RLH Industries, Inc.

USER GUIDE

Optimum Series
4RU Patch Panel

19"/23" EQUIPMENT RACK COMPATIBILITY
8 ADAPTER PLATES, UP TO 192 FIBERS

Introduction

The RLH Optimum Series 4RU patch panel is one of a series of fully integrated fiber distribution units. The user friendly design makes the Optimum series the superior solution for fiber patching and/or splicing optical fiber in a 19/23" rack. It holds up to 8 fiber adapter plates (up to 192-fibers), 8 splice trays, and is ideal for installation in a wide variety of environments including equipment rooms, central offices, and outdoor enclosures.

Optimum series patch panels are constructed from powder coated aluminum alloy, and feature a removable door with quarter-turn cam-lock, removable slide out tray, and removable rear access self-sealing entry grommets. Optional strain relief kits featuring *Peel n' Seal* technology provide proper routing and securing of fiber optic entrance cables every time. Fiber assemblies or pigtails can be custom ordered and pre-terminated into the patch panel for a complete turn-key solution.

Optimum 4RU Patch Panel

Internal Rear View - Loaded

Key Features

- Rugged design suited for any environment.
- Installer friendly built-in cable management & splice tray storage.
- Holds 8 adapter plates, up to 192 fiber capacity.
- (EIA) 19" or 23" rack front or mid/center mounting.
- Removable hinged door with latch.
- Self-sealing grommets provide superior dust and rodent protection.
- Convenient fiber identification system.
- Angled adapter plates for optimal fiber routing.
- Removable sliding tray, rear cover, and entry grommets allow for a variety of cable arrangements and maximum ease of fiber installation and maintenance.
- Flexible rear fiber entrance that adapts to every application.
- Additional options include our peel and seal fiber cable strain relief kits, splice trays, adapter plates, and fiber pigtails.
- **Made in the USA**

Contents	

Accessories

The RLH Optimum Series patch panels may be ordered empty or pre-terminated with all the accessories needed for a professional installation. Adapter plates, Fiber Cable Strain Relief Kit, splice trays, fusion splice sleeves and fiber pigtails are all available separately or they may be ordered together to be preloaded. Inside packaged together is a set of cable ties and mounting hardware. The distribution unit can be ordered with jumpers pre-installed upon request. Contact your RLH representative for more information.
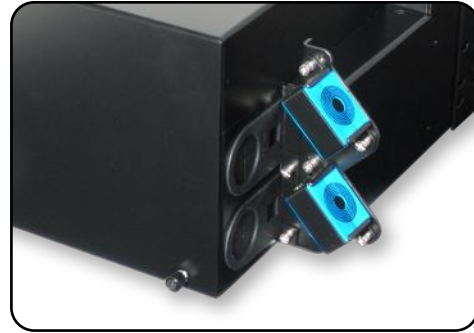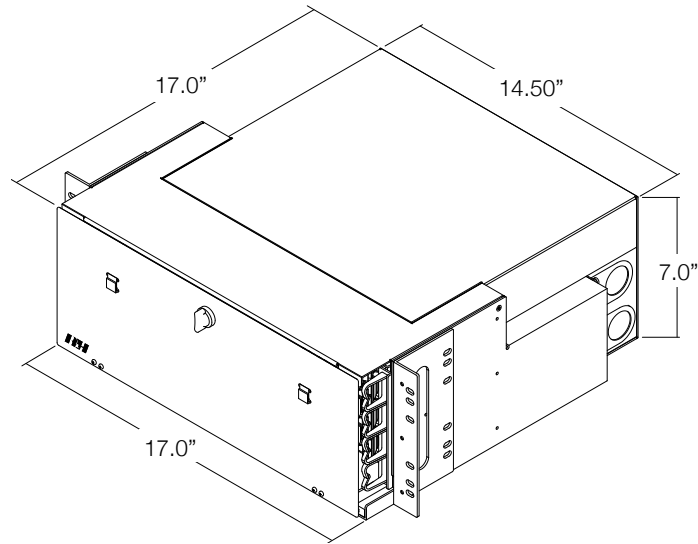

