

Communication Markets Division

3M™ Fiber Optic Splice Closure 2178 Family

# Flexible Fiber Management Solutions



# More flexibility for your complex fiber optic network

A full line of closures and accessories designed to protect fiber optic facilities. The 3M™ Fiber Optic Splice Closure 2178 family has earned its reputation for reliable protection of fiber optic facilities.

Now, the 2178 family includes many models and configurations for more flexibility to help meet the complex needs of today's fiber optic networks.

## Growing technologies require growing solutions.

You want to build reliable FTTP networks faster and cheaper. The expanded 3M™ Fiber Optic Splice Closure 2178 family can help you meet these needs for most applications (including aerial, buried, underground, vault and building entrance) and cables (including loose buffer tube, tight buffer tube, central tube, discrete fiber, ribbon fiber, armored or dielectric).



# 3M™ Fiber Optic Splice Closure 2178 Family

## Multiple solutions for evolving networks.

The 3M Fiber Optic Splice Closure 2178 family provides multiple real-world solutions with five key aspects:

1

### A complete product family

The 3M Fiber Optic Splice Closure 2178 family includes seven distinct models (XSB, XLB, S, SL, LS, LL and XL) in both flame-retardant and non-flame-retardant versions, each with flexibility built-in for growing networks.

2

### Future-proof solutions

The 2178 family has scalability and flexibility, allowing you to expand the system based on splicing capacity and the number of cable entry ports. It also allows you to defer your investment until it is required.

3

### Easily re-enterable designs

A reusable gasket makes re-entry easy, while bolted halves provide greater security. With the 2178 family, you can re-enter, re-configure and add or remove cables in most outside plant and inside plant environments.

4

### Flexible environment applications

The 3M™ Fiber Optic Splice Closure 2178 family can be effectively used in nearly any application including aerial (pole and strand) mount, central office vault, manhole, pedestal and handhole. It can also accommodate most splicing methods (mechanical and fusion) as well as inline and butt splicing configurations.

5

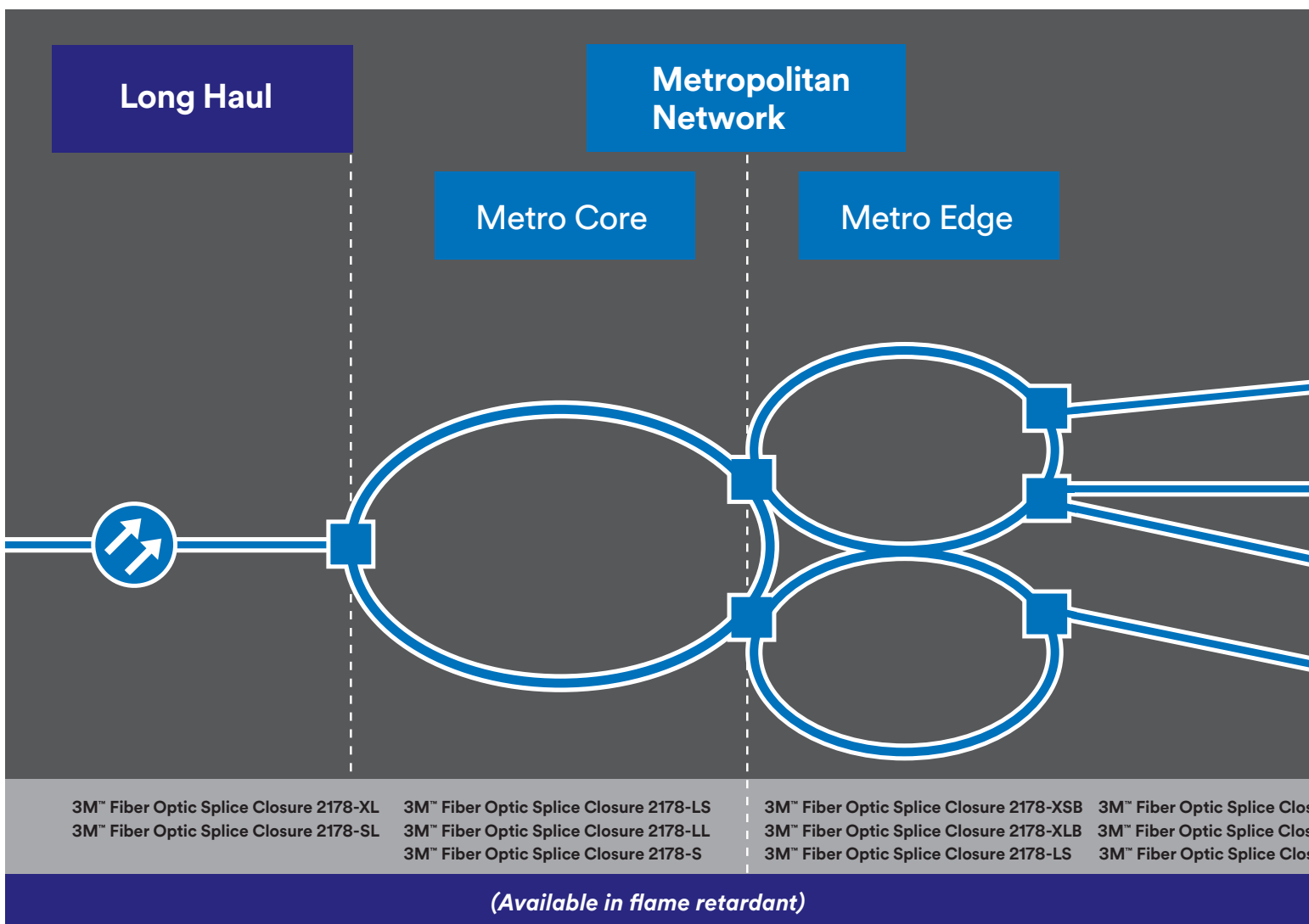
### Network flexibility

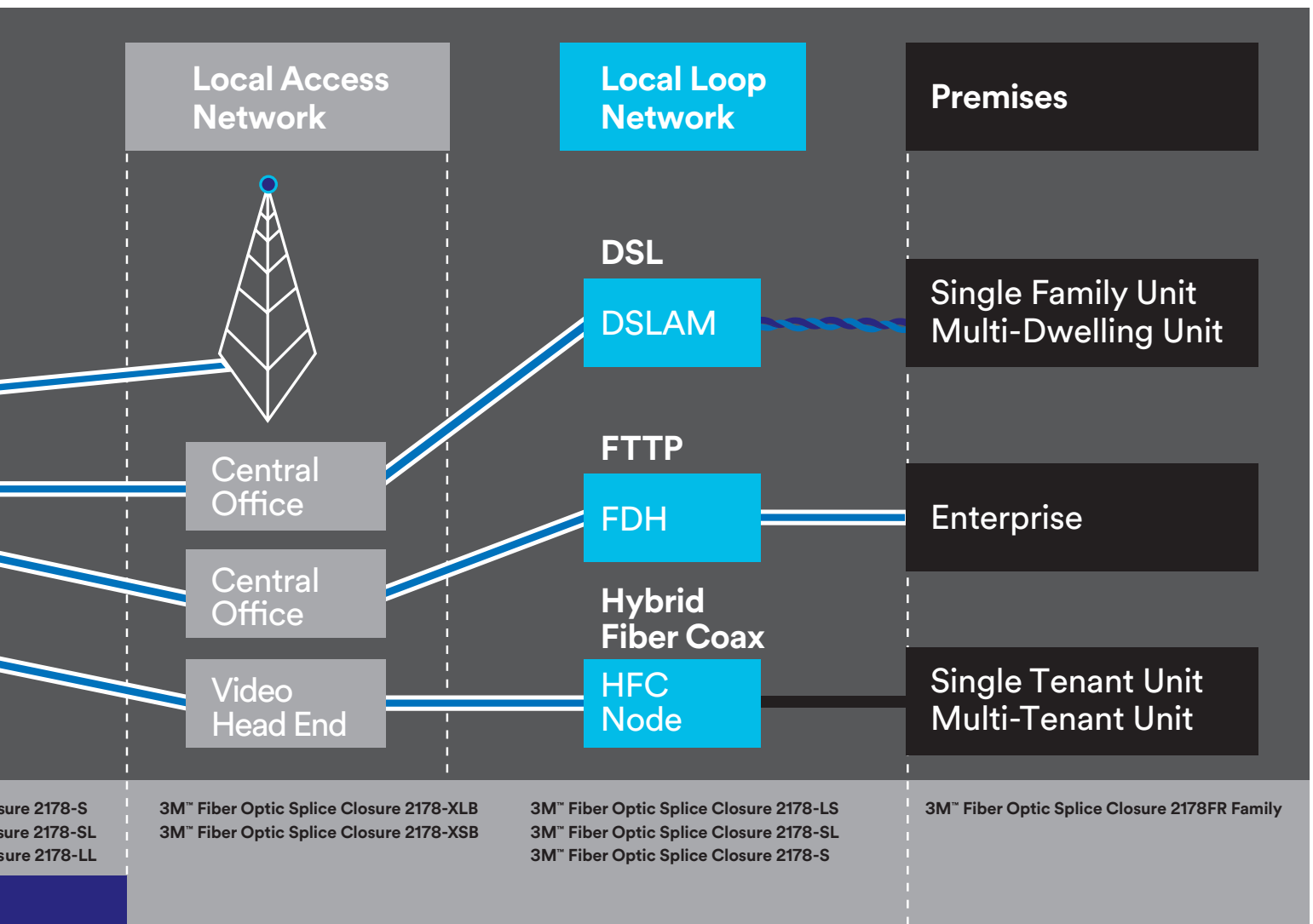
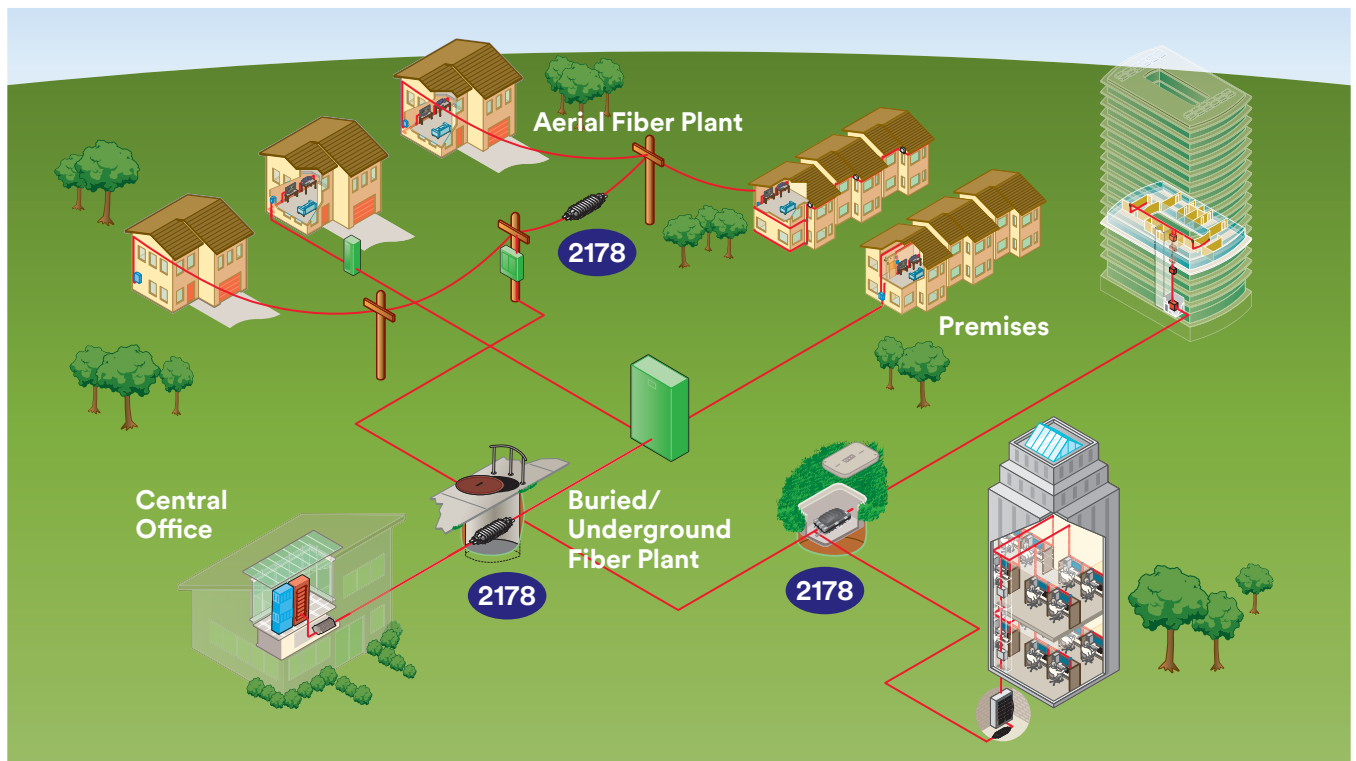
3M designs a variety of sizes, materials (flame retardant vs. non flame retardant) and configuration options so that our fiber optic splice closures can be used in almost every segment of the network. A single product family meets a range of needs.



