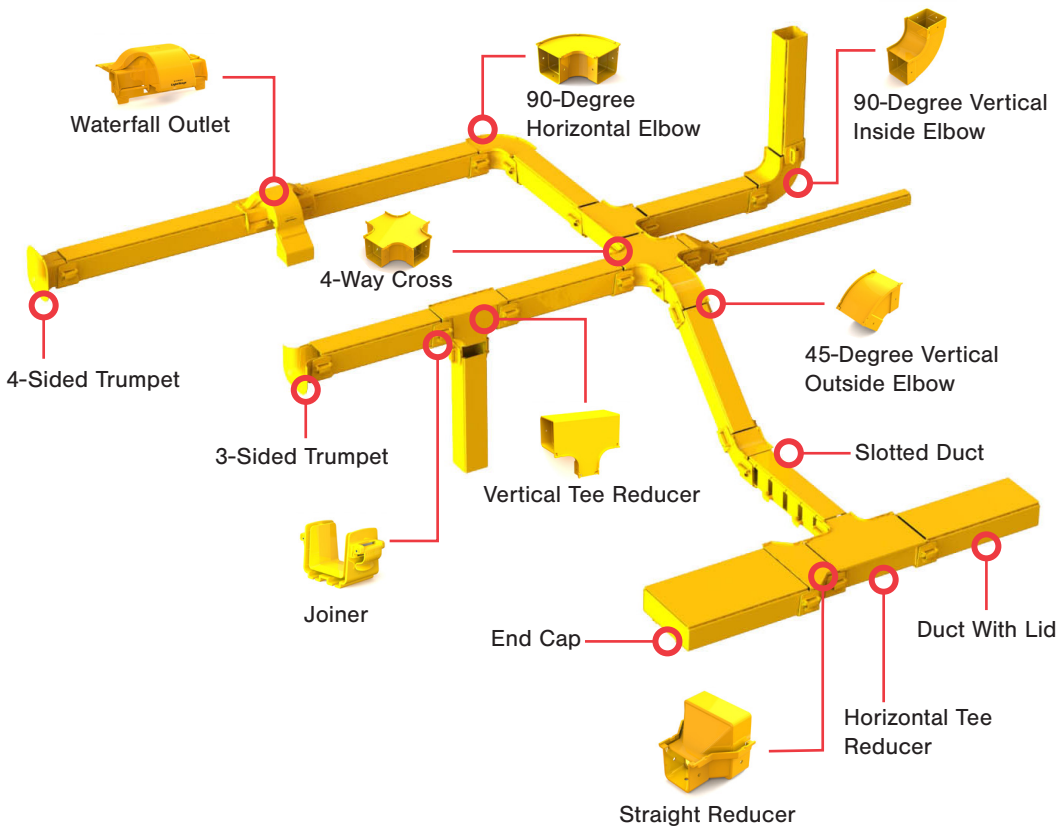


LightWays™ Fiber Routing System

LightWays is a flexible fiber routing system for supporting the growing amount of fiber optic cables required to connect critical networking equipment in the data center. This system is fully enclosed to protect fiber as it traverses from distribution areas to SANs and server areas. Strong enough to protect cables against the most rigorous of conditions, LightWays is specifically designed to maintain proper bend radius of fiber optic cabling, which is imperative to preventing microbend and macrobend losses that can adversely impact system performance.

Manufactured from halogen free, flame-retardant UL94/V0 plastic and available in four different sizes, LightWays is easy to assemble and includes a wide variety of straight duct, elbows, tees, crosses, reducers and innovative outlets for designing a system that meets the exact needs of any data center space. The system's easy access covers allow fiber optic cables to be installed in or removed from pathways at any time without the need to disconnect the whole system. Backed by Siemon Data Center Design Services, the LightWays Fiber Routing System is the ideal solution for protecting, segregating and managing your data center's critical fiber infrastructure.

