-- Select Language -- OK

PPC®
A BELDEN BRAND

# FTTX
## Fibre Optic Solutions

**Region**
Europe, Middle East / Africa

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# THE HOME CONNECTIVITY COMPANY

With millions of homes connected worldwide, PPC leads the way with innovative fibre optic, coaxial and category solutions, essential for the development and implementation of xTTx® networks. We are a market leader in high performance connectivity solutions that simplify the installation and maintenance of communications networks.

PPC is the broadband and 5G focused branch of Belden, a global, multi-billion dollar company.

- Global manufacturing footprint
- In-house product design and development
- Plug-and-play systems for rapid deployment
- Local technical and customer service support
- Multi-technology broadband connectivity solutions
- Optimised solutions tailored to the application
- A passion for innovation and technical excellence

- Central Office / POP Solutions
- Outside Plant Solutions
- Customer Premises Solutions (the “last mile“)

xTTx®

## SIMPLER

Requires no specialist training
Easier to install and maintain
Modular and scalable building blocks

## FASTER

Plug-and-Play Options
Factory-integrated Solutions
Self-install Kits

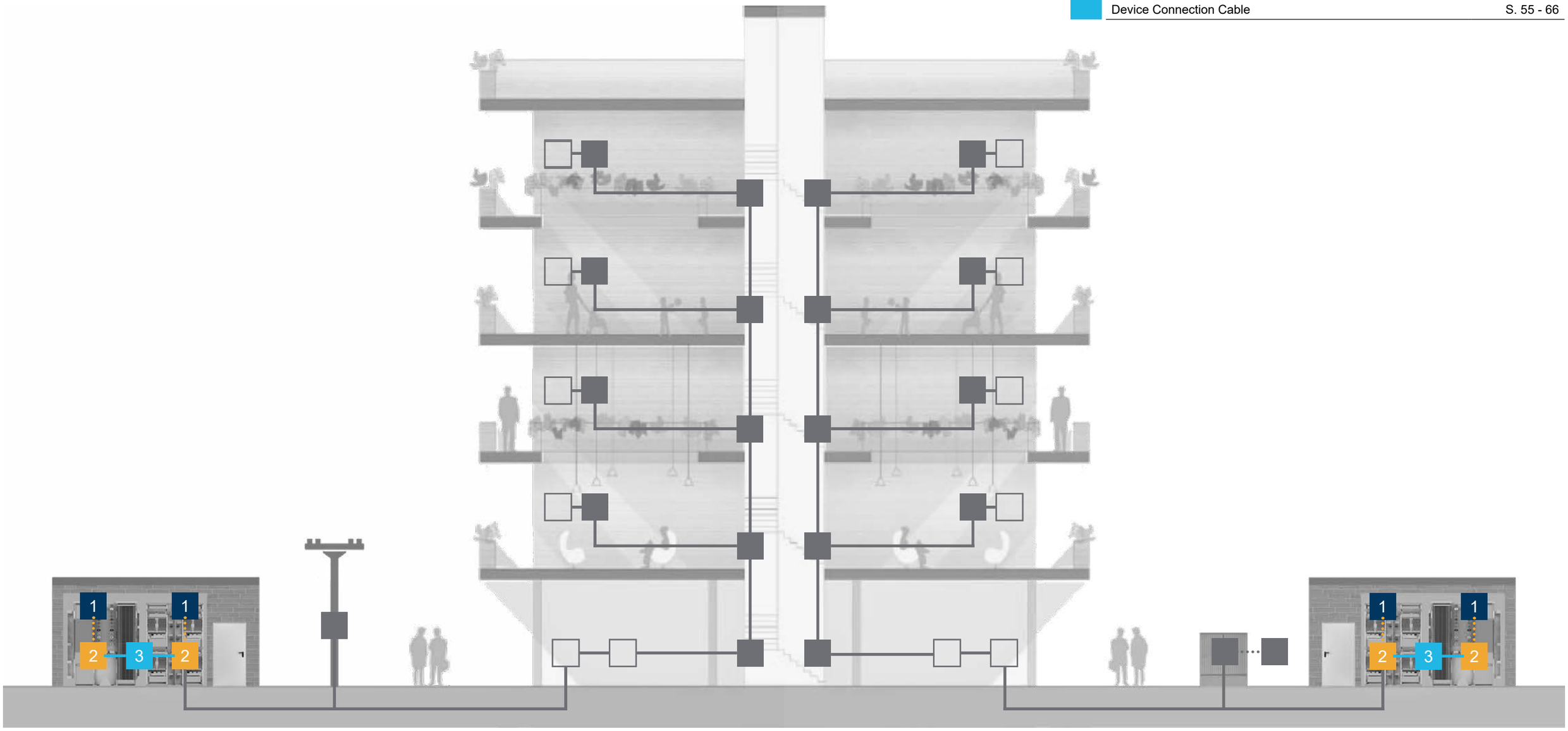
## BETTER

Reduced operational costs
Improved mechanical performance
Lifetime quality and reliability

# CENTRAL OFFICE / POP SOLUTIONS

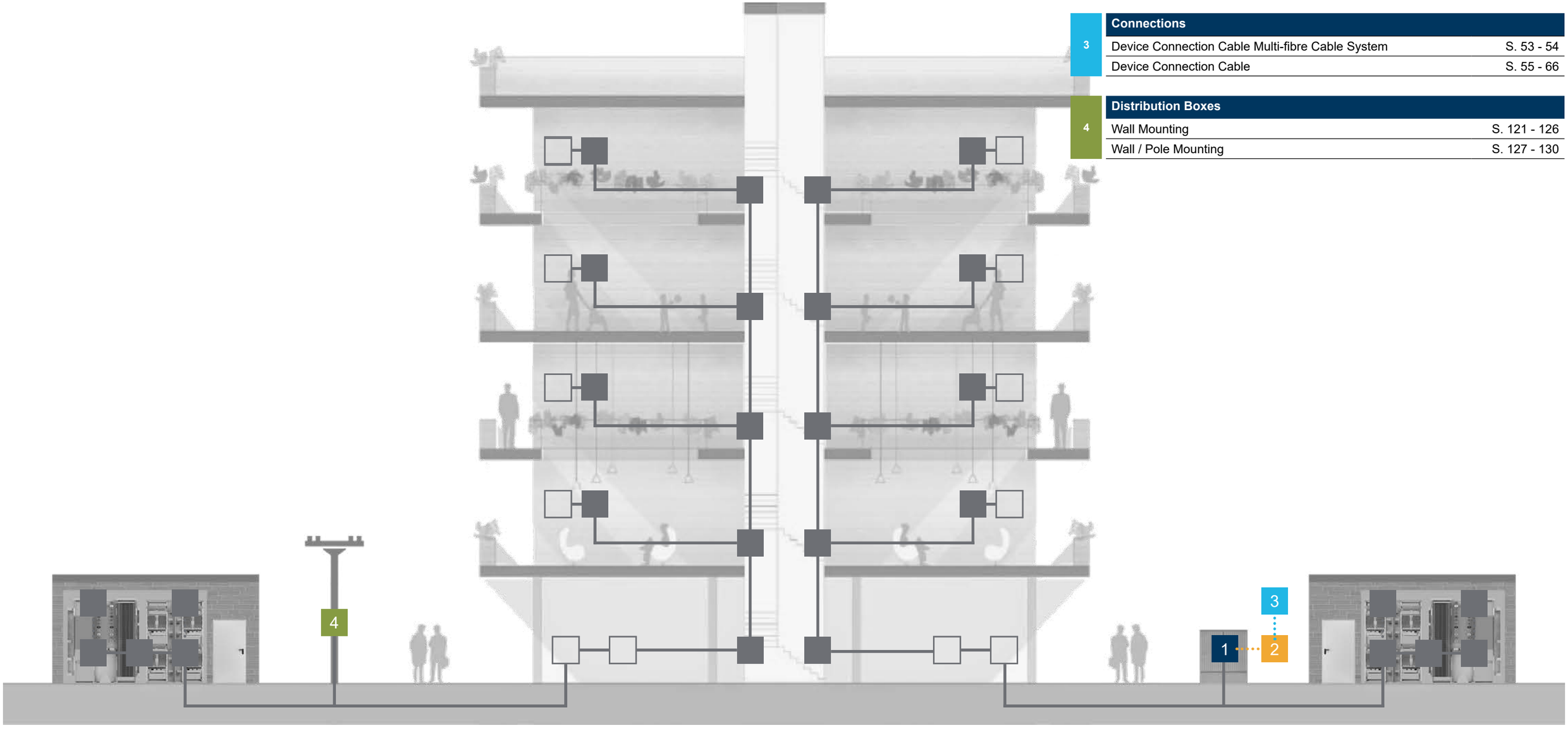
PPC offers a range of innovative solutions for the Central Office / Point of Presence (POP). These include factory-equipped Optical Distribution Frames (ODFs) as well as Equipment Frames (EQFs). Thanks to a high degree of customised pre-assembly, our products can be integrated into any network structure. Our factory-assembled racks can significantly reduce installation times compared to conventional designs.





# OUTSIDE PLANT SOLUTIONS

PPC offers a range of integrated street cabinets, fibre management systems and cable assemblies that satisfy the rigorous demands of the outside premises environment. Our factory-fitted cabinets can reduce installation times by as much as 60% compared to traditional designs.



# CUSTOMER PREMISES SOLUTIONS WITH THE SPLICE-FREE MINIFLEX® SYSTEM

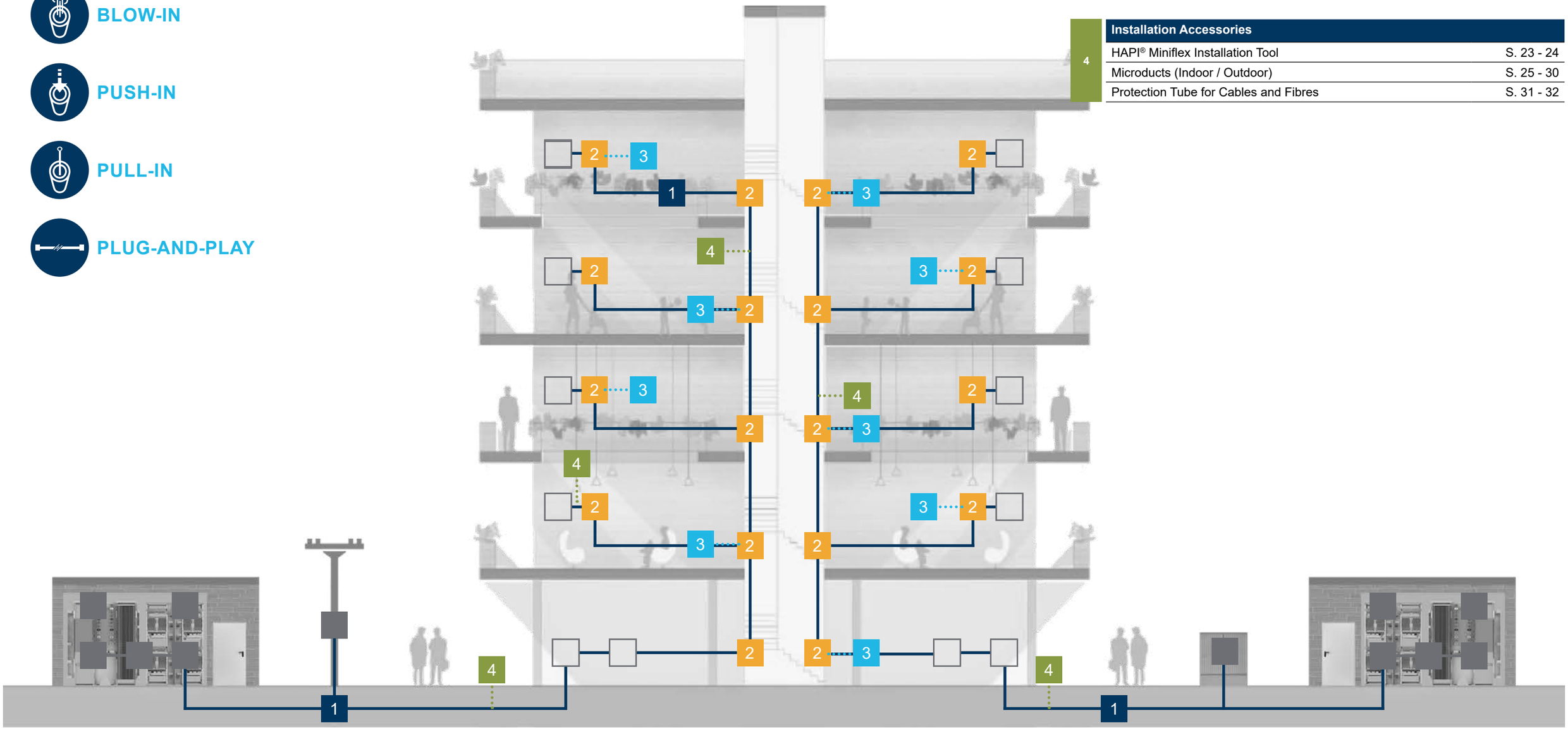
The PPC Plug-and-Play Fibre Solution comprises microducts, cable systems and distribution boxes that speed up and simplify fibre deployment in the home. From the building entry to the fibre termination outlet, PPC's combination of fusion spliced and pre-terminated solutions provide operators with the flexibility and simplicity required to support different topologies and diverse building types.

**BLOW-IN**

**PUSH-IN**

**PULL-IN**

**PLUG-AND-PLAY**




| | | |
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# CUSTOMER PREMISES SOLUTIONS

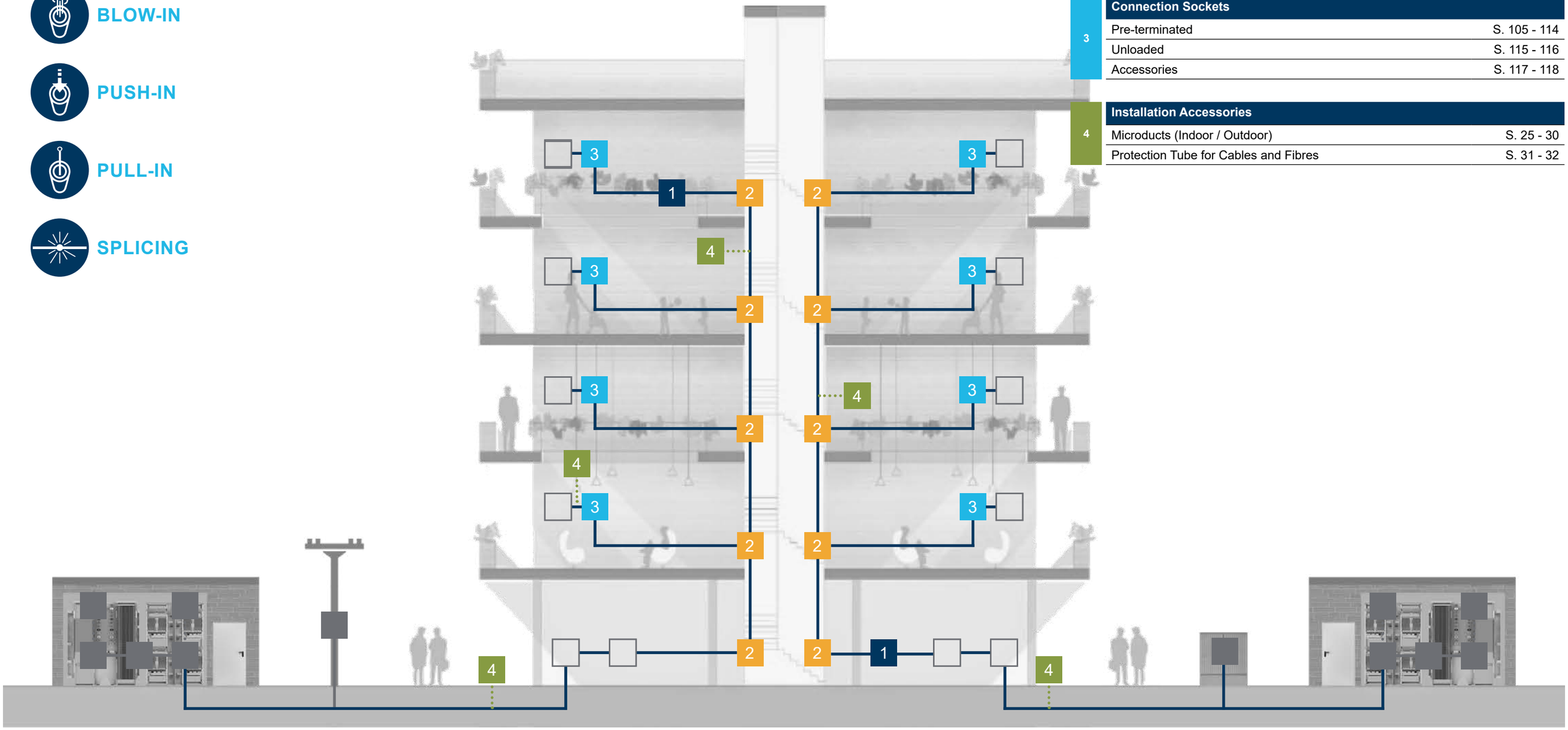
The PPC fibre splicing solution consists of microducts, cable systems and distribution boxes that accelerate and simplify the deployment of fibre in the building. From the building entrance to the fibre termination box, PPC's combination of fusion spliced and pre-terminated solutions provides operators with the flexibility and simplicity needed to support different topologies and different building types.

**BLOW-IN**

**PUSH-IN**

**PULL-IN**

**SPLICING**




| | Connections | |
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|---|---|---|
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|---|---|---|
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| | Installation Accessories | |
|---|---|---|
| 4 | Microducts (Indoor / Outdoor) | S. 25 - 30 |
| | Protection Tube for Cables and Fibres | S. 31 - 32 |

# Miniflex® System

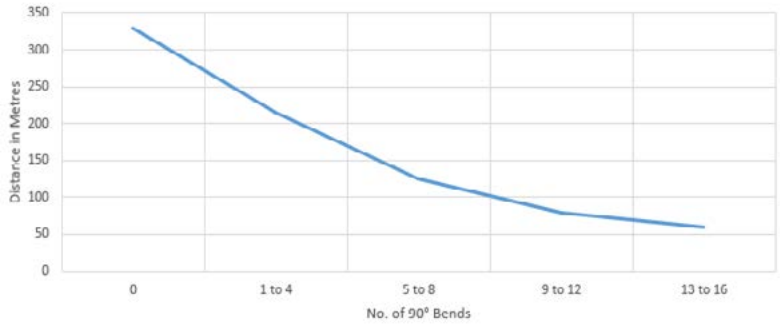
# QuikPush® LC Balistix™

## Features & Benefits

- ITU-T: G657A1 & A2
- UL Riser rated and CPR certified
- Complies with IEC 60794-1-2
- REACH & RoHS compliant
- Pre-terminated – so no field splicing/mechanical termination
- Guaranteed Insertion loss/return loss with certification
- Installs inside microducts with bores as small as 3.5 mm (0.14 in) I.D.
- Industry-standard LC Balistix™ connector (SC also available)
- Single-mode UPC, APC or multi-mode options
- Features Miniflex® bend limiting technology
- Ultra light-weight
- High crush resistance
- Low friction outer sheath
- Inherent kink resistance
- Small round concentric design

## Overview

PPC's QuikPush® cable assembly is a flexible, pushable pre-terminated fibre optic drop solution that utilizes our Miniflex fibre cable and allows for connectorization on one or both ends. QuikPush has a number of advantages over alternative last-drop solutions for fast and reliable FTTX deployments: Miniflex fiber cable and Balistix connectors. At just 2.2 mm outer diameter, the Miniflex fibre cable is one of the smallest cables in the industry. Miniflex cable can be installed easily and quickly by pushing, pulling or blowing. PPC's Balistix pushable connectors enable the pre-connectorized fibre cable to be installed through microducts and small holes that are typical of most FTTX scenarios. PPC's connector options are unlimited, including SC; LC; FC; Balistix LC and SC; and no connector.




QuikPush cable assemblies can be successfully pushed through 4 mm (0.16 in) holes and microduct bores as small as 3.5 mm (0.14 in). Hand push distances vary according to bend frequency and duct quality. For example, QuikPush, combined with PPC microduct, exceeds 100 m (328 ft) in a route with 8 x 90° bends. With air assistance, the route can extend to 12 x bends and up to 1 km (3,280 ft). The rugged nature of the QuikPush cable assembly reduces the cost of fibre deployments as well as the skill and difficulty of handling and connecting customer drop cables.

## Applications

- FTTH / FTTX – Indoor & outdoor drops
- Single and multi-dwelling units
- FTTP and campus networks
- Telecoms
- Rural broadband
- DAS / FTTA

# QuikPush® LC Balistix™

## Technical Data

### Mechanical Performance

| Fibre Count | Weight | O.D. | Sheath Thickness | Tension Strength | Crush | Minimum Bend Radius | |
|---|---|---|---|---|---|---|---|
| | | | | | | Installation | Operation |
| *250µm* | *kg/km (lbs/km)* | *mm (in)* | *mm (in)* | *N (lb)* | *N (lb)* | *mm (in)* | *mm (in)* |
| 1, 2 & 4* | ~4 (~8.8) | 2.2 (.09) | 0.5 (.02) | 100 (22) | 1500 (337) | 11 (.4) | 22 (0.9) |

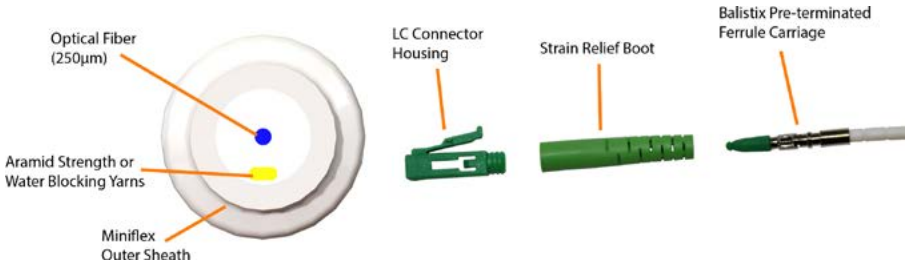
**Only the first fibre is terminated, all other fibres remain dark.*

| Material | Applications | Fire Rating | Color | Operating Temp |
|---|---|---|---|---|
| | | EN / UL | | *°C (°F)* |
| PBIO | Indoor-Outdoor | Cca / Riser | White | -30 to 70 (-22 to 158) |

### Transmission Performance Specification

| Item | Single-mode | Single-mode 900µm |
|---|---|---|
| Specification | G657 A1 | G657 A2 |
| Attenuation (850 / 1300 nm) | n/a | n/a |
| Attenuation (1310 / 1550 nm) | 0.4/0.3 dB/km | 0.4/0.3 dB/km |
| Attenuation at 1383nm | ≤ 0.32 dB/km | n/a |
| Attenuation at 1625 nm | < 0.24 dB/km | < 0.24 dB/km |
| Refractive Index at 1310nm, 1550nm | 1.467, 1.468 | 1.467, 1.468 |
| Refractive Index at 850nm, 1300nm | n/a | n/a |
| Proof test | 0.69 GPa (100 kpsi), 1% min. | 0.69 GPa (100 kpsi), 1% min. |
| Cladding diameter | 125 ± 0.7µm | 125 ± 0.7 µm |
| Coated diameter | 235µm to 245µm | 235µm to 245µm |
| Core/Cladding concentricity error | ≤ 0.5µm | ≤ 0.5 µm |
| Coating concentricity error | ≤ 12µm | ≤ 12µm |
| Macro bend loss | (1550 nm) | (1550 nm) |
| 10 turns at 50mm diameter | ≤ 0.01 dB | n/a |
| 10 turns at 15 mm diameter | ≤ 0.2 dB | ≤ 0.03 dB |
| 1 turn at 10mm diameter | ≤ 0.2 dB | ≤ 0.10 dB |
| 1 turn at 7.5mm diameter | n/a | ≤ 0.50 dB |
| Temp. range (operation)<br>-60°C to 85°C (-76°F to 185°F) | max attenuation change<br>≤ 0.05 dB/km | |
| Coating Strip Force | 1.3 to 8.9 N | |

# QuikPush® LC Balistix™



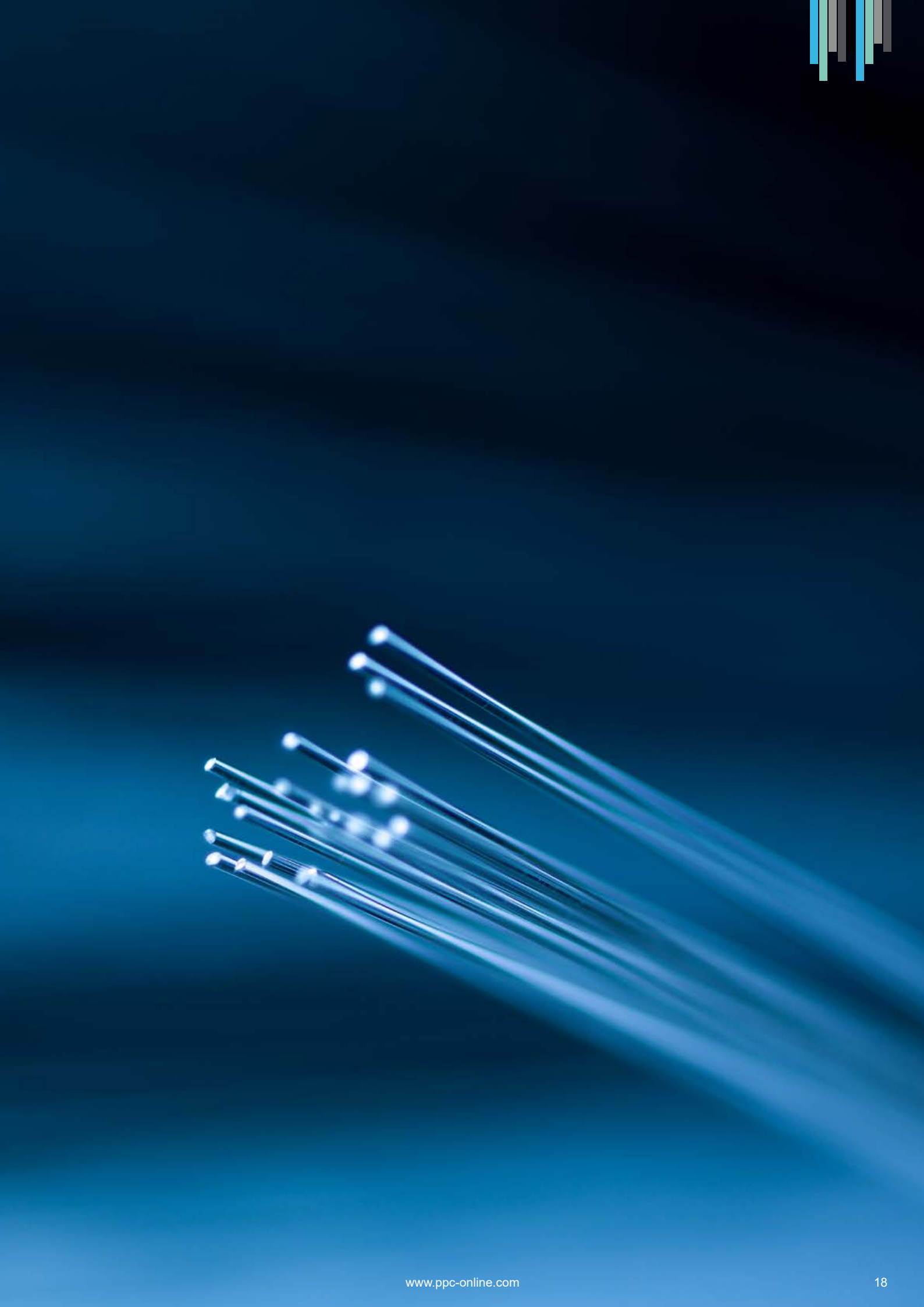

## Ordering Information

### Example: QP12RIW22V5L550F (North America)

| QP | 1 | 2 | RI | W | 2 | 2 | V5 | L5 | 50 | F |
|---|---|---|---|---|---|---|---|---|---|---|
| QuikPush® | Number of Fibres | Cable Diameter | Material | Color | Fibre Diameter | Fibre Type | Outside Connector | Inside Connector | Length | Unit of Measure |
| QP | 1, 2, or 4* | 2 - 2mm | RI - Riser | W - white | 2 - 250um | 1 - G.657.A1 | V3 - LC Balistix™ UPC | | XXX | F - Feet |
| | | | | | | 2 - G.657.A2 | V5 - LC Balistix APC | | | M - Meters |
| | *only first fibre is terminated | | | | | | L3 - LC UPC | | | |
| | | | | | | | L5 - LC APC | | | |
| | | | | | | | NC - no connector | | | |
| | | | | | | | S3 - SC UPC | | | |
| | | | | | | | S5 - SC APC | | | |
| | | | | | | | B3 - SC Balistix UPC | | | |
| | | | | | | | B5 - SC Balistix APC | | | |

### Example: QP-013-PBIO-V5-WHT-LC5-A1-250-15M (Europe & ROW)

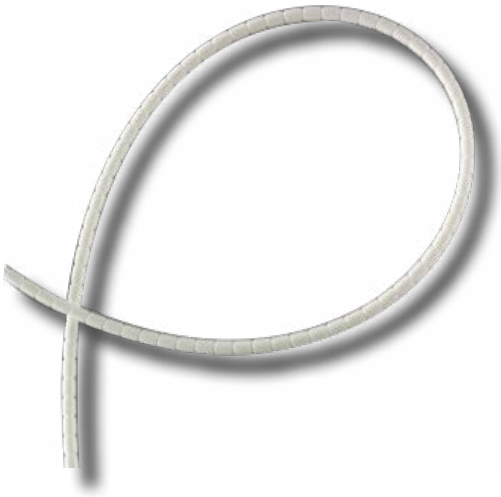
| QP | 01 | 2 | PBIO | V5 | WHT | LC5 | A1 | 250 | 15 | M |
|---|---|---|---|---|---|---|---|---|---|---|
| QuikPush | Number of Fibres | Cable Diameter | Material | Connector A | Color | Connector B | Fibre Type | Fibre Diameter | Length | Unit of Measure |
| QP | 1, 2, or 4* | 2 - 2.2 mm | PBIO - Cca | V3 - LC Balistix UPC | WHT - White | V3 - LC Balistix UPC | A1 - G.657.A1 | 250 - 250µm | XXX | M - Metres |
| | *only first fibre is terminated | | | V5 - LC Balistix APC | | V5 - LC Balistix APC | A2 - G.657.A2 | | | |
| | | | | SC3 - SC UPC | | SC3 - SC UPC | | | | |
| | | | | SC5 - SC APC | | SC5 - SC APC | | | | |
| | | | | LC3 - LC UPC | | LC3 - LC UPC | | | | |
| | | | | LC5 - LC APC | | LC5 - LC APC | | | | |
| | | | | NC - No Connector | | NC - No Connector | | | | |
| | | | | BC3 - SC Balistix UPC | | BC3 - SC Balistix UPC | | | | |
| | | | | BC5 - SC Balistix APC | | BC5 - SC Balistix APC | | | | |



# Miniflex® Euroclass Cca Cable

## Features & Benefits

- ITU-T G652.D, G657A1 & G657A2 optical fiber
- Loose tube cable design
- Dry construction (no gel)
- Terminated with Balistix™ SC and LC connectors (QuikPush®), and industry standard connectors
- Ultra-flexible, small bend radius for compact slack fibre storage
- Pushable, pullable, and blowable for routing into building ducts and conduits
- Small and unobtrusive enough for surface mount applications
- Tough enough for clipping, tacking and gluing
- EN CPR (Construction Products Regulation) Cca rated
- UV Stable, Lightweight and High Crush Resistance
- Small Diameter (2.2 mm for 1-4 fibres, 3 mm for 1-12 fibres and 4.3 mm for 24 fibres)
- Miniflex® Technology for 5x diameter operating bend radius
- Best-in-class push/pull and blow-ability



## Overview

Rated Cca in accordance with EN 50575:2014+A1:2016, Miniflex fibre cable is considered a low fire hazard product. With low flame spread and zero droplets, it is the ideal cable solution in areas with high fire risks such as public and multi-dwelling buildings, escape routes and corridors. Miniflex Cable is a rugged, ultra-flexible drop cable solution for pushing and pulling inside raceways or for fixing directly to building surfaces.

