Distribuční boxy a konektivita vláken u koncového zákazníka

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Solutions for Customer Premise
Fiber Optic Distribution Boxes

- Distribution Box Outdoor: 8-32 Subscribers
- Multi Dwelling Unit: 12-36 Subscribers
- Connection Box: Internal 6-24 Subscribers
- Distribution Box Indoor: Internal 6-24 Subscribers
- Transition Box: 2-4 Subscribers

<table>
<thead>
<tr>
<th>Feature</th>
<th>Description</th>
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<tbody>
<tr>
<td>flexibility</td>
<td>high density and various capacity</td>
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<tr>
<td>high performance</td>
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Wall Boxes (termination/distribution)
OUTDOOR

- 2 different versions
- Possibility of using fusion or Fibrlok splicing
- IP55
- Optional key locking

PBO T1
DIM. (mm) 240x270x80

PBO T2
DIM. (mm) 255x400x85
MDUO box for 12 subscribers with pre-wiring option

Multi Dwelling Unit Optical Box

**Features:**
- Box & Plastic Organizer
- Dim: L:400 ; W:255 ; T:86
- IP55 / IK06
- 8+2 anchorage: 2 for cables up to 20mm, 8 for cables up to 12mm (16 drops for 3 to 5mm cables, 8 > 5mm )
- Organizer 7 slots
- Trays 5 or 10 mm from BPEO Evol
- Connection for 12 connectors SC, 24 pigtails in buffer

4 versions of pre-wiring:
- Empty
- Prewired P2P: 100 % pigtails & connectors for the riser and 50 % pigtails on the operator side
  - 12 pigtails for the riser & 12 on the operator side
  - 12 pigtails for the riser & 6 on the operator side
- Prewired PON: 100 % pigtails & connector for the riser and tray for splitter on the operator side
- Prewired PON: 100 % pigtails & connector for the riser and pre-connectorized splitter on the operator side

MDUO box for 24 subscribers with prewiring option

Multi Dwelling Unit Optical Box

**Features:**
- Box & Plastic Organizer
- Dim: L:400 ; W:255 ; T:116
- IP55 / IK06
- 8+2 anchorage: 2 for cables up to 20mm, 8 for cables up to 12mm (16 drops for 3 to 5mm cables, 8 > 5mm )
- Organizer 7 slots
- Trays 5 or 10 mm from BPEO Evol

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MDUO boxes for 12-24-40 subscribers with pre-wiring option

Multi Dwelling Unit Optical Box

CDS Fiber Boxes
For high number of connections

- There are 3 sizes with different capacities for direct splicing or patching with the option of PLC splitter usage
Wall Boxes (termination/distribution)
OUTDOOR/INDOOR

FTB-M

- Outdoor/indoor distribution box
- IP54 protection level
- Compatible to Blown Fiber applications
- Up to 4 fibers terminated with NPC or Fibrolk

Optional: Splice Tray !

Wall Boxes (termination/distribution)
OUTDOOR/INDOOR

- Transition Box
- 25mm bend radius
- 4 Fibrolk splicing slots

DIM. (mm) 89x91x45
Wall Boxes (termination/distribution)
INDOOR - RISER

PBPO/C (PBO 6-12)

- Floor Box
- Up to 48 splices*
- Up to 12 SC/E2000 connectors
- Indoor, wall-mount only

DIM. (mm) 160x210x60

Wall Boxes (termination/distribution)
INDOOR/RESIDENTIAL

8686 FTTH WALL OUTLET

- Terminates indoor cable in the customer premise to a point ready for connection to an Optical Network Unit
- Up to 4 field mount connectors or 4 splices with SC connector pigtail

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<tr>
<td>Dimensions: 86x86x33 mm</td>
<td>Small enough to fit into existing copper service distribution boxes.</td>
</tr>
<tr>
<td>Multiple ports entry and termination capacity</td>
<td>Double and variables. 6 cable entry ports and 8 back ports. Up to 4 ports for SC coupling. 5 drop terminations for customer premises. Keystone jack.</td>
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<tr>
<td>Multiple mounting capability</td>
<td>Wall mount (screw)</td>
</tr>
<tr>
<td>Integrated cable management</td>
<td>Cabinet mount (double-sided adhesive tape).</td>
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<tr>
<td>Label Holder</td>
<td>Easy identification.</td>
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DIM. (mm) 86x86x33
Termination Box: 8686 FTTH Wall Outlet

Features:
- 2 mechanical splices “Fibrlok”
- accommodate 2 “NPC” connectors terminated on a two fiber cables.
- Can integrate 1 keystone jack (RJ45)

