# CONNECTED OPTICAL EXTENSION

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| **Product Type** | Pigtail and Optical Adapter |
| **Product Family** | TeraLan |
| **Description** | The Optical Extension Kit consists typically of two main parts [1]: |

- Optical Pigtail: optical cable, singlefiber or duplex, connectorized at one end only;
- Optical Adaptor: coupler that interconnects two optical connectors, of the same type of extension that is being provided.

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| **Installation Environment** | Indoor |
| **Operation Environment** | Non-agressive |
| **Compatibility** | This product is compatible with all Optical Distributors of FCS product line. Except the DIO A280 model that the extension have their respective optical adapter plate bracket, being marketed in a exclusive code. The standard kit is compatible with ODF's: |

- A270
- B48
- A146
- A115
- BW12
- B144
- LGX ODF

It can also be used with Optical Termination Points that have the capability to accommodate optical couplers. They are:

- PTO 02F
- PTO 12F
- OPTIC ROSETA

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| **Warranty** | 12 months |
| **Extended Guaranty** | 15 or 25 years - in accordance to the Special Warranty Program FCS |

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**Advantage**

- Recommended for internal use only, ending optical cables in optical distributors, in optical systems with low loss and high bandwidth, like: high distance systems, backbone networks, video and data transmission and distribution;
- Exceeds performance requirements of EIA/TIA-568-B.3 standard;
- Support for background requirements of IEEE 802.3 (Gigabit and 10 Gigabit Ethernet) and ANSI T11.2 (Fibre Channel) standard; [3]
- Full assembled and tested on factory;
- High performance for insertion loss and return loss (backreflection);
- Avaiable in diverse kinds of optical connectors;
- Avaiable for singlemode and multimode optical fiber;
- Avaiable in PC and APC polishing.

**Marking**

**Length**                  1,5m [4]

**Nominal Diameter**

| OPTICAL EXTENSION |
|---|
| SINGLE-FIBER |
| 0,9* |
| 2,0 |

Obs: Optical extension with MT-RJ connector only available with 2,0.
* Recommended for all the DIOs.

**Color**

|  | TIA 598 - C | | ABNT | |
|---|---|---|---|---|
| **Fiber** | **D 0.9** | **D 2.0** | **D 0.9** | **D 2.0** |
| Monomodo Standard (G.652B) | White | Yellow | White | Blue |
| Monomodo LWP (G.652D) | White | Yellow | White | Blue |
| Monomodo (G657) | White | White | White | White |
| Multimodo OM1 (62,5µm) | Orange | Orange | Orange | Orange |
| Multimodo OM2 (50µm) | Orange | Orange | Yellow | Yellow |
| Multimodo OM3 (50µm) | Acqua | Acqua | Acqua | Acqua |
| Multimodo OM4 (50µm) | Acqua | Acqua | Acqua | Acqua |

**Connector Type**         LC

- SFF "Push-pull" Connector Type
- Plastic Body
- Ceramic Ferrule (zirconia)
- SM and MM Fiber
- PC Polishing (SPC/UPC)
- SM-PC Blue
- MM Beige
- APC Polishing
- SM-APC Green

SC

- "Push-pull" Connector Type
- Plastic Body
- Ceramic Ferrule (zirconia)
- SM and MM Fiber
- PC Polishing (SPC/UPC)
- SM-PC Blue
- MM Beige
- APC Polishing
- SM-APC Green

MT-RJ

- "Push-pull" Connector Type
- Male connector (with guide pin) or female connector (without guide pin)
- Plastic body and ferrule
- SM or MM Fiber
- PC Polishing (SPC/UPC)
- Black

ST

- Guide pin connector type (BNC)
- Metalic Body
- Ceramic Ferrule (zirconia)
- SM and MM Fiber
- PC Polishing (SPC/UPC)
- Metalic

FC

- Spiral connector type
- Metalic Body
- Ceramic Ferrule (zirconia)
- SM and MM Fiber
- PC Polishing (SPC/UPC)
- APC Polishing
- Metalic

E-2000

- "Push-pull" connector type
- Plastic body
- Ceramic Ferrule (zirconia)
- SM Fiber
- APC Polishing
- Green

**Polish Type**

- PC (SPC/UPC) - Singlemode and multimode fibers
- APC - Singlemode fibers

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**Fiber Type**

- Singlemode Standard G.652B (9,0μm) [5]
- Singlemode LWP G.652D (9,0μm) [5]
- Singlemode G.657-A (9,0μm) [5]
- Multimode OM1 (62.5μm) [5]
- Multimode OM2 (50.0μm) [5]
- Multimode OM3 (50.0μm) [5]
- Multimode OM4 (50.0μm) [5]

- 02F - 2 optical extensions monofiber + 2 simplex optical adaptors or 1 duplex (LC and MT-RJ)
- 06F - 6 optical extensions monofiber + 6 simplex optical adaptors or 3 duplex (LC and MT-RJ)

**Cable type**

- 0.9
- 2.0

**Flame Standards**

- OFN - General Optical Cable [6]