By virtue of the Miniflex grooving technology, this lightweight fibre cable is ultra-flexible while resisting the urge to kink like regular fibre cable. No specialist installation tools are required to push/pull Miniflex through FTTx microducts. When combined with PPC's class-leading low-friction microducts, the cable can be pushed by hand up to 100 m with up to 8 x 90° bends in the route.

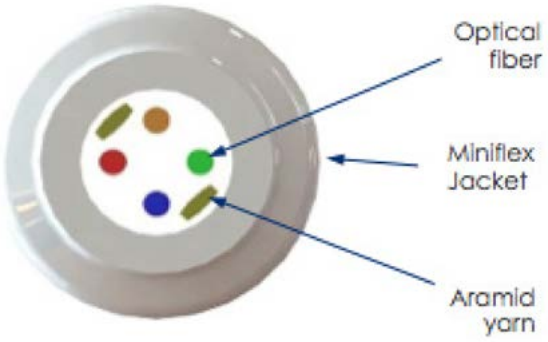
## Applications

- FTTH / FTTX indoor and outdoor
- MDU and rural broadband single-dwelling units (SDU)
- Telecoms, data infrastructure and transportation

## Technical Data

### Transmission Performance Specification

| Fibre Performance | | |
|---|---|---|
| **Type** | Single-mode | |
| **Specification** | G657.A1 | G657.A2 |
| **Max. Attenuation 1310 nm / 1550 nm** | ≤ 0.40 dB/km / 0.35 dB/km | |
| **10 turns at 15mm** | 0.20 | 0.03 |
| **1 turn at 10mm** | 0.75 | 0.10 |
| **1 turn at 7.5mm** | ~ | 0.50 |




This product may be protected by one or more patents • For further information, please visit: www.ppc-online.com/patents

# Miniflex® Euroclass Cca Cable

## Technical Data

### Mechanical Performance Specification

| Cable Dimensions | | Tensile Performance | Impact Performance | Bend Performance | |
|---|---|---|---|---|---|
| Cable Jacket O.D. | Wall Thickness | Max. Install Tension | <0.05dB change | Installation Min. Bend Radius | Operating Min. Bend Radius |
| *mm* | *mm* | *N* | *N. m* | *mm* | *mm* |
| 4.3 | 1.05 | 200 | 3 | 43 | 22 |
| 3.0 | 0.8 | 100 | 2 | 30 | 15 |
| 2.2 | 0.5 | 100 | 2 | 22 | 11 |

| Cable Dimensions | | Crush Resistance | | | Temperature Performance |
|---|---|---|---|---|---|
| Cable Jacket O.D. | Wall Thickness | Recoverable Jacket Damage | <0.05 dB Attenuation | Loss of Optical Signal | Operating Range |
| *mm* | *mm* | *N* | *N* | *N* | *°C (°F)* |
| 4.3 | 1.05 | 1500 | 3200 | >4000 | -40 to 70 (-40 to 158) |
| 3.0 | 0.8 | 1500 | 2900 | >3400 | -40 to 70 (-40 to 158) |
| 2.2 | 0.5 | 1500 | 3000 | >3500 | -40 to 70 (-40 to 158) |

## Ordering Information

| Fibre Type (ITU-T) | Fibre Coating | Cable O.D. | Fibre Count | Descriptive Code | Standard SKU (m marked) 2,000 m |
|---|---|---|---|---|---|
| G657.A1 | 250 µm | 2.2 mm | 1 | MX-012-PBIO-WHT-A1-250 | 10-1244 |
| G657.A1 | 250 µm | 2.2 mm | 2 | MX-022-PBIO-WHT-A1-250 | 10-1299 |
| G657.A1 | 250 µm | 2.2 mm | 4 | MX-042-PBIO-WHT-A1-250 | 10-1298 |
| G657.A1 | 250 µm | 3.0 mm | 1 | MX-013-PBIO-WHT-A1-250 | 10-1310 |
| G657.A1 | 250 µm | 3.0 mm | 2 | MX-023-PBIO-WHT-A1-250 | 10-1329 |
| G657.A1 | 250 µm | 3.0 mm | 4 | MX-043-PBIO-WHT-A1-250 | 10-1246 |
| G657.A1 | 250 µm | 3.0 mm | 6 | MX-063-PBIO-WHT-A1-250 | 10-1331 |
| G657.A1 | 250 µm | 3.0 mm | 8 | MX-083-PBIO-WHT-A1-250 | 10-1332 |
| G657.A1 | 250 µm | 3.0 mm | 12 | MX-123-PBIO-WHT-A1-250 | 10-1272 |
| G657.A1 | 250 µm | 4.3 mm | 24 | MX-244-PBIO-WHT-A1-250 | 10-1494 |
| G657.A2 | 900 µm | 3.0 mm | 1 | MX-013-PBIO-WHT-A2-900 | 10-1338 |
| G657.A2 | 250 µm | 2.2 mm | 1 | MX-012-PBIO-WHT-A2-250 | 10-1388 |
| G657.A2 | 250 µm | 2.2 mm | 2 | MX-022-PBIO-WHT-A2-250 | 10-1473 |
| G657.A2 | 250 µm | 2.2 mm | 4 | MX-042-PBIO-WHT-A2-250 | 10-1437 |
| G657.A2 | 250 µm | 3.0 mm | 1 | MX-013-PBIO-WHT-A2-250 | 10-1389 |
| G657.A2 | 250 µm | 3.0 mm | 2 | MX-023-PBIO-WHT-A2-250 | 10-1474 |
| G657.A2 | 250 µm | 3.0 mm | 4 | MX-043-PBIO-WHT-A2-250 | 10-1439 |

# Indoor Mini-Distribution Euroclass Bca & Cca Cable

## Features & Benefits

- ITU-T G657A1 & G657A2 optical fibre
- Waterblocking Aramid Yarns
- Flame retardant, LSZH jacket available in white and yellow colors
- For indoor use in risers and horizontal cabling to apartments and offices
- Pullable, and blowable for routing into building ducts and conduits
- EN CPR (Construction Products Regulation) Bca (s1a; d1; a1) & Cca (s1a; d1; a1) rated
- UV Stable and Lightweight (8kg/km)
- Small Diameter (3 mm for 2-12 fibres)

## Overview

Rated both Bca & Cca in accordance with EN 50575:2014+A1:2016, PPC's mini-distribution fibre cable is a low fire hazard product. With low flame spread and zero droplets, it is the ideal cable solution in areas with high fire risks such as public and multi-dwelling buildings, escape routes and corridors.

The cable is a tough, flexible cable for use in risers as well as horizontal cabling and as a customer drop cable. It is easy to install in ducts and other conduits.

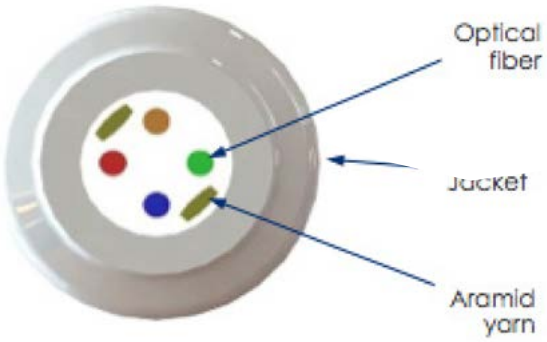
## Applications

- FTTH / FTTX indoor
- MDU and (SDU)
- Telecoms, data infrastructure and transportation

## Technical Data

### Transmission Performance Specification

| Fibre Performance | | |
|---|---|---|
| **Type** | Single-mode | |
| **Specification** | G657A1 | G657A2 |
| **Max. Attenuation 1310 nm / 1550 nm** | ≤ 0.40 dB/km / 0.35 dB/km | |
| **Min. Bend Radius** | Attenuation dB at 1550 nm | |
| **10 turns at 15mm** | 0.20 | 0.03 |
| **1 turn at 10mm** | 0.75 | 0.10 |
| **1 turn at 7.5mm** | ~ | 0.50 |



# Indoor Mini-Distribution Euroclass Bca & Cca Cable

## Technical Data

### Mechanical Performance Specification

| Cable Dimensions | Tensile Performance | Impact Performance |
|---|---|---|
| **Cable Jacket O.D.** | **Max. Install Tension** | **<0.05dB change** |
| *(mm)* | *(N)* | *(N. m)* |
| 3.0 | 140 | 2 |

| Bend Performance | | Crush Resistance | |
|---|---|---|---|
| **Installation Min. Bend Radius** | **Operating Min. Bend Radius** | **Recoverable Jacket Damage** | **<0.05 dB Attenuation** |
| *(mm)* | *(mm)* | *(N)* | *(N)* |
| 45 | 30 | 1500 | 3000 |

| Temperature Performance | | |
|---|---|---|
| **Operating Range** | **Installation Range** | **Storage Range** |
| 0 °C to 70 °C | -5 °C to 50 °C | -25 °C to 70 °C |

## Ordering Information

| Fibre Type (ITU-T)[2] | Fibre Count | CPR Code | Descriptive Code[3] | Standard SKU[1,4] |
|---|---|---|---|---|
| G657A1 | 2 | Cca | IMD-C-023-LSZH-WHT-A1-250 | 10-1509-2F |
| G657A1 | 4 | Cca | IMD-C-043-LSZH-WHT-A1-250 | 10-1509-4F |
| G657A1 | 6 | Cca | IMD-C-063-LSZH-WHT-A1-250 | 10-1509-6F |
| G657A1 | 8 | Cca | IMD-C-083-LSZH-WHT-A1-250 | 10-1509-8F |
| G657A1 | 12 | Cca | IMD-C-123-LSZH-WHT-A1-250 | 10-1509-12F |
| G657A2 | 2 | Cca | IMD-C-023-LSZH-WHT-A2-250 | 10-1510-2F |
| G657A2 | 4 | Cca | IMD-C-043-LSZH-WHT-A2-250 | 10-1510-4F |
| G657A2 | 6 | Cca | IMD-C-063-LSZH-WHT-A2-250 | 10-1510-6F |
| G657A2 | 8 | Cca | IMD-C-083-LSZH-WHT-A2-250 | 10-1510-8F |
| G657A2 | 12 | Cca | IMD-C-123-LSZH-WHT-A2-250 | 10-1510-12F |
| G657A1 | 2 | Bca | IMD-B-023-LSZH-WHT-A1-250 | 10-1511-2F |
| G657A1 | 4 | Bca | IMD-B-043-LSZH-WHT-A1-250 | 10-1511-4F |
| G657A1 | 6 | Bca | IMD-B-063-LSZH-WHT-A1-250 | 10-1511-6F |
| G657A1 | 8 | Bca | IMD-B-083-LSZH-WHT-A1-250 | 10-1511-8F |
| G657A1 | 12 | Bca | IMD-B-123-LSZH-WHT-A1-250 | 10-1511-12F |
| G657A2 | 2 | Bca | IMD-B-023-LSZH-WHT-A2-250 | 10-1512-2F |
| G657A2 | 4 | Bca | IMD-B-043-LSZH-WHT-A2-250 | 10-1512-4F |
| G657A2 | 6 | Bca | IMD-B-063-LSZH-WHT-A2-250 | 10-1512-6F |
| G657A2 | 8 | Bca | IMD-B-083-LSZH-WHT-A2-250 | 10-1512-8F |
| G657A2 | 12 | Bca | IMD-B-123-LSZH-WHT-A2-250 | 10-1512-12F |

**NOTES:**
*1. Standard SKU length is 2000m*
*2. Also available with B3 fibre*
*3. Replace 'WHT' with YEL for the YELLOW colour*
*4. For the YELLOW colour add '-YL' to the Standard SKU code*

# HAPI® Miniflex®

## Features & Benefits

- Ideal for both outdoor and indoor deployments
- Adjustable arm support with ambidextrous setup option
- Works with microducts from 5 mm to 10 mm OD
- Fast setup time and can push cable up to 300 m
- 30 cm (1 ft) install distance per revolution
- Hand operated - no power source required and near silent in use
- Rugged compact carry case
- Inexpensive - approx. 1/10th the cost of blown fibre equipment


**Compatibility:**

- 2 mm and 3 mm Miniflex® cables
- QuikPush® cable connector (SC & LC)
- PPC microducts & TuffDuct®
- Other manufacturers' duct of appropriate size

## Overview

Designed with the installer in mind, the HAPI is a lightweight, compact cable pushing tool for use with the Miniflex family of PPC cables. It features a simple loading mechanism that prevents cable damage and saves the fibre installer valuable set up time.

It is optimized to deploy PPC's 2 mm and 3 mm diameter Miniflex cable into 5 mm, 7 mm, 8 mm and 10 mm microducts to up to 300 m without the need for any power source. HAPI can be used anywhere, either in hand-held mode, with the included height-adjustable monopod or a tripod for longer distances.

HAPI is virtually noiseless in operation due to its manual operation and also enables scalable FTTX roll-outs with minimal CapEx or training.

## Applications

- FTTH
- Multi-dwelling Units
- Premises Installations
- Telecommunications

# HAPI® Miniflex®

## Technical Data

| Specification | Parameter |
|---|---|
| Fibre Cable Diameter | Up to 3.0 mm |
| Microduct Diameter | 5, 7, 8 & 10 mm outside diameter |
| Pushing Distance* | Up to 300 m (*depending on duct integrity and route) |
| Pushing Rate* | Up to 40 m/min (*depending on type of cable and duct integrity) |
| Tool Dimensions | 206 x 204 x 115 mm (fully assembled without tripod) |
| HAPI® Tool Weight | 1.8 kg (fully assembled without tripod) |
| Carrying Case Dimensions | 330 x 300 x 140 mm |
| HAPI Kit Weight | 3.1 kg |

## Ordering Information

| Description | Part Number |
|---|---|
| Miniflex® Cable Installation Tool | 10-HAPI-01 |
| Monopod | 10-HAPI-MONOPOD |
| Adapter for Camera Tripod | 10-HAPI-ADAPTER |
| Tyre/Wheel Assembly | 10-HAPI-WHEEL |
| Microduct Olive Set: 5-10 mm (2 pairs each) | 10-HAPI-OLIVE-SET |
| Spare Microduct Olives – 5 mm (2 pairs) | 0-HAPI-OLIVE05 |
| Spare Microduct Olives – 7 mm (2 pairs) | 0-HAPI-OLIVE07 |
| Spare Microduct Olives – 8 mm (2 pairs) | 0-HAPI-OLIVE08 |
| Spare Microduct Olives – 10 mm (2 pairs) | 10-HAPI-OLIVE10 |
| Cable Guide | 10-HAPI-GUIDE |

Microduct Olives

Camera Tripod Adapter

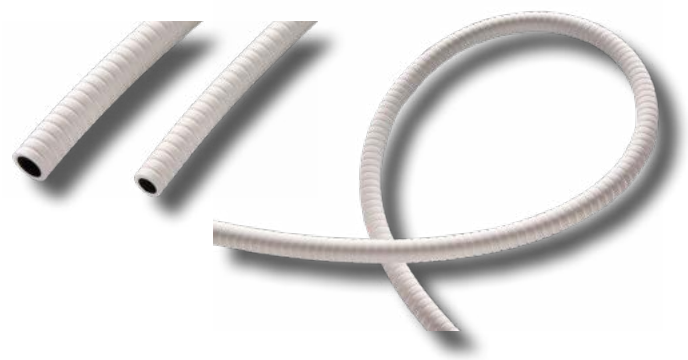
Tyre/Wheel Assembly

Cable Guide

# Miniflex® Indoor Microduct

## Features & Benefits

- Fire Performance per IEC 61386-1
- Low Smoke, Zero Halogen (LSZH)
- Features Miniflex® technology
- Ultra tough
- Ultra low friction & low static DVC lining aiding fibre install
- Very high crush resistance
- Class-leading push- and blow-ability



**Compatibility**

- QuikPush® products
- Industry standard push-fit connectors
- Compatible with all microduct, fibre and cables

## Overview

Miniflex® Indoor Microduct is a microduct for the routing of cables and optical fibres within buildings. Miniflex Indoor Microduct is made from a flame retardant, LSZH polymer making it suitable for use indoors in the event of fire (EU only). Miniflex Indoor Microduct has a low-friction & low static DVC lining to assist in pulling, blowing and pushing of fibre or cable.

## Applications

- FTTH / FTTX - Indoor
- Data Infrastructure
- Telecoms

## Technical Data

**Product Specifications**

| Microduct Size | Material | O.D. | I.D. | Crush | Tension | Biegeradius | |
|---|---|---|---|---|---|---|---|
| | | | | | | Installed* | Installation** |
| *mm* | | *mm (in)* | *mm (in)* | *N* | *N* | | |
| 8 | PEMX | 8.0 (0.314) | 5.5 (0.217) | 400 (1) | 250 | 20x A.D. | 10x A.D. |
| 10 | PEMX | 10.0 (0.394) | 6.0 (0.236) | 725 (2) | 350 | 20x A.D. | 10x A.D. |

*This is the minimum radius to which the Microduct should be subject once it is installed. This passive radius will make it easier to install the pre-connectorized Miniflex QuikPush cable with its pushable SC connector.

**This bend radius can temporarily be subject to the active radius during the installation process. The final, passive bend radius should be as defined above.

(1) *The 8 mm microduct is of medium compression strength (#3) per IEC 61386-1*

(2) *The 10 mm microduct of heavy compression strength (#4) per IEC 61386-1*

# Miniflex® Indoor Microduct

## Environmental Data

| Operating Temperature | Installation Temperature |
|---|---|
| ISO9001 Production, REACH, ROHS, Certificate of Origin, EN 50411-6-1, IEC 60794-5 | |
| °C | °C |
| -40 to 70 | -10 to 60 |

## Ordering Information

| Part Number | Product Code | SKU Length | SKU Weight | Reel Diameter | Reel Depth | Reel Width |
|---|---|---|---|---|---|---|
| | | m (ft) | kg (lbs) | *mm (in)* | *mm (in)* | *mm (in)* |
| 10-0003 | MD-P-8-5.5-PE-WHT-V0-LSZH-1KM | 1000 (3250) | 35 (77) | 750 (29.5) | 350 (13.8) | 400 (15.7) |
| 10-0004 | MD-P-8.0-5.5-PE-WHT-V0-LSZH-200M | 200 (650) | 8 (18) | 420 (16.5) | 150 (5.9) | 160 (6.3) |
| 10-0803 | MD-P-10-6.0-PE-WHT-V0-LSZH-1KM | 1000 (3250) | 59 (130) | 750 (29.5) | 350 (13.8) | 400 (15.7) |
| 10-1241 | MD-P-10.0-6.0-PE-WHT-V0-LSZH-200m | 200 (650) | 13 (29) | 395 (15.6) | 250 (9.8) | 275 (10.8) |

### Accessories

| Part Number | Description | Compatible Miniflex sizes | Packaging L x H x T | Pack contents |
|---|---|---|---|---|
| | | *mm* | *mm* | *Pieces* |
| 10-1409 | 8 mm Miniflex Wall Clips | 8,0 | 185 x 97 x 125 | 200 |
| 10-1410 | 10 mm Miniflex Wall Clips | 10,0 | | |

# TuffDuct® Direct Buried Microduct

## Features & Benefits

- Ultra tough, high crush resistant microduct
- Very low friction & low static DVC lining aiding fibre installations
- Compact size OD perfect for slot trenching
- Withstands high temperature (exposure to bitumen)
- Toneable version available with 0.75 mm hard drawn copper clad steel wire
- Low coil set product
- Class-leading push and blow ability
- Comes with a pull cord as standard

**Compatibility:**

- QuikPush® cable assemblies
- High install tension suitable for all direct bury methods
- Slot cut trenching methods
- Industry standard push-fit connectors
- Compatible with all microduct, fibre and cables

## Overview

TuffDuct® Direct Buried Microduct has an ultra low-friction & low static DVC lining to assist in pulling, blowing and pushing of fibre or cable. TuffDuct is an ultra tough 10 mm microduct for routing fibre optic cables underground. TuffDuct is suitable for direct bury deployment due to the special HDPE polymer that it is constructed from. It is available with a tone-wire if required for locating purposes.

## Applications

- FTTH/FTTX indoor and outdoor
- Telcom Networks

## Technical Data

**Product Specifications**

| Part Number | Color | OD (mm) | ID (mm) | Crush (N) | Tension (N) | Nominal Weight | *Bend Radius (Installed) | **Bend Radius (Installation) |
|---|---|---|---|---|---|---|---|---|
| 10-0010 | Orange | 10.0 | 6.0 | 2000 | 800 | 62.2 kg/km | 20x OD | 10x OD |
| 10-0010FT | Orange | 10.0 | 6.0 | 2000 | 800 | 42 lbs/kft | 20x OD | 10x OD |
| 10-0843 | Orange | 10.0 | 6.0 | 2000 | 800 | 56.3 kg/km | 20x OD | 10x OD |
| 10-0843FT | Orange | 10.0 | 6.0 | 2000 | 800 | 38 lbs/kft | 20x OD | 10x OD |

*This is the minimum radius to which the TuffDuct should be subject once it is installed. This radius will make it easier to install the QuikPush cable assembly with its Balistix™ connector.

**This is the bend radius that the TuffDuct can be temporarily be subjected to during the installation process. The final bend radius should be the installed radius as defined above.

# TuffDuct® Direct Buried Microduct

## Technical Data

### Environmental Specification

| Operating Temperature | Installation Temperature |
|---|---|
| *°C (°F)* | *°C (°F)* |
| -40 to 70 (-40 to 158) | -10 to 60 (14 to 140) |

*ISO9001 Production, REACH, ROHS, Certificate of Origin, EN 50411-6-1, IEC 60794-5*

## Ordering Information

| Part Number | Product Code | SKU Length | SKU Weight | Reel Diameter | Reel Weight | Reel Width |
|---|---|---|---|---|---|---|
| 10-0010 | TD8-P-10.0-6.0-PE-ORG-1KM | 1000 m | 68.7 kg (151.1 lb) | 750 mm | 6.5 kg (14.3 lb) | 400 mm |
| 10-0010FT | TD8-P-10.0-6.0-PE-ORG | 3280 ft | 68.7 kg (151.1 lb) | 750 mm | 6.5 kg (14.3 lb) | 400 mm |
| 10-0843 | TD-P-10.0-6.0-PE-ORG-1KM | 1000 m | 62.8 kg (138.2 lb) | 750 mm | 6.5 kg (14.3 lb) | 400 mm |
| 10-0843FT | TD-P-10.0-6.0-PE-ORG | 3280 ft | 62.8 kg (138.2 lb) | 750 mm | 6.5 kg (14.3 lb) | 400 mm |

# Miniflex® Outdoor Microduct

## Features & Benefits

- UV stabilized guaranteed for 25 years outdoor use
- Features Miniflex® technology
- Ultra tough
- Ultra low friction & low static DVC lining aiding fibre install
- Very high crush resistance
- Class-leading push and blowability
- The Microduct comes with a pull cord as standard

**Compatibility**

- QuikPush® products
- Industry standard push-fit connectors
- Compatible with all other microducts, fibres and cables

## Overview

Miniflex® Outdoor Microduct is used for the routing of cables and optical fibres wherever there is a need for a UV stable product, such as outdoors. Miniflex Outdoor Microduct is identical to Miniflex Indoor Microduct except that it is made from a tough UV stable PE polymer. Miniflex Outdoor Microduct has a low-friction & low static DVC lining to assist in pulling, blowing and pushing of fibre or cable.

## Applications

- FTTx - Outdoor
- Telecoms Networks

## Environmental Data

| Operating Temperature | Installation Temperature |
|---|---|
| ISO9001 Production, REACH, ROHS, Certificate of Origin, EN 50411-6-1, IEC 60794-5 | |
| *°C (°F)* | |
| -40 to 70 (-40 to 158) | -10 to 60 (14 to 140) |

# Miniflex® Outdoor Microduct

## Ordering Information

| Part Number | SKU Length | O.D. | I.D. | Crush | Tension | Bend Radius | |
|---|---|---|---|---|---|---|---|
| | | | | | | *installed | **installation |
| | *m (ft)* | *mm (in)* | *mm (in)* | *N* | *N* | | |
| 10-0412 | 1000 (3280.8) | 8.0 (0.314) | 5.5 (0.217) | 450 | 300 | 10x OD | 5x OD |
| 10-0425 | 200 (656.2) | | | | | | |
| 10-0802 | 1000 (3280.8) | 10.0 (0.394) | 6.0 (0.236) | 1000 | 500 | | |
| 10-1267 | 200 (656.2) | | | | | | |

*This is the minimum radius to which the microduct should be subject once it is installed. This passive radius will make it easier to install the pre-connectorized Miniflex QuikPush cable with its pushable SC connector.

**The bend radius can temporarily be subject to this active radius during the installation process. The final, passive bend radius should be as defined above.

# Miniflex® Protection-Tube for Cables and Fibres

## Features & Benefits

- Tough, yet lightweight – as little as 5g/m
- Compact – small diameter down to 3mm
- Anti-kink property
- Very high crush resistance – up to 1400N
- Slit version – suitable for retro-fitting over installed fibre
- Small bend radius – down to 5x OD

**Compatibility**

- All normal fibre termination methods (e.g. SC/LC/MTP/E2000)
- Standard tube/microduct push-fit connectors
- Electrical cable style installation – staples or cable clips
- All industry standard fibre, bend insensitive fibre and small-diameter cable

## Overview

Miniflex® protection tube is a flexible tube made from tough polymers to protect optical fibres or lightweight optical fibre units. Miniflex protection tube has exceptionally low weight for the level of strength and protection it provides and it's the only flexible, durable polymer protective jacket in the industry.

## Applications

- FTTh/FTTx – Indoor & Outdoor
- Broadband Networks
- Data Infrastructure
- Transport – Automotive & Aerospace

## Technical Data

| Material | Property | Best For | O.D. | I.D. | Crush | Tension | Nominal Weight |
|---|---|---|---|---|---|---|---|
| | | | *mm* | *mm* | *N* | *N* | *kg/km* |
| PEMX | Specialized LSZH & Riser Material | Indoor use | 5,0 | 3,1 | 500 | 100 | 12.9 |

- **Materialfarbe:** Standard colors for all materials are black and white.
- **Bend radius:** All protection tubes should have an installed bend radius that is 10x OD. The radius during installation should not be smaller than 5x OD.
- **Operating Temperature Range:** -10 °C to 60 °C (14 °F to 140 °F)

# Miniflex® Protection-Tube for Cables and Fibres

## Ordering Information

| Material | Part Number | Product Code | SKU Length | SKU Weight | Reel Diameter | Reel Depth | Reel Width |
|---|---|---|---|---|---|---|---|
| | | | *m* | *kg* | *mm* | *mm* | *mm* |
| PEMX | 10-0037 | PT-5-3.1-PE-WHT-V0LSZH | 100 | 1.9 | 275 | 160 | 111.5 |
| | 10-0169 | PT-5-3.1-PE-WHT-V0LSZH | 1000 | 15.9 | 550 | 350 | 320.0 |

This version of the protection tube allows it to be retro-fitted onto already installed optical fibre or fibre cable. The PPC Zipper Hand Tool (5mm sized tubes only) is designed to facilitate applying the protection tube in this manner.

Fire retardant versions are indicated by V0 in their product code. Similarly for Low, Somke Zero Halogen (LSZH) versions.

