Equipment Issue A
030-101690 Rev. B, December 2008

VirtualEdge® VEUP-30 Universal Panel, with 3 LGX-Type Positions and 12 Keystone Coupler Positions

1. GENERAL

1.1 Document Purpose

This practice describes Westell's VirtualEdge® VEUP-30 Universal Panel with three LGX®-type positions, shown in Figure 1. Westell offers a variety of panels, couplers, cables, and other orderable options for terminating services for use with the VEUP-30 or other models in the VirtualEdge family. See Table 3 for information.

- NOTE -
Hereafter, the Westell VirtualEdge VEUP-30 Universal Panel may be referred to as "the panel" or the "VEUP-30."

1.2 Document Status

Whenever this practice is updated, the reason will be stated in this paragraph. Revision B adds Paragraph 2.4 and updates the wall mounting drawing in Figure 4.

1.3 Product Purpose and Description

The VirtualEdge (VE) VEUP-30 is a universal, LGX-compatible, interface panel used at the CPE point of demarcation. It comes equipped with three, detachable, LGX-to-Keystone adapter panels, each of which contain four Keystone-type holes for couplers. The sturdy adapter panels can be populated with a variety of couplers, such as RJ45/48 (Cat5e for Ethernet and DS1), BNC (for DS3), and SC/LC (for fiber), or any Keystone-type coupler. The coupler type and type of service terminated is determined per company practice and application. Keystone-type blanks are provided for the holes. Different types of couplers and adapter panels can be combined or mixed within the VEUP-30 panel, for flexible configurations and applications, as shown in Figure 2. A circuit identification (ID) card is provided inside a clear plastic packet, which allows installers to label each coupler position. The VEUP-30 comes equipped with the components shown in Table 1. Optional features include adapter panels, couplers, D-rings, and a front tray for additional cable management at the front of the VEUP-30.

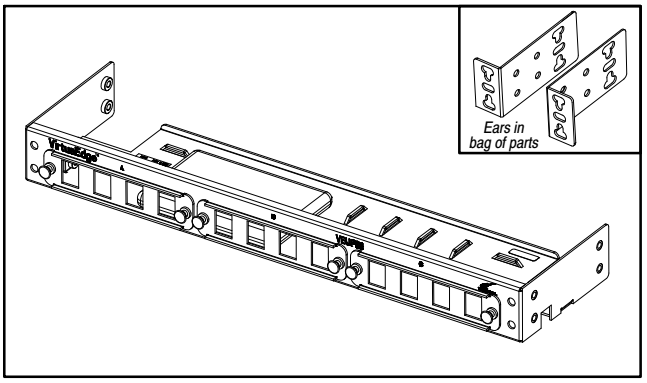


Figure 1. Isometric View of VirtualEdge Universal Panel

Quantity	Component	Description
1	Panel	1.75 inches (1 RU) high panel, with three empty LGX-type positions for adapter panels
3	Adapter panel	LGX-type detachable panel, with 4 Keystone-type empty coupler positions and two Ny-latch fasteners
2	Mounting Ear	Adjustable/reversible ear for 19 or 23" racks or for wall-mounting, shipped in bag of parts
1	Tray (rear)	Built-in cable management tray, with multiple cable tie-downs, located at *rear* of front panel
10	Screw	Two types; to attach ears to panel and to a rack
1	Bag of parts	Contains 12 Keystone-type blanks, 2 mounting ears, rack mounting screws, and a ground lug
1	ID Card	Circuit ID card, in a clear plastic packet, for easy customer or coupler identification

Note: D-rings, front tray, couplers, and modules are optional equipment.

Table 1. VEUP-30 Features and Components

1.4 Product Mounting

The panels can be rack or wall mounted using the included reversible mounting ears (included in the bag of parts). These ears allow flush or projected positions in both 19" and 23" standard EIA relay racks, or they can be flipped and repositioned at the back of the panel for wall-mounting. See Part 2 and Figure 4 for more detailed mounting information.

