The Calix GPON Optical Interface Modules (OIM) are 1490-nm, 2.5-Gbps optical transmitter, and 1310-nm, 1.2-Gbps optical receiver. Modules plug into the C-Series (OLTG-4 and OLTG-4E) and E7 (GPON-4) GPON Optical Line Terminal cards. Each OIM interface supports up to 64 Optical Network Terminations (ONTs). OIMs’ reach:

- Up to 20 km (12 miles).
- Up to 40 km (25 miles), Extended Reach OIM.

**KEY ATTRIBUTES**

The GPON Optical Interface Modules are a central component of the Calix GPON FTTP solution. The pluggable Calix OIM features include:

- Operates with Calix C7 and E7 platforms
- Supports the full family of Calix P-Series 700 ONTs
- Compliant with the ITU G.984 family of standards
- 2.488 Gbps downstream (1490 nm)
- 1.244 Gbps upstream (1310 nm)
- Class B+ ODN with minimum 28 dB link budget (Standard OIM), up to 1:64 split per OLT port
- Extended reach GPON up to 40 km with 1:8 split
- Supports 1550 nm video overlay and 1610 nm RF Return
- Hardened for CO and RT applications

**ODN FLEXIBILITY:** The Optical Distribution Network (ODN) between the Calix OLT and the subscriber 700 ONT includes fiber, splitters, and connectors, with up to 64 splits per PON. Splitters can be deployed in the CO, remote terminal, outside plant, or any combination of the above.

**EXERVED REACH GPON:** Extending GPON reach beyond the traditionally 20 km range allows service providers to edge-out their GPON networks and economically serve sparsely populated outlying areas without adding remote cabinets. Ideal applications for extended-reach GPON include rural areas, isolated communities, and neighboring towns. Since the Extended-Reach GPON OIM plugs into any Calix OLT, service delivery models remain consistent for all subscribers while limiting initial deployment costs.

The Calix Extended-Reach GPON OIM significantly improves optical performance characteristics. After removing optical performance as a distance limiting factor, optical loss is the remaining constraint. The largest contributors to optical loss are splitters. By using fewer splitters in the PON, optical losses are reduced and subscribers up to a 40km distance can be served. The fewer splitters in the PON, the greater the distance supported.

The Calix Extended-Reach GPON OIM requires no change to Calix 700 family of ONTs. Currently installed Calix ONTs are fully compatible with the extended reach OIM capabilities, and additional ONTs can be added to the network at extended reach distances.
SPECIFICATIONS

GPON Optical Interface Module

ORDERING INFORMATION

- Calix Part No. 100-01782 (CO only)
- Calix Part No. 100-01783 (CO/RT)
- Calix Part No. 100-01784 (CO only, Ext. Reach)
- Calix Part No. 100-01836 (CO/RT, Ext. Reach)

PORTS

- 1 pluggable GPON Optical Interface Module per port
- 4 GPON ports per OLT

CONNECTORS

- SC-UPC

PON WAVELENGTHS

- 1490 nm digital downstream
- 1310 nm digital upstream

PON RATES

- 2.488 Gbps digital downstream
- 1.244 Gbps digital upstream

OPTICAL DISTRIBUTION

NETWORK – STANDARD OIM

- 1310-nm wavelength link margin: 28 dB
- 1490-nm wavelength link margin: 28 dB
- Up to 1.64 splits
- Single fiber
  - Downstream: OLT transmit level of +1.5 to +5 dBm
  - Upstream: OLT minimum sensitivity of –28 dBm

NETWORK – EXTENDED REACH OIM

- 1310-nm wavelength link margin: 28 dB
- 1490-nm wavelength link margin: 23 dB
- Up to 1.64 splits
- Single fiber
  - Downstream: OLT transmit level of +1.5 to +5 dBm
  - Upstream: OLT minimum sensitivity of –28 dBm

PHYSICAL DIMENSIONS

- Size: 0.53 inches (height) x 0.37 inches (width) x 2.5 inches (depth)
- Standard SFP dimensions

OPERATING ENVIRONMENT

- 100-01782 & 100-01784:
  - Temperature: C-temp, -40° C to +70° C (23° F to +158° F)
- 100-01783 & 100-01836:
  - Temperature: I-temp, -40° C to +85° C (-40° F to +185° F)

STORAGE TEMPERATURE

- –40° C to +85° C (-40° F to +158° F)

Calix GPON Optical Interface Modules

- 100-01782..............GPON OIM, 2.4/1.2G class B+, 1490/1310nm Single Fiber Transceiver, C-Temp (CO), C-Series & E-Series
- 100-01783..............GPON OIM, 2.4/1.2G class B+, 1490/1310nm Single Fiber Transceiver, I-Temp (RT), C-Series & E-Series
- 100-01784..............Extended Reach GPON OIM, 1490/1310nm Single Fiber Transceiver, C-Temp (CO), C-Series & E-Series
- 100-01836..............Extended Reach GPON OIM, 1490/1310nm Single Fiber Transceiver, I-Temp (RT), C-Series & E-Series