

FlexNAP™ Outside Plant System

CORNING

Features and Benefits

Factory-installed, sealed splice points (2, 4, 6, 8 or 12 fibers per tether)

Drastically reduces field splicing with a predetermined loss at each waterproof tether attachment point (TAP)

Flexible preterminated access points

Utilize traditional field-installation techniques for aerial, below-grade, and duct applications

Maximum of two tethers per attachment point

Up to 24 fibers at each designated TAP point

Distribution cables available in ALTOS® Loose Tube Gel-Free Cable, ALTOS Figure-8, ALTOS Lite™ Gel-Free Armored Cable and RPX® Ribbon Cable

Field familiarity with traditional network cable types

OptiSheath® MultiPort Terminals may be configured with four, six, eight or 12 OptiTap® Connector Adapters

Allow multiple configuration variations that are suitable for aerial, below-ground and duct applications

Corning FlexNAP™ outside plant system provides the most cost-effective method of deploying optical fiber in outside plant distribution networks at speeds significantly faster than traditional field installations. The FlexNAP system utilizes optical fiber cables upon which network access points are pre-installed at customer-specified locations along the length of the cable. The cable and network access points are tested and shipped as a complete distribution cable/terminal system.

Compatible with both aerial (overlash, dedicated messenger and self-support) and below-ground (direct-buried and 1.25 in duct) outside plant distribution applications, Corning FlexNAP can be installed up to five times faster per network access point.

The increased speed of network deployment, along with the reliability of factory testing, offers significant value to the end user in the following key areas: deployment velocity, risk avoidance, workforce efficiency, capital avoidance, and deferment.

