Charles Backboard Cabling
CFDP-EL Series 12” Pedestals
General Description and Installation

1. GENERAL INTRODUCTION

1.1. Document Purpose

This document provides instructions for fiber cable preparations, routings, splicing, terminations, and connections within the Charles CFDP EL series of pedestals with 12” domes. Figure 1 shows an interior view of the open dome.

-NOTE-

Hereafter, the model in the series will be referred to as the “CFDP.”

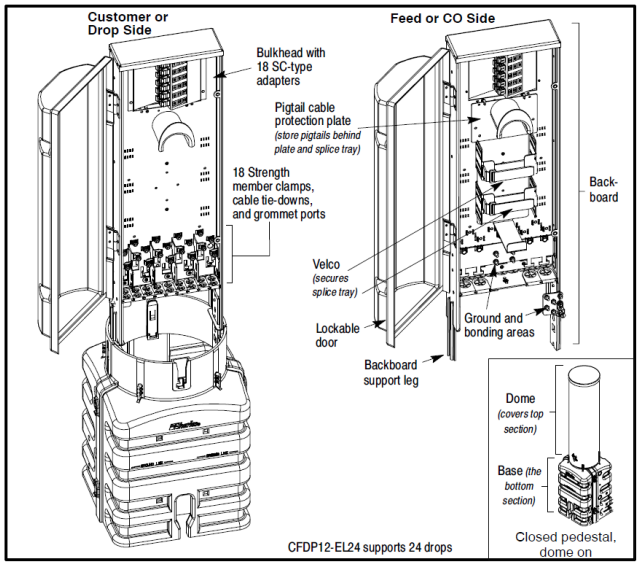


Figure 1 Interior View

1.2. Product Purpose

The CFDP is an above-grade pedestal that offers OSP protection against floods, fire, dirt, weather, insects, and impact for fiber optic cable splices and customer service drops in FTTP deployments.

1.3. Product Mounting and Location

Install the CFDP pedestals as new or replacement units. The pedestals are designed to accommodate various soil and mounting applications, exceeding Telcordia GR-771-CORE specifications. Install at the cell side or FTTP distribution point in a trench or hole up to the ground line indicator on the base. Mount the pedestal backboard into the base. Once all cable connections are complete, secure the inner doors and then place the outer dome over the inner enclosure and attach it to the base.

2. PRODUCT DESCRIPTION

The CFDP series has an interior metal backboard designed for fiber applications where preconnectorized SC/APC or SC/UPC connections are needed. The CFDP base (bottom section) is a non-metallic, split base that opens easily and is installed around conduit-fed cable bundles. The dome (top section) contains a non-metallic outer dome to cover and protect the inner enclosure. The metallic backboard is inside the inner enclosure. The two sides of the backboard (CO/feed side and drop/customer side) are each concealed by a locking door to separate the CO and drop connections. The interconnecting bulkhead at the top of the backboard has SC adapters on both sides. Make splice connections using the provided splice tray.

3. SAFETY PRECAUTIONS

Risk of serious eye damage! Never look into the end of a fiber optic line or use a magnifier in the presence of laser light or radiation. Exercise caution when installing, testing or maintaining live circuits. If eyes are exposed to laser light or radiation occurs, immediately seek treatment by a medical professional.

Cable and fiber cleaning solvents may contain hazardous or harmful materials. Maintain good housekeeping practices and refer to the SDS when working with cleaning solvents or similar products.

Shards and cleaved glass fibers are very sharp and can easily pierce the skin. Use tweezers to pick up cut glass fibers and place them in a specifically designated container. Do not consume any food products near the cable installation site.

Corrugated metal or armor in feed cables is very sharp when cut or exposed. Exercise extreme caution to prevent personal injury. Use protective work gloves when handling armored cable.

Perform all bonding and grounding prior to making any electrical and communications connections.

Be careful not to damage any buried cables or service wires while digging either to expose cables or to prepare a hole or trench, or while driving stakes. Buffer tubes and fibers are sensitive to excessive bending, pulling, and crushing forces. To avoid kinking of buffer tubes and fiber damage or breakage, exercise great care when working with fiber, and do not exceed or violate minimum bend radius requirements for fibers, buffer tubes, and cables.