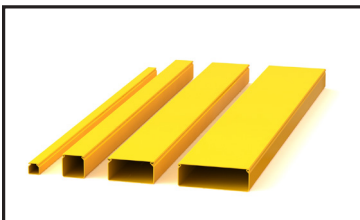


MATERIAL

- Halogen free, flame-retardant UL94/V0 plastic
- Color: Yellow

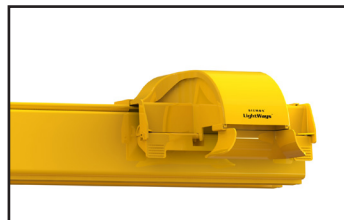
PERFORMANCE SPECIFICATIONS

- ANSI/TIA-942-B, Telecommunications Infrastructure Standard for Data Centers
- ANSI/TIA-569-B, Commercial Building Standard for Telecommunications Pathways and Spaces
- ANSI/UL 2024, Cable Routing Assemblies and Communications Raceways
- CAN/ULC-S143, Standard Method of Fire Tests for Non-Metallic Electrical and Optical Fibre Cable Raceway Systems
- NFPA 70 National Electrical Code (NEC)
- CSA C22.1 Canadian Electrical Code Part 1
- Suitable for riser and general-purpose applications



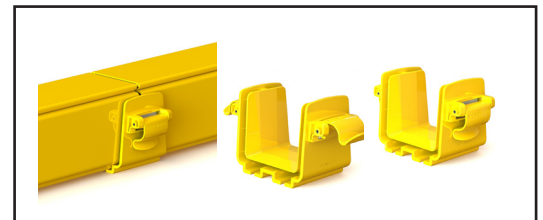
Variety of Sizes

Available in
50mm x 50mm (2 x 2 in.),
100mm x 100mm (4 x 4 in.)
200mm x 100mm (8 x 4 in.) and
300mm x 100mm (12 x 4 in.)



Innovate Waterfall Outlet

Can be easily placed over the side-wall of any straight run to create a vertical drop-off with full bend radius control.



Innovative Toolless Joiner

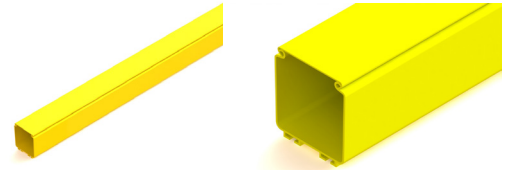
No tools are required to easily connect and disconnect LightWays ducts, elbows, tees, crosses and reducers.

Product Information

Straight Duct

Straight, Solid Duct

Straight, solid duct is used to support straight runs of fiber. These ducts are easily joined together using a combination of elbows, tees, crosses, reducers and splices. End caps are used to seal the ends of straight duct.



Solid Duct and Cover

Part Number	Description
LW-DCA05-18-05C	50mm x 50mm (2 x 2 in.), 1.8m (6 ft.)
LW-DCA10-18-05C	100mm x 100mm (4 x 4 in.), 1.8m (6 ft.)
LW-DCA20-18-05C	200mm x 100mm (8 x 4 in.), 1.8m (6 ft.)
LW-DCA30-18-05C	300mm x 100mm (12 x 4 in.), 1.8m (6 ft.)

Solid Duct

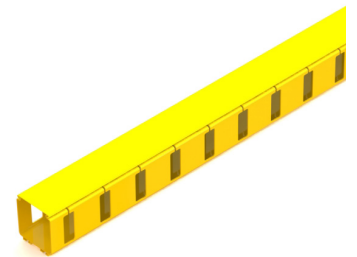
Part Number	Description
LW-DCA05-18-05N	50mm x 50mm (2 x 2 in.), 1.8m (6 ft.)
LW-DCA10-18-05N	100mm x 100mm (4 x 4 in.), 1.8m (6 ft.)
LW-DCA20-18-05N	200mm x 100mm (8 x 4 in.), 1.8m (6 ft.)
LW-DCA30-18-05N	300mm x 100mm (12 x 4 in.), 1.8m (6 ft.)

Straight, Slotted Duct with Cover

Straight, slotted duct features cutouts spaced either 50mm (2 in.) or 100mm (4 in.) on center. These slots allow fiber to vertically drop into cabinets and racks in virtually any location along the route, and can be used with slotted channel trumpets to protect fiber bend radius.

