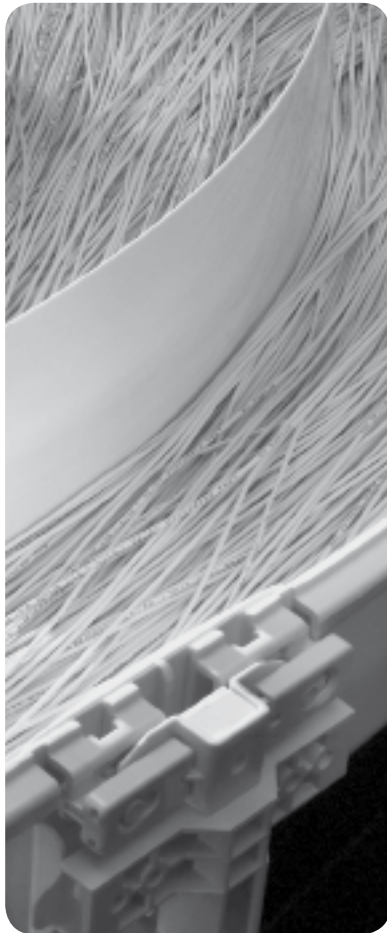


Plenum FiberGuide® System



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Typical Installations	100
Patch Cord Densities	101
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Express Exit™ 4x6 System	103
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Plenum FiberGuide® System

System Description

ADC KRONE's plenum FiberGuide® system is a fiber cable raceway system that protects optical fibers, routed beneath raised computer room floors and above suspended ceilings. These physical areas, used to transport environment air, are typically categorized as plenum air spaces by National Electric Code (NEC) Standards. In general, materials used in these spaces must be non-flammable and must not emit appreciable amounts of smoke or toxic gases when exposed to heat or flame.

Made from sturdy aluminum, ADC KRONE's plenum FiberGuide system protects optical fibers by physically separating them from copper communications cable, power cable, ground cables, heating/ventilating ducts, water pipes and many other obstructions commonly encountered in plenum air spaces.

Plenum FiberGuide Express Exits™ allow jumpers to be permanently or temporarily routed to the fiber optic terminal (FOT) equipment or fiber frames. No cutting is required because knockout sections can be punched out as necessary.

As seen in Figure 1, the plenum FiberGuide system can be used above a dropped ceiling as well as below a raised computer floor.

Figure 2 details a layout below a computer floor. This illustration shows a plenum FiberGuide system featuring new Express Exits.

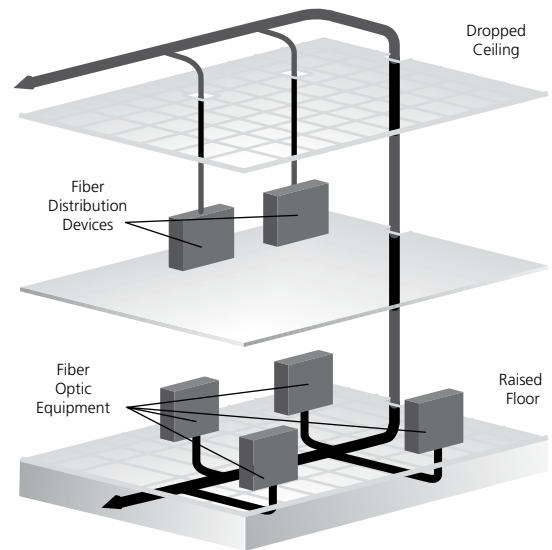


Figure 1



Figure 2

All plenum components, including mounting hardware for mounting the FiberGuide to the raised floor struts, are available in the plenum FiberGuide product line.

Plenum FiberGuide® System

System Description

Straight sections: U-shaped troughs that provide a protective pathway for optical fibers. Straight sections are usually installed horizontally but may also be installed vertically when a system is mounted on multiple levels. Straight sections are six feet in length, and covers are also available. The covers snap into place but can be easily removed for fiber installation.

Express Exits™: The plenum FiberGuide® Express Exit system allows jumpers to be routed in and out of the system with ease. Express Exits are secured to the sidewall of a FiberGuide straight section where needed. No cutting is required because knockout sections allow for quick and easy deployment.

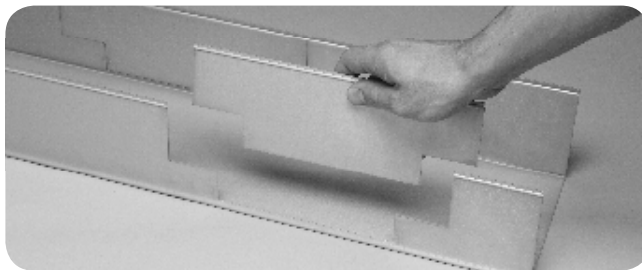
Fittings: Elbows, tees, crosses, trumpet flares and conversions. The fittings are used for changing direction, converting from one size system to another, adding branch segments and routing the fibers in and out of the system. Like the straight sections, snap-on covers are also available for the fittings.

Junction kits: Used for aligning and connecting straight sections and fittings. Two components are joined by inserting them into a junction and pushing them together.

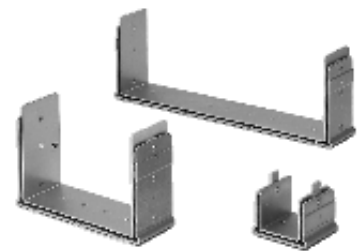
Support kits: Used to support the FiberGuide system. The short, long, span and diagonal bracket kits are used for supporting straight sections from round or square tubing.

