

# FlexNAP™ Outside Plant System

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## 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

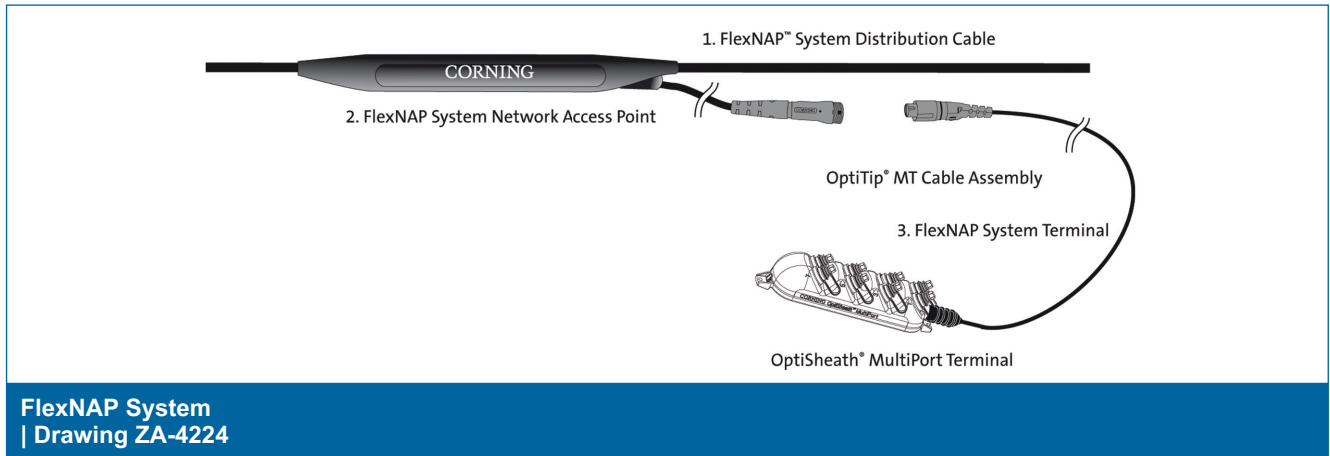


OptiTip MT Cable Assembly  
| Photo CCA202

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## Designing A FlexNAP™ System

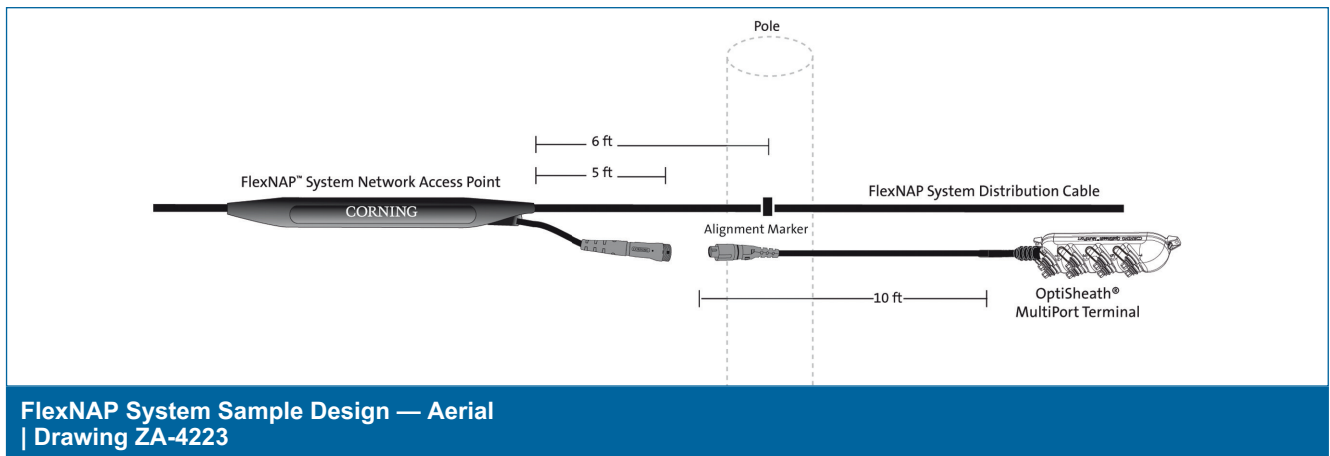


A FlexNAP System cable consists of three components:

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

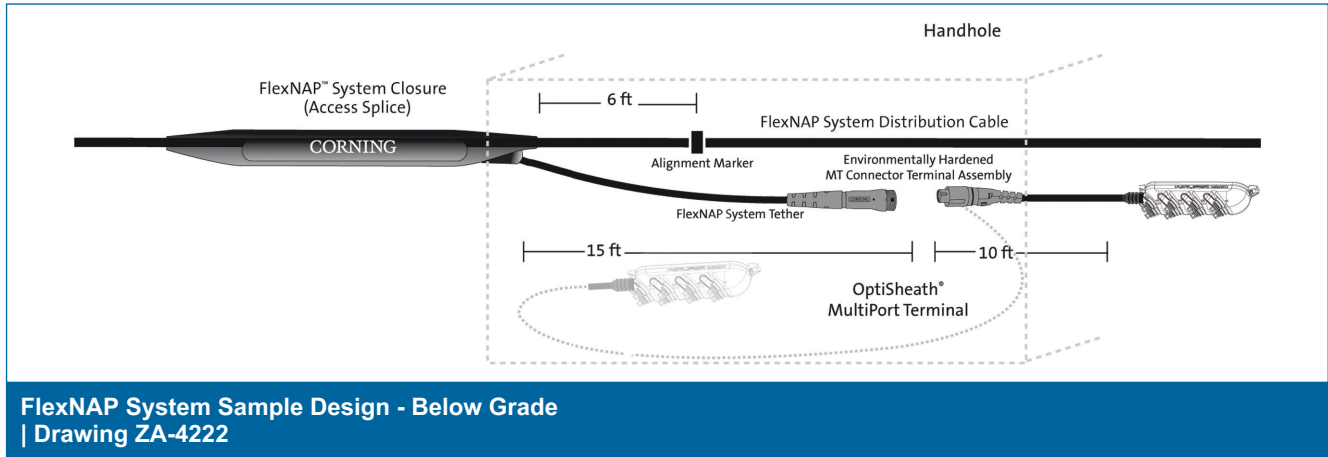


- 12 to 432 fibers
- 2-, 4-, 6-, 8- and 12-fiber MT-based tether attachment points (TAPs)
- Loose tube cable, Figure-8 cable, and RPX ribbon cable
- TAP tether length — 5 ft
- Terminal assembly length — 10 ft minimum

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## Buried/Duct FlexNAP System Portfolio



- Buried application
  - Direct buried/Duct: 12 to 432 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)

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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)
<b>FlexNAP System – Loose Tube Dielectric</b>									
Low-Profile	≤ 72	1.25	24	2	28 (1.1)	158 (6.2)	105 (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)	158 (6.2)	105 (4.1)	2700 (600)	890 (200)
High-Fiber-Count	96	2	24	2	44 (1.7)	183 (7.2)	122 (4.8)	2700 (600)	890 (200)
	144	2	24	2	44 (1.7)	237 (9.3)	158 (6.2)	2700 (600)	890 (200)
	216	2	24	2	44 (1.7)	240 (9.4)	160 (6.3)	2700 (600)	890 (200)
	288	3	24	2	55 (2.2)	273 (10.7)	182 (7.2)	2700 (600)	890 (200)
	432	3	24	2	65 (2.2)	318 (12.5)	212 (8.3)	2700 (600)	890 (200)
<i>*Note: 288F and 432F cables only allow tethers to be built in the outer layer of buffer tubes.</i>									

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)
<b>FlexNAP System – Loose Tube Armored</b>									
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)
	288	3	24	2	55 (2.2)	273 (10.7)	182 (7.2)	2700 (600)	890 (200)
	432	3	24	2	55 (2.2)	318 (12.5)	212 (8.3)	2700 (600)	890 (200)
<i>*Note: 288F and 432F cables only allow tethers to be built in the outer layer of buffer tubes.</i>									

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)
<b>FlexNAP System – Dielectric or Toneable RPX</b>									
	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



Tether Application	Tether Length (ft)	Connector Style	Cable Type	Available Fiber Counts	Insertion Loss (dB) Typical	Reflectance (dB) Typical	Polish	Alignment Mechanism
<b>OptiTip® MT Cable Assembly Tether</b>								
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