1.5 Applications

To enable a greater variety of service and interface offerings, service providers are putting more fiber into customer premises, either with Fiber-to-the-Premise or placing more fiber multiplexers and IP aggregation devices closer to subscribers. In business markets, the strong demand for Transparent LAN and Virtual Private Network services creates numerous ap-

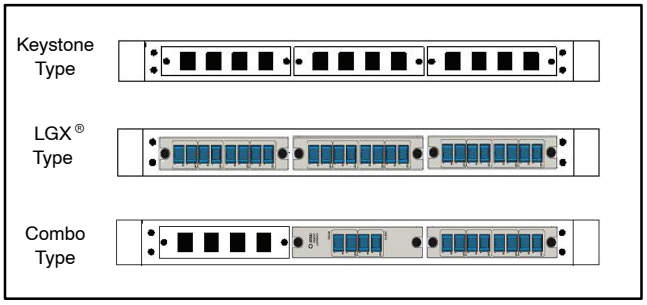


Figure 2. Various VEUP-30 Adapter Panel Configurations

plications for Westell's VirtualEdge panels. These panels are intended to be simple, sturdy, and versatile mechanical platforms, used to terminate high-speed Ethernet, fiber, or copper services in any combination(s). Additional interfaces can also be installed on a per-circuit basis.

1.6 Product Features

The VEUP-30 panel offers the following features.

- 1 Rack Unit (RU) high
- Three, horizontal, LGX-type positions
- Mounts on wall or in 19" or 23" relay racks or data cabinets
- Adjustable, reversible, mounting ears
- Three empty LGX-type adapter panels, each with four Keystone-type positions or holes; U-shape adds strength
- Accepts any combination of RJ45/48 (Cat5e for Ethernet and DS1), SC/LC (fiber), BNC (DS3) or other Keystone-type couplers
- Accepts 6/12 position, fiber, LGX panels
- Accepts JDSU Bright Jack panels
- Rear steel tray provides cable support and cable tie-downs for cables coming from the Network/Telco
- Steel construction
- Circuit identification card with clear plastic packet
- Rack mounting hardware included
- Ground lug, nut, and stud
- Optional couplers, adapter panels, front cable management tray, cable management D-rings, and combination kits available (see Table 3)

- PRECAUTIONARY STATEMENT -

Never install telephone wiring during a lightning storm.

Never install telephone jacks in wet locations unless the jack is specifically designed for wet locations.

Never touch uninsulated telephone wires or terminals unless the telephone line has been disconnected at the network interface.

Use caution when installing or modifying telephone lines.

- INSPECTION NOTE -

Visually inspect the unit for damages prior to installation. If the equipment has been damaged in transit, immediately report the extent of the damage to the transportation company and to Westell (see Part 4 for telephone number).

2. INSTALLATION

The VEUP-30 panel can be mounted on a wall or in 19" or 23" relay racks with standard EIA 1.75" hole spacing. When rack mounting, the panel can be installed so the front of it is flush with the front of the rack, or mounted in a projected position in the rack. The following paragraphs and Figure 4 provide further details. Screws to attach the mounting ears to the panel are provided, as well as screws to mount the panel to a rack.

2.1 Mounting in a 19" Rack

The panel is shipped from the factory pre-assembled. Each panel is equipped with two, removable, L-shaped, mounting ears (located in the bag of parts). For 19" rack mounting, the mounting ear's short flange attaches to the rack channel.

1. **Determine vertical position in rack.** Select the vertical mounting location in the rack. This panel requires one vertical Rack Unit (RU) in a standard Telco relay rack.
2. **Remove ears from bag.** Locate the bag of parts shipped with the panel and remove the two L-shaped mounting ears and the rack mounting hardware. Each ear flange has several sets of mounting holes in it.
3. **Determine horizontal position (shelf projection).** The mounting ears and the panel's side flanges have several mounting holes from which to choose, for the desired amount of projection in the rack. If a *projected look* or orientation in the rack is desired, the ears should be attached in the last ear hole position on the panel's side flanges, so that the panel will be projected further forward from the mounting ears. If a *flush look* in the rack is desired, the mounting ears should be attached in the first or forward ear hole position on the panel's side flanges.
4. **Attach long flange of ear to panel.** Attach both ears to the panel in the desired position as determined in the step

