



# 2178-L/S Series Fiber Optic Splice Cases and Accessories



The 3M™ 2178 Fiber Optic Splice Case family has always given you great protection for fiber optic connections. Now, the addition of 3M™ 2178-L/S Series Fiber Optic Splice Cases adds more capabilities to the family.

### More chemical-resistant

With the new addition you get all the features of the popular 2178 splice case. Plus, the 2178-L/S series consists of a tough chemical-resistant material and a new gasket seal that make this the ideal splice case for outside plant, underground, aerial, pedestal and direct buried applications.

### Meets your changing network needs

The 2178-L/S series is designed with larger and smaller interchangeable closure halves so you can select the size case that meets your needs today, but with the flexibility to expand for the future. Cable ports and space for trays can be added at reentry with the 3M™ 2181-L/S Cable Addition Kit.

The ease of installation is unsurpassed, requiring no special tools or complicated training procedures. The closures are easily reenterable to allow access to the splices.

### The ultimate protection for fiber optic connections

The 2178-L/S series feature a tough, rigid non-filled case, tested under real-world conditions, that stands up to even the most severe conditions of moisture, vibration and extreme temperatures. The closure will withstand up to 200 pounds (90.7 kg) compression.

Design improvements to the 2178-L/S series include changes to improve the cable strain relief and a movable tray support. The closures hold cables of varying sizes and provide flexibility to add ports on both ends with the cable addition kit. The 2178-L/S series splice cases can be used with the 3M™ 2522 or 2523 Small Fiber Splice Organizer Trays or the 3M™ 2524 Fibrlok™ Small Fiber Splice Organizer Tray and most other commercially available trays..

Features	Benefits
<b>2178-L/S Series FiberOptic Splice Cases</b>	
Constructed of a highly chemical-resistant material	Use in buried applications
Gasket seal	Easy reentry and reusable seal
Unique strength member clamp assembly	Prevents cable sheath movement with temperature changes
Several sizes with interchangeable parts	Expandable system to fit capacity and space requirements
Multiple cable entry options	Butt or in-line configuration for splicing
No special tools required	Easy installation and reentry
Non-filled closure	No compound required; easier reentry
Multiple ground studs	Isolated grounding capability
Pressurization Valve	Provides ability to flash test
Varying cable port sizes	Accommodates all common trunk and feeder cable sizes
Expandable from two cable entries per end up to six	Add cable with minimum disturbance; eliminates splice rebuilding when adding lines
<b>3M™ 2522 and 2523 FiberOptic Splice OrganizerTrays</b>	
Meets Bellcore requirement for bend diameter	Easy maintenance
Trays allow entry and exit of buffer tubing at any of the four corners	Provides flexibility in fiber management
Extra tray depth	Ribbon fiber may be coiled without twisting
Modular design of the splice holder	Accommodates many types of splices
Stackable hinged tray	Easy access without removing other trays
<b>3M™ Fibrlok™ 2524 FiberOptic Splice OrganizerTray</b>	
Single entry point	Controls fiber management
Hinged trays snap together	Stackable; individual tray access
Flame retardant / isopropyl alcohol resistant	Meets fire codes and industry standards
4-inch (10.16 cm) bend diameter	Individual fiber access; allows easy maintenance



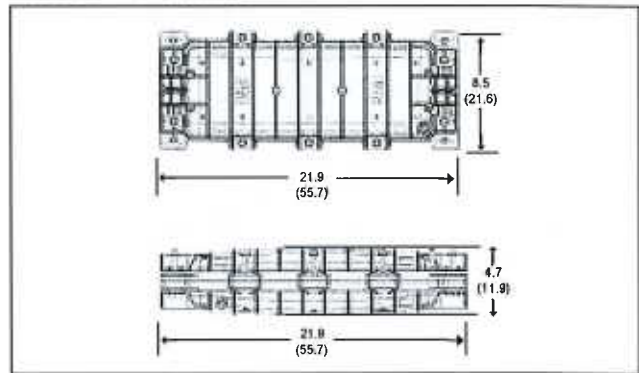
3M™ 2178-S case mounted on strand,





2178-S

**2178-S FiberOptic Splice Case**

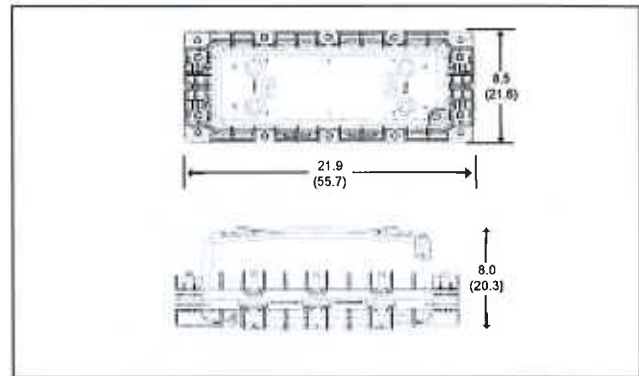


Dimensions Shown: Inches (Centimeters)



