Vertiv™ Solutions Quick Guide

A complete range of Vertiv solutions and services, including critical power, thermal management, and monitoring.

![VERTIV]

The world depends on data we power and cool.™

Technology underpins and enriches almost every aspect of our lives. Digital technology drives the global demand for data. Vertiv is a global leader in critical digital infrastructure for applications in data centres, communication networks, and commercial and industrial environments. We enable the critical digital world to continuously accelerate and perform.
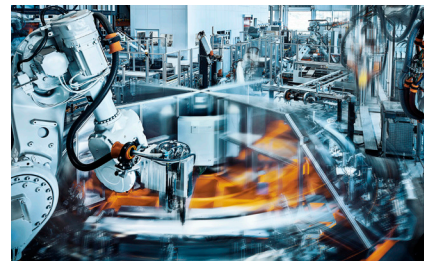
Supporting the most impactful market segments:

Data Centres

Communication Networks

Commercial & Industrial

As businesses, industries, and communities become more connected, Vertiv™ pioneer and deliver end-to-end power and cooling technologies to help our customers stay resilient, optimised, and future-ready.

With our industry-leading innovative technologies and global services network, we are fueling the revolution of the digital world - keeping technology ecosystems running efficiently and without interruption.
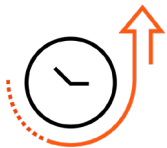
~$8.0B USD revenue

130+ countries served

~31,000 employees globally

60+ years in the industry

Note: [1]Based on FY 2024 revenue. All else, company information as of December 31, 2024.

Uniquely positioned to enable the critical digital world

Application expertise and customer collaboration to envision and build **future-ready infrastructure**.

Most complete portfolio and continuous innovation of products, services, and customisable solutions.

Proven **superior reliability and quality** to deliver continuous and optimal performance.

Robust operations, supply chain and services presence globally.

Industry-leading **global services network** to safeguard uptime and support.

Critical Power Solutions

We offer a complete range of efficient, reliable UPS systems that can be configured to meet the specific needs of your critical application.

Vertiv™ Liebert® GXE (1-10kVA)

Essential and affordable UPS for high performance power protection.

Features and benefits:

Key Performance Features:
- High efficiency: Up to 94% in online mode and 98% in ECO mode.
- High output power factor (0.9).
- Fast recharge time: 3-4 hours to 90% capacity for internal batteries.
- Wide input frequency operation (40-70Hz) without power derating.

Design & Flexibility:
- Flexible rack/tower convertible design with gravity-sensing LCD display.
- Compact form factor.
- Extended runtime capability with up to 4 External Battery Cabinets (EBC).
- Hot-swappable, user-replaceable internal batteries.

Connectivity & Management:
- Full-color graphic LCD interface.
- Remote monitoring through Vertiv™ Liebert® IntelliSlot™ cards.
- Free management software:
    - Vertiv Power Assist for local UPS monitoring.
    - Vertiv Power Insight for remote network management.
    - Vertiv™ Life™ Services for maximised availability.

Power Output:
- (8) IEC60320 C13 outlets (all models).
- (1) C19 outlet (3kVA model).
- Automatic internal bypass for enhanced reliability.

Additional Benefits:
- Affordable and reliable solution.
- Easy to manage and expand.
- Optimised energy consumption.
- Multiple service options including warranty extensions.
- Adjustable 4-post rack mounting kit included.

Vertiv™ Liebert® GXT5 VRLA and LIB (750VA – 20kVA VRLA and 1-10kVA LIB)

Intelligent and efficient double conversion online UPS offers the highest level of power protection.

Features and benefits:
- Designed as a premier on-line double conversion UPS with both VRLA and Lithium battery options, it stands out as an ideal choice for mission-critical applications, ensuring reliable power supply.
- Flexible form factor for each model in the range, allowing to easily switch between rack or tower configuration dependent on requirement.
- The inclusion of a unity output power factor enhances its capacity to deliver power efficiently.
- Featuring a user-friendly LCD multi-language colour display with gravity sensing, providing an intuitive interface for ease of operation.
- In on-line (VFI) mode, the UPS achieves an impressive efficiency of up to 95.9% at full load, ensuring optimal performance.
- With an active eco mode, efficiency reaches up to 99%, promoting energy savings and environmental sustainability.
- GXT5 5-10kVA models feature an integrated External Bypass maintenance unit, allowing seamless transition to the utility grid for easy UPS replacement.
- Parallel operation is available for 10-20kVA models, allowing the ability to create redundant UPS solutions.
- The controllable and programmable output sockets offer flexibility in managing power distribution based on specific needs and improve energy savings.
- Can extend run time significantly with the capability of connecting up to 10 external battery cabinets.
- The UPS is equipped with the capability to automatically detect external battery cabinets, enhancing its adaptability for extended run-times.
- Operating at full power up to 40°C, and even up to 50°C with derating, it ensures reliable performance in various environmental conditions.
- Intelligent communication readiness enhances connectivity, enabling effective communication with other systems and devices.

Vertiv™ Liebert® ITA2 VRLA and LIB (5-40kVA VRLA and 5-30kVA LIB)

Flexible power protection for rack or tower installation.

Features and benefits:
- Fully-digital control with high output voltage precision.
- Manages all the nine power problems including sagging, spikes, and fluctuations.
- Built-in Ethernet port includes compatibility with intelligent cards (SIC card, RDU SIC cards, etc.,) with browser support.
- Built-in-power charger for fast charging reduces battery charging time.
- Prolonged backup time through cascaded connection.
- Quality-tested for 1000 hours for extreme durability and extreme tolerance even in stringent condition.
- High Availability.
- Parallel operations are available for the entire ITA2 range, enabling redundant UPS solutions.

Early Warning of UPS System Status
- Multiple audible and visual alarms immediately alert you to critical issues.

Periodic Battery Testing
- Provides automatic and manual self-diagnostic battery testing for peace of mind.

Power-Factor Correction
- Prevents noise, harmonics, and distortion from being passed on to connected loads or from being fed back to the utility.