4. CABLE INSTALLATION AND SPLICING

This section provides instructions for fiber feed and drop cable preparation, routing, attachment, splicing, and connections. The following conditions are assumed:

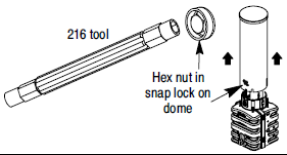
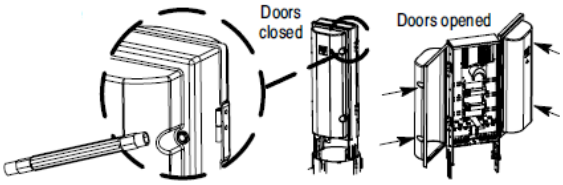
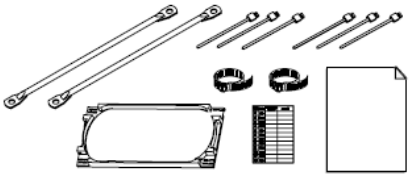
- The fiber cable deployment is a CO or feed cable in a stub-end configuration (though not described in these instructions, these pedestals support loop-through applications as well).
- A CFDP base has been properly installed at the desired field site (for base installation instructions, see the pedestal base installation document provided with the base.
- The trench is either dug and open or backfilled with the feed cable already placed and brought into the base.
- The CO or feed cable is a loose buffer tube type with single fibers.
- Drop cables are SC/UPC or SC/APC preconnectorized cables.
- Protective, flexible transportation tubing is provided for the feed cable pigtails (two 3-foot long pieces).

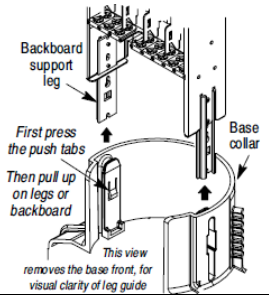
4.1. Branch or Stub-End Configuration

Obtain tools material and equipment:

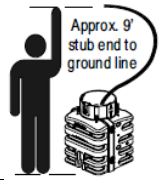
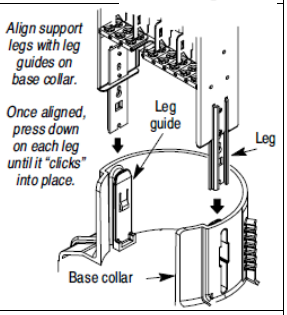
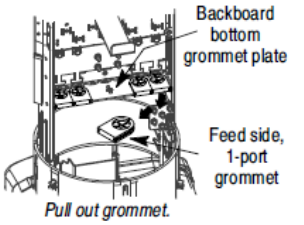
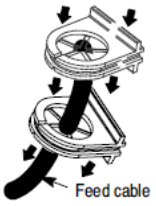
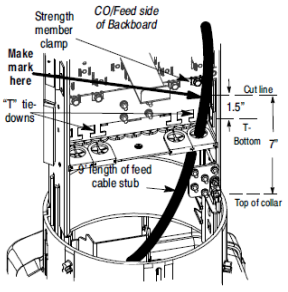
- 216 tool/can wrench
- Tape measure
- Cable marking tool
- Labels for cables (optional)
- Hose clamps (2 provided)
- Cable bond clamps (optional)
- Proper length drop cables
- Drop trenching equipment
- Wrenches or socket set
- Slotted screwdriver
- Gel removal compound
- Isopropyl alcohol and clean, dry wipes
- Site clean-up tools
- Properly installed CFDP base
- Dome and backboard wit douple doors (provided)
- Bag of parts (provided)
- Assorted cable ties (12 provided)
- Splice tray and labels for splice tray (2 provided)
- Knife, snips, pr puncture tool (to cut grommets)
- Cable entry tool or utility knife with hook blade
- Buffer tube stripper tool (to score/cut buffer tubes)
- Fiber optic stripper tool (for 900 micron pigtails)
- Fiber splicing tools and equipment
- Tweezers and tape (for cleaved glass fibers/shards)
- Safety glasses and work gloves
- Shovel (to access drop cable hole)
- Grounding equipment and tools