2178-LS

**2178-LS FiberOptic Splice Case**

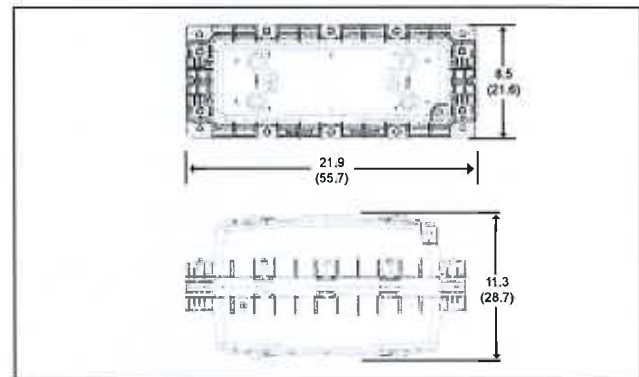


Dimensions Shown: Inches (Centimeters)

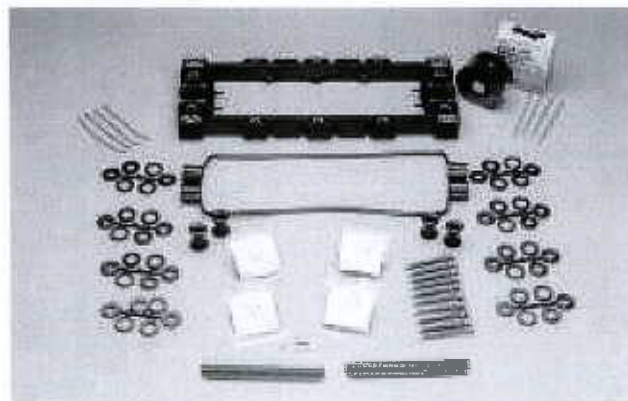


2178-LL

**2178-LL FiberOptic Splice Case**



Dimensions Shown: Inches (Centimeters)



2181-LS Cable Addition Kit (Gasket is factory installed.)

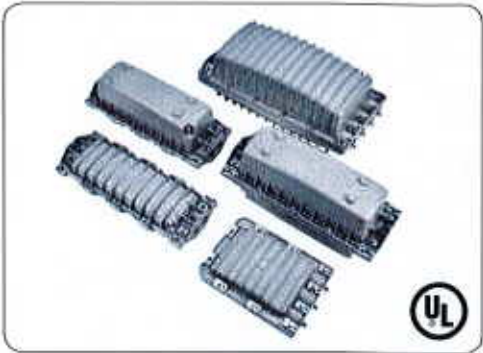
## MULTIPLE SOLUTIONS (CONTINUED)