SLOTTED DUCT AND COVER

Part Number	Description
LW-DCB05-18-05C	50mm x 50mm (2 x 2 in.) x 1.8m (6 ft.) with slots spaced 50mm (2 in.) on center
LW-DCC05-18-05C	50mm x 50mm (2 x 2 in.) x 1.8m (6 ft.) with slots spaced 100mm (4 in.) on center
LW-DCB10-18-05C	100mm x 100mm (4 x 4 in.) x 1.8m (6 ft.) with slots spaced 50mm (2 in.) on center
LW-DCC10-18-05C	100mm x 100mm (4 x 4 in.) x 1.8m (6 ft.) with slots spaced 100mm (4 in.) on center



Joiners

Toolless Joiner

The toolless joiners are used to connect ducts, elbows, tees, crosses and reducers.

Part Number	Description
LW-JND05-05	50mm x 50mm (2 x 2 in.), 1.8m (6 ft.)
LW-JND10-05	100mm x 100mm (4 x 4 in.), 1.8m (6 ft.)
LW-JND20-05	200mm x 100mm (8 x 4 in.), 1.8m (6 ft.)
LW-JND30-05	300mm x 100mm (12 x 4 in.), 1.8m (6 ft.)

Manual Joiner

Manual joiners use nut/bolt hardware and tools to connect duct, elbows, tees, crosses and reducers.

Part Number	Description
LW-JNH05-05	50mm x 50mm (2 x 2 in.)
LW-JNH10-05	100mm x 100mm (4 x 4 in.)
LW-JNH20-05	200mm x 100mm (8 x 4 in.)
LW-JNH30-05	300mm x 100mm (12 x 4 in.)



Toolless Joiners

Product Information

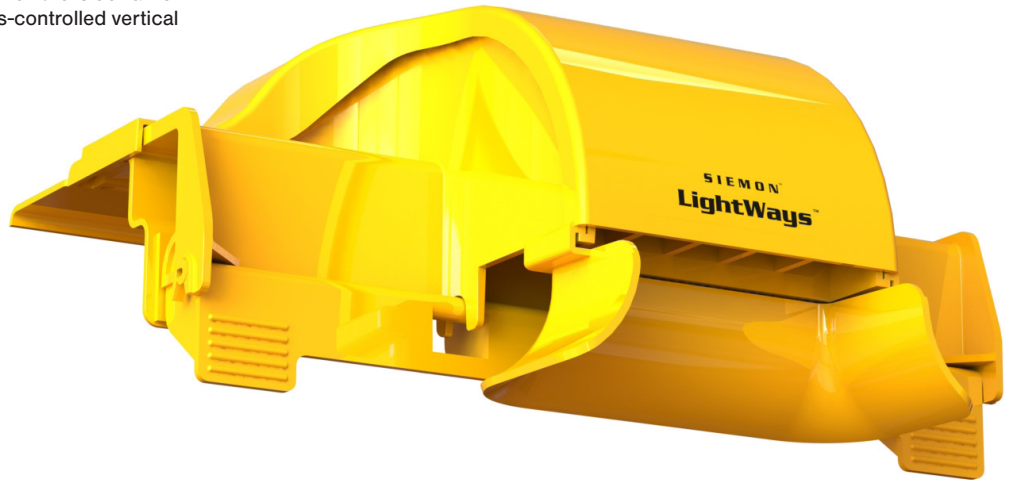
Waterfall Outlet

Low Profile Waterfall Outlet

Low-profile Waterfall Outlets are easily placed over the sidewall of any new or existing straight duct to create a radius-controlled vertical drop off from a horizontal run.

Part Number	Description
LW-TES10-05	100mm (4 in.)*
LW-TES20-05	200mm (8 in.)
LW-TES30-05	300mm (12 in.)

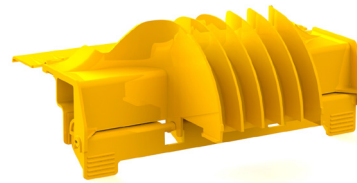
*Can be used with 50mm x 50mm (2 x 2 in.) duct but cover will extend slightly past duct.