### Accessories

| Part Number | Description | Product Code | Miniflex Protection Tube size | | Material selection | Weight |
|---|---|---|---|---|---|---|
| | | | *A.D. mm* | *I.D. mm* | | *kg (lb)* |
| 10-0300 | 5mm Zipper Tool | ZIP-5.0-R-ALY-SLV | 5.0 | 3.1<br>3.2 | PP, PBT, PA12<br>PBT, PA12 | 0.2 (0.44) |

# PTO DIN Rail Miniflex®, DIN rail mounted

## Features & Benefits

- Material: Thermoplastic, halogen-free plastic (ABS)
- Color: pure white (RAL 9010).
- Compatible with G657.A2 fibre
- 1 to 2 adapters
- 1 label strip (45 x 10 mm)
- Protection class / shockproof: IP30 / IK05
- 2 trays for the fibres
- Colour code to identify the ports
- Fire resistance: UL94 V0
- Delivery content: 2 x cable ties, 1 x assembly instructions
- Laser Symbol

## Overview

The PTO DIN rail outlet for terminating up to 4 singlemode fibres was developed for subscriber connection in FTTH projects and is compatible with DIN rails according to DIN. Thus they offer a simple and fast assembly in new distributions and can also be easily integrated into existing installations. The FTTH Drop Cable can be terminated in the adapters with various types of connectors.

## Ordering Information

| Example | PTOF | 5 | 5 | 2 | 6 | 9 | 3 | 1 | 4 | 3 | 2 | 4 | 1 | 5 | 0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 1 | | 2 | 3 | | 4 | | 5 | 6 | | 7 | 8 | 9 | |

### 1 Adapter Type

- 10 = LC Duplex Blue Flangeless
- 11 = LC Duplex Green Flangeless
- 30 = SC Simplex Blue Flangeless
- 31 = SC Simplex Green Flangeless
- 51 = LC Duplex Blue Internal Shutter Flangeless
- 52 = LC Duplex Green Internal Shutter Flangeless
- 55 = SC Simplex Blue Internal Shutter Flangeless
- 56 = SC Simplex Green Internal Shutter Flangeless

### 2 Adapter Quantity

- 1 = 1
- 2 = 2

### 3 Cable Type

- 54 = Miniflex 2F 2mm G.657.A1
- 55 = Miniflex 4F 2mm G.657.A1
- 56 = Miniflex 2F 3mm G.657.A1

### 3 Cable Type

- 57 = Miniflex 4F 3mm G.657.A1
- 68 = Miniflex 2F 2mm G.657.A2
- 69 = Miniflex 4F 2mm G.657.A2
- 70 = Miniflex 2F 3mm G.657.A2
- 71 = Miniflex 4F 3mm G.657.A2

### 4 Connector Outlet

- 11 = LC/UPC Simplex
- 12 = LC/APC Simplex
- 31 = SC/UPC Simplex
- 32 = SC/APC Simplex

### 5 Connector Quantity Outlet

- 1 = 1
- 2 = 2
- 3 = 3
- 4 = 4

### 6 Connector Pulling End

- 00 = No connector
- 11 = LC/UPC Simplex

### 6 Connector Pulling End

- 12 = LC/APC Simplex
- 31 = SC/UPC Simplex
- 32 = SC/APC Simplex
- 84 = LC UPC Blow-In Connector
- 85 = LC APC Blow-In Connector
- 86 = SC UPC Blow-In Connector
- 87 = SC APC Blow-In Connector

### 7 Connector Quantity Pulling End

- See Connector Quantity Outlet (5.)

### 8 Pull-in Loop

- 1 = Yes
- 2 = No

### 9 Product Length

- 05 = 5 Meters
- 10 = 10 Meters
- 50 = 50 Meters

# QuikPush® Enclosure QP-SCT store up to 2 m of total slack

## Features & Benefits

- Allows for 100% splice-less FTTH installations
- IP55 protection from dust and water
- Supplied with SC or LC duplex adapter
- Small footprint for minimum decor disruption
- Slack cable storage for up to 2 m (6.5 ft) of 3mm Miniflex® cable
- Large cable entry port for PPC cable or microduct
- Supplied with wall fixings and cable ties

**Compatibility**

- All PPC and industry standard cable
- QuikPush® cable connector (SC & LC)
- PPC Microduct

## Overview

PPC's QuikPush Small Customer Terminal (QP-SCT) is a cost-effective, low-profile termination point for FTTH deployments. The QP-SCT is typically located inside the customer dwelling and connects to the Network Access Point via PPC's pre-terminated QuikPush drop cable. Compatible with SC and LC adapters, the small customer terminal provides the ideal solution for QuikPush cables, with capacity to store up to 2 m (6.5 ft) of slack 3mm Miniflex® cable.

Suitable for indoor use, the QP-SCT facilitates the use of the pre-terminated PPC QuikPush drop cables within customer dwellings, between the network floor distribution point and the end user's Optical Network Terminal.

## Applications

- FTTH
- Multi-dwelling Units
- Premise installations
- Telecommunications

## Technical Data

| Part Number | Connector Adapter | Dimensions (H) x (B) x (T) | Weight | Recommended Slack Storage |
|---|---|---|---|---|
| | | *mm* | *kg* | *m* |
| 10-1327 | SC/APC | 86 x 86 x 24 | 1,0 | 1,0 |

| Max Slack Storage | Port Diameter | PU | Operating Temperature |
|---|---|---|---|
| *m* | *mm* | *pieces* | *°C* |
| 2,0 | 2-10 | 10 | -20 to 75 |

# QuikPush® Enclosure QP-MCT store up to 8 m of total slack

## Features & Benefits

- Allows for 100% splice-less FTTH installations
- IP55 protection from dust and water
- Accommodates 2 x SC or LC duplex adapters
- Capacity for two drop cables per enclosure
- Easy installation using removable wall mount plate
- Slim and compact design with contoured cover
- Slack cable storage for up to 8 m of 3mm Miniflex® cable
- Supplied with wall fixings, splice protector and cable ties

**Compatibility**

- All PPC and industry standard cable
- QuikPush® cable connector (SC & LC)
- PPC Microduct

## Overview

PPC's QuikPush Medium Customer Terminal (QP-MCT) is a sleek and versatile termination point for FTTH deployments. This terminal is typically inside the customer dwelling and connects to the Network Access Point using PPC's pre-terminated QuikPush Drop Cable. The QP-MCT is the ideal complement to the QuikPush drop cables due to its impressive slack storage capability - up to 8 m.

The QP-MCT allows for convenient routing, storage and interface of optical fibre from the network provider to the end user's Optical Network Terminals.

## Applications

- FTTH
- Multi-dwelling units
- Premise installations
- Telecommunications

## Technical Data

| Part Number | Connector Adapter | Dimensions (H) x (B) x (T) | Weight | Recommended Slack Storage |
|---|---|---|---|---|
| | | *mm* | *kg* | *m* |
| 10-1328 | SC/APC | 205 x 115 x 35 | 3,0 | 5,0 |

| Max. Slack Storage | Port Diameter | Pack Quantity | Operating Temp. |
|---|---|---|---|
| *m* | *mm* | *pcs* | *°C* |
| 8,0 | 2-10 | 10 | -20 to 70 |

# QuikPush Enclosure QP-LCT store up to 15 m of total slack

## Features & Benefits

- Allows for 100% splice-less FTTH installations
- IP55 protection from dust and water
- SC and LC QuikPush® compatible
- Robust hinged front cover for quick and easy installation
- Slack cable storage for up to 15 m (50 ft) of 3mm Miniflex® cable
- Supplied with wall fixings and cable grommets

**Compatibility**

- All PPC and industry standard cable
- QuikPush® cable connector (SC & LC)

## Overview

Designed for indoor use, the QuikPush Large Customer Terminal (QP-LCT) allows for convenient routing, storage and interface of optical fibre from the network provider to the end user's Optical Network Terminal. This terminal is typically located inside the customer dwelling and connects to the Network Access Point using PPC's pre-terminated QuikPush Cable. The QP-LCT is an ideal complement to the QuikPush drop cable which allows operators to minimize their range of drop cable inventory. Storing up to 15 mm (50 ft) of excess 3mm Miniflex cable makes the QP-LCT a versatile slack storage solution for connectorized drop cable. PPC's QP-LCT is a highly practical and compact termination point for FTTH deployments.

## Applications

- FTTH
- Multi-dwelling units
- Premise installations
- Telecommunications

## Technical Data

| Part Number | Connector Adapter | Dimensions (H) x (B) x (T) | Weight | Recommended Slack Storage |
|---|---|---|---|---|
| | | *mm* | *kg* | *m* |
| 10-1343 | SC/APC | 175 x 153 x 42 | 3,0 | 8,0 |

| Max. Slack Storage | Port Diameter | Pack Quantity | Operating Temp. |
|---|---|---|---|
| *m* | *mm* | *pcs* | *°C* |
| 15,0 | 2-10 | 10 | -20 to 70 |

This product may be protected by one or more patents • For further information, please visit: www.ppc-online.com/patents

# QuikPush® Enclosure QP-SDB store up to 25 m of total slack

## Features & Benefits

- Allows for 100% splice-less FTTH installations
- IP54 protection from dust and water
- Can accommodate 12 x SC or LC duplex adapters
- Capacity for 12 drop cables per closure
- Lockable front cover for total fibre security
- Compact design with hinged splice trays
- Storage for up to 25 m (82 ft) of 3mm Miniflex® cable
- Supplied with wall fixings, cable ties and connector adapters

**Compatibility**

- All PPC and industry standard cable
- QuikPush® cable connector (SC & LC)
- PPC Microduct

## Overview

PPC's QuikPush Small Distribution Box (QP-SDB) is a stylish, compact fibre distribution point designed specifically for pre-terminated FTTH applications. Supporting fully pre-terminated installations, the distribution box can facilitate point-to-point (12 fibres) and passive network (1:8) architecture within MDUs. The QP-SDB is designed specifically to overcome the slack storage challenge of pre-terminated FTTH applications with capacity for up to 25 m (82 ft) of slack fibre cable.

Suitable for indoor use, the QP-SDB can accommodate up to 12 QuikPush drop cables for onward routing within MDUs.

## Applications

- FTTH
- Multi-dwelling Units
- Premise installations
- Telecommunications

## Technical Data

| Material | Dimensions (H) x (B) x (T) | Gewicht | Recommended Slack Storage | Port Diameter | Ingress Protection | Operating Temp. |
|---|---|---|---|---|---|---|
| | *mm* | *kg* | *m* | *mm* | | *°C* |
| Plastic | 340 x 260 x 90 | 1,0 | 25,0 | 2-3 | IP54 | -20 to 70 |

| Part Number | Description |
|---|---|
| 10-1335 | Small Distribution Box with 1:8 Splitter |
| 10-1336 | Small Distribution Box with 12 x Pigtails |

# QuikPush Enclosure QP-MDB store up to 80 m of total slack

## Features & Benefits

- Allows for 100% splice-less FTTH installations
- IP55 protection from dust and water
- Can accommodate 12 x SC or LC duplex adapters
- Capacity for 12 drop cables per closure
- Lockable front cover for total fibre security
- Stores up to 80 m (262 ft) of 3mm Miniflex® cable
- Supplied with wall fixings, cable ties and connector adapters
- Multiple ports supporting cable and microduct

**Compatibility**

- All PPC and industry standard cable
- QuikPush® cable connector (SC & LC)
- PPC Microduct

## Overview

PPC's QuikPush Medium Distribution Box (QP-MDB) is a feature-packed, versatile fibre distribution point designed specifically for pre-terminated FTTH applications. Designed for indoor use, the QP-MDB can accommodate up to 12 QuikPush drop cables for onward routing within multi-dwelling units (MDU). The QP-MDB is designed specifically to overcome the slack storage challenge of pre-terminated FTTH applications with capacity for up to 80 m (262 ft) of slack fibre cable.

Supporting fully pre-terminated installations, the QP-MDB can facilitate point-to-point (12 fibre) and passive network (1:8) architecture within MDUs.

## Applications

- FTTH
- Multi-dwelling Units
- Premise installations
- Telecommunications

## Technical Data

| Material | Dimensions (H) x (B) x (T) | Weight | Recommended Slack Storage | No. of Ports | Port Diameter | Operating Temp. | Colour |
|---|---|---|---|---|---|---|---|
| | *mm* | *kg* | *m* | | *mm* | *°C* | |
| Plastic | 345 x 200 x 120 | 1,5 | 80,0 | 12 | 2-10 | -20 to 75 | Light grey |

| Part Number | Description |
|---|---|
| 10-1341 | Medium Distribution Box with 1:8 Splitter |
| 10-1342 | Medium Distribution Box with 12 x Pigtails |

# Quik Install Kit (QIK), pre-terminated Install Kit

## Features & Benefits

- 2.2 mm and 3 mm Miniflex® ruggedized, flexible fibre cable
- Slim, compact customer terminal
- Up to 4 optical fibre connectors
- Multiple termination options
- Supplied with wall mount fixings
- 100% recyclable spool and deployment style “pizza box”
- No cable pay-off equipment required
- 100% laser safety Shuttered Connector Adapters
- 5 to 100 m (15 to 300 ft) cable lengths


**Compatibility**

- 2.2 mm and 3 mm Miniflex
- 5 mm to 10 mm (0.2 in to 0.4 in) microduct
- Miniflex G.657A1 optical fibre
- SC/APC & LC/APC connectors
- Fusion and mechanial splicing
- UL riser and CPR Cca certified

## Overview

PPC’s Quik Install Kit (QIK) offers an efficient and cost-effective option for the deployment of fibre drop cables, removing the need for complicated tools and highly skilled fibre engineers. Configurations include one to four fibres, multiple connector choices - including PPC’s pushable LC and SC connectors - and two different terminals. Both the Small Customer Terminal and the Micro-Terminal include pre-terminated, pre-installed adapters and simple mounting features, ensuring performance and reducing install time at the customer premises.

## Applications

- Multi-dwelling units
- Commercial offices
- Schools and campuses
- Hotels and resorts

## OPTERNA® Micro Terminal Available for Select Configurations

**Compatibility**

- Extremely compact, all-plastic design
- Up to 20 m (65 ft) of 2mm Miniflex cable storage
- Universal mounting brackets

# Quik Install Kit (QIK), pre-terminated Install Kit

## Technical Data

### Cable Mechanical Performance

| Cable Ø | Tensile | Impact | Bend Perfmor-mance | Crush Resistance | | | Temperature Performance |
|---|---|---|---|---|---|---|---|
| | (Installation) | <0.05db change | Operating Min. Bend Radius | Recoverable Jacket | <0.05dB Attenuation | Loss of Optical Signal | Operating Range |
| *mm* | *N* | *N. m* | *mm* | *N* | | | *°C / °F* |
| 2,2 | 100 | 2 | 11 | 1500 | 3000 | >3500 | -40 to +70 / 104 to +158 |
| 3,0 | 100 | 2 | 15 | 1500 | 2900 | >3400 | -40 to +70 / 104 to +158 |

### Cable Optical Performance

| Wave-length | Insertion Loss | | Return Loss | Wave-length | Fibre Bend Performance | | | Attenua-tion |
|---|---|---|---|---|---|---|---|---|
| | Nominal | Max. | Max. | | Ø20mm 1 turn | Ø30mm 10 turns | Ø50mm 100 turns | ITU-T G.657.A1 |
| *mm* | *dB* | *dB* | *dB* | *nm* | *N* | *N* | *N* | *db/km* |
| 1310 | ≤0.25 | ≤0.5 | ≥60 | 1550 | 0.75 | 0.25 | 0.05 | 0.40 |
| 1550 | ≤0.25 | ≤0.5 | ≥60 | 1625 | 1.5 | 1.0 | 0.1 | 0.30 |

## **Ordering Information:** Quik Install Kit with Standard PPC Small Customer Terminal

| Free End - Terminal End | NC - SC/APC | BC/APC - SC/APC | BC/APC - LC/APC | NC - LC/APC | BLC/APC - SC/APC | BLC/APC - LC/APC |
|---|---|---|---|---|---|---|
| 2mm Miniflex - 1 Fibre | 10-1451-xx | N/A | 10-1458-xx | 10-1460-xx | 10-1466-xx | 10-1467-xx |
| 2mm Miniflex - 2 Fibre | 10-1452-xx | N/A | N/A | 10-1461-xx | N/A | N/A |
| 2mm Miniflex - 4 Fibre | 10-1453-xx | N/A | N/A | 10-1462-xx | N/A | N/A |
| 3mm Miniflex - 1 Fibre | 10-1454-xx | 10-1457-xx | 10-1459-xx | 10-1463-xx | N/A | N/A |
| 3mm Miniflex - 2 Fibre | 10-1455-xx | N/A | N/A | 10-1464-xx | N/A | N/A |
| 3mm Miniflex - 4 Fibre | 10-1456-xx | N/A | N/A | 10-1465-xx | N/A | N/A |

## **Ordering Information:** Quik Install Kit with OPTERNA® Micro-Terminal

| Free End - Terminal End | NC - SC/APC | BC/APC - SC/APC | BC/APC - LC/APC | NC - LC/APC | BLC/APC - SC/APC | BLC/APC - LC/APC |
|---|---|---|---|---|---|---|
| 2mm Miniflex - 1 Fibre | 10-1451-MT-xx | N/A | 10-1458-MT-xx | 10-1460-MT-xx | 10-1466-MT-xx | 10-1467-MT-xx |
| 2mm Miniflex - 2 Fibre | 10-1452-MT-xx | N/A | N/A | 10-1461-MT-xx | N/A | N/A |
| 2mm Miniflex - 4 Fibre | 10-1453-MT-xx | N/A | N/A | 10-1462-MT-xx | N/A | N/A |

*KEY:*
- *NC - No connector*
- *BC - SC compatible Balistix™ connector*
- *BLC - LC compatible Balistix connector*
- *XX - Insert length followed by unit of measure:*
  - *M (meters) e.g. 10-1451-50M*
  - *F (feet) e.g. 10-1451-100FT*

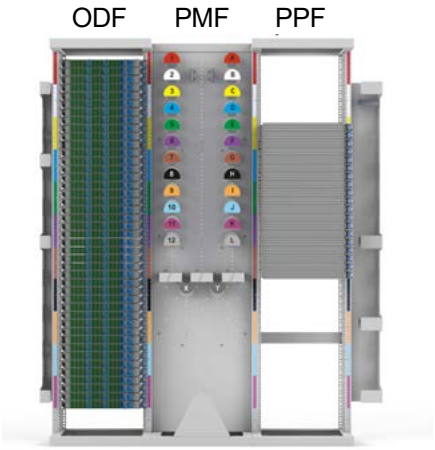
**option to include 'dark' fibre for future-proofing.*

# OPTICAL DISTRIBUTION WITH HIGH DENSITY

# Optical Distribution Frame (ODF)

## Features & Benefits

- Robust steel construction
- Open frame design for fast and easy access to ODF
- Suitable for splitter panels and ODF Feeder panels
- Adjustable vertical rails for different panel types
- Numbered identification strips on vertical rail for clear placement of hardware and accessories
- 19” rails on the left and on the right side (465mm pitch between fixings)
- 19” rails adjustable in steps of 25mm forwards and backwards (loading capacity approx. 180 kg per ODF and PPF)
- 47U fixing positions per 2200mm rack
- Integrated cable overlength management (optional)
- Flexible cable routing mandrels (radius 30mm) for different cable paths
- Three earthing points (one earthing point per frame)
- Fixing options: On the floor, on the wall, back to back or side to side
- Environmental conditions according to ETS 300 019-1-3 class 3.1




## Overview

The ODF is a purpose-made rack designed to accommodate high density Feeder Panels or Splitter Panels used in FTTH PON networks. The rack can be made as a stand-alone solution, or it can be made as a ‘side-by-side’ system with integrated cable management in the middle. Adjustable 19” mounting rails at the rear of the rack provide excellent front access to all cables and the optional PMF rack provides fast and easy cable overlength management.

The 19” rails and the cable routing mandrels are numbered, lettered and colour-coded for clear placement of hardware and accessories. The cable connections of four height units can be guided over two numbered, lettered and colour-coded cable routing mandrels of the same colour and number.

In many cases, the ODF racks will be deployed in small POP buildings alongside EQF frames where transmission equipment is mounted. These ODF’s then provide the necessary connection from the transmission equipment, through the splitter panel and then to the outside-plant network via Feeder cables. Splitters with 1:4 or 1:8 ratio are often fitted to the splitter panel to provide the first level of network aggregation.

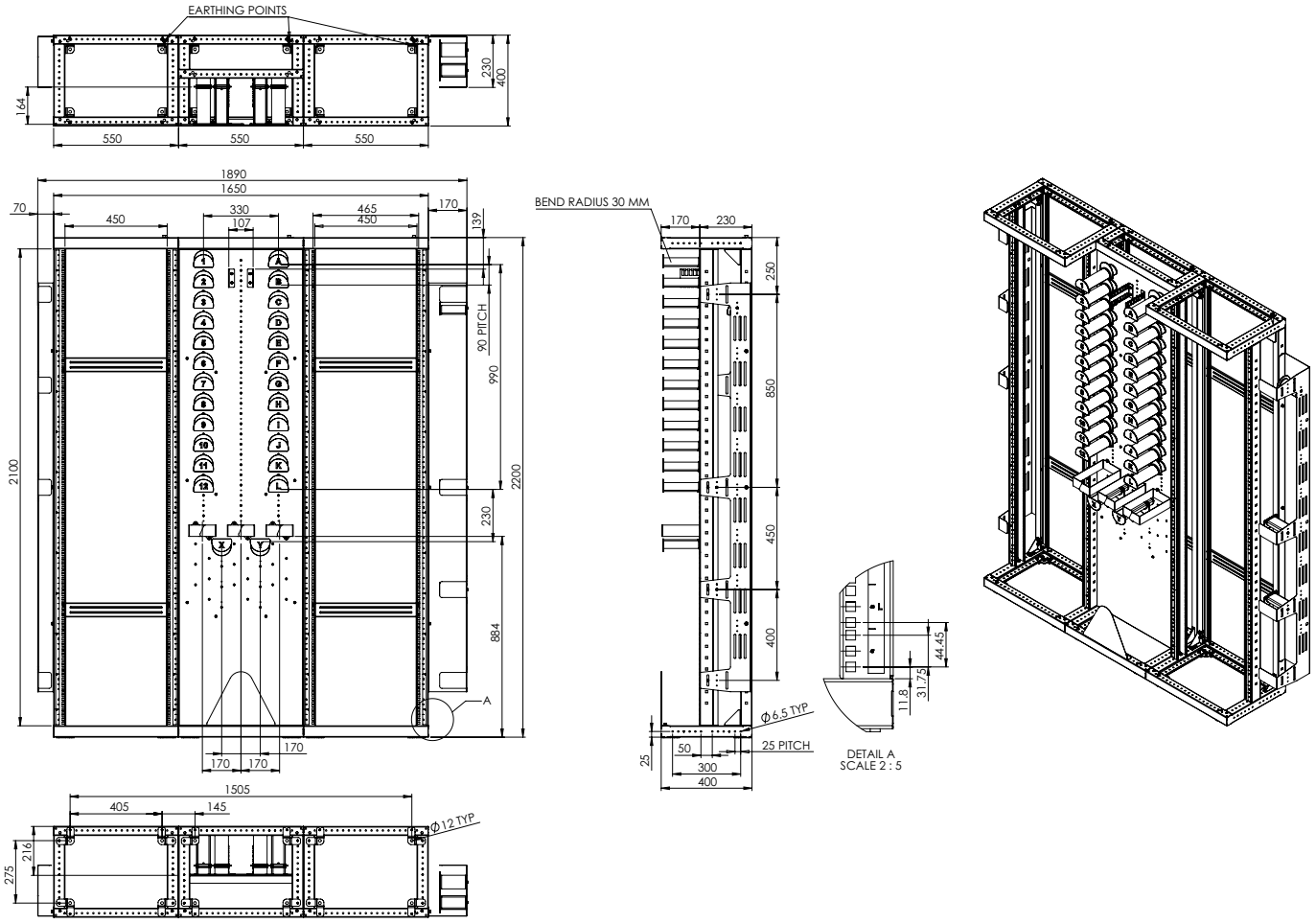
## Technical Data

| ODF and PPF 19” rack dimensions | Rack dimensions without lateral accessories | Complete rack dimensions |
|---|---|---|
| *mm (width x depth x height)* | *mm (width x depth x height)* | *mm (width x depth x height)* |
| 550 x 400 x 2200 | 1650 x 400 x 2200 | 1890 x 400 x 2200 |

| Material | Colour | 19 “ fixing positions |
|---|---|---|
| Steel powder coated | Light Grey RAL 7035 | 47U |

# Optical Distribution Frame (ODF)

## Technical Drawing




## Ordering Information

| Description | Part Number |
|---|---|
| ODF Fibre management suite with 3 racks (two ODF racks + middle management rack), assembled, Grey RAL 7035 | FRSO0400002273-002 |
| ODF Fibre management suite with 3 racks (two ODF racks + middle management rack), non-assembled, Grey RAL 7035 | FRSO0300002273-002 |

# Equipment Frame (EQF)

## Features & Benefits

- Robust steel construction
- Open frame design for fast and easy access to equipment
- Adjustable vertical rails for different equipment depths
- Numbered identification strips on vertical rail for clear placement of equipment and accessories
- ETSI rails (500mm pitch between fixings)
- 84 metric positions per 2200mm rack
- Integrated cable overlength management
- Flexible cable routing mandrels for different cable paths
- Optional harness manager for managing harness cables into the vertical equipment blades


## Overview

The EQF is a purpose-made rack designed to accommodate high density switches DSLAMs used in FTTH PON networks. The rack can be made as a stand-alone solution, or it can be made as a 'side-by-side' system with integrated cable management in the middle. Each rack has capacity for up to two high-density DSLAM switches including the associated baffle plates required to deflect warm air away from the switch.

In many cases, the EQF racks will be deployed in small POP buildings alongside high density optical distribution frames or splitter racks. These ODF's then provide the necessary connection to 'Feeder Cables' connecting aggregation street cabinets further down the network. Harness cables can enter the EQF rack from either the top or the bottom of the rack and cable slack mandrels can be used to store excess cable between the EQF racks and the ODF racks.

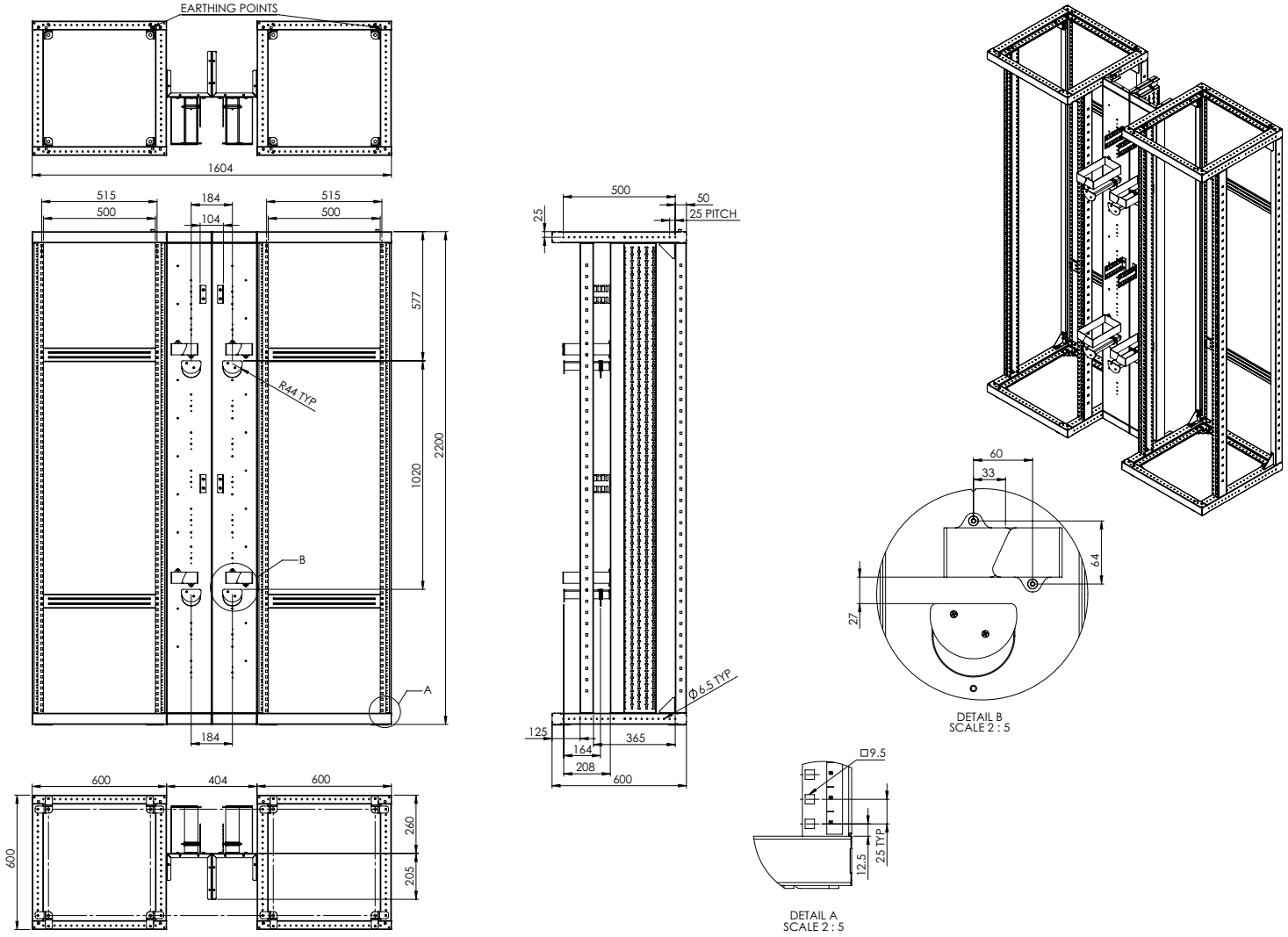
## Technical Data

| EQF rack dimensions | EQF PMF rack dimensions |
|---|---|
| *mm (width x depth x height)* | *mm (width x depth x height)* |
| 600 x 600 x 2200 | 406 x 600 x 2200 |

| Material | Colour | ETSI fixing positions |
|---|---|---|
| Steel powder coated | Light Grey RAL 7035 | 84 (numbered top down) |

# Equipment Frame (EQF)

## Technical Drawing



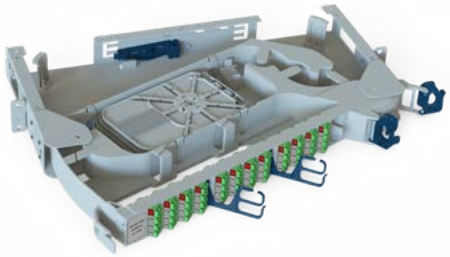

## Ordering Information

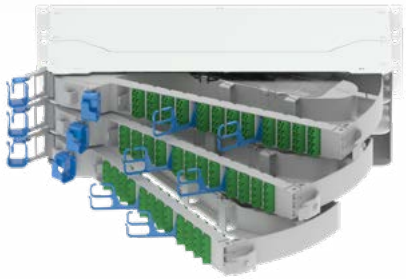
| Description | Part Number |
|---|---|
| ETSI Fibre management suite with 3 racks (two equipment racks + middle cable management rack), assembled, Grey RAL 7035 | FRSE0400002273-002 |
| ETSI Fibre management suite with 3 racks (two equipment racks + middle cable management rack), non-assembled, Grey RAL 7035 | FRSE0300002273-002 |
| ETSI Fibre management suite with 2 racks (one equipment rack + cable management rack on the right), assembled, Grey RAL 7035 | FRSE0200002272-002 |
| ETSI Fibre management suite with 2 racks (one equipment rack + cable management rack on the right), non-assembled, Grey RAL 7035 | FRSE0100002272-002 |

# Optiscale GEN2 Pivoting Panel

## Features & Benefits

- Variants: **1U (standard), 2U or 3U**
- 48 x SC or 96 x LC ports per 1U
- Pivoting design for fast and safe access to connectivity
- Opening directions either to the left or to the right (standard)
- Variable fiber types and color codes possible
- Horizontal patchcord support and rotating cord guides
- Multiple rail fixing options (rear, center and front)
- Integrated parking position for up to 4 x SC/8 x LC ports
- Fiber transition tubes for fast and easy installation
- Hinged splice cassettes (crimp splice protectors or heat shrink splice protectors) for clear separation of fiber bundles
- Angled adapters for laser safety and improved cable routing (adapters with port labeling)
- Can be patched in static state





## Overview

The PPC Optiscale GEN2 Pivoting Chassis is a high density fiber management system that allows up to 48 x SC simplex connections or 96 x LC connections in a single 1U of rack space. Cables enter the chassis from the rear side and patchcords exit from the front. The chassis offers multiple rail fixing options (rear, center and front) and can therefore be used multifunctionally for various applications. The pivoting design of the chassis means that the splice cassettes and pigtail connectors are easily accessible. This pivoting design also reduces the amount of movement of the fiber patchcords during MACs (Moves, Adds and Changes). The Optiscale pivoting chassis is generally designed for splice/patch applications, however other variants are available on request such as pre-terminated or splitter solutions.