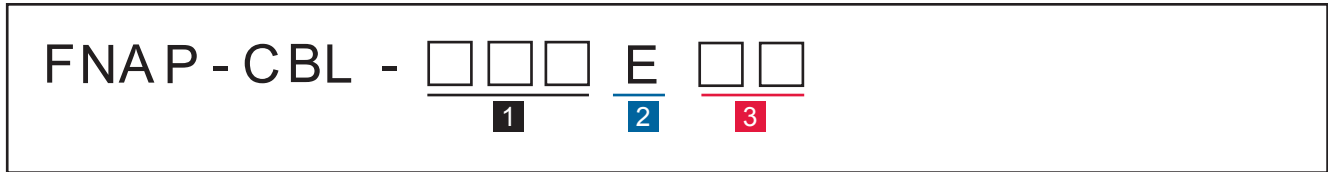
The FlexNAP system configurator is an online tool used to format a build-plan that will be used to process the FlexNAP system design specifications at Corning. The following information is provided to illustrate the available FlexNAP system configurations and to allow for creating a bill of materials (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



**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       | 288 = 288 fibers |
| <i>See Notes 1-4.</i> | 432 = 432 fibers |

**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

Notes:

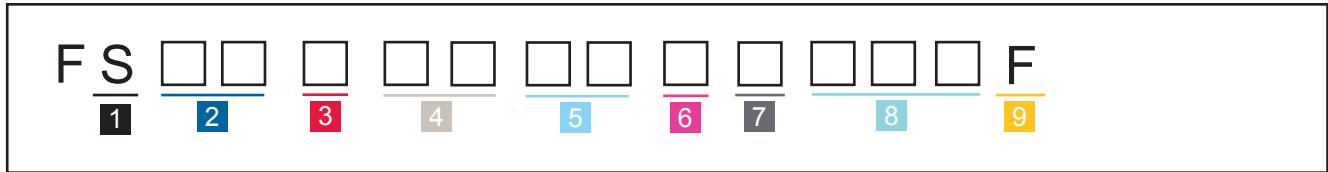
- 1) RPX Cables available in 24, 48, 72, 96 and 144 fiber counts only.
- 2) 216 fiber only in ALTOS All-Dielectric Cable, ALTOS Lite Gel-Free Armored Cable and figure-8 cable.
- 3) 288 and 432 fiber only in ALTOS All-Dielectric Cable and ALTOS Lite Gel-Free Armored Cable.
- 4) 288 fiber cable allows 168 preconnectorized fibers, 432 fiber cable allows 204 preconnectorized fibers.



## FlexNAP System Components | (continued)

### Tether Attachment Points

#### Ordering Information



**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

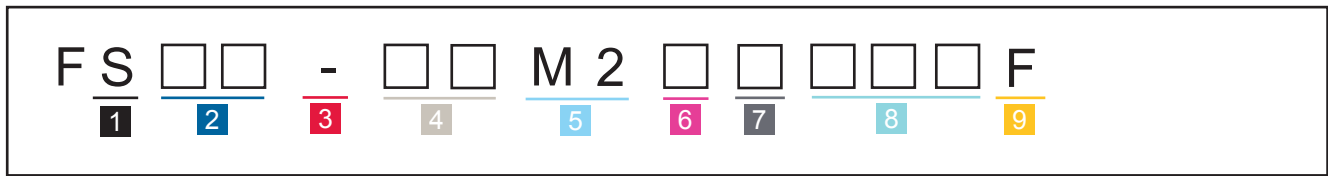
Note:  
1) RPX Cable FlexNAP tether fiber counts are 4, 8, 12.