Fully assembled 3M™ Fiber Optic Splice Closure 2178-S with two LBT cables

# A flexible solution for different applications





# More advantages with a complete solution

## Flexibility that can save you time and money.

The 3M™ Fiber Optic Splice Closure 2178 family provides excellent system flexibility for both existing and new fiber deployments. Products in the 2178 family are industry-proven. The flexible design and common accessories allow you to maintain a reduced inventory, which can save time and money.

## Smart design makes your job easier.

All 2178 closures are designed to be easy to install, easy to use and easy to re-enter. The reusable gasket helps make re-entry as easy as any other system with almost no training necessary.

The 2178 family accommodates most splicing configurations (inline or butt).



3M™ 4- and 6-Port Grommets for 3M™ Fiber Optic Splice Closure 2178 Series

## Features to meet network demands.

The closures accommodate cables of varying sizes and provide flexibility to add ports with the cable addition kit. The 3M™ Cable Addition Kits 2181-XL, 2181-XB and 3M™ 4- and 6-Port Grommets make system expansion even easier. A flexible tray system allows positionable or fixed splice inserts. Technicians can re-enter and swap out splice holders, and mix and match splice types (fusion and mechanical). The same tray can be used for discrete or mass splicing.

All of these features combine to give you an enhanced ability to offer optimum bandwidth for triple play services of voice, data and video.

## 3M™ Fiber Optic Splice Closure 2178 Family

### Features and Benefits

|                                                     |                                                                                                                                            |
|-----------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|
| Full range of sizes                                 | Fits your specific application                                                                                                             |
| No special tools required (standard torque wrench)  | Easy installation and re-entry                                                                                                             |
| Constructed of a highly chemical-resistant material | Can be deployed in most applications: buried, underground and aerial                                                                       |
| Gasket seals                                        | Reusable for easy re-entry                                                                                                                 |
| Unique strength member clamp assembly               | Prevents cable sheath movement with temperature changes                                                                                    |
| Spacious fiber management areas                     | All closures provide separate areas for routing, protecting, and expressing buffer tubes and ribbon fibers                                 |
| Flexible drop or cable addition                     | Multiport grommets provide entry for drops or cables                                                                                       |
| Flame-retardant materials                           | All 2178 closures are available in a flame-retardant model, giving you even more application choices<br>Flame Retardant Material: UL-94V-0 |

# Reliable protection for your application

The 3M™ Fiber Optic Splice Closure 2178 family provides secure protection for a broad range of fiber cables. The 2178 family is engineered to meet common needs and field conditions, with different sizes to accommodate varying splice counts, ideal for wide varieties of applications.



3M™ Fiber Optic Splice Closure 2178-XSB  
Available in flame retardant



3M™ Fiber Optic Splice Closure 2178-XLB  
Available in flame retardant



3M™ Fiber Optic Splice Closure 2178-S  
Available in flame retardant



3M™ Fiber Optic Splice Closure 2178-SL  
Available in flame retardant



3M™ Fiber Optic Splice Closure 2178-LS  
Available in flame retardant



3M™ Fiber Optic Splice Closure 2178-LL  
Available in flame retardant



3M™ Fiber Optic Splice Closure 2178-XL  
Available in flame retardant



## 3M™ Fiber Optic Splice Closure 2178

| Product Number  | Size in. (mm)<br>(L x W x H)                  | Splice Configuration | Cable Entry Ports  | Maximum Splice Capacity               |
|-----------------|-----------------------------------------------|----------------------|--------------------|---------------------------------------|
| <b>2178-XSB</b> | 14.6 × 10.1 × 4.6<br>(369.8 × 256.5 × 117.3)  | Butt                 | 3 Butt             | 48 Single Fusion<br>288 Mass Fusion   |
| <b>2178-XLB</b> | 14.6 × 10.1 × 5.8<br>(369.8 × 256.5 × 147)    | Butt                 | 3 Butt             | 96 Single Fusion<br>432 Mass Fusion   |
| <b>2178-S</b>   | 21.9 × 8.5 × 4.7<br>(556.3 × 215.9 × 119.4)   | Inline<br>Butt       | 4 Inline<br>2 Butt | 96 Single Fusion<br>288 Mass Fusion   |
| <b>2178-SL</b>  | 21.9 × 8.5 × 8.0<br>(556.3 × 215.9 × 203.2)   | Inline<br>Butt       | 4 Inline<br>2 Butt | 96 Single Fusion<br>288 Mass Fusion   |
| <b>2178-LS</b>  | 21.9 × 8.5 × 8.0<br>(556.3 × 215.9 × 203.2)   | Inline<br>Butt       | 4 Inline<br>2 Butt | 288 Single Fusion<br>864 Mass Fusion  |
| <b>2178-LL</b>  | 21.9 × 8.5 × 11.3<br>(556.3 × 215.9 × 287.0)  | Inline<br>Butt       | 4 Inline<br>2 Butt | 288 Single Fusion<br>864 Mass Fusion  |
| <b>2178-XL</b>  | 27.0 × 13.3 × 11.0<br>(660.4 × 337.8 × 279.4) | Inline<br>Butt       | 8 Inline<br>4 Butt | 576 Single Fusion<br>1728 Mass Fusion |

# Grow as you go with multiple entry port configurations

## 3M™ Fiber Optic Splice Closure 2178

|                                                                                     | Size<br>(L x W x H)                                         | Splice<br>Application | Max Cable Entry Ports |                   |
|-------------------------------------------------------------------------------------|-------------------------------------------------------------|-----------------------|-----------------------|-------------------|
|                                                                                     |                                                             |                       | Main                  | Branch            |
|    | <b>2178-XSB</b><br>(14.6" x 10.1" x 4.6")                   | Butt                  | 2 Butt                | 1 Butt            |
|    | <b>2178-XSB with one 2181-XB</b><br>(14.6" x 10.1" x 6.73") | Butt                  | 2 Butt                | 4 Butt            |
|    | <b>2178-XLB</b><br>(14.6" x 10.1" x 5.8")                   | Butt                  | 2 Butt                | 1 Butt            |
|   | <b>2178-XLB with one 2181-XB</b><br>(14.6" x 10.1" x 7.93") | Butt                  | 2 Butt                | 4 Butt            |
|  | <b>2178-S</b><br>(21.9" x 8.5" x 4.7")                      | Butt or Inline        | 2 Butt, 2 Inline      | 0 Butt, 2 Inline  |
|  | <b>2178-S with one 2181-LS</b><br>(21.9" x 8.5" x 6.2")     | Butt or Inline        | 2 Butt, 2 Inline      | 2 Butt, 6 Inline  |
|  | <b>2178-S with two 2181-LS</b><br>(21.9" x 8.5" x 7.7")     | Butt or Inline        | 2 Butt, 2 Inline      | 4 Butt, 10 Inline |
|  | <b>2178-S with three 2181-LS</b><br>(21.9" x 8.5" x 9.2")   | Butt or Inline        | 2 Butt, 2 Inline      | 4 Butt, 10 Inline |
|  | <b>2178-SL</b><br>(21.9" x 8.5" x 8.0")                     | Butt or Inline        | 2 Butt, 2 Inline      | 0 Butt, 2 Inline  |
|  | <b>2178-SL with one 2181-LS</b><br>(21.9" x 8.5" x 9.5")    | Butt or Inline        | 2 Butt, 2 Inline      | 2 Butt, 6 Inline  |
|  | <b>2178-SL with two 2181-LS</b><br>(21.9" x 8.5" x 11.0")   | Butt or Inline        | 2 Butt, 2 Inline      | 4 Butt, 10 Inline |

