

Vertiv™ Liebert® DCE Racks
GUIDE SPECIFICATIONS
for Non-Sealed Systems; Fan or Convection Cooling
Integrated Secure Protection for Electronic Equipment

1.0 GENERAL

1.1 Summary

This specification defines the mechanical characteristics and requirements for the Liebert® DCE Rack system from Vertiv, a series of adaptive and scalable electronic equipment support cabinets. The Liebert® DCE Rack System shall be configurable as a basic four-post open rack, a cabling and distribution enclosure or a complete server enclosure. Liebert® DCE Racks shall include EIA-310E standard rack-mount rails. The core systems shall be factory-assembled, ready for the installation of customer-supplied electronic equipment. All Liebert® DCE basic open rack, distribution and server enclosures shall be flexible and field-upgradeable with doors, panels, UPS, power distribution and fan options.

1.2 Standards

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

2.0 PRODUCT

2.1 Frame Types

The Vertiv™ Liebert® DCE frame shall be constructed as a welded/bolted steel frame, folded 5-times for maximum strength and rigidity, and promote flexible mounting options and fully adjustable rail positioning. The frame shall include depth markings for ease of EIA rail alignment. The frame shall support 4000 lbs. (1361kg) static weight load, 2500 lbs. (1334kg) dynamic (non- transit) weight load, and shall be equipped with leveling feet. The leveling feet shall be accessible when IT equipment is installed in the frame.

2.2 19" Rack Mounting Rails - Standard Frames

All mounting rails shall be constructed of 12-gauge sheet steel, 19" rails, folded 3 times for maximum rigidity, powder-coat black (RAL 7021), with color-contrasting full-height RU position labels on both sides of each rail. The mounting rails shall support the EIA-310E standard hole-mounting pattern, shall be factory-installed in the Liebert® DCE frame and be individually and infinitely depth-adjustable within the useable space to allow for flexibility of mounting depth. Mounting rails accept cage nuts (M6 type included with all units). Integrated cable management features accept Vertiv tool-less cable management accessories.

2.3 Standard Frame / Pre-Configured Enclosure Options

The Liebert® DCE frame shall be factory- or field-configurable as an open rack, or with optional doors and side panels or a NEMA 1 / IP10 (non-sealed) enclosure. overall dimensions of the Liebert® DCE enclosure with all doors and panels shall be:

<ul style="list-style-type: none"> • Width: 19" EIA rack mount: <ul style="list-style-type: none"> • 23.6"(600mm) or • 27.6"(700mm) or • 31.5"(800mm) 	<ul style="list-style-type: none"> • Height: with leveling feet: <ul style="list-style-type: none"> • 24U, 47.3" (1203mm) or • 42U, 78.7" (2000mm) or • 45U, 84.0" (2136mm) or • 48U, 89.4" (2269mm) 	<ul style="list-style-type: none"> • Depth: <ul style="list-style-type: none"> • 43.3" (1100mm) or • 47.2" (1200mm)
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2.3.1 Doors

Doors shall be tool-less removable, and field reversible. Doors come standard with locks keyed to 1333 key code, and 3 hinges per door for added rigidity. Liebert® DCE doors shall be available in three primary versions:

1. Single door, 77% free-area perforation, 16-gauge (1.5mm) steel finished in powder-coat black (RAL 7021).
2. Split doors, 77% free-area perforation, 16-gauge (1.5mm) steel finished in powder-coat black (RAL 7021).
3. Split Solid doors, 16-gauge (1.5mm) steel finished in powder-coat black (RAL 7021).

2.3.2 Side Panels

The Liebert® DCE split locking side panels shall be made of 16-gauge (1.5mm) sheet metal and finished in powder-coat black (RAL 7021). Panels shall be externally removable and come standard with locks keyed to 1333.

Optional cable pass-through side panels with brush strips shall be available.

2.3.3 Top Panel

The standard top panel shall be removable in the field, include provisions for front and rear cable entrance and shall be made of 16-gauge (1.5mm) sheet metal and finished in powder-coat black (RAL 7021). The top cover 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), and (1) cutout for optional top panel fan module.

2.3.4 PDU/Cable Management Brackets

The PDU/Cable Management Brackets shall be made of 14-gauge (2mm) sheet metal and be finished in powder-coat black (RAL 7021). All PDU/Cable Management Brackets shall include button-mount keyholes throughout to accommodate tool-less button-mounting of Rack PDUs of various heights. All PDU/Cable Management Brackets shall be depth-adjustable within the frame and include integrated cable management features to accept Vertiv tool-less cable management accessories. The frame shall accommodate up to (4) PDU/Cable Management brackets for cable management and Rack-PDU installation.