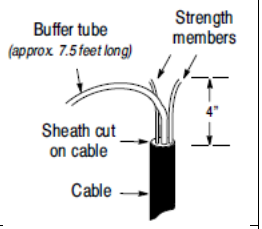
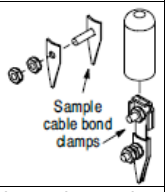
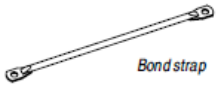
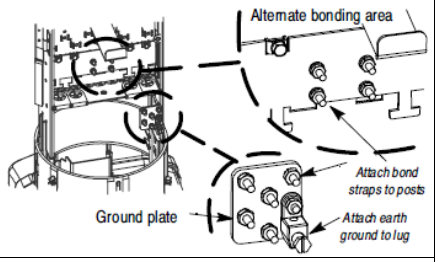
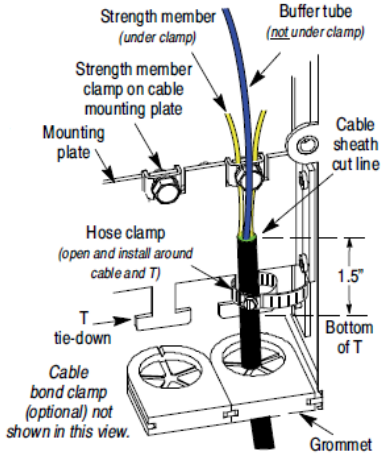
4.1.1. Preparing and Opening the Pre-installed CFDP Pedestal

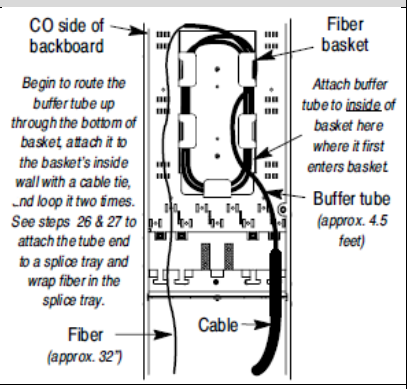
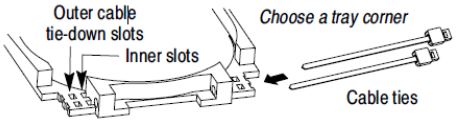
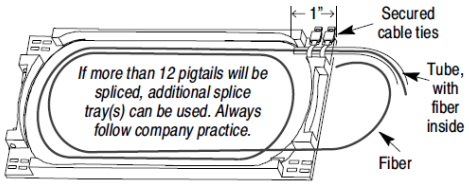
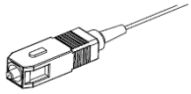
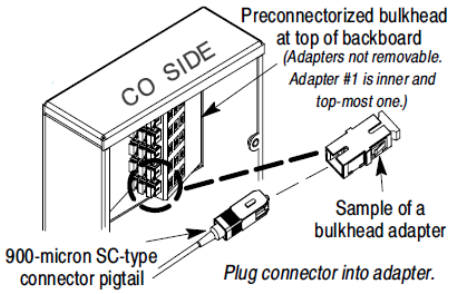
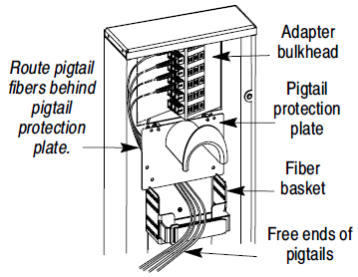
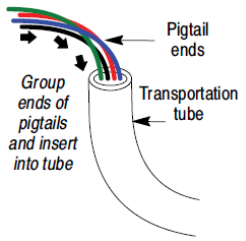
Step #	Instruction
1	Find the CFDP pedestal installation site, inspect it, and verify the pedestal is properly installed in the ground. For new pedestals, inspect thoroughly upon delivery. If equipment is damaged, report damage to the shipping company.
2	If not already off, remove the outer dome with a 216 tool or can wrench. Turn the snap lock's hex nut 1/4 turn CCW, hold in that position, then lift up on the dome. Set the dome aside for later re-installation. 
3	Open the internal doors of the CFDP using a 216 tool or can wrench on the cup-washer screws. Each door contains two cup-washer screws. 
4	Locate the clear plastic bag (typically attached to the interior backboard). Verify contents: 6 cable ties, 2 bond straps, 2 hose clamps, 1 FOSC B splice tray and tray label. 
5	Remove the backboard (if needed) to facilitate the earth ground installation, per local company practice. First, press on finger push tab (inside the base collar at the support leg) and pull up on the support leg, then repeat with the other leg.