Standards

Design and Test Criteria GR-3122, GR-771, GR-3120, GR-3152



OptiSheath MultiPort Terminal - 6/8-Port
| Photo TRCLS026

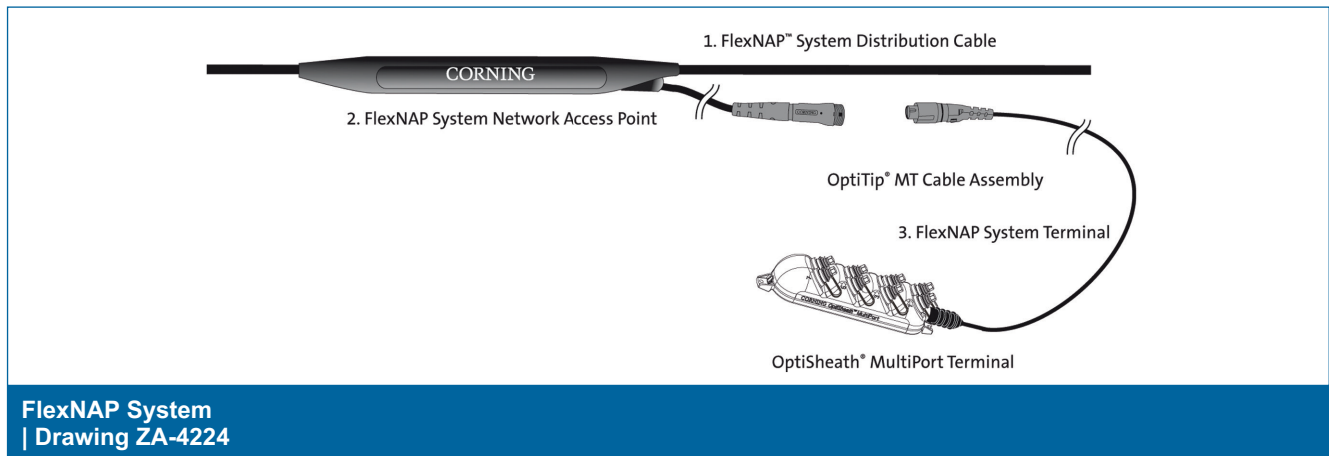


OptiTip MT Cable Assembly
| Photo CCA202

FlexNAP™ Outside Plant System

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Designing A FlexNAP™ System

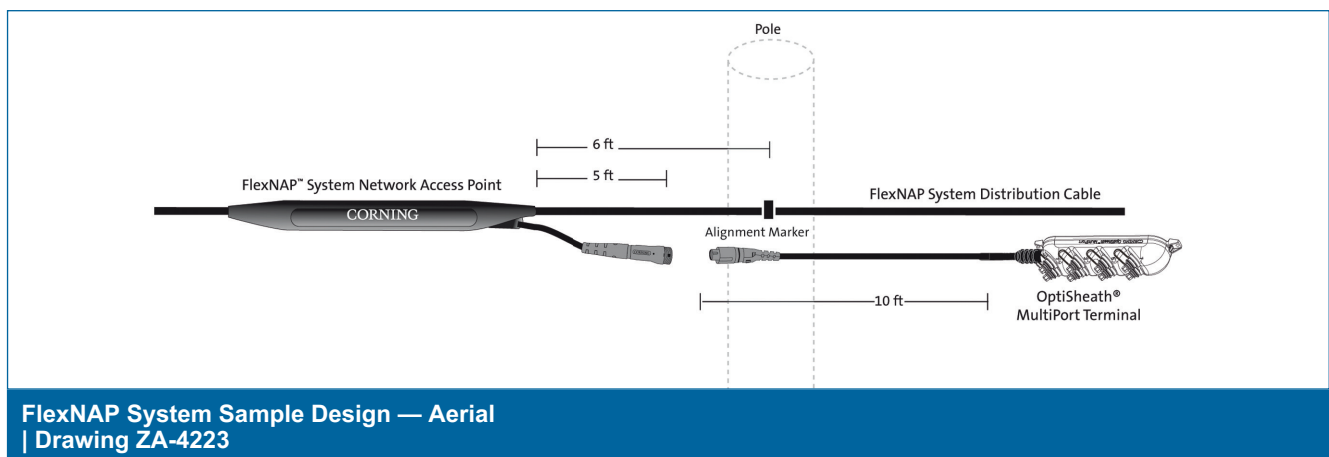


A FlexNAP System cable consists of three components:

1. FlexNAP System distribution cable
2. FlexNAP System network access points (with OptiTip® MT Cable Assembly)
3. FlexNAP System terminal (with OptiSheath® MultiPort Terminal) and OptiTip MT Cable Assembly (ordered separately)

Sample Design Layouts

Aerial FlexNAP™ System Portfolio

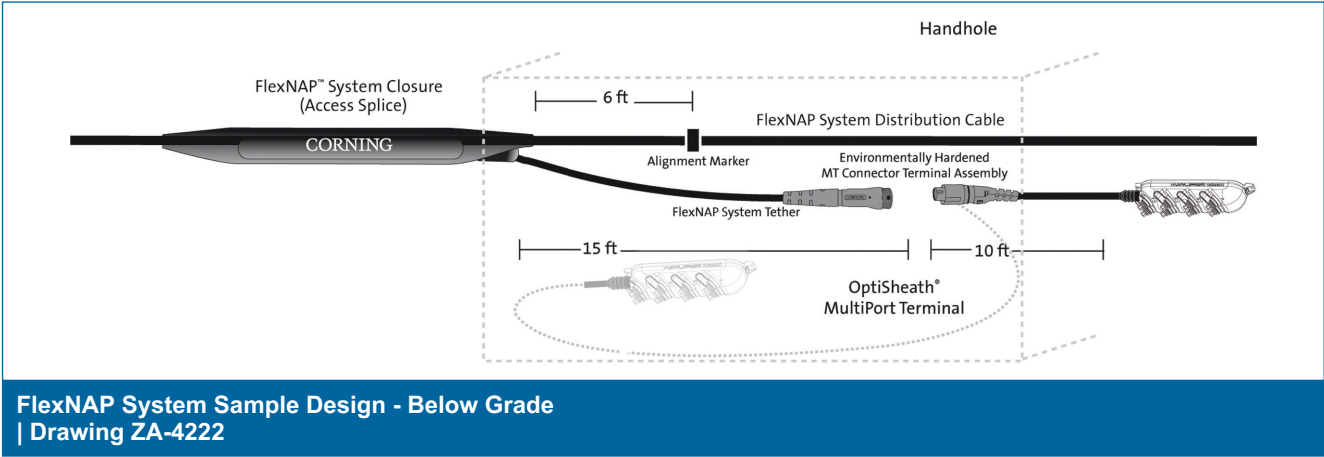


- 12 to 216 fibers
- 2-, 4-, 6-, 8- and 12-fiber MT-based tether attachment points (TAPs)
- Loose tube cable, Figure-8 cable, and RPX ribbon cable
- TAP tether length — 5 ft
- Terminal assembly length — 10 ft minimum

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Buried/Duct FlexNAP System Portfolio