Peel n' Seal Fiber Cable Strain Relief Kit

Feature Identification
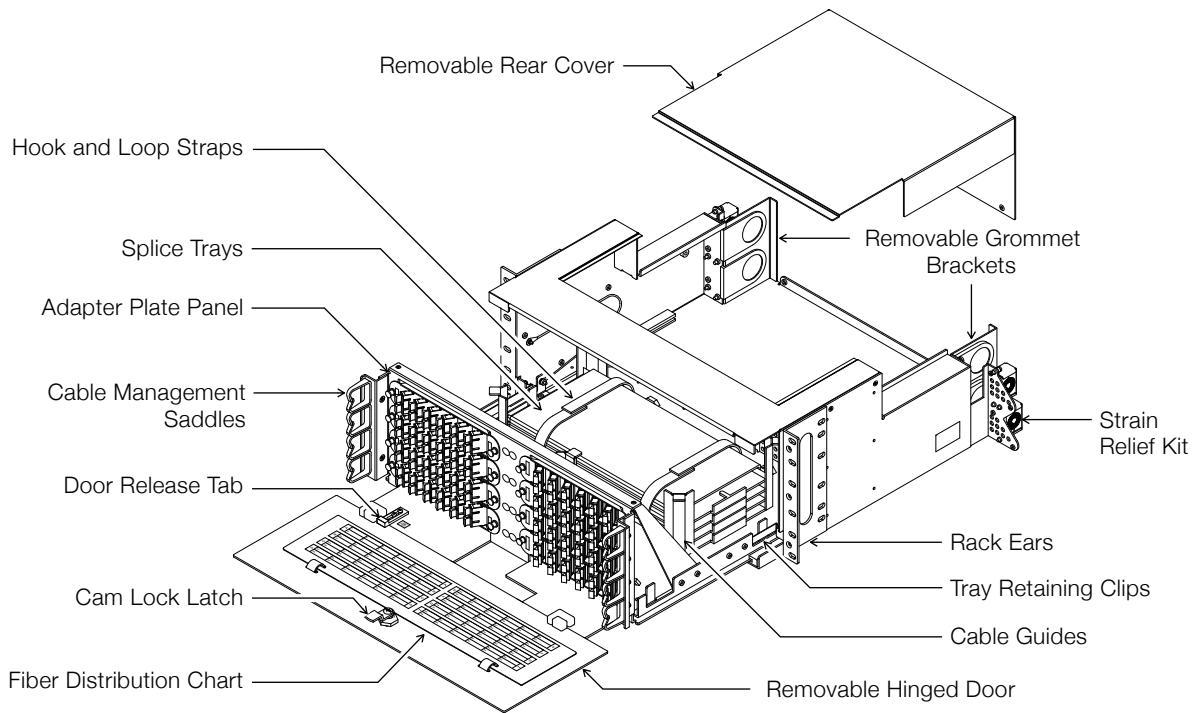

Optimum 4RU Features

Dimensional Information

Optimum 4RU Chassis Dimensions

Installation Instructions

Rack Mounting

Choose a suitable 19"/23" equipment or telco rack location, with room for the fiber tray to extend out and allow for easy access to the interior. The rack ears are reversible for either 19" or 23" application. The rack ears may be attached to any of the 5 mounting locations on the sides of the housing to suit telco or equipment rack installations. Pre-position the unit in the rack to plan out fiber cable routings and check for any potential problems with the location, then fasten the unit to the equipment rack rails with the hardware provided.