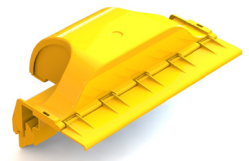
Direct Front View



Front View



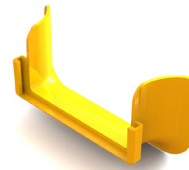
Front View No Cover



Rear View

Outlet Opening Trumpet

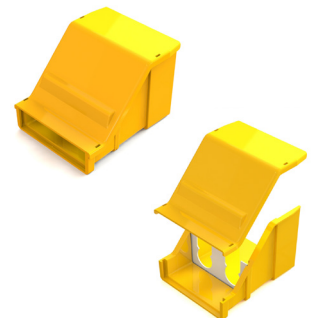
Part Number	Description
LW-TR110-05	Used with 100mm (4 in.), 200mm (8 in.) or 300 mm (12 in.) Waterfall Outlets



Outlet Adapters

Adapters are used for transitioning from waterfall outlet to flexible tubing.

Part Number	Description
LW-EA05-132-05	50mm x 50mm (2 x 2 in.) Drop Adapter to One 32mm (1.25 in.) Flexible Split Conduit
LW-EA10-232-05	100mm x 100mm (4 x 4 in.) Drop Adapter to Two 32mm (1.25 in.) Flexible Split Conduit
LW-EA05-S-05	50mm x 50mm (2 x 2 in.) Drop Adapter
LW-EA10-S-05	100mm x 100mm (4 x 4 in.) Drop Adapter

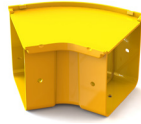


Product Information

Elbows

45-Degree Horizontal Elbows

45-degree horizontal elbows are used for creating bends that change the direction of horizontal routes of LightWays routing on a 45-degree angle.



Elbow and Cover

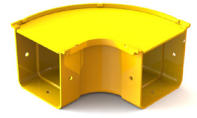
Part Number	Description
LW-BNH45-05-05C	50mm x 50mm (2 x 2 in.)
LW-BNH45-10-05C	100mm x 100mm (4 x 4 in.)
LW-BNH45-20-05C	200mm x 100mm (8 x 4 in.)
LW-BNH45-30-05C	300mm x 100mm (12 x 4in.)

Elbow Only

Part Number	Description
LW-BNH45-05-05N	50mm x 50mm (2 x 2 in.)
LW-BNH45-10-05N	100mm x 100mm (4 x 4 in.)
LW-BNH45-20-05N	200mm x 100mm (8 x 4 in.)
LW-BNH45-30-05N	300mm x 100mm (12 x 4in.)

90-Degree Horizontal Elbows

90-degree horizontal elbows are used for making left- or right-hand bends in horizontal routes of LightWays.



Elbow and Cover

Part Number	Description
LW-BNH90-05-05C	50mm x 50mm (2 x 2 in.)
LW-BNH90-10-05C	100mm x 100mm (4 x 4 in.)
LW-BNH90-20-05C	200mm x 100mm (8 x 4 in.)
LW-BNH90-30-05C	300mm x 100mm (12 x 4in.)

Elbow Only

Part Number	Description
LW-BNH90-05-05N	50mm x 50mm (2 x 2 in.)
LW-BNH90-10-05N	100mm x 100mm (4 x 4 in.)
LW-BNH90-20-05N	200mm x 100mm (8 x 4 in.)
LW-BNH90-30-05N	300mm x 100mm (12 x 4in.)

45-Degree Vertical Inside (Up) and Outside (Down) Elbows

45-degree vertical elbows are used for creating 45-degree vertical transitions from horizontal routes.

45-Degree Vertical Up Elbows

Elbow and Cover

Part Number	Description
LW-BNU45-05-05C	50mm x 50mm (2 x 2 in.)
LW-BNU45-10-05C	100mm x 100mm (4 x 4 in.)
LW-BNU45-20-05C	200mm x 100mm (8 x 4 in.)
LW-BNU45-30-05C	300mm x 100mm (12 x 4in.)