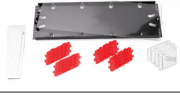
## 3M™ Fiber Optic Splice Closure 2178

|                                                                                     | Size<br>(L x W x H)                                         | Splice<br>Application | Max Cable Entry Ports |                   |
|-------------------------------------------------------------------------------------|-------------------------------------------------------------|-----------------------|-----------------------|-------------------|
|                                                                                     |                                                             |                       | Main                  | Branch            |
|    | <b>2178-SL with three 2181-LS</b><br>(21.9" x 8.5" x 12.5") | Butt or Inline        | 2 Butt, 2 Inline      | 6 Butt, 14 Inline |
|    | <b>2178-LS</b><br>(21.9" x 8.5" x 8.0")                     | Butt or Inline        | 2 Butt, 2 Inline      | 0 Butt, 2 Inline  |
|    | <b>2178-LS with one 2181-LS</b><br>(21.9" x 8.5" x 9.5")    | Butt or Inline        | 2 Butt, 2 Inline      | 2 Butt, 6 Inline  |
|   | <b>2178-LS with two 2181-LS</b><br>(21.9" x 8.5" x 11.0")   | Butt or Inline        | 2 Butt, 2 Inline      | 4 Butt, 10 Inline |
|  | <b>2178-LS with three 2181-LS</b><br>(21.9" x 8.5" x 12.5") | Butt or Inline        | 2 Butt, 4 Inline      | 6 Butt, 14 Inline |
|  | <b>2178-LL</b><br>(21.9" x 8.5" x 11.3")                    | Butt or Inline        | 2 Butt, 2 Inline      | 0 Butt, 2 Inline  |
|  | <b>2178-LL with one 2181-LS</b><br>(21.9" x 8.5" x 12.8")   | Butt or Inline        | 2 Butt, 2 Inline      | 2 Butt, 6 Inline  |
|  | <b>2178-LL with two 2181-LS</b><br>(21.9" x 8.5" x 14.3")   | Butt or Inline        | 2 Butt, 2 Inline      | 4 Butt, 10 Inline |
|  | <b>2178-LL with three 2181-LS</b><br>(21.9" x 8.5" x 15.8") | Butt or Inline        | 2 Butt, 4 Inline      | 6 Butt, 14 Inline |
|  | <b>2178-XL</b><br>(27.0" x 13.3" x 11.0")                   | Butt or Inline        | 2 Butt, 2 Inline      | 2 Butt, 6 Inline  |
|  | <b>2178-xl with one 2181-XL</b><br>(27.0" x 13.3" x 14.25") | Butt or Inline        | 2 Butt, 2 Inline      | 6 Butt, 14 Inline |

# Flexible fiber management

One of the greatest advantages of the 3M™ Fiber Optic Splice Closure 2178 family is flexibility. With seven different closures and several tray choices and expansion kits, there are more configuration choices than ever.

## 3M™ Fiber Optic Splice Trays

|                                                                                     | Product Number          | Description                                                                             | Splices Accommodated                                                         | Splice Capacity Per Tray | 2178 Closure      |
|-------------------------------------------------------------------------------------|-------------------------|-----------------------------------------------------------------------------------------|------------------------------------------------------------------------------|--------------------------|-------------------|
|    | <b>2522*</b>            | Stackable hinged tray, fiber entry/exit at any corner of the tray, fixed splice holders | Single Fusion (3.0 mm x 60 mm)<br>Single Mechanical (Fiblok™)<br>Mass Fusion | 24<br>12<br>120          | S, LS, LL, SL     |
|    | <b>2522-24-SF</b>       | Stackable hinged tray, fiber entry/exit at any corner of the tray, fixed splice holders | Single Fusion (3.0 mm x 60 mm)                                               | 24                       | S, LS, LL, SL     |
|    | <b>2523*</b>            | Stackable hinged tray, fiber entry/exit at any corner of the tray, fixed splice holders | Single Fusion (3.0 mm x 60 mm)<br>Single Mechanical (Fiblok™)<br>Mass Fusion | 48<br>24<br>144          | S, LS, LL, SL, XL |
|    | <b>2523-48-SF</b>       | Stackable hinged tray, fiber entry/exit at any corner of the tray, fixed splice holders | Single Fusion (3.0 mm x 60 mm)                                               | 48                       | S, LS, LL, SL, XL |
|  | <b>2524*</b>            | Stackable, hinged tray lid, side entry, fixed splice holders                            | Single Fusion (3.0 mm x 60 mm)<br>Single Mechanical (Fiblok™)                | 24<br>24                 | S, LS, LL, SL, XL |
|  | <b>2524-FT</b>          | Stackable, hinged tray lid, side entry, fixed splice holders                            | Single Fusion (3.0 mm x 60 mm)                                               | 24                       | S, LS, LL, SL, XL |
|  | <b>2527</b>             | Stackable, fiber entry/exit both ends of tray, positionable splice holders              | Single Fusion (3.0 mm x 60 mm)<br>Single Mechanical (Fiblok™)<br>Mass Fusion | 24<br>12<br>144          | S, LS, LL, SL, XL |
|  | <b>2527-48-SF</b>       | Stackable, fiber entry/exit both ends of tray, positionable splice holders              | Single Fusion (3.0 mm x 60 mm)                                               | 48                       | S, LS, LL, SL, XL |
|  | <b>2532</b>             | Stackable, fiber entry/exit both ends of tray, positionable splice holders              | Single Fusion (3.0 mm x 60 mm)<br>Single Mechanical (Fiblok™)<br>Mass Fusion | 24<br>12<br>144          | XLB<br>XSB        |
|  | <b>2539-12-SF</b>       | Hinged, fixed spliced holders                                                           | Single Fusion (2.4 mm x 60 mm)                                               | 12                       | XLB<br>XSB        |
|  | <b>2540-12-SF/36-MF</b> | Hinged, fixed spliced holders                                                           | Single Fusion (2.4 mm x 60 mm)<br>Single Mechanical (Fiblok™)<br>Mass Fusion | 12<br>12<br>36           | XLB<br>XSB        |
|  | <b>2543</b>             | Stackable, fiber entry/exit both ends of tray, positionable splice holders              | Single Fusion (3.0 mm x 60 mm)<br>Single Mechanical (Fiblok™)<br>Mass Fusion | 24<br>12<br>144          | S, LS, LL, SL, XL |

\* Requires additional kit

# Select the right combination for your specific application

As the chart below demonstrates, 3M provides several options for configuring the products you need today, with room to grow tomorrow. Follow the example to the right to find the components for your particular application.

## Specifications — 3M™ Fiber Optic Splice Closure 2178

| Product Configuration         | Cable Entry Ports per Splicing Configuration |        |        |        |                  |  |
|-------------------------------|----------------------------------------------|--------|--------|--------|------------------|--|
|                               | 1 Butt                                       |        | Inline |        | Size             |  |
|                               | Main                                         | Branch | Main   | Branch |                  |  |
| 2178-S or SL                  | 2                                            | 0      | 2      | 2      | 1.0"             |  |
| 2178-S or SL w/ one 2181-LS   | 2                                            | 0      | 2      | 2      | 1.0"             |  |
| 2178-S or SL w/ one 2181-LS   | 2                                            | 2      | 2      | 6      | 1.0"             |  |
| 2178-S or SL w/ two 2181-LS   | 2                                            | 0      | 2      | 2      | 1.0"             |  |
| 2178-S or SL w/ two 2181-LS   | 2                                            | 2      | 2      | 6      | 1.0"             |  |
| 2178-S or SL w/ two 2181-LS   | 2                                            | 4      | 2      | 10     | 1.0"             |  |
| 2178-S or SL w/ three 2181-LS | 2                                            | 2      | 2      | 6      | 1.0"             |  |
| 2178-S or SL w/ three 2181-LS | 2                                            | 4      | 2      | 10     | 1.0"             |  |
| 2178-S or SL w/ three 2181-LS | 2                                            | 6      | 2      | 14     | 1.0"             |  |
| 2178-LS                       | 2                                            | 0      | 2      | 2      | 1.0"             |  |
| 2178-LS w/ one 2181-LS        | 2                                            | 2      | 2      | 6      | 1.0"             |  |
| 2178-LS w/ two 2181-LS        | 2                                            | 4      | 2      | 10     | 1.0"             |  |
| 2178-LS w/ two 2181-LS        | 2                                            | 2      | 2      | 6      | 1.0"             |  |
| 2178-LS w/ three 2181-LS      | 2                                            | 4      | 2      | 10     | 1.0"             |  |
| 2178-LS w/ three 2181-LS      | 2                                            | 6      | 2      | 14     | 1.0"             |  |
| 2178-LL                       | 2                                            | 0      | 2      | 2      | 1.0"             |  |
| 2178-LL w/ one 2181-LS        | 2                                            | 2      | 2      | 6      | 1.0"             |  |
| 2178-LL w/ two 2181-LS        | 2                                            | 4      | 2      | 10     | 1.0"             |  |
| 2178-LL w/ two 2181-LS        | 2                                            | 2      | 2      | 6      | 1.0"             |  |
| 2178-LL w/ three 2181-LS      | 2                                            | 4      | 2      | 10     | 1.0"             |  |
| 2178-LL w/ three 2181-LS      | 2                                            | 6      | 2      | 14     | 1.0"             |  |
| 2178-XSB                      | 2                                            | 1      | -      | -      | 1-1.4"<br>2-1.0" |  |
| 2178 XSB w/ one 2181 XB       | 4                                            | 2      | -      | -      | 2-1.4"<br>4-1.0" |  |
| 2178 XLB                      | 2                                            | 1      | -      | -      | 1-1.4"<br>2-1.0" |  |
| 2178 XLB w/one 2181           | 4                                            | 2      | -      | -      | 2-1.4"<br>4-1.0" |  |
| 2178-XL                       | 2                                            | 2      | 2      | 6      | 4-1.4"<br>4-1.0" |  |
| 2178-XL w/ one 2181-XL        | 2                                            | 6      | 2      | 14     | 8-1.4"<br>8-1.0" |  |

