

Vertiv™ VR Rack

Guide Specifications

1.0 GENERAL

1.1 SUMMARY

This specification defines the mechanical characteristics and requirements for the Vertiv™ VR Rack, a series of adaptive and scalable electronic equipment support cabinets. The Vertiv™ VR Rack shall be a cabling and distribution enclosure or a complete server enclosure. Vertiv™ VR Racks shall include: (1) 77% Perforated Locking Front Door, (2) 77% Perforated Split Locking Rear Doors, (2) pair 19" Mounting Rails, (4) split side panels with locking slam latch, Tool-less Removeable Top Panel, Casters and Leveling Feet, (2) Full Height PDU/Cable Mgt. Brackets, (1) Baying Kit, (50) M6 Cage Nuts and Screws, Color RAL 7021 Black. The core systems shall be factory-assembled, ready for the installation of customer-supplied electronic equipment.

1.2 STANDARDS

1. The product shall be designed in accordance with the following agency standards or certifications. Where a conflict arises between these documents and statements made herein, the statements in this specification shall govern.
 - EIA-310E standard for IT rail hole spacing
 - UL2416
 - REACH
 - RoHS

2.0 PRODUCT

2.1 FRAME

1. The Vertiv™ VR frame shall be constructed as a welded steel/bolted frame and promote flexible mounting options and fully adjustable rail positioning. Finished in powder-coat black (RAL 7021).
2. The frame shall include depth markings for ease of EIA rail alignment.
3. The frame shall support 3000 lbs. (1361kg) static weight load, 2250 lbs. (1022kg) dynamic (non- transit) weight load, and 2000 lbs (907kg) transit on optional Vertiv shock pallet.
4. The frame shall come with (4) swivel casters, and top accessible leveling feet.
5. The leveling feet shall be accessible when IT equipment is installed in the frame.
6. A driver/adaptor shall be provided for leveling feet adjustment.
7. All cabinet components (doors, side panels, top panels, 19" rails, pdu brackets) shall be grounded directly to the frame.
8. Grounding points shall be provided on the cabinets frame to externally ground each unit to the building ground.
9. Shipping brackets may be used to bolt the rack to the floor either internally or externally.

2.2 19" RACK MOUNTING RAILS - STANDARD FRAMES

1. All mounting rails shall be constructed of 14-gauge sheet steel, 19" rails, folded 5 times for maximum rigidity, finished in powder-coat black (RAL 7021).
2. Color-contrasting full-height RU position labels on front/rear of each rail.
3. 19" Mounting Rails shall be spaced 29.1" (740mm) apart from the factory
4. The mounting rails shall support the EIA-310E standard hole-mounting pattern, shall be factory-installed in the Vertiv™ VR frame and be individually depth-adjustable within the useable space to allow for flexibility of mounting depth. Mounting rails accept cage nuts (M6 type included with all units).
5. Integrated cable management features accepts Vertiv™ tool-less cable management accessories.

2.3 PHYSICAL SPECIFICATIONS

Part Number	Internal Height	EIA-310	External Height	External Width	External Depth	Static Rating	Dynamic Rating
VR3100	42U	19"	1998mm (78.6")	600mm (23.62")	1115mm (43.89")	1363 kg (3000lbs)	1022 kg (2250lbs)
VR3300	42U	19"	1998mm (78.6")	600mm (23.62")	1215 mm (47.83")	1363 kg (3000lbs)	1022 kg (2250lbs)
VR3150	42U	19"	1998mm (78.6")	800mm (31.5")	1115mm (43.89")	1363 kg (3000lbs)	1022 kg (2250lbs)
VR3350	42U	19"	1998mm (78.6")	800mm (31.5")	1215mm (31.5")	1363 kg (3000lbs)	1022 kg (2250lbs)
VR3107	48U	19"	2265mm (89.17")	600mm (23.62")	1115mm (43.89")	1363 kg (3000lbs)	1022 kg (2250lbs)
VR3307	48U	19"	2265mm (89.17")	600mm (23.62")	1215 mm (47.83")	1363 kg (3000lbs)	1022 kg (2250lbs)
VR3157	48U	19"	2265mm (89.17")	800mm (31.5")	1115mm (43.89")	1363 kg (3000lbs)	1022 kg (2250lbs)
VR3357	48U	19"	2265mm (89.17")	800mm (31.5")	1215 mm (47.83")	1363 kg (3000lbs)	1022 kg (2250lbs)

2.4 DOORS

1. Doors shall be tool-less lift off removable, and field reversible. Doors come standard with locks keyed to 1333 key code, and (2) hinges per door allowing a maximum 148° door opening. Vertiv™ VR Rack doors shall be available in two primary versions:
 - A. Single door, 77% free-area perforation, 16 GA (1.5mm) steel finished in powder-coat black (RAL 7021).
 - B. Split doors, 77% free-area perforation, 18 GA (1.2mm) steel finished in powder-coat black (RAL 7021).

