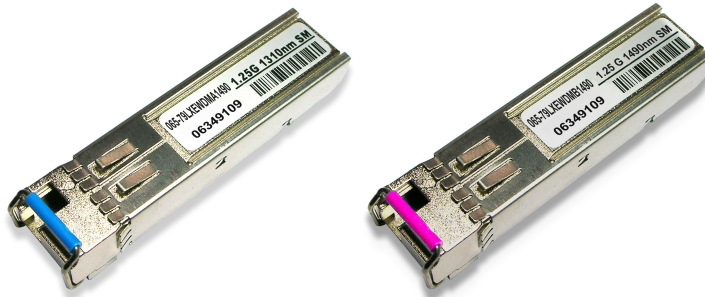


065-79LXCWDMx1490 Singlemode Fiber Wave Division Multiplexing Small Form-factor Pluggable (SFP) 1.25 Gbps Single-Fiber Interface Modules



The Signamax 065-79LXCWDMx1490 models are Small Form-factor Pluggable (SFP) multimode fiber modules that support Gigabit Ethernet or SONET OC-12 over a single strand of singlemode fiber cable at distances up to 10 kilometers. There are two models in this series: one transmits at 1310 nm and receives at 1490 nm (model 065-79LXCWDMA1490), and the other transmits at 1490 nm and receives at 1310 nm (model 065-79LXCWDMB1490). These modules are designed to be used in pairs facing each other across a single stand of singlemode fiber. They are a cost-effective method of providing changeable Gigabit Ethernet or SONET OC-12 single-fiber singlemode interfaces to switches and media converters equipped with a standard SFP slot.

Applications

- Metro Access Rings
- Point-to-Point networking
- 1x Fiber Channel
- Gigabit Ethernet
- Suitable for Fast Ethernet and OC-12 transmission

Key Features

- RoHS Compliant
- Operation Temperature: -5~+70°C
- Model 065-79LXCWDMA1490: 1310 nm uncooled FP Laser Diode transmitter;1490 nm Photo Diode receiver
- Model 065-79LXCWDMB1490: 1490 nm uncooled DFB Laser Diode transmitter;1310 nm Photo Diode receiver
- 10 Km link distance (indicative only**)
- Hot pluggable
- Metal enclosure, low EMI
- Single 3.3V power supply
- Low Power Dissipation

Ordering Information

| Part Number | Description |
|-------------------|---|
| 065-79LXCWDMA1490 | WDM 1.25 Gbps SFP Module Tx: 1310 nm / Rx: 1490 nm – SM/LC Simplex, 10 km |
| 065-79LXCWDMB1490 | WDM 1.25 Gbps SFP Module Tx: 1490 nm / Rx: 1310 nm – SM/LC Simplex, 10 km |

Summary Specification

| PART NUMBER | Tx / Rx Spectrum | Light Source | Link Power Budget | Typical Max. Distance** | Supply Voltage | Operating Temp. |
|---|----------------------------|--------------|-------------------|-------------------------|----------------|-----------------|
| 065-79LXCWDMA1490 (Blue Clasp) | Tx: 1310 nm Rx: 1490 nm | FP Laser | 13 dBm | 10 km | 3.3V | 0 ~ 70 °C |
| 065-79LXCWDMB1490 (Violet Clasp) | Tx: 1490 nm Rx: 1310 nm | DFB Laser | 13 dBm | 10 km | 3.3V | 0 ~ 70 °C |

** Maximum distances attainable on singlemode fiber circuits are dependent upon a circuit's conditions; i.e., the number of splices and patch panels and the number of bends in the circuit path. For comparison with competing products, please use the Link Power Budget for meaningful comparisons.

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DETAILED SPECIFICATIONS

• **ABSOLUTE MAXIMUM RATINGS, MODELS 065-79LXCWDMA1490 & 065-79LXCWDMB1490**

Storage Temperature: TS -40 -- 85 °C

Supply Voltage: V_{CC} -0.5 -- 6.0 V

Input Voltage: VIN 0 – 5.5 V

Operating Humidity: 0-85 %

• **RECOMMENDED OPERATING CONDITIONS**

| PARAMETER | SYMBOL | MIN | TYP. | MAX | UNITS | NOTE |
|-------------------------------|-----------------------------------|-----|------|-----|-------|------|
| Ambient Operating Temperature | T _{AMB} | 0 | | 70 | °C | |
| Supply Voltage | V _{CC} | 3.1 | 3.3 | 3.5 | V | |
| Supply Current (3.3V) | I _{TX} + I _{RX} | | 200 | 300 | mA | |

• **TRANSMITTER ELECTRO-OPTICAL CHARACTERISTICS, MODEL 065-79LXCWDMA1490**

V_{CC} = 3.1 V to 3.5V, T_A = 0 °C to 70 °C

| PARAMETER | SYMBOL | MIN | TYP. | MAX | UNITS | NOTE |
|--|---------------------------------|-----------------|------|----------------------|-------|------|
| Transmitter Differential Input Voltage | TD +/- | 400 | | 2000 | mVp-p | A |
| Optical Output Power | P _O | -9 | | -3 | dBm | A |
| Optical Extinction Ratio | E _R | 9 | | | dB | A |
| Center Wavelength | λ _C | 1280 | 1310 | 1355 | nm | A |
| Spectral Width | Δλ | | | <4 | nm | A |
| Optical Rise / Fall Time | t _r / t _f | | | 0.25 | nsec | A,B |
| Tx_Fault - High | V _{Fault H} | 2 | | V _{CC} | V | A |
| Tx_Fault - Low | V _{Fault L} | V _{ee} | | V _{ee} +0.5 | V | A |
| Tx_Disable - High | V _{Disable H} | 2 | | V _{CC} | V | A |
| Tx_Disable - Low | V _{Disable L} | V _{ee} | | V _{ee} +0.8 | V | A |

Note A: All data measured at 1250 Mbps, PRBS 2⁷-1, NRZ.

