



Product brochure

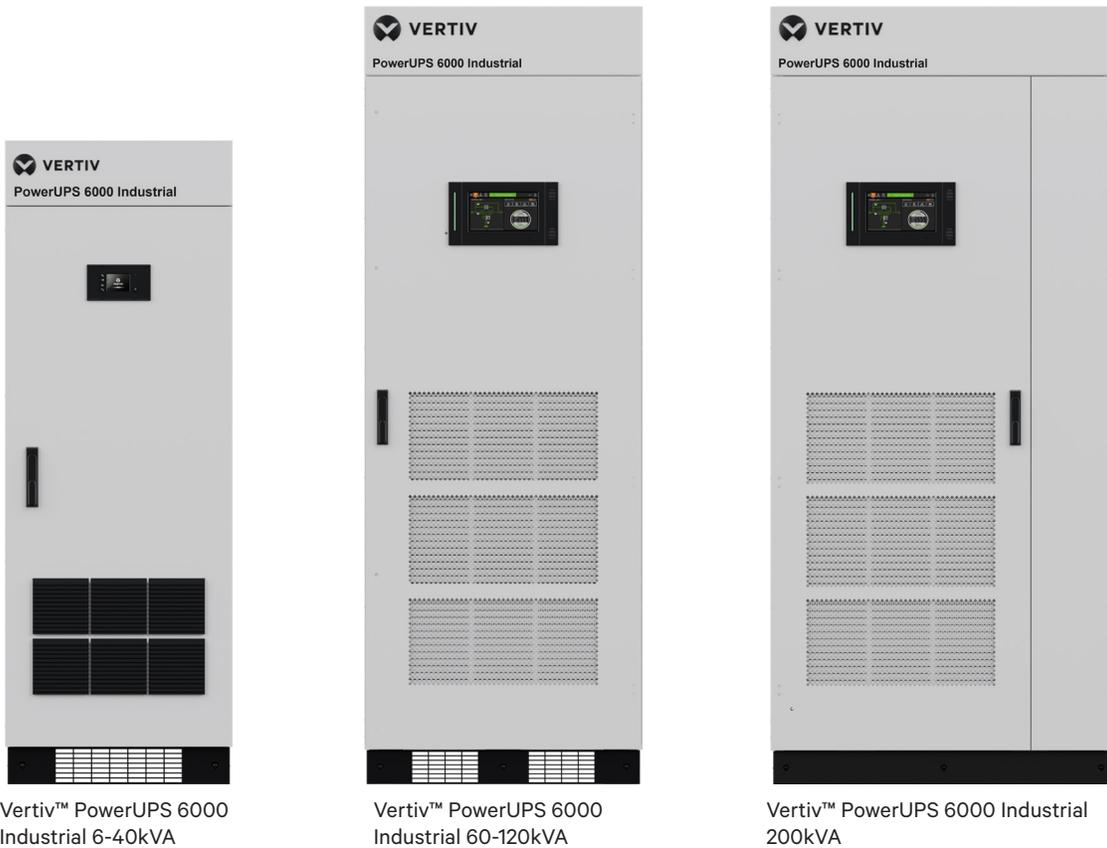
Vertiv™ PowerUPS 6000 Industrial

3 Phase UPS: The backbone of industrial power



Unwavering power for demanding environments: Vertiv™ PowerUPS 6000 Industrial

Vertiv™ has long been trusted for dependable power protection in critical datacenter infrastructure. Building on this foundation, Vertiv introduces the **PowerUPS 6000 Industrial (6-200kVA)** systems, designed to meet the rigorous demands of industrial settings. These UPS solutions deliver the same high reliability Vertiv is known for, now enhanced with advanced capabilities like **IP42** protection rating to support Industry 4.0 connectivity and automation requirements. This compact UPS seamlessly integrates into various commercial and industrial applications, delivering uninterrupted power for critical operations, automation, and process controls, even in harsh environments.



**Peak
performance
in extreme
conditions**



**Flexible
compatibility
with battery
options**



**Simplified
installation and
maintenance**



Low TCO



**High reliability
with IGBT
technology**



**Compact
footprint**



Highlights

Industrial applications need continuous, tailored power solutions. The Vertiv™ PowerUPS 6000 Industrial UPS systems deliver clean and uninterrupted power for critical industrial operations on a global platform.