## FlexNAP™ System Components | (continued)

### Second Tether Component Breakdown Second Tether Attachment Points

#### Ordering Information



**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  
*See Note 1.*

**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 - <u>□□□</u> <u>□□□</u> 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

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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)
<b>ALTOS Loose Tube, Gel-Free, Dielectric and Riser Cable</b>	12 to 72 fibers	7000	23000
	96 fibers	5500	18000
	144 fibers	3300	10000
	216 fibers	4000	13000
	288 fibers	3000	10000
	432 fibers	2400	8000
<b>ALTOS Figure-8 Loose Tube</b>	12 to 72 fiber	1500	4900
	96 fibers	1500	4900
	144 fibers	1200	4000
	216 fibers	1200	4000
<b>RPX Toneable and Dielectric</b>	24 fibers	7000	23000
	48 fibers	7000	23000
	72 fibers	6500	21000
	96 fibers	6500	21000
	144 fibers	5500	21000
	<b>ALTOS Loose Tube, Armored, Gel-Free</b>	12 to 72 fibers	4000
96 fibers		3000	9600
144 fibers		2000	6500
216 fibers		2400	8000
288 fibers		2000	6500
432 fibers		1600	5200

# 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*
<b>FlexNAP System Compatible OptiSheath® MultiPort Terminal Specifications</b>				
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
<b>FlexNAP System Compatible OptiSheath MultiPort Terminal Specifications</b>					
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)
<b>FlexNAP System Compatible OptiSheath MultiPort Terminal Specifications</b>	
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)

# FlexNAP™ Outside Plant System



## Ordering Information

**M T B** -   **4 4**    **F W** -

**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



## FlexNAP™ System Components | (continued)

### Terminal Component Breakdown

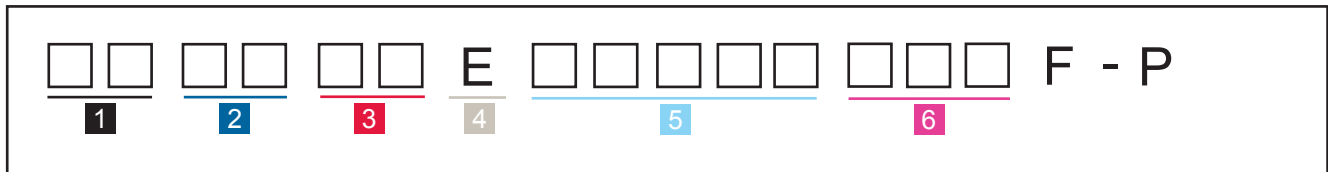
Standard Multiport Configurations		
Part Number	Number of Ports	Cable Length
MTB-0444FD010FW-P	4	3 m (10 ft)
MTB-0644FD010FW-P	6	3 m (10 ft)
MTB-0844FD010FW-P	8	3 m (10 ft)
MTB-1244FD010FW-P	12	3 m (10 ft)



## FlexNAP™ System Components | (continued)

### OptiTip® Assemblies

### Ordering Information



- 1** Select connector type one.
- 00 = No connector (pigtail)
  - M1 = OptiTip MT Connector (non-pinned), single-mode (OS2)
  - M2 = OptiTip MT Connector (pinned), single-mode (OS2)

- 2** Select connector type two.
- M1 = OptiTip MT Connector (non-pinned), single-mode (OS2)
  - M2 = OptiTip MT Connector (pinned), single-mode (OS2)
  - 02 = LC UPC, single-mode (OS2)
  - 44 = SC APC
  - 58 = SC UPC, single-mode (OS2)
  - 61 = ST Compatible Connector, UPC, single-mode (OS2)
  - 90 = MTP Connector (non-pinned), single-mode (OS2)
- See Notes 1 and 2.*

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

- 4** Defines fiber type.
- E = Single-mode (OS2)

- 5** Select cable type.
- B4D1E = SST-Drop Outdoor Cable
  - B1D1E = SST-Drop Toneable Outdoor Cable
  - BZD1X = FREEDM LSZH Flat Drop Cable

- 6** Select length.
- 025 = 25 ft
  - 050 = 50 ft
  - 075 = 75 ft
  - 100 = 100 ft
  - 150 = 150 ft
  - 200 = 200 ft
  - 250 = 250 ft
  - 500 = 500 ft


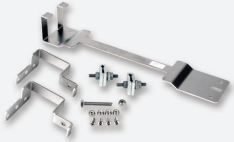



**Notes:**

- 1) Codes M1 and M2 are point-to-point trunks when selected as connector type two.
- 2) Our assemblies are not available with M2 (pinned) connectors on both ends.

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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	

Corning Optical Communications LLC • 4200 Corning Place • Charlotte, NC 28216 United States  
 800-743-2675 • FAX: 828-325-5060 • International: +1-828-901-5000 • [www.corning.com/opcomm](http://www.corning.com/opcomm)

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