Lightning and Surge Protection
- The transient voltage surge suppression circuitry inside the Liebert® ITA2 provides additional protection for the connected equipment.

Wide Input Voltage Window
- Prolongs battery life by allowing the UPS to maximise the use of utility power before transferring to the battery when the input voltage exceeds the specified limits.

![Vertiv logo]

Vertiv™ Liebert® EXS (10-80kVA)

Optimised and integrated three-phase UPS solution with high efficiency power protection.

Features and benefits:
- Output power factor up to 1.
- Double conversion efficiency up to 96.2%.
- Eco mode efficiency up to 99.3%.
- Compact footprint with multiple internal runtime configurations.
- Available in 3/3 and 3/1 versions (10-20kVA).
- Integrated maintenance bypass.
- Integrated input and output breakers/switches.
- Parallel capability for capacity and redundancy.
- Lithium-ion battery compatible.

Vertiv™ Liebert® MTP (10-200kVA)

Reliable and compact monolithic tower UPS

Features and benefits:
- Compact footprint with internal runtime configuration (applicable for up to 40kVA). No need to install external batteries.
- Unity output power factor for additional power availability.
- Up to 95.5% efficiency in Double Conversion mode.
- Up to 98.5% efficiency in Eco mode.
- Powerful charging capability in minimum battery recharging time.
- Wide input voltage range, reducing battery operation and extending battery lifetime.
- 0.99 input power factor avoids the oversizing of the supply system.
- Integrated switch assembly.
- High overload capability.
- Scalable up to 4 units with common battery bank.
- Integrated communication port for remote monitoring.
- 7-inch touch screen LCD display[1].
- Voice warning[2] / alarm code notification.

  [1] For 10-40kVA and 80kVA, 5-inch touch screen display.
  [2] Applicable for 10-40kVA and 80kVA.

Vertiv™ Liebert® EXM2 (100-250kVA)

Highly reliable and efficient UPS designed to provide industry-leading performance.

Features and benefits:
- Saves cost with up to 97% and 99.2% efficiency in double conversion and ECO mode, respectively; and up to 98.8% efficiency in dynamic online mode.
- Space-saving and compact versus legacy systems.
- Can sustain high ambient temperatures of up to 50˚C.
- Diverse applications: in-row- room, and against-the-wall.
- Flexible battery configuration, compatible with lithium-ion batteries and adapts to two-wire connection.
- Scalable up to 1.5MW.
- Seismic compliant (with optional kit) .

Vertiv™ Liebert® APM Plus (50-500kVA)

The next generation versatile and modular UPS fit for row and room applications efficiency.

Features and benefits:
- Remarkable double conversion efficiency up to 97%.
- Eco mode efficiency up to 99%.
- Flat efficiency curve.
- High power density.
- Fit for the row or room applications.
- Modular and scalable.
- Hot-swappable power modules and bypass module.
- Distributed module control system.
- Unitary output power factor and symmetrical power factor diagram.
- Reliability boosters - robust air channels, PCBs embedded with conformal coating.
- Integrated parallel and load bus synchronisation.
- Intelligent paralleling function.
- User-friendly 9-inch LCD touch screen display.
- Supports UPS self-capacity test without load banks.

Vertiv™ Liebert® APM2 (30-600kVA)

Efficient, scalable, technology driven power solution for critical facilities.

Features and benefits:
- Remarkable double conversion efficiency up to 97.5%.
- Dynamic online mode efficiency up to 98.8%.
- Unitary output power factor.
- High density design.
- Modular and scalable.
- Hot-swappable power modules, bypass modules, and communication modules.
- Load compatibility from 0.5 lag to 0.5 lead.
- Integrated parallel capability up to 6 frames without CSI.
- Seamlessly operates up to 50°C with auto-derating above 40°C.
- Large, intuitive 9-inch full-color touchscreen HMI.
- Intelligent paralleling mode.
- Optimised MTTR <0.5h.
- Flexible battery configuration; adapt internal VRLA & Lio battery modules for 120k; external for 300/600k.
- Predictive maintenance notifications.
- Monitors real-time waveform from GHMI and captures waveform during the fault.
- Supports self-capacity test.

Vertiv™ Liebert® EXL S1 (300-1250kVA)

Enhanced design and improved efficiency

Features and benefits:

- Extraordinary double conversion efficiency up to 97%.
- Intelligent ECO mode efficiency above 99%.
- Intelligent paralleling feature optimises efficiency at partial load.
- Maximised active power at unity power factor.
- Compact footprint for optimum space utilisation.
- Backward compatibility with previous 80-NET generation.
- ETL listed products can claim back 100% first year capital allowance.
- Transformer-free design.
- Full IGBT three-level NPC2 topology.
- Excellent input performances:
  - PF > 0.99
  - THDi < 3%
- Automatic output power upgrade of up to +10%.
- Output PF up to one and symmetrical respect to zero.
- Three and four wire electrical compatibility.
- Parallel up to 8 units.
- Centralised and distributed parallel capabilities.
- Intelligent paralleling.
- Seismic compliance.
- Vertiv™ LIFE™ Services native.

Vertiv™ Liebert® PowerUPS 9000 (250-1250kVA)

High performance, modularity, resilience, reliability and efficiency for your power needs

Features and benefits:

- **No Interruptions:** It offers hot and easy serviceability that leads to no interruptions even during maintenance or power upgrades.

- **125kVA Power Modules:** Customisable power setup to scale with ease and speed depending on site construction progress and real load demand.

- **Rich Digital Experience:** Service empowered by data across entire life cycle with optional Vertiv™ LIFE™ monitoring system.

- **Energy Source Integration:** It readily integrates different backup power sources, including lithium-ion and nickel-zinc.

- **Wide Input Voltage Range:** This reduces battery usage and helps prevent premature replacement due to aging.

- **High-Power Factor:** This ensures you get maximum kW, for more usable power.

- **Hotswappable Modules:** Enable seamless maintenance and upgrades without downtime.