- Buried application
 - Direct buried/Duct: 12 to 216 fibers
 - 1.25-in duct: 12 to 72 fibers
- 2-, 4-, 6-, 8- and 12-fiber MT-based tether attachment points (TAPs)
- Loose tube cable, Armored loose tube cable, and Toneable RPX ribbon cable
- TAP tether length — 15 ft
- Terminal assembly length — 10 ft minimum

Specifications

| Temperature Range | |
|-------------------|---|
| Storage | -40 °C to 70 °C (-40 °F to 158 °F) |
| Installation | -30 °C to 70 °C (-22 °F to 158 °F RPX cable -18° to 70°C) |
| Operation | -40 °C to 70 °C (-40 °F to 158 °F) |

FlexNAP™ Outside Plant System

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| Type | Maximum Distribution Cable Fiber Count | Minimum Duct Size (in) | Maximum Fibers per Access Point | Maximum Tether Assemblies per Access Point | Nominal Overmold Outer Diameter mm (in) | Minimum Bend Radius Loaded cm (in) | Minimum Bend Radius Installed cm (in) | Maximum Tensile Load Short-Term N (lbf) | Maximum Tensile Load Long-Term N (lbf) |
|---|--|------------------------|---------------------------------|--|---|------------------------------------|---------------------------------------|---|--|
| FlexNAP System – Loose Tube Dielectric | | | | | | | | | |
| Low-Profile | ≤ 72 | 1.25 | 24 | 2 | 28 (1.1) | 15.8 (6.2) | 10.5 (4.1) | 2700 (600) | 890 (200) |
| <i>*Note: Dual-tether locations will have two individual single-tether access points.</i> | | | | | | | | | |
| Standard | ≤ 72 | 2 | 24 | 2 | 36 (1.4) | 15.8 (6.2) | 10.5 (4.1) | 2700 (600) | 890 (200) |
| High-Fiber-Count | 96 | 2 | 24 | 2 | 44 (1.7) | 18.3 (7.2) | 12.2 (4.8) | 2700 (600) | 890 (200) |
| | 144 | 2 | 24 | 2 | 44 (1.7) | 23.7 (9.3) | 15.8 (6.2) | 2700 (600) | 890 (200) |
| | 216 | 2 | 24 | 2 | 44 (1.7) | 24.0 (9.4) | 16.0 (6.3) | 2700 (600) | 890 (200) |

| Type | Maximum Distribution Cable Fiber Count | Minimum Duct Size (in) | Maximum Fibers per Access Point | Maximum Tether Assemblies per Access Point | Nominal Overmold Outer Diameter mm (in) | Minimum Bend Radius Loaded mm (in) | Minimum Bend Radius Installed mm (in) | Maximum Tensile Load Short-Term N (lbf) | Maximum Tensile Load Long-Term N (lbf) |
|--|--|------------------------|---------------------------------|--|---|------------------------------------|---------------------------------------|---|--|
| FlexNAP System – Loose Tube Armored | | | | | | | | | |
| Standard | ≤ 72 | 2 | 24 | 2 | 44 (1.7) | 182 (7.2) | 121 (4.8) | 2700 (600) | 890 (200) |
| High-Fiber-Count | 96 | 3 | 24 | 2 | 50 (2.0) | 207 (8.1) | 138 (5.4) | 2700 (600) | 890 (200) |
| | 144 | 3 | 24 | 2 | 50 (2.0) | 263 (10.4) | 175 (6.9) | 2700 (600) | 890 (200) |
| | 216 | 3 | 24 | 2 | 50 (2.0) | 266 (10.5) | 177 (7.0) | 2700 (600) | 890 (200) |

| Type | Maximum Distribution Cable Fiber Count | Minimum Duct Size (in) | Maximum Fibers per Access Point | Maximum Tether Assemblies per Access Point | Nominal Closure Outer Diameter mm (in) | Minimum Bend Radius Loaded mm (in) | Minimum Bend Radius Installed mm (in) | Maximum Tensile Load Short-Term N (lbf) | Maximum Tensile Load Long-Term N (lbf) |
|--|--|------------------------|---------------------------------|--|--|------------------------------------|---------------------------------------|---|--|
| FlexNAP System – Dielectric or Toneable RPX | | | | | | | | | |
| | 24, 48, 72, 96, 144 | 2 | 24 | 2 | 25.4 (1.0) | 229 (9.0) | 229 (9.0) | 2700 (600) | 890 (200) |
| <i>* Notes:</i> | | | | | | | | | |
| 1) RPX FlexNAP tether fiber counts are 4, 8, 12. | | | | | | | | | |
| 2) All cable types allow two access points three feet apart resulting in four tethers at the same location for a maximum of 48 fibers. | | | | | | | | | |