Flexible tubing: Used in plenum FiberGuide systems when the exact layout of the equipment drop locations is unknown or when frequent equipment relocations are expected. The flexible tubing is two inches in diameter and attaches to the end of a straight section with an adapter. When the equipment configuration is known, the flexible tubing is routed to the exact drop location. Other flexible tubing components include splicing couplers, finishing couplers, mounting straps and additional lengths of tubing.

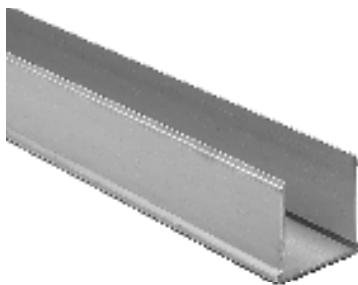
Both patch cords and IFC cables may be installed in the plenum FiberGuide system. The required two-inch bend radius for patch cords is maintained at all points within the system. IFC cables require the use of tie-down brackets to maintain the required cable bend radius specified by the cable manufacturer at the various fittings.



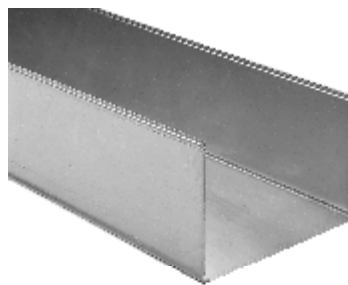
4x6 Horizontal Straight Section with Express Exit™ Cutouts



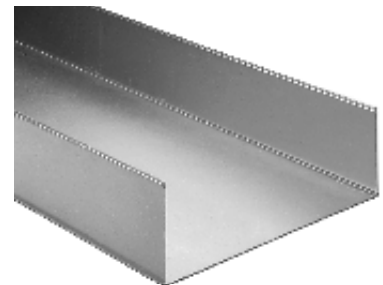
2x2, 4x6, and 4x12 Junction Kits



2x2 Horizontal Straight Section



4x6 Horizontal Straight Section



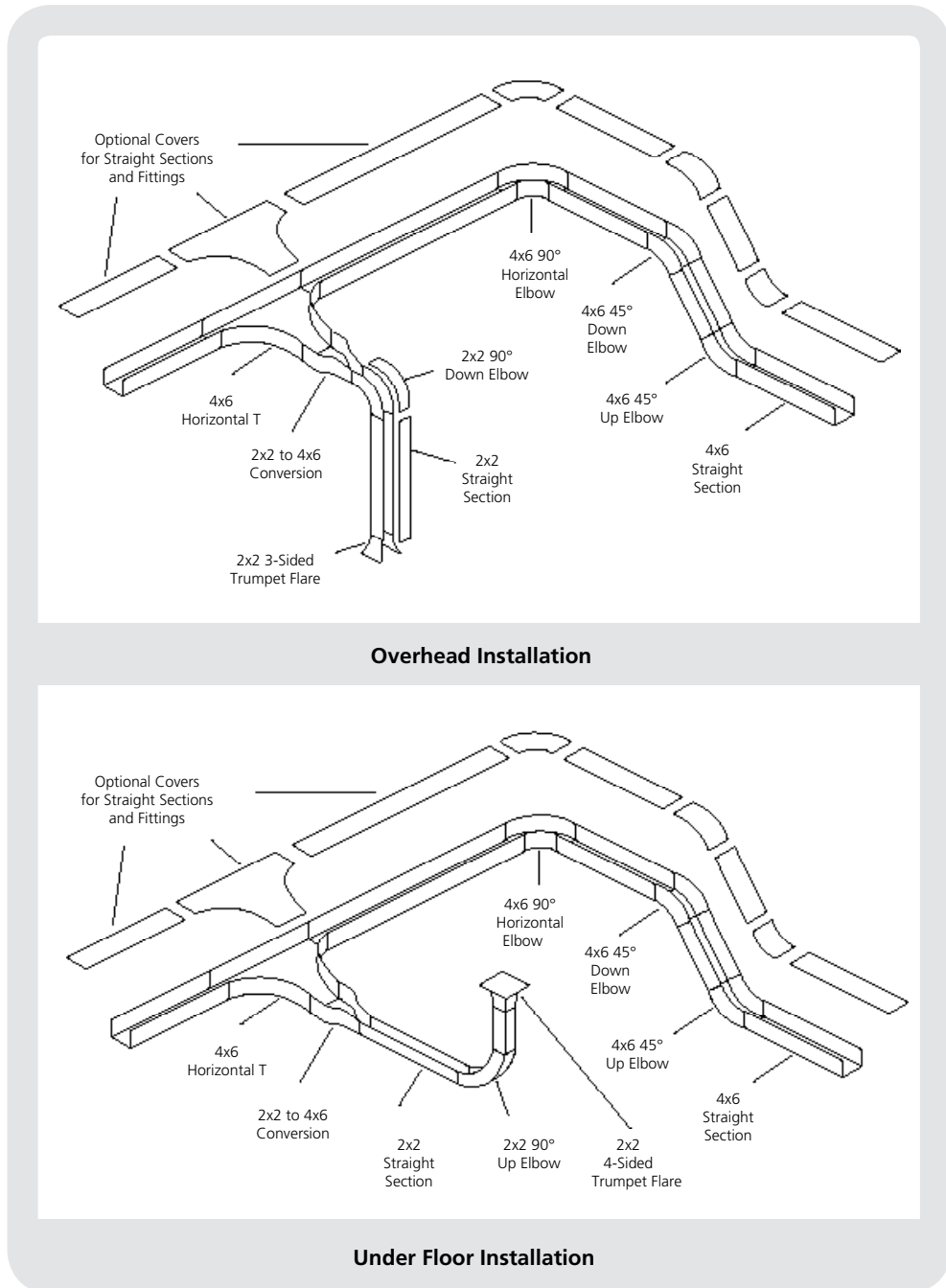
4x12 Horizontal Straight Section

Plenum FiberGuide® System

Typical Installations

In addition to providing physical separation and protection, the plenum FiberGuide® system also provides smooth edges and 2-inch minimum bend radius protection.