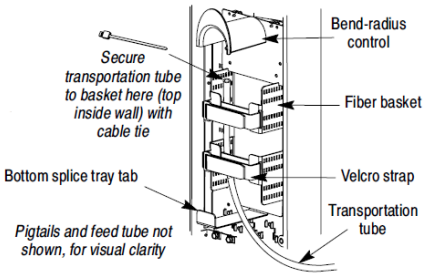
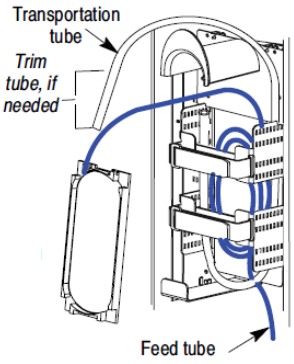
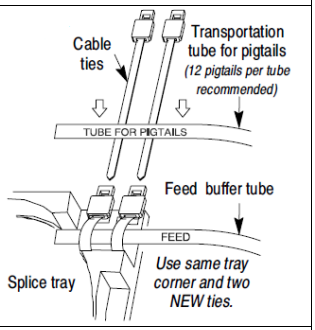
Step #	Instruction
	When both tabs are disengaged or released, pull the backboard out of the base and temporarily set aside. 
6	**Always follow local codes and practices when grounding cables and equipment.** If an earth ground is not present at the pedestal site and local practice requires an earth ground, prepare one at this time. Do not connect the earth ground until the backboard is re-attached to the base.

4.1.2. Preparing the Feed or Branch Stub Cable

Step #	Instruction
1	Verify 9 feet (approx.) of cable, from the ground line to the cable's stub end, extends up through the base. Lift it up. Press the cable toward the rear of the base so it will be at the CO or feed side of the backboard (the side with fewer but larger rubber grommet ports) when it is installed. See the base installation document for instructions on installing the base and routing cables into the base. 
2	(Skip this step if the backboard is already installed) Position the feed cable so it will be at the CO or distribution side of the backboard. Then install the backboard to facilitate marking the cable for the proper cable sheath removal length. Align the backboard's support legs in the base collar. Once the leg guides are lined up, press down on the backboard until it stops and the tab locks are engaged (audible clicks indicate proper leg insertion). 
3	Grommets on the CO or feed cable side of the backboard accept one feed cable each (as opposed to the drop cable grommets that accept two smaller cables). Pull or slide out one of the single port feed side grommets from the bottom grommet plate. With a sharp or pointed tool, poke a small hole in the center of the grommet. 
4	Place the bottom center of the poked grommet at the stub end of the cable and push the grommet down over the cable end. Slide the grommet down the cable, stopping about 5" above the base. Rotate the grommet, slide it up or down as necessary to get the proper vertical alignment, align it with its slot on the grommet plate, then re-insert the grommet in the plate. 
5	The cable sheathing must be removed from the cable stub to expose the fiber to be spliced, but enough cable length with sheathing must remain to hold it in place against the backboard. On the feed side of the backboard, locate the "T" cable tie-down directly above the chosen grommet. Pull the cable up until it is almost taut, hold the cable against the T, and mark a cut line on the cable midway between the T and the strength member clamp above it (approx. 7" above the top of the base collar). 

Step #	Instruction
6	If desired, remove the grommet or backboard (or both) to facilitate the sheathing removal and bond clamp installation. See section 4.1.1 for backboard removal steps.
7	Use the tool and method of choice to remove the outer cable sheath from the mark to the cable end (approx. 7.5 feet) to expose the buffer tube and strength members. Discard the removed sheathing. Per company practice, trim the cable strength member(s) approx. 4" longer than the cable sheath cut (so 4" remains). Do not cut the buffer tube. 
8	Per company practice and cable type, clean the buffer tube as needed.
9	To prepare the cable for bonding to the pedestal bonding plate, attach a company-approved cable bond clamp to the cable/shield at the sheath cut. Always follow clamp manufacturer instructions or company practice to attach cable bond clamps, as procedures and clamps used may vary. 
10	Measure and make a mark on the buffer tube approx. 32" from the cut end. Use local practice to score the tube at the mark and remove the 32" length of surplus tube. Discard.
11	Per company practice, clean the fibers.
12	If still removed, re-attach the backboard.
13	Per company practice, install an earth ground wire of proper gauge from the earth ground to the pedestal at the ground plate's ground lug. Always perform grounding prior to cable attachment. Attach a bond strap (provided) from the cable bond clamp to one of the bond posts.  
14	If the cable has strength members (and they were not terminated in an optional cable bond clamp), loosen the strength member clamp above the chosen grommet and slide the strength members under it. Place the cable against the mounting plate at the T tie-down and vertically align the cable so the sheath cut is midway between the T and strength member clamp above it (approx. 1.5" above the bottom of the T). Hold the cable in this position and secure it to the T by opening and firmly affixing a hose clamp around both the cable and the T tie-down. 
15	If the strength members were placed under the strength member clamp in the previous step, secure them by tightening the hex nut of the strength member clamp. Trim the strength members per company practice.