2.5 SIDE PANELS

1. The Vertiv™ VR Rack split locking side panels shall be made of 20 GA(0.9mm) sheet metal and finished in powder-coat black (RAL 7021).
2. Panels shall be externally removable and come standard with a locking slam latch keyed to 1333.

3. Panels shall install internal to the frame.

2.6 TOP PANEL

1. The standard top panel shall be tool-less for ease of removal in the field, and include (2) 153mm (6.04") x 100mm (3.94") rectangular cut outs located in the front and rear of the top panel for cable entrance or exit.
 - A. Rectangular cut outs shall include field removeable tabs to expand cutout size to accommodate 60A plug sizes.
2. The top panel shall be made of 18 GA (1.2mm) sheet metal and finished in powder-coat black (RAL 7021).
3. The top panel shall include an integrated hole pattern for easy installation of top panel mount accessories (cable management, ladder/cable tray support brackets, or Liebert Modular Busway support brackets.)
4. The top panel shall be able to support 150 lbs. when utilizing accessory mounting holes.

2.7 PDU/CABLE MANAGEMENT BRACKETS

1. The PDU/Cable Management Brackets shall be made of 16 GA (1.6mm) sheet metal and be finished in powder-coat black (RAL 7021).
2. All PDU/Cable Management Brackets shall include button-mount keyholes throughout to accommodate tool-less button-mounting of Rack PDUs of various heights.
3. All PDU/Cable Management Brackets shall be depth-adjustable within the useable depth.
4. All PDU/Cable Management Brackets will have integrated cable management features to accept Vertiv™ tool-less cable management accessories.
5. The frame shall accommodate up to (4) PDU/Cable Management brackets for cable management and Rack-PDU installation.

2.8 BAYING KIT

1. The baying kit shall supply hardware necessary to bay Vertiv™ VR frames of the same height and depth.
2. Bayed racks shall be interconnected in the field to space the racks 24 inches on center, or accommodate frame-to-frame baying of racks of disparate widths.
3. An optional gasket kit (VRA5003) shall be available to fill the gap between racks bayed on 24" centers.

2.9 PAINT FINISH

Powder Coat RAL7021(Black) paint finish shall be provided for all the Vertiv VR™ Rack sheet metal components.

3.0 OPTIONAL ACCESSORIES

Optional Accessories shall be field-installed and include all necessary installation instructions.

Cable Management Accessories	
Part Number	Description
VRA1000	1U Horizontal Cable Organizer with Metal D Rings (Qty. 1)
VRA1001	2U Horizontal Cable Organizer 2U with Metal D Rings (Qty. 1)

Cable Management Accessories	
Part Number	Description
VRA1002	Horizontal Cable Manager, 1U x 4" Deep, Single-Sided with Cover (Qty. 1)
VRA1003	2U x 4" Deep Horizontal Cable Manager, Single-Sided with Cover (Qty. 1)
VRA1004	Tool Less Cable Management -Lobster Claw (Qty. 10)
VRA1005	Tool Less Cable Management - Velcro Strap (Qty. 10)
VRA1006	Tool Less Cable Management -Lobster Claw (Qty. 100)
VRA1007	Tool Less Cable Management - Velcro Strap (Qty. 100)
VRA1008	Tool less D-Rings small (Qty. 10)
VRA1009	Tool less D-Rings small (Qty. 100)
VRA1010	Tool less D-Rings Large (Qty. 10)
VRA1011	Tool less D-Rings Large (Qty. 100)
VRA1013	Horizontal Cable Organizer Side Channel 20 to 33 inch adjustment (Qty. 1)
VRA1024	Horizontal Cable Organizer Side Channel 22 to 38 inch adjustment (Qty. 1)
VRA1014	Vertical Cable Manager 600mm Wide 42U (Qty. 2)
VRA1015	Vertical Cable Manager for 600mm Wide 48U (Qty. 2)
VRA1016	Vertical Cable Manager for 800mm Wide 42U (Qty. 2)
VRA1017	Vertical Cable Manager for 800mm Wide 48U (Qty. 2)
VRA1018	Hinged Covers 800mm Wide 42U Vertical Cable Manager (Qty. 2)
VRA1020	Hinged Covers 800mm Wide 48U Vertical Cable Manager (Qty. 2)
VRA1021	Vertical Cable Organizer, 8 Cable Rings, Zero U (Qty. 2)
VRA1022	2U x 6" Deep Horizontal Cable Manager, Single-Sided with Cover (Qty. 1)
VRA1023	1U x 6" Deep Horizontal Cable Manager, Single-Sided with Cover (Qty. 1)
VRA1024	Horizontal Cable Organizer Side Channel 22 to 38-inch adjustment (Qty 1)