23" Rack Mounting,
Rotate Rack Ears
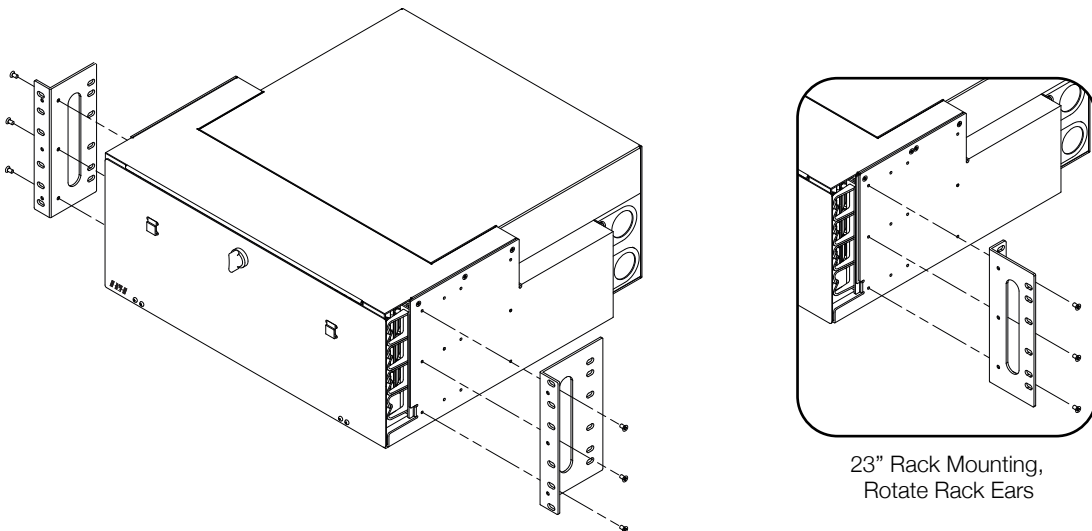
Attaching Rack Mounting Ears
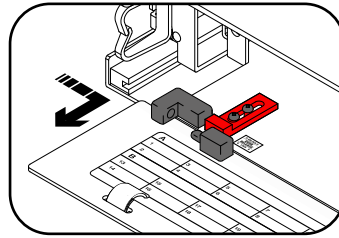
Door Release Tab

Removing the door for access to fiber is easy and convenient. The door release tab is located next to the left door hinge. When the tab is in the forward position the hinge is locked in place. Push the tab back to unlock the hinge and remove the door. Pull the door release tab into the locked position when replacing the door to prevent the door from being accidentally dropped and damaged.
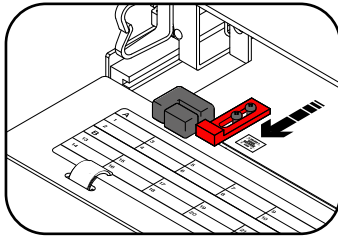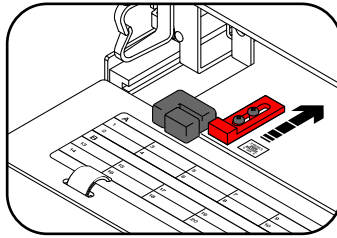
Locked Position　　　　**Unlocked Position**　　　　**Removed Door**

Main Tray

The main tray can slide out the front of the housing for access to the front part of the housing. The Main tray may also be completely removed for complete access to the interior.

Press Down Tray Latch To Release Tray Out To Rear Retaining Clip

Slide Tray Out
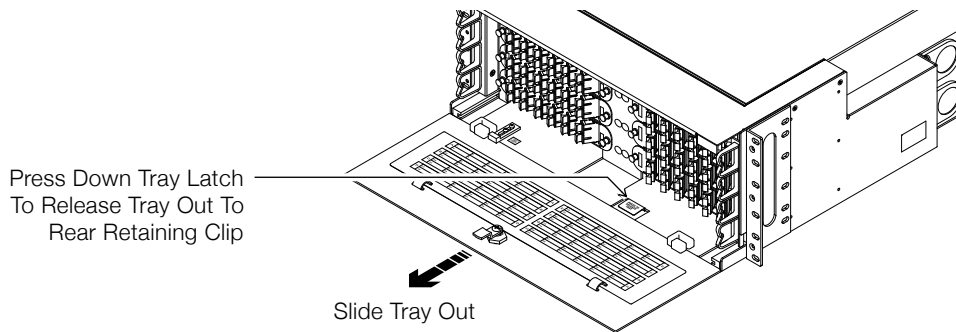
Sliding Tray Out From Closed Position