### 4 Flexible Environmental Applications

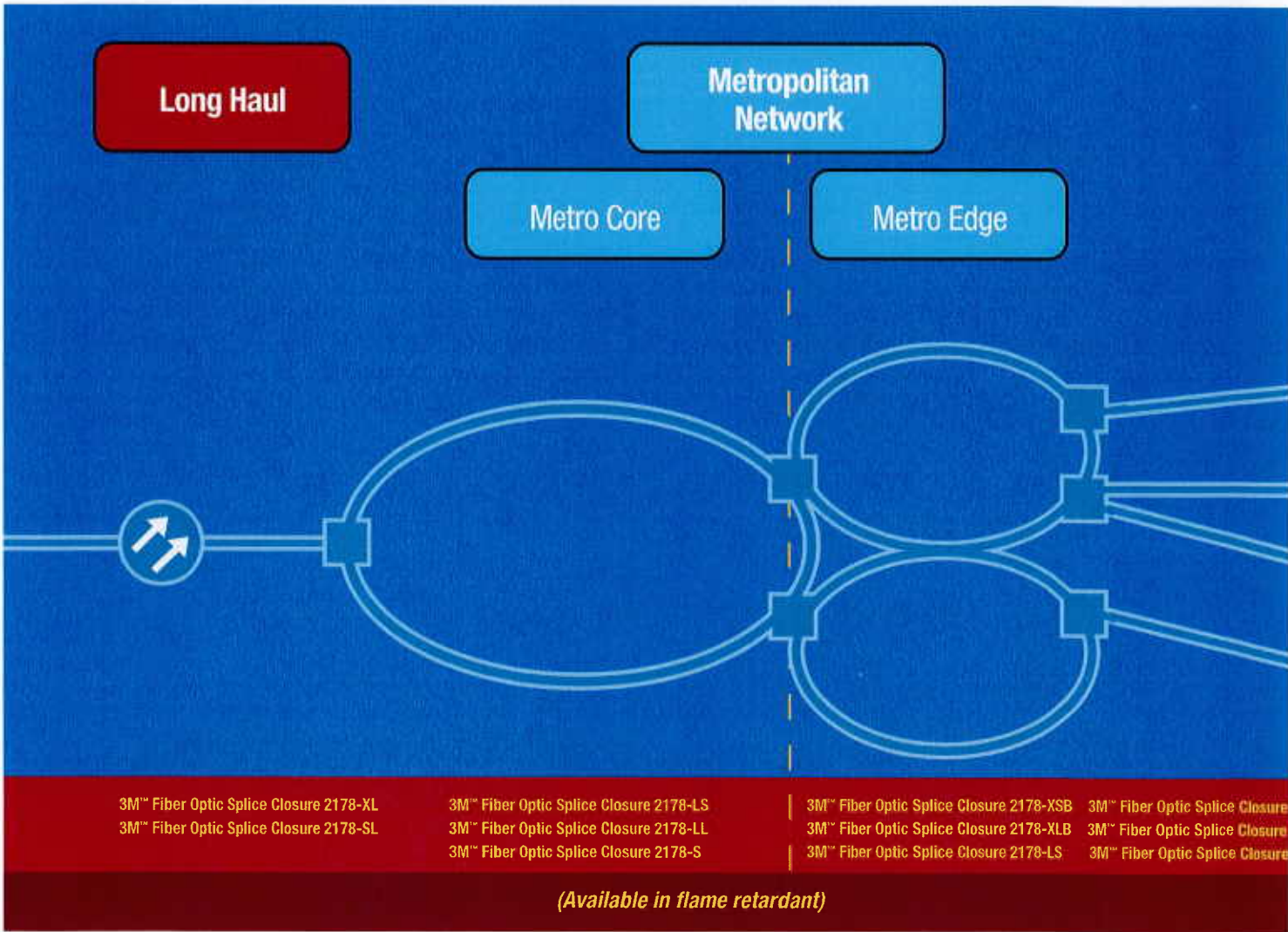
The 3M™ Fiber Optic Splice Closure 2178 family can be effectively used in nearly any application including aerial (pole and strand) mount, central office vault, manhole, pedestal and handhole. It can also accommodate most splicing methods (mechanical and fusion) as well as inline and butt splicing configurations.

### 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.



3M™ Fiber Optic Splice Closure 2178/FR Flame Retardant Series



### 2178-L/S Series Maximum Splice Capacities with 3M™ Splice Organizer Trays

Product Number	Fibrlok™	Fibrlok™ Multi-fiber	Fusion	Ribbon Fusion	Comments
2178-S w/2 2522	24	16 (192 fibers)	48	20 (240 fibers)	
2178-S w/2 2523	48	24 (288 fibers)	96	24 (288 fibers)	
2178-S w/2 2524	48				
2178-S w/2 2524-A			48	8 (96 fibers)	
2178-S w/2 2524-FT			48		
2178-S w/2 2524-MF	4	6 (72 fibers)			
2178-S w/4 2522	48	32 (384 fibers)	96	40 (480 fibers)	One 2181 cable addition kit
2178-S w/4 2523	96	48 (576 fibers)	192	48 (576 fibers)	One 2181 cable addition kit
2178-S w/4 2524	96				One 2181 cable addition kit
2178-S w/4 2524-A			96	16 (192 fibers)	One 2181 cable addition kit
2178-S w/4 2524-FT			96		One 2181 cable addition kit
2178-S w/4 2524-MF	8	12 (144 fibers)			One 2181 cable addition kit