## Technical Data

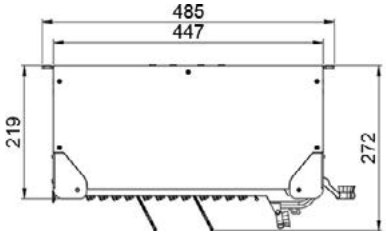
| Fiber capacity per 1U | Adapter type |
|---|---|
| 48 x SC or 96 x LC connections | SC simplex or LC duplex |

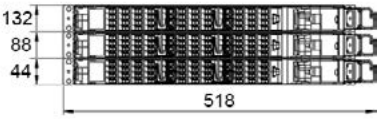
| Adapter IL | Standard compliance | Connector performance |
|---|---|---|
| *dB* | | |
| <0.2 | IEC 60297-3, IEC 61754-4, GR-326 | Grade B |

| Operating temperature | 2011/65/EC RoHS | Environmental protection |
|---|---|---|
| *°C (°F)* | | |
| -10 to 60 (14 to 140) | Fully compliant | IP20 |

# Optiscale GEN2 Pivoting Panel

## Technical Drawing




## Ordering Information

Example MPS01 | 3 | 2 | 1 | 1 | 4 | 8 | 3 | 2 | 9 | 6 | 1 | - | 0

1 2 3 4 5 6 7

### 1 Panel Height

1 = 1 U
2 = 2 U
3 = 3 U

### 2 Pivot side

1 = Left handed
2 = Right handed

### 3 Adapter Type

10 = LC duplex flangeless, blue
11 = LC duplex flangeless, green
30 = SC simplex flangeless, blue
31 = SC simplex flangeless, green

### 4 Adapter Quantity per 1U

12 = 12
24 = 24
48 = 48

### 5 Pigtail Type*

02 = ISO(EIA/598-A) SM G657A1 LC UPC Pigtail
03 = ISO(EIA/598-A) SM G657A2 LC UPC Pigtail
08 = ISO(EIA/598-A) SM G657A1 LC APC Pigtail
09 = ISO(EIA/598-A) SM G657A2 LC APC Pigtail
14 = ISO(EIA/598-A) SM G657A1 SC UPC Pigtail
15 = ISO(EIA/598-A) SM G657A2 SC UPC Pigtail
20 = ISO(EIA/598-A) SM G657A1 SC APC Pigtail
21 = ISO(EIA/598-A) SM G657A2 SC APC Pigtail
26 = DIN (IEC 60304) SM G657A1 LC UPC Pigtail
27 = DIN (IEC 60304) SM G657A2 LC UPC Pigtail
32 = DIN (IEC 60304) SM G657A1 LC APC Pigtail
33 = DIN (IEC 60304) SM G657A2 LC APC Pigtail
38 = DIN (IEC 60304) SM G657A1 SC UPC Pigtail
39 = DIN (IEC 60304) SM G657A2 SC UPC Pigtail
44 = DIN (IEC 60304) SM G657A1 SC APC Pigtail
45 = DIN (IEC 60304) SM G657A2 SC APC Pigtail

### 6 Pigtail Quantity per 1U

12 = 12
24 = 24
48 = 48
96 = 96 (LC only)

### 7 Splice Protection*

1 = Crimp splice
3 = Heatshrink (small)

* Not all Pigtail Types and Splice Protections are available for all regions.

# Crimp-splice Protection (CSS)

## Features & Benefits

- Dimensions single element: 30 x 3 x 1.2 mm (W x H x D)
- Packaging unit: 150 CSS in a carton (5 strips of 30 pieces each)
- Recommended crimp thickness: 1.2 mm ± 0.05 mm
- Transport simulation/ ageing test/ temperature change: -25°C to +75°C; 20 cycles over 8 days
- Bending test: vertical in longitudinal axis and flat in longitudinal axis
- Testing the protective mass: injection force and flow rate

## Overview

The crimp splice protection element (CSS) is a V-shaped metal sleeve designed to protect fibre optic fusion splices within fibre optic splice cassettes and enclosures. Unlike heat-shrink splice protectors that require curing time in an oven, the CSS can be applied by simply folding it over the connection point of the fused fibres. This mechanical process of protecting fibre splices provides the fastest and most convenient method of protecting fibres in the field. The elastic compound lining of the CSS, provides a cushioned protection of the fibre joint and prevents the splice from being affected by extreme environmental influences. The CSS can be used for optical fibres with an outer diameter up to 250 µm and when applied correctly, will not add any attenuation to the optical link. CSS sleeves are supplied in a purpose-made blister packaging for convenient handling and protection during transportation. Blister packs are also re-sealable in the case where not all sleeves in the package are required. One complete package contains 5 blister tape strips of 30 splice protection elements (including assembly instructions). The blister tape strip each consist of 5 groups of 6 crimp splice protection elements. These groups of 6 units can be separated at a pre-determined breaking point. This type of packaging ensures easy and safe removal of the splice protection elements. The CSS can be applied by inserting it into any purpose-made tool designed for crimp splice protection.

## Technical Data

**Testing of spliced fusions**

A spliced fibre which is protected within the CSS splice protection element is subjected to the following consecutive tests without any attenuation change of of more than 0.1 dB. The measurements are made at a wavelength of 1550 nm.

- Dry heat according to DIN EN 61300-2-18; 4 days at +85°C
- Cold according to DIN EN 61300-2-17; 4 days at -40°C
- Humid heat according to DIN EN 61300-2-19; 4 days at 40°C and a relative humidity of 93
- Temperature change according to DIN EN 61300-2-22; 12 cycles over 3 days from -40°C to +70°C
- Vibration test according to EN 60068-2-27; 3 hours at frequencies of 10-500 Hz
- Shock test according to EN 60068-2-27 with 15 g

## Ordering Information

| Description | Part Number |
|---|---|
| Crimp splice protection (CSS) blister packaging, incl. assembly instructions, PU 150 | 640002008-BLI |
| Crimp splice protection (CSS) blister packaging, incl. assembly instructions, PU 150. **Approved for Deutsche Telekom according to TS0338/96** | 640002001-BLI |

## Accessories

| Description | Part Number |
|---|---|
| Press for Crimp splice protection (CSS) | SP-ANT-CRIMP-TOOL |

# Heat-shrink Splice Protection

## Features & Benefits

- Two diffrent versions
- Packaging unit: 100 pcs.

## Technical Data

| Dimensions |
|---|
| *mm* |
| Length: 45, Ø: 2,5 or Ø: 3,0 |

## Ordering Information

| Description | Part Number |
|---|---|
| Splice protector, Ø 2.5mm type, length 45mm | SP-HSL-STA-40-XXXP |
| Splice protector, Ø 2.5mm type, length 60mm | SP-HSL-STA-60-XXXP |
| Splice protector, Ø 0.5mm, length 40mm | HSPS40100 |

# CONNECTION CABLE

# Breakout-Cable (pre-terminated)

## Features & Benefits

- Cable for indoor applications
- Single core diameter: approx. 2mm
- Jacket color: yellow
- Applicable standards: ISO 11801 2nd edition, EN 187 000, IEC 60794-2, IEC 60794-2-20, EN 50 173-1
- Flame retardancy: IEC 60332-1-2, IEC 60754-1, IEC 60754-2, IEC 61034-2
- Cable length on request 100% optical control of all connectors (enlargement 400x)
- 100% insertion loss measurement according to IEC 61300-3-4 method B
- 100% return loss measurement according to according to IEC 61300-3-6
- Each value documented on a measurement report
- Interferometric measurement, inspection of ferrule end face geometry (random inspection)
- Each cable is packed in a plastic bag (closed) with a measurement report

## Overview

PPC fibre optic breakout cables are rugged, high performance optical communication cables suitable for inside plant installations. fibre optic breakout cable contains multiple individual strands each with their own aramid strength member and jacket which makes the cable more robust and reliable. Breakout cables are often used to connect two different locations or racks in a data center or central office. Rather than installing multiple individual patch cords, it is more cost effective and faster to install one high fibre-count cable. These cables can be factory assembled with connectors of your choice.

## Technical Data

| Number of fibres / Diameter | Fibre type |
|---|---|
| *mm* | |
| 4 (7.5); 6 (9); 8 (10.5); 12 (12.5); 16 (13); 24 (15) | G.652.D, G.657.A1 |

| Grade C, B | Polishing type |
|---|---|
| According to IEC 61753 | PC, APC 8°, APC 9° (only SC) |

| Tails length | Cascading |
|---|---|
| Freely selectable | Freely selectable |

# Breakout-Cable (pre-terminated)

## Environmental Data

| Operating temperature | Free of halogen | 2011/65/EC RoHS |
|---|---|---|
| °C | | |
| -10 to +60 | Yes | Fully compliant |

## Ordering Information

| Example | BOS | 0 4 | 3 1 | 3 1 | 3 5 | 0 | 0 | 1 | 0 5 0 | 1 |
|---|---|---|---|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

**1 Fibre Quantity**

04 = 4 fibres
06 = 6 fibres
12 = 12 fibres
16 = 16 fibres
24 = 24 fibres

**2 Connector type end A (left side)**

31 = SC Simplex connector
34 = SC Duplex connector
11 = LC Simplex connector
14 = LC Duplex connector
41 = E-2000™ Simplex connector
44 = E-2000™ Duplex connector

**3 Connector type end B (left side)**

See options from Side A table (2.)

**4 Fibre Type**

35 = Single-mode G652D
36 = Single-mode G657A1
37 = Single-mode G657A2

**5 Cable jacket material**

0 = LSZH
1 = Plenum
2 = Riser
3 = PVC

**6 Tail configuration**

0 = Straight
1 = Cascaded (to fit inside pulling aid)

**7 Tail length in centimeters (shortest tail if cascaded)**

1 = 50 cm (1,63 feet)
2 = 100 cm (3,27 feet)

**8 Total Cable length**

050 = 50
999 = 999

**9 Length measure**

1 = Meters
2 = Feet

Other versions on request.

# Jumper, Single-mode Simplex

## Features & Benefits

- Available with all fibre optic connector types
- High quality housings and ceramic ferrules
- Low insertion loss and high return loss
- Individual test results and traceability number
- Mating Durability: 1000 cycles; <0.2 dB change
- IEC, EIA/TIA compliant
- Customized on request

## Overview

PPC offers high performance fibre optic simplex jumpers for use in single-fibre applications. The simplex jumpers are manufactured using state-of-the-art controlled manufacturing processes to operate over the full range of Single-mode wavelengths.

The jumpers are terminated with high quality connectors, which provide low insertion loss and high return loss. Each patchcord is individually tested and supplied with test certificates. The unique serial number provides traceability of every single product. Available in all types of Single-mode fibre types.

## Standards

| Optical Fibre | Cable Jacket ratings |
|---|---|
| ITU-T G.652D, G.655, G.657A1/A2, G657B2/B3, G655 | Low Smoke Zero Halogen (LSZH)<br>per: IEC 60754-1, IEC 60754-2, IEC 61034-2<br>Flame Rating as per: IEC 60332-1-2, UL 1666 (Riser), NFPA 262 (Plenum) |

| Connector Design acc. | Connector Tested acc. |
|---|---|
| IEC 61754, TIA 604 | IEC 61753, IEC 61300, TIA-455 |

## Technical Data

| Durability | Fibre Connectors |
|---|---|
| Min. 1000 cycles | LC, SC, LSH, FC, MU, ST |

| Insertion Loss | Return Loss |
|---|---|
| *dB* | *dB* |
| ≤0.25 | ≥50 UPC, ≥60 APC |

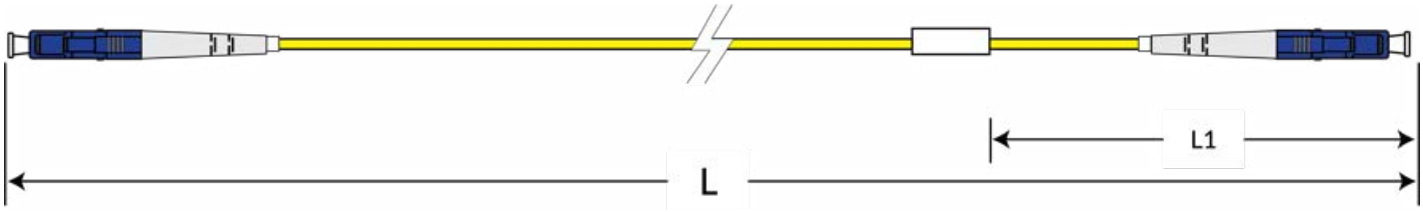
| Wavelength |
|---|
| *nm* |
| 1310/1550 |

# Jumper, Single-mode Simplex

## Environmental Data

| Operating temperature | 2015/863 RoHS | Free of Halogen |
|---|---|---|
| °C | | |
| -20 to +70 | Fully compliant | Yes |

## Technical Drawing




| Length of assembly (L) | Traceability label distance (L1) |
|---|---|
| L -0/+50mm (for L<0.5m)<br>L -0/+100mm (for 0.5m>L<5m)<br>L -0/+200mm (for L>5m) | 200 ± 25mm (from one end) |

## Ordering Information

Example

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| JA | S | 1 | 1 | 1 | 1 | 3 | 5 | 1 | 2 | 2 | 1- | 0 | 0 | 1 | 5 |
| | 1 | 2 | | 3 | | 4 | | 5 | | 6 | | 7 | | | |

**1 Sheath**

S = Standard, LSZH
A = Plenum
C = Riser
E = PVC

**2 Connector Type End A**

11 = LC UPC
12 = LC APC 8°
31 = SC UPC
32 = SC APC 8°
41 = LSH UPC
42 = LSH APC 8°
51 = FC UPC
52 = FC APC 8°
71 = MU UPC
72 = MU APC 8°
61 = ST UPC

**3 Connector Type End B**

nn = Please refer to End A connector code

**4 Fibre type**

35 = G652/G652.D
36 = G657.A1
37 = G657.A2
38 = G657.B2
39 = G657.B3

**5 Cable Type and Diameter**

10 = 1,2mm
11 = 1,4mm
12 = 1,6mm
13 = 1,8mm
14 = 2,0mm
15 = 2,2mm

**5 Cable Type and Diameter**

16 = 2,4mm
17 = 2,6mm
18 = 2,8mm
19 = 3,0mm

**6 Performance**

1 = Grade A (≤0.15dB)
2 = Grade B (≤0.25dB)
3 = Grade C (≤0.50dB)

**7 Length**

005 = 500 mm
0015 = 1,5 m
0150 = 15 m
1500 = 150 m

Other versions on request.

# Jumper, Single--mode Simplex Push-Pull-Tab

## Features & Benefits

- High quality housings and ceramic ferrules
- Heat-shrink strain relief and boot
- Low insertion loss and high return loss
- Encapsulated dust-protection
- Individual test results and traceability number
- Push-Pull-Tab for easy access to connectors in high-density
- Environments IEC, EIA/TIA compliant
- Color-coded shroud to denote performance

## Overview

PPC's LC Simplex patch cords with integrated Push-Pull-Tab are designed to reduce the cable congestion at the front of high-density patch panels and switches and reduce the time it takes to add new subscribers to the network. These compact connectors can also be deployed on the output tails of pre-terminated splitter systems to facilitate higher packing density.

A convenient pulling tab at the rear of the connector provides unparalleled access to connectors, and allows users to disconnect assemblies even in applications where LC ports are stacked adjacent to one another. This patch cord is ideal for use in FTTH networks to patch between PPC high density ODF's and splitter racks or between high density ODF's in P2P applications.

## Standards

| Optical Fibre | Cable Jacket ratings |
|---|---|
| ITU-T G.652D, G.655, G.657.A1/A2, G657.B2/B3, G655 | Low Smoke Zero Halogen (LSZH)<br>per: IEC 60754-1, IEC 60754-2, IEC 61034-2<br>Flame Rating as per: IEC 60332-1-2, UL 1666 (Riser), NFPA 262 (Plenum) |

| Connector Design acc. | Connector Tested acc. |
|---|---|
| IEC 61754, TIA 604 | IEC 61753, IEC 61300, TIA-455 |

## Technical Data

| Durability | Fibre Connectors |
|---|---|
| Min. 1000 cycles | LC |

| Insertion Loss | Return Loss |
|---|---|
| *dB* | *dB* |
| ≤0.25 | ≥50 UPC, ≥60 APC |

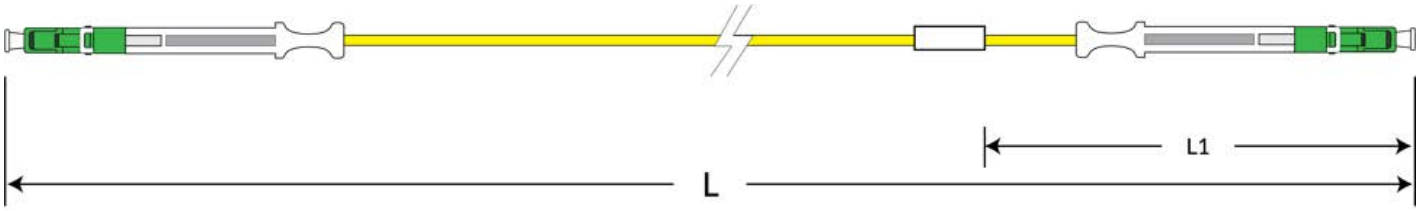
| Wavelength |
|---|
| *nm* |
| 1310/1550 |

# Jumper, Single--mode Simplex Push-Pull-Tab

## Environmental Data

| Operating temperature | 2015/863 RoHS | Free of Halogen |
|---|---|---|
| °C | | |
| -20 to +70 | Fully compliant | Yes |

## Technical Drawing




| Length of assembly (L) | Traceability label distance (L1) |
|---|---|
| L -0/+50mm (for L<0.5.m)<br>L -0/+100mm (for 0.5m>L<5m)<br>L -0/+200mm (for L>5m) | 200 ± 25mm (from one end) |

## Ordering Information

Example

| JA | S | 2 2 | 2 2 | 3 6 | 1 2 | 2 | 1- | 0 0 1 5 |
|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | | 7 |

**1 Sheath**

- S = Standard, LSZH
- A = Plenum
- C = Riser
- E = PVC

**2 Connector Type End A**

- 21 = LC simplex UPC Push-Pull-tab
- 22 = LC simplex APC (8 degree) Push-Pull-tab

**3 Connector Type End B**

- nn = Please refer to Connector Type End A code

**4 Fibre Type**

- 35 = G652/G652.D
- 36 = G657.A1
- 37 = G657.A2
- 38 = G657.B2
- 39 = G657.B3
- 40 = G655

**5 Cable Type and Diameter**

- 10 = 1,2mm
- 11 = 1,4mm
- 12 = 1,6mm
- 13 = 1,8mm
- 14 = 2,0mm

**6 Performance**

- 1 = Grade A (≤0.15dB)
- 2 = Grade B (≤0.25dB)
- 3 = Grade C (≤0.50dB)

**7 Length**

- 005 = 500 mm
- 0015 = 1,5 m
- 0150 = 15 m
- 1500 = 150 m

Other versions on request.

# Jumper, Single-mode Simplex Hybrid Push-Pull Tab

## Features & Benefits

- High quality housings and ceramic ferrules
- Heat-shrink strain relief and boot
- Low insertion loss and high return loss
- Encapsulated dust-protection
- Individual test results and traceability number
- Push-Pull-Tab for easy access to connectors in high-density
- Environments IEC, EIA/TIA compliant
- Color-coded shroud to denote performance

## Overview

PPC's LC Simplex hybrid patch cords with integrated Push-Pull-Tab are designed to reduce the cable congestion at the front of high-density patch panels and switches and reduce the time it takes to add new subscribers to the network. These compact connectors can also be deployed on the output tails of pre-terminated splitter systems to facilitate higher packing density.

A convenient Push-Pull-Tab at the rear of the connector provides unparalleled access to connectors, and allows users to disconnect assemblies even in applications where LC ports are stacked adjacent to one another. This patch cord is ideal for use in FTTH networks to patch between PPC high density ODF's and splitter racks or between high density ODF's in P2P applications.

## Standards

| Optical Fibre | Cable Jacket ratings |
|---|---|
| ITU-T G.652D, G.655, G.657.A1/A2, G657.B2/B3, G655 | Low Smoke Zero Halogen (LSZH)<br>per: IEC 60754-1, IEC 60754-2, IEC 61034-2<br>Flame Rating as per: IEC 60332-1-2, UL 1666 (Riser), NFPA 262 (Plenum) |

| Connector Design acc. | Connector Tested acc. |
|---|---|
| IEC 61754, TIA 604 | IEC 61753, IEC 61300, TIA-455 |

## Technical Data

| Durability | Fibre Connectors |
|---|---|
| Min. 1000 cycles | LC |

| Insertion Loss | Return Loss |
|---|---|
| *dB* | *dB* |
| ≤0.25 | ≥50 UPC, ≥60 APC |

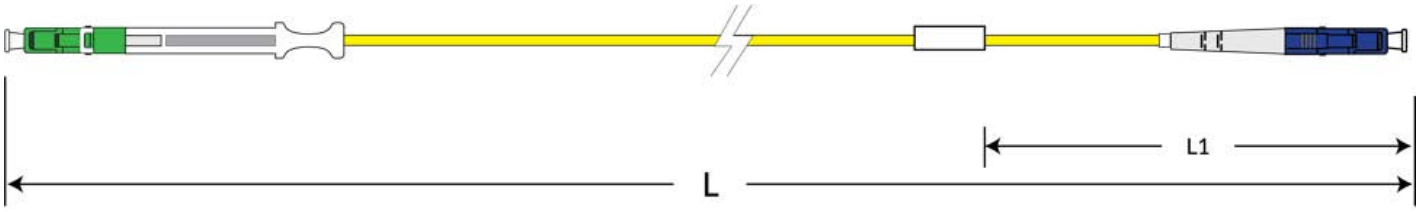
| Wavelength |
|---|
| *nm* |
| 1310/1550 |

# Jumper, Single-mode Simplex Hybrid Push-Pull Tab

## Environmental Data

| Operating temperature | 2015/863 RoHS | Free of Halogen |
|---|---|---|
| °C | | |
| -20 to +70 | Fully compliant | Yes |

## Technical Drawing




| Length of assembly (L) | Traceability label distance (L1) |
|---|---|
| L -0/+50mm (for L<0.5.m)<br>L -0/+100mm (for 0.5m>L<5m)<br>L -0/+200mm (for L>5m) | 200 ± 25mm (from one end) |

## Ordering Information

Example

| JA | S | 2 2 | 1 1 | 3 6 | 1 2 | 2 | 1- | 0 0 1 5 |
|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | | 7 |

**1 Sheath**

- S = Standard, LSZH
- A = Plenum
- C = Riser
- E = PVC

**2 Connector Type End A**

- 21 = LC UPC Push-Pull-Tab
- 22 = LC APC (8°) Push-Pull-Tab

**3 Connector Type End B**

- 11 = LC UPC
- 12 = LC APC (8°)

**4 Fibre Type**

- 35 = G652/G652.D
- 36 = G657.A1
- 37 = G657.A2
- 38 = G657.B2
- 39 = G657.B3
- 40 = G655

**5 Cable Type and Diameter**

- 10 = 1,2mm
- 11 = 1,4mm
- 12 = 1,6mm
- 13 = 1,8mm
- 14 = 2,0mm

**6 Performance**

- 1 = Grade A (≤0.15dB)
- 2 = Grade B (≤0.25dB)
- 3 = Grade C (≤0.50dB)

**7 Length**

- 005 = 500 mm
- 0015 = 1,5 m
- 0150 = 15 m
- 1500 = 150 m

Other versions on request.

# Jumper, Single-mode Duplex

## Features & Benefits

- Available with all fibre optic connector types
- High quality housings and ceramic ferrules
- Low insertion loss and high return loss
- Individual test results and traceability number
- Mating Durability: 1000 cycles; <0.2 dB change
- IEC, EIA/TIA compliant
- Customized on request
- Polarity A-B (Standard), A-A

## Overview

PPC offers high performance fibre optic duplex jumpers for use in duplex fibre applications. The duplex jumpers are manufactured using state-of-the-art controlled manufacturing processes to operate over the full range of singlemode wavelengths.

The jumpers are terminated with high quality connectors, which provide low insertion loss and high return loss. Each patchcord is individually tested and supplied with test certificates. The unique serial number provides traceability of every single product. Available in all types of singlemode fibre types.

## Standards

| Optical Fibre | Cable Jacket ratings |
|---|---|
| ITU-T G.652D, G.655, G.657A1/A2, G657B2/B3, G655 | Low Smoke Zero Halogen (LSZH)<br>per: IEC 60754-1, IEC 60754-2, IEC 61034-2<br>Flame Rating as per: IEC 60332-1-2, UL 1666 (Riser), NFPA 262 (Plenum) |

| Connector Design acc. | Connector Tested acc. |
|---|---|
| IEC 61754, TIA 604 | IEC 61753, IEC 61300, TIA-455 |

## Technical Data

| Durability | Fibre Connectors |
|---|---|
| Min. 1000 cycles | LC, SC, LSH, FC, MU, ST |

| Insertion Loss | Return Loss |
|---|---|
| *dB* | *dB* |
| ≤0.25 | ≥50 UPC, ≥60 APC |

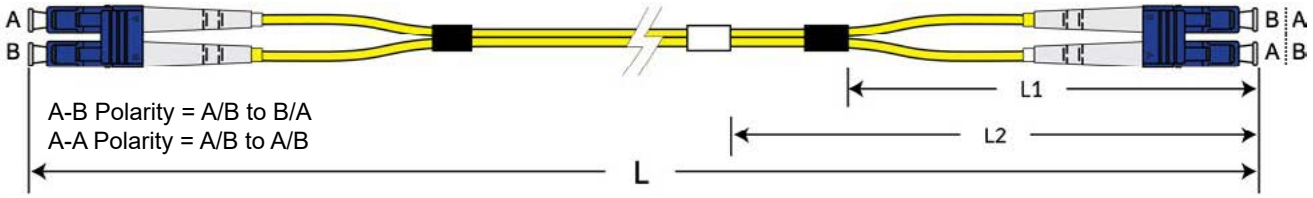
| Wavelength |
|---|
| *nm* |
| 1310/1550 |

# Jumper, Single-mode Duplex

## Environmental Data

| Operating temperature | 2015/863 RoHS | Free of Halogen |
|---|---|---|
| °C | | |
| -20 to +70 | Fully compliant | Yes |

## Technical Drawing




| Length of assembly (L) | Split length (L1) | Traceability label distance (L2) |
|---|---|---|
| L -0/+50mm (for L<0.5m)<br>L -0/+100mm (for 0.5m>L<5m)<br>L -0/+200mm (for L>5m) | 150 ± 25mm (from one end) | 200 ± 25mm (from one end) |

## Ordering Information

Example

| JA | S | 1 4 | 1 4 | 3 5 | 1 3 | 2 | 1- | 0 0 1 5 |
|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | | 7 |

### 1 Sheath / Polarity

- S = Standard, LSZH, Polarity A-B
- N = Non-Standard, LSZH, Polarity A-A
- A = Plenum, Polarity A-B
- B = Plenum, Polarity A-A
- C = Riser, Polarity A-B
- D = Riser, Polarity A-A
- E = PVC Polarity A-B
- F = PVC Polarity A-A

### 2 Connector Type End A

- 54 = FC UPC
- 55 = FC APC 8°
- 74 = MU UPC
- 75 = MU APC 8°
- 64 = ST UPC

### 3 Connector Type End B

- nn = Please refer to End A connector code

### 5 Cable Type and Diameter

- 13 = 1.8mm
- 14 = 2.0mm
- 18 = 2.8mm
- 19 = 3.0mm

### 6 Performance

- 1 = Grade A (≤0.15dB)
- 2 = Grade B (≤0.25dB)
- 3 = Grade C (≤0.50dB)

### 2 Connector Type End A

- 14 = LC UPC
- 15 = LC APC 8°
- 34 = SC UPC duplex
- 35 = SC APC 8°
- 44 = LSH UPC
- 45 = LSH APC 8°

### 4 Fibre type

- 35 = G652/G652D
- 36 = G657A1
- 37 = G657A2
- 38 = G657B2
- 39 = G657B3
- 40 = G655

### 7 Length

- 005 = 500 mm
- 0015 = 1,5 m
- 0150 = 15 m
- 1500 = 150 m

Other versions on request.