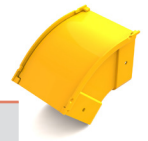
Elbow Only

Part Number	Description
LW-BNU45-05-05N	50mm x 50mm (2 x 2 in.)
LW-BNU45-10-05N	100mm x 100mm (4 x 4 in.)
LW-BNU45-20-05N	200mm x 100mm (8 x 4 in.)
LW-BNU45-30-05N	300mm x 100mm (12 x 4in.)

45-Degree Vertical Down Elbows

Elbow and Cover

Part Number	Description
LW-BND45-05-05C	50mm x 50mm (2 x 2 in.)
LW-BND45-10-05C	100mm x 100mm (4 x 4 in.)
LW-BND45-20-05C	200mm x 100mm (8 x 4 in.)
LW-BND45-30-05C	300mm x 100mm (12 x 4in.)



Elbow Only

Part Number	Description
LW-BND45-05-05N	50mm x 50mm (2 x 2 in.)
LW-BND45-10-05N	100mm x 100mm (4 x 4 in.)
LW-BND45-20-05N	200mm x 100mm (8 x 4 in.)
LW-BND45-30-05N	300mm x 100mm (12 x 4in.)

Product Information

Elbows Cont.

90-Degree Vertical Inside (Up) and Outside (Down) Elbows

90-degree vertical elbows are used for creating 90-degree vertical transitions from horizontal routes.

90-Degree Vertical Up Elbows

Elbow and Cover

Part Number	Description
LW-BNU90-05-05C	50mm x 50mm (2 x 2 in.)
LW-BNU90-10-05C	100mm x 100mm (4 x 4 in.)
LW-BNU90-20-05C	200mm x 100mm (8 x 4 in.)
LW-BNU90-30-05C	300mm x 100mm (12 x 4in.)



Elbow Only

Part Number	Description
LW-BNU90-05-05N	50mm x 50mm (2 x 2 in.)
LW-BNU90-10-05N	100mm x 100mm (4 x 4 in.)
LW-BNU90-20-05N	200mm x 100mm (8 x 4 in.)
LW-BNU90-30-05N	300mm x 100mm (12 x 4in.)

90-Degree Vertical Down Elbows

Elbow and Cover

Part Number	Description
LW-BND90-05-05C	50mm x 50mm (2 x 2 in.)
LW-BND90-10-05C	100mm x 100mm (4 x 4 in.)
LW-BND90-20-05C	200mm x 100mm (8 x 4 in.)
LW-BND90-30-05C	300mm x 100mm (12 x 4in.)



Elbow Only

Part Number	Description
LW-BND90-05-05N	50mm x 50mm (2 x 2 in.)
LW-BND90-10-05N	100mm x 100mm (4 x 4 in.)
LW-BND90-20-05N	200mm x 100mm (8 x 4 in.)
LW-BND90-30-05N	300mm x 100mm (12 x 4in.)

Tees, Crosses and Reducers

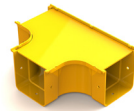
Horizontal Tees and Reducers

Horizontal tees are used to branch off from main horizontal routes to matching size routes while horizontal tee reducers enable branching off from larger to smaller horizontal routes.

Horizontal Tees

Tee and Cover

Part Number	Description
LW-TEH05-05-05C	50mm x 50mm (2 x 2 in.)
LW-TEH10-10-05C	100mm x 100mm (4 x 4 in.)
LW-TEH20-20-05C	200mm x 100mm (8 x 4 in.)
LW-TEH30-30-05C	300mm x 100mm (12 x 4in.)



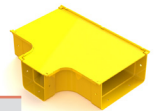
Tee Only

Part Number	Description
LW-TEH05-05-05N	50mm x 50mm (2 x 2 in.)
LW-TEH10-10-05N	100mm x 100mm (4 x 4 in.)
LW-TEH20-20-05N	200mm x 100mm (8 x 4 in.)
LW-TEH30-30-05N	300mm x 100mm (12 x 4in.)

Horizontal Tee Reducer

Tee Reducer and Cover

Part Number	Description
LW-TEH10-05-05C	100mm x 100mm (4 x 4in.) to 50mm x 50mm (2 x 2 in.)
LW-TEH20-10-05C	200mm x 100mm (8 x 4in.) to 100mm x 100mm (4 x 4 in.)