2178-LS w/5 2522	60	40 (480 fibers)	120	50 (600 fibers)	
2178-LS w/5 2523	120	60 (720 fibers)	240	60 (720 fibers)	
2178-LS w/7 2524	168				
2178-LS w/7 2524-A			168	28 (336 fibers)	
2178-LS w/7 2524-FT			168		
2178-LS w/7 2524-MF	14	21 (252 fibers)			
2178-LS w/8 2522	96	64 (768 fibers)	192	80 (960 fibers)	One 2181 cable addition kit
2178-LS w/8 2523	192	96 (1152 fibers)	384	96 (1152 fibers)	One 2181 cable addition kit
2178-LS w/10 2524	240				One 2181 cable addition kit
2178-LS w/10 2524-A			240	40 (480 fibers)	One 2181 cable addition kit
2178-LS w/10 2524-FT			240		One 2181 cable addition kit
2178-LS w/10 2524-MF	20	30 (360 fibers)			One 2181 cable addition kit
2178-LS w/10 2522	120	80 (960 fibers)	240	100 (1200 fibers)	Two 2181 cable addition kits
2178-LS w/10 2523	240	120 (1440 fibers)	480	120 (1440 fibers)	Two 2181 cable addition kits
2178-LS w/13 2524	312				Two 2181 cable addition kits
2178-LS w/13 2524-A			312	52 (624 fibers)	Two 2181 cable addition kits
2178-LS w/13 2524-FT			312		Two 2181 cable addition kits
2178-LS w/13 2524-MF	26	39 (468 fibers)			Two 2181 cable addition kits

NOTE: 2178-LL has the same splice capacity as 2178-LS with additional space for buffer storage. Capacity may be affected by the cable size and number of cables installed. Please call Customer Service for more information.

2522 Small Tray	12	8 (96 fibers)	24	10 (120 fibers)	
2523 Large Tray	24	12 (144 fibers)	48	12 (144 fibers)	
2524 Tray	24				
2524-A Tray			24	4 (48 fibers)	
2524-FT Tray			24		
2524-MF Tray	2	3 (36 fibers)			



## 3M™ Splice Cases and Accessories Ordering Information

### 3M™ 2178-L/S Series Splice Cases

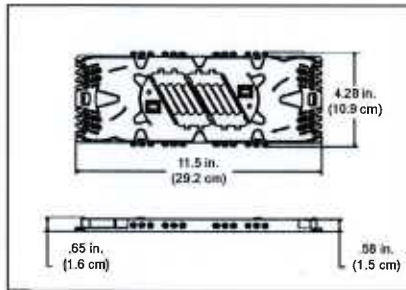
Product	Packaging	Min. Order
2178-S Small Fiber Optic Splice Case Contains materials for installation of 3 cables	1 kit/cs.	1 each
2178-LS Large Fiber Optic Splice Case Contains materials for initial installation of 4 cables	1 kit/cs.	1 each
2178-LLExtremely Large Fiber Optic Splice Case Contains materials for initial installation of 4 cables	1 kit/cs.	1 each
2181-LS Cable Addition Kit Contains gasket and materials for installing additional cables in 2178-S, 2178-LS, or 2178-LL Fiber Optic Splice Cases	1 kit/cs.	1 each

### 3M™ 2178-L/S Series Splice Case Accessories

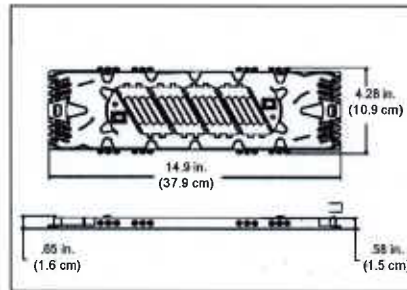
Product	Packaging	Min. Order
2172 Strength Member Clamp for fiber cable Clamps strength member to cable sheath	100/cs.	100 each
2178-EGI External Ground Isolation Kit	5/cs.	5 each
2178-LS / GSKT Gasket for 2178-L/S Series Fiber Optic Splice Cases	10/cs.	10 each
2181-B Fiber Optic Double Butt Adapter Kit Contains bolts for installation of two 2181-LS Cable Addition Kits		
2181-C Triple Adapter Kit Contains bolts for installation of three 2181-LS Cable Addition Kits		
<b>Mounting Hardware Accessories</b>		
2183 Universal Hanger Bracket Hardware for aerial installation	1/cs.	1 each
2186-SC Demarcation Bracket Capacity for 48 SC Connectors	1/cs.	1 each
2186-STDemarcation Bracket Capacity for 48 ST* or FC Connectors	1/cs.	1 each
2197 Aerial Hanger / Hinge Kit Contains hardware for aerial installation with hinged cover	1/cs.	1 each
2198 Mounting Bracket for 2178-S Fiber Optic Splice Case Hardware to mount 2178-S to wall or pole	1 kit/cs.	1 each
2199 Mounting Bracket for 2178-LS and 2178-LL Fiber Optic Splice Cases Hardware to mount 2178-LS or 2178-LL to wall	1 kit/cs.	1 each
Scotchlok™ 4460-D/FO Shield Bond Connector Assembly Provides grounding and strength member clamp	100/cs.	100 each
<b>Fiber Management Accessories</b>		
2519 Cable Fanout Kit Transitions cable buffer tubes or single tube to FibrTube	10 kits/cs.	10 kits
2519-X Cable Fanout Expander Kit Transitions one FibrTube to two FibrTubes	10 kits/cs.	10 kits
2520 FibrTube Transport Tubing Protects single or ribbon fiber between trays; cut in one-foot lengths	50/cs.	50 each
2521-F Fusion Splice Insert Holds 12 single fusion splices in each insert, used in 2522/2523 trays	2/pkg, 12pkg/cs.	12 pkgs.
2521-FLFibrlok™ Splice Insert Holds six Fibrlok™ Splices in each insert, used in 2522/2523 trays	2/pkg, 12pkg/cs.	12 pkgs.
2521-MF Fibrlok Multi-Fiber Splice Insert Holds four Fibrlok Multi-Fiber Splices in each insert, used in 2522/2523 trays	2/pkg, 12pkg/cs.	12 pkgs.
2521-RF Ribbon Fusion Splice Insert Holds five ribbon fusion splices in each insert, used in 2522/2523 trays	2/pkg, 12pkg/cs.	12 pkgs.
2522 Small Fiber Splice Organizer Tray Holds two 2521 Series Splice Inserts (sold separately)	3/cs.	3 each
2523 Large Fiber Splice Organizer Tray Holds four 2521 Series Splice Inserts (sold separately)	3/cs.	3 each
2524 Splice Organizer Tray Holds 24 Fibrlok splices and eight buffer tubes	3/cs.	3 each