The Plenum FiberGuide system can be assembled and installed using common hand tools. Push together assembly simplifies installation in confined areas and also permits system expansion when additional capacity is required. A variety of fittings allow adjustments in routing to avoid obstructions. The various sizes provide flexibility when considering the capacity required versus the space available.



Plenum FiberGuide® System

Recommended Patch Cord Densities

Recommended capacity takes into consideration random jumper placement into the FiberGuide® system. Trough capacity refers to the maximum number of fiber jumpers in a given cross-section of a FiberGuide installation.

Recommended/Maximum Density

1.7 mm Patch Cords (per in ²)	2.0 mm Patch Cords (per in ²)	3.0 mm Patch Cords (per in ²)
120/142	90/102	40/44

Trough Pileup

Recommended/Maximum Density

	2-Inch	3-Inch	4-Inch
4x12 System			
1.7 mm	2880/3408	4320/5112	5760/6862
2.0 mm	2160/2448	3240/3672	4320/4896
3.0 mm	960/1056	1440/1584	1920/2112
4x6 System			
1.7 mm	1440/1704	- /2556	- /3408
2.0 mm	1080/1224	1620/1836	2160/2448
3.0 mm	480/528	720/792	960/1056
2x2 System			
1.7 mm	480/568	-	-
2.0 mm	360/408	-	-
3.0 mm	160/176	-	-

Recommended density determined using GR-449-CORE Bellcore Formula
 Maximum density determined using Lab Manual Set-ups
 Pile-up beyond 2 inches is not recommended

Plenum FiberGuide® System

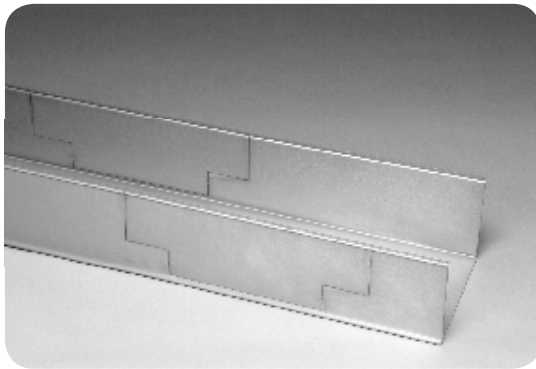
Plenum Express Exit™ System

ADC KRONE introduces its new plenum FiberGuide® Express Exit™ system, which accommodates a wide range of raceway environments and applications, ensuring greater speed of deployment. Knockout areas are placed every 24" on straight sections. By simply punching out one of these areas, the Express Exit can be secured directly to the sidewall — allowing drops to be inserted quickly and easily. No cutting is required.

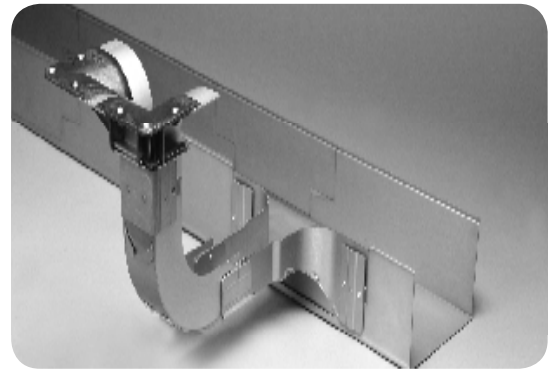
Positioning a drop with the plenum Express Exit family greatly simplifies installation, protecting the integrity of fibers already present in the raceway, and increases the flexibility of the entire plenum raceway system. All plenum Express Exits guarantee two-inch minimum bend radius protection.

Ordering Information

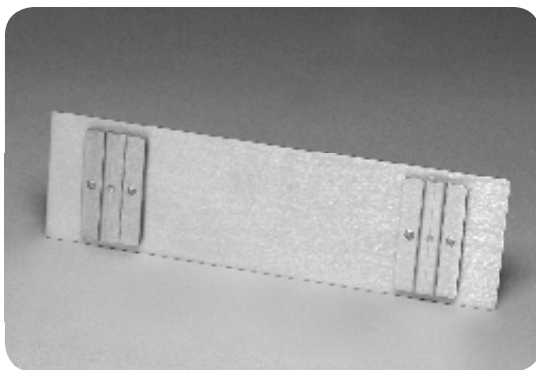
Description	Catalog Number
6-inch plenum Express Exit™ straight section with Express Exit cutouts placed every 24"	PFGF-PSHS-KT
Plenum Express Exit™ 2" square; For rigid drops — 90° up elbow and trumpet flare are NOT included. See page 103 for more information on these accessories.	PFGF-PSEE-B/C
12-inch plenum Express Exit™ straight section	PFGF-PSHS-KT-F
Plenum blank cover	PFGF-PSEE-BLK



6" Plenum Express Exit Straight Section
(PFGF-PSHS-KT)