# Jumper (Ruggedized), Single-mode Duplex

## Features & Benefits

- Available with all fibre optic connector types
- Ruggedized jacket in different cable color available
- High quality ferrules and housings
- Factory terminated and 100% tested for Insertion Loss and Return Loss
- 100% optical tested with individual test results and traceability number
- Mating Durability: 1000 cycles; <0.2 dB change
- IEC, TIA and GR-326-CORE compliant
- Polarity A-B (Standard), A-A

## Overview

PPC's Ruggedized Flat Duplex fibre patch cables provide a more robust alternative to standard zipped duplex patch cables. The patch cords are recommended for patching where fibre runs are of longer distance as the patch cords are less prone to damage during & after installing. These are available in Singlemode with all the standard connector options.

The cable is also known as a Flat Twin which consists of two simplex tight buffered cables surrounded by aramid yarn, encased in an additional LSZH sheath for extra rigidity and protection. Each patch cord is individually tested and supplied with test certificates. The unique serial number provides traceability of every single product.

## Standards

| Optical Fibre | Cable Jacket ratings |
|---|---|
| ITU-T G.652D, G.655, G.657A1/A2, G657B2/B3, G655 | Low Smoke Zero Halogen (LSZH)<br>per: IEC 60754-1, IEC 60754-2, IEC 61034-2<br>Flame Rating as per: IEC 60332-1-2, UL 1666 (Riser), NFPA 262 (Plenum) |

| Connector Design acc. | Connector Tested acc. |
|---|---|
| IEC 61754, TIA 604 | IEC 61753, IEC 61300, TIA-455 |

## Technical Data

| Durability | Outer diameter | Sub-unit diameter |
|---|---|---|
| | *mm* | *mm* |
| Min. 1000 cycles | 4.0 × 8.1 (±0.3) | 2.8 ~ 3.0 |

| Cable weight | Tensile strength | Crush Resistance |
|---|---|---|
| *kg/km* | *N* | *N/mm* |
| 28 | Short term: 300, Long term: 150 | Short term: 1000/100, Long term: 300/100 |

## Optical Data

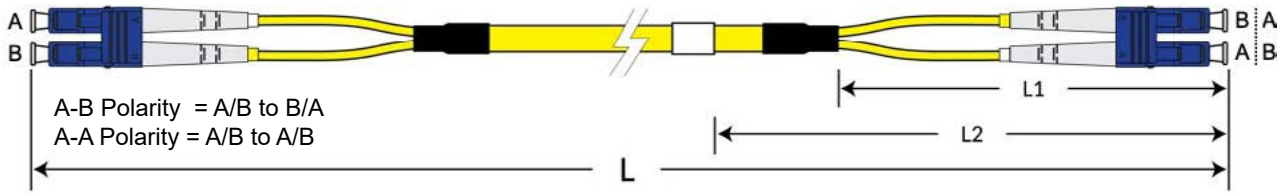
| Fibre Connectors | Insertion Loss | Return Loss | Wavelength |
|---|---|---|---|
| | *dB* | *dB* | *nm* |
| LC, SC, E2000™, FC, MU, ST | ≤0.25 | ≥50 UPC, ≥60 APC | 1310/1550 |

# Jumper (Ruggedized), Single-mode Duplex

## Environmental Data

| Operating temperature | 2015/863 RoHS | Free of Halogen |
|---|---|---|
| °C | | |
| -20 to +70 | Fully compliant | Yes |

## Technical Drawing




| Length of assembly (L) | Split length (L1) | Traceability label distance (L2) |
|---|---|---|
| L -0/+50mm (for L<0.5m),<br>L -0/+100mm (for 0.5m>L<5m)<br>L -0/+200mm (for L>5m) | 150 ± 25mm (from one end) | 200 ± 25mm (from one end) |

## Ordering Information

Example

| JA | S | 1 4 | 1 4 | 3 5 | 3 3 | 2 | 1- | 0 0 1 5 |
|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | | 7 |

**1 Sheath / Polarity**

- S = Standard, LSZH, Polarity A-B
- N = Non-Standard, LSZH, Polarity A-A
- A = Plenum, Polarity A-B
- B = Plenum, Polarity A-A
- C = Riser, Polarity A-B
- D = Riser, Polarity A-A
- E = PVC Polarity A-B
- F = PVC Polarity A-A

**2 Connector Type End A**

- 14 = LC UPC
- 15 = LC APC 8°
- 34 = SC UPC duplex
- 35 = SC APC 8°
- 44 = E2000™ UPC
- 45 = E2000™ APC 8°

**2 Connector Type End A**

- 54 = FC UPC
- 55 = FC APC 8°
- 74 = MU UPC
- 75 = MU APC 8°
- 64 = ST UPC

**3 Connector Type End B**

- = Please refer to Connector Type End A code

**4 Fibre type**

- 35 = G652/G652.D
- 36 = G657.A1
- 37 = G657.A2
- 38 = G657.B2
- 39 = G657.B3
- 40 = G655

**5 Cable Type and Diameter**

- 32 = Fig 'O' duplex 1,8mm
- 33 = Fig 'O' duplex 2,8mm

**6 Performance**

- 1 = Grade A (≤0.15dB)
- 2 = Grade B (≤0.25dB)
- 3 = Grade C (≤0.50dB)

**7 Length**

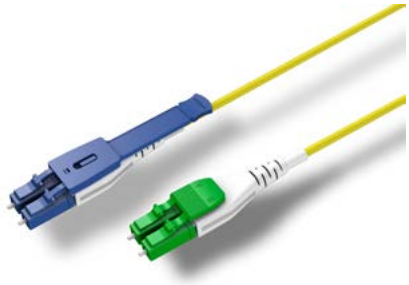
- 005 = 500 mm
- 0015 = 1,5 m
- 0150 = 15 m
- 1500 = 150 m

Other versions on request.

# Jumper, Single-mode Uni-boot Duplex

## Features & Benefits

- Compact 2mm round cable
- Bend-insensitive/bend optimized fibres
- Color-coded shroud to denote performance
- Pulling tab for easy access to connectors in high density environments
- Fast polarity reversal with unique rotating latch (push-pull or standard)
- Ultra-low loss
- Low-profile housing design
- Polarity A-B (Standard), A-A



## Overview

PPC's LC Uni-boot patch cords are designed to reduce the cable congestion at the front of high-density patch panels and switches and reduce the time it takes to make routine MAC's (Moves, Adds and Changes). With a diameter of only 2mm, the single cord construction reduces cable consumption by as much as 50% compared to conventional figure '8' duplex cables.

A convenient pulling tab (option) at the rear of the connector provides unparalleled access to connectors, and allows users to disconnect assemblies even in applications where LC ports are stacked adjacent to one another. Polarity reversal is fast and simple with the PPC's uni-boot assemblies, thanks to a removable tab which can be fitted to the opposite side of the connector when rotated 180°.

## Standards

| Optical Fibre | Cable Jacket ratings |
|---|---|
| ITU-T G.652D, G.655, G.657A1/A2, G657B2/B3, G655 | Low Smoke Zero Halogen (LSZH)<br>per: IEC 60754-1, IEC 60754-2, IEC 61034-2<br>Flame Rating as per: IEC 60332-1-2, UL 1666 (Riser), NFPA 262 (Plenum) |

| Connector Design acc. | Connector Tested acc. |
|---|---|
| IEC 61754, TIA 604 | IEC 61753, IEC 61300, TIA-455 |

## Technical Data

| Durability |
|---|
| Min. 500 cycles |

## Optical Data

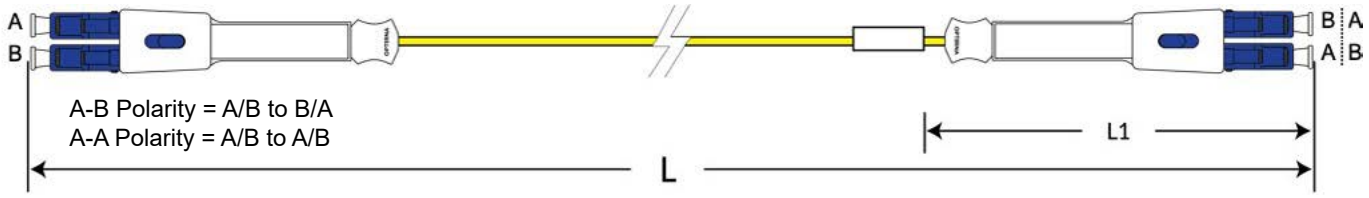
| Fibre Connectors | Insertion Loss | Return Loss | Wavelength |
|---|---|---|---|
| | *dB* | *dB* | *nm* |
| LC | ≤0.25 | ≥50 UPC, ≥60 APC | 1310/1550 |

# Jumper, Single-mode Uni-boot Duplex

## Environmental Data

| Operating temperature | 2015/863 RoHS | Free of Halogen |
|---|---|---|
| °C | | |
| -20 to +70 | Fully compliant | Yes |

## Technical Drawing




| Length of assembly (L) | Traceability label distance (L2) |
|---|---|
| L -0/+50mm (for L<0.5m)<br>L -0/+100mm (for 0.5m>L<5m)<br>L -0/+200mm (for L>5m) | 200 ± 25mm (from one end) |

## Ordering Information

Example

| JA | S | 2 7 | 2 7 | 3 5 | 40 | 2 | 1- | 0 0 1 5 |
|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | | 5 | | 6 |

**1 Sheath / Polarity**

- S = Standard, LSZH, Polarity A-B
- N = Non-Standard, LSZH, Polarity A-A
- A = Plenum, Polarity A-B
- B = Plenum, Polarity A-A
- C = Riser, Polarity A-B
- D = Riser, Polarity A-A
- E = PVC Polarity A-B
- F = PVC Polarity A-A

**2 Connector Type End A**

- 27 = LC UPC Uni-Boot Pull-Tab
- 28 = LC APC 8° Uni-Boot Pull-Tab

**3 Connector Type End B**

- nn = Please refer to End A connector code

**4 Fibre Type**

- 35 = G652/G652D
- 36 = G657A1
- 37 = G657A2
- 38 = G657B2
- 39 = G657B3
- 40 = G655

**5 Performance**

- 1 = Grade A (≤0.15dB)
- 2 = Grade B (≤0.25dB)
- 3 = Grade C (≤0.50dB)

**6 Length**

- 005 = 500 mm
- 0015 = 1,5 m
- 0150 = 15 m
- 1500 = 150 m

Other versions on request.

# Jumper, Single-mode Simplex, LSZH

## Features & Benefits

- Available with all fibre optic connector types
- High quality housings and ceramic ferrules
- Low Smoke Zero Halogen (LSZH)
- Low insertion loss and high return loss
- Individual test results and traceability number
- Mating Durability: 1000 cycles; <0.2 dB change
- IEC, EIA/TIA compliant
- Customized on request

## Overview

PPC offers high performance Low Smoke Zero Halogen (LSZH) fibre optic simplex jumpers for use in single-fibre in-building applications. The simplex jumpers are manufactured using state-of-the-art controlled manufacturing processes to operate over the full range of singlemode wavelengths.

The jumpers are terminated with high quality connectors, which provide low insertion loss and high return loss. Each patchcord is individually tested and supplied with test certificates. The unique serial number provides traceability of every single product. Available in all types of singlemode fibre types.

## Standards

| Optical Fibre | Cable Jacket |
|---|---|
| ITU-T G.652D, G.655, G.657A1/A2, G657B2/B3, G655 | Low Smoke Zero Halogen (LSZH) |

| Connector Design acc. | Connector Tested acc. |
|---|---|
| IEC 61754, TIA 604 | IEC 61753, IEC 61300, TIA-455 |

## Technical Data

| Durability | Fibre Connectors |
|---|---|
| Min. 1000 cycles | LC, SC, LSH, FC, MU, ST |

| Insertion Loss | Return Loss |
|---|---|
| *dB* | *dB* |
| ≤0.25 | ≥50 UPC, ≥60 APC |

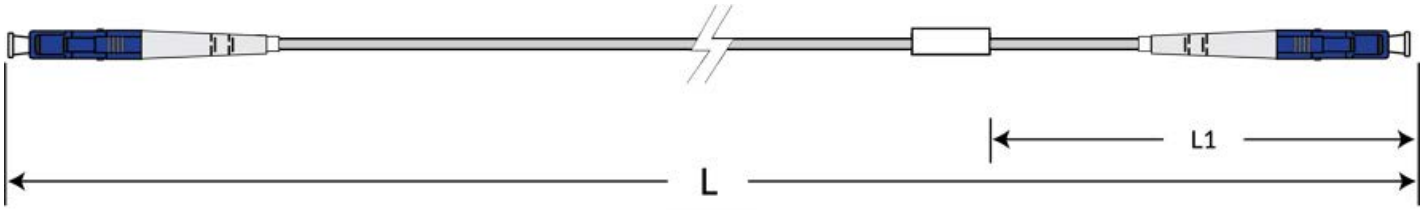
| Wavelength |
|---|
| *nm* |
| 1310/1550 |

# Jumper, Single-mode Simplex, LSZH

## Environmental Data

| Operating temperature | 2015/863 RoHS | Free of Halogen |
|---|---|---|
| °C | | |
| -20 to +70 | Fully compliant | Yes |

## Technical Drawing




| Length of assembly (L) | Traceability label distance (L1) |
|---|---|
| L -0/+50mm (for L<0.5m)<br>L -0/+100mm (for 0.5m>L<5m)<br>L -0/+200mm (for L>5m) | 200 ± 25mm (from one end) |

## Ordering Information

Example

| JA1 | 1 1 | 1 1 | 3 5 | 1 2 | 2 | 1- | 0 0 1 5 |
|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | | 6 |

**1 Connector Type End A**

- 11 = LC UPC
- 12 = LC APC 8°
- 31 = SC UPC
- 32 = SC APC 8°

**2 Connector Type End B**

- nn = Please refer to End A connector code

**3 Fibre Type**

- 35 = G652/G652D
- 36 = G657A1
- 37 = G657A2

**4 Cable Type and Diameter**

- 10 = 1.2mm
- 11 = 1.4mm
- 12 = 1.6mm
- 13 = 1.8mm
- 14 = 2.0mm
- 15 = 2.2mm
- 16 = 2.4mm
- 17 = 2.6mm
- 18 = 2.8mm
- 19 = 3.0mm

**5 Performance**

- 1 = Grade A (≤0.15dB)
- 2 = Grade B (≤0.25dB)
- 3 = Grade C (≤0.50dB)

**6 Length**

- 005 = 500 mm
- 0015 = 1,5 m
- 0150 = 15 m

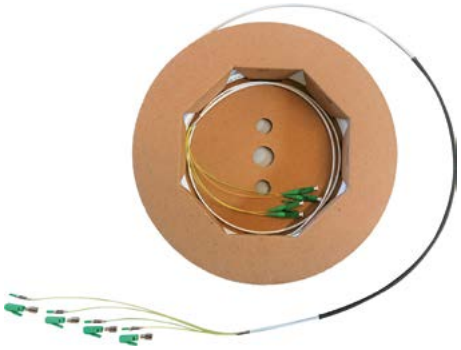
Other versions on request.

# INSTALLATION CABLE

# FTTH LC Cable Assemblies up to 4 fibres

## Features & Benefits

- Fast and simple last-drop FTTX deployments
- Push, pull or blow connector through micro-ducts
- Low skill-set required to install the product
- Uses stiffened cable for increased strength and rigidity
- High-performance ceramic ferrule and housing
- Available with up to 4 x connectors per cable
- Easy connector housing assembly with visible locking identification
- Low-loss optical performance



## Overview

The FTTH Cable Assembly has been specifically designed to simplify and speed up the installation of fibre optic cables within SDU (Single Dwelling Units) and MDU's (Multi-Dwelling Units). By using this solution, operators can lower the required skill-set of their field technicians and reduce the amount of time it takes to connect a subscriber to the network.

The innovative aspect of this solution is that the outer-housing of the connector can be assembled to the ceramic ferrule after the connector has been blown, pushed or pulled through the micro-duct. This allows the connector to occupy less space inside the duct and subsequently improves the complete installation process. The traditional installation process requires a connectorized pigtail to be fusion-spliced to a cable with special fusion splicing machines. This costly and timely because FTTx operators generally only have a small percentage of their workforce with sufficient skills or tooling to do this.

Up to four connectors can be terminated on a single cable, allowing FTTx operators to provide spare fibres for other operator or for SMART applications in the future.

## Applications

The blow-in connector system has been developed to avoid splicing work on cables with a small number of fibres. This will be the case in building networks, whether FTTH networks or LAN. Depending on the existing infrastructure, the LC blow-in cable system can also be pulled in or pushed in. The LC blow-in cable system increases the effectiveness of the installation in buildings.

## Technical Data

**Cable structure**

| Fibre Standard, Fibretyp | Fibre core diameter | Attenuation range | | Cable diameter |
|---|---|---|---|---|
| | | @1310 nm | @1550 nm | |
| | *µm* | *db/km* | | *mm* |
| IEC 60793-2-10, G.657.A2 | 9/125/250 | ≤ 0,35 | ≤ 0,25 | 2,0 x 2,4 |

| Temperature range during installation | Sheath color | Sheath material (inside/outside) | Fire protection class |
|---|---|---|---|
| °C | | | |
| -20 ~ +60 | white | LSOH | $B2_{ca}$-S1,d0,a1 |

# FTTH LC Cable Assemblies up to 4 fibres

| Number of fibres | Bending radius | | Permissible tensile force | | Permissible pressure load | |
|---|---|---|---|---|---|---|
| | Operation | Max. | Operation | Installation | Longterm | Shortterm |
| | *mm* | | *N* | | *N/dm* | |
| 2 or 4 (other variants on request) | 10 | 40 | 100 | 250 | 1000 | 2000 |

**Blow-In-Connector**

| Connector type | Ferrule Drilling-Ø | Ferrule OD / Material | Mating cycles | Temperature range | |
|---|---|---|---|---|---|
| | | | | Operation | Storage |
| | *µm* | *mm* | | *°C* | |
| LC/APC, LC/UPC (IEC 61754-20, TIA604-10-A) | 125,5 | Ø 1,25 / Ceramics SM | 500 | -40 to +75 | -40 to +75 |

## Ordering Information

Example BABC- 0 4 (1) -BC A (2) - L C A (3 4) -2L- 0 5 0 (5) M (6)

**1 Number of connectors (per side)**

01 = 1 connector
...
04 = 4 connector

**2 Blow-In Connector end face type**

U = UPC
A = APC

**3 Variable connector**

00 = No connector/open end
SC = SC simplex connector
LC = LC simplex connector

**4 Variable connector end face type**

0 = No connector/open end
U = UPC
A = APC

**5 Total length**

001 = 1 m
...
999 = 999 m

**6 Version**

without = Blow-In Version
-P = Pull-in version with towing eye

Other versions on request.

# Indoor FTTH Cable E9/125µm G.657.A2

## Features & Benefits

- Compact oval cable with a diameter of 2.0 x 2.4 mm
- Halogen-free material and CPR rated according to $B2_{ca}$ s1 d0 a1
- Fast and easy access to fibres through aramid ripcord
- High tensile strength for pulling through micro-channels
- White sheath for discreet installation in living areas

## Overview

PPC Easy-Pull cable is designed specifically for deployment inside buildings to connect the BEP (Building Entry Point) with OTOs (Optical Termination Point) in the living area. With one central FRP (fibre reinforced plastic) strength member and surrounding aramid yarns, the easy-pull cable has a high tensile strength making it suitable for pulling through micro-ducts within the building.

The cable is constructed from zero halogen material with a CPR rating classification of $B2_{ca}$-S1,d0,a1. The aramid yarns within the cable can also be used as a rip-cord so as to provide fast access to the internal fibres in splicing applications.

## Standards

| Temperature | Tensile strength | Crush Resistance | Impact Resistance |
|---|---|---|---|
| IEC 60794-1-2 F1 | IEC 60794-1-2 E1 | IEC 60794-1-2 E3 | IEC 60794-1-2 E4 |

| Repetitive Bending | Torsion | Bending |
|---|---|---|
| IEC 60794-1-2 E6 | IEC 60794-1-2 E7 | IEC 60794-1-2 E11 |

| Halogen-free, non-corrosive gases | Flame Retardant | Minimum Smoke Emission |
|---|---|---|
| IEC 60754-1/-2, EN 50267-1-2/-2-2, VDE0482-267-2-1/-2-2 | IEC 60332-1-2, EN 60332-1-2, VDE0482-332-2-1 | IEC 61034-1/-2, EN 61034-1/-2 (EN 50268-1/-2) |

## Environmental Data

| Installation Temperature | Service Temperature | Storage Temperature |
|---|---|---|
| °C | °C | °C |
| -20 ~ +60 | -40 ~ +80 | -40 ~ +85 |

## Mechanical Data

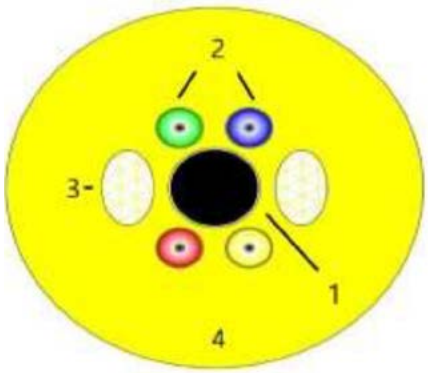
| Sheath Material (inside/outside) | CPR Rating | Sheath Colour | Colour Code |
|---|---|---|---|
| LSZH | $B2_{ca}$ s1 d0 a1 | white | Red - Green - Blue - Yellow |

# Indoor FTTH Cable E9/125µm G.657.A2

| Fibre Count | Cable Diameter | Weight |
|---|---|---|
| | *mm* | *kg/km* |
| 1, 2, 4 | 2,0x2,4 | 1, 2 = 4,5; 4 = 5,0 |

| Bend Radius | | Allowed tension | | Allowed crush | |
|---|---|---|---|---|---|
| In service | Max tensile load | In service | During installation | Long term | Short term |
| *mm* | | *N* | | *N/dm* | |
| 10 | 40 | 100 | 250 | 1000 | 2000 |

## Cable Structure




1. Central strength element (FRP)
2. Up to 4 fibres 250µm
3. Aramid yarn (rip cord)
4. LSZH jacket

## Ordering Information

| Description | Part Number |
|---|---|
| Indoor FTTH Cable 1E9/125µm G.657.A2 LSOH white (RAL 9010) | 862048001-WS |
| Indoor FTTH Cable 2E9/125µm G.657.A2 LSOH white (RAL 9010) | 862048002-WS |
| Indoor FTTH Cable 4E9/125µm G.657.A2 LSOH white (RAL 9010) | 862048004-WS |

# OSP PON CABINETS



# SiCab12 (576, 960, 1536 PON)

## Features & Benefits

- Capacity of up to 576, 960, 1536 PON connections
- Pre-configured with 1 x 1U Feeder ODF 96F LC-APC SM
- Pre-configured with 6, 10 or 16x 1U PON Distribution ODFs (96F LC-APC SM Splitter (6x2x1:8) / Panel Combo)
- Removable panels for in-vehicle splicing
- Modular construction for fast and simple installation
- Two separate fixing areas for ETSI/ 19”equipment (depth adjustable)
- Central mandrels for excess patch cord management (cross-connecting)
- Multiple cable entry options
- Double walled modular cabinet for improved protection and thermal control
- Active cooling concept, Temperature-controlled air exchanger using an external sensor
- Outer parts of cabinet can be removed without interruption of service
- Proven lifespan in the field of more than 25 years
- 100% recyclable polycarbonate material

## Overview

The SiCab outdoor cabinet is a double-walled, weather-proof protective cabinet for accommodation of electronic equipment. The Cabinet protects the installed components reliably against the effects of weather and mechanical stress. The housing of the modular cabinet consists of a metal inner shell and a plastic outer shell made of fibreglassreinforced polycarbonate. The heat is additionally dissipated from the cabinet by means of climate modules in the roof.

The SiCab12 cabinet is a ‘pre-configured’ and ‘installation-ready’ street cabinet with an initial capacity of between 576 and 1536 PON connections. Pivoting rear-mounted optical distribution frames with a density of 96 LC/APC connections per 1U provide the splice/patch interface for Feeder cables and Distribution cables. Four Miniflex 5,0/3,3mm tubes are pre-assembled per ODF for easy insertion of the loose tubes. The Miniflex tubes can be inserted into two different types of Miniflex holders.

**Type 1 (used for model 1 and 2):**
Two holders mounted on the left side of the cabinet

**Type 2 (used for model 3):**
One holder, mounted below the last panel

# SiCab12 (576, 960, 1536 PON)

## Technical Data

### Dimensions

| Cabinet dimensions (w) X (h) x (d) | Plinth dimensions (w) X (h) x (d) |
|---|---|
| *mm* | *mm* |
| 1400 x 1600 x 500 | 1400 x 740 x 500 |

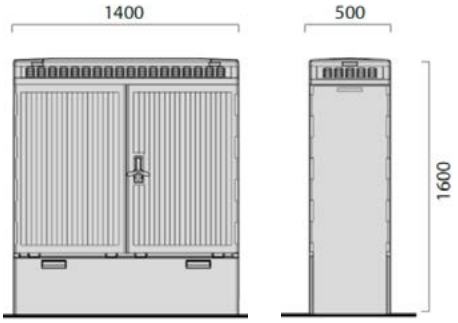

### Mechanical Data

| Material | Colour | Construction | Degree of protection |
|---|---|---|---|
| Polycarbonate PC-GF5, aluminium | RAL 7038, Agate grey | Double walled | IP 55 (DIN EN 60529, VDE 0470) |

| Low-voltage distribution | Resistance to impacts | Climatic conditions | Optical distribution frame type |
|---|---|---|---|
| DIN EN 61439-5 (VDE 0660-600-5) | IK10+ (IEC 62262, IEC 60068-2-75) | ETSI EN 300019-1-4 class 4.1E | Pivoting type (hinged on right side) |

| Optical distribution frame splice type | ODF density per 1U | Splitter type |
|---|---|---|
| Crimpslice protector (not included) | 96 LC/APC | |

## Technical Drawing




## Ordering Information

| Description | Part Number |
|---|---|
| SiCab12 (576 PON) Model 1: 1x ODF 96F LC-APC SM and 6x ODF Splitter / Panel Combo | 559001412-M1 |
| SiCab12 (960 PON) Model 2: 1x ODF 96F LC-APC SM und 10x ODF Splitter / Panel Combo | 559001412-M2 |
| SiCab12 (1536 PON) Model 3: 1x ODF 96F LC-APC SM and 16x ODF Splitter / Panel Combo | 559001412-M3 |

Other versions and configurations on request.

# SiCab15 (576, 960, 1536 PON)

## Features & Benefits

- Capacity of up to 576, 960, 1536 PON connections
- Pre-configured with 1 x 1U Feeder ODF 96F LC-APC SM
- Pre-configured with 6, 10 or 16x 1U PON Distribution ODFs (96F LC-APC SM Splitter (6x2x1:8) / Panel Combo)
- Removable panels for in-vehicle splicing
- Modular construction for fast and simple installation
- Two separate fixing areas for ETSI/ 19”equipment (depth adjustable)
- Central mandrels for excess patch cord management (cross-connecting)
- Multiple cable entry options
- Double walled modular cabinet for improved protection and thermal control
- Active cooling concept, Temperature-controlled air exchanger using an external sensor
- Outer parts of cabinet can be removed without interruption of service
- Proven lifespan in the field of more than 25 years
- 100% recyclable polycarbonate material

## Overview

The SiCab outdoor cabinet is a double-walled, weather-proof protective cabinet for accommodation of electronic equipment. The Cabinet protects the installed components reliably against the effects of weather and mechanical stress. The housing of the modular cabinet consists of a metal inner shell and a plastic outer shell made of fibre glass reinforced polycarbonate. The heat is additionally dissipated from the cabinet by the means of climate modules in the roof.

The SiCab15 cabinet is a ‘pre-configured’ and ‘installation-ready’ street cabinet with an initial capacity of 576 up to 1536 PON connections. Pivoting rear-mounted optical distribution frames with a density of 96 LC/APC connections per 1U provide the splice/ patch interface for Feeder cables and Distribution cables. Four Miniflex® 5,0/3,3mm tubes are pre-assembled per ODF for easy insertion of the loose tubes. The Miniflex® tubes can be inserted into two different types of Miniflex® holders.

**Type 1 (used for model 1 and 2):**
Two holders mounted on the left side of the cabinet

**Type 2 (used for model 3):**
One holder, mounted below the last panel

# SiCab15 (576, 960, 1536 PON)

## Technical Data

### Dimensions

| Cabinet dimensions (w) X (h) x (d) | Plinth dimensions (w) X (h) x (d) |
|---|---|
| *mm* | *mm* |
| 1700 x 1600 x 500 | 1700 x 740 x 500 |

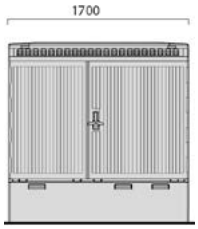

### Mechanical Data

| Material | Colour | Construction | Degree of protection |
|---|---|---|---|
| Polycarbonate PC-GF5, aluminium | RAL 7038, Agate grey | Double walled | IP 55 (DIN EN 60529, VDE 0470) |

| Low-voltage distribution | Resistance to impacts | Climatic conditions | Optical distribution frame type |
|---|---|---|---|
| DIN EN 61439-5 (VDE 0660-600-5) | IK10+ (IEC 62262, IEC 60068-2-75) | ETSI EN 300019-1-4 class 4.1E | Pivoting type (hinged on right side) |

| Optical distribution frame splice type | ODF density per 1U | Splitter type |
|---|---|---|
| Crimpslice protector (not included) | 96 LC/APC | 6x 2x 1:8 splitter per panel,Input SC PC, Output LC APC |

## Technical Drawing


## Ordering Information

| Description | Part Number |
|---|---|
| SiCab15 (576 PON) Model 1: 1x ODF 96F LC-APC SM and 6x ODF Splitter / Panel Combo | 559001412-M1 |
| SiCab15 (960 PON) Model 2: 1x ODF 96F LC-APC SM and 10x ODF Splitter / Panel Combo | 559001412-M2 |
| SiCab15 (1536 PON) Model 3: 1x ODF 96F LC-APC SM and 16x ODF Splitter / Panel Combo | 559001412-M3 |

Other versions and configurations on request.