Tee Reducer Only

Part Number	Description
LW-TEH10-05-05N	100mm x 100mm (4 x 4in.) to 50mm x 50mm (2 x 2 in.)
LW-TEH20-10-05N	200mm x 100mm (8 x 4in.) to 100mm x 100mm (4 x 4 in.)

Product Information

Tees, Crosses and Reducers Cont.

Straight Reducers

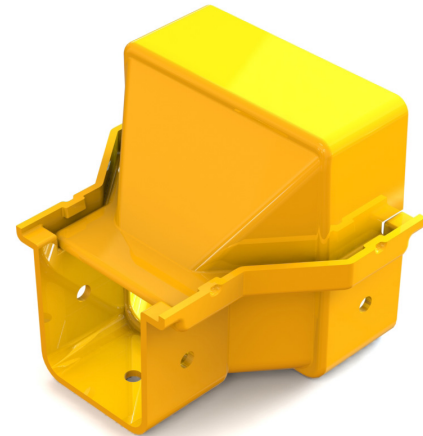
Straight reducers are used for joining horizontal ducts of different sizes.

Straight Reducer and Cover

Part Number	Description
LW-RES10-05-05C	100mm x 100mm (4 x 4 in.) to 50mm x 50mm (2 x 2 in.)
LW-RES20-10-05C	200mm x 100mm (8 x 4 in.) to 100mm x 100mm (4 x 4 in.)
LW-RES30-10-05C	300mm x 100mm (12 x 4 in.) to 100mm x 100mm (4 x 4 in.)
LW-RES30-20-05C	300mm x 100mm (12 x 4 in.) to 200mm x 100mm (8 x 4 in.)

Straight Reducer Only

Part Number	Description
LW-RES10-05-05N	100mm x 100mm (4 x 4 in.) to 50mm x 50mm (2 x 2 in.)
LW-RES20-10-05N	200mm x 100mm (8 x 4 in.) to 100mm x 100mm (4 x 4 in.)
LW-RES30-10-05N	300mm x 100mm (12 x 4 in.) to 100mm x 100mm (4 x 4 in.)
LW-RES30-20-05N	300mm x 100mm (12 x 4 in.) to 200mm x 100mm (8 x 4 in.)



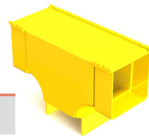
Straight Reducer and Cover

Vertical Tees and Reducers

Vertical tees are used to branch off vertically from main horizontal routes of the same size, while vertical tee reducers allow for branching off vertically to smaller duct.

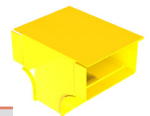
Vertical Tee and Cover

Part Number	Description
LW-TEV05-05-05C	50mm x 50mm (2 x 2 in.)
LW-TEV10-10-05C	100mm x 100mm (4 x 4 in.)



Vertical Tee Reducer and Cover

Part Number	Description
LW-TEV10-05-05C	100mm x 100mm (4 x 4 in.) to 50mm x 50mm (2 x 2 in.)
LW-TEV20-10-05C	200mm x 100mm (8 x 4 in.) to 100mm x 100mm (4 x 4 in.)
LW-TEV30-10-05C	300mm x 100mm (12 x 4 in.) to 100mm x 100mm (4 x 4 in.)

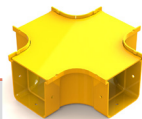


4-Way Crosses and Reducers

4-way horizontal crosses are used to establish 4-way intersections in straight routes of matching specs. 4-way horizontal cross-reducers enable crossing of larger and smaller routes

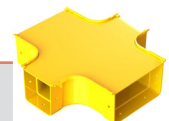
4-Way Cross and Cover

Part Number	Description
LW-CR05-05-05C	50mm x 50mm (2 x 2 in.)
LW-CR10-10-05C	100mm x 100mm (4 x 4 in.)
LW-CR20-20-05C	200mm x 100mm (8 in. x 4 in.)
LW-CR30-30-05C	300mm x 100mm (12 in. x 4 in.)