Tray Retaining Clip

Depress Tray Retaining Clips To Remove Tray From Housing

Remove Tray
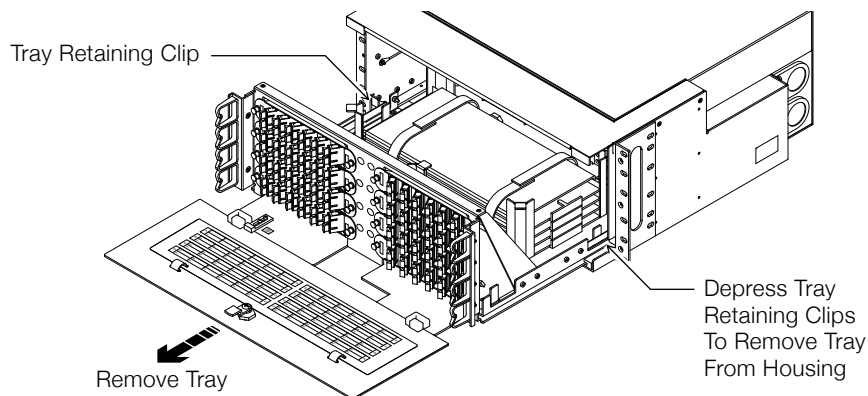
Removing Tray From Housing

Adapter Plates

The Optimum 4RU patch panel accommodates eight adapter plates. Adapter plates loaded on the left side are angled left, and adapter plates on the right side are angled right.

The Optimum Series adapter plates are easily installed and removed by pushing in or pulling out the two finger plunger latches on each side of the plate. In the **OUT** position, latches can be inserted or removed from the adapter plate panel. Pushing the latch into the **IN** position locks the adapter plate into the loaded position.