FlexNAP™ Outside Plant System

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| Tether Application | Tether Length (ft) | Connector Style | Cable Type | Available Fiber Counts | Insertion Loss (dB) Typical | Reflectance (dB) Typical | Polish | Alignment Mechanism |
|--|--------------------|-------------------|---------------|------------------------|-----------------------------|--------------------------|----------|----------------------------|
| OptiTip® MT Cable Assembly Tether | | | | | | | | |
| Aerial | 5 | OptiTip MT Pinned | SST flat drop | 2, 4, 6, 8, 12 | 0.35 | ≤ -65 | 8° angle | Stainless steel guide pins |
| Below Ground/Duct | 15 | OptiTip MT Pinned | SST flat drop | 2, 4, 6, 8, 12 | 0.35 | ≤ -65 | 8° angle | Stainless steel guide pins |

Ordering Process

Ordering the FlexNAP system is a three-step process:

1. Design and Measure – Design the distribution cable build-plan and measure distances between poles, handholes, or pedestals to fit your specific application.
2. Create and Submit Build-Plan Online – Contact Corning at 800-743-2675 for access to the online configurator.
3. Place Order – Place order by submitting the single, unique part number generated by the online configurator.

Note: Initial FlexNAP system quote will be generated using this specification sheet to create a component bill of material (BOM).

Component Specifications

The FlexNAP system configurator is an online tool used to format a build-plan that will be used to process the FlexNAP system design specifications at Corning. The following information is provided to illustrate the available FlexNAP system configurations and to allow for creating a bill of materials (BOM) for planning purposes once a design is uploaded. The BOM created is only for reference and is not a component breakdown for ordering. A single part number used for ordering will be generated by the FlexNAP system configurator that will encompass the components of the BOM.



FlexNAP System Components |

Distribution Trunk Cables

Ordering Information

FNAP - CBL -

E

1

2

3

1 Select fiber count.

- | | |
|-----------------|------------------|
| 012 = 12 fibers | 072 = 72 fibers |
| 024 = 24 fibers | 096 = 96 fibers |
| 036 = 36 fibers | 144 = 144 fibers |
| 048 = 48 fibers | 216 = 216 fibers |
| 060 = 60 fibers | |

See Notes 1 and 2.

2 Defines fiber type.

E = Single-mode (OS2)

3 Select cable type.

- U4 = ALTOS loose tube gel-free
- UA = Figure-8 loose tube
- V4 = RPX gel-free flat ribbon
- UC = ALTOS Lite gel-free armored
- V2 = RPX toneable
- UF = Loose tube flame retardant

Note:
1) RPX Cables available in 24, 48, 72, 96 and 144 fiber counts only.
2) 216 fiber only in ALTOS All-Dielectric Cable, ALTOS Lite Gel-Free Armored Cable and figure-8 cable.

FlexNAP System Components | (continued)

Tether Attachment Points

Ordering Information

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|--|--|--|---|
| F | S | | | | | | | | | | | F |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | | | | |

1 Defines fiber type.
S = Single-mode (OS2)

2 Select cable type.
U4 = ALTOS loose tube gel-free
UA = Figure-8 loose tube
V4 = RPX gel-free flat ribbon
UC = ALTOS Lite gel-free armored
V2 = RPX toneable
UF = Loose tube flame retardant
See Note 1.

3 Select TAP type.
A = RPX cable or standard overmold for loose tube
C = 1.25-in overmold (≤ 72 fiber; U4 cable only)

4 Select fiber count.
02 = 2 fibers
04 = 4 fibers
06 = 6 fibers
08 = 8 fibers
12 = 12 fibers

5 Select tether type.
M2 = OptiTip MT connector (pinned)

6 Select installation environment.
T = Aerial
R = Below grade

7 Select end cap type.
N = No loop back
L = Loop back dust cap

8 Select tether length in ft.
005 = Aerial
015 = Below grade and/or duct

9 Defines unit of measure for tether length.
F = Feet

Note:

1) RPX Cable FlexNAP tether fiber counts are 4, 8, 12.