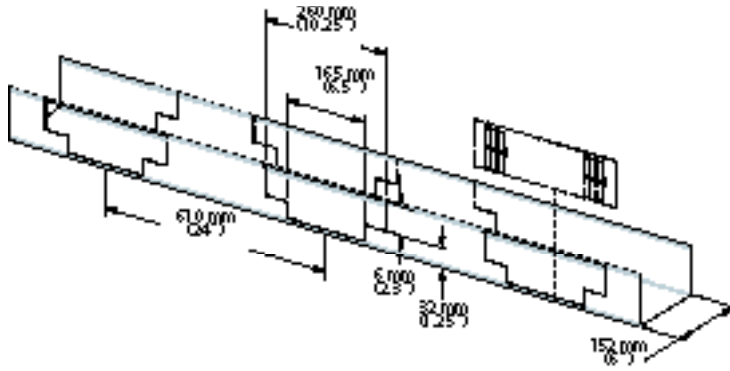
Plenum Express Exit 2" Square
(PFGF-PSEE-B/C)



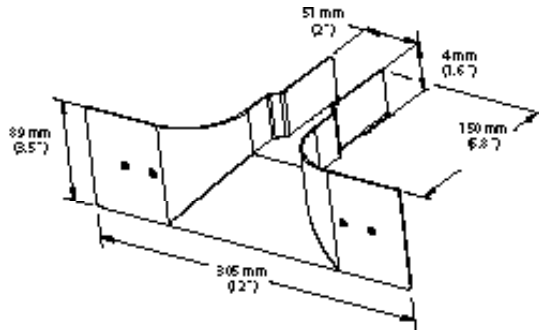
Plenum Blank Cover
(PFGF-PSEE-BLK)

Plenum FiberGuide® System

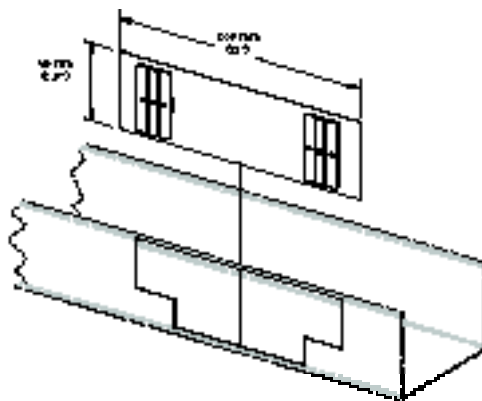
Express Exit™ 4x6 System – 4" H x 6" W



6-Inch Plenum Express Exit™ Straight Section
(PFGF-PSHS-KT)



Plenum Express Exit™ — 2" Square
(PFGF-PSEE-B/C)



Plenum Blank Cover
(PFGF-PSEE-BLK)

FiberGuide® Systems

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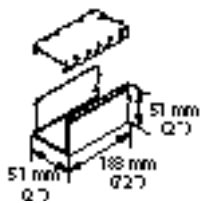
Plenum FiberGuide® System

2x2 System – 2" H x 2" W

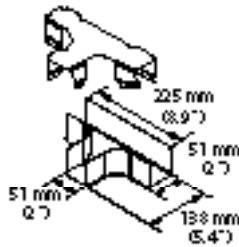
The 2x2 plenum FiberGuide® system interfaces with ADC KRONE's standard 2x2 FiberGuide system and requires no special conversion piece.

Ordering Information

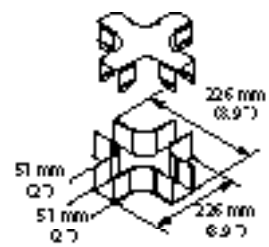
Description	Number of Junctions	Catalog Number	
		Fitting	Snap-on Cover
2x2 straight section			
Straight section; 6' long	–	PFGF-PSHS-C	PFGC-PSHS-C
2x2 fittings			
Horizontal T	3	PFGF-PHRT-C	PFGC-PHRT-C
Horizontal cross	4	PFGF-PHXP-C	PFGC-PHXP-C
90° horizontal elbow	2	PFGF-PH9E-C	PFGC-PH9E-C
45° horizontal elbow	2	PFGF-PH4E-C	PFGC-PH4E-C
90° up elbow	2	PFGF-PUPE-C	PFGC-PUPE-C
90° down elbow	2	PFGF-PDNE-C	PFGC-PDNE-C
45° up elbow	2	PFGF-PU4E-C	PFGC-PU4E-C
45° down elbow	2	PFGF-PD4E-C	PFGC-PD4E-C
2x2 trumpet flares			
Trumpet flare; 3 sided	–	PFGF-PTRM-C	–
Trumpet flare; 4 sided	–	PFGF-PFPT-C	–
2x2 conversions			
2x2 plenum to 4x6 conversion	(1) 2x2 (1) 4x6	PFGF-PDSA-C/B	PFGC-PDSA-C/B
2x2 plenum to 4x12 conversion	(1) 2x2 (1) 4x12	PFGF-PDSA-C/F	PFGC-PDSA-C/F
2x2 junction	–	PFGF-PJWR-C	–
2x2 end cap; includes 2x2 junction	–	PFGF-PMEC-C	–



Straight Section
(PFGF-PSHS-C)
Cover: PFGC-PSHS-C



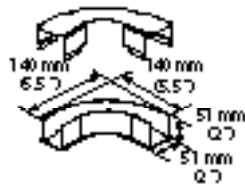
Horizontal T
(PFGF-PHRT-C)
Cover: PFGC-PHRT-C