## How to use chart:

1. Select your splice configuration
2. Determine # of branch ports
3. Choose type of tray (p. 16)
4. Select appropriate splice capacity

### Configuration Example — If your application requires:

- 1 Butt splice configuration
- 2 2 branch ports
- 3 Fixed-position splice holder
- 4 96 single fusion splices

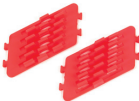
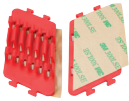
Then you would need the 3M™ Fiber Optic Splice Closure 2178-S with one 3M™ Cable Addition Kit 2181 and 3M™ Splice Tray 2523.

|  | Splice Capacity per Splice Tray |       |       |        |       |       |        |        |       |        |       |       |       |       |        |            |       |                  |       |       |       |       |        |
|--|---------------------------------|-------|-------|--------|-------|-------|--------|--------|-------|--------|-------|-------|-------|-------|--------|------------|-------|------------------|-------|-------|-------|-------|--------|
|  | 2527                            |       |       |        | 2522  |       |        | 3 2523 |       |        | 2524  |       | 2532  |       |        | 2539-12-Sf |       | 2540-12-Sf/36-Mf |       |       | 2543  |       |        |
|  | Trays                           | Sf 24 | Sf 48 | Mf 144 | Trays | Sf 24 | Mf 144 | Trays  | Sf 48 | Mf 144 | Trays | Sf 24 | Trays | Sf 24 | Mf 144 | Trays      | Sf 12 | Trays            | Sf 12 | Mf 36 | Trays | Sf 24 | Mf 144 |
|  | 2                               | 48    | 96    | 288    | 2     | 48    | 288    | 2      | 96    | 288    | 2     | 48    | -     | -     | -      | -          | -     | -                | -     | -     | 2     | 48    | 288    |
|  | 5                               | 120   | 240   | 720    | 5     | 120   | 720    | 4      | 192   | 576    | 4     | 96    | -     | -     | -      | -          | -     | -                | -     | -     | 5     | 120   | 720    |
|  | 2                               | 48    | 96    | 288    | 2     | 48    | 288    | 2      | 96    | 288    | 2     | 48    | -     | -     | -      | -          | -     | -                | -     | -     | 2     | 48    | 288    |
|  | 8                               | 192   | 384   | 864    | 8     | 192   | 864    | 6      | 288   | 864    | 6     | 144   | -     | -     | -      | -          | -     | -                | -     | -     | 8     | 192   | 864    |
|  | 5                               | 120   | 240   | 720    | 5     | 120   | 720    | 4      | 192   | 576    | 4     | 96    | -     | -     | -      | -          | -     | -                | -     | -     | 5     | 120   | 720    |
|  | 2                               | 48    | 96    | 288    | 2     | 48    | 288    | 2      | 96    | 288    | 2     | 48    | -     | -     | -      | -          | -     | -                | -     | -     | 2     | 48    | 288    |
|  | 8                               | 120   | 384   | 864    | 8     | 192   | 864    | 6      | 288   | 864    | 6     | 144   | -     | -     | -      | -          | -     | -                | -     | -     | 8     | 192   | 864    |
|  | 5                               | 120   | 240   | 720    | 5     | 120   | 720    | 5      | 240   | 720    | 5     | 120   | -     | -     | -      | -          | -     | -                | -     | -     | 5     | 120   | 720    |
|  | 2                               | 48    | 96    | 288    | 2     | 48    | 288    | 2      | 96    | 288    | 2     | 48    | -     | -     | -      | -          | -     | -                | -     | -     | 2     | 48    | 288    |
|  | 7                               | 168   | 336   | 864    | 6     | 144   | 864    | 6      | 288   | 864    | 6     | 144   | -     | -     | -      | -          | -     | -                | -     | -     | 7     | 168   | 864    |
|  | 7                               | 168   | 336   | 864    | 6     | 144   | 864    | 6      | 288   | 864    | 6     | 144   | -     | -     | -      | -          | -     | -                | -     | -     | 7     | 168   | 864    |
|  | 7                               | 168   | 336   | 864    | 6     | 144   | 864    | 6      | 288   | 864    | 6     | 144   | -     | -     | -      | -          | -     | -                | -     | -     | 7     | 168   | 864    |
|  | 10                              | 240   | 480   | 864    | 9     | 216   | 864    | 9      | 432   | 864    | 9     | 216   | -     | -     | -      | -          | -     | -                | -     | -     | 10    | 240   | 864    |
|  | 10                              | 240   | 480   | 864    | 9     | 216   | 864    | 9      | 432   | 864    | 9     | 216   | -     | -     | -      | -          | -     | -                | -     | -     | 10    | 240   | 864    |
|  | 7                               | 168   | 336   | 864    | 6     | 144   | 864    | 6      | 288   | 864    | 6     | 144   | -     | -     | -      | -          | -     | -                | -     | -     | 7     | 168   | 864    |
|  | 7                               | 168   | 336   | 864    | 6     | 144   | 864    | 6      | 288   | 864    | 6     | 144   | -     | -     | -      | -          | -     | -                | -     | -     | 7     | 168   | 864    |
|  | 7                               | 168   | 336   | 864    | 6     | 144   | 864    | 6      | 288   | 864    | 6     | 144   | -     | -     | -      | -          | -     | -                | -     | -     | 7     | 168   | 864    |
|  | 7                               | 168   | 336   | 864    | 6     | 144   | 864    | 6      | 288   | 720    | 6     | 144   | -     | -     | -      | -          | -     | -                | -     | -     | 7     | 168   | 864    |
|  | 10                              | 240   | 480   | 864    | 9     | 216   | 864    | 9      | 432   | 864    | 9     | 216   | -     | -     | -      | -          | -     | -                | -     | -     | 10    | 240   | 864    |
|  | 10                              | 240   | 480   | 864    | 9     | 216   | 864    | 9      | 432   | 864    | 9     | 216   | -     | -     | -      | -          | -     | -                | -     | -     | 10    | 240   | 864    |
|  | 7                               | 168   | 336   | 864    | 6     | 144   | 864    | 6      | 288   | 864    | 6     | 144   | -     | -     | -      | -          | -     | -                | -     | -     | 7     | 168   | 864    |
|  | -                               | -     | -     | -      | -     | -     | -      | -      | -     | -      | -     | -     | 2     | 48    | 288    | 6          | 72    | 4                | 48    | 144   | -     | -     | -      |
|  | -                               | -     | -     | -      | -     | -     | -      | -      | -     | -      | -     | -     | 2     | 48    | 288    | 6          | 72    | 4                | 48    | 144   | -     | -     | -      |
|  | -                               | -     | -     | -      | -     | -     | -      | -      | -     | -      | -     | -     | 4     | 96    | 432    | -          | -     | -                | -     | -     | -     | -     | -      |
|  | -                               | -     | -     | -      | -     | -     | -      | -      | -     | -      | -     | -     | 4     | 96    | 432    | -          | -     | -                | -     | -     | -     | -     | -      |
|  | 12                              | 288   | 576   | 1728   | 12    | 288   | 1728   | 12     | 576   | 1728   | 12    | 288   | -     | -     | -      | -          | -     | -                | -     | -     | 12    | 288   | 1728   |
|  | 12                              | 288   | 576   | 1728   | 12    | 288   | 1728   | 12     | 576   | 1728   | 12    | 288   | -     | -     | -      | -          | -     | -                | -     | -     | 12    | 288   | 1728   |