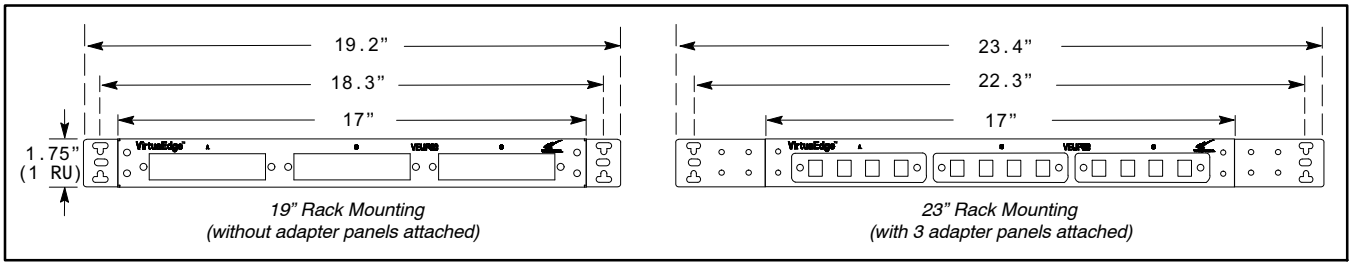


Figure 3. Dimensions for Rack Mounting

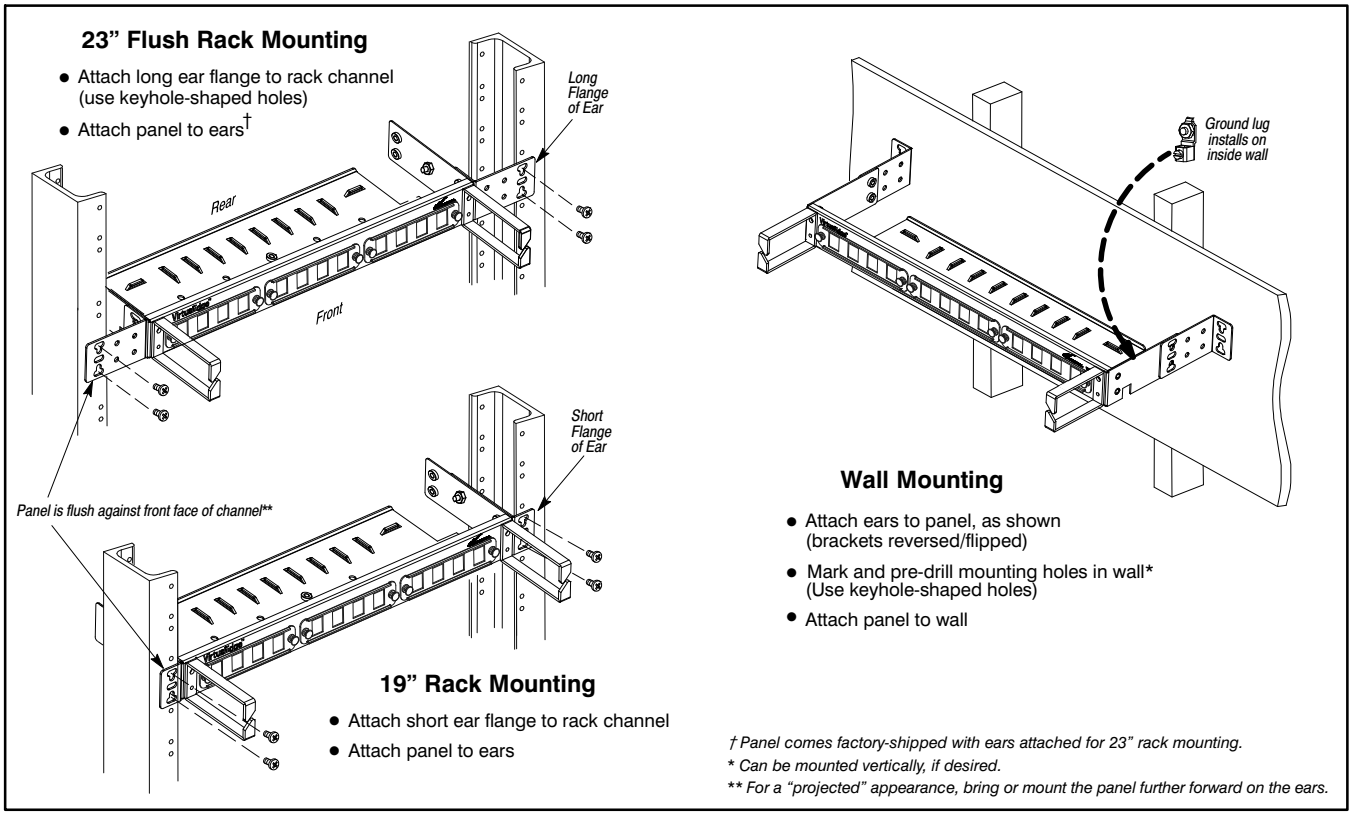


Figure 4. Mounting Views

above, using the hardware provided. The ear's long flange abuts the panel.