Note B: 20% to 80%

• **TRANSMITTER ELECTRO-OPTICAL CHARACTERISTICS, MODEL 065-79LXCWDMB1490**

V_{CC} = 3.1 V to 3.5V, T_A = 0 °C to 70 °C

| PARAMETER | SYMBOL | MIN | TYP. | MAX | UNITS | NOTE |
|--|---------------------------------|-----------------|------|----------------------|-------|------|
| Transmitter Differential Input Voltage | TD +/- | 400 | | 2000 | mVp-p | A |
| Optical Output Power | P _O | -9 | | -3 | dBm | A |
| Optical Extinction Ratio | E _R | 9 | | | dB | A |
| Center Wavelength | λ _C | 1280 | 1310 | 1355 | nm | A |
| Spectral Width | Δλ | | | <4 | nm | A |
| Optical Rise / Fall Time | t _r / t _f | | | 0.25 | nsec | A,B |
| Tx_Fault - High | V _{Fault H} | 2 | | V _{CC} | V | A |
| Tx_Fault - Low | V _{Fault L} | V _{ee} | | V _{ee} +0.5 | V | A |
| Tx_Disable - High | V _{Disable H} | 2 | | V _{CC} | V | A |
| Tx_Disable - Low | V _{Disable L} | V _{ee} | | V _{ee} +0.8 | V | A |

Note A: All data measured at 1250 Mbps, PRBS 2⁷-1, NRZ.

Note B: 20% to 80%

DETAILED SPECIFICATIONS (continued)

• **RECEIVER ELECTRO-OPTICAL CHARACTERISTICS, MODEL 065-79LXCWDMA1490**

V_{cc} = 3.1 V to 3.5V, T_A = 0 °C to 70 °C

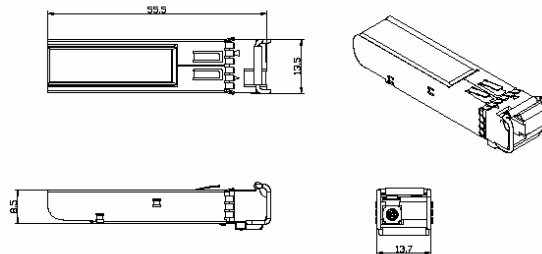
| PARAMETER | SYMBOL | MIN | TYP. | MAX | UNITS | NOTE |
|---|-----------------------|------|------|-------|-------------------|------|
| Receiver Differential Output Voltage | RD +/- | 600 | 800 | | mV _{P-P} | |
| Receiver Overload | P _{IN} MAX | -3 | | | dBm | A,B |
| Receiver Sensitivity | P _{IN} MIN | | | -22 | dBm | A,B |
| Operating Center Wavelength | λ _c | 1480 | | 1500 | nm | |
| Receiver LOS Assert Level | P _{RX LOS A} | -35 | | | dBm | B |
| Receiver LOS Deassert Level | P _{RX LOS D} | | | -22.5 | dBm | B |
| Receiver Loss of Signal Hysteresis | | 0.5 | 2 | | dB | B |
| Note A: BER better than or equal to 1×10 ⁻¹² | | | | | | |
| Note B: Measured in the center of the eye opening with 2 ⁷ -1 PRBS, NRZ | | | | | | |

• **RECEIVER ELECTRO-OPTICAL CHARACTERISTICS, MODEL 065-79LXCWDMB1490**

V_{cc} = 3.1 V to 3.5 V, T_A = 0 °C to 70 °C

| PARAMETER | SYMBOL | MIN | TYP. | MAX | UNITS | NOTE |
|---|-----------------------|------|------|-------|-------------------|------|
| Receiver Differential Output Voltage | RD +/- | 600 | 800 | | mV _{P-P} | |
| Receiver Overload | P _{IN} MAX | -3 | | | dBm | A,B |
| Receiver Sensitivity | P _{IN} MIN | | | -22 | dBm | A,B |
| Operating Center Wavelength | λ _c | 1260 | | 1360 | nm | |
| Receiver LOS Assert Level | P _{RX LOS A} | -35 | | | dBm | B |
| Receiver LOS Deassert Level | P _{RX LOS D} | | | -22.5 | dBm | B |
| Receiver Loss of Signal Hysteresis | | 0.5 | 2 | | dB | B |
| Note A: BER better than or equal to 1×10 ⁻¹² | | | | | | |
| Note B: Measured in the center of the eye opening with 2 ⁷ -1 PRBS, NRZ | | | | | | |

• **DIMENSIONS (mm), MODELS 065-79LXCWDMA1490 & 065-79LXCWDMB1490**



• **REGULATORY COMPLIANCE, MODELS 065-79LXEWDMA1490 & 065-79LXEWDMB1490**

| Feature | Test Method | Performance |
|--|---|--|
| Electrostatic Discharge (ESD) to optical connector | Variation of IEC 61000-4-2 | Typically withstand at least 15kV without damage when port is contacted by Human Body Model probe. |
| Immunity | Variation of IEC 61000-4-3 | Typically show no measurable effect from a 10 V/m field swept from 27 MHz to 1 GHz applied to the transceiver without a chassis enclosure. |
| Electromagnetic Interference (EMI) | FCC Class B CENELEC EN55022 Class B (CISPR 22A) | Margins are dependent on customer board and chassis design. |
| Laser Eye Safety | FDA21 CFR 1040.10 and 1040.11 | Class 1 Laser Safety product. |