- Designed to deliver peak performance and operational continuity, the Vertiv PowerUPS 6000 Industrial UPS withstands prolonged exposure to harsh industrial environments with **IP42** protection rating
- The Vertiv™ PowerUPS 6000 Industrial is available in capacities ranging from **6-200kVA**. This UPS system supports a 400V 3-wire input and provides a 4-wire output
- Advanced IGBT rectifier technology for clean and continuous power
- Galvanic isolation feature available with optional input/bypass/output isolation transformers
- Optimized, space-saving footprint for all ratings facilitating easier transportation and installation
- Fully front access with simplified design for easy installation and serviceability with a **<0.5-hour MTTR**
- Compatible with VRLA, Nickel Cadmium and lithium-ion external battery cabinets for extended runtimes
- Best-in-class advanced power monitoring and waveform capture through the global HMI platform with intuitive 9-inch color touchscreen display
- Utilizes a communications protocol incorporating a Vertiv™ RDU120 card
- **EN50121** and **EN50171** certified



Vertiv™ PowerUPS 6000 Industrial UPS systems are designed for maintaining operational continuity across various industries. These UPS systems provide reliable power for critical processes, especially during power outages, safeguarding essential equipment, controls and back-up needs in the most demanding applications. These UPS systems support a wide range of industries as shown in the examples below.

Common applications across these industries are **SCADA Systems, Emergency Lighting, PLCs (Programmable Logic Controllers), communication systems, data acquisition Systems (DAS), ventilation and HVAC Systems** and some other equipment related to specific industrial processes.



Oil and gas

- Fire and gas detection devices
- Emergency shutdown devices (ESD)
- Control rooms
- Motors and pumps
- Helicopter landing areas
- Navigational instruments for vessels and aircrafts
- Onboard weather stations



Railways

- Signaling systems
- Railway control systems
- Passenger information systems
- Trackside substations
- Communication systems
- Catenary systems



Airlines

- Air traffic control systems
- Navigation systems
- Passenger information systems
- Security systems
- Baggage handling systems



Cement

- Kiln control systems
- Raw mill
- Cement crusher
- Cement mill
- Packaging lines
- Granulators



Food and beverages

- Processing equipment (mixers, blenders, sterilizers, pasteurizers)
- Packaging lines (conveyors, fillers, sealers)
- Labeling and printing systems
- Inspection & quality control systems
- Refrigeration systems
- Pumps and motors
- Lighting systems



Packaging

- Automated packaging lines
- Labeling and printing systems
- Inspection and quality control systems
- Robotic systems
- Lighting systems



Pharmaceuticals and healthcare

- Pharma manufacturing systems (bioreactors, mixers, blenders)
- Sterilization equipment, granulators and tablet presses
- Labeling and printing systems
- Inspection and quality control systems