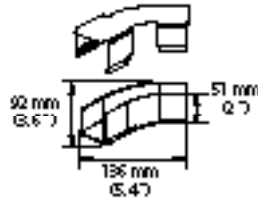
Horizontal Cross
(PFGF-PHXP-C)
Cover: PFGC-PHXP-C

Plenum FiberGuide® System

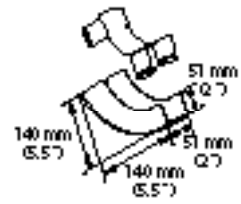
2x2 System – 2" H x 2" W



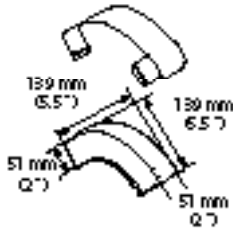
90° Horizontal Elbow
(PFGF-PH9E-C)
Cover: PFGC-PH9E-C



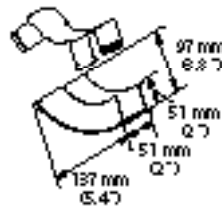
45° Horizontal Elbow
(PFGF-PH4E-C)
Cover: PFGC-PH4E-C



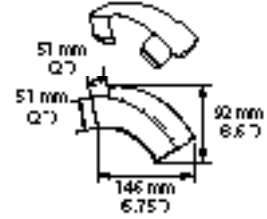
90° Up Elbow
(PFGF-PUPE-C)
Cover: PFGC-PUPE-C



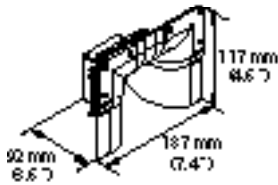
90° Down Elbow
(PFGF-PDNE-C)
Cover: PFGC-PDNE-C



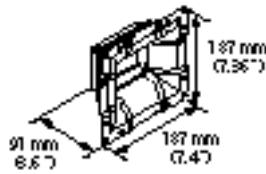
45° Up Elbow
(PFGF-PU4E-C)
Cover: PFGC-PU4E-C



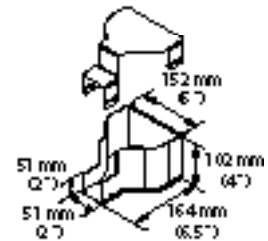
45° Down Elbow
(PFGF-PD4E-C)
Cover: PFGC-PD4E-C



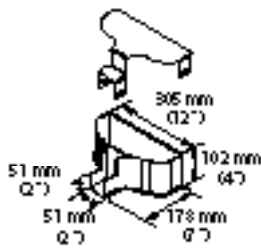
3-Sided Trumpet Flare
(PFGF-PTRM-C)



4-Sided Trumpet Flare
(PFGF-PFPT-C)



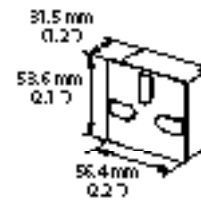
2x2 to 4x6 Conversion
(PFGF-PDSA-C/B)
Cover: PFGC-PDSA-C/B



2x2 to 4x12 Conversion
(PFGF-PDSA-C/F)
Cover: PFGC-PDSA-C/F



Junction
(PFGF-PJWR-C)



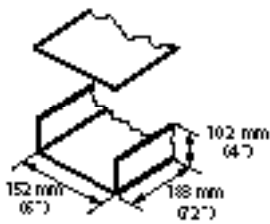
End Cap
(PFGF-PMEC-C)

FiberGuide® Systems
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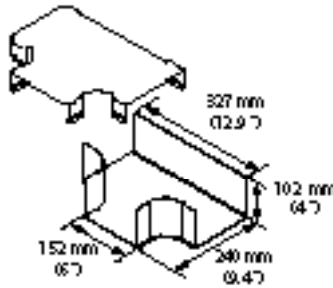
Ordering Information

Description	Number of Junctions	Catalog Number	
		Fitting	Snap-on Cover
4x6 straight section			
Straight section; 6' long	–	PFGF-PSHS-B	PFGC-PSHS-B
4x6 fittings			
Horizontal T	3	PFGF-PHRT-B	PFGC-PHRT-B
Horizontal cross	4	PFGF-PHXP-B	PFGC-PHXP-B
90° horizontal elbow	2	PFGF-PH9E-B	PFGC-PH9E-B
45° horizontal elbow	2	PFGF-PH4E-B	PFGC-PH4E-B
90° up elbow	2	PFGF-PUPE-B	PFGC-PUPE-B
90° down elbow	2	PFGF-PDNE-B	PFGC-PDNE-B
45° up elbow	2	PFGF-PU4E-B	PFGC-PU4E-B
45° down elbow	2	PFGF-PD4E-B	PFGC-PD4E-B
4x6 trumpet flares			
Trumpet flare; 3 sided	–	PFGF-PTRM-B	–
Trumpet flare; 4 sided	–	PFGF-PFPT-B	–
4x6 conversions			
4x6 plenum to 4x6 standard conversion <i>One 4x6 plenum junction kit required; 4x6 standard junction is not required</i>	1*	PFGF-PPSC-B	–
4x6 plenum to 4x12 plenum conversion	(1) 2x2 (1) 4x12	PFGF-PDSA-B/F	PFGC-PDSA-B/F
4x6 junction			
	–	PFGF-PJWR-B	–
4x6 end cap; includes 4x6 junction			
	–	PFGF-PMEC-B	–

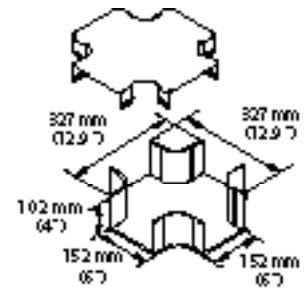
Note: For more information on Express Exits, see pages 58-59, 90.