## 3M™ Fiber Optic Splice Closure 2178 Accessories

| Splice Trays                                                                        |                                                                                          |                                                                                                                                                                                                                                                                                              |
|-------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                     | Product Number/<br>Packaging Info                                                        | Description                                                                                                                                                                                                                                                                                  |
|    | <b>2170</b><br>Pkg: 50 each<br>Min. Order: 50 each<br>3M ID: 80-6102-8138-0              | <b>Fiber Optic Splice Sleeve, 3.0 mm x 60 mm</b><br>Transparent plastic tube and stainless steel rod designed to help prevent stress and protect fusion fiber optic splices in field and factory operations.                                                                                 |
|    | <b>2171</b><br>Pkg: 50 each<br>Min. Order: 50 each<br>3M ID: 80-6111-4669-9              | <b>Fiber Optic Splice Sleeve, 2.4 mm x 60 mm</b><br>Transparent plastic tube and stainless steel rod designed to help prevent stress and protect fusion fiber optic splices in field and factory operations.                                                                                 |
|    | <b>2519</b><br>Pkg: 10 kits<br>Min. Order: 10 kits<br>3M ID: 80-6109-3259-4              | <b>Cable Fanout Kit</b><br>Transitions cable buffer tubes or single tube to fiber tube.                                                                                                                                                                                                      |
|    | <b>2519-X</b><br>Pkg: 10 kits<br>Min. Order: 10 kits<br>3M ID: 80-6109-3260-2            | <b>Cable Fanout Expander Kit</b><br>Transitions one fiber tube to two fiber tubes.                                                                                                                                                                                                           |
|    | <b>2520</b><br>Pkg: 50 each<br>Min. Order: 50 each<br>3M ID: 80-6108-5927-6              | <b>Fiber Transition Tubing, 1 ft.</b><br>Protects 12 single or four 12-fiber ribbon between trays; cut in one-foot lengths.                                                                                                                                                                  |
|   | <b>2520-3FT</b><br>Pkg: 24 each<br>Min. Order: 24 each<br>3M ID: 80-6108-6110-8          | <b>Fiber Transition Tubing, 3 ft.</b><br>Protects 12 single or four 12-fiber ribbon between trays; cut in three-foot lengths.                                                                                                                                                                |
|  | <b>2520-100FT</b><br>Pkg: 1 each<br>Min. Order: 1 each<br>3M ID: 80-6113-2636-6          | <b>Fiber Transition Tubing, 100 ft.</b><br>Protects 12 single or four 12-fiber ribbon between trays; cut in 100-foot lengths.                                                                                                                                                                |
|  | <b>2518</b><br>Pkg: 6 each<br>Min. Order: 6 each<br>3M ID: 80-6113-2634-1                | <b>Fiber Transition Tubing Kit for Loose Buffer Tube</b><br>The 3M Fiber Transition Tubing Kit 2518 is a 2 MM fiber transition tube kit for loose buffer tube cables. It is used to transition the fibers from the splice closure slack storage area to the splice tray.                     |
|  | <b>2521-F</b><br>Pkg: 12 pkgs.<br>Min. Order: 12 pkgs.<br>3M ID: 80-6108-5926-8          | <b>Fusion Splice Insert, 2 Pack</b><br>Holds 12 single fusion splices in each insert, used in 3M™ Fiber Splice Organizer Trays 2538/2522/2523<br>3.0 mm x 60 mm single fusion heat shrink sleeve required (3M Fiber Optic Splice Sleeve 2170 or equivalent).                                 |
|  | <b>2521-FL</b><br>Pkg: 12 pkgs.<br>Min. Order: 12 pkgs.<br>3M ID: 80-6108-5926-8         | <b>3M™ Fibrlok™ Splice Insert, 2 Pack</b><br>Holds six Fibrlok or mass fusion splices in each insert, used in 2538/2522/2523 trays. Accommodates single ceramic rod 12 fiber mass fusion sleeves or double ceramic rod 4 to 6 fiber mass fusion sleeves.                                     |
|  | <b>2521-R-12RF-MF-A</b><br>Pkg: 24 each<br>Min. Order: 24 each<br>3M ID: 80-6113-3204-2  | <b>12RF Mass Fusion Splice Insert, Adhesive Back</b><br>Adhesive backed splice insert that holds six 3M™ Fibrlok™ Splices or Mass Fusion Splices, used in 2532 and 2543 trays. Accommodates single ceramic rod 12 fiber mass sleeves or double ceramic rod 4 to 6 fiber mass fusion sleeves. |
|  | <b>2521-R-2.4MM-SF-A</b><br>Pkg: 24 each<br>Min. Order: 24 each<br>3M ID: 80-6113-3202-6 | <b>2.4MM Single Fusion Splice Insert, Adhesive Back</b><br>Adhesive backed splice insert that holds twelve single fusion splices in each insert, used in 2532 and 2543 trays. 2.4 mm x 60 mm single fusion heat shrink sleeve required (3M Fiber Optic Splice Sleeve 2171 or equivalent).    |

## 3M™ Fiber Optic Splice Closure 2178 Accessories

| Splice Trays (continued)                                                            |                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|-------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                     | Product Number/<br>Packaging Info                                                        | Description                                                                                                                                                                                                                                                                                                                                                                                                                            |
|    | <b>2521-R-3.0MM-SF-A</b><br>Pkg: 24 each<br>Min. Order: 24 each<br>3M ID: 80-6113-3203-4 | <b>3.0MM Single Fusion Splice Insert, Adhesive Back</b><br>Adhesive backed splice insert that holds twelve single fusion splices in each insert, used in 3M Fiber Splice Organizer Tray 2532 and 2543. 3.0 mm x 60 mm single fusion heat shrink sleeve required (3M Fiber Optic Splice Sleeve 2170 or equivalent).                                                                                                                     |
|    | <b>2521-MF</b><br>Pkg: 12 pkgs.<br>Min. Order: 12 pkgs.<br>3M ID: 80-6108-5924-3         | <b>3M™ Fibrok™ Multi-Fiber Splice Insert, 2 Pack</b><br>Holds four multi-fiber splices in each insert, used in 3M Fiber Splice Organizer Tray 2522/2523.                                                                                                                                                                                                                                                                               |
|    | <b>2521-RF</b><br>Pkg: 12 pkgs.<br>Min. Order: 12 pkgs.<br>3M ID: 80-6108-5928-4         | <b>Ribbon Fusion Splice Insert, 2 Pack</b><br>Holds five ribbon fusion splices in each insert, used in 2522/2523 trays. Accommodates double ceramic rod 8 to 12 fiber mass fusion sleeves.                                                                                                                                                                                                                                             |
|    | <b>2521-F-A</b><br>Pkg: 24 pkgs.<br>Min. Order: 24 pkgs.<br>3M ID: 80-6113-2632-5        | <b>Single Fusion Splice Insert with Adhesive, 2 Pack</b><br>Holds 12 single fusion splices in each insert, used in 3M™ Fiber Splice Organizer Trays 2527/2532. 3.0 mm x 60 mm single fusion heat shrink sleeve required (2170 sleeve or equivalent).                                                                                                                                                                                   |
|    | <b>2521-FL-A</b><br>Pkg: 24 pkgs.<br>Min. Order: 24 pkgs.<br>3M ID: 80-6113-2604-4       | <b>Ribbon Fusion Splice Insert with Adhesive, 2 Pack</b><br>Holds six Fibrok or mass fusion splices in each insert, used in 3M Fiber Splice Organizer Tray 2527/2522. Accommodates single ceramic rod 12 fiber mass fusion sleeves or double ceramic rod 4 to 6 fiber mass fusion sleeves.                                                                                                                                             |
|  | <b>2522</b><br>Pkg: 2 each<br>Min. Order: 2 each<br>3M ID: 80-6108-5990-4                | <b>Small Fiber Splice Organizer Tray</b><br>Holds two 3M™ Splice Inserts 2521 family.*<br><br>The 2522 tray stores and protects single and mass, mechanical and fusion splices. The 2521 family splice inserts are easily added to secure splices into the trays. Fibers are routed into the trays using 3M™ Transition Tubing 2520 that zips over the fibers.<br><br>*Splice inserts must be ordered separately.                      |
|  | <b>2522-24-SF</b><br>Pkg: 2 each<br>Min. Order: 2 each<br>3M ID: 80-6113-1655-7          | <b>Small Fiber Splice Organizer Tray, 24SF</b><br>Holds 24 single fusion splices.<br>3.0 mm x 60 mm single fusion heat shrink sleeve required (2170 or equivalent).                                                                                                                                                                                                                                                                    |
|  | <b>2523</b><br>Pkg: 2 each<br>Min. Order: 2 each<br>3M ID: 80-6108-5991-2                | <b>Large Fiber Splice Organizer Tray</b><br>Holds four 2521 family splice inserts.*<br><br>The 2523 tray stores and protects discrete and mass, mechanical and fusion splices. The 3M Fiber Splice Organizer Tray 2521 inserts are easily added to secure splices into the trays. Fibers are routed into the trays using 3M Fiber Transition Tubing 2520 that zips over the fibers.<br><br>*Splice inserts must be ordered separately. |
|  | <b>2523-48-SF</b><br>Pkg: 2 each<br>Min. Order: 2 each<br>3M ID: 80-6113-1651-6          | <b>Large Fiber Splice Organizer Tray, 48SF</b><br>Holds 48 single fusion splices.<br>3.0 mm x 60 mm single fusion heat shrink sleeve required (2170 sleeve or equivalent).                                                                                                                                                                                                                                                             |