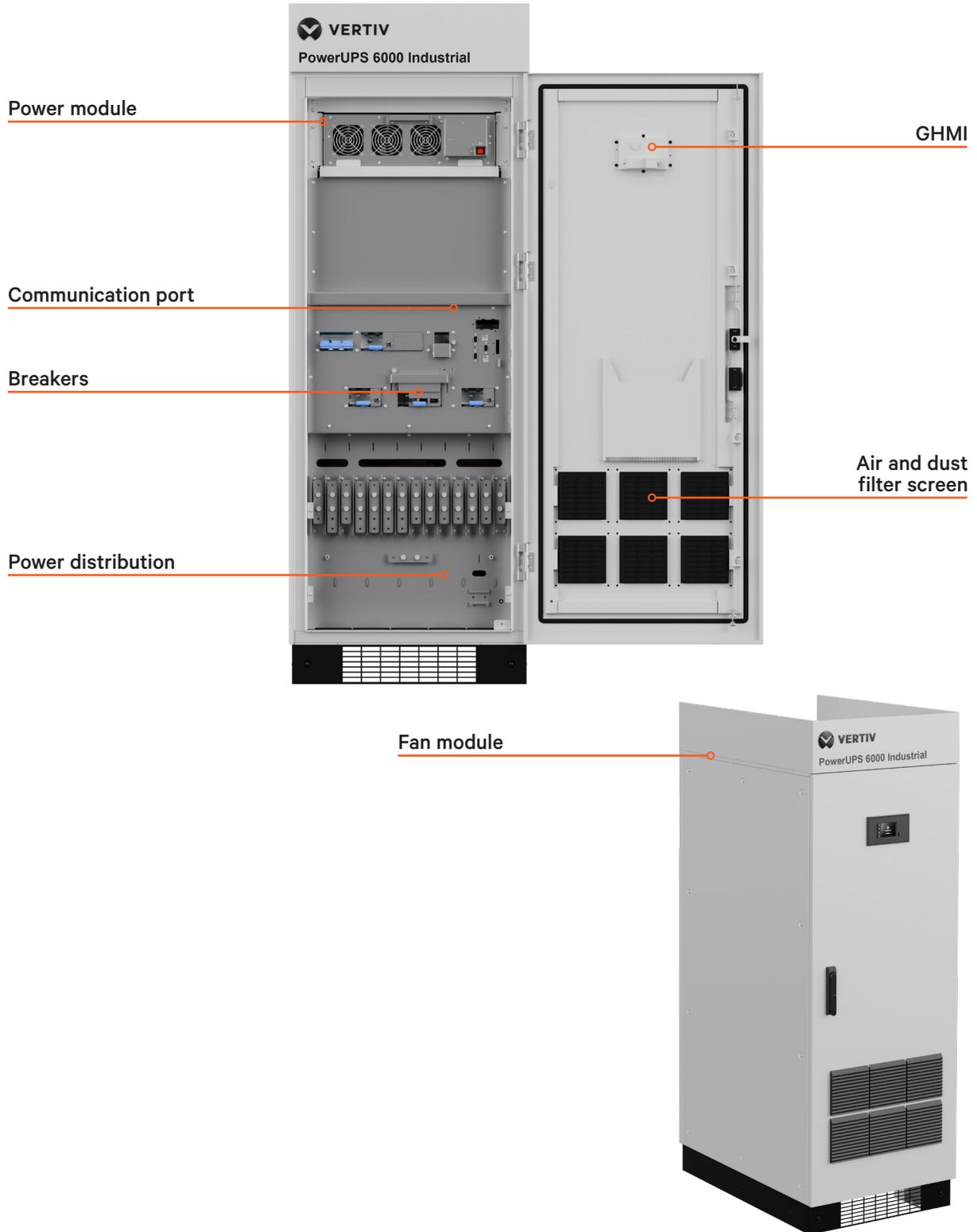


Steel

- Furnace operations
- Rolling mills
- Instrumentation and sensors systems
- Material handling systems
- Environmental control systems
- Process control and automation systems

Vertiv™ PowerUPS 6000 Industrial (6-40kVA)