FlexNAP™ System Components | (continued)

Second Tether Component Breakdown Second Tether Attachment Points

Ordering Information

| | | | | | | | | | | | | | |
|---|--|--|--|---|--|---|---|---|----------|----------|----------|----------|----------|
| F | S | □ | □ | - | □ | □ | M 2 | □ | □ | □ | □ | □ | F |
| 1 | 2 | 3 | 4 | | 5 | 6 | 7 | 8 | | | | 9 | |
| 1 Defines fiber type. S = Single-mode (OS2) | 2 Select cable type. U2 = ALTOS loose tube gel-free UA = Figure-8 loose tube UC = ALTOS Lite gel-free armored V2 = RPX toneable V4 = RPX gel-free flat ribbon UF = Loose tube flame retardant <i>See Note 1.</i> | 3 Defines TAP type. - = Second tether attachment point | 4 Select fiber count. 02 = 2 fibers 04 = 4 fibers 06 = 6 fibers 08 = 8 fibers 12 = 12 fibers | 5 Defines tether type. M2 = OptiTip MT connector (pinned) | 6 Select installation environment. T = Aerial R = Below grade | 7 Select end cap type. N = No loop back L = Loop back dust cap | 8 Select tether length in ft. 005 = Aerial 015 = Below grade and/or duct | 9 Defines unit of measure for tether length. F = Feet | | | | | |

Note:

1) RPX Cable FlexNAP tether fiber counts are 4, 8, 12.

FlexNAP™ System Components | (continued)

Pre-term Lateral Installation Details

A pre-term lateral is a factory-terminated solution for quick and easy connection to a parent FlexNAP cable, with the purpose of eliminating a field splice point. This allows passing smaller side streets in a neighborhood of 48 homes or less. The connectivity is achieved by adding one to four non-pinned connectors to the HE/CO/Cabinet side of the cable. These mate directly to the parent FlexNAP cable providing connectivity without a need for tools. Pre-term laterals are available with the fiber counts of 12, 24, 36, or 48 fiber maximum and at least one field side tap.

Ordering Information

RTX - M 1

1 **2**

1 Select fiber count.

012 = 12 fibers (1 tether)
024 = 24 fibers (2 tethers)
036 = 36 fibers (3 tethers)
048 = 48 fibers (4 tethers)

2 Select cable type.

EV4 = RPX cable
EUC = Armored loose tube
EU4 = Dielectric loose tube
EV2 = RPX toneable
EUA = Figure-8 loose tube



Typical FlexNAP with Preterminated Lateral (reverse tether)
| Drawing ZA-4309

FlexNAP™ Outside Plant System

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FlexNAP™ System Components | (continued)

Cable with Max Lengths

| Cable Type with Maximum Lengths in Feet and Meters | | | |
|---|-----------------|--------------------|---------------------|
| Cable | Fiber Count | Maximum Length (m) | Maximum Length (ft) |
| ALTOS Loose Tube, Gel-Free, Dielectric and Riser Cable | 12 to 72 fibers | 7000 | 23000 |
| | 96 fibers | 5500 | 18000 |
| | 144 fibers | 3300 | 10000 |
| | 216 fibers | 4000 | 13000 |
| ALTOS Figure-8 Loose Tube | 12 to 72 fiber | 1500 | 4900 |
| | 96 fibers | 1500 | 4900 |
| | 144 fibers | 1200 | 4000 |
| | 216 fibers | 1200 | 4000 |
| RPX Toneable and Dielectric | 24 fibers | 7000 | 23000 |
| | 48 fibers | 7000 | 23000 |
| | 72 fibers | 6500 | 21000 |
| | 96 fibers | 6500 | 21000 |
| | 144 fibers | 5500 | 21000 |
| ALTOS Loose Tube, Armored, Gel-Free | 12 to 72 fibers | 4000 | 13000 |
| | 96 fibers | 3000 | 9600 |
| | 144 fibers | 2000 | 6500 |

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FlexNAP™ Outside Plant System

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FlexNAP™ System Components | (continued)

Terminal Component Breakdown

Order the appropriate OptiSheath® MultiPort Terminal with OptiTip® MT Cable Assembly separately.