Step #	Instruction
16	Route the buffer tube/fiber upward through the bottom opening of the fiber basket (about 2 loops). Secure the tube to the inside walls of the basket with cable ties, especially where it first enters the basket, but do not secure the last 3 feet of tube. After the tube is attached to the splice tray, this 3 feet length will allow the technician sufficient tube slack when the splice tray is accessed for fiber splicing. 
17	Prepare a splice tray (provided) by removing the cover and starting two cable ties at a top tray corner, using the inner tie-down slots. Two trays are advised if using more than 12 pigtails. 
18	Overlap the buffer tube into the tray corner about 1", then secure the tube to the tray with the two positioned cable ties. Per company practice, wrap and store the fibers in the splice tray for later splicing, then attach the tray cover. Use additional trays as needed. Label both tube ends, per company practice. 
19	SC/APC and SC/UPC pigtail kits are available from Charles (ordered separately). Obtain the correct type of pigtails for the interconnect pedestal used in this installation. 
20	Attach the connector end of the SC-type pigtails to the SC-type bulkhead adapters at the top of the backboard. Remove the caps from the adapters prior to inserting the connectors. Follow company practice for correct cable color-coding, and consult the label on the front side of the bulkhead to locate the proper line numbers. 
21	Once all pigtail connectors are attached to the bulkhead, route their free ends (either singly or collectively) behind the pigtail protection plate, starting at the left side of the plate, then guide them down into the fiber basket area. 
22	Two 3-foot lengths of plastic 1/4" tubing are provided to protect the 900-micron pigtail cables. Gather the free ends of the connected pigtails (12 pigtails per tray and tube), align their ends as a group, and collectively guide them into a transportation tube. Grouping the fibers provides greater rigidity. Slide the fibers through the tube until the free ends exit the opposite tube end. 

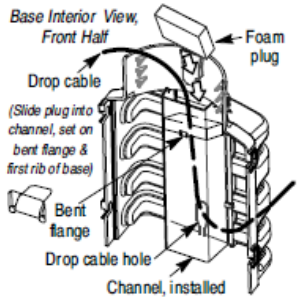
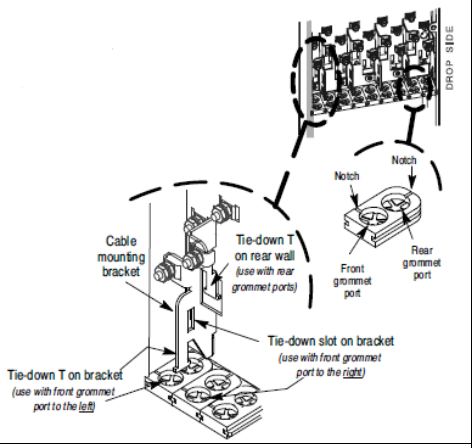
Step #	Instruction
23	With a cable tie, doubled over, attach one end of the transportation tube to the top, left, inside wall of the fiber basket. 
24	Before attaching the tube to the splice tray, verify the tube length allows the splice tray (which is attached to the tube in the next step) to be easily positioned at the front of the fiber basket after the tube is positioned in the basket. If needed, the transportation tube can be cut to length, or trimmed approximately 4", if company practice it so wrap or loop it just one time down into the fiber basket and then up and over the band radius control. Alternately, the uncut tube can be looped twice within the fiber basket, then routed up and over the bend radius control. 
25	Again, prepare the splice tray for tube attachment, starting two new cable ties at the same tray corner as before, using the outer tie-down slots. Overlap the transportation tube onto the tray corner about 1" (alongside the feed tube), then secure the tube to the tray with the two new positioned cable ties. If splicing is not performed at this time, wrap the pigtails in the tray per company practice and tray manufacturer instruction, and continue with the next step. If splicing is to be performed at this time, proceed to the next section. 
26	Keep tubing neat and free of kinks. To manage the tube slack, loop and store the tubes inside the fiber basket, and hang the tube end with the attached splice tray up over the bend radius control near the top of the backboard. If desired, starting at the splice tray, attach the length of transportation tube to the feed tube with cable ties at short intervals, for easy joint tube management. Allow the splice tray to rotate freely when looping the tubes for storage, to avoid stressing and kinking the tubes, which should cause fiber damage.
27	Secure the splice tray(s) to the backboard. To do this, wind or rotate the tubes and the tray(s) as needed to loop and store the tubing in the fiber basket, then hang the splice tray(s) from the bend radius control by routing the last foot of tubing over the band radius control. Secure the tray(s) wo the tabs at the front of the fiber basket with the provided Velcro straps.
28	Verify that all tubing is neat and not kinked, and that no cables, ties, wires, or tubes protrude beyond the backboard walls. Close and lock the inner doors by turning all cup washer screws clockwise until tight.
29	Locate the outer dome and orient it so the snap lock faces the front (Charles logo is on the front of the base). Slide the dome down over the backboard, align the dome's snap lock with the base's latch catch, and sallow the self-locking dome to drop down in place. An audible "click" indicates the dome is locked.