## 3M™ Fiber Optic Splice Closure 2178 Accessories

| Splice Trays (continued)                                                            |                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                     | Product Number/<br>Packaging Info                                                     | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|    | <b>2524</b><br>Pkg: 2 each<br>Min. Order: 2 each<br>3M ID: 80-6106-1688-2             | <b>3M™ Fibrlok™ Splice Organizer Tray</b><br>Holds 24 3M™ Fibrlok™ Splices and eight buffer tubes.<br><br>The 3M™ Fibrlok™ Splice Organizer Tray 2524 holds 24 Fibrlok splices. The 2524 tray can be adapted for fusion splice storage using the 2524F tray insert. Buffer tubes are secured with channel snaps so that cable ties are not required. The fibers all enter the tray in one corner eliminating the need for figure 8's in the fiber. An important design feature of these stackable trays is the snap-on hinge cover on each tray. Individual trays may be accessed without disassembly of the trays above or below — and without kinking buffer tubes. |
|    | <b>2524-F</b><br>Pkg: 24 each<br>Min. Order: 24 each<br>3M ID: 78-8070-2884-6         | <b>Fusion Splice Insert</b><br>Adapts the 2524 tray for fusion splices.<br>3.0 mm x 60 mm single fusion heat shrink sleeve required (3M Fiber Optic Splice Sleeve 2170 or equivalent).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|    | <b>2524-FT</b><br>Pkg: 2 each<br>Min. Order: 2 each<br>3M ID: 80-6106-1687-4          | <b>Fusion Splice Organizer Tray</b><br>Holds 24 single fusion splices.<br><br>Holds up to 24 fusion splices. Buffer tubes are secured with channel snaps so that cable ties are not required. The fibers all enter the tray in one corner eliminating the need for figure 8's in the fiber. An important design feature of these stackable trays is the snap-on hinge cover on each tray. Individual trays may be accessed without disassembly of the trays above or below — and without kinking buffer tubes.<br>3.0 mm x 60 mm single fusion heat shrink sleeve required (2170 sleeve or equivalent).                                                               |
|   | <b>2524-MF</b><br>Pkg: 2 each<br>Min. Order: 2 each<br>3M ID: 80-6106-1688-2          | <b>Multi-Fiber Splice Organizer Tray</b><br>Holds three 3M™ Fibrlok™ Multi-Fiber and four single Fibrlok splices.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|  | <b>2527</b><br>PKg: 2 each<br>Min. Order: 2 each<br>3M ID: 80-6111-7558-1             | <b>Fiber Splice Organizer Tray</b><br>The 3M Fiber Splice Organizer Tray 2527 accommodates up to 24 single fusion or 144 mass splices and has entry from all corners. It maintains the minimum bend radius of fiber. The tray has a clear cover and splice holders included.<br>3.0 mm x 60 mm single fusion heat shrink sleeve required (2170 sleeve or equivalent).                                                                                                                                                                                                                                                                                                 |
|  | <b>2527-48-SF</b><br>PKg: 2 each<br>Min. Order: 2 each<br>3M ID: 80-6113-2587-1       | <b>Fiber Splice Organizer Tray</b><br>The 2527 tray accommodates up to 48 single fusion splices and has entry from all corners. It maintains the minimum bend radius of fiber. The tray has a clear cover and splice holders included.<br>3.0 mm x 60 mm single fusion heat shrink sleeve required.                                                                                                                                                                                                                                                                                                                                                                   |
|  | <b>2532</b><br>PKg: 2 each<br>Min. Order: 2 each<br>3M ID: 80-6113-0480-1             | <b>Fiber Splice Organizer Tray</b><br>Tray is stackable and accommodates 24 single and 72 mass fusion splices.<br>3.0 mm x 60 mm single fusion heat shrink sleeve required (3M Fiber Optic Splice Sleeve 2170 or equivalent).                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|  | <b>2539-12-SF</b><br>PKg: 2 each<br>Min. Order: 2 each<br>3M ID: 80-6113-1715-9       | <b>Fiber Optic Splice Tray with 12 Single Fusion Splices</b><br>Hinged tray that accommodates 12 single fusion splices. Only for 2178-XSB closures.<br>2.4 mm x 60 mm single fusion heat shrink sleeves required (2171 sleeve or equivalent).                                                                                                                                                                                                                                                                                                                                                                                                                         |
|  | <b>2540-12-SF/36-MF</b><br>PKg: 2 each<br>Min. Order: 2 each<br>3M ID: 80-6113-1716-7 | <b>Fiber Optic Splice Tray with 12 Single/36 Mass Fusion</b><br>Hinged tray that accommodates up to 12 single fusion and 36 mass fusion splices. Only for 2178-XSB closures.<br>2.4 mm x 60 mm single fusion heat shrink sleeves required (2171 sleeve or equivalent).                                                                                                                                                                                                                                                                                                                                                                                                |
|  | <b>2543-S-144-MF</b><br>PKg: 2 each<br>Min. Order: 2 each<br>3M ID: 80-6113-3199-4    | <b>Fiber Optic Splice Tray Tube Entry, 144 Mass Fusion</b><br>Accommodates up to 144 mass fusion splices and has entry from all corners for standard transition or LBT tubes.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |

## 3M™ Fiber Optic Splice Closure 2178 Accessories

| Splice Trays (continued)                                                          |                                                                                             |                                                                                                                                                                                                                                                                                                                                          |
|-----------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                   | Product Number/<br>Packaging Info                                                           | Description                                                                                                                                                                                                                                                                                                                              |
|  | <b>2543-S-24-SF-2.4MM</b><br>Pkg: 2 each<br>Min. Order: 2 each<br>3M ID: 80-6113-3195-2     | <b>Fiber Optic Splice Tray Tube Entry, 24SF 2.4MM</b><br>Accommodates up to 24 single fusion splices and has entry from all corners. The single fusion splice inserts accommodate the 3M™ Fiber Optic Splice Sleeve 2171 or equivalent 2.4 mm x 60 mm heat shrink sleeve.                                                                |
|  | <b>2543-S-24-SF-3.0MM</b><br>Pkg: 2 each<br>Min. Order: 2 each<br>3M ID: 80-6113-3196-0     | <b>Fiber Optic Splice Tray Tube Entry, 24SF 3.0MM</b><br>Accommodates up to 24 single fusion splices and has entry from all corners. The single fusion splice inserts accommodate the 3M™ Fiber Optic Splice Sleeve 2170 or equivalent 3.0 mm x 60 mm heat shrink sleeve.                                                                |
|  | <b>2543-T-144-MF</b><br>Pkg: 2 each<br>Min. Order: 2 each<br>3M ID: 80-6113-3198-6          | <b>Fiber Optic Splice Tray 2520 Tube Entry, 144MF</b><br>Accommodates 144 mass fusion splices. Fibers are routed into the trays using 3M Fiber Transition Tubing 2520-6RF that zips over the fibers. The tray has entry from all corners.                                                                                                |
|  | <b>2543-U-24SF-3MM/144MF</b><br>Pkg: 2 each<br>Min. Order: 2 each<br>3M ID: 80-6113-3197-8  | <b>Fiber Optic Splice Tray 2520 Tube Entry 24SF 3MM/144MF</b><br>Accommodates 24 single fusion (3.0 mm x 60 mm) or 144 mass fusion splices. Fibers are routed into the trays using 2520-6RF tubing that zips over the fibers on one end of the tray. Standard transition tube or LBT securing is available on the other end of the tray. |
|  | <b>2527-1X32PLC-01-SF2-AA</b><br>Pkg: 1 each<br>Min. Order: 1 each<br>3M ID: 80-6113-3088-9 | <b>1X32 PLC 2527 Splitter Tray Input Splicing</b><br>3M Fiber Optic Organizer Tray 2527 with one 1x32 PLC Splitter, SM discrete 250 µm input/output fibers, with 12-splice holder.                                                                                                                                                       |

## 3M™ Fiber Optic Splice Closure 2178 Accessories

| Expansion                                                                           |                                                                                     |                                                                                                                                                                                                                     |
|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                     | Product Number/<br>Packaging Info                                                   | Description                                                                                                                                                                                                         |
|    | <b>2172</b><br>PKg: 100 each<br>Min. Order: 100 each<br>3M ID: 80-6108-6076-1       | <b>Strength Member Clamp for Fiber Cable</b><br>Clamps strength member to cable sheath for 2178-L/S closures.                                                                                                       |
|    | <b>2178-LS/GSKT</b><br>Pkg: 10 kits<br>Min. Order: 10 kits<br>3M ID: 80-6109-3321-2 | <b>Gasket Kit for 2178-L/S Family</b><br>Replaceable gasket kit.                                                                                                                                                    |
|    | <b>2178-XLB-TOP</b><br>PKg: 1 each<br>Min. Order: 1 each<br>3M ID: 80-6114-8670-7   | <b>Fiber Closure 2178 XLB Top</b><br>XLB Closure Top                                                                                                                                                                |
|    | <b>2178-XSB-1.4B</b><br>PKg: 5 each<br>Min. Order: 5 each<br>3M ID: 80-6113-1460-2  | <b>Cable Branch Port Kit for 2178-XSB and XLB</b><br>Single cable entry for 1.4" cable entry port.                                                                                                                  |
|    | <b>2178-4PGA</b><br>PKg: 5 each<br>Min. Order: 5 each<br>3M ID: 80-6113-1459-4      | <b>4-Port Grommet</b><br>Compatible with most flat drop cable available. For use with all 2178 models.<br>For use with 1.0" ports.                                                                                  |
|   | <b>2178-6PGA</b><br>PKg: 5 each<br>Min. Order: 5 each<br>3M ID: 80-6113-1458-6      | <b>6-Port Grommet</b><br>Compatible with most flat drop cable available. For use only with the 2178-XSB, 2178-XLB, and 2178-XL closures. For use with 1.4" ports.                                                   |
|  | <b>2181-B</b><br>Pkg: 1 kit<br>Min. Order: 1 kit<br>3M ID: 80-6114-8677-2           | <b>Double Adapter Bolt Kit</b><br>Contains bolts for installation of two 3M™ Cable Addition Kits 2181-LS or 2181-LS/FR.                                                                                             |
|  | <b>2181-C</b><br>Pkg: 1 kit<br>Min. Order: 1 kit<br>3M ID: 80-6114-8678-0           | <b>Triple Adapter Bolt Kit</b><br>Contains bolts for installation of three, 2181-LS or 2181-LS/FR cable addition kits.                                                                                              |
|  | <b>2181-LS</b><br>Pkg: 1 each<br>Min. Order: 1 each<br>3M ID: 80-6114-8679-8        | <b>Cable Addition Kit</b><br>Contains gasket and materials for installing additional cables. For use with 2178-L/S family closures.                                                                                 |
|  | <b>2181-LS/FR</b><br>Pkg: 1 each<br>Min. Order: 1 each<br>3M ID: 80-6110-1285-9     | <b>Cable Addition Kit, Flame Retardant</b><br>Contains gasket and materials for installing additional cables and is flame retardant. For use with 2178-L/S fire retardant closures.                                 |
|  | <b>2181-XL/CAK</b><br>Pkg: 1 each<br>Min. Order: 1 each<br>3M ID: 80-6114-8685-5    | <b>Cable Addition Kit for 2178-XL</b><br>Contains gasket and materials for installing additional cables. For use with 2178-XL closure.                                                                              |
|  | <b>2181-XL/FR-CAK</b><br>Pkg: 1 each<br>MIN. ORDER: 1 each<br>3M ID: 80-6113-2682-0 | <b>Cable Addition Kit for 2178-XL</b><br>Contains gasket and materials for installing additional cables. For use with 2178-XL/FR flame retardant closure.                                                           |
|  | <b>2181-XB</b><br>Pkg: 1 each<br>Min. Order: 1 each<br>3M ID: 80-6114-8684-8        | <b>Cable Addition Kit for 2178-XB</b><br>Contains gasket and materials for installing additional cables. For use with 2178-XSB and -XLB closures.                                                                   |
|  | <b>2181-XB/FR</b><br>Pkg: 1 each<br>Min. Order: 1 each<br>3M ID: 80-6113-3386-7     | <b>Cable Addition Kit for 2178-XSB/FR &amp; 2178-XLB/FR</b><br>Cable addition kit for the 2178-XLB/FR and 2178-XSB/FR Closures. Allows for the addition of 3 cable ports. Contains three cable entry hardware kits. |