- **Design Reliability:** It includes dedicated segregated controls, enhanced diagnostic tools (Waveform Capture, History Log), and verification/validity tests.

- **High Operating Efficiency:** This reduces Total Cost of Ownership (TCO) and improves Power Usage Effectiveness (PUE).

- **Complete Service Packages:** Complement this UPS system with complete and in-depth support throughout your UPS life for optimal performance.

Vertiv™ Liebert® Trinergy™ (1500-2000kVA)

Vertiv's most reliable, resilient and efficient UPS in its product class

Features and benefits:

- **No System Downtime:** It facilitates maintenance and power upgrades without interruption, leading to enhanced operational availabulity and preventing unplanned outages.

- **Distributed Batteries:** This enhances fault tolerance and system availability by improving performance with various failure modes.

- **Capacity & Installation Flexibility:** From 1.5MW up to 20MW, this power solution can adapt to your system needs in power capacity, redundancy and design.

- **Energy Savings & Management:** This compact, optimised power solution with simple interface offers maximum energy savings and rapid return on investment.

- **Rich Digital Experience:** Service empowered by data across entire life with cycle with optional Vertiv™ LIFE™ Advances Incident Management and Condition Based Maintenance.

- Transformer-free design with full IGBT three-level double conversion technology to meet the volatile demands of next-generation AI systems.

- Vertiv™ Trinergy UPS operates with output power factor up to 1.

- Advanced diagnostic and user interface with enhanced event analysis and coloured multi-language touch screen display.

- Skid-mount and containarised power solutions for easy deployment.

- Innovative continuous-duty booster converter ensures uniterrupted power supply even at full load indefinitely.

- Options for integrated backfeed protection device and DC ground fault detection.

Thermal Management Solutions

Intelligent, comprehensive approach to managing and controlling heat across your mission-critical facilities.

Vertiv™ Liebert® SRC-G (3-11kW)

Thermal management solution for small equipment rooms.

Features and benefits:
Advanced Controller
- Sequencing up to 8 units.
- Monitoring and alarm generation.
- User friendly interface.
- Auto-startup on power failure.
- Remote monitoring feature.
- Authorised access control.

Highest Efficiency
- Efficient scroll compressor working on green refrigerant.
- High efficiency EC fan with high airflow (> 255 CMH/kW).
- Advanced coil design delivering high SHR > 0.9.

High Ambient Operation
- Sustain up to 45°C outdoor temperature.
- Hydrophilic coated coil.
- Metallic construction.

Easy Maintenance & Service
- Self diagnostic feature.
- Ease internal access to parts.
- 24hrs call centre.
- Global presence with experienced personnel.

Liebert® SRC-G comes with Intelligent Controller.
- The micro-processing controller has the following features:
- It can monitor and display the operation status of Liebert SRC unit to maintain the environment within the range of setpoints.
- Equipped with a 128×64 dot graphics color screen with white back-light with a user-friendly interface.
- Provides a two-level password protection to prevent unauthorised operation.
- Provides multiple functions, including self-recovery upon power failure, high & low voltage protection, phase loss protection and protection against phase-reversal.
- Accurately record the run-time of important components through menu operation.
- Stores up to 99 historical alarm records.
- Configured with an RS485, using MODBUS-RTU communication protocol.

Vertiv™ Liebert® HPS (4-14kW)

High performance air conditioning.

Features and benefits:
- Features displacement cooling technology for optimal air distribution and enhanced efficiency.
- Incorporates high-performance components for reduced energy consumption.
- Offers compact free cooling design to maximise space utilisation.
- Available in multiple configurations to meet specific installation requirements.
- Provides reliable temperature control for critical environments.
- Delivers 4kW to 14kW cooling capacity with eco-friendly operation.

Vertiv™ Liebert® LPC (15kW)

Nurturing every breath of today's precision equipment.

Features and benefits:
- High-efficiency brushless DC motor designed for optimal speed control.
- Precise environmental control with ±0.5°C temperature and ±2%RH humidity accuracy.
- Advanced protection features including auto-restoration and voltage safeguards.
- Comprehensive monitoring through multiple remote sensor capability (3-5 sensors).
- Variable capacity control maintains constant superheat and enhances dehumidification.
- Energy-efficient EC fans with automatic speed modulation for synchronized operation with compressor.

Vertiv™ Liebert® HPM (5-29kW)

Air conditioning units are designed for top level performance and reliabity.

Features and benefits:
- **Cooling Versions: Vertiv™ Liebert® HPM** is available both in chilled water or direct expansion execution, in air cooled and water cooled versions to suit various site installation requirements.

- **Latest generation EC fans:** Powerful fans allow to increase cooling density with the same unit footprint.

- **Teamwork function:** The communication between the units optimises system working mode and improves efficiency.

- **Virtual display:** Through a web browser, all the functionalities of the standard display can be replicated.

- **Efficiency:** Vertiv™ Liebert® HPM internal design has been engineered to optimise the aerodynamic impact thus reducing the unit energy consumption.

- **Maintenance:** The user-friendly interface and the frontal access for mechanical interventions shorten maintenance time.

- **Compactness:** The compact design ensures the best performance as a result of fluid-dynamic analyses and laboratory testing.

- **Vertiv™ Liebert® iCOM™ Smart Control:** The control manages and optimises the overall system and is fully-programable via an advanced and user-friendly touch display that can be linked with common BMS protocols, allowing for enhanced remote supervision.

Vertiv™ Liebert® DM (7-27kW)

High performance thermal management solution for small technological rooms.

Features and benefits:
Energy saving
- High sensible heat ratio and high energy efficiency.
- Equipped with Copeland Scroll Compressors
- Provides stable temperature and humidity condition.
- Fans for outdoor units feature easy to access full range speed regulation*.
- Manageable and uniqe Eco-Mode option*.
- Energy saving component options*.
- V-shaped evaporator**.
- Group control function offered for units of the same model.
  * for 22kW & 27kW models
  ** for 17kW, 22kW & 27kW models

Space Saving
- Small footprint – 100% front door access .