2.3.5 Casters

The caster option shall be a set of two (2) swivel casters (front), (2) fixed casters (rear) non-locking.

2.3.6 Baying Kit

The baying kit shall supply hardware necessary to bay Vertiv™ Liebert® DCE frames of the same height and depth. Bayed systems shall be interconnected in the field and shall be capable of spacing the racks 24 inches on center, or accommodate frame-to-frame baying of racks of disparate widths.

An optional gasket kit shall be available to fill the gap between racks.

2.3.7 Paint Finish

Powder Coat RAL7021(Black) paint finish shall be provided for all of the Liebert® DCE sheet metal components as described in sections 2.1 through 2.3.4.

Optional Powder Coat RAL 7035 (Light Grey) paint finish shall be available on request.

3.0 MOUNTING OPTIONS

Mounting options shall be field-installed and include all necessary installation instructions. All mounting options shall be for application with the front / rear internal mounting rails unless noted otherwise.

3.1 Telescopic Tool-Less Shelf

The pullout shelf shall be a solid shelf that mounts to standard Vertiv™ Liebert® DCE internal rails. The shelf shall be 0.04" (1mm) sheet steel construction, finished in powder-coat black (RAL 7021) and support 110 lb. (50kg) evenly distributed.

3.2 Fixed Tool-Less Shelf

The tool-less shelf shall be a vented shelf that mounts to standard Liebert® DCE internal rails without requiring tools. The shelf shall be 20-gauge (1mm) sheet steel construction, finished in powder-coat black (RAL 7021) and support 275 lb. (124kg) evenly distributed

3.3 L-Shaped Depth Adjustable Support Rails

The L-Shaped Depth Adjustable Support Rail shall include two horizontally positioned 90° “L” rails that extend between the front and rear 19" mounting rails. The “L” rails shall be 14 gauge (2mm) galvanized sheet steel and support up to 110 lb. (50kg) evenly distributed. The finish shall be polished but unpainted.

3.4 Blanking Panels

Tool-less blanking panels shall be snapped onto the DCE 19" EIA rails to block unused portions of the rack, blocking the open areas enhances airflow through the rack equipment. The blanking panels shall be available in 1U and 2U. There is also a 1U metal variation with brush strips that can mount horizontally between the EIA rails.

3.5 Vertical Airflow Baffle With Brush Strip

Vertical Airflow Baffle with Brush Strip shall be available to be used to block air flow in the vertical space between the EIA rails and side panels, and allow for cable pass through. These full-height kits shall be available on 700mm and 800mm racks, and shall be compatible with Vertical Cable Management System.

3.6 Vertiv™ Liebert® Mb Mounting Bracket

The Liebert® MB Mounting Bracket shall be used for installing a Liebert® MB on a Liebert® DCE. Available to mount a single or A & B bus on top of a cabinet. One (1) shall be used, at a minimum, for every five-foot (5') section of Liebert® MB run.

3.7 Combination Lock

Optional combination locks shall be available for the front and rear DCE doors to enhance security.

3.8 Bolt-Down Brackets

Bolt-down Brackets shall come with every rack. Bolt-down Brackets shall be used to secure the cabinet to the pallet during transit and to the floor after installation. The bracket shall not hold any seismic rating; seismic installation compliance must be obtained on-site, after installation of the Liebert® DCE from a qualified seismic or structural engineer.

3.9 19" Mounting Hardware Kit

The 19" Mounting Hardware Kit shall include (50) M6 Cage Nuts, Screws, Washers

3.10 Cable Management Options

Cable management options shall include:

- Lobster Claw (pack of 10 or pack of 100)
- Velcro Straps (pack of 10 or pack of 100)
- 19" Rack-Mount Cable Trough
- 19" 1U Rack-Mount Cable Routing Panel with D Rings
- 19"1U Horizontal Cable Manager
- 19" 2U Horizontal Cable Manager
- Front-to-Rear Cable Trough
- Front-to-Rear Lacing Bar
- Vertical Cable Management System
- Top-Mount Cable Management System

3.11 Top Panel Fan Module

Vertiv™ Liebert® DCE racks shall be available with an optional fan module to provide top air evacuation. Top panel fan modules shall be available in 110V or 230V, 60Hz, 300CFM with NEMA 5-15P or IEC 320-C14 plug connection on an attached 6 foot (1.8m) cord.

4.0 WARRANTY (U.S. SALES ONLY)

4.1 Standard Warranty

The Vertiv™ Liebert® DCE Rack shall be warranted against defects in materials and workmanship for two (2) years from date of shipment. For the complete warranty terms and description, refer to the separate warranty statement at www.Vertiv.com.