5. **Attach panel to rack.** Lift the panel and attach it to the rack channels in the correct vertical rack position. Align the holes in the ear's short flange with the proper holes in the rack channels. Insert the provided screws into the aligned set of holes, then tighten the screws. Repeat for both ears.

2.2 Mounting in a 23" Rack

The panel is shipped from the factory pre-assembled. Each panel is equipped with two, removable, L-shaped, mounting ears (located in the bag of parts). For 23" rack mounting, the mounting ear's long flange attaches to the rack channel.

1. **Determine vertical position in rack.** Determine and select the vertical mounting location in the rack. This panel requires one *vertical* Rack Unit (RU) in a standard Telco relay rack.
2. **Remove ears from bag.** Locate the bag of parts shipped with the panel and remove the two L-shaped mounting ears and the rack mounting hardware. Each ear flange has several sets of mounting holes in it.
3. **Determine horizontal position (shelf projection).** The mounting ears and the panel's side flanges have several mounting holes from which to choose, for the desired amount of projection in the rack. If a *projected look* or orientation in the rack is desired, the ears should be attached in the last, rear-most, ear hole position on the panel's side flanges, so that the panel will be projected further forward from the mounting ears. If a *flush look* in the rack is desired, the mounting ears should be attached in the first or forward-most ear hole position on the panel's side flanges.
4. **Attach short flange of ear to panel.** Attach both ears to the panel in the desired projection position as determined in the step above, using the hardware provided. The ear's short flange abuts the panel.
5. **Attach panel to rack.** Lift the panel and attach it to the rack channels in the correct vertical rack position. Align the holes in the ear's long flange with the proper holes in the rack channels. Insert the provided screws into the aligned set of holes, then tighten the screws. Repeat for both ears.

2.3 Mounting on a Wall

The mounting ears can be attached for wall mounting. Follow local codes and company practices for the proper wall type.

1. **Determine position on wall.** Select the mounting location on the approved wall. This panel requires one *vertical* Rack Unit (RU) in a standard Telco relay rack. ***Note that the panel can be mounted in a vertical position, if desired.***
2. **Remove ears from bag.** Locate the bag of parts shipped with the panel and remove the two L-shaped mounting ears and the rack mounting hardware. Each ear flange has several sets of mounting holes in it.
3. **Determine horizontal position (wall projection).** The mounting ears and the panel's side flanges have several mounting holes from which to choose, for the desired

amount of projection from the wall. If a *more projected position* on the wall is desired (allows greater rear access), the ears should be attached in the last, rear-most, ear hole position on the panel's side flanges. If a *less projected position* on the wall is desired (allows more front access), the mounting ears should be attached in the first or forward-most ear hole position on the panel's side flanges.

4. **Attach ears to panel.** Attach both ears to the panel in the desired projection position as determined in the step above, using the hardware provided.
5. **Mark mounting hole locations.** Lift and place the panel on the wall in the desired final position and mark the mounting holes to be drilled in the wall with a marking utensil.
6. **Drill holes.** Set aside the panel and drill the holes. Do not make the holes too big.
7. **Attach panel to wall.** Lift the panel and align the holes in the mounting ears with the drilled holes in the wall, then insert and tighten the mounting screws (not provided).

- GROUNDING NOTE -

Always follow local safety precautions and standard operating procedures for grounding the equipment when installing, upgrading, repairing or maintaining equipment. Any instructions or information contained herein is subordinate to local codes, operating procedures or practices.

2.4 Making Ground Connections

2.4.1 The Westell VE panels are shipped from the factory with a ground lug (in a bag of parts) capable of accepting #6 ground wire for wall-mount applications. The installer should locate the ground lug and hex-nut from the bag of parts shipped with the panel and install the lug on the post located on the inside wall of the panel, securing the ground lug to the post with the nut (see Figure 4). The installer then makes the ground connection to the ground lug using a #6 ground wire and then grounds the panel to an earth ground or according to local installation procedures for grounding and bonding equipment.

2.4.2 If the VE panel is installed in a relay rack, the #6 ground lug and nut is not required, but a bond wire may be used to connect the VE panel's chassis to the common ground or bond for the relay rack or cabinet, per local procedures.