User Friendly and Maintenance Free
- 24/7 operation capable.
- Ultra wide input voltage range: multiple power protection functions.
- Environment adaptability: adoption to outdoor temperature while meeting cooling requirements.
- Adaptive to heat dissipation of the main equipment.

Intelligent Controller
- 7-inch HMI Colourscreen & easy to use interface.
- 3 level password protection to prevent unauthorised operation.
- Graphical representation of return air temperature & relative humidity display in real time.
- Email and SMS notification (thru Vertiv™ Liebert® RDU™) for remote monitoring functions.
- Store up to 999 alarm history.

Vertiv™ Liebert® CRV4 (12kW-66kW)

Precision in-row cooling for high-density data centres

Features and benefits:
- Evaporator coil design uses a finned tube evaporator with high heat dissipation efficiency.
- DC inverter compressor technology provides infinite variable capacity modulation between 30%-100% to ensure precise repose to dynamic changing cooling demand.
- Environment-friendly R410A refrigerant
- High-efficiency EC fans save energy and hot swappable design allows replacement while unit is running.
- Electronic Expansion Valve (EEV) allows for integrated and optimal variable capacity control.
- Small footprint and high reliability.

Vertiv™ Liebert® PEX4 (35-120kW)

Unsurpassed thermal management solution with premium efficiency.

Features and benefits:
Smart Control System
- Enables unit coordination.
- Optimises room conditions.
- Enhanced operational reliability.

Efficient Cooling Design
- Variable speed optimisation for part load efficiency.
- Expanded operating envelope.
- Intelligent oil circulation with R410A refrigerant.

Advanced Cooling Technology
- "V" shaped microchannel coil design.
- 40% smaller and more efficient.
- 50% less refrigerant usage.
- Reduced pressure drop and power consumption.

Energy Efficiency
- High-efficiency EC fan.
- 30% energy savings.
- EEV (Electronic Expansion Valve) technology.

Vertiv™ Liebert® PEX3 (30-100kW)

Economical precision solution in a compact footprint.

Features and benefits:
Microchannel Coil
- 40% smaller and more efficient.
- Uses 50% less refrigerant.
- Improved heat transfer with less power consumption.

Electronic Expansion Valve (EEV)
- Enables variable capacity control.
- Maintains constant superheat.

EC Fan Technology
- High-efficiency centrifugal design.
- Automated speed modulation saves 30% energy.
- Enhanced efficiency in downflow units.

Design & Capacity
- 15-30% smaller footprint.
- Capacity range: 30-100kW.
- Available in up/downflow configurations.

Performance
- Precise temperature and humidity control.
- Advanced controller included.
- Uses eco-friendly R410A refrigerant.

Vertiv™ Liebert® HPW (15-165kW)

High performance wall-mounted air conditioning.

Features and benefits:
- Reliability.
- Site shutdown prevention.
- Extreme environmental conditions protection.
- Remote site conditions control.
- Flexibility.
- Adaptive to all site layouts.
- Suitable forcritical environments.
- Respecting the surroundings.
- Total Cost of Ownership.
- Target fast return on investment.

Vertiv™ Liebert® PDX (15-165kW)

Direct expansion perimeter unit.

Features and benefits:
- Industry-leading floor mount cooling unit delivering outstanding efficiency and performance.
- Adaptable system with multiple configurations to suit any data centre environment.
- Optimised for data centres with variable loads and temperatures, ideal for cloud computing facilities.
- Available in both air-cooled and water-cooled versions with multiple freecooling options.
- Integrates with Liebert® EconoPhase™ to significantly reduce energy costs.
- Precise temperature control.
- Fresh air economiser function.
- Automatic optimisation.
- Advanced efficiency through:
  - Latest refrigerant technology.
  - Electronic Expansion Valve.
  - Next-generation EC Fans.

Vertiv™ CoolPhase Perimeter DX Floor Mount (10-80kW)

High efficiency design, low-GWP and non-flammable R513A refrigerant.

Features and benefits:
- Maximised cooling continuity, quiet operation and reliable continuous performance.
- Low-GWP, non-flammable R513A refrigerant, reduce carbon footprint.
- Continuous modulation of the performance to achieve maximum efficiency in both full and part-load operations.
- Optimised cooling density: maximum cooling capacity with minimal footprint.
- Compact design to facilitate transportation and installation.
- Wide range of airflow and system configurations, providing maximum flexibility and ease of implementation.
- Designed for a long service lifetime duration.

Vertiv™ Liebert® PCW (25-220kW)

Chilled water units optimising data centre efficiency.

Features and benefits:
High Efficiency
- With optimised aerodynamic design (minimum internal pressure drops), and the new EC Fan 2.0, Vertiv™ Liebert® PCW can perfectly match the cooling needs of the server with minimum power consumption. Liebert® PCW delivers optimum energy efficiency and 70% saving when compared to standard market solution with EC fans.

EC Fan
- The unit is fitted with one (two, three or four) direct-driven, high efficient, single inlet, backward curved centrifugal 'plug' type innovating EC fan(s). The fan(s) have an impeller with corrosion resistant curved blades made of fibreglass plastic, which dramatically reduce the noise level and increases the unit efficiency.

Intelligent Controller with HMI Display
- The 9 inch HMI touch screen is a standard offering for 250 kW model and it is also available for other models on request.

Aeraulic Design Efficiency
- Specially designed cooling cabinets for lower air pressure drop resulting in a higher NSEER. A unique inner aerodynamic architecture - from the coil angle to the electrical panel - achieving an outstanding competitive advantage and state-of-the-art efficiency.

Easy Installation & Maintenance
- Liebert PCW simplifies installation & maintenance for operational efficiency. Complete frontal access of cooling coil, filters, user friendly electrical connection, and futhermore, to simply access the fans during installation and replacement. The Liebert PCW maintenance kit facilitates servicing, reducing repair time, and possible downtime.