Standard length is 10 ft. For customized lengths up to 500 ft, refer to the ordering information on the following page. For lengths greater than 500 ft, please call a Corning Customer Care Representative at 800-743-2675.

| Terminal Type | OptiTap® Adapter Port Counts | Connector Style | Insertion Loss (dB) Typical | Reflectance (dB) Typical* |
|--|------------------------------|---------------------------------|-----------------------------|---------------------------|
| FlexNAP System Compatible OptiSheath® MultiPort Terminal Specifications | | | | |
| Sealed with OSP cable stub | 4, 6, 8, 12 | OptiTap Port Assembly to SC APC | 0.15 | ≤ -65 |

*Typical performance when mated with a Corning Cable Systems OptiTap Drop Cable assembly.

| Connector Style | Cable Type | Fiber Counts | Insertion Loss (dB) Typical | Reflectance (dB) Typical† | Polish |
|---|---------------|--------------|-----------------------------|---------------------------|----------|
| FlexNAP System Compatible OptiSheath MultiPort Terminal Specifications | | | | | |
| OptiTip MT Non-pinned | SST flat drop | 4, 6, 8, 12 | 0.35 | ≤ -65 | 8° angle |

†Typical performance when mated with a Corning Cable Systems OptiTip MT Pinned Connector

| Description | Dimensions (L x H x W) mm (in) |
|---|---------------------------------------|
| FlexNAP System Compatible OptiSheath MultiPort Terminal Specifications | |
| OptiSheath 4-Port MultiPort Terminal | 27.4 x 6.6 x 7.3 (10.8 x 2.6 x 2.9) |
| OptiSheath MultiPort Terminal (6-, 8-Ports) | 31.2 x 7.6 x 8.6 (12.3 x 3.0 x 3.4) |
| OptiSheath 12-Port MultiPort Terminal | 10.2 x 14.7 x 38.1 (15.0 x 4.0 x 5.8) |

Ordering Information

| | | | | | | | | | | | | | | | |
|---|---|---|---|----------------------|----------------------|---|---|----------------------|----------------------|----------------------|----------------------|---|---|---|----------------------|
| M | T | B | - | <input type="text"/> | <input type="text"/> | 4 | 4 | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | F | W | - | <input type="text"/> |
| | | | | 1 | | 2 | | 3 | | 4 | | 5 | | | 6 |

1 Select number of OptiTap Cable Assembly ports.

04 = 4 OptiTap Connector adapters
 06 = 6 OptiTap Connector adapters
 08 = 8 OptiTap Connector adapters
 12 = 12 OptiTap Connector adapters

2 Defines OptiTap Connector Adapter type.

44 = APC

3 Select cable type.

FD = SST flat dielectric drop cable
 TD = SST flat toneable drop cable

4 Select cable length (See Table A for additional lengths).

010 = 10 ft
 025 = 25 ft
 050 = 50 ft
 075 = 75 ft
 100 = 100 ft
 500 = 500 ft

5 Defines unit of measure.

F = Feet

6 Select packaging.

P = Individual packaging
 Blank = Bulk packaging

Table A: Alpha Codes for lengths ≥ 1000 ft

| | | |
|-----|---|------|
| A00 | = | 1000 |
| B00 | = | 1100 |
| C00 | = | 1200 |
| D00 | = | 1300 |
| E00 | = | 1400 |
| F00 | = | 1500 |
| G00 | = | 1600 |
| H00 | = | 1700 |
| J00 | = | 1800 |
| K00 | = | 1900 |
| L00 | = | 2000 |

FlexNAP™ Outside Plant System

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FlexNAP™ System Components | (continued)

Terminal Component Breakdown

| Standard Multiport Configurations | | |
|-----------------------------------|-----------------|----------------|
| Part Number | Number of Ports | Cable Length |
| MTB-0444FD010FW-P | 4 | 3 m (10 ft) |
| MTB-0644FD010FW-P | 6 | 3 m (10 ft) |
| MTB-0844FD010FW-P | 8 | 3 m (10 ft) |
| MTB-1244FD010FW-P | 12 | 3 m (10 ft) |






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Accessories

| Part Number | Product Description | Units per Delivery | |
|-------------------|--|--------------------|---|
| MOB-KT-AHD | 4-, 6-, and 8-port Mounting Bracket for aerial strand applications | 1/1 |  |
| MOB-KT-AHD-12 | 12-port Mounting Bracket for aerial strand applications | 1/1 |  |
| MOB-KT-UNIV-BKT | Universal Mounting Bracket Pack for 4- and 12-port housing | 10/1 |  |
| 2104478-01 | Fiber Optic Cleaning Tool, OptiTip® connector | 1/1 |  |
| CLEANER-PORT-OTAP | Single-fiber Port Cleaner for OptiTap® connector end faces | 1/1 |  |

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