4.1.3. Splicing Fibers at the CFDP Pedestal

Step #	Instruction
1	Prepare the area for splicing. Assemble and prepare any equipment and tools needed to splice fibers. Review all necessary cautions and warnings.
2	Remove the dome and open the CO side door.
3	Loosen the Velcro straps that secure the splice tray and pull out the tray, unwinding/rotating it and the tubes attached to it. Detach the clear plastic cover from the tray.
4	Unwrap the working fibers to be spliced, perform all splicing, and when complete, route/place the spliced fibers back into the splice tray per local practice and product manufacturer's instructions.
5	Per company practice, label/identify the splices.
6	Reattach the splice tray cover.
7	Secure the splice tray to the backboard. To do this, wind or rotate the tubes and the tray as needed to loop and store the tubing in the fiber basket, then hang the splice tray from the bend radius control by routing the last foot of tubing over the bend radius control. Secure the tray using the Velcro straps.

8	Verify that all tubing is neat and not kinked, and that no cables, ties, wires, or tubes protrude beyond the backboard walls. Close and lock the inner doors by turning all cup washer screws clockwise until tight.
9	Locate the outer dome and orient it so the snap lock faces the front (Charles logo is on the front of the base). Slide the dome down over the backboard, align the dome's snap lock with the base's latch catch, and sallow the self-locking dome to drop down in place. An audible "click" indicates the dome is locked.

4.1.4. Installing Fiber Drop Cables

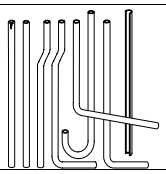
Step #	Instruction
1	Per local practice, prepare a trench to run the drop cable to the pedestal. Clear the soil from the bottom front of the base, where the cable enters at the drop cable access hole.
2	Route the preconnectorized drop cable through the trench to the pedestal base. Verify 9 feet of cable will be available above the ground line.
3	Per company practice, route the drop cable through the drop cable access hole at the bottom front of the base and push it up through the channel (or conduit) provided for the drop cables. At the top of the channel, guide the cable between the foam plug (installed at the top of the channel) and the back wall of the channel. If the plug dislodges during cable routing (after all cables are routed through the base to their final length), re-install the plug by placing it in front of the cables (cables at the back of the channel), angling the plug's front edge down and forward toward the first rib of the base front, and sliding it down and forward until it rests on top of the base's first rib. Press down on the plug's back edge until it rests on the bent flange at the rear of the channel. 
4	At the drop cable side of the backboard, at the bottom grommet plate, pull or slide out one of the double-port grommets. Feed the preconnectorized cable through the grommet port by slicing into the grommet port at the notch provided in it, then pressing or sliding the drop cable into the grommet port at the sliced notch. Slide the grommet down the cable until it is at the level of the grommet plate. Rotate and align the grommet with its slot and re-insert the grommet into the grommet plate. Always populate or use the rear-most ports first, for best hand and tool access and mobility. 
5	Secure the cable to its appropriate tie-down T or tie-down slot with a hose clamp. If cable ties are used, per company practice, double the tie over the cable and T or slot, crisscross it, and tighten the tie. Cables that are routed through rear grommet ports should use the Ts on the backboard rear wall. Ts (and slots) are also provided on the cable mounting brackets that are perpendicular to the back wall. Use the bracket Ts and slots with the front grommet ports (the bracket T is used with the front port of the grommet to the left of the bracket, and the bracket slot is used with the front port of the grommet to the right of the bracket).
6	Label all drop cables with a cable marker or label. This facilitates later cable identification for future troubleshooting, splicing, or rework.
7	Route and loop the drop cable pigtail around the inside perimeter of the drop side backboard and hang the last slack loop from the bend radius control. Size the loops so that the connector will easily (without tension) reach the appropriate bulkhead adapter. Secure the cable to the backboard tie-down slots with cable ties at regular intervals. Plug the first connector into adapter 1 at the top front corner. Adapter 2 is directly below it in the same column.
8	Repeat these steps for all customer drop cables ready for installation and connection at this time. If splicing is to be performed, go to section 4.1.3.
9	Verify the foam plug is properly installed in the drop channel. If it was removed or dislodged, re-install it at this time.
10	Verify that all tubing is neat and not kinked, and that no cables, ties, wires, or tubes protrude beyond the backboard walls. Close and lock the inner doors by turning all cup washer screws clockwise until tight.
11	Locate the outer dome and orient it so the snap lock faces the front (Charles logo is on the front of the base). Slide the