Vertiv™ Liebert® AHU (250- 500kW*)

High capacity cooling solution.

Features and benefits:
- Fast deployment with lower initial cost.
- Modular units.
- No raised floor required.
- Increased chiller efficiency.
- Operates with higher return air temperature.
- Optimized cooling.
- With hot aisle containment.
- Robust and resilient structure.
- Sheet metal 1.5G anti-seismic is used.
- Space saving.
- Placed outside data hall.

Vertiv™ CoolLoop RDHx

Rack-based chilled water rear-door heat exchanger available in active or passive models from 35 to 80kW.

Features and benefits:
- The compact design minimises construction costs and resource consumption, freeing up valuable space in the data centre.
- The fan module's low power consumption allows cost and energy efficient operation.
- For lower heat loads, the passive solution with zero electrical power consumption maximises the cooling capacity.
- The perfect complement to direct-to-chip liquid cooling, efficiently absorbing any remaining heat dissipation from the air-cooled IT equipment.

Vertiv™ Liebert® XDU100

Vertiv™ Liebert® XDU070

Vertiv™ Liebert® XDU1350

Vertiv™ Liebert® XDU (70-1350kW)

Next generation liquid cooling distribution technology.

Features and benefits:
- Compact footprint allows for in-row deployments.
- Top or bottom liquid supply & return connections.
- Integrated 25 micron filter.
- Large 7" responsive color touch screen display.
- Precise temperature control to eliminate thermal shock for server CPU and GPUs.
- Intelligent flow monitoring with alarm features.
- Closed-loop pipe design with integrated leak detection.
- Easily accessible fill port and drain locations.
- Innovative stainless-steel design and hygienic couplings help ensure secondary fluid network integrity.

Vertiv™ Liebert® EFC (100- 450kW)

The next generation indirect evaporative free cooling unit.

Features and benefits:
- Game changer polymer plate heat exchanger.
- Dual mode flexibility, switch in a click.
- Multi-step evaporative modes.
- Cooling with the future in mind.
- All under your control.
- Fitting seamlessly.

Vertiv™ Liebert® VIC (25kW-240kW)

Innovative and highly efficient liquid immersion cooling solution for high-density infrastructure.

Features and benefits:
- Ultimate efficiency.
- Industry-leading PUE of ~1.05.
- High cooling capacity (up to 100kW) at 35°C water.
- Unlimited scalability potential.
- Superior coolant technology.
- ElectroSafe Dielectric Liquid.
- Zero maintenance lifecycle.
- NFPA 704 safety rated (0-1-0).
- Operational excellence.
- Non-toxic, odorless operation.
- Chemical and electrical inertness.
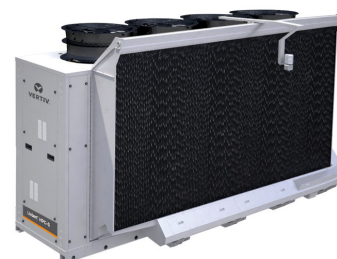- Fire-resistant properties.
- Cost-effective scaling.

Vertiv™ Liebert® AFC (650-2200kW)

The inverter screw chiller range with low-GWP refrigerant.

Features and benefits:
- An environmentally friendly refrigerant with a low impact on the environment.
- Low in-rush current and higher part load efficiency, allowing for savings in the electrical infrastructure design and lower running costs.
- The possibility of using pure water inside the data centre lowers the risk of environmental pollution and grants lower installation costs.
- Increased free cooling capacity and more free cooling hours lead to a better seasonal efficiency and lower operating costs.
- Guaranteeing cooling continuity.
- Enlarged capacity up to 2200kW in a single frame: fewer units to be installed, installation costs significantly reduced.
- Global solution suitable for any climatic condition.

Vertiv™ Liebert® HPC-S (60-400kW)

Air-cooled, freecooling and adiabatic freecooling chillers for highly efficient data centres.

Features and benefits:
- The freecooling and adiabatic freecooling operation allows to reduce the annual use of compressors, thus achieving top efficiency levels.
- In the adiabatic models, the highly efficient adiabatic wet pads humidify air entering the freecooling and condensing coils, increase freecooling operation and mechanical efficiency.
- Audible noise is reduced to a minimum as a result of EC fans and special acoustic insulation.
- The Fast Start option ensures full restoration of chiller capacity within 100 seconds from a power re-start.
- The Supersaver software logic embedded in the iCOM control leverages on the communication with floor mount units to maximise efficiency at system level.

Vertiv™ CoolLoop Trim Cooler (850 to ~3000kW)

The free cooling AI and densification-ready cooler

Features and benefits:
- Up to 40°C supply water temperature.
- Up to nearly 3 MW of cooling capacity in a single, compact frame.
- Easy coupling with Vertiv™ CoolChip CDU and Vertiv™ CoolCenter immersion systems.
- Very low-GWP R1234ze refrigerant (GWP = 7 as per IPCC AR4).
- Free cooling coils optimised for high ambient temperatures incorporating microchannel heat exchangers for superior heat transfer.
- Inverter-driven technology.
- Active harmonic filters in the electrical panel.
- Wide range of external temperatures from -20°C to over 52°C.

VERTIV.

Integrated Solutions

Rapidly deploy and manage IT infrastructure in just weeks without building new data centre space. Our Integrated Solutions, including prefabricated rack, row, aisle, and modular data centres, can meet your IT needs with significant savings based on proven configurations.

Vertiv™ SmartCabinet™ 2

Self-contained, pre-configured, pre-engineered and factory tested infrastructure solutions for data centres and telecom networks.

- **Fully integrated** - Factory assembled and tested; no dedicated IT room is required.

- **Dust protection and noise insulation** - Fully closed operation, cold/hot air is circulated within the rack for better temperature and humidity control; highly suitable for office environment.

- **Highly Efficient** - Built-in high efficiency UPS and cooling equipment.

- **Fast deployment** – Provides faster deployment and is ready to use from day one, removing the need to build, construct and design computer rooms.