2.5 Making Installer Connections

After the panel is mounted, installer connections can be made at the front and rear of the three adapter panels of the VEUP-30 panel.

- CAUTION -

Use care when installing and removing couplers and adapter panels - *do not force into place*. If a coupler resists insertion, remove it and check for debris in or near the coupler or hole. Then gently re-insert the coupler.

2.5.1 Installing Adapter Panels and Couplers

The VEUP-30 panel contains 3 empty LGX-type adapter panels, each of which accepts up to 4 Keystone-type couplers. Order and install couplers or LGX-type adapter panels per the specific application, company practice, or service desired. Follow the steps below to install the couplers and adapter panels in the VEUP-30.

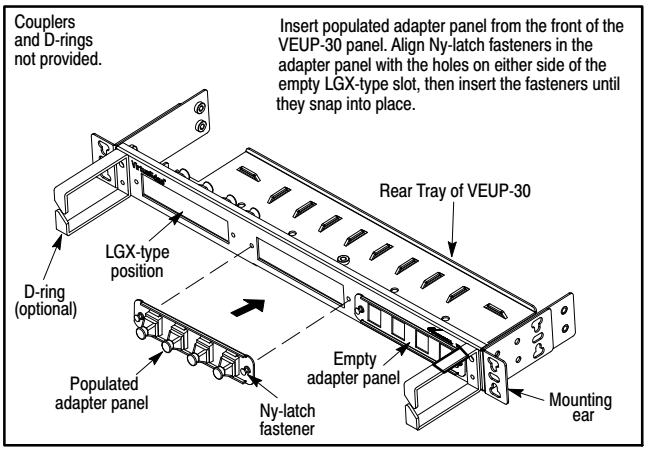


Figure 5. Inserting Populated Adapter Panels in the VEUP-30

1. Call Westell to order the couplers or LGX-type adapter panels of choice for the application (see Table 3).
2. Install the desired couplers into their proper or designated positions in the provided Keystone-type adapter panels.
3. Align the two, plastic, Ny-latch fasteners on each side of the coupler-populated adapter panel with the holes provided for them at both sides of the desired LGX-type position on the panel. Insert the fasteners into the holes, and press them until they click, snap, or lock in place. Verify the adapter panel is securely attached to the panel (see Figure 5).
4. Use the circuit ID card to properly identify all coupler positions.
5. Repeat for all adapter panels to be installed.

2.5.2 Connecting Network/Telco Cables

Network/Telco connections are made to the connector at the back of the installed coupler(s), at the back of the customer-installed adapter panels.

1. Remove the protective connector insert or cover from the back of the coupler in the first coupler position.
2. Run the cable of choice to the first coupler and insert the cable's connector into the back of the coupler.
3. Leave enough cable slack so as not to strain the cable, then use a cable tie (provided) to secure the cable to the cable tie-down provided near the coupler hole on the rear shelf of the panel.
4. Repeat for each coupler. Excess cable can be routed to either or both sides for neat cable management.

After installing adapter panels and couplers, the installer can connect the appropriate service-type connectorized cable to any desired circuit position and route the cable to the Network equipment. When the Network equipment is activated, signals from the Network equipment should be present at the

VEUP-30 front panel where the end-user or customer equipment can be connected.

2.5.3 Connecting End-User or Customer Cables

Customer connections are made to the connector at the front of coupler(s), at the front of the panel. Perform any customer equipment connections per company practice.

1. Remove the protective connector insert or cover from the front of the coupler in the first coupler position.
2. Run the cable of choice to the first coupler and insert the cable's connector into the front of the coupler.
3. Repeat for each coupler.

2.5.4 Labelling Circuit Positions

A circuit identification card (label) is provided, inside a clear plastic packet, for quick and easy circuit labelling and identification. The ID card and packet hangs from the panel using the provided, beaded, removable, cable tie.

3. ACCESSORIES

3.1 Coupler Types

Westell VirtualEdge® panels and adapter panels accept multiple coupler types that can be used or interchanged within the panel(s), as shown in the following list of couplers. If desired, couplers can be purchased separately using the part numbers shown in Table 3.

- RJ45/48 (Cat5e for Ethernet and DS1 services)
- BNC (for DS3 service)
- SC/LC (for fiber)
- Any Keystone-type coupler

3.2 LGX-type Adapter Panels

Three LGX-type adapter panels are provided with and can be installed in the VEUP-30 panel. Each adapter panel contains 4 Keystone-type holes for couplers. If desired, customer-provided adapter panels, such as the JDSU Bright Jack or a 6/12 position fiber LGX panel) can be purchased separately (couplers can be purchased from Westell, see Table 3).