Straight Section
(PFGF-PSHS-B)
Cover : PFGC-PSHS-B



Horizontal T
(PFGF-PHRT-B)
Cover : PFGC-PHRT-B

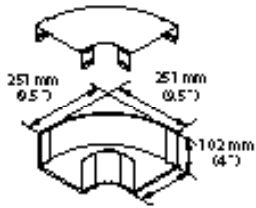


Horizontal Cross
(PFGF-PHXP-B)
Cover : PFGC-PHXP-B

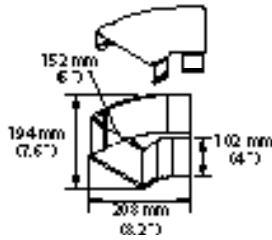
Plenum FiberGuide® System

4x6 System – 4" H x 6" W

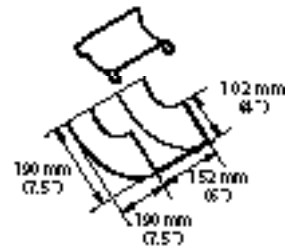
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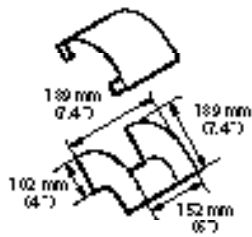
90° Horizontal Elbow
(PFGF-PH9E-B)
Cover : PFGC-PH9E-B



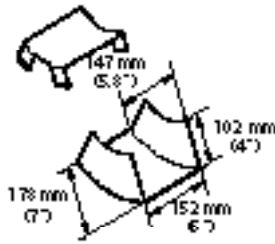
45° Horizontal Elbow
(PFGF-PH4E-B)
Cover : PFGC-PH4E-B



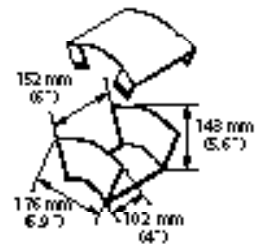
90° Up Elbow
(PFGF-PUPE-B)
Cover : PFGC-PUPE-B



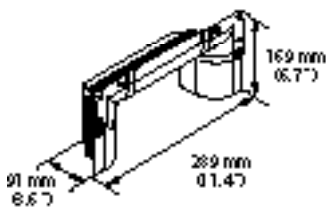
90° Down Elbow
(PFGF-PDNE-B)
Cover : PFGC-PDNE-B



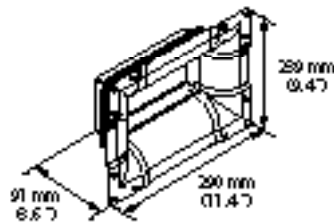
45° Up Elbow
(PFGF-PU4E-B)
Cover : PFGC-PU4E-B



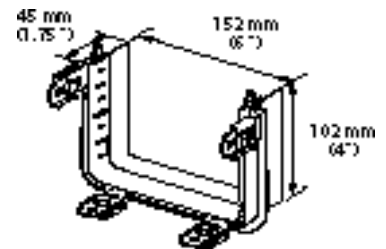
45° Down Elbow
(PFGF-PD4E-B)
Cover : PFGC-PD4E-B



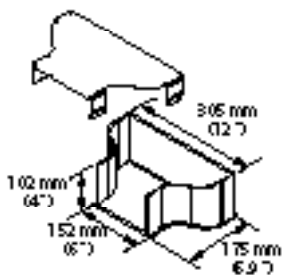
3-Sided Trumpet Flare
(PFGF-PTRM-B)



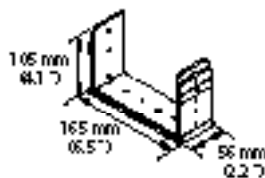
4-Sided Trumpet Flare
(PFGF-PFPT-B)



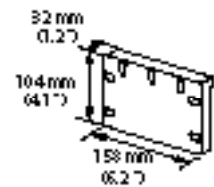
4x6 Plenum to 4x6 Standard Conversion
(PFGF-PPSC-B)
No Cover



4x6 to 4x12 Conversion
(PFGF-PDSA-B/F)
Cover : PFGC-PDSA-B/F



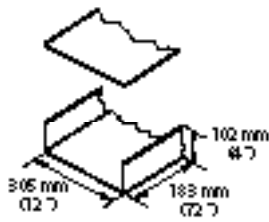
Junction
(PFGF-PJWR-B)



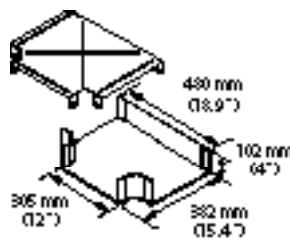
End Cap
(PFGF-PMEC-B)