# SiCab18 (576, 960, 1536 PON)

## Features & Benefits

- Capacity of up to 576, 960, 1536 PON connections
- Pre-configured with 1 x 1U Feeder ODF 96F LC-APC SM
- Pre-configured with 6, 10 or 16x 1U PON Distribution ODFs (96F LC-APC SM Splitter (6x2x1:8) / Panel Combo)
- Removable panels for in-vehicle splicing
- Modular construction for fast and simple installation
- Three separate fixing areas for ETSI/ 19”equipment (depth adjustable)
- Central mandrels for excess patch cord management (cross-connecting)
- Multiple cable entry options
- Double walled modular cabinet for improved protection and thermal control
- Active cooling concept, Temperature-controlled air exchanger using an external sensor
- Outer parts of cabinet can be removed without interruption of service
- Proven lifespan in the field of more than 25 years
- 100% recyclable polycarbonate material

## Overview

The SiCab outdoor cabinet is a double-walled, weather-proof protective cabinet for accommodation of electronic equipment. The Cabinet protects the installed components reliably against the effects of weather and mechanical stress. The housing of the modular cabinet consists of a metal inner shell and a plastic outer shell made of fibreglassreinforcedpolycarbonate. The heat is additionally dissipated from the cabinet by means of climate modules in the roof.

The SiCab18 cabinet is a ‘pre-configured’ and ‘installation-ready’ street cabinet with an initial capacity of 576 up to 1536 PON connections. Pivoting rear-mounted optical distribution frames with a density of 96 LC/APC connections per 1U provide the splice/ patch interface for Feeder cables and Distribution cables. Four Miniflex® 5,0/3,3mm tubes are pre-assembled per ODF for easy insertion of the loose tubes. The Miniflex® tubes can be inserted into two different types of Miniflex® holders.

**Type 1 (used for model 1 and 2):**
Two holders mounted on the left side of the cabinet

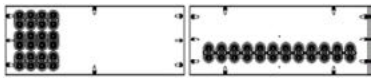
**Type 2 (used for model 3):**
One holder, mounted below the last panel

# SiCab18 (576, 960, 1536 PON)

## Technical Data

### Dimensions

| Cabinet dimensions (w) X (h) x (d) | Plinth dimensions (w) X (h) x (d) |
|---|---|
| *mm* | *mm* |
| 2000 x 1600 x 500 | 2000 x 740 x 500 |



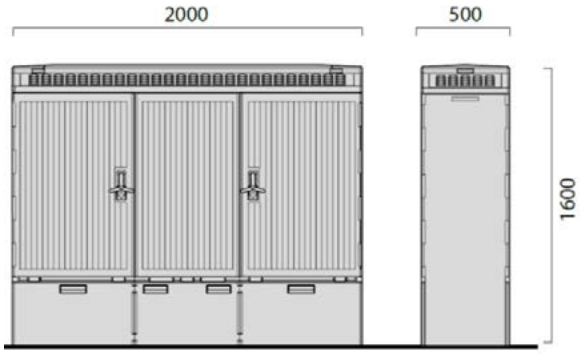

### Mechanical Data

| Material | Colour | Construction | Degree of protection |
|---|---|---|---|
| Polycarbonate PC-GF5, aluminium | RAL 7038, Agate grey | Double walled | IP 55 (DIN EN 60529, VDE 0470) |

| Low-voltage distribution | Resistance to impacts | Climatic conditions | Optical distribution frame type |
|---|---|---|---|
| DIN EN 61439-5 (VDE 0660-600-5) | IK10+ (IEC 62262, IEC 60068-2-75) | ETSI EN 300019-1-4 class 4.1E | Pivoting type (hinged on right side) |

| Optical distribution frame splice type | ODF density per 1U | Splitter type |
|---|---|---|
| Crimpslice protector (not included) | 96 LC/APC | 6x 2x 1:8 splitter per panel,Input SC PC, Output LC APC |

## Technical Drawing




## Ordering Information

| Description | Part Number |
|---|---|
| SiCab18 (576 PON) Model 1: 1x ODF 96F LC-APC SM and 6x ODF Splitter / Panel Combo | 559001418-M1 |
| SiCab18 (960 PON) Model 2: 1x ODF 96F LC-APC SM and 10x ODF Splitter / Panel Combo | 559001418-M2 |
| SiCab18 (1536 PON) Model 3: 1x ODF 96F LC-APC SM and 16x ODF Splitter / Panel Combo | 59001418-M3 |

Other versions and configurations on request.

# SC9 (steel/aluminium)

## Features & Benefits

- Capacity of up to 16 height units (16U)
- Slots for PPC USC splitter cassettes included
- Cable entry via 12 PG cable glands (other variants configurable)
- Preconfigured rails for mounting up to 25 ducts Ø14mm (other variants configurable)
- Innovative chamber for cable storage
- Modular construction fast and simple installation
- RC2 compliant steel/aluminium cabinet
- Dual wall aluminum, Robust design
- Excellent passive heat conductivity
- Powder coating RAL 7035, RAL 7016, RAL 6009
- Optional electronic locking system

## Overview

The PPC SC9 is an outdoor cabinet system that provides maximum protection of customer's equipment against vandalism and extreme weather conditions.
This cabinet is the ideal solution for installations hosting active and passive telecom equipment.

The PPC SC9 cabinet is designed to be as compact as possible so that the aesthetic impact on the 'streetscene' is kept to a minimum. The cabinet is only 900mm wide and the powder coating in grey RAL 7035 (alternatively RAL 7006 or RAL 6009) blends sympahetically with the environment.

## Technical Data

### Dimensions

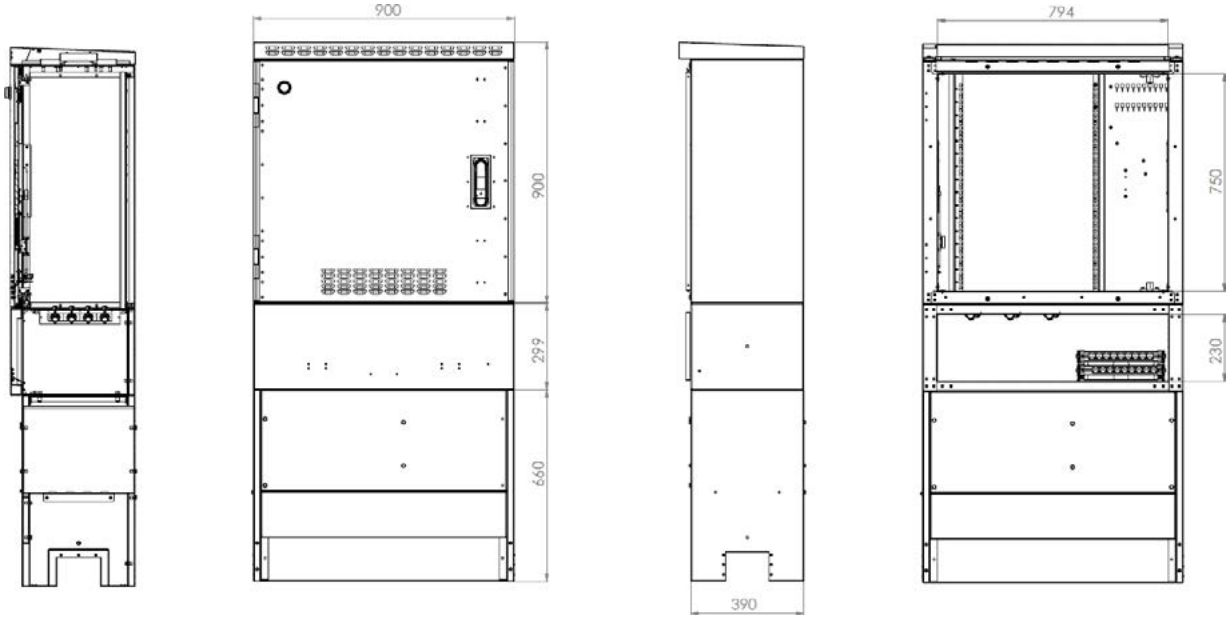
| Upper housing dimensions (w) x (h) x (d) | Plinth dimensions (w) x (h) x (d) | Base dimensions (w) x (h) x (d) |
|---|---|---|
| *mm* | *mm* | *mm* |
| 900 x 900 x 430 | 900 x 299 x 430 | 900 x 660 x 390 |

### Mechanical data cont.

| Material | | | Weight (empty) | Colour options |
|---|---|---|---|---|
| upper housing | pedestal | lower base | | |
| | | | *kg* | *(Unit)* |
| Aluminum alloy sheet, EN AW-5754 H22 | MAGNELIS steel sheet, S320GD+ZM310-A-CE | MAGNELIS steel sheet, S320GD+ZM310-A-CE | 83<br>upper housing: 35<br>pedestal: 28<br>lower base: 20 | Grey RAL 7035, Anthracite Grey RAL 7016 semi-gloss granulated or Fir Green RAL 6009 |

# SC9 (steel/aluminium)

## Technical Drawing




## Ordering Information

| Description | Part Number |
|---|---|
| Street Cabinet SC9 (steel/aluminium), RAL 7035 (Grey) | SBKB000DA |
| Street Cabinet SC9 (steel/aluminium), RAL 7016 (Antracite Grey) | SBKB000DAR7016 |
| Street Cabinet SC9 (steel/aluminium), RAL 6009 (Fir Green) | SBKB000DAR6009 |

Other versions and configurations on request.

# MODULAR SPLITTER SYSTEM

# Pivoting Splitter Chassis 1U 96 PON (rear-mounted)

## Features & Benefits

- 1U, 19” standard panel (IEC 60297-3), RAL7035
- Capacity of 96 PON connections
- 96 x LC ports per 1U
- Pivoting design for fast and safe access to connectivity
- Pivot side: Right handed
- Angled adapters for laser safety and improved cable routing
- Hinged splice cassettes for clear separation of fibre bundles
- Horizontal patch cord support and rotating cord guide
- Rail fixing option: Rear
- Integrated parking position for up to 4 x SC/8 x LC ports
- Loaded with 6x 2x 1:8 splitter:
  Input SC PC, length 2,5m
  Output LC APC, cascaded, pulling tab
- One preassembled 13mm fibre transition conduit for fast and easy installation. Length approx. 90cm from the left panel edge
- Bend-insensitive fibre G.657 A2
- Color code: DIN IEC 60304
- For crimp splice protectors

## Overview

The PPC Pivoting Splitter Chassis is a rear-mounted, high density fibre management system that allows up to 96 x LC splitter connections to be distributed in a single 1U of rack space. The pre-terminated PLC splitters are fixed directly to the side of the chassis where they are patched to angled LC adapters. This close-proximity of the splitter to the panel reduces the need to have splitter tails managed elsewhere in the cabinet and creates an extremely practical and tidy installation.

The PPC Pivoting Splitter Chassis is ‘pre-configured’ and ‘installation-ready’ with an initial capacity of 96 PON connections and one 13mm conduit is preassembled at the rear of the chassis for easy insertion of the loose tubes. The pivoting design of the chassis means that the splicing tray and splitter connectors are easily accessible.

## Technical Data

**Optical Data 1:8 splitter**

| Operating wavelength | Return loss | Directivity | Maximum input power | Fibre type | Insertion Loss |
|---|---|---|---|---|---|
| *nm* | *dB* | *dB* | *mW* | | *dB* |
| 1260 ~ 1650 | ≥50 | ≥55 | 500 | G.657.A2 | 10,5 |

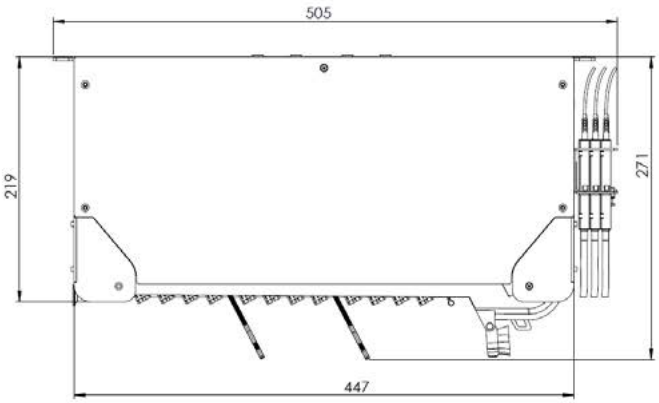
| Uniformity | PDL | Wavelength Dependent Loss | Temperature Loss | Connector Loss |
|---|---|---|---|---|
| *dB* | *dB* | *dB* | *dB* | *dB* |
| 0,8 | 0,3 | 0,8 | 0,5 | 0,3 |

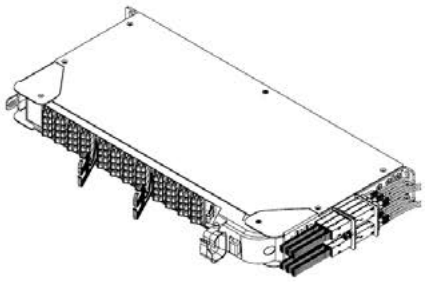
# Pivoting Splitter Chassis 1U 96 PON (rear-mounted)

## Environmental Data

| Operating temperature | 2011/65/EC RoHS | Environmental protection |
|---|---|---|
| °C | | |
| -10 to +60 | Fully compliant | IP20, indoor use only |

## Technical Drawing




## Ordering Information

| Beschreibung | Artikelnummer |
|---|---|
| Pivoting Splitter Chassis 1U 96 PON | MPS0112114833961-2 |

# USC Splitter Housing Chassis, 2U

## Features & Benefits

- Compact design for 3 USC splitter modules
- 2U, 19” standard panel (IEC 60297-3)
  (Panel 1U, front cable manager 1U)
- Color: grey RAL7035
- Multiple rail fixing options (rear and front)
- Fast and easy front access to all splitter leads
- Solid steel construction from powder coated CRCA
- Ultra-High Density
- Capacity of up to 288 PON connections
  with 3 modules with a maximum of each 6 pieces 2:16 splitters
  (other combinations possible)

## Overview

The PPC Splitter Housing Chassis is a front- and rear mounted, high density fibre management system that allows up to 288 PON connections connections to be distributed in a single 2U of rack space. The pre-terminated USC splitter modules can easily be inserted and fixed from the front with a snap mechanism (no tools required). This creates an extremely practical and tidy installation with fast and easy front access to all splitter leads.

The PPC Splitter Housing Chassis can be loaded with ‘pre-configured’ and ‘installation-ready’ USC splitter modules with a capacity of up to 288 PON connections. The modules are freely configurable with different splitter/connector combinations and tail lengths.

The PPC Planar Lightwave Circuit (PLC) Splitters are manufactured using silica glass waveguide circuits and extremely precise alignment of optic fibres in very small package. They split or combine light from incoming fibres to multiple numbers of outgoing fibres. They perform uniformly over a wide spectral range, with ultra-low losses.

## Technical Data

Examples (freely configurable with different splitter/connector combinations and tail lengths)

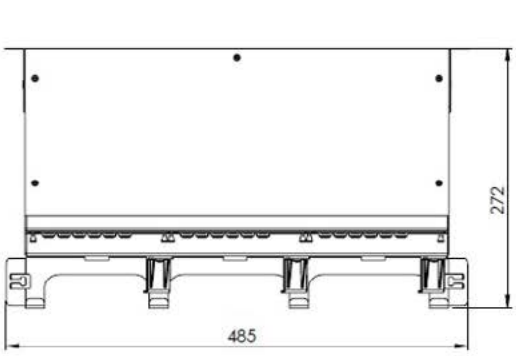
| Fibre capacity | USC splitter module type |
|---|---|
| 72 PON connections | 3 modules with a maximum of each 6 pieces 1:4 splitters |
| 36 PON connections | 3 modules with a maximum of each 6 pieces 1:2 splitters |
| 144 PON connections | 3 modules with a maximum of each 6 pieces 1:8 splitters |
| 288 PON connections | 3 modules with a maximum of each 6 pieces 2:16 splitters |

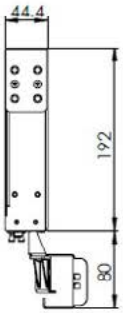
## Environmental Data

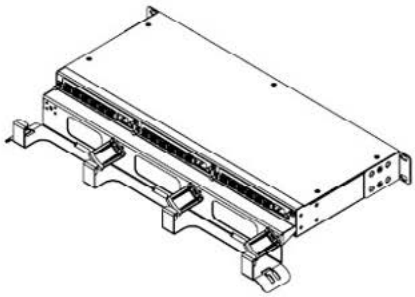
| Operating temperature | 2015/863 RoHS | Environmental protection |
|---|---|---|
| °C | | |
| -10 to +60 | Fully compliant | IP20, indoor use only |

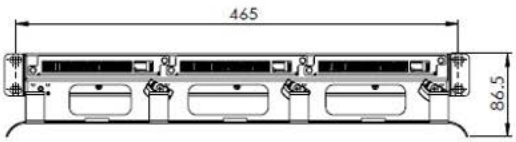
# USC Splitter Housing Chassis, 2U

## Technical Drawing






## Ordering Information

| Description | Part Number |
|---|---|
| Mini Splitter Housing Chassis, 2U | MSHC11303GY1 |

# USC Splitter Module

## Features & Benefits

- Designed for the PPC Optiscale Splitter Housing Chassis
- Low insertion loss
- Ultra-broadband performance (1260-1650nm)
- Low Polarization DependantLoss (PDL) and Polarization Mode Dispersion (PMD)
- 1 or 2 input channels and up to 16 output channels
- Available with all type of connectors
- Compact design
- Fast and easy front access to all splitter leads
- Solid steel module construction from powder coated CRCA
- Ultra-High Density
- Capacity of up to 96 PON connections with one 2:16 splitter (other combinations possible)
- Two splitters per MSH (Mini Splitter Housing) possible, maximum 12 splitters and max. 96 output channels per module

## Overview

The ‘pre-configured’ and ‘installation-ready’ PPC USC Splitter Module can easily be inserted and fixed from the front with a snap mechanism (no tools required). This creates an extremely practical and tidy installation with fast and easy front access to all splitter leads and allows up to 96 PON connections. The modules are freely configurable with different splitter/connector combinations and tail lengths.

The PPC Planar Lightwave Circuit (PLC) Splitters are manufactured using silica glass waveguide circuits and extremely precise alignment of optic fibres in very small package. They split or combine light from incoming fibres to multiple numbers of outgoing fibres. They perform uniformly over a wide spectral range, with ultra-low losses.

## Technical Data

Examples (freely configurable with different splitter/connector combinations and tail lengths):

| Fibre capacity | USC splitter module type |
|---|---|
| 12 PON connections | maximum 6 pieces 1:2 splitters |
| 24 PON connections | maximum 6 pieces 1:4 or 12 pieces1:2 splitters |
| 48 PON connections | maximum 6 pieces 1:8 or 12 pieces1:4 splitters |
| 96 PON connections | maximum 6 pieces 2:16 or 12 pieces1:8 splitters |

## Mechnical Data

| Operatin wavelength | Return loss | Directivity |
|---|---|---|
| *nm* | *dB* | *dB* |
| 1260 ~ 1650 | ≥50 | ≥55 |

| Operating / storage temp | Maximum input power | Fibre type |
|---|---|---|
| *°C* | *mW* | *dB* |
| -40 ~ + 85 | 500 | SM G.652.D, G.657.A1, G.657.A2 |

# USC Splitter Module

| Insertion Loss | Uniformity | PDL |
|---|---|---|
| *dB* | *dB* | *dB* |
| 1x2: 3,8; 1x4: 7,2; 1x8: 10,5; 1x16: 13,6 | 1x2: 0,6; 1x4: 0,8; 1x8: 0,8; 1x16: 1 | 1x2: 0,2; 1x4: 0,2; 1x8: 0,3; 1x16: 0,3 |

| Wavelength Dependent Loss | Temperature Loss | Connector Loss |
|---|---|---|
| *dB* | *dB* | *dB* |
| 1x2: 0,6; 1x4: 0,8; 1x8: 0,8; 1x16: 1 | 1x2: 0,5; 1x4: 0,5; 1x8: 0,5; 1x16: 0,5 | 1x2: 0,3; 1x4: 0,3; 1x8: 0,3; 1x16: 0,3 |

## Environmental Data

| Operating temperature | 2011/65/EC RoHS | Environmental protection |
|---|---|---|
| °C | | |
| -10 to +60 | Fully compliant | IP20, indoor use only |

## Ordering Information

Example

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| UP | 6 | 2 | C | S | U | 0 | L | A | 2 | 3 | 0 | 3 | 0 | 1 | G | Y |
| | 1 | 2 | | 3 | 4 | 5 | 6 | 7 | 8 | 9 | | 10 | | 11 | 12 | |

**1 Quantity Mini-Splitters**

0 = none
1 = 1
6 = 6 (Standard)

**2 Mini-Splitter Configuration**

00 = None
1A = 1x1:2 Splitter
1B = 1x1:4 Splitter
1C = 1x1:8 Splitter
1D = 1x1:16 Splitter
2A = 2x1:2 Splitter
2B = 2x1:4 Splitter
2C = 2x1:8 Splitter
1G = 1x2:2 Splitter
1H = 1x2:4 Splitter
1I = 1x2:8 Splitter
1J = 1x2:16 Splitter
2G = 2x2:2 Splitter
2H = 2x2:4 Splitter
2I = 2x2:8 Splitter

**3 Input Connector type**

0 = None
S = SC
L = LC
E = E2000

**4 Input Connector end face**

0 = None
U = UPC
A = APC

**5 Input Connector Tab**

0 = Standard no Tab
2 = Push-Pull Tab Fitted

**6 Output Connector type**

nn = Please refer to 3.)

**7 Output Connector end face**

nn = Please refer to 4.)

**8 Output Connector Tab**

nn = Please refer to 5.)

**9 Input fibre length**

00 = none
...
50 = 5.0m

**10 Output fibre length**

nn = Please refer to 9.)

**11 Fibre type**

0 = none
1 = G.657.A1
2 = G.657.A2

**12 Plate colour**

BK = Black
GY = Grey RAL 7035

# PLC Splitter Chassis GEN2, 1U and 2U

## Features & Benefits

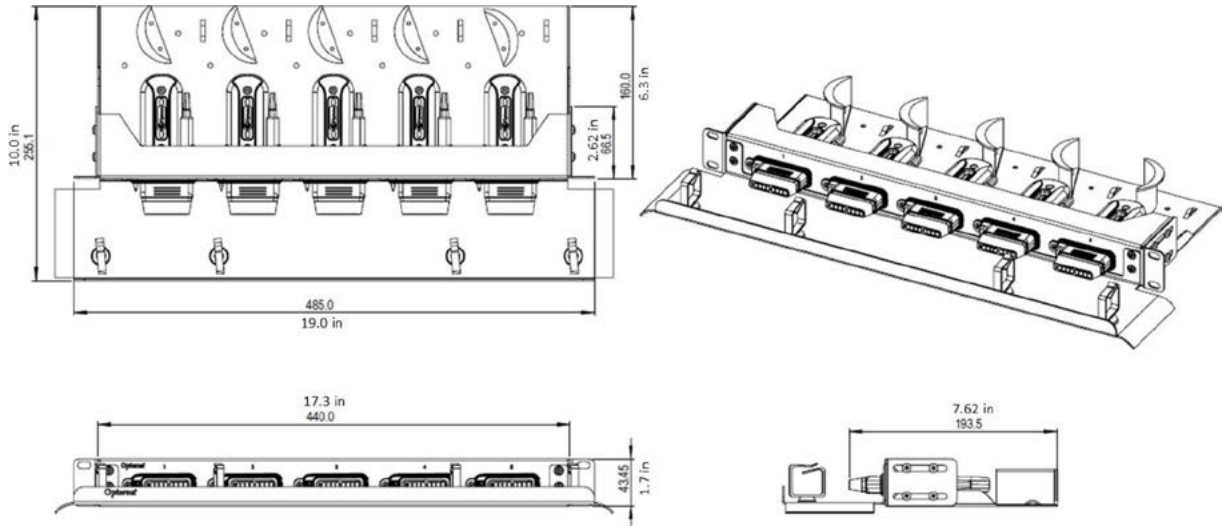
- Fast and easy front access to all splitter leads
- Compact design for GEN2 PLC splitter modules
  - o 1U chassis holds 5 each splitter modules
  - o 2U chassis holds 18 each splitter modules
- Integral fibre management trays on the front
- Solid steel construction from powder coated CRCA
- 2011/65/EU RoHS compliant and halogen free
- Parking Panel for spare splitter leads (sold separately)
- Fibre management accessories available

## Overview

The 19-inch Sliding fibre Optic Splitter Panel is designed for quick installation and easy access to the splitter ports, which maximize fibre density in 2U rack spaces. fibre management is integrated into the front of the splitter panel to facilitate efficient management of the fibre jumpers.

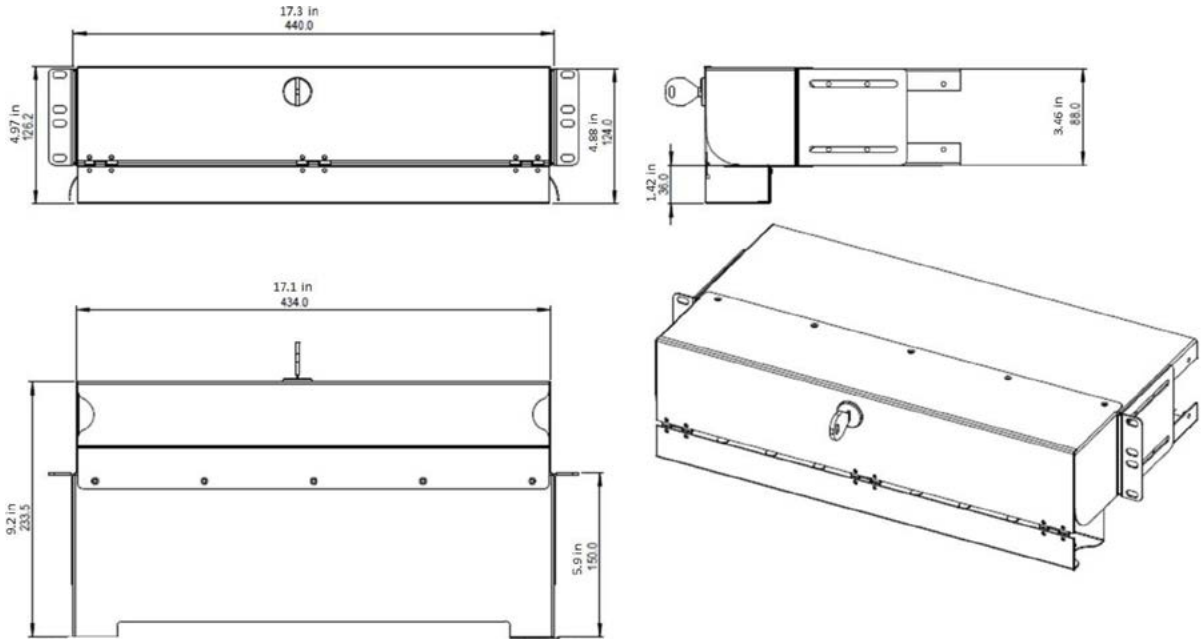
PPC's PLC splitters are based on Planar Lightwave Circuit technology with precision alignment. They split or combine light from one or two input fibres and multiple output fibres uniformly over a wide spectral range with ultra-low insertion loss and low polarization dependent loss. PPC's's splitters offer excellent optical performance and high reliability. They are fully compliant with Telcordia GR-1209 and GR-1221 and are suitable for indoor or outdoor environments.

## Technical Drawing




Part Number: SPCH-1UFM-BK  Description: 1U 19-inch GEN2 PLC Splitter Chassis, Black

# PLC Splitter Chassis GEN2, 1U and 2U




Part Number: SPCH-2UFM-BK Description: 2U 19-inch GEN2 PLC Splitter Chassis, Black

## Ordering Information

| Description | Part Number |
|---|---|
| 1U 19-inch GEN2 PLC Splitter Chassis, black | SPCH-1UFM-BK |
| 2U 19-inch GEN2 PLC Splitter Chassis, black | SPCH-2UFM-BK |

Also available in White (-WH) and Siemens Gray (-SG)

### Accessories

| Description | Part Number |
|---|---|
| 1U Parking Panel (up to 64 splitter leads), black | PRP-1U-001-BK |
| 1U fibre Management Panel, D-Ring black | MOP-1187-BK-FG |
| 1U Patch Cord Management Drawer, black | CAB-PCD-1U-BK |

# PLC Splitter Module GEN2

## Features & Benefits

- Bi-directional performance with accurate split ratios
- Ultra-broadband range (1260 ~ 1650nm)
- Low insertion loss; excellent uniformity
- Low Polarization Dependent Loss (PDL)
- Low Polarization Mode Dispersion (PMD)
- Up to 8 input leads; up to 32 output leads
- Suitable for indoor or outdoor applications
- 2011/65/EU RoHS compliant and halogen free
- GR-326, GR-1209 and GR-1221 compliant

## Overview

PPC Planar Lightwave Circuit (PLC) Splitters are manufactured using silica glass waveguide circuits and extremely precise alignment of optic fibres in very small package. They split or combine light from incoming fibres to multiple numbers of outgoing fibres. They perform uniformly over a wide spectral range, with ultra-low losses.