## 3M™ Fiber Optic Splice Closure 2178 Accessories

| Expansion (continued)                                                                         |                                                                                              |                                                                                                                                                                         |
|-----------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                               | Product Number/<br>Packaging Info                                                            | Description                                                                                                                                                             |
|              | <b>2178-LS-CSB-SMC-BRKT</b><br>Pkg: 10 each<br>Min. Order: 10 each<br>3M ID: 80-6113-2761-2  | <b>Cable Strain Relief Bracket</b><br>Contains materials for installing additional cables. For use with 2178-L/S family of closures.                                    |
|              | <b>2178-1.0-PORT-CRPX</b><br>Pkg: 5 each<br>Min. Order: 5 each<br>3M ID: 80-6113-2711-7      | <b>Cable Grommet for Corning RPX Cable</b><br>To be used in the 2178 1.0" cable entry port.                                                                             |
|  | <b>2178-XL/XSB-FR-3PG-0.52</b><br>Pkg: 2 each<br>Min. Order: 2 each<br>3M ID: 80-6113-2944-4 | <b>Flame Retardant 3-Port 0.52" Grommet</b><br>This grommet can only be used with the 2178-XSB/FR, 2178-XLB/FR and 2178-XL/FR closures.<br>For use with 1.4" port only. |
|  | <b>2178-XL/XSB-FR-2PG-0.60</b><br>Pkg: 2 each<br>Min. Order: 2 each<br>3M ID: 80-6113-2186-2 | <b>Flame Retardant 2-Port 0.60" Grommet</b><br>This grommet can only be used with the 2178-XSB/FR, 2178-XLB/FR and 2178-XL/FR closures.<br>For use with 1.4" port only. |

| Grounding                                                                           |                                                                                    |                                                                                                                                                                                                                                                                                                                                                  |
|-------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                     | Product Number/<br>Packaging Info                                                  | Description                                                                                                                                                                                                                                                                                                                                      |
|  | <b>2178-EGI</b><br>Pkg: 5 each<br>Min. Order: 5 each<br>3M ID: 80-6109-3322-0      | <b>External Ground Isolation Kit</b><br>Provides a means to ground each cable shield with waterproof isolation. The 2178-EGI housing can be used with any 2178 closure utilizing the 1.0" port. Contents: two 2178-EGI housing assemblies and caps, two ground wire assemblies, two O-rings, two bolts and two 4460-D/FO shield bond connectors. |
|  | <b>25T-BBE6</b><br>Pkg: 1 each<br>Min. Order: 1 each<br>3M ID: 80-6100-9615-0      | <b>Bond Braid</b><br>With 6" eyelets.                                                                                                                                                                                                                                                                                                            |
|  | <b>4460-D/FO</b><br>Pkg: 100 each<br>Min. Order: 100 each<br>3M ID: 80-6108-4444-3 | <b>3M™ Scotchlok™ Shield Bond Connector Assembly</b><br>Provides grounding and strength member clamp for armored fiber cables.                                                                                                                                                                                                                   |

## 3M™ Fiber Optic Splice Closure 2178 Accessories

| Mounting Hardware                                                                                  |                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|----------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                    | Product Number/<br>Packaging Info                                                           | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|                   | <b>2183-UHB</b><br>Pkg: 1 kit<br>Min. Order: 1 kit<br>3M ID: 80-6107-6137-3                 | <b>Universal Aerial Hanger Bracket Kit</b><br>Hardware for aerial installation of the 2178-LS family splice closures (S, SL, LS, LL). The kit also accommodates the 2178 splice closure with one or two 3M™ Cable Addition Kits 2181. Contents: four nylon stop nuts, two corner inserts with studs, two universal hanger bracket assemblies.                                                                                                                                  |
|                   | <b>2184</b><br>Pkg: 10 kits<br>Min. Order: 10 kits<br>3M ID: 80-6113-1769-6                 | <b>Adjustable Aerial Hanger Bracket Kit</b><br>Adjustable aerial hanger bracket kit for the 2178-XSB, 2178-XLB, 2178-S, 2178-LS, and 2178-SL closures.                                                                                                                                                                                                                                                                                                                         |
|                   | <b>2184-LL</b><br>Pkg: 10 kits<br>Min. Order: 10 kits<br>3M ID: 80-6113-2559-0              | <b>Aerial Offset Hanger Bracket Kit Lightlinker</b><br>3M™ Aerial Offset Hanger Bracket 2184-LL is designed to work with the 3M™ Fiber Splice Closure System LL Series and the 3M™ Fiber Optic Splice Closure 2178-XL.                                                                                                                                                                                                                                                         |
|                   | <b>2197</b><br>Pkg: 1 kit<br>Min. Order: 1 kit<br>3M ID: 80-6107-5610-0                     | <b>Aerial Hanger Bracket Kit</b><br>Contains hardware for aerial installation with hinged cover.<br><br>For 2178-L/S family splice closures (S, SL, LS, LL). The kit also accommodates the 2178 splice closure with one or two 2181 cable addition kits. It provides additional hardware to attach the splice closure cover to its base. Contents: six corner inserts, 12 nuts, two flexible hinges, two “L” brackets, two bonding/hanger brackets and two bolts with washers. |
|                  | <b>2198</b><br>Pkg: 1 kit<br>Min. Order: 1 kit<br>3M ID: 80-6108-6077-9                     | <b>Wall Mount Bracket</b><br>For use with 2178-XSB, 2178-XLB, 2178-S, 2178-SL, 2178-LS and XL fiber closures.                                                                                                                                                                                                                                                                                                                                                                  |
|                 | <b>2199</b><br>Pkg: 1 kit<br>Min. Order: 1 kit<br>3M ID: 80-6109-3320-4                     | <b>Wall Mount Bracket</b><br>For use with 2178-S, LS and LL fiber closures.                                                                                                                                                                                                                                                                                                                                                                                                    |
|  | <b>AC-HB4</b><br>Pkg.(lbs.): 10 sets (4.00)<br>Min. Order: 10 sets<br>3M ID: 80-6113-1470-1 | <b>Aerial Offset Hanger Bracket, 4.0"</b><br>For overlashing application.                                                                                                                                                                                                                                                                                                                                                                                                      |
|                 | <b>2178-S/LS-OPGW</b><br>Pkg: 2 each<br>Min. Order: 2 each<br>3M ID: 80-6113-3047-5         | <b>OPGW Cable Bracket</b><br>For use with 2178-S and 2178-LS fiber closures.                                                                                                                                                                                                                                                                                                                                                                                                   |

## 3M™ Fiber Optic Splice Closure 2178 Accessories

| General                                                                             |                                                                                             |                                                                                                                                                                                 |
|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                     | Product Number/<br>Packaging Info                                                           | Description                                                                                                                                                                     |
|    | <b>2178-XB/XL-T-INSERT-G</b><br>Pkg: 10 each<br>Min. Order: 1 pack<br>3M ID: 80-6113-3110-1 | <b>Plastic Threaded Inserts</b><br>Threaded inserts for the 2178-XSB, XLB, XL splice closures.                                                                                  |
|    | <b>2178-L/S-T-INSERT</b><br>Pkg: 10 each<br>Min. Order: 1 pack<br>3M ID: 80-6113-2093-0     | <b>Stainless Steel Threaded Inserts</b><br>Threaded inserts for the 2178-S, SL, LS and LL splice closures.                                                                      |
|    | <b>2178-L/S-T-INSERT-G</b><br>Pkg: 10 each<br>Min. Order: 1 pack<br>3M ID: 80-6113-3111-9   | <b>Plastic Threaded Inserts</b><br>Inserts for 2178-S, SL, LS, LL splice closures.                                                                                              |
|    | <b>2178-L/S-375-BOLTS</b><br>Pkg: 10 each<br>Min. Order: 1 pack<br>3M ID: 80-6113-2094-8    | <b>Cable Addition Replacement Bolts</b><br>Bolts used with a single 3M Cable Addition Kit 2181-LS.                                                                              |
|    | <b>2178-L/S-248-BOLTS</b><br>Pkg: 10 each<br>Min. Order: 1 pack<br>3M ID: 80-6113-2095-5    | <b>Standard Closure Bolts</b><br>Bolts for the 2178-S, LS, LL, XSB, XLB and XL splice closures.                                                                                 |
|   | <b>4415</b><br>Pkg: 10 kits<br>Min. Order: 10 kits<br>3M ID: 80-6105-8223-3                 | <b>Cable Cleaning Kit</b><br>Provides all the necessary materials for cleaning the filling compound from filled copper and fiber optic cables in an easy-to-transport kit.      |
|  | <b>5005-KIT</b><br>Pkg: 1 kit<br>Min. Order: 1 kit<br>3M ID: 80-6105-8080-7                 | <b>Reflective Lettering System Kit</b><br>Each kit contains 25 each A-Z, 0-9, blank and dash characters packaged in a clear, 36-compartment box, including an application tool. |
|  | <b>2178-2T-LL-CLTK</b><br>Pkg: 1 each<br>Min. Order: 1 kit<br>3M ID: 80-6113-2187-0         | <b>Tool Kit with Torque Wrench</b><br>Kit includes sockets, extension and torque wrench.                                                                                        |