- **Central Management** – optional feature of RDU-M that provides central management of multiple SmartCabinet sites.

 Key Applications: Banking, healthcare, government, education and edge sites.

Vertiv™ SmartCabinet™ 2-E
with self-contained cooling

Other models:

Vertiv SmartCabinet Premium
with external condensers

Vertiv SmartCabinet 600 width
with external condensers

Vertiv SmartCabinet 800 width
with external condensers

Scan QR Code to
Learn More

Vertiv™ SmartRow™ 2

Vertiv™ SmartRow™ 2 brings an innovative approach to micro modular data centre systems in a row-based design. It takes over the previous generation of products' set-up to provide users with a more compact, more reliable, safer, more convenient technology room deployment experience. The solution comes with the fastest deployment rate, lowest operating cost and the lowest learning curve for operation.

- **Efficient Cooling System** - Fully-enclosed design comes with cold aisle and hot aisle containment. DC inverter compressor technology offers infinite cooling capacity modulation to match with cooling demand.

- **Flexible and Fast Deployment** - Simple and fully-integrated infrastructure with space-saving benefits.

- **Intelligent Monitoring and Management** - Integrated centralised infrastructure management for added peace of mind.

 Key Applications: Data centre/colocation, education, government, healthcare, manufacturing, retail, and banking.

Other models:
Vertiv SmartRow HPC

Scan QR Code to
Learn More

Vertiv™ SmartAisle™ 3

Vertiv™ SmartAisle™ stands out as a cutting-edge modular data centre, offering highly efficient precision air conditioning, UPS, and a versatile soft busway power distribution system designed for medium and large data centre applications. This AI-powered infrastructure solution is crafted to streamline the deployment process and maintain peak operational efficiency.

- **Quick Deployment** - Prefabricated carriage with in-built innovative flexible busway, Smart POD, rPDU and sensors.

- **Space-saving** - Power distribution panel and monitoring module helps save data centre white space.

- **Unmatched Efficiency** - With in-row cooling and a highly-efficient UPS.

 Key Applications: Banking, healthcare, education, government, healthcare, manufacturing, telecom, transportation.

Scan QR Code to
Learn More

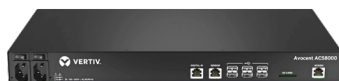# IT Management & Environmental Monitoring Solutions

Our solutions provide comprehensive functionality, scalability and security across the facility. By expanding data access and analysis, we provide unprecedented insight which lowers costs and enables rich remote management while ensuring security.

Vertiv™ AV Series KVM Switch

Features and benefits:
- Local port: support for USB and/or PS/2 user keyboards and mice.
- Single solution: support for USB, PS/2, Sun and serial target devices in a single solution.
- Graphical, multilingual OSD: advanced, graphical OSD eases system configuration and server selection.
- Space-saving: CAT-5, thin cabling saves space in the rack and allows up to a 100-foot distance between the server and the switch.
- Intelligent cabling: Server interface modules and integrated access cables automatically assign and retain unique server names for each attached server.
- Powerful user access control: An administrator can grant KVM access to only certain users. The administrator can also limit KVM access to only specific targets on the switch. The AV Series 2030 switch supports smart card/CAC authentication to target devices, enabling the extension of two-factor.

Vertiv™ Avocent® High-performance KVM Switch

Features and benefits:
- Supports USB2.0 devices.
- Supports transmitter DVI local loop output (local KVM interface) with dedicated selection button.
- Support full-HD video transmission (1920×1200 @ 60HZ).
- Low latency of <1 frame per second.
- Supports multi-channel lossless compression audio formats.
- Matrix and extension modes.
- Drawing and video modes.
- Integrated 2-Port gigabit switch.
- Virtual IP matrix function.
- On-screen display menu supports screen preview.
- RS232 port transmission.
- Optional IR wired remote control kit.

Vertiv™ Avocent® MergePoint Unity™ KVM over IP Switch

Features and benefits:
- Advanced remote management provides secure and remote, out-of-band connections directly to the physical KVM, USB and serial ports to complement existing in-band software management tools.
- Meet service level agreements and minimise downtime through a unified approach that provides IT administrators a faster method to diagnose, reconfigure or restore equipment.
- Virtual Media support enables USB media such as CD-ROMs, flash memory and external drives to be virtually attached to a remote server's USB port.
- CAC/Smart Card Support allows remote or local users to map a USB-based smart card reader to the attached servers and authenticate using their smart cards.
- FIPS 140-2 compliance: based on the FIPS 140-2 validated cryptographic modules (certificate number 1051).

Vertiv™ Avocent® ACS Serial Console

Features and benefits:
- Secure in-band and out-of-band network remote management.
- Remotely manage and control IT assets from anywhere in the world.
- Maximise productivity while providing scalability and reducing operational costs.
- Ensure compliance with data centre access and security policies – customisable, multiple access levels.
- Fast, automated configuration with zero touch provisioning.
- Access and troubleshoot remote locations using automatic network failover to cellular.
- No need for adaptors with automatic Cyclades™ and Cisco pin-out conversions.
- Expanded support for Rack PDUs from Vertiv, ServerTech, APC, Raritan and Eaton.
- Support for Vertiv GXT4 UPS systems.
- Integrated support for 1Gb SFP fiber modules
- 8 USB ports to support new IT equipment and external devices.

Vertiv™ Avocent® CLRA Local Rack Access Control

Features and benefits:
- Space savings: Eliminates the need for cumbersome and inefficient crash cart access, with optional pre-integrated KVM that requires only 1U rack space for the entire package.
- Reduce downtime: Manage up to 16 servers with the optional 16-port KVM, allowing rapid troubleshooting of server issues.
- Secure access: Limit server access to authorised personnel by setting with individual users and passwords.
- Ease of use: High-definition (1920 x 1080) 18.5" LED panel, full-sized keyboard, touch pad and USB pass through ports provides a superior computing experience.
- Easy installation: Tool-less design for ease of installation.
- Local rack access console.