**3M™ Splice Case Accessories Ordering Information, continued**

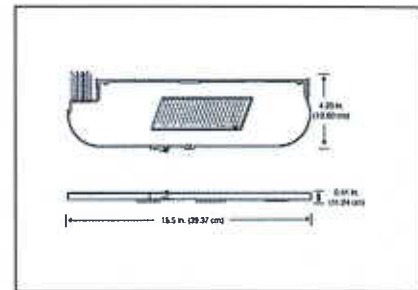
2524-ASplice Organizer Tray Holds four mass fusion or 24 single fusion splices, or a combination of 20 single fusion and four mass fusion	3/cs.	3 each
2524-FTFusion Splice Organizer Tray Holds 24 single fusion splices	3/cs.	3 each
2524-MF Fibriok Multi-fiber Splice Organizer Tray Holds three Fibriok Multi-fiber and four single Fibrioks	3/cs.	3 each
2524-F Fusion Splice Insert Adapts the 2524 Tray for fusion splices	24/cs.	24 each
2526 Strap Kit for Organizer Trays Holds 2522 and 2523 Trays in place in closure	24 kits/cs.	24 kits



3M™ 2522 Fiber Optic  
Splice Organizer Tray with cover



3M™ 2523 Fiber Optic  
Splice Organizer Tray with cover



3M™ 2524 Fiber Optic  
Splice Organizer Tray with cover

\*STi is a registered trademark of Lucent.

**Important Notice**

All statements, technical information, and recommendations related to Seller's products are based on information believed to be reliable, but the accuracy or completeness thereof is not guaranteed. Before utilizing the product, the user should determine the suitability of the product for its intended use. The user assumes all risks and liability whatsoever in connection with such use.

Any statements or recommendations of the Seller which are not contained in the Seller's current publications shall have no force or effect unless contained in an agreement signed by an authorized officer of Seller. The statements contained herein are made in lieu of

all warranties, expressed or implied, including but not limited to the implied warranties of merchantability and fitness for a particular purpose which warranties are hereby expressly disclaimed.

SELLER SHALL NOT BE LIABLE TO THE USER OR ANY OTHER PERSON UNDER ANY LEGAL THEORY, INCLUDING BUT NOT LIMITED TO NEGLIGENCE OR STRICT LIABILITY, FOR ANY INJURY OR FOR ANY DIRECT OR CONSEQUENTIAL DAMAGES SUSTAINED OR INCURRED BY REASON OF THE USE OF ANY OF THE SELLER'S PRODUCTS THAT WERE DEFECTIVE.

**Telecom Systems Division**

6801 River Place Blvd.  
Austin, TX 78726-9000  
800/426 8688  
FAX 800/626 0326  
<http://www.mmm.com/telecom>



Recycled paper  
40% pre-consumer  
10% post-consumer

Printed in USA.  
© 3M 1997 80-6109-3465-7