Ordering Information

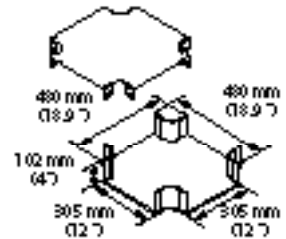
Description	Number of Junctions	Catalog Number	
		Fitting	Snap-on Cover
4x12 straight section			
Straight section; 6' long	–	PFGF-PSHS-F	PFGC-PSHS-F
4x12 fittings			
Horizontal T	3	PFGF-PHRT-F	PFGC-PHRT-F
Horizontal cross	4	PFGF-PHXP-F	PFGC-PHXP-F
4x12/4x6 horizontal T		PFGF-PHRT-F/B	PFGC-PHRT-F/B
90° horizontal elbow	2	PFGF-PH9E-F	PFGC-PH9E-F
45° horizontal elbow	2	PFGF-PH4E-F	PFGC-PH4E-F
90° up elbow	2	PFGF-PUPE-F	PFGC-PUPE-F
90° down elbow	2	PFGF-PDNE-F	PFGC-PDNE-F
45° degree up elbow	2	PFGF-PU4E-F	PFGC-PU4E-F
45° degree down elbow	2	PFGF-PD4E-F	PFGC-PD4E-F
4x12 trumpet flares			
4x12 trumpet flare; 3 sided	–	PFGF-PTRM-F	–
4x12 trumpet flare; 4 sided	–	PFGF-PFPT-F	–
4x12 junction			
4x12 end cap; 4x12 junction included	–	PFGF-PMEC-F	–



Straight Section
(PFGF-PSHS-F)
Cover: PFGC-PSHS-F



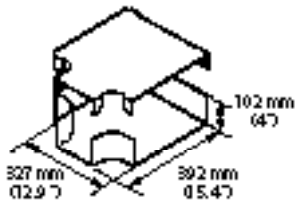
Horizontal T
(PFGF-PHRT-F)
Cover: PFGC-PHRT-F



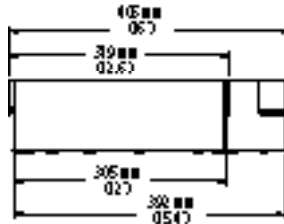
Horizontal Cross
(PFGF-PHXP-F)
Cover: PFGC-PHXP-F

Plenum FiberGuide® System

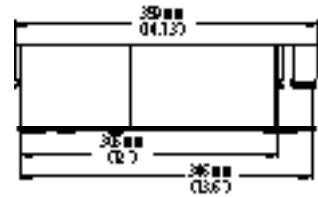
4x12 System – 4" H x 12" W



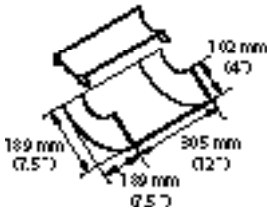
4x12/4x6 Horizontal T
(PFGF-PHRT-F/B)
Cover: PFGC-PHRT-F/B



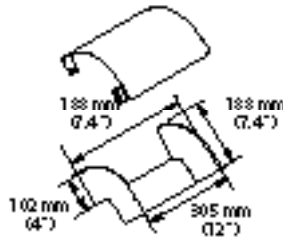
90° Horizontal Elbow
(PFGF-PH9E-F)
Cover: PFGC-PH9E-F



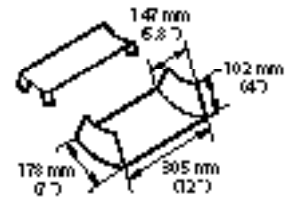
45° Horizontal Elbow
(PFGF-PH4E-F)
Cover: PFGC-PH4E-F



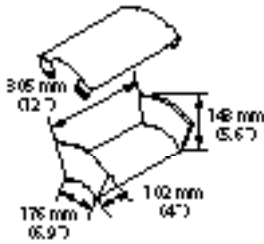
90° Up Elbow
(PFGF-PUPE-F)
Cover: PFGC-PUPE-F



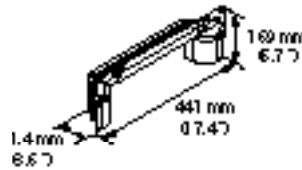
90° Down Elbow
(PFGF-PDNE-F)
Cover: PFGC-PDNE-F



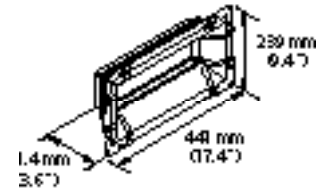
45° Up Elbow
(PFGF-PU4E-F)
Cover: PFGC-PU4E-F



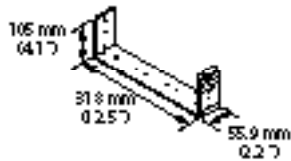
45° Down Elbow
(PFGF-PD4E-F)
Cover: PFGC-PD4E-F



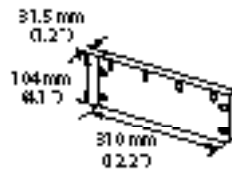
3-Sided Trumpet Flare
(PFGF-PTRM-F)



4-Sided Trumpet Flare
(PFGF-PFPT-F)



Junction
(PFGF-PJWR-F)

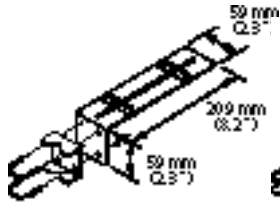


End Cap
(PFGF-PMEC-F)

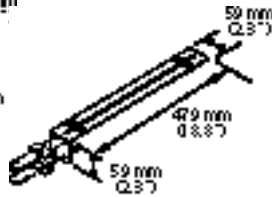
FiberGuide® Systems
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Plenum FiberGuide® System

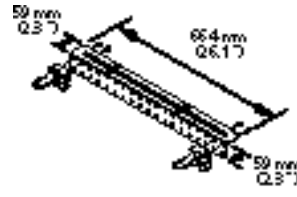
Accessories (Support Bracket Kits)