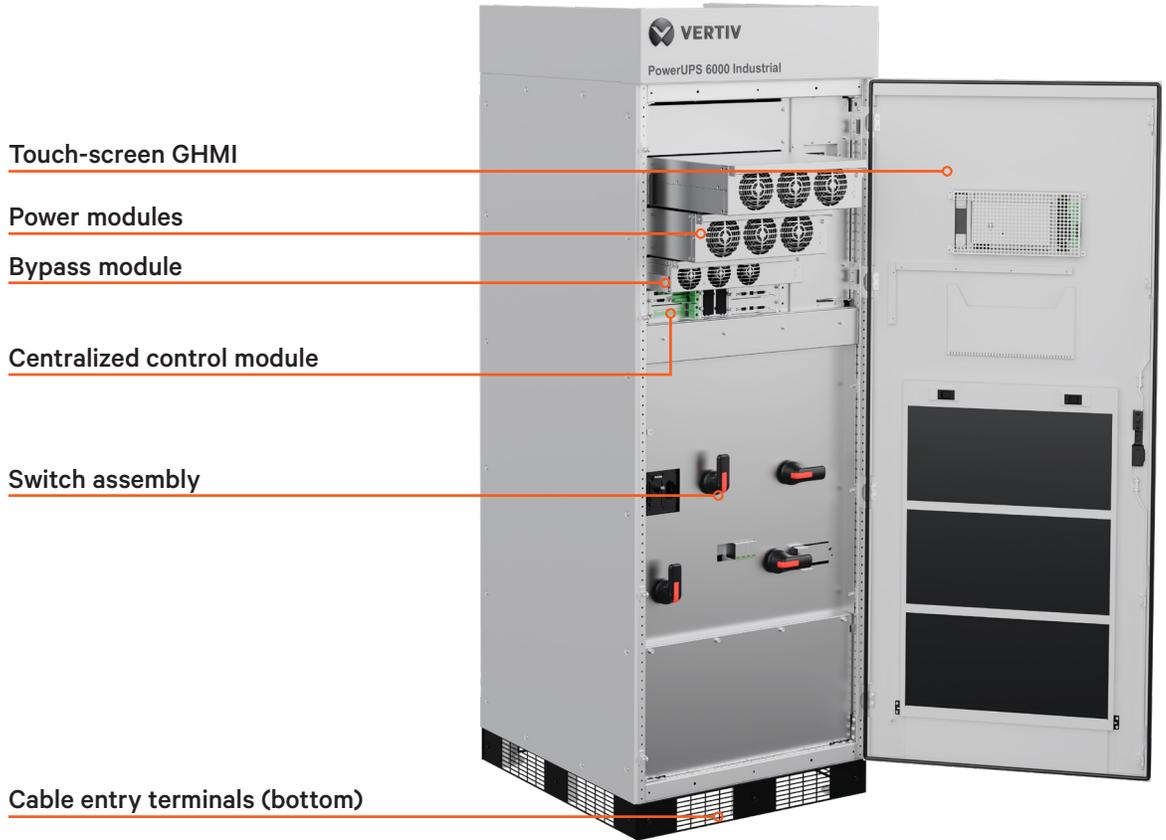
Features display





Vertiv™ PowerUPS 6000 Industrial (60-200kVA)

Features display



Vertiv™ PowerUPS 6000 Industrial 120kVA

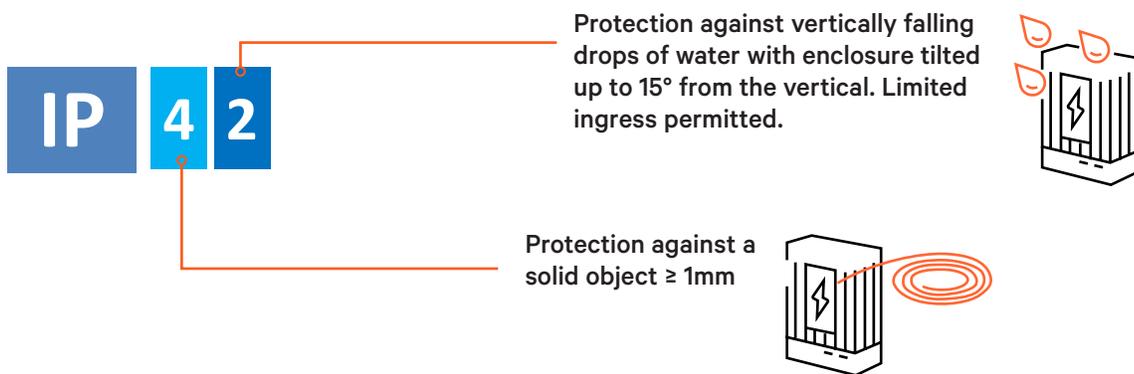




Peak performance in extreme conditions

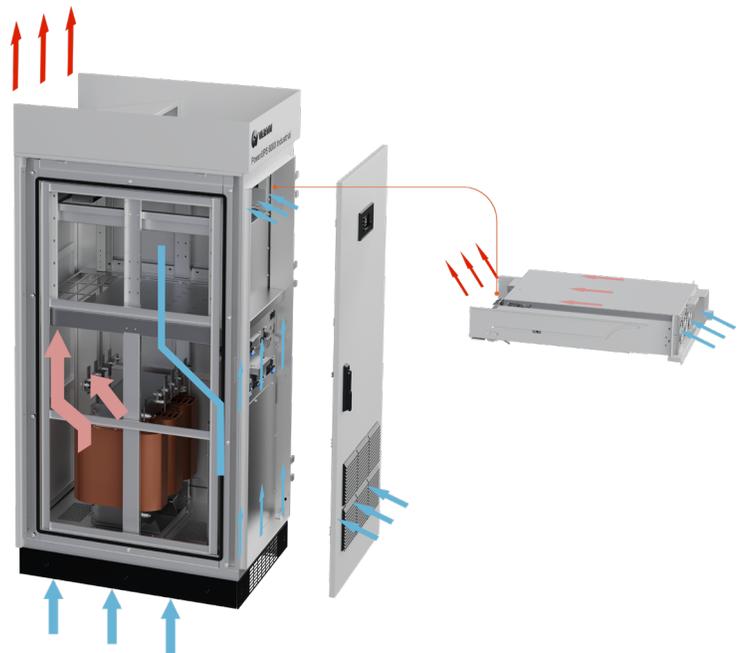
High degree of protection in industrial environments