Vertiv™ Liebert® RDU501 Monitoring Data Aggregator

Features and benefits:
Monitoring of the health and status of the equipment.
- Monitoring of environmental conditions i.e. temperature and humidity, leak and smoke.
- Monitor the improved communication speed in transmitting control or commands to the equipment and parameter setting.
- Records data and logs of historical information of alarms and notifications.

3rd Party Communications:
- SNMP.
- Modbus 485.
- Dry contacts.
- Analog signals.

Other variants
- RDU-M.
- RDU-EX.

Management Software

Our solutions provide comprehensive functionality, scalability and security across the facility. By expanding data access and analysis, we provide unprecedented insight which lowers costs and enables rich remote management while ensuring security.

Vertiv™ Avocent® DSView™ Solutions

Centralised IT management for secure remote access.

Features and benefits:
- Secure, remote, centralised data centre management.
- Multi-device support.
- Virtual media support.
- Integrated solution for KVM and power control.
- Simple, fast and reliable user interface.
- Access service processor managers.
- Notifications and scheduling.
- Multi-platform support.
- Flexible authentication/access control.
- System/User logs.
- Selectable encryption modes.

Vertiv™ Environet™ Alert

Multisite environmental monitoring management platform.

Features and benefits:
- Increase flexibility: Vendor neutral SNMP device management to simplify deployment.
- Affordable solution: Environet Alert is a budget-friendly yet powerful solution.
- Fast and easy configuration: Intuitive interface to manage your own system configuration and changes.
- Customisable: Set your own views with our modern user interface.
- Connect your operations: Use our API to connect to remote DCIM and building management systems.

Vertiv™ Power Insight

UPS and PDU monitoring freeware.

Features and benefits:
- Alarm notifications via email, SMS and on-screen icons.
- Shutdown protection for individual and virtual servers.
- Access to each device web interface.
- Alarm views with data that can be sorted or filtered.
- Summary data of individual devices.
- Dashboard views of key data points such as capacity load percentage, output current, battery percentage charge and battery time remaining.
- Sequential server shutdown function to extend runtime for the most critical loads.
- Vertiv™ Power Insight provides easy integration into VMware's vSphere management platform.

Vertiv™ Environet Connect

Cloud-connected monitoring software for data centre infrastructure.

Features and benefits:
- Cloud-connected, web-accessible interface.
- Increase operational awareness and visibility into critical equipment.
- Monitor devices quickly and easily via an intuitive, user-friendly UI.
- Save time with easy setup and monitoring.
- Identify trends to plan and optimise operations across all physical locations.
- Communicate with critical equipment via IP-connected devices (via SNMP).
- Use global navigation to quickly see what is most important in each facility.
- View alarm and device data for multiple tenants with enhanced management features.

Network Cards

For remote visibility and monitoring: 'Vertiv supplies all types of network cards providing web access, environmental sensor data and alarm notifications for Vertiv equipment. These cards allow customers to enable third-party protocols such as SNMP, BACnet, Modbus, and YDN23, for interfacing with building management or data centre management system applications.

Vertiv™ Liebert® Intelislot RDU101 Communications Card

The Vertiv™ Liebert® IntelliSlot RDU101 Communications Card enables communication between Vertiv™ products such as Trellis™ Enterprise, Trellis™ Power Insight and LIFE™ Services. It provides web access, data via SNMP and Modbus TCP for Vertiv equipment. Environmental sensor data is provided via web and SNMP.

Vertiv™ Liebert® IS-Unity Communications Card

Provides web access, environmental sensor data, alarm notifications, and third-party interface protocols for Vertiv equipment, and integrates with Vertiv™ LIFE™ Services, Trellis, and Liebert Nform. The IS-UNITY-DP (dual protocol) card allows customers to enable two of the supported third-party protocols (SNMP, BACnet, Modbus, and YDN23) for interfacing with building management or data centre management system applications.

Racks and Containment

Our rack and containment products deliver flexibility, adaptability and cost-effective solutions to your specific data centre requirements.

Vertiv™VE Rack

The Vertiv VE Rack is a space-saving, free-standing server rack solution capable of supporting multiple configurations. Designed to efficiently combine cooling, power distribution, cable management, and environmental monitoring infrastructure into one enclosure. Built to provide optimum versality while increasing efficiency suited for demanding IT environments. Our rack and containment products deliver flexibility, adaptability and cost-effective solutions to your specific data centre requirements.

Features and benefits:
- Strong and durable nine-folded solid frame profile which can hold a static load of up to 1,600 kg.
- 75% open high perforated doors for optimal air flow.
- Convenient tool-less installation of cable and air flow management.
- Internal and external battery configurations for optimised back up time management.
- Fast deployment leveling feet heavy duty caster wheels for easy movement.

Vertiv™Geist™ SwitchAir

Passive airflow management device.

Features and benefits:
- Targeted airflow.
- Airflow management.
- Fast installation.
- Easy selection.

Power Distribution
Rack Power Distribution Units

Vertiv™ Geist™ offers a wide range of monitored and switched rPDUs equipped with a network interface to allow for remote monitoring, management, and automated alerts. These units offer important insights on how to improve data centre energy efficiency while enabling you to prevent downtime, providing notifications when user specified thresholds for power and environmental conditions are breached.

Vertiv™PowerIT Basic Rack PDU

Features and benefits:
- Every unit is 100% tested for reliability and functionality
- Available in vertical and horizontal rackmount form factors.
- Flexibility to meet a broad range of requirements, with a variety of electrical and receptacle configurations available.
- Standard three-year warranty, upgraded to five years with product registration.

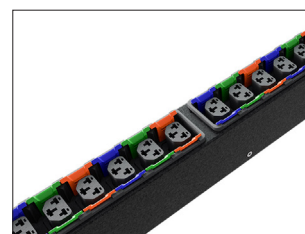## Vertiv™PowerIT Metered Rack PDU

Features and benefits:
- Every unit is 100% tested for reliability and functionality.
- Avoid accidental overloads when deploying or moving critical server equipment with instant access to power consumption metrics on the local LED digital display.
- Available in vertical and horizontal rackmount form factors.
- Standard three-year warranty, upgraded to five years with product registration.