Route fiber pigtails so that the fiber leads smoothly off of the fiber adapter plates, and continues in a loop around the splice trays, wrapping around the cable guides as shown. It is best to install one side (right or left) before the other to ensure simplified cable routing.
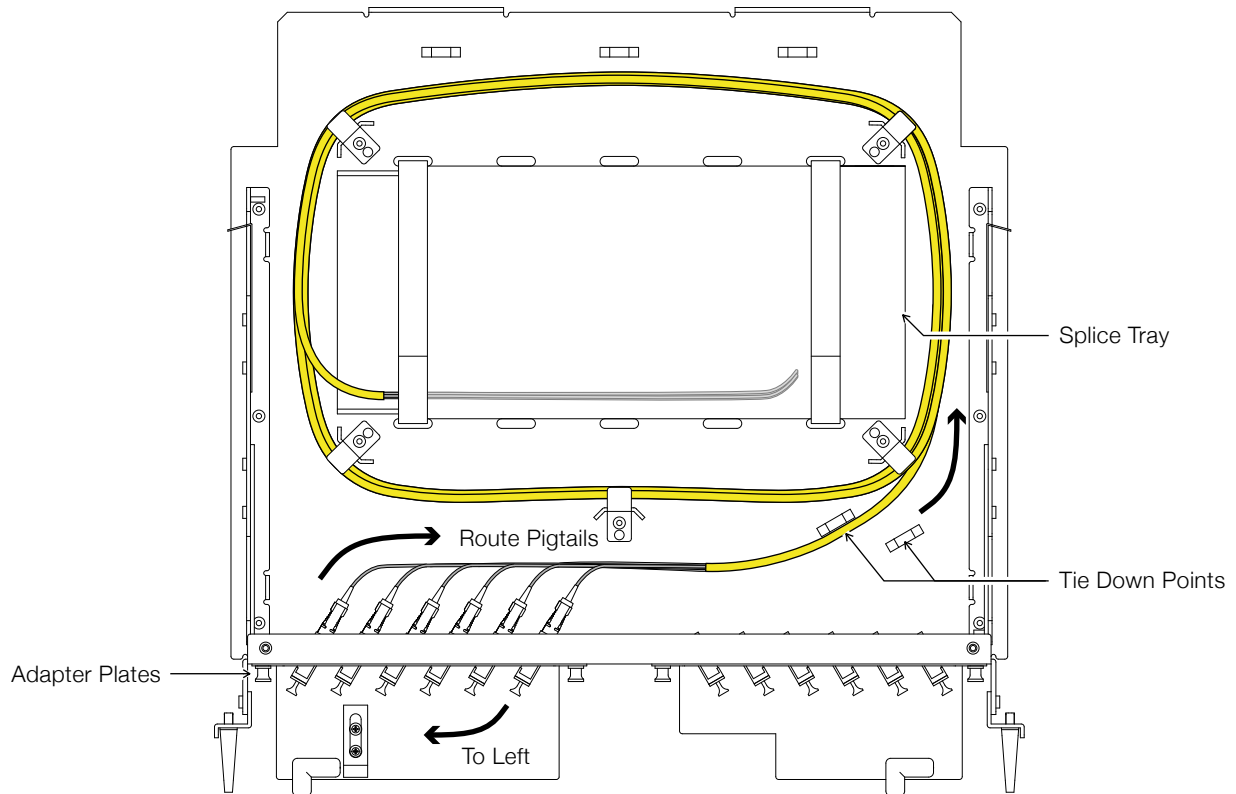
Main Tray Top View
Showing Left Side Fiber Pigtail Routing
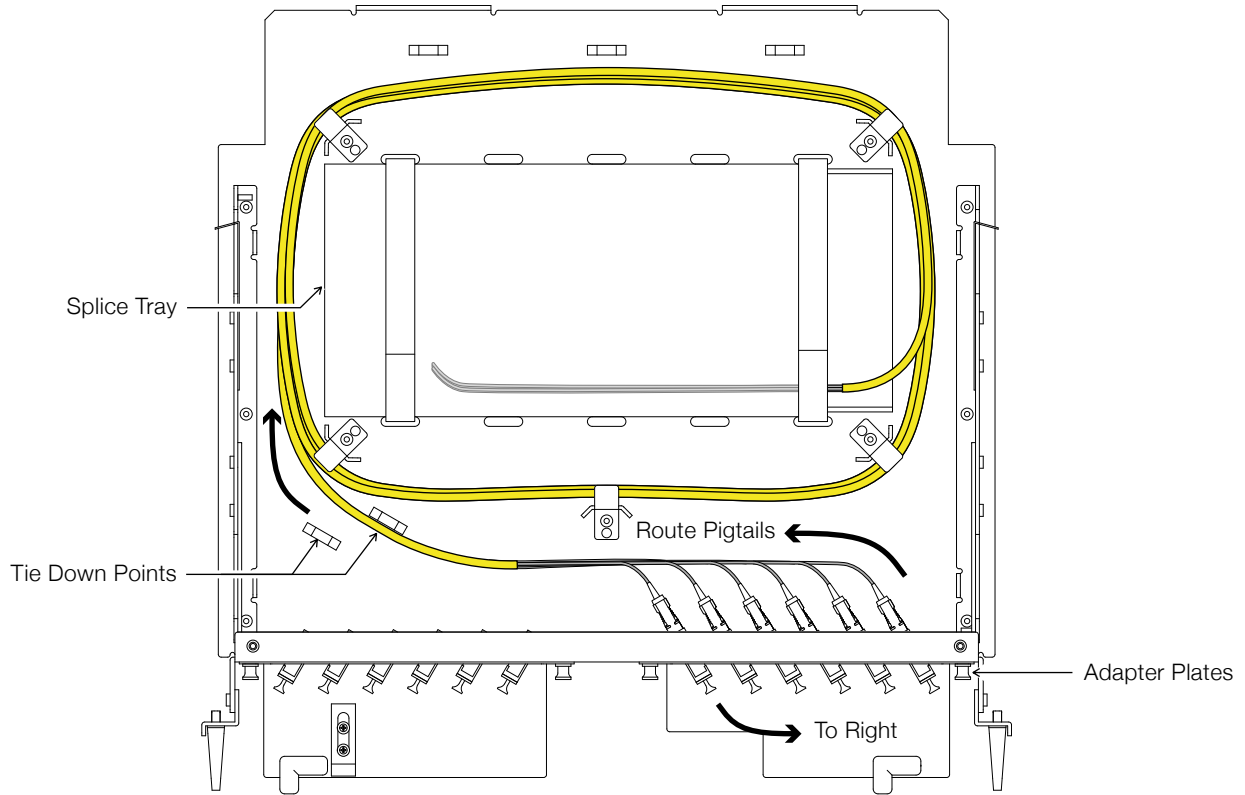
Main Tray Top View