3.3 Front Cable Management Tray

To facilitate cable management at the front of the VEUP-30, Westell offers a metallic Cable Management Tray (Figure 6). This tray attaches to the unit as shown in Figure 6. The tray is designed to allow jumpers and cables to cross in front of the panel without putting unnecessary downward force or strain on the couplers, when installed. The tray also has bridge-forms or cable tie-downs to allow technicians to dress and secure cables to the tray, if desired. The tray can be mounted to the panels at two different depths to allow customization based on the amount of cables and jumpers running across the panels. Use

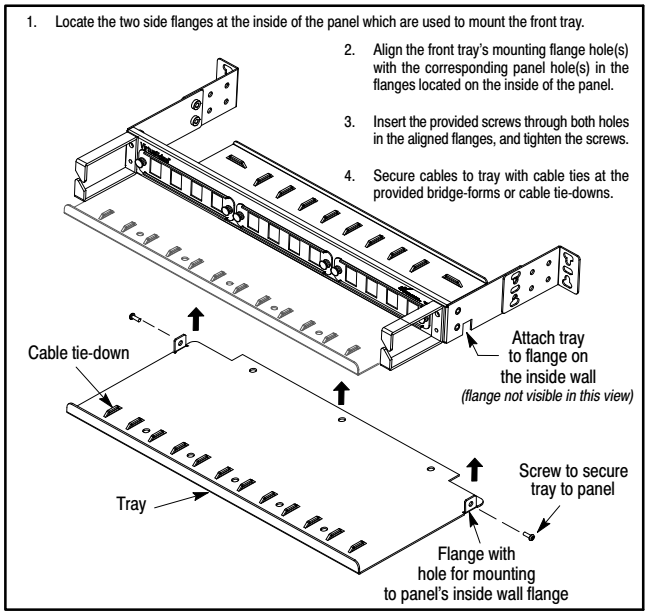


Figure 6. Installing Cable Management Tray to the VEUP-30

alone or with one or more D-rings described in Paragraph 3.4 for a customized cable-management solution.

3.4 Cable Management D-Rings

Optional, metallic D-rings (Figure 7), installed at either or both ends of a VirtualEdge panel, provides guidance and support of the cables that run across the front of the panel to the couplers. A diagonal slit in the front of the ring allows existing or newly-installed cables/jumpers to be easily inserted into the ring, without re-feeding or re-routing, and the 3" ring depth easily accommodates up to 24 or more cables. Use one or more D-rings alone or with the tray described in Paragraph 3.3 for a customized cable-management solution.

4 CUSTOMER & TECHNICAL SERVICES

4.1 Customer Service & Technical Assistance

If technical or customer assistance is required, contact Westell by calling or using one of the following options:

Voice: (800) 377-8766
email: *global_support@westell.com*

For additional information about Westell, visit the Westell World Wide Web site at http://**www.Westell.com**.

4.2 Part Numbers

This equipment is identified by a product number (A90-VEUP30), which consists of three parts: the issue letter of the equipment (A), the assembly type (90), and the specific model number (VEUP30). Each time a change is made to the product which changes the form, fit, or function of the product, the issue letter is incremented or advanced by one. Be sure to indicate the issue level as well as the model number when making inquiries about the equipment.

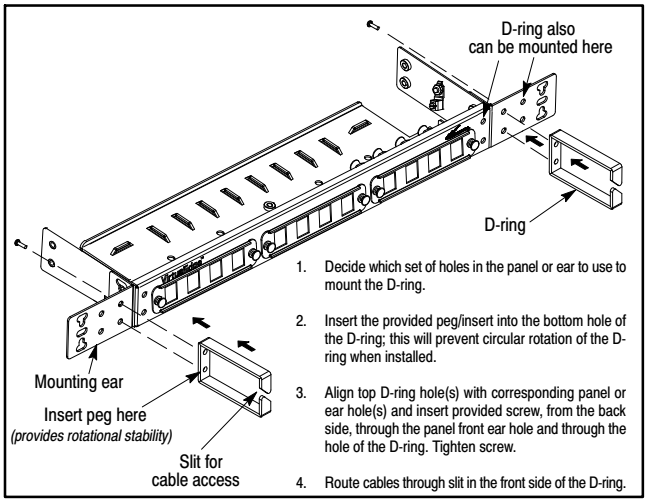


Figure 7. Installing Cable Management D-Rings to the Panel

5. WARRANTY & REPAIRS

5.1 Warranty

Westell warrants this product to be free of defects at the time of shipment. Westell also warrants this product to be fully functional for the time period specified by the terms and conditions governing the sale of the product. Any attempt to repair or modify the equipment by anyone other than an authorized Westell representative will void the warranty.