Vertiv™PowerIT Monitored Rack PDU

Features and benefits:
- Every unit is 100% tested for reliability and functionality.
- Reliable power distribution with local and remote power monitoring options offer quick access to critical power usage information to evaluate energy usage trends and maximise uptime.
- Upgrade your hot-swappable monitoring device on the fly to leverage new technologies and accommodate changing business needs without having to replace entire power strips.
- Standard three-year warranty, upgraded to five years with product registration.

Vertiv™PowerIT Combination Outlet C13/C19

Features and benefits:
- Combination Outlet C13 / C19 is a 2-in-1 receptacle functioning as both an IEC C13 and C19 providing flexibility to connect C14 and C20 plugs in the same outlet
- Select the appropriate power configuration with confidence that the rPDU will have the right combination of outlets available no matter what equipment is.
- For ultimate rack power flexibility, select a Vertiv Geist UPDU, Universal Power Distribution Unit, with the Combination Outlet C13 / C19 to accommodate all initial deployment needs and any future equipment adds, moves, or changes.

Scan the QR Code
Find the rack PDU most suitable for your application using the rPDU Finder.

Power Distribution
Busway and Busduct

Choose a solution designed for easy reconfiguration, effortless installation, and maximum efficiency. The Vertiv™ Powerbar patented busbar trunking system provides overhead power distribution for your data centre, giving easier access to power loads for maintenance. Circuits can be added or removed directly above their respective racks, enabling cost-effective, timely changes. Vertiv Powerbar products also complement the Vertiv E+I Switchgear range, delivering a complete power distribution solution.
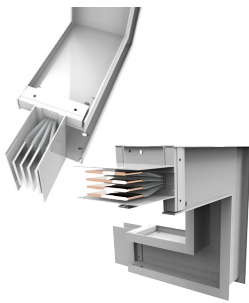
Vertiv™ Powerbar iMPB

Introducing Vertiv's new IEC certified intelligent Vertiv™ Powerbar iMPB - now available with a current rating of up to 1000A. Ideal for dynamic data centre environments, the modular Vertiv™ Powerbar iMPB system allows businesses to cost-effectively optimise and adapt power distribution infrastructure over time, maximising availability with continuous power delivery to critical loads. User friendly tap-off boxes can be placed anywhere along the busway for easy integration into any data centre layout.

Features and benefits:
- Modular design with IP2X certified open-face track.
- Extendable segments in increments ranging from 0.6 to 4 metres.
- Capacities that range from 160 to 1000 amps.
- Rigid aluminium busway track chassis.
- Easy-to-change, hot-swappable tap-off boxes.
- Busway track rated for 100% continuous current.
- Interrupt capacity rating up of 10 to 50 kA.
- Tap-off boxes with mechanical and electrical interlocks that utilise a ground-first, break-last safety feature.
- Monitoring options for electrical oversight.

Vertiv™ PowerBar HPB – IEC

The Vertiv™ PowerBar HPB feature advanced sandwich construction, it is purpose-built for applications requiring the transfer of large amounts of power. The Vertiv™ PowerBar HPB is a 1000V, fully enclosed, non-ventilated, and low-impedance busbar system, providing maximum safety, efficiency, and performance for demanding operations.

Features and benefits:
- Low impedance sandwich design: Improves short circuit rating, reduces voltage drop and removes potential pathways for flame, smoke or gas to pass through the busbar system.
- Modular design: Enables easy horizontal or vertical installation to suit project requirements.
- Fully certified firewall penetration barrier with two or four hour fire rating.
- Extruded aluminum casing is light weight and facilitates heat conductivity.
- Insulated tap off slot cover prevents access to the contacts behind the cover, protecting from the entry of dirt, dust and moisture.
- Can be connected to other PowerBar ranges to form a complete power distribution system.

Vertiv™ PowerBoard Low Voltage Switchgear

Gain new low-voltage switching capabilities to power digital operations.

Vertiv™ manufactures the most compact type tested low voltage (LV) switchgear assemblies on the market. All LV switchgear solutions are custom built using a modular design that can be configured to suit project requirements. In house metalwork fabrication and paintwork facilities ensure that Vertiv™ can deliver a high quality and efficient solution for any specification.

Features and benefits:
- Available in ratings of up to 690V/800A to 6300A.
- Seismic certifications include IBC 2012, CBC 2010, and rated components.
- NEMA 1 gasketed enclosures for indoor applications; NEMA 3 for outdoor applications.
- Segregation available up to Form 4 Type 6.
- Type-tested arc prevention busbar systems.
- Incorporates life safety protection relays and interlocks.
- Uses fixed-mount or draw-out breakers from a vendor of your choice.
- Ability to integrate transient voltage surge suppressor, power quality meters, protective relays, and controls based on site requirements.

Services

Vertiv™ ensures continuous uptime of your critical operations so you can perform at your peak and maximise your resources. Whether you are in a data centre, communications facility, government agency, or industrial plant, we collaborate with you every step of the way.

Spare Parts & Parts Management
Having the parts you need on site and at the latest revision level reduces unplanned downtime and keeps your systems up and running.

Preventive Maintenance
Design and implement a maintenance strategy that will improve your facility's availability and performance.

Performance Optimisation Services
The life of your IT critical equipment can be shorter than design life if you do not regularly optimize the equipment and your data centre. With that in mind, we designed a holistic performance services offering, to enable you to optimise the life of your critical equipment and the life of your data centre.

Remote Services
Ensure healthy critical systems by relying on domain experts who use advanced monitoring to capture and analyse your system data, and turn it into action.

Project & Commissioning Services
Maximise your investments, prevent delays, and avoid rework with effective project planning and execution.

Preventive Maintenance for Industrial
Have regular maintenance to ensure that your industrial systems are performing at optimal levels.