The Vertiv™ PowerUPS 6000 Industrial UPS achieves an IP42 rating, preventing the entry of solid foreign objects $\geq 1\text{mm}$ and supporting normal operation even during accidental water sprays at a 15° tilt.



System level compartment air duct + module-level independent air duct

- This innovative dual environmental protection design features a system-level compartment air duct and a power module-level independent air duct. Separate front and rear compartment air ducts are used for high-power heating components and power modules within the cabinet to enhance heat dissipation
- The power modules in the cabinet utilize an innovative “independent air duct” design to isolate sensitive components. This design allows the entire UPS system can continue to operate reliably, even if the power modules fail due to dust or conductive powder
- The precision components are sealed and fully isolated from external dust, enhancing the overall reliability of the entire machine





Suitable for high-temperature industrial environments

The Vertiv™ PowerUPS 6000 Industrial UPS operates reliably in environments up to 50° C, making it ideal for non-air-conditioned, dusty, or humid conditions in commercial and industrial settings



Conformal coated PCBA's

The Triple Proof Impregnation Process protects circuit boards from dust, moisture, and corrosion, enabling resilience in harsh conditions like salt spray and dust. It involves applying a conformal coating that repels dust, prevents moisture penetration, and shields metal components from corrosion. This coating can be applied through spraying, brushing, or dipping, providing comprehensive protection and extending the lifespan of circuit boards in challenging environments



LSOH cabling

LSOH (Low Smoke Zero Halogen) internal cabling in Vertiv™ PowerUPS Industrial UPS systems enhances safety and reliability by emitting minimal smoke and no halogen gases during fires, reducing toxic fumes and improving visibility. These cables are also resistant to corrosion and moisture, maintaining durability and performance in harsh environments, making them suitable for uninterrupted power and protection of sensitive equipment



High altitude capability

Excellent electrical safety and heat dissipation performance of Vertiv™ PowerUPS 6000 Industrial UPS systems were validated through a rigorous test conducted at an altitude of 3000 meters. This test demonstrated the UPS's ability to maintain reliable operation and effective cooling in high-altitude conditions, where air density is lower, and heat dissipation is more challenging. The results confirm the UPS's robustness and suitability for use in demanding environments, maintaining consistent performance and safety standards



Certifications

Vertiv™ PowerUPS 6000 Industrial UPS systems are EN50121 Certified (Electromagnetic compatibility within the railway environment) and EN50171 (CPSS) Certified and many others specified in Technical Specifications



Dust resistant

Vertiv™ PowerUPS 6000 Industrial UPS systems can be directly installed in industrial cabinet rooms without the need for special dustproofing or ambient temperature control



Reliability redefined

Full digital control technology with configurable input, output and bypass isolation transformers (optional)

- The Vertiv™ PowerUPS 6000 Industrial UPS systems can be factory-configured with input, output and bypass isolation transformers to isolate the electrical system from both the grid's input side and the load side in sensitive power application situations
- Built-in output transformer is standard only in Vertiv PowerUPS 6000 Industrial 6-40kVA UPS unit
- The (optional) built-in transformers are only for 60-200kVA units and are dynamically adjusted to perfectly match the rectifier and inverter, allowing the system to maintain optimal operating status. The system continuously monitors transformer temperature in real-time to guarantee safe and reliable operation
- When the Vertiv™ PowerUPS 6000 Industrial UPS is equipped with an output transformer it provides galvanic isolation, protecting sensitive equipment from electrical faults and disturbances, enhances power quality by reducing harmonics making it a resilient and a highly dependable solution for light industrial applications under challenging conditions