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**Insertion loss**

| CONNECTOR TYPE | POLISHING | FIBER | TYPICAL - MAXIMUM INSERTION LOSS (dB) [7] | CLASS (NBR 14433) [7] |
|---|---|---|---|---|
| LC | SPC | MM | 0.30 - 0.50 | II |
| LC | UPC | MM | 0.15 - 0.30 | III |
| LC | SPC | SM | 0.30 - 0.50 | II |
| LC | UPC | SM | 0.15 - 0.30 | III |
| LC | APC | SM | 0.15 - 0.30 | III |
| SC | SPC | MM | 0.30 - 0.50 | II |
| SC | UPC | MM | 0.15 - 0.30 | III |
| SC | SPC | SM | 0.30 - 0.50 | II |
| SC | UPC | SM | 0.15 - 0.30 | III |
| SC | APC | SM | 0.15 - 0.30 | III |
| MT-RJ | - | MM | 0.30 - 0.50 | II |
| MT-RJ | - | SM | 0.50 - 0.80 | I |
| ST | SPC | MM | 0.30 - 0.50 | II |
| ST | UPC | MM | 0.15 - 0.30 | III |
| ST | SPC | SM | 0.30 - 0.50 | II |
| ST | UPC | SM | 0.15 - 0.30 | III |
| FC | SPC | MM | 0.30 - 0.50 | II |
| FC | UPC | MM | 0.15 - 0.30 | III |
| FC | SPC | SM | 0.30 - 0.50 | II |
| FC | UPC | SM | 0.15 - 0.30 | III |
| FC | APC | SM | 0.15 - 0.30 | III |
| E2000 | APC | SM | 0.15 - 0.30 | III |

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**Return loss**

| CONNECTOR TYPE | POLISHING | FIBER | RETURN LOSS [7] | CATEGORY (NBR 14433) [7] |
|---|---|---|---|---|
| LC | SPC | MM | >30 | A |
| LC | UPC | MM | >30 | A |
| LC | SPC | SM | >40 | B |
| LC | UPC | SM | >50 | C |
| LC | APC | SM | >60 | D |
| SC | SPC | MM | >30 | A |
| SC | UPC | MM | >30 | A |
| SC | SPC | SM | >40 | B |
| SC | UPC | SM | >50 | C |
| SC | APC | SM | >60 | D |
| MT-RJ | - | MM | >30 | A |
| MT-RJ | - | SM | >40 | B |
| ST | SPC | MM | >30 | A |
| ST | UPC | MM | >30 | A |
| ST | SPC | SM | >40 | B |
| ST | UPC | SM | >50 | C |
| FC | SPC | MM | >30 | A |
| FC | UPC | MM | >30 | A |
| FC | SPC | SM | >40 | B |
| FC | UPC | SM | >50 | C |
| FC | APC | SM | >60 | D |
| E2000 | APC | SM | >60 | D |

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| **Cycles quantity** | > 500 insertions |
| **Installation Temperature** | 20ºC |
| **Operation Temperature** | From -25ºC to 75ºC |
| **Amount for box gift** | 10 pieces |
| **Minimum order quantity** | 1 box |
| **Associated Solutions** | Data Centers, Commercial Building, Health, Educational, Governamental / Finance, Residential |

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| **Standard** | **ABNT NBR 14433** - Connectors mounted on optical cords or optical fiber cables and adapters - Specification |
| | **ABNT NBR 14705** - Classification of internal cables for telecommunications about of flame behavior - Specification |
| | **ISO 8877** - Information Technology - Telecommunications and information exchange between systems - Interface connector and contact assignments for ISDN basic access interface located at reference points S and T |
| | **ANSI/EIA/TIA-568-C.0** - Generic Telecommunications Cabling for Costumer Premises |
| | **ANSI/EIA/TIA-568-C.1** - Commercial Building Telecommunications Cabling Standard |
| | **ANSI/EIA/TIA-568-C.3** - Optical Fiber Cabling Component Standard |
| | ISO/IEC 11.801 Ed.02 |

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| **Certification** | LC-APC   0583-08-0256 |
| | LC-PC   1344-06-0256 |
| | SC-APC   0483-02-0256 |
| | SC-PC   1365-06-0256 |
| | FC-PC   1366-06-0256 |
| | FC-APC   0485-02-0256 |
| | ST-PC   0484-02-0256 |
| | MT-RJ   1364-06-0256 |
| | E2000-APC   0482-02-0256 |

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| **Note** | 1 - Connected Optical Extensions for A280 ODF's models are provided with plates for fixing the optical adapters, since they are not included in the basic module of these products. |
| | 2 - Extended Warranty of 15 or 25 years, requires the fulfillment of the Special Extended Warranty FCS. |
| | 3 - Depends on the choice of optical fiber. |
| | 4 - Other lengths on request. |
| | 5 - Optical fibers should be as Annexes "A " (Single Mode Fiber), "B " (Multimode Fiber ) or "C " (Non-Zero Dispersion Fiber). |
| | 6 - Providing standard flammability class type COG. Other classes of flammability under consultation. |
| | 7 - Values ¿¿performance standards for products in accordance with ABNT NBR 14433. Losses can be optimized for each type of connector and polishing on request. |