5.2 Repair and Return

Westell will repair or replace any defective Westell equipment without cost during the warranty period if the unit is defective for any reason other than abuse, improper use, or improper installation. To return defective equipment, first request a Return Material Authorization (RMA) number from Westell by calling or using one of the options shown below. Once an RMA number is obtained, return the defective unit (freight prepaid), along with a brief problem description, to the address we will provide to you when you contact us.

Voice: (630) 375-4457
email: rgmdept@westell.com

Replacements will be shipped in the fastest manner consistent with the urgency of the situation. Westell will continue to repair or replace faulty equipment beyond the warranty period for a nominal charge. Contact Westell for details.

Feature	U.S.	Metric
Height	1.75 inches (1 RU)	4.45 cm
Width, w/o ears	17 inches (approx.)	43.2 cm
Width, w/ears in 19” rack position	19.325” (overall) 18.312” (mounting holes)	49.1 cm 46.5 cm
Width, w/ears in 23” rack position	23.525” (overall) 22.312” (mounting holes)	59.8 cm 56.7 cm
Depth, minimum	4 inches	10.2 cm
Depth, maximum	6 inches	15.2 cm
Weight	25 ounces	709 g
Operating Temp.	-40° to 149°F	-40° to 65°C
Humidity	0 to 95% (non-condensing)	

Table 2. Physical Specifications

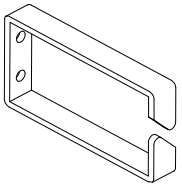
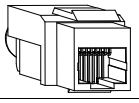
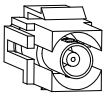
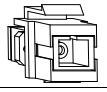
6. SPECIFICATIONS

6.1 Physical Specifications

The physical specifications are shown in Table 2.

6.2 Ordering Specifications

To order units, call the telephone number shown in Paragraph 4.1 and please specify a specific part number shown in Table 3.

Part #	Description
A90-VEUP30	Model VEUP-30 – VirtualEdge® Universal Connection Panel for LGX Fiber Panels and Keystone Couplers, with 3 LGX-118 to Keystone adapter panels. 1 RU.
Other Panels, and Panel Accessories and Options*	
A90-VEVP31	Model VEVP-31, VirtualEdge® 1-RU Video Panel.
A90-VE1200	12-position, 1 RU high, VirtualEdge® Connectivity panel with 12 empty coupler termination positions.
A90-VE1212	Model VE-1212 – Same as VE-1200 but equipped with 12 Cat5e couplers.
A90-VE2400	Model VE-2400 – 24-position, 2 RU high, VirtualEdge® Connectivity Panel with 24 *empty* coupler termination positions.
A90-VE2424	Model VE-2424 – Same as VE-2400 but equipped with 24 Cat5e couplers.
A90-VE2424BNC	Model VE-2424BNC – Same as VE-2424 but equipped with 24 BNC couplers.
A90-VE2424SC	Model VE-2424SC – Same as VE-2424 but equipped with 24 SC couplers.
A90-VECMTRAY	Cable management tray (front projection)
A90-VECMRING3	Cable management D-ring (Qty = 1) 
A90-VECPL5E10	CAT 5e RJ48 Keystone style coupler (Qty = 10) 
A90-VECPL5EIDC10	CAT 5e coupler with IDC termination on Network side (Qty = 10)
A90-VECPLBNC10	BNC COAX coupler (Qty = 10) 
A90-VECPLSC1	Fiber coupler with SC connectors (Qty = 1) 
A90-VECPLLC1	Fiber coupler with LC connectors (Qty = 1) 
A99-VE2424BNC	Kit which contains a 24-position panel, 24 BNC couplers, a cable management tray, 2 D-rings, kit assembly hardware, and rack mounting hardware.
A99-VE2424SC	Same as A99-VE2424BNC but with SC couplers.

**A variety of cables and fiber jumpers also are available. Call Westell for details.*

Table 3. Ordering and Option Information