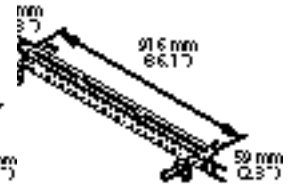
Short Bracket Kit
(PFGF-SSPT-C/B)



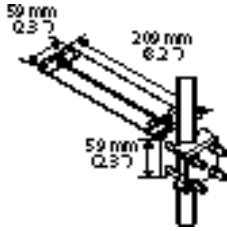
Long Bracket Kit
(PFGF-LSPT-C/B/F)



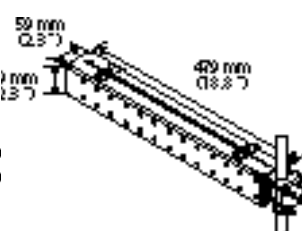
Span Bracket Kit
(PFGF-ESPT-C/B/F)



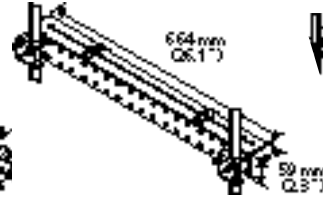
Diagonal Span Bracket Kit
(PFGF-DSPT-C/B/F)



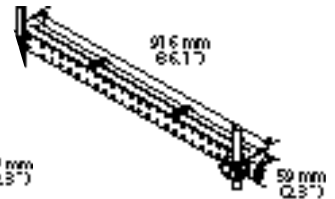
Short Bracket Kit with Square U-bolt
(PFGF-EASSPT-C/B)



Long Bracket Kit with Square U-bolt
(PFGF-EALSPT-C/B/F)



Span Bracket Kit with Square U-bolt
(PFGF-EAESPT-C/B/F)



Diagonal Span Bracket Kit with Square U-bolt
(PFGF-EADSPT-C/B/F)

Ordering Information

Description	Catalog Number
Short bracket kits	
For use with 2x2 and 4x6 sizes; 8.21" overall length	PFGF-SSPT-C/B
With square U-bolt for easy access mounting	PFGF-EASSPT-C/B
Long bracket kits	
For use with 2x2, 4x6, and 4x12 sizes; 18.84" overall length	PFGF-LSPT-C/B/F
With square U-bolt for easy access mounting	PFGF-EALSPT-C/B/F
Span bracket kits	
For use with 2x2, 4x6, and 4x12 sizes; spans 24" center to center floor struts	PFGF-ESPT-C/B/F
With square U-bolt for easy access mounting	PFGF-EAESPT-C/B/F
Diagonal span bracket kits	
For use with 2x2, 4x6, and 4x12 sizes; spans diagonally up to 34" between struts	PFGF-DSPT-C/B/F
With square U-bolt for easy access mounting	PFGF-EADSPT-C/B/F

Plenum FiberGuide® System

Accessories (Flexible Tubing)

Plenum metallic 2-inch inner diameter flexible tubing is available for use in under floor applications where the exact layout of drop locations has not yet been defined, or where frequent changes in equipment location are expected. In future growth applications, the flexible tubing can be installed up front, and coiled under the floor until the exact configuration of equipment is established. The flexible tubing can then be routed to the drop location and fed through the flooring to the final location.

Flexible tubing options include a two-hose adapter that can be attached to a 6-inch standard fitting or straight section. The two-hose adapter comes complete with two 5-foot-long flexible hoses, and two end finishing couplers. When longer flexible tube requirements exist, multiple 5-foot-long extension tubes can be spliced into the two hose adapter to reach any length. The extension tubes are 5 feet long, and come with a splice coupler. Additional finishing couplers, mounting straps and splice couplers can be purchased separately.

Ordering Information

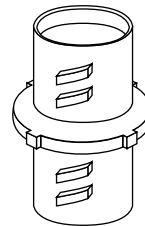
Description	Catalog Number
One hose adapter, with 1.53 m (5') hoses and finishing couplers <i>For use with 2x2 openings</i>	PFGF-KT03-C
Two hose adapter, with 1.53 m (5') hoses and finishing coupler <i>For use with 4x6 openings</i>	PFGF-KT03-B
Extension tube; 1.53 m (5') long with splice coupler	PFGF-HEXT
Finishing coupler	PFGF-HFIN
Mounting strap	PFGF-HMST
Splicing coupler	PFGF-HSPL
Flexible tubing; 51 mm (2") inner diameter (X = length in feet: 5, 15, 35, 75, 110, 150)	PFGF-MIDY-XF



Extension Tube
(PFGF-HEXT)



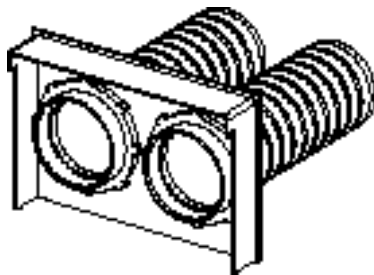
Finishing Coupler
(PFGF-HFIN)



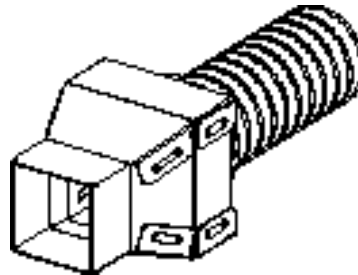
Splicing Coupler
(PFGF-HSPL)



Mounting Strap
(PFGF-HMST)



Two Hose Adapter
(PFGF-KT03-B)



One Hose Adapter
(PFGF-KT03-C)