The GEN2 PLC Splitter Modules are enclosed in a chemically resistant housing and are compliant with Telcordia GR-326, GR-1209 and GR-1221 standards. They easily snap into and finger release from splitter slots in Opterna Fibre Distribution Hubs or Splitter Chassis (no tools required).

## Mechnical Data

| Dimension (L x W x H) | Operating wavelength | Test wavelength |
|---|---|---|
| *mm* | *nm* | *nm* |
| 125 x 15 x 58 | 1260 ~ 1650 | 1310, 1490, 1550 and 1625 |

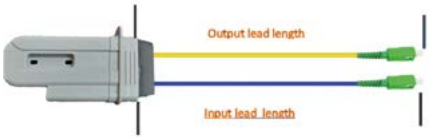
| Return loss: 1x32 | Channel Uniformity | Directivity |
|---|---|---|
| *dB* | *dB* | *dB* |
| 17,4 (SC/APC connector inclusive) | 1,6 | 55 |

| Return Loss | PDL | Insertion Loss: Connector |
|---|---|---|
| *dB* | *dB* | *dB* |
| 0,3 | 0,3 | 0,3 |

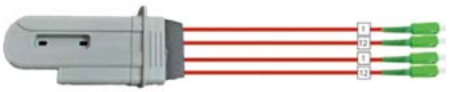
| Operating temperature | Storage temperature |
|---|---|
| *°C* | *°C* |
| -40 to 85 | -40 to 85 |

| Maximum input power | Fibre type |
|---|---|
| *mW* | |
| 500 | SM G.657.B3 |

# PLC Splitter Module GEN2



1x32 PLC Splittermodule


12 Channel Pass Through Modul

## Optical Daten

| Parameter | 1x2 | 1x4 | 1x8 | 1x16 | 1x32 | 2x2 | 2x4 | 2x8 | 2x16 | 2x32 |
|---|---|---|---|---|---|---|---|---|---|---|
| Insertion loss (dB) | 3,8 | 7,1 | 10,4 | 13,6 | 17,0 | 4,2 | 7,6 | 10,8 | 14,0 | 17,5 |
| Channel Uniformity (dB) | 0,6 | 0,6 | 0,8 | 1,2 | 1,6 | 1,0 | 1,0 | 1,0 | 1,5 | 1,8 |
| Polarization dependent loss (dB) | 0,2 | 0,2 | 0,2 | 0,3 | 0,3 | 0,3 | 0,3 | 0,3 | 0,3 | 0,3 |
| Wavelength dependent loss (dB) | 0,3 | 0,3 | 0,3 | 0,3 | 0,3 | 0,3 | 0,3 | 0,3 | 0,3 | 0,3 |
| Connector loss (dB) | 0,2 | 0,2 | 0,2 | 0,2 | 0,2 | 0,2 | 0,2 | 0,2 | 0,2 | 0,2 |
| Dimensions | 4.9 x 0.6 x 2.3 inches (125 x 15 x 58 mm) (L x W x H) | | | | | | | | | |

## Ordering Information

Example

| TSM | 4 | - | 1 0 8 | P- | L C A | - | S R | - | 1 - 0 |
|---|---|---|---|---|---|---|---|---|---|
| | 1 | | 2 | | 3 | | 4 | | 5 |

**1 Splitter count**

1 = 1 Splitter
2 = 2 Splitters
3 = 3 Splitters
4 = 4 Splitters

**2 Splitter type**

102 = 1x2 Splitter (1, 2, 3, or 4)
104 = 1x4 Splitter (1, 2, 3, or 4)
108 = 1x8 Splitter (1, 2, 3, or 4)
116 = 1x16 Splitter (1 or 2)
132 = 1x32 Splitter (nur 1)
202 = 2x2 Splitter (1, 2, 3, or 4)
204 = 2x4 Splitter (1, 2, 3, or 4)
208 = 2x8 Splitter (1, 2, 3, or 4)
216 = 2x16 Splitter (1 or 2)
232 = 2x32 Splitter (only 1)

**3 Connector type**

SCA = SC/APC
SCU = SC/UPC
LCA = LC/APC
LCU = LC/UPC

**4 Parking tray**

Blank = TurnOpt™ 1000 or 1100
SL = TurnOpt 2000 left hinge
SR = TurnOpt 2000 right hinge
NN = no parking trays

**5 Alternate lead length (optional)**

0-5 = 0,5 meter
1-0 = 1,0 meter
1-5 = 1,5 meter
2-0 = 2,0 meter

| Description | Part Number |
|---|---|
| 12 Channel Pass-Through Module SC-APC (left hinge) | PTM120-SCA-2R2R-SL |
| 12 Channel Pass-Through Module SC-APC (right hinge) | PTM120-SCA-2R2R-SR |

# UHD Skeleton Chassis (SKC), 1U

## Features & Benefits

- Efficient rack utilization (Up to 96 x ports per 1U)
- Fast installation of modules from front or rear
- Fast moves, adds and changes (lower OPEX)
- Wide range of modules available
- Option door assembly and rear cable manager
- Clear port identification and traceability
- Robust and secure steel construction
- Suitable for a wide range of applications

## Overview

The Skeleton chassis (SKC) is a modular, standards-based, fibre management system designed to increase port density, improve connector access, and efficiently utilize valuable rack space in FTTX environments. The SKC Chassis in its basic configuration will serve 48 LC ports per 1U (96 fibres) or 120 LC ports per 2U (240 fibres).

A wide variety of connectivity methods can be managed inside the chassis including pre-terminated MPO cabling, fusion splicing or PLC splitter modules making it the ideal choice for diverse FTTX environments.

The SKC Chassis solution facilitates front or rear installable modules (per 1U) that allows multiple fibre connections to be quickly and efficiently installed and maintained, while supporting regular moves, adds and changes. An optional front cable manager and door assembly can be added to the front of the chassis, and a cable manager can also be added at the rear for incoming trunk cable.

## Mechanical Data

| Dimensions Chassis (WxDxH) | Dimensions Rear Cable Manager (WxDxH) | Dimensions Cable Manager Door assembly (WxDxH) | Weight Chassis |
|---|---|---|---|
| *mm / inches* | *mm / inches* | *mm / inches* | *kg* |
| 483 x 110 x 1U/2U / 19.33 x 4.33 x 1U/2U (1U = 44.45/2U = 89) | 444 x 248 / 17,51 x 4,72 | 465 x 95 x 1HE/2HE / 17,51 x 4,72 x 1HE/2HE (1HE = 44,45/2HE = 89) | 1U = 1.5, 2U = 2.5 |

| Material | Color | Capacity | Density | Mounting type |
|---|---|---|---|---|
| Steel chassis (powder coated), plastic ABS | Black RAL 9005, Bengal Silver | 4 x modules per row (2 x rows per 1U) | 48 x MPO ports or 96 x LC ports | 465mm (19”) |

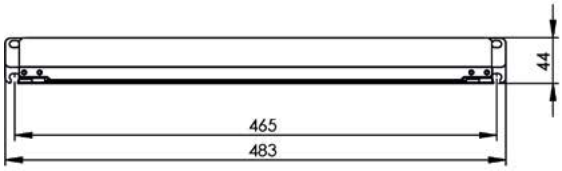
## Environmental Data

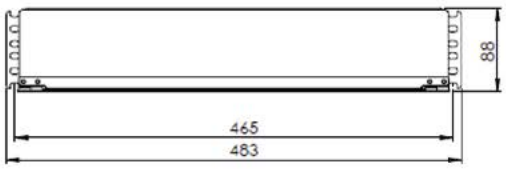
| Free of halogen | 2011/65/EC RoHS |
|---|---|
| Yes | Fully compliant |

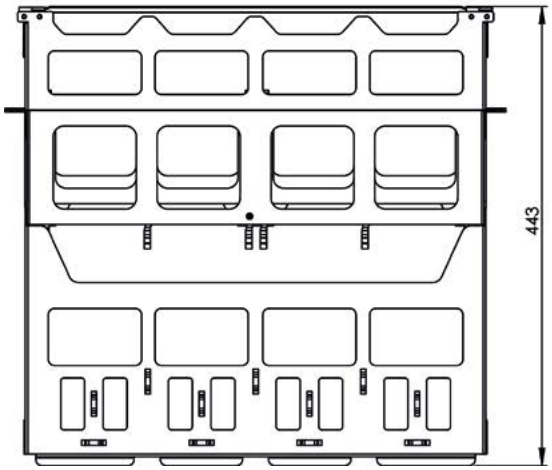
# UHD Skeleton Chassis (SKC), 1U

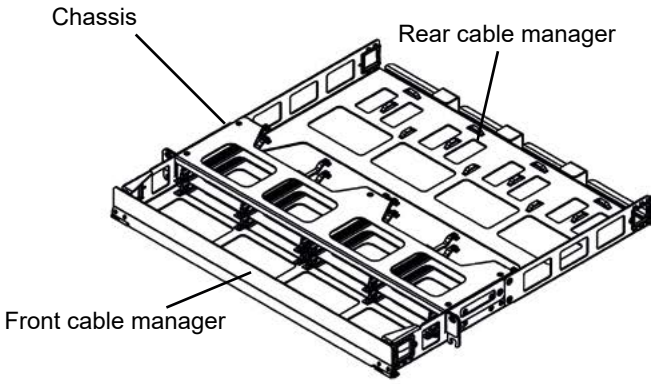
## Technical Drawing

**Including optional cable managers**




## Ordering Information

**1U SKC Skeleton Chassis Black (RAL9005)**

| Description | Part Number |
|---|---|
| 1U SKC Chassis, 4 modules per row, 8 modules total, black | SKC1U0408BK1 |
| 1U Front cable manager (including door) for skeleton chassis, black | SKC1UFDMBK1 |
| 1U Rear cable manager for skeleton chassis, black | SKC1URCMBK1 |
| Patch cord guide, 1U, Retro-fittable, black | CORD-GUIDE-1U-RF-BK-01 |

# UHD Splitter Cartridge Module

## Features & Benefits

- Bi-directional performance with accurate split ratios
- Ultra-broadband range (1260 ~ 1650nm)
- Low insertion loss; excellent uniformity
- Low Polarization Dependent Loss (PDL)
- Low Polarization Mode Dispersion (PMD)
- Ultra-High Density
- Compatible with all PPC UHD chassis
- 2011/65/EU RoHS compliant and halogen free
- GR-326, GR-1209 and GR-1221 compliant


## Overview

PPC Planar Lightwave Circuit (PLC) Splitters are manufactured using silica glass waveguide circuits and extremely precise alignment of optic fibres in very small package. They split or combine light from incoming fibres to multiple numbers of outgoing fibres. They perform uniformly over a wide spectral range, with ultra-low losses.

The Plug & Play UHD Splitter Modules offer Ultra-High density and splitter ratios between 1:2 to 2:32 and are fully compatible with all chassis and panels in the PPC UHD and SKS UHD product lines.

The pre-connectorised modules are an ideal solution for applications that demand high density and ultra low loss performance, eliminating the added cost and insertion loss from using patch cables and significantly decreasing the overall space requirements.

## Mechnical Data

| Operating wavelength | Return loss and Directivity |
|---|---|
| *nm* | *dB* |
| 1260 ~ 1650 | Min. 55 |

| Abmessung (B x T x H) | Operating temperature |
|---|---|
| *mm* | *°C* |
| 86 x 152 x 12,1 | -40 to 85 (-10 to +70 for LSZH) |

| Storage temperature | Maximum input power |
|---|---|
| *°C* | *mW* |
| -40 bis 85 | 500 |

| Fibre type | Connector type |
|---|---|
| SM G.657.A1 (other on request) | SC or LC (other on request) |

| Optical Data | 1x2 | 1x4 | 1x8 | 1x16 | 1x32 | 2x4 | 2x8 | 2x16 | 2x32 |
|---|---|---|---|---|---|---|---|---|---|
| Insertion loss (dB) | 3,8 | 7,0 | 10,4 | 13,6 | 17,0 | 7,6 | 10,8 | 14,0 | 17,5 |
| Channel Uniformity (dB) | 0,6 | 0,6 | 0,8 | 1,2 | 1,6 | 1,0 | 1,0 | 1,5 | 1,8 |
| PDL (dB) | 0,2 | 0,2 | 0,2 | 0,3 | 0,3 | 0,3 | 0,3 | 0,3 | 0,3 |
| WDL (dB) | 0,3 | 0,3 | 0,3 | 0,3 | 0,3 | 0,3 | 0,3 | 0,3 | 0,3 |
| Connector loss (dB) | 0,2 | 0,2 | 0,2 | 0,2 | 0,2 | 0,2 | 0,2 | 0,2 | 0,2 |

# UHD Splitter Cartridge Module

## Ordering Information

Example

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| PPLCMA | 8 | - | 2 | 1 | 6 | L | - | S | C | A | - | 1 | 6 | - | 1 | 5 |
| | 1 | | 2 | | | 3 | | 4 | | | | 5 | | | 6 | | | |

**1 Splitter count per module**

1 = 1 Splitter
2 = 2 Splitters
3 = 4 Splitters
8 = 8 Splitters

**2 Splitter type**

102 = 1x2 Splitter
104 = 1x4 Splitter
108 = 1x8 Splitter
116 = 1x16 Splitter
132 = 1x32 Splitter
202 = 2x2 Splitter
204 = 2x4 Splitter
208 = 2x8 Splitter
216 = 2x16 Splitter
232 = 2x32 Splitter

**3 Jacket material**

P = Plenum
L = LSZH

**4 Connector type**

SCA = SC/APC
SCU = SC/UPC
LCA = LC/APC
LCU = LC/UPC

**5 Lead diameter**

16 = 1,6 mm
20 = 2,0 mm

**6 Lead length**

10 = 1,0m standard
15 = 1,5m
20 = 2,0m

# PLC Splitter

## Features & Benefits

- Low insertion loss
- Ultra-broadband performance (1250-1650nm)
- Low Polarization Dependant Loss (PDL) and Polarization Mode Dispersion (PMD)
- 1 or 2 input channels and up to 64 output channels
- Ultra-small, suitable for all applications
- Available with all type of packages and connectors

## Overview

PPC's Planar Lightwave Circuits (PLC) splitters are manufactured using silica glass waveguide circuits and extremely precise alignment of optic fibres in a very small package. They split or combine light from one or two incoming fibres to multiple numbers of outgoing fibres. They perform uniformly over a wide spectral range, with ultra-low losses. PPC splitters are highly compact, reliable and available in very wide range of fibre and connector types. All PPC PLC splitters are fully compliant with the Telcordia GR-1209 & GR-1221 standard.

## Mechnical Data

| Operating wavelength | Return loss and Directivity |
|---|---|
| *nm* | *(Unit)* |
| 1250 ~ 1650 | ≥55 |

| Directivity | Operating / storage temp |
|---|---|
| *dB* | *°C* |
| ≥55 | -40 to 85 |

| Maximum input power | Fibre type |
|---|---|
| *mW* | |
| 500 | SM G.652.D, G.657.A1, G.657.A2 |

| Optical Data | 1x2 | 1x4 | 1x8 | 1x16 | 1x32 | 1x64 | 2x2 | 2x4 | 2x8 | 2x16 | 2x32 | 2x64 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Insertion loss (dB) | 3,8 | 7,0 | 10,4 | 13,6 | 17,0 | 20,4 | 4,2 | 7,6 | 10,8 | 14,0 | 17,5 | 21,0 |
| Channel Uniformity (dB) | 0,6 | 0,6 | 0,8 | 1,2 | 1,6 | 2,0 | 0,8 | 1,0 | 1,0 | 1,5 | 1,8 | 3,0 |
| Polarization dep loss (dB) | 0,2 | 0,2 | 0,2 | 0,3 | 0,3 | 0,3 | 0,2 | 0,3 | 0,3 | 0,3 | 0,3 | 0,4 |
| Wavelength dep loss (dB) | 0,3 | 0,3 | 0,3 | 0,3 | 0,3 | 0,3 | 0,3 | 0,3 | 0,3 | 0,3 | 0,3 | 0,3 |
| Temperature loss (dB) | 0,5 | 0,5 | 0,5 | 0,5 | 0,5 | 0,5 | 0,5 | 0,5 | 0,5 | 0,5 | 0,5 | 0,5 |
| Connector loss (dB) | 0,2 | 0,2 | 0,2 | 0,2 | 0,2 | 0,2 | 0,2 | 0,2 | 0,2 | 0,2 | 0,2 | 0,2 |

# PLC Splitter

| Dimensions (H x W x L) | Basic type | Integrated type | Box type |
|---|---|---|---|
| | *mm* | *mm* | *mm* |
| 1:2 | 4 x 4 x 40 | 4 x 7 x 55 | 10 x 80 x 100 |
| 1:4 | 4 x 4 x 40 | 4 x 7 x 55 | 10 x 80 x 100 |
| 1:8 | 4 x 4 x 40 | 4 x 7 x 55 | 10 x 80 x 100 |
| 1:16 | 4 x 4 x 40 | 4 x 12 x 60 | 10 x 80 x 100 |
| 1:32 | 4 x 7 x 55 | 6 x 20 x 80 | 10 x 80 x 100 |
| 1:64 | 4 x 12 x 60 | 5 x 43 x 120 | 17 x 114 x 140 |
| 2:2 | 4 x 4 x 50 | 4 x 7 x 68 | 10 x 80 x 100 |
| 2:4 | 4 x 4 x 50 | 4 x 7 x 68 | 10 x 80 x 100 |
| 2:8 | 4 x 4 x 50 | 4 x 7 x 68 | 10 x 80 x 100 |
| 2:16 | 4 x 7 x 55 | 4 x 12 x 70 | 10 x 80 x 100 |
| 2:32 | 4 x 7 x 55 | 6 x 20 x 80 | 10 x 80 x 100 |
| 2:64 | 4 x 12 x 70 | 5 x 43 x 120 | 17 x 114 x 140 |

## Ordering Information

| Example | PL | 1 | 0 | 2 | 1 | 3 | 1 | 3 | 2 | 9 | 9 | 1 | 0 | 1 | 5 | 3 | 6 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 1 | | | 2 | 3 | | 4 | | 5 | 6 | 7 | | 8 | | 9 | |

**1 PLC Typ**
- 102 = 1x2
- 104 = 1x4
- 108 = 1x8
- 116 = 1x16
- 132 = 1x32
- 164 = 1x64
- 202 = 2x2
- 204 = 2x4
- 208 = 2x8
- 216 = 2x16
- 232 = 2x32
- 264 = 2x64

**2 Package type**
- 1 = Integrated
- 2 = Plastic case
- 3 = Bare fiber type
- X = Custom type

**3 I/P connector**
- 31 = SC/UPC
- 32 = SC/APC
- 11 = LC/UPC
- 12 = LC/APC
- 51 = FC/APC
- 52 = FC/APC
- 00 = No conn

**4 O/P connector**
- 31 = SC/UPC
- 32 = SC/APC
- 11 = LC/UPC
- 12 = LC/APC
- 51 = FC/APC
- 52 = FC/APC
- 00 = No conn

**5 I/P fiber**
- 0 = 250um
- 9 = 900um
- 2 = 2,0mm
- X = Custom

**6 O/P fiber**
- 0 = 250um
- 9 = 900um
- 2 = 2,0mm
- R = 250um ribbon
- X = Custom

**7 I/P fiber length**
- 05 = 0,5m
- 10 = 1,0m
- 15 = 1,5m
- XX = other

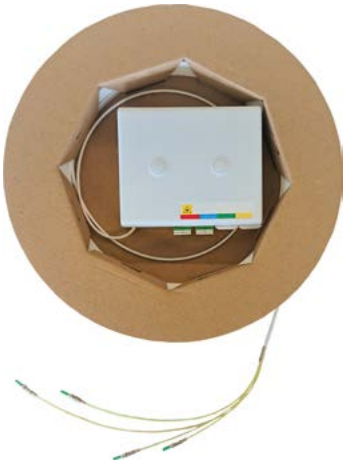
**8 O/P fiber length**
- 05 = 0.5m
- 10 = 1.0m
- 15 = 1.5m

**9 Fiber type**
- 35 = G.652.D
- 36 = G.657.A1
- 37 = G.657.A2

# PTO ECO, Surface-mounted

## Features & Benefits

- Quick and easy installation
- Push, pull or blow through micro channels (cables specially designed for these installation processes)
- Low qualification required to install the product
- High-performance ceramic ferrules and housings
- Outer end configurable with various connectors (Push, Pull, Blow), inner end SC or LC in PC and APC versions
- Direct wall mounting possible without opening the PTO
- Vertical and horizontal break-outs for DIN rail mounting (according to EN 50022 35x7.5mm)
- 4 port capacity (4x SC simplex or 4x LC duplex adapter)
- Custom lengths up to 99m are available
- 2011/65/EU RoHS certified and halogen-free



## Overview

The Pre-Terminated Outlet Kit (PTO) is a product designed for quick and easy installation in Fibre to the Home (FTTH) and Fibre to the Building (FTTB) installations.

The Pre-Terminated Outlet Kit (PTO) is specifically designed to simplify and accelerate the installation of fibre optic cables within SDUs and MDUs. Operators are able to send field service technicians without splicing knowledge to installation and thus reduce the installation time required to connect a subscriber to the network.

The innovative aspect of this solution is that the outer housing of the various connectors (Push, Pull, Blow) can be connected to the ceramic ferrule after blowing, pushing or pulling through the micro- or corrugated tube. The connector needs less space in the tube and this improves the entire installation process. The traditional installation process requires a pre-terminated connector or pigtail to be spliced to a cable. This is costly and time-consuming.

The pre-installation of the connectors in building networks prevented complex, cost-intensive installation on site.

## Applications

The Push, Pull, Blow connector system has been developed to avoid splicing work on cables with a small number of fibres.

This will be the case in building networks, whether FTTH networks or LAN.  Depending on the existing infrastructure, the cable can also be pulled in or pushed in, thus increasing the effectiveness of the installation in buildings.

## Technical Data

| Dimensions (L x W x H) | Material | Connector type | Adapter capacity |
|---|---|---|---|
| *mm* | | | |
| 83 x 100 x 30 | 94V-0 ABS white | LC / SC | max. 4 |

| Fibre capacity | Fibre category | Insertion Loss | Return Loss |
|---|---|---|---|
| | *µm* | *dB* | *dB* |
| 1 to 8 | Singlemode (9/125)<br>G657.A1 or G657.A2 | ≤ 0,30 Singlemode (UPC)<br>≤ 0,25 Singlemode (APC) | ≥ -55,0 Singlemode (UPC)<br>≥ -65,0 Singlemode (APC) |

# PTO ECO, Surface-mounted

## Ordering Information

| Example | PTOB | 1 | 0 | 2 | 6 | 7 | 1 | 1 | 4 | 1 | 2 | 4 | 1 | 1 | 0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 1 | | 2 | 3 | | 4 | | 5 | 6 | | 7 | 8 | 9 | |

### 1 Adapter

10 = LC Duplex Blue Flangeless
11 = LC Duplex Green Flangeless
30 = SC Simplex Blue Flangeless
31 = SC Simplex Green Flangeless
51 = LC Duplex Blue Internal Shutter Flangeless
52 = LC Duplex Green Internal Shutter Flangeless
55 = SC Simplex Blue Internal Shutter Flangeless
56 = SC Simplex Green Internal shutter Flangeless

### 2 Adapter Quantity

1 = 1
2 = 2
3 = 3
4 = 4

### 3 Cable Type

52 = 2F Indoor G657.A1
53 = 4F Indoor G657.A1
54 = Miniflex® 2F 2mm G657.A1
55 = Miniflex 4F 2mm G657.A1
56 = Miniflex 2F 3mm G657.A1
57 = Miniflex 4F 3mm G657.A1
66 = 2F Indoor cable G657.A2
67 = 4F Indoor cable G657.A2
68 = Miniflex 2F 2mm G657.A2
69 = Miniflex 4F 2mm G657.A2
70 = Miniflex 2F 3mm G657.A2
71 = Miniflex 4F 3mm G657.A2

### 4 Connector Outlet

11 = LC/UPC Simplex
12 = LC/APC Simplex
31 = SC/UPC Simplex
32 = SC/APC Simplex

### 5 Connector Quantity Outlet

1 = 1
2 = 2
3 = 3
4 = 4

### 6 Connector Pulling End

00 = No connector
11 = LC/UPC Simplex
12 = LC/APC Simplex
31 = SC/UPC Simplex
32 = SC/APC Simplex
82 = SC UPC Balistix (1F Only)
83 = SC APC Balistix (1F Only)
84 = LC UPC Blow-In Connector
85 = LC APC Blow-In Connector
86 = SC UPC Blow-In Connector
87 = SC APC Blow-In Connector
88 = LC UPC Balistix (1F Only)
89 = LC APC Balistix (1F Only)

### 7 Connector Quantity Pulling End

See Connector Quantity Outlet (5.)

### 8 Pull-in Loop

1 = Yes
2 = No

### 9 Product Length

05 = 5 Meters
10 = 10 Meters
50 = 50 Meters

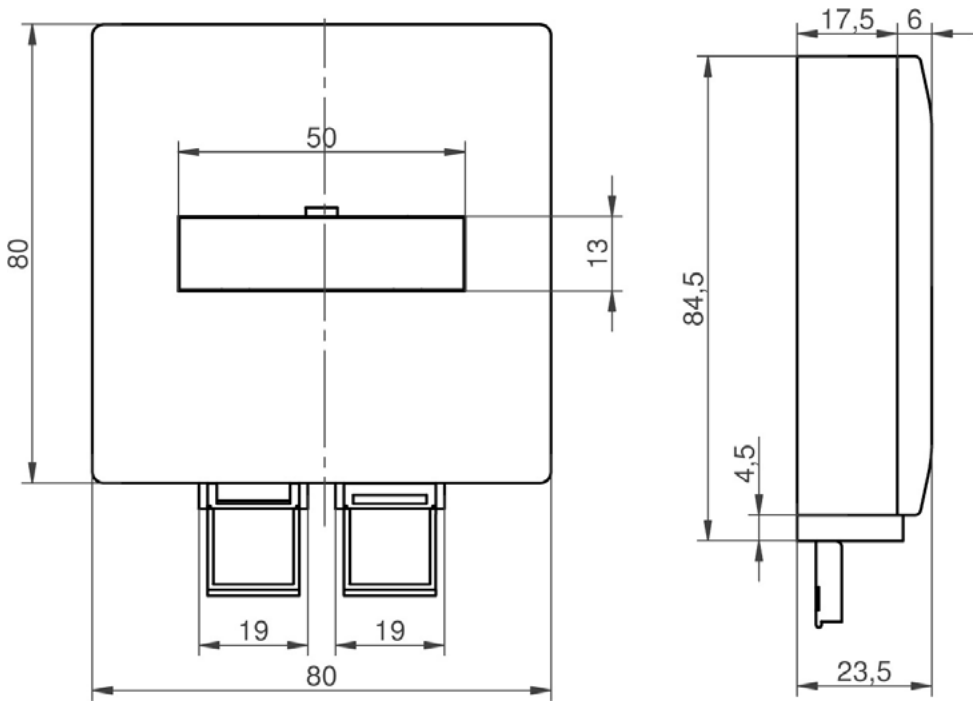
Other versions and configurations on request.

# PTO Premium, Surface-mounted

## Features & Benefits

- Strain relief for cable or fibre optics
- Base plate made of metal
- 360° cable entry possible
- Field for labelling
- ergonomic design
- Colour: white

## Technical Drawing



# PTO Premium, Surface-mounted

## Ordering Information

Example

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| PTOC | 3 | 6 | 2 | 6 | 8 | 3 | 2 | 2 | 1 | 2 | 2 | 1 | 1 | 0 |
| | 1 | | 2 | 3 | | 4 | | 5 | 6 | | 7 | 8 | 9 | |

### 1 Adapter Type

15 = LC Duplex Blue Flanged
16 = LC Duplex Green Flanged
35 = SC Simplex Blue Flanged
36 = SC Simplex Green Flanged
53 = LC Duplex Blue Internal Shutter Flanged
54 = LC Duplex Green Internal Shutter Flanged
57 = SC Simplex Blue Internal Shutter Flanged
58 = SC Simplex Green Internal Shutter Flanged

### 2 Adapter Quantity

1 = 1
2 = 2

### 3 Cable Type

52 = 2F Indoor G657.A1
53 = 4F Indoor G657.A1
54 = Miniflex® 2F 2mm G657.A1
55 = Miniflex 4F 2mm G657.A1
56 = Miniflex 2F 3mm G657.A1
57 = Miniflex 4F 3mm G657.A1
66 = 2F Indoor cable G657.A2
67 = 4F Indoor cable G657.A2
68 = Miniflex 2F 2mm G657.A2
69 = Miniflex 4F 2mm G657.A2
70 = Miniflex 2F 3mm G657.A2
71 = Miniflex 4F 3mm G657.A2

### 4 Connector Outlet

11 = LC/UPC Simplex
12 = LC/APC Simplex
31 = SC/UPC Simplex
32 = SC/APC Simplex

### 5 Connector Quantity Outlet

1 = 1
2 = 2
3 = 3
4 = 4

### 6 Connector Pulling End

00 = No connector
11 = LC/UPC Simplex
12 = LC/APC Simplex
31 = SC/UPC Simplex
32 = SC/APC Simplex
82 = SC UPC Balistix (1F Only)
83 = SC APC Balistix (1F Only)
84 = LC UPC Blow-In Connector
85 = LC APC Blow-In Connector
86 = SC UPC Blow-In Connector
87 = SC APC Blow-In Connector
88 = LC UPC Balistix (1F Only)
89 = LC APC Balistix (1F Only)

### 7 Connector Quantity Pulling End

See Connector Quantity Outlet (5.)

### 8 Pull-in Loop

1 = Yes
2 = No

### 9 Product Length

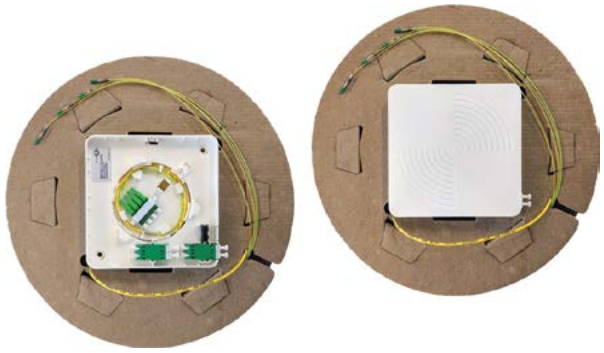
05 = 5 Meters
10 = 10 Meters
50 = 50 Meters

Other versions and configurations on request.