Step #	Instruction
	dome down over the backboard, align the dome's snap lock with the base's latch catch, and sallow the self-locking dome to drop down in place. An audible "click" indicates the dome is locked.

5. SPECIFICATIONS

Feature	Inches or lbs	Cm or kg
Height, overall	50.5	128.3
Height, base only, incl. collar (stake only for IPS)	18.5	47
Height, dome only	35.5	90.2
Height, base bottom to ground line	8.5	21.6
Height, dome top to ground line	42	107
Depth, base (front to back)	15.1	38.4
Width, base (side to side)	16.1	41
Diameter, base collar, O.D.	12.75	32.4
Diameter, base collar, I.D.	12.3	31.2
Diameter, dome, O.D. (not the cap)	13.25	33.6
Diameter, dome, I.D.	12.85	32.6
Weight	44	20

6. MODEL NUMBERS AND ORDERING INFORMATION

Model #	Description
CFDP12-EL24	CFDP Interconnect Pedlock OSP Pedestal with 12" diameter, locking, exterior dome, square extended capacity split base, a weather-tight interior enclosure with two locking doors, a removable backboard for fiber cable routing, attachment, storage, and splicing tray (tray capacity = 8 trays at 24 fibers per tray), a preconnectorized bulkhead with 24 SC/APC adapters, 6 single-port 1" diameter feed grommets and 12 double-port 0.624" diameter drop grommets for 24 drops, one FOSC B splice tray, a ground/bond plate, and two 3' lengths of transportation tubing.
CFDP12-EL24C	Same as above, except bulkhead adapters are SC/UPC
Optional Equipment	
97-SCAPC18PT	Kit of 18 fiber pigtails: SC/APC connectors, color coded 900 micron, 3 meters
97-SCUPC18PT	Kit of 18 fiber pigtails: SC/UPC connectors, color coded 900 micron, 3 meters
97-SCAPC24PT	Kit of 24 fiber pigtails: SC/APC connectors, color coded 900 micron, 3 meters
97-SCUPC24PT	Kit of 24 fiber pigtails: SC/UPC connectors, color coded 900 micron, 3 meters
97-001911-A	Grommets, feed-side type, one 1" port per grommet, 50 piece kit 
97-001753-A	Grommets, drop-side type, two 0.624" ports per grommet, 50 piece kit
119 series (Ø 7/8" risers) 122 series (Ø 7/8" U-guards) 219 series (Ø 1.25" risers) 222 series (Ø 1.25" U-guards)	 • Durable solution for protecting wires that are mounted to buildings and utility poles. • Various bends, lengths, offsets, and notches available. • PVC construction: lightweight and easy to cut

7. TECHNICAL ASSISTANCE AND CUSTOMER SERVICE

For questions on product repair or if technical assistance is required, contact Charles Technical Support.

847-806-8500
techserv@charlesindustries.com (email)
http://www.charlesindustries.com/techserv.htm

For questions on warranty or other customer service assistance, contact your Charles Customer Service Representative.

847-806-6300
mktserv@charlesindustries.com (email)
http://www.charlesindustries.com/main/telecom_sales_support.htm