Advantages – Benefits:
- Cost competitive
- Symmetric according to cable entry
- Compact size

Customer Premise Solutions & Connectivity
3M Products With Mechanical Splice

- Fibrlok™ II 250/900um Splice
- Fibrlok™ 250um Splice
- Fibrlok™ II Splice Holder
- Fibrlok™ II Splice Holder w/ Pigtail
- Fibrlok™ Angle Splice
- NPC SC PC and SC APC
- NPC LC PC and LC APC

Fibrlok™ II Universal Splice 2529 in detail
Fibrlok™ II Universal Splice 2529

- Single fiber splicing of 250um & 900um of
- Single Mode & Multimode fiber

Cross-sectional view of open and actuated Fibrlok II Splice 2529

Features
- <0.1dB insertion loss
- 30 second installation time
- Minimum tooling requirements
- No epoxy or electricity required
- Simple, easy to use

Benefits
- High performance
- Increased productivity
- Low capital cost
- Easy on-site installation
- Minimal training, lower installed cost

3M Splice Technology Ensures Fiber Core Alignment

Different Fiber Diameters: 125um ± 1um

Benefits
- Low Light Loss
- Long Term Reliability

Aluminum conforms to different diameters so it:
- Consistently has gripping force from 3 directions
- Automatically aligns the fibers
- Permanently locks fibers in place
Fibrlok™/ NPC – Gel Performance

- Gel consists of silicone with glass particles
- Gel index-of-refraction closely matches glass index-of-refraction at room temperature

Fibrlok™ 250um 2540G

- Single Fiber Splice
- Reduced size of 4mm by 4mm
- Similar performance as Fibrlok™ II
- 250um fiber capable

Over 2 Million Deployed In Japan FTTH Market

Features

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<tr>
<th>Features</th>
<th>Benefits</th>
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<tr>
<td>Hand held tool</td>
<td>Splice anywhere</td>
</tr>
<tr>
<td>Small size</td>
<td>Fits in many fusion splice trays</td>
</tr>
<tr>
<td>Simple, easy to use</td>
<td>Minimal training, lower installed cost</td>
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Fibrlok™ II w/ Splice Holder

ONT mounted to side of house. Fiber coming into ONT from the ground.

Completed Installation

Technician has installed the splice holder, and is routing the pigtail.

Fibrlok™ Angled Splice Tooling

Fibrlok Angled Splice

Angled Splice Cleaver 2535

3M
Non Polish Connector

No Small, Loose Parts
Simple, Easy Assembly
Compact Size
Standard SC Interface
250/900um Fiber

Ferrule
Fiber

Splice Element
Spring
Sleeve
Boot

< 50mm (2")
Length

Fully Pre-Assembled

NPC Connector – Features & Benefits

and with the following advantages…

- low insertion loss
  typ. 0.3 dB

- excellent return loss performance with the NPC/APC Connector
  < -65 dB (@ RT)
  < -60 dB (@ temp. extremes)

- standardized connector interface
  SC-connector, you will see in ~ 90% of FTTx – projects worldwide
  LC-connector, increasing tendency
NPC Connector – Assembly Tool

- It is a part of each packaging unit (MOQ 60 pc.)
- It is equal for all offered SC connector types

- Fiber Holder: for all fiber types with 250µm & 900µm

SC APC NPC Connector

- 8 APC ferrule with angled (cleave) splice
- Angle splice (keyed angled splice) with Angle Cleaver 2535
- Excellent back reflection of < -60dB

Angle cleave – to be done in field; fitting to fiber stub in ferrule (keyed)

2535 Angle Cleaver

2526 Angle Splice Kit
SC APC NPC/AS Connector – Field Termination

Factory Stub Fiber w/ 8 Degree Polish APC Front and Angle Cleave Back

Mechanical Splice Joint

8 Degree APC

Actuate Cap

Result: Low Reflectance Field Termination

NPC Connectors with SC Interface

**UPC – Versions**
- SC Multi Mode 50µm (flat splice) 250/900µm
- SC Multi Mode 50µm OM3 (flat splice) 250/900µm
- SC Multi Mode 62.5µm (flat splice) 250/900µm
- SC Single Mode 9µm (flat splice) 250/900µm
- SC Single Mode 9µm (angled splice) 250/900µm

**APC – Versions**
- SC/APC Single Mode 9µm (angled splice) 250/900µm
- SC/APC Single Mode 9µm (angled splice) jacketed 3mm
- SC/APC Single Mode 9µm (flat splice) 250/900µm
- SC/APC Single Mode 9µm (flat splice) jacketed 3mm
Děkuji za pozornost!
mkubalikova@mmm.com