Showing Right Side Fiber Pigtail Routing

Removable Grommet Brackets

The removable self-sealing grommet brackets provide protection to interior components while allowing access perform do maintenance or remove the incoming fiber cables without damaging the fiber. To remove the grommet bracket, unscrew the self-captive screws from the housing and slide the self-sealing grommet off.
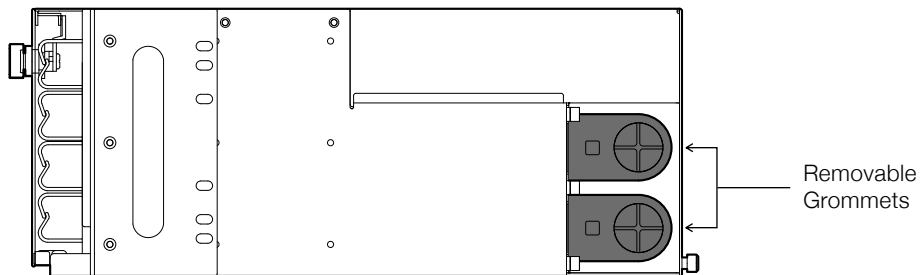
Removable Grommets Installed

Peel n' Seal Strain Relief Kit

The *Peel n' Seal* strain relief kit is a universal clamping system for splicing applications. The kit comes with a bracket for each side and can be placed on either side of the patch panel as well as adjusted vertically in two different positions depending on where the cable is coming from into the patch panel. To fit the incoming cable in the clamp, peel the rubber sections away to the size of the cable being retained. Place the cable through the middle of the two pieces and screw down to the bracket. If the Peel n' Seal clamp is not used, lacing holes are provided on the bracket for securing cable.

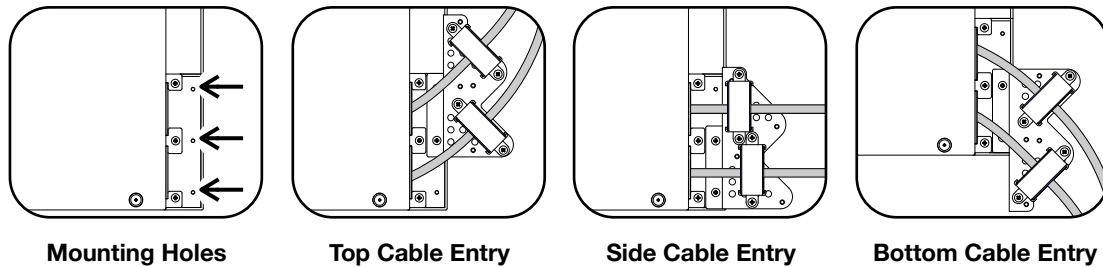| Mounting Holes | Top Cable Entry | Side Cable Entry | Bottom Cable Entry |

Rear Cable Entry

After preparing the rear cable entrance pull the cable through grommet and secure it to a tie down loop or lace holes, on the back of the tray. Always secure cable lightly to avoid fiber damage. Make sure to leave room for the service loop out the back once the tray is closed. Wrap excess fiber loosely around the fiber spools avoiding sharp bends.

Splice trays are stacked and held together with retaining hook and loop straps. Use heat shrink splice protectors as required on each fiber splice before inserting into the splice trays. Snap the top back into place on the tray and secure the splice tray with the hook and loop straps when finished.

Use hook and loop fasteners to organize fiber as required so that no strands are pinched between the tray and housing when the unit is closed. Once the fiber is secured, replace the rear cover and tighten the thumb screws.