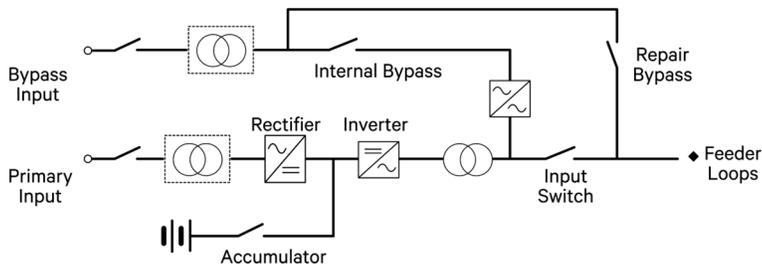


Without output transformer



Optional factory built-in output transformer

Schematic diagram of a stand-alone machine



**Input and bypass isolation transformers are optional*



Wide input voltage range:

Vertiv™ PowerUPS 6000 Industrial UPS systems can seamlessly adapt to power grid fluctuations in industrial scenarios, enabled by its ultra-wide input voltage range of -40% to +25%, maintaining stable operation even under varying grid conditions.

IGBT rectifier technology:

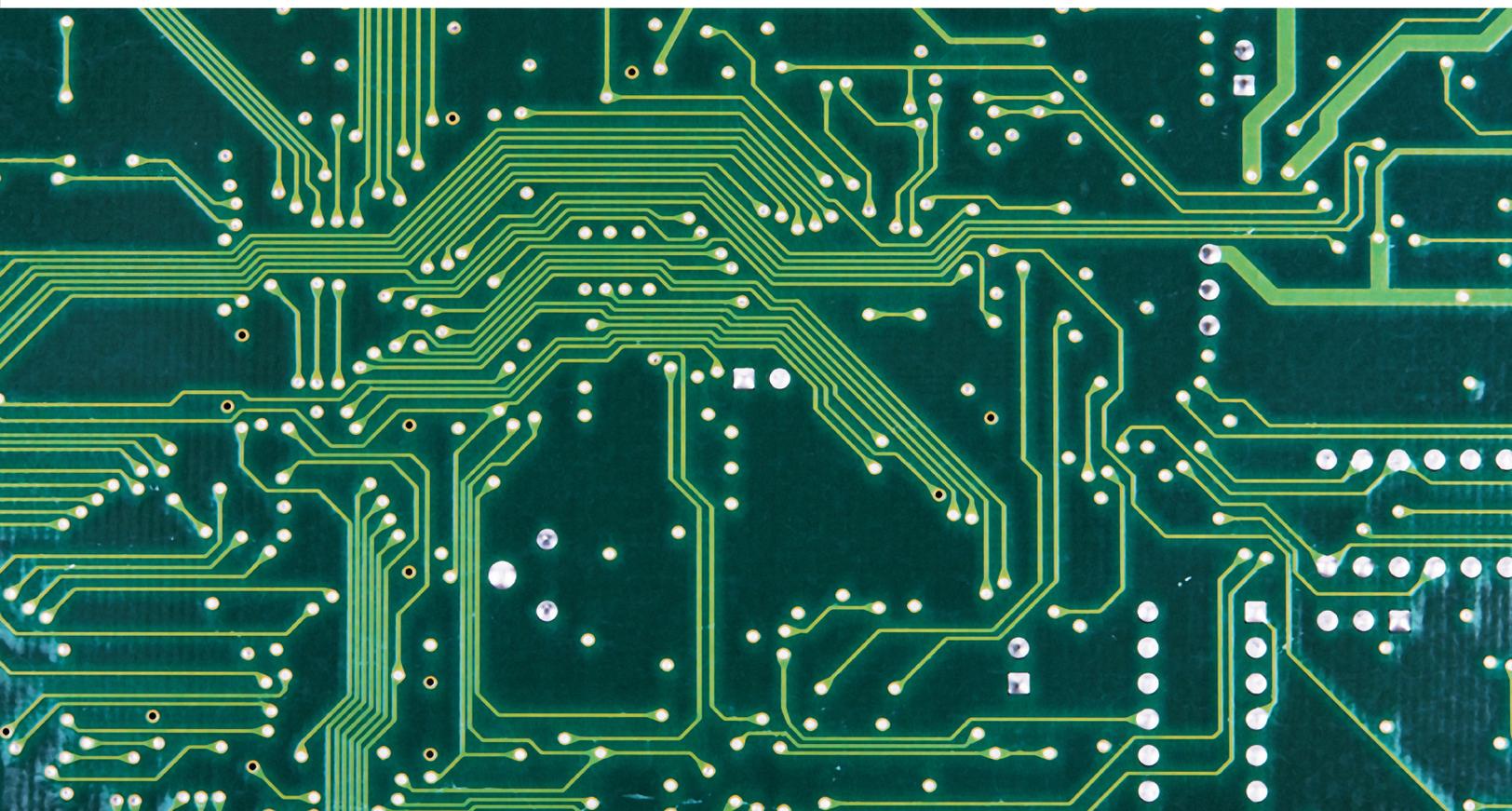
Vertiv™ PowerUPS 6000 Industrial UPS is equipped with DSP processors and advanced core control algorithms, delivering exceptional input and output electrical performance.