4-Way Cross Reducer and Cover

Part Number	Description
LW-CR20-10-05C	200mm x 100mm (8 in. x 4 in.) (2 sides) to 100mm x 100mm (4 in. x 4 in.) (2 sides)



4-Way Cross Only

Part Number	Description
LW-CR05-05-05N	50mm x 50mm (2 x 2 in.)
LW-CR10-10-05N	100mm x 100mm (4 x 4 in.)
LW-CR20-20-05N	200mm x 100mm (8 in. x 4 in.)
LW-CR30-30-05N	300mm x 100mm (12 in. x 4 in.)

4-Way Cross Reducer Only

Part Number	Description
LW-CR20-10-05N	200mm x 100mm (8 in. x 4 in.) (2 sides) to 100mm x 100mm (4 in. x 4 in.) (2 sides)

Product Information

Conduit, Trumpets and End Caps

Split Flexible Conduit

For use with adapters, split flexible conduit is used to protect fiber traversing from drops into racks and cabinets. Split for ease of cable installation, flexible duct can be adjusted to ensure that fiber drops can be positioned exactly in line with equipment.

Part Number	Description
LW-CNL32-05	Yellow, 32mm (1 ¼ in.)



Trumpets

Trumpets maintain proper bend radius of fiber exiting any horizontal duct, fitting or outlet. Slotted channel trumpets are used for maintaining proper bend radius of fiber exiting from slotted duct.

3-Sided Trumpet

Part Number	Description
LW-TR305-05	50mm x 50mm (2 x 2 in.)
LW-TR310-05	100mm x 100mm (4 x 4 in.)
LW-TR320-05	200mm x 100mm (8 in. x 4 in.)



4-Sided Trumpet

Part Number	Description
LW-TR405-05	50mm x 50mm (2 x 2 in.)
LW-TR410-05	100mm x 100mm (4 x 4 in.)
LW-TR420-05	200mm x 100mm (8 in. x 4 in.)



Slotted Channel Trumpet

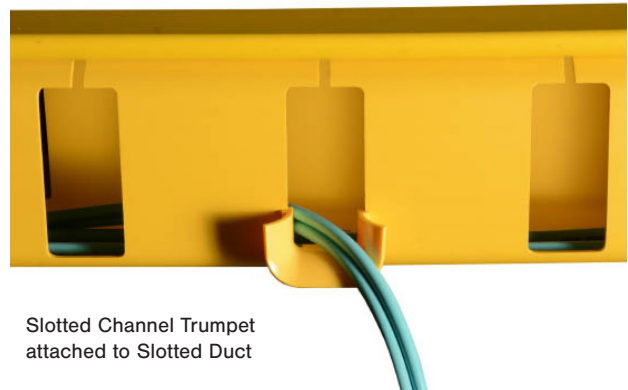
Part Number	Description
LW-TR210-05	Used with 50mm x 50mm (2 x 2 in.) and 100mm x 100mm (4 / 4 in.) Slotted Duct



End Caps

Standard end caps close off the open ends of horizontal duct to maintain fiber protection.

Part Number	Description
LW-EC05-S-05	50mm x 50mm (2 x 2 in.) End Cap
LW-EC10-S-05	100mm x 100mm (4 x 4 in.) End Cap
LW-EC20-S-05	200mm x 100mm (8 x 4 in.) End Cap
LW-EC30-S-05	300mm x 100mm (12 x 4 in.) End Cap



Slotted Channel Trumpet attached to Slotted Duct

Hardware and Accessories

Nuts and Bolts

Nuts and bolts are utilized for joining various components of the LightWays system. Protective caps can be used to cover metal nuts and protruding bolt threads to avoid risk of damage to fiber or personnel.

Part Number	Description
LW-HWA-20	M6 x 20mm Coach Bolt and Nut Kit, Pack of 100
LW-HWC-05	Protective Cap, Pack of 100



Product Information

Hardware and Accessories Cont.

Under Floor Hardware

LightWays fiber ducting can also be mounted beneath raised floors or other locations that use supports.

Part Number	Description
LW-BRF-C-25	130mm (5.1 in.) Mounting Kit*
LW-BRF-B-25	230mm (9.1 in.) Mounting Kit*

* Maximum rod size is 25mm with given hardware.

