.003 nm | ±0.003 nm | ±0.003 nm |
| 24 hours: | ±0.005 nm | ±0.005 nm | ±0.005 nm | ±0.005 nm |
| Tuning Range: | ±0.85 nm | ±0.85 nm | ±0.85 nm | ±0.85 nm |
| Spectral Width | | | | |
| Coherence Control OFF: | <30 MHz | <30 MHz | <30 MHz | <30 MHz |
| Coherence Control ON: | 1 GHz (typical)[6] | 1 GHz (typical)[6] | 1 GHz (typical)[6] | 1 GHz (typical)[6] |
| Transition Time | | | | |
| Off to On: | 30 ms | 30 ms | 30 ms | 30 ms |

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| | | | | |
|---|---|---|---|---|
| On to Off: | 10 ms | 10 ms | 10 ms | 10 ms |
| Repeatability: | ±0.01 dB | ±0.01 dB | ±0.01 dB | ±0.01 dB |
| Lifetime: | >10 million cycles | >10 million cycles | >10 million cycles | >10 million cycles |
| General | | | | |
| SMSR:[8] | >40 dB (>45 dB typical) | >40 dB (>45 dB typical) | >40 dB (>45 dB typical) | >40 dB (>45 dB typical) |
| Signal to Background:[9] | >30 dB | >30 dB | >30 dB | >30 dB |
| Optical Isolation: | >30 dB | >30 dB | >30 dB | >30 dB |
| Relative intensity noise (RIN):[10] | -145 dB/Hz | -145 dB/Hz | -145 dB/Hz | -145 dB/Hz |
| Modulation Frequency:[11] | 1 to 500 kHz | 1 to 500 kHz | 1 to 500 kHz | 1 to 500 kHz |
| Optical Connector:[12] | FC/APC | FC/APC | FC/APC | FC/APC |
| Operating Temperature: | 15°C to 35°C | 15°C to 35°C | 15°C to 35°C | 15°C to 35°C |

## Ordering Information

| | |
|---|---|
| FOM-7900B | Mainframe / Processor with 8 bay capacity (includes GPIB/IEEE 488.2 interface) |
| FOS-79800D/315C1 | WDM DFB 10 mW Source Module (1527.98-1564.26 nm user specified wavelength) |
| FOS-79800D/315L1 | WDM DFB 10 mW Source Module (1564.27 - 1610.06 nm user specified wavelength) |
| FOS-79800D/315C2 | WDM DFB 20 mW Source Module (1527.98-1564.26 nm user specified wavelength) |
| FOS-79800D/315L2 | WDM DFB 20 mW Source Module (1564.26 - 1610.06 nm user specified wavelength) |
| FOS-79800D/000 | Customer Supplied Source Module |
| FOS-79710 | Fiber Optic Switch Module |
| SS-810 | Source Shutter Option (not compatible with PM alignment) |
| PM Alignment | Per Channel PM Alignment |

## Notes

1. Other power levels available.
2. After 1-hour warm-up. For short-term stability, assume constant ambient temperature (±0.1°C); for long-term stability, assume constant ambient temperature (±1°C).
3. Defined as: DPmeas - DPset , from maximum power to 5 dB down.
4. "C-band" = 1527.99 - 1564.26 nm
   "L-band" = 1564.27 - 1610.06 nm
5. Measured at constant ambient temperature (±1°C) through 2-meter SM 9/125 fiber at full output power after 1-hour warm-up.
6. Other linewidths available.
7. Source shutter option not compatible with PM-aligned connectors.
8. Measured at output connector, set to maximum power.
9. ±100 nm about center wavelength.
10. Measured at output connector. Use angled connector patchcords to minimize noise.
11. Modulation depth 100%, duty cycle 50%, rear panel TTL level input. Some rising edge ring above 100 kHz. See 7900B System Mainframe specifications for more information.
12. Other connector types available. Some specifications may be degraded. Also available: PANDA PM fiber aligned to slow axis.

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