Input THDi and input power factor:

Vertiv™ PowerUPS 6000 Industrial UPS systems have reduced harmonic distortion on the input THDi <5% with an input power factor of 0.99.

Predictive monitoring and remote diagnostics:

Vertiv™ PowerUPS 6000 Industrial UPS systems have advanced input/output waveform analytics feature and IoT sensors to continuously monitor the health and performance of the UPS and its components.





High availability

Vertiv™ PowerUPS 6000 Industrial is available in the range of 6-200kVA @400V. Of these ratings, 6-120kVA units have a three-phase input and single-phase output (3*1). 10-200kVA range have three phase input/output (3*3).

Scalability and redundancy

Increase in capacity and redundancy can be done within a parallel system configuration based on the output transformer configuration in this industrial UPS system. Units can be paralleled up to **1+1** for capacity or redundancy with the optional factory built in output transformer. Units without output transformer can be paralleled in either **4+0** or **3+1** or **2+1** configurations.



1+1 Configuration with output transformer

High battery charging capacity

Vertiv™ PowerUPS 6000 Industrial UPS systems have high battery charging capacities allowing batteries to recharge quickly, minimizing downtime and enabling continuous operation. It also extends the lifespan of batteries, reducing the need for frequent replacements thus enhancing availability and reliability.

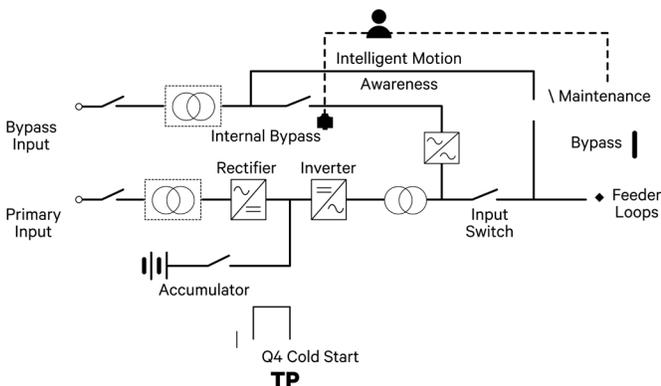
High availability through diverse battery types

Both Vertiv™ PowerUPS 6000 Industrial UPS systems are easily compatible with **VRLA**, **Nickel-Cadmium** or **Lithium-Ion** external battery cabinets for extended runtimes as preferred by most of the industrial customers.

Cold-Start function

In the event of a complete network power failure, the system can be powered on with a single key using the battery cold start function (black start). This provides an emergency power supply to critical loads.

Schematic diagram of a stand-alone machine



*Input and bypass isolation transformers are optional



Simplified installation, operation and maintenance – True front-access design



Full front access design

- Designed for maintainability, the system features a **full front maintenance layout** and an **upper air outlet** design, allowing for flexible wall installation with no rear clearances required. This makes it adaptable to small spaces in commercial and industrial sites while efficiently exhausting hot air through top of the cabinet
- An **independent fan switch** on the main cabinet allows safe power-off and replacement of fan modules, ensuring safer and more reliable operation
- The **power module** can be withdrawn and replaced as a whole, enabling simple, module-level maintenance that significantly reduces MTTR (mean time to repair)

Intelligent maintenance bypass with motion awareness

- The maintenance bypass features intelligent motion-sensing capability. When the maintenance bypass protection device is removed, the UPS host automatically switches to the internal bypass. During maintenance, the UPS enters a logic protection state to prevent mis-operation that could cause the bypass to pass through the inverter

Compact design

- Compact design with a footprint approximately 30% smaller than similar products. Simplified installation with standard bottom cable entry and optional top cable entry