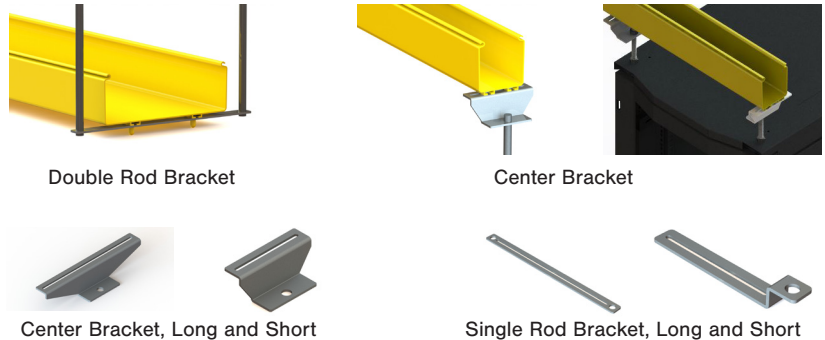


Threaded Rod Mounting Hardware

For mounting of LightWays ducting to threaded rod.

Part Number	Description
LW-BRC-B	Center Support Bracket, Long
LW-BRC-C	Center Support Bracket, Short
LW-BRR-C	Single Rod Support Bracket, Short
LW-BRR-B	Double Rod Support Bracket, Long

* Maximum rod size is 16mm with given hardware.

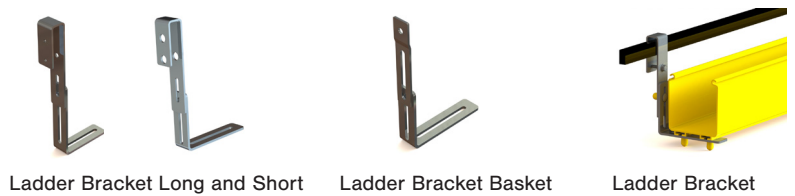


Ladder Rack and Basket Tray Mounting Hardware

For mounting of LightWays ducting to ladder rack.

Part Number	Description
LW-BRL-B	Ladder Bracket Kit, Long
LW-BRL-C	Ladder Bracket Kit, Short
LW-BRB-C	Basket Tray Bracket Kit, Short*

* 50mm, 100mm use only



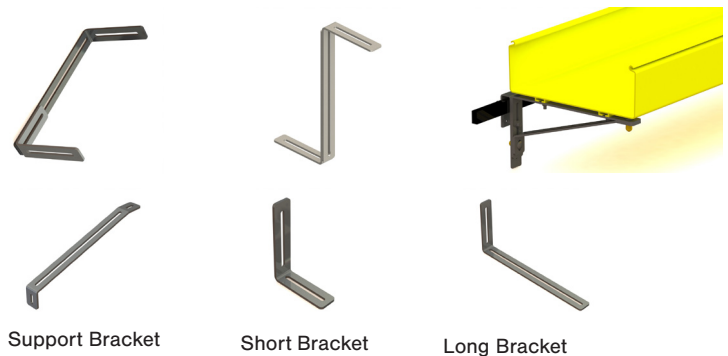
Universal Mounting Hardware

For alternate mounting including walls, floors or ceilings. These brackets can be configured in a range of orientations and lengths. The kits are comprised of a combination of a 129mm x 94mm (5.1in. x 3.7in.) bracket and a 129mm x 294mm (5.1in. x 11.6in.) bracket.

Part Number	Description
LW-BRU-B	Universal Bracket Kit, Long
LW-BRU-D	Universal Bracket Kit, Medium
LW-BRU-C	Universal Bracket Kit, Short
LW-BRU-S	Universal Bracket Long, Support, Ladder



Universal Support Bracket Assembled (Can be used with ladder bracket long or universal long bracket for heavy loads)



Because we continuously improve our products, Siemon reserves the right to change specifications and availability without prior notice.

North America P: (1) 860 945 4200	Asia Pacific P: (61) 2 8977 7500	Latin America P: (571) 657 1950/51/52	Europe P: (44) 0 1932 571771	China P: (86) 215385 0303	India, Middle East & Africa P: (971) 4 3689743
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Siemon Interconnect Solutions
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