Tie Downs
Lacing Holes
Grommets
Strain Relief Kit
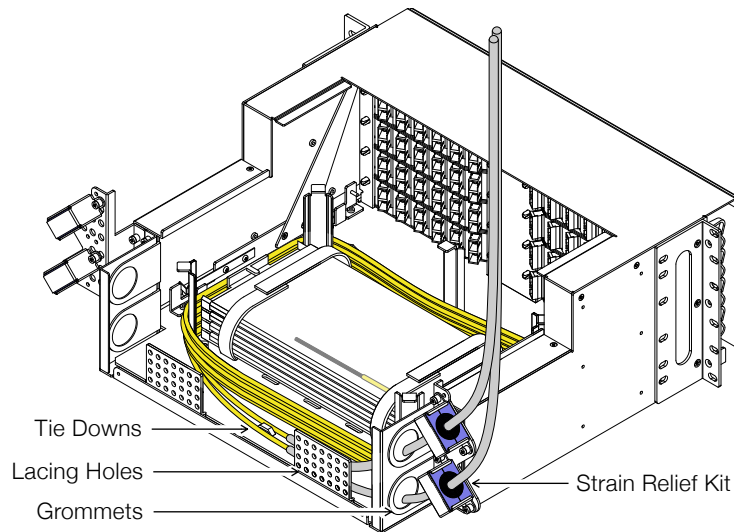
Installed Rear Top Cable Entry

Ordering Information

Custom Optimum 2RU Patch Panel - Loaded

PRO-4B-1- [XXX] - [XX] - [X]

Plate Number	
A	4 Adapter Plates *
B	6 Adapter Plates *
C	8 Adapter Plates

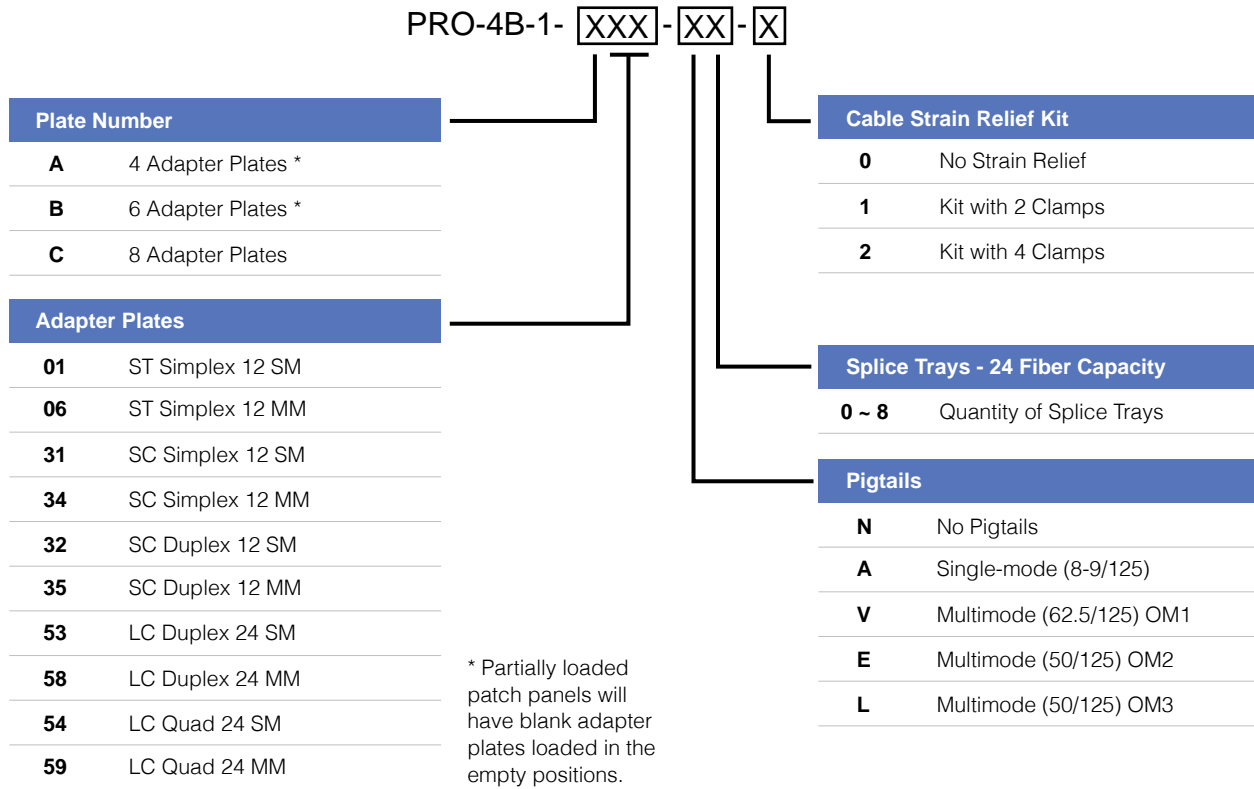| Adapter Plates	
01	ST Simplex 12 SM
06	ST Simplex 12 MM
31	SC Simplex 12 SM
34	SC Simplex 12 MM
32	SC Duplex 12 SM
35	SC Duplex 12 MM
53	LC Duplex 24 SM
58	LC Duplex 24 MM
54	LC Quad 24 SM
59	LC Quad 24 MM