Airflow Management Accessories

Part Number	Description
VRA2000	1U 19" Black Plastic Tool Less Airflow Blanking Panel (Qty. 10)
VRA2001	1U 19" Black Plastic Tool Less Airflow Blanking Panel (Qty. 200)
VRA2002	19" Sheet Metal Airflow Blanking Panel Kit (1U, 2U, 4U, 8U) Black (Qty. 1 ea. Size)
VRA2003	1U 19" Sheet Metal Airflow Blanking Panel Kit Black (Qty. 2) Black
VRA2004	Air Recirculation Prevention Kit
VRA2005	19" Rail Brush Strips, 800mm Wide (Qty.12)
VRA2006	Cable Pass Through Brush Kit for Top Panel (Qty. 8)

Shelves and Support Brackets

Part Number	Description
VRA3000	1U Depth Adjustable Fixed shelf 250lbs Black (Qty. 1)
VRA3001	2U 19" Cantilever Fixed Shelf 50lbs Black (Qty. 1)
VRA3002	1U Depth Adjustable Sliding Shelf 100lbs Black (Qty. 1)
VRA3003	1U Depth Adjustable Sliding Shelf 200lbs Black (Qty. 1)
VRA3004	1U Depth Adjustable Equipment Support Rails 100lbs (Qty. 2)

Anchoring

Part Number	Description
VRA4000	VR Bolt Down Brackets (Qty 2)
VRA4001	VR Anti Tip Stabilizer Plate for 600mm/800mm Wide cabinets (Qty. 2)

Baying and Hardware

Part Number	Description
VRA5000	Mounting Hardware (Qty. 50 M6 cage nuts, screws, washers)
VRA5001	10-32 Cage Nuts (Qty. 50)

Baying and Hardware	
Part Number	Description
VRA5002	Baying Kit: Baying Hardware Kit (1 Kit)
VRA5003	Baying Gasket kit for use when baying racks on 24" centers
VRA5004	Zero U Accessory Mounting Bracket (Qty. 2)

Doors & Handles	
Part Number	Description
VRA6001	42U x 600mm Wide Single Perforated Door Black (Qty 1)
VRA6002	42U x 800mm Wide Single Perforated Door Black (Qty 1)
VRA6003	48U x 600mm Wide Single Perforated Door Black (Qty 1)
VRA6004	48U x 800mm Wide Single Perforated Door Black (Qty1)
VRA6005	42U x 600mm Wide Split Perforated Doors Black (Qty 2)
VRA6006	42U x 800mm Wide Split Perforated Doors Black (Qty 2)
VRA6007	48U x 600mm Wide Split Perforated Doors Black (Qty 2)
VRA6008	48U x 800mm Wide Split Perforated Doors Black (Qty 2)
VRA6009	42U x 1100mm Deep Split Side Panels Black (Qty 2)
VRA6010	42U x 1200mm Deep Split Side Panels Black (Qty 2)
VRA6011	48U x 1100mm Deep Split Side Panels Black (Qty 2)
VRA6012	48U x 1200mm Deep Split Side Panels Black (Qty 2)
VRA6013	42U x 600mm Wide 19" Server Rails Square Hole Black (Qty 2)
VRA6014	42U x 800mm Wide 19" Server Rails Square Hole Black (Qty 2)
VRA6015	48U x 600mm Wide Server Rails Square Hole Black (Qty 2)
VRA6016	48U x 800mm Wide 19" Server Rails Square Hole Black (Qty 2)
VRA6017	600mm Wide x 1100mm Deep Top Panel Black (Qty 1)
VRA6018	800mm Wide x 1100mm Deep Top Panel Black (Qty 1)
VRA6019	600mm Wide x 1200mm Deep Top Panel Black (Qty 1)

Doors & Handles	
Part Number	Description
VRA6020	800mm Wide x 1200mm Deep Top Panel Black (Qty 1)
VRA6021	Replacement Top Panel Grommets Black (Qty 8)
VRA6022	Standard Door Handle (Qty. 1)
VRA6023	Combination Lock Handle (Qty 2)
VRA6024	Caster Kit (Qty 4)
VRA6025	42U 4" Wide PDU/Cable Management Bracket Black (Qty 2)
VRA6026	48U 4" Wide PDU/Cable Management Bracket Black (Qty 2)
VRA6027	Keys, 1333 key code (Qty 4)
VRA6028	Leveling Feet, M10 x 95mm (Qty 4)

4.0 WARRANTY

4.1 STANDARD WARRANTY

The Vertiv™ VR Rack shall be warrantied against defects in materials and workmanship for three (3) years from date of shipment. An additional two (2) years may be obtained by registering your product at <https://www.vertivco.com/en-us/support/register-your-product/product-registration/>.