## 3M™ Fiber Optic Splice Closure 2178 Configurations

| FEATURES                                       | 2178-XSB                                     | 2178-XLB                                     | 2178-S                                | 2178-S4                               | 2178-S6                               |  |
|------------------------------------------------|----------------------------------------------|----------------------------------------------|---------------------------------------|---------------------------------------|---------------------------------------|--|
| CABLE ENTRY PORTS & SIZE                       |                                              |                                              |                                       |                                       |                                       |  |
| INLINE                                         | 0                                            | 0                                            | 4                                     | 8                                     | 12                                    |  |
| BUTT                                           | 3                                            | 3                                            | 2                                     | 4                                     | 6                                     |  |
| SIZE - INCHES (MM)                             | 2 - 1.0" (25 mm)<br>1 - 1.4" (35 mm)         | 2 - 1.0" (25 mm)<br>1 - 1.4" (35 mm)         | 1.0" (25 mm)                          | 1.0" (25 mm)                          | 1.0" (25 mm)                          |  |
| SPLICE CAPACITY (MAXIMUM) AND TRAY INFORMATION |                                              |                                              |                                       |                                       |                                       |  |
| SINGLE FUSION                                  | 72                                           | 96                                           | 96                                    | 96                                    | 96                                    |  |
| MASS FUSION                                    | 288                                          | 432                                          | 288                                   | 288                                   | 288                                   |  |
| TRAYS<br>*Most Popular                         | 2532*<br>2539<br>2540                        | 2532*<br>2539<br>2540                        | 2522*<br>2523<br>2524<br>2527<br>2543 | 2522*<br>2523<br>2524<br>2527<br>2543 | 2522*<br>2523<br>2524<br>2527<br>2543 |  |
| BONDING & GROUNDING                            |                                              |                                              |                                       |                                       |                                       |  |
| # OF GROUND LUGS                               | 0, 2, 3 or 6                                 | 0, 2, 3 or 6                                 | 0, 2, or 4                            |                                       |                                       |  |
| DIMENSIONS (INCHES)                            |                                              |                                              |                                       |                                       |                                       |  |
| LENGTH                                         | 14.6" (370 mm)                               | 14.6" (370 mm)                               | 21.9" (556 mm)                        | 21.9" (556 mm)                        | 21.9" (556 mm)                        |  |
| WIDTH                                          | 10.1" (257 mm)                               | 10.1" (257 mm)                               | 8.5" (216 mm)                         | 8.5" (216 mm)                         | 8.5" (216 mm)                         |  |
| HEIGHT                                         | 4.6" (117 mm)                                | 5.8" (147 mm)                                | 4.7" (119 mm)                         | 6.2" (158 mm)                         | 7.7" (196 mm)                         |  |
| KEY ACCESSORIES                                |                                              |                                              |                                       |                                       |                                       |  |
| CABLE PORT OR SPLICE CAPACITY EXPANSION        | 2181-XB                                      | 2181-XB                                      | 2181-LS<br>2181-B<br>2181-C           | 2181-LS<br>2181-B<br>2181-C           | 2181-LS<br>2181-C                     |  |
| GROMMETS                                       | 2178-4PGA<br>2178-6PGA<br>2178-1.0-PORT-CRPX | 2178-4PGA<br>2178-6PGA<br>2178-1.0-PORT-CRPX | 2178-4PGA<br>2178-1.0-PORT-CRPX       | 2178-4PGA<br>2178-1.0-PORT-CRPX       | 2178-4PGA<br>2178-1.0-PORT-CRPX       |  |
| MOUNTING HARDWARE                              |                                              |                                              |                                       |                                       |                                       |  |
| AERIAL STRAND MOUNT                            | 2184                                         | 2184                                         | 2183, 2184, or 2197                   |                                       |                                       |  |
| MANHOLE                                        | 2198                                         | 2198                                         | 2198                                  |                                       |                                       |  |
| HANDHOLE                                       | 2198                                         | 2198                                         | 2198                                  |                                       |                                       |  |
| AERIAL POLE MOUNT                              | 2198                                         | 2198                                         | 2198                                  |                                       |                                       |  |
| WALL MOUNT                                     | 2198                                         | 2198                                         | 2198 or 2199                          |                                       |                                       |  |
| FLAME/FIRE RETARDANT SOLUTION (UL LISTED*)     |                                              |                                              |                                       |                                       |                                       |  |
| PRODUCT                                        | 2178-XSB/FR*<br>2181-XB/FR*                  | 2178-XLB/FR*<br>2181-XB/FR*                  | 2178-S/FR*<br>2181-LS/FR*             | 2178-S4/FR<br>2181-LS/FR*             | 2178-S6/FR<br>2181-LS/FR*             |  |

Note: The deeper base of the 2178-SL and 2178-LL closures provides for additional slack storage for buffer tubes and ribbons.  
The 2181 Cable Addition Kits can be used to increase splice capacity or port capacity.  
Maximum splice capacity varies per the splice tray selected for each closure.

|  | 2178-SL                               | 2178-LS                               | 2178-LS4                              | 2178-LS6                              | 2178-LL                               | 2178-LL4                              | 2178-XL                                      |
|--|---------------------------------------|---------------------------------------|---------------------------------------|---------------------------------------|---------------------------------------|---------------------------------------|----------------------------------------------|
|  | 4                                     | 4                                     | 8                                     | 12                                    | 4                                     | 8                                     | 8                                            |
|  | 2                                     | 2                                     | 4                                     | 6                                     | 2                                     | 4                                     | 4                                            |
|  | 1.0" (25 mm)                          | 1.0" (25 mm)                          | 1.0" (25 mm)                          | 1.0" (25 mm)                          | 1.0" (25 mm)                          | 1.0" (25 mm)                          | 4 - 1.0" (25 mm)<br>4 - 1.4" (35 mm)         |
|  | 96                                    | 288                                   | 288                                   | 288                                   | 288                                   | 288                                   | 576                                          |
|  | 288                                   | 864                                   | 864                                   | 864                                   | 864                                   | 864                                   | 1728                                         |
|  | 2522*<br>2523<br>2524<br>2527<br>2543 | 2522*<br>2523<br>2524<br>2527<br>2543 | 2522*<br>2523<br>2524<br>2527<br>2543 | 2522*<br>2523<br>2524<br>2527<br>2543 | 2522*<br>2523<br>2524<br>2527<br>2543 | 2522*<br>2523<br>2524<br>2527<br>2543 | 2522*<br>2523<br>2527<br>2543                |
|  | 0, 2, or 4                            | 0, 2, or 4                            |                                       |                                       | 0, 2, or 4, 8                         |                                       | 0, 4, or 8                                   |
|  | 21.9" (556 mm)                        | 21.9" (556 mm)                        | 21.9" (556 mm)                        | 21.9" (556 mm)                        | 21.9" (556 mm)                        | 1.9" (556 mm)                         | 27.0" (660 mm)                               |
|  | 8.5" (216 mm)                         | 8.5" (216 mm)                         | 8.5" (216 mm)                         | 8.5" (216 mm)                         | 8.5" (216 mm)                         | 8.5" (216 mm)                         | 13.3" (337 mm)                               |
|  | 8.0" (203 mm)                         | 8.0" (203 mm)                         | 9.5" (241 mm)                         | 11.0" (279 mm)                        | 11.3" (287 mm)                        | 12.8" (325 mm)                        | 11.0" ( 279 mm)                              |
|  | 2181-LS<br>2181-B<br>2181-C           | 2181-LS<br>2181-B<br>2181-C           | 2181-LS<br>2181-B<br>2181-C           | 2181-LS<br>2181-C                     | 2181-LS<br>2181-B<br>2181-C           | 2181-LS<br>2181-B<br>2181-C           | 2181-XL/CAK                                  |
|  | 2178-4PGA<br>2178-1.0-PORT-CRPX       | 2178-4PGA<br>2178-1.0-PORT-CRPX       | 2178-4PGA<br>2178-1.0-PORT-CRPX       | 2178-4PGA<br>2178-1.0-PORT-CRPX       | 2178-4PGA<br>2178-1.0-PORT-CRPX       | 2178-4PGA<br>2178-1.0-PORT-CRPX       | 2178-4PGA<br>2178-6PGA<br>2178-1.0-PORT-CRPX |
|  | 2183, 2184, or 2197                   | 2183, 2184, or 2197                   |                                       |                                       | 2183 or 2197                          |                                       | 2184-LL                                      |
|  | 2198                                  | 2198                                  |                                       |                                       | 2198                                  |                                       | 2198                                         |
|  | 2198                                  | 2198                                  |                                       |                                       | 2198                                  |                                       | 2198                                         |
|  | 2198                                  | 2198                                  |                                       |                                       | 2198                                  |                                       | 2198                                         |
|  | 2198 or 2199                          | 2199                                  |                                       |                                       | 2199                                  |                                       | 2198                                         |
|  | na                                    | 2178-LS/FR*<br>2181-LS/FR*            | 2178-LS4/FR<br>2181-LS/FR*            | 2178-LS6/FR<br>2181-LS/FR*            | 2178-LL/FR*<br>2181-LS/FR*            | 2178-LL4/FR<br>2181-LS/FR*            | 2178-XL/FR*<br>2178-XL/CAK-FR                |

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