Cable Strain Relief Kit	
0	No Strain Relief
1	Kit with 2 Clamps
2	Kit with 4 Clamps

Splice Trays - 24 Fiber Capacity	
0 ~ 8	Quantity of Splice Trays

Pigtails	
N	No Pigtails
A	Single-mode (8-9/125)
V	Multimode (62.5/125) OM1
E	Multimode (50/125) OM2
L	Multimode (50/125) OM3

* Partially loaded patch panels will have blank adapter plates loaded in the empty positions.

▶ Example: **PRO-4B-C35-N4-1**
RLH Optimum 4RU with 8 SC Duplex angled adapter plates, 4 splice trays, and 1 strain relief kit with 2 clamps.

Optimum 4RU Patch Panel - Unloaded

Description	Dimensions	Part Number
Optimum 4RU Patch Panel - Unloaded	7"H x 17"W x 17"D	**PRO-4B-1**

Splice Trays

Description	Fiber Capacity	Dimensions	Plate Number
Fiber Splice Tray	24	11.75"H x 5.15"W x 0.35"D	**RLH-FST-03**

Peel n' Seal Strain Relief Kit

Description	Quantity of Clamps Per Kit	Plate Number
Optimum 4RU *Peel n' Seal* Strain Relief Kit	2	**PRO-SRK-4A**
	4	**PRO-SRK-4B**

Adapter Plates

Description	Mode	Fiber Capacity	Plate Number
Blank Plate	N/A	N/A	**APO-BLANK**
ST - Simplex	Single Mode	12	**APO-ST12-LSSM**
	Multimode	12	**APO-ST12-LSMM**
SC - Simplex	Single Mode	12	**APO-SC12-LSSM**
	Multimode	12	**APO-SC12-LSMM**
SC - Duplex	Single Mode	12	**APO-SC6-LDSM**
	Multimode	12	**APO-SC6-LDMM**
LC - Duplex	Single Mode	24	**APO-LC12-LDMM**
	Multimode	24	**APO-LC12-LDMM**
LC - Quad	Single Mode	24	**APO-LC6-LQMM**
	Multimode	24	**APO-LC6-LQMM**

Specifications

Adapter Plates		Simplex	96 Fibers
	Holds 8 plates	Duplex	96 to 192 Fibers
		Quad	192 Fibers
Connectors	ST-ST	Simplex, Duplex	
	SC-SC	Simplex, Duplex	
	SC-APC	Simplex	
	APC-SC	Simplex, Duplex	
	LC-LC	Duplex, Quad	
Mounting Style	Standard EIA 19"/23" equipment rack or telco rack		
Environmental	Indoor type sliding tray design		
Construction	Powder coated aluminum		
	Removable hinged door with cam locking latch		
	Plastic tray guides with built-in closing detent		
	Includes cable guides, fiber management saddles, self sealing cable grommets, hook and loop straps from splice trays, 19"/23" rack adapter ears and rack mounting hardware.		
Dimensions	H 7in. x W 17in. x D 17in. (172mm x 432mm x 432mm) Without rack ears		
	4RU Rack Height - **Note:** 1RU = 1.75 inches		

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Please contact your RLH sales representative for pricing and delivery information.

Specifications subject to change without notice.