# Micro Terminal
# with integrated slack management

## Features & Benefits

- Quick and easy installation
- Push, pull or blow through micro channels (cables specially designed for these installation processes)
- Low qualification required to install the product
- High-performance ceramic ferrules and housings
- Outer end configurable with various connectors (Push, Pull, Blow), inner end SC or LC in PC and APC versions
- Up to 18m cable storage inside the terminal
- 2 Port Capacity (2x SC Simplex or 2x LC Duplex Adapter)
- Custom lengths up to 99m are available
- 2011/65/EU RoHS certified and halogen-free



## Overview

The Micro Terminal™ offers the possibility to terminate subscriber lines comfortably on the wall or on the table. The combination of patented unwinding technology and the philosophy of always offering the subscriber a simple plug-and-play solution allows the subscriber to realize reliable fibre optic connections within a very short time. The simple rewind technology consists of a plastic coil inside, which can be equipped with freely configurable connectors and offers the possibility to store excess cable lengths generously. If the fibre optic cable is routed back to a subscriber aggregation point, the Micro Terminal™ can either be attached to the wall via the holes provided on the back of the housing or installed with an optional stand, without any manual effort.

The Micro Terminal™ is specifically designed to simplify and accelerate the installation of fibre optic cables within SDUs and MDUs. Operators are able to send field service technicians without splicing knowledge to installation and thus reduce the installation time required to connect a subscriber to the network.

The innovative aspect of this solution is that the outer housing of the various connectors (Push, Pull, Blow) can be connected to the ceramic ferrule after blowing, pushing or pulling through the micro- or corrugated tube. The connector needs less space in the tube and this improves the entire installation process. The traditional installation process requires a pre-terminated connector or pigtail to be spliced to a cable. This is costly and time-consuming.

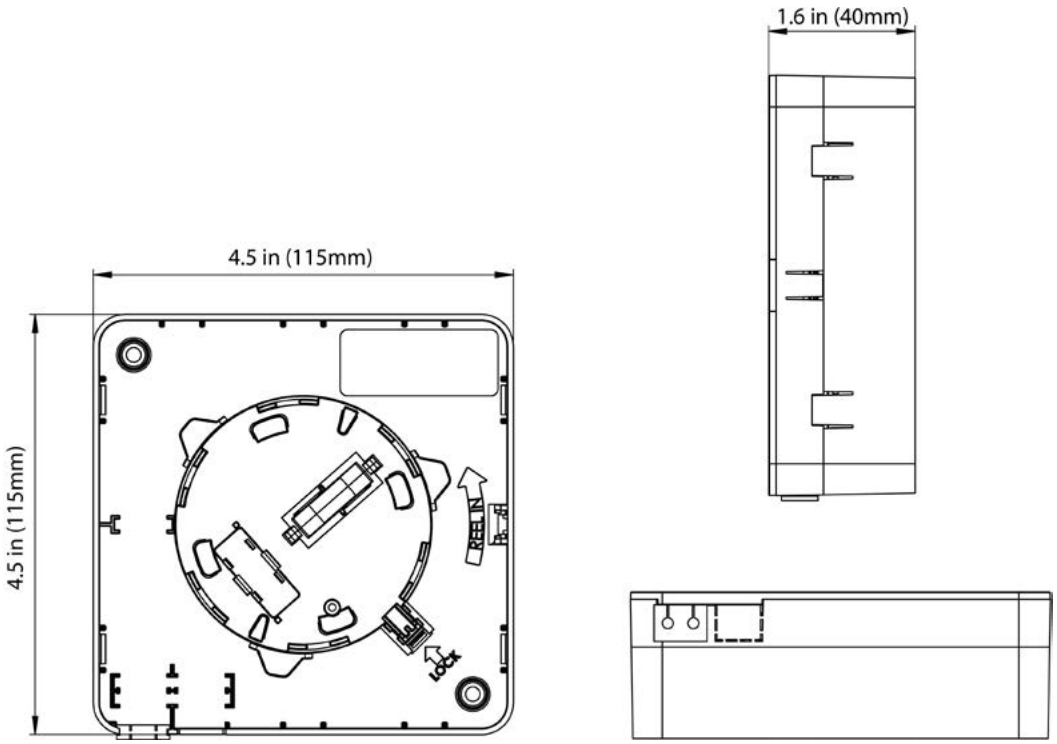
The pre-installation of the connectors in building networks prevented complex, cost-intensive installation on site.

## Applications

The Push, Pull, Blow connector system has been developed to avoid splicing work on cables with a small number of fibres. This will be the case in building networks, whether FTTH networks or LAN.  Depending on the existing infrastructure, the cable can also be pulled in or pushed in, thus increasing the effectiveness of the installation in buildings.

# Micro Terminal
# with integrated slack management

## Technical Drawing




## Technical Data

| Dimensions (L x W x H) | Material | Connector type | Adapter capacity |
|---|---|---|---|
| *mm* | | | |
| 115 x 115 x 40 | 94V-0 ABS ivory white | LC / SC | max. 2 |

| Fibre capacity | Fibre category | Insertion Loss | Return Loss |
|---|---|---|---|
| | *µm* | *dB* | *dB* |
| 1, 2, 4 | Single Mode (9/125), G657.A1 or G657.A2 | ≤ 0,30 Single Mode (UPC)<br>≤ 0,25 Single Mode (APC) | ≥ -55,0 Single Mode (UPC)<br>≥ -65,0 Single Mode (APC) |

# Micro Terminal
# with integrated slack management

## Ordering Information

| Example | PTOA | 3 0 | 2 | 6 8 | 3 1 | 2 | 1 2 | 2 | 1 | 1 9 |
|---|---|---|---|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

### 1 Adapter

10 = LC Duplex Blue Flangeless
11 = LC Duplex Green Flangeless
30 = SC Simplex Blue Flangeless
31 = SC Simplex Green Flangeless
51 = LC Duplex Blue Internal Shutter Flangeless
52 = LC Duplex Green Internal Shutter Flangeless
55 = SC Simplex Blue Internal Shutter Flangeless
56 = SC Simplex Green Internal Shutter Flangeless

### 2 Adapter Quantity

1 = 1
2 = 2

### 3 Cable Type

52 = 2F Indoor G657.A1
53 = 4F Indoor G657.A1
54 = Mibniflex® 2F 2mm G657.A1
55 = Miniflex 4F 2mm G657.A1
56 = Miniflex 2F 3mm G657.A1
57 = Miniflex 4F 3mm G657.A1
66 = 2F Indoor G657.A2
67 = 4F Indoor G657.A2
68 = Miniflex 2F 2mm G657.A2
69 = Miniflex 4F 2mm G657.A2
70 = Miniflex 2F 3mm G657.A2
71 = Miniflex 4F 3mm G657.A2

### 4 Connector Outlet

11 = LC/UPC Simplex
12 = LC/APC Simplex
31 = SC/UPC Simplex
32 = SC/APC Simplex

### 5 Connector Quantity Outlet

1 = 1
2 = 2
3 = 3
4 = 4

### 6 Connector Pulling End

00 = No connector
11 = LC/UPC Simplex
12 = LC/APC Simplex
31 = SC/UPC Simplex
32 = SC/APC Simplex
82 = SC UPC Balistix (1F Only)
83 = SC APC Balistix (1F Only)
84 = LC UPC Blow-In Connector
85 = LC APC Blow-In Connector
86 = SC UPC Blow-In Connector
87 = SC APC Blow-In Connector
88 = LC UPC Balistix (1F Only)
89 = LC APC Balistix (1F Only)

### 7 Connector Quantity Pulling End

See Connector Quantity Outlet (5.)

### 8 Pull-in Loop

1 = Yes
2 = No

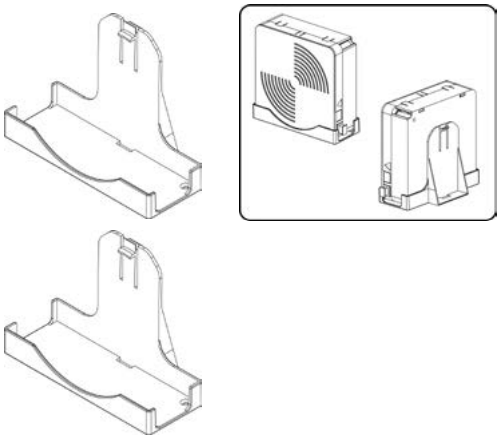
### 9 Product Length

05 = 5 Meters
10 = 10 Meters
50 = 50 Meters

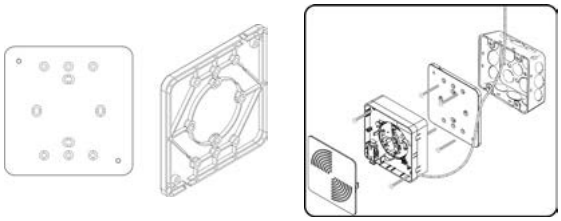
# Micro Terminal
# with integrated slack management

## Accessories

| Description | Part Number |
|---|---|
| Stand for desktop mounting | 553100001-1 |
| Adapter plate for wall mounting on flush box | 553100001-2 |



Desktop Mounting (553100001-1)



Direct Mounting (553100001-2)

Other versions and configurations on request.

# PTO DIN Rail, DIN Rail mounted

## Features & Benefits

- Material: Thermoplastic, halogen-free plastic (ABS)
- Color: pure white (RAL 9010).
- Compatible with G657.A2 fibre
- 1 to 2 adapters
- 1 label strip (45 x 10 mm)
- Protection class / shockproof: IP30 / IK05
- 2 trays for the fibres
- Colour code to identify the ports
- Fire resistance: UL94 V0
- Delivery content: 2 x cable ties, 1 x assembly instructions
- Laser Symbol

## Overview

The PTO DIN rail outlet for terminating up to 4 singlemode fibres was developed for subscriber connection in FTTH projects and is compatible with DIN rails according to DIN.

Thus they offer a simple and fast assembly in new distributions and can also be easily integrated into existing installations.

The FTTH Drop Cable can be terminated in the adapters with various types of connectors.

## Application Image

# PTO DIN Rail, DIN Rail mounted

## Ordering Information

| Example | PTOF | 5 5 | 4 | 6 9 | 3 1 | 4 | 1 2 | 4 | 1 | 5 0 |
|---|---|---|---|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

### 1 Adapter Type

10 = LC Duplex Blue Flangeless
11 = LC Duplex Green Flangeless
30 = SC Simplex Blue Flangeless
31 = SC Simplex Green Flangeless
51 = LC Duplex Blue Internal Shutter Flangeless
52 = LC Duplex Green Internal Shutter Flangeless
55 = SC Simplex Blue Internal Shutter Flangeless
56 = SC Simplex Green Internal Shutter Flangeless

### 2 Adapter Quantity

1 = 1
2 = 2

### 3 Cable Type

52 = 2F Indoor G657.A1
53 = 4F Indoor G657.A1
54 = Mibniflex® 2F 2mm G657.A1
55 = Miniflex 4F 2mm G657.A1
56 = Miniflex 2F 3mm G657.A1
57 = Miniflex 4F 3mm G657.A1
66 = 2F Indoor G657.A2
67 = 4F Indoor G657.A2
68 = Miniflex 2F 2mm G657.A2
69 = Miniflex 4F 2mm G657.A2
70 = Miniflex 2F 3mm G657.A2
71 = Miniflex 4F 3mm G657.A2

### 4 Connector Outlet

11 = LC/UPC Simplex
12 = LC/APC Simplex
31 = SC/UPC Simplex
32 = SC/APC Simplex

### 5 Connector Quantity Outlet

1 = 1
2 = 2
3 = 3
4 = 4

### 6 Connector Pulling End

00 = No connector
11 = LC/UPC Simplex
12 = LC/APC Simplex
31 = SC/UPC Simplex
32 = SC/APC Simplex
82 = SC UPC Balistix (1F Only)
83 = SC APC Balistix (1F Only)
84 = LC UPC Blow-In Connector
85 = LC APC Blow-In Connector
86 = SC UPC Blow-In Connector
87 = SC APC Blow-In Connector
88 = LC UPC Balistix (1F Only)
89 = LC APC Balistix (1F Only)

### 7 Connector Quantity Pulling End

See Connector Quantity Outlet (5.)

### 8 Pull-in Loop

1 = Yes
2 = No

### 9 Product Length

05 = 5 Meters
10 = 10 Meters
50 = 50 Meters

Other versions and configurations on request.

# OTO Keystone, Flush-mounted

## Features & Benefits

- Suitable for Flush-mounted installation as well as for installation in wall ducts
- Angled outlet
- Simple mounting and removal
- Few, easily separable housing parts
- Switch ranges
- No visible fasteners, screw concealed by labelling field
- Compliant with RoHS II (2011/65/EC) and REACH (1907/2006)

## Overview

The PPC fibre optic termination point Keystone is practical, easy to install and can be integrated into all common installation or underfloor systems. The unpopulated box offers up to 3 x Keystone module receptacles. The box consists of a few, easily separable housing parts.

## Mechnical Data

| Support ring | Central plate | Colour |
|---|---|---|
| Zinc die-cast | ABS plastic, 50x50mm with Labelling field | pure white |

## Ordering Information

| Description | Part Number |
|---|---|
| Termination Point Keystone 1-fold, FM, empty box, incl. dust protection flaps and labelling field, pure white, PU=10 | 503005001 |
| Termination Point Keystone 2-fold, FM, empty box, incl. dust protection flaps and labelling field, pure white, PU=10 | 503005002 |
| Termination Point Keystone 3-fold, FM, empty box, incl. dust protection flaps and labelling field, pure white, PU=10 | 503005003 |

### Accessories

| Description | Part Number |
|---|---|
| Cover frame 80x80 mm, 1-fold, pure white RAL 9010 | 524511802-WS |
| Surface-mounted box incl. cover frame 80x80mm, RAL 9010 | 524511702-WS |
| Keystone-Module E-2000 APC, Singlemode | 522014033-7035 |
| Keystone-Module LC, Singlemode | 522014012-7035 |
| Keystone-Module SC, Singlemode | 522014021-7035 |
| Keystone-Module SC APC, Singlemode | 522014021-7035-GN |

Other versions and configurations on request.

# OTO Universal, Flush-mounted

## Features & Benefits

- Clip and screw locking of the adapter plates
- Zinc die-cast housing UPEK
- ABS central disc 50 x 50 mm
- with laser symbol and title block

## Overview

The PPC fibre optic termination point Universal is for fibre optic cables are practical, easy to install and can be integrated into all common installation or underfloor systems. The unpopulated adapter plates are fastened by clip and screw locking. The labelling field facilitates labelling and identification.

## Mechnical Data

| Support ring | Central plate | Adapter plates |
|---|---|---|
| Zinc die-cast | ABS plastic, 50x50mm acc. to DIN40975 with printed laser symbol | ABS plastic (black) |

## Ordering Information

| Description | Part Number |
|---|---|
| Termination point OTO Universal incl. 9 unpopulated adapter plates (SC-simplex, SC-duplex, E2000-simplex, MTRJ, AMP/MTRJ, ST-simplex, ST-duplex, FC/PC, DIN, LC-duplex, blind plate) | 524500201-WS |

### Accessories

| Description | Part Number |
|---|---|
| Cover frame 80x80 mm, 1-fold, pure white RAL 9010 | 524511802-WS |
| Surface-mounted box incl. cover frame 80x80mm, RAL 9010 | 524511702-WS |
| Adapter E-2000 simplex, Singlemode, PC blue, incl. screws | 076699107 |
| Adapter E-2000 simplex, Singlemode, APC green, incl. screws | 076699107-GN |
| Adapter LC duplex, Singlemode, PC blue, without screws | 076655032 |
| Adapter LC duplex, Singlemode, APC green, without screws | 076655032-GN |
| Adapter SC duplex, Singlemode, PC blue, without screws | 076622302 |
| Adapter SC duplex, Singlemode, APC green, without screws | 076622302-GN |
| Adapter screws LC / SC, Self-tapping self-tapping screw, PU = 100 | 076912001 |

Other versions and configurations on request.

# Pigtails Single-mode

## Features & Benefits

- Available with all fibre optic connector types
- High quality ferrules and housings
- Low insertion loss and high return loss
- Individual test results and traceability number
- Mating Durability: 1000 cycles; <0.2 dB change
- IEC, EIA/TIA and GR-326-CORE compliant
- Customized on request

## Overview

PPC offers high-performance pigtails colored in compliance with TIA-598-C standard for all types of fibre optic networks. The pigtails are manufactured in state-of-the-art controlled facilities and to strict manufacturing processes. The pigtail are designed to operate over a wide range of wavelengths, ranging from 1310nm - 1550nm for singlemode fibre with guaranteed low loss and reliability.

PPC pigtails are offered in wide variety of connectors for singlemode fibre. Each pigtail is individually tested and supplied with a test certificate. The unique serial number provides traceability of every single product.

## Standard

| Optical Fibre | Cable Jacket ratings |
|---|---|
| ITU-T G.652.D, G.655, G.657.A1/A2, G.657.B2/B3, G.655 | Low Smoke Zero Halogen (LSZH)<br>per: IEC 60754-1, IEC 60754-2, IEC 61034-2<br>Flame Rating as per: IEC 60332-1-2, UL 1666 (Riser), NFPA 262 (Plenum) |

| Connector Design acc. | Connector Tested acc. |
|---|---|
| IEC 61754, TIA 604 | IEC 61753, IEC 61300, TIA-455 |

## Technical Data

| Durability | Fibre Connectors |
|---|---|
| Min. 1000 cycles | LC, SC, LSH, FC, MU, ST |

| Insertion Loss | Return Loss |
|---|---|
| *dB* | *dB* |
| ≤0.25 | ≥50 UPC, ≥60 APC |

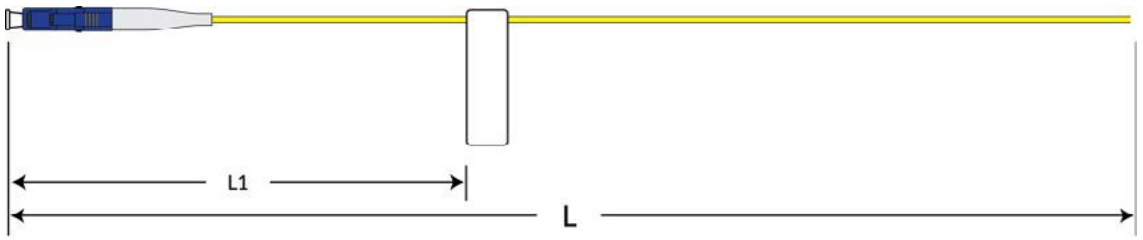
| Wavelength |
|---|
| *nm* |
| 1310/1550 |

# Pigtails Single-mode

## Environmental Data

| Operating temperature | 2011/65/EC RoHS | Free of Halogen |
|---|---|---|
| °C | | |
| -20 to +70 | Fully compliant | Yes |

## Technical Drawing




| Length of assembly (L) | Traceability label distance (L1) |
|---|---|
| L -0/+50mm (for L<0.5m)<br>L -0/+100mm (for 0.5m>L<5m)<br>L -0/+200mm (for L>5m) | 50 ± 25mm (from one end) |

## Ordering Information

Example

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| PTS | S | 1 | 1 | 3 | 5 | 0 | 7 | 2 | 0 | 1 | - | 0 | 1 | 5 |
| | 1 | 2 | | 3 | | 4 | | 5 | 6 | | | 7 | | |

**1 Sheath**

S = Standard, LSZH
A = Plenum
C = Riser
E = PVC

**2 Connector Type**

11 = LC UPC
12 = LC APC 8°
31 = SC UPC
32 = SC APC 8°
41 = LSH UPC
42 = LSH APC 8°
51 = FC UPC
52 = FC APC 8°
71 = MU UPC
72 = MU APC 8°
61 = ST UPC

**3 Fibre Type**

35 = G.652/G.652.D
36 = G.657.A1
37 = G.657.A2
38 = G.657.B2
39 = G.657.B3
40 = G.655

**4 Cable Type and Diameter**

02 = Simplex 250µm Ø
06 = Simplex 600µm Ø
07 = Simplex 900µm Ø Easy Strip
08 = Simplex 900µm Ø Tight Buffered
09 = Simplex 900µm Ø Loose Tube

**5 Performance**

1 = Grade A (≤0.15dB)
2 = Grade B (≤0.25dB)
3 = Grade C (≤0.50dB)

**6 Colour**

01 = Yellow (STD)
30 = Standard TIA Pigtail Set 1-12
31 = Standard TIA Pigtail Set 13-24

**7 Length**

005 = 500 mm
015 = 1.5 m

# DISTRIBUTION BOXES



# Optical Distribution Box ODB4 for Maximum 4 Pigtail Splices

## Features & Benefits

- Wall mountable design
- Light and compact made of high impact resistant plastic
- IP 55 rated
- Individual lock
- Usable with fusion splicing and field assembly connectors
- Can house SC and LC adaptors and PLC splitters
- Built-in cable management elements to ensure optimum bend radius and fibre management

## Overview

The PPC ODB4 is a light and compact wall mountable box for termination of up to four fibres. It has been designed to serve as a building entry point for FTTH applications but is also a perfect choice for all types of FTTX applications. The demarcation box provides versatility, enabling fusion splicing, direct termination or patching. It can house one PLC splitter with 1:2 or 1:4 splitting ratio.

## Applications

- FTTH networks
- Telecoms networks

## Mechanical Data

| Dimensions (HxWxD) | Type of adapters |
|---|---|
| *mm* | |
| 210 x 135 x 50 | SC Simplex / LC Duplex |

| Adapter capacity | Splice tray capacity |
|---|---|
| 2 | 4 |

| Splitter capacity | Environmental protection rating |
|---|---|
| 1 x 1:4 | IP 55 |

| Termination method | Operating temperature |
|---|---|
| | °C |
| Fusion splice or field assembly connectors | -20 to +70 |

| Cable entries | Weight |
|---|---|
| *mm* | *g* |
| Gland type, 2 x 5-12 | 400 |

# Optical Distribution Box ODB24 MCM for Maximum 24 Pigtail Splices

## Features & Benefits

- Wall mountable design
- Light and compact made of high impact resistant plastic
- Indoor/Outdoor
- UV resistant housing
- IP 55 rated
- Individual lock
- Compatible with heat shrink and crimp splice protector, space for gas blocker
- Can house SC and LC adaptors and PLC splitters
- 12 SC or 24 LC connections
- Built-in cable management elements to ensure optimum bend radius and fibre management

## Overview

The PPC 12-24 fibre drop box is a light and compact wall mountable enclosure for termination of up to twelve fibres. It has been designed to serve as a building entry point for FTTH applications but is also a perfect choice for all types of FTTX applications. The 12-24 fibre box provides versatility, enabling fusion splicing, direct termination or patching. It can house two PLC splitters up to 1:8.

## Applications

- FTTX networks
- Telecon networks

## Mechanical Data

| Dimensions (H x W x D) | Material |
|---|---|
| *mm* | |
| 258 x 186 x 61 | Polycarbonate, light grey RAL 7035 |

| Weight | Fibre capacity | Drop cable capacity |
|---|---|---|
| *g* | | |
| 650 | 24 HS or ANT splices, 6 LC Quad or SC Duplex adaptors | 24 Drop cables of 2mm, individually sealed |

| Feeder cable capacity | Connector performance |
|---|---|
| | *dB* |
| One cable or tube up to 11mm diameter, with anchoring and gas blocker space | IL < 0.30, RL APC 60, UPC 50 |

## Environmental Data

| Operating temperature | 2011/65/EC RoHS | Environmental protection |
|---|---|---|
| *°C* | | |
| -20 to +70 | Fully compliant | IP 55 |

# Optical Distribution Box ODB300 for Maximum 96 Pigtail Splices

## Features & Benefits

- Developed for indoor applications (FTTH)
- Indoor and outdoor applications (IP56 rated)
- Impact resistant plastic with two external latches
- Wall mount or pole mount options
- Top and bottom cable entry or bottom only cable entry
- User-configured rubber grommets for inputs and outputs
- For up to 24 SC Duplex or LC Quad adapters
- Side knockouts for connecting multiple enclosures
- Swing tray design for easy access to all components
- Splice trays, cable clamps and fibre managers in the base
- 216c can wrench lock with protective cap
- 2011/65/EU RoHS compliant and halogen free

## Overview

The Optical Distribution Box ODB300 is a robust outdoor-rated wall mount enclosure designed for FTTx networks in single dwelling, multi-dwelling and multi-tenant applications for up to 96 subscribers.

The ODB300 features an internal swing tray that holds up to four PLC splitters and 24 SC Duplex or LC Quad adapters. Mechanical or fusion splices can be stored in up to four splice cassettes underneath the swing tray.

The ODB300 can be ordered with top and bottom cable entry or bottom only cable entry. Rubber grommets are user-configured to secure input and output cables. It is easily mounted to a flat surface with 4 screws, accessible only when the cover is open. A pole mounting kit is also available.

## Mechanical Data

| Dimensions (W x H x D) | Weight | Input | Output |
|---|---|---|---|
| *in / mm* | *pounds / kg* | *mm* | *mm* |
| 13.3 x 15.4 x 6.5 / 338 x 390 x 165 | 8 / 3.6 | 2 rubber grommets (1 cable per grommet; 4 - 17 diameter) | 3 or 4 rubber grommets (12 cables per grommet; 2 - 7 diameter) |

| Splitter capacity | Splice capacity | Material |
|---|---|---|
| 2 each 1x32; 4 each 1x16; 4 each 1x8 PLC Splitters | 3 each 24-fibre splice trays | UV resistant polycarbonate (RAL 7035 light gray) |

| Flammability | Water and dust resistance | Impact resistance |
|---|---|---|
| UL94V-0 for 3.0mm | IEC 60529 IP56 | IEC 62262 IK08 |

## Environmental Data

| Operating temperature | Free of halogen | 2011/65/EU RoHS |
|---|---|---|
| *°F / °C* | | |
| -40 to 149 / -40 to 65 | Yes | Fully compliant |

# Optical Distribution Box ODB100B

## Features & Benefits

- Compact UV resistant 94V-0 polycarbonate plastic
- Indoor and outdoor applications (IP55 rated)
- Impact resistant plastic with two external latches
- Wall mount or pole mount options
- Room for 12 mechanical or fusion splices and two splitters
- 2 PG16 input ports; 8 output ports (2mm to 7mm)
- 4 SC Duplex or LC Quad adapters
- Integrated splice tray and fibre management
- 216c can wrench lock with protective cap
- 2011/65/EU RoHS compliant and halogen free

## Overview

PPC's Optical Distribution Box (ODB) Series 100B is a compact, robust, outdoor-rated wall mount enclosure designed for FTTx networks in single dwelling, multi-dwelling and multi-tenant applications for up to 16 subscribers (when using splitters).
The ODB 100B features an internal swing panel with a rear splice area for 12 mechanical or fusion splices, one or two PLC splitters, and excess fibre storage. The front face of the swing panel holds 4 SC duplex or LC quad adapters and provides fibre management for the output cables.

The ODB 100B can be securely mounted to a flat surface with 4 screws, accessible only when the cover is open. A pole mounting kit is also available.

## Mechanical Data

| Dimensions (W x H x D) | Weight |
|---|---|
| *in (mm)* | *pounds (kg)* |
| 8.0 x 8.0 x 3.6 (204 x 204 x 92) | 4.5 / 2 |

| Input | Output |
|---|---|
| | *mm* |
| Two each PG16 glands | Two each 4 port rubber grommets (2 to 7 diameter) |

| Splitter capacity | Splice capacity | Material |
|---|---|---|
| 1 or 2 PLC splitters | 12 mechanical or fusion splices | UV resistant polycarbonate (RAL 7035, RAL 7016) |

# Optical Distribution Terminal ODT24

## Features & Benefits

- Outoor, IP-55 rated
- Weather resistant ABS + PC material
- Suitable for PON and P2P applications
- Suitable for splice only, splice + patch or pre-terminated cables
- Integrated holders for PLC splitters
- Integrated splice tray and fibre management
- Compatible with mid-span applications
- Distribution cables can be pre-terminated or spliced
- Usable with cables or ducts
- Optional pole mounting accessories
- Standard locking screw
- Available pre-configured with adaptors, pigtails, PLC splitters
- Connectivity compliance: IEC 61754-4, IEC 61754-20,GR-326 CORE

## Overview

The PPC Fibre Optical Distribution Terminal 24 (ODT-24) is a robust outdoor enclosure designed for FTTH PON and P2P networks. It can accommodate up to 96 fusion splices plus 24 SC simplex or LC duplex adaptors and a wide range of pre-connectorised or spliced PLC splitter modules.

The ODT-24 features a splice system with 4 splice trays, PLC splitter holders and a removable adaptor plate. The ODT-24 can be securely mounted to a surface with 4 screws, accessible only when the cover is open, or pole mounted using additional brackets.

It is available in standard light grey or black color.

## Applications

- FTTH Networks
- CATV Networks
- Fibre optic backbone networks
- Building access and demarcation points

## Technical Data

| Dimensions (H x W x D) | Weight | Material and colour |
|---|---|---|
| *mm* | *kg* | |
| 340 x 220 x 95 | 1.9 | ABS+PC, Light Grey or Black |

| Connectivity | Splices capacity |
|---|---|
| 24 SC Simplex or LC Duplex adaptors | 48 (96 double stacked) heat shrink splices |

| PLC splitters (pre-terminated) | Cable Entries |
|---|---|
| 3 x 1:2, 1:4 or 1:8, 1 x 1:16 or 1:32 | 2 x PG13 cable glands + 2 x 13mm midspan + 24 x 2-7mm drop cables* |

*Standard individual sealing for 2mm drop cable, different sealings available on request

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- Design and manufacturing center of excellence for Miniflex® cable, microduct and aerial fibre systems based in the UK
- Dedicated fibre termination facilities to support global and local demand
- State-of-the-art Telcordia certified laboratory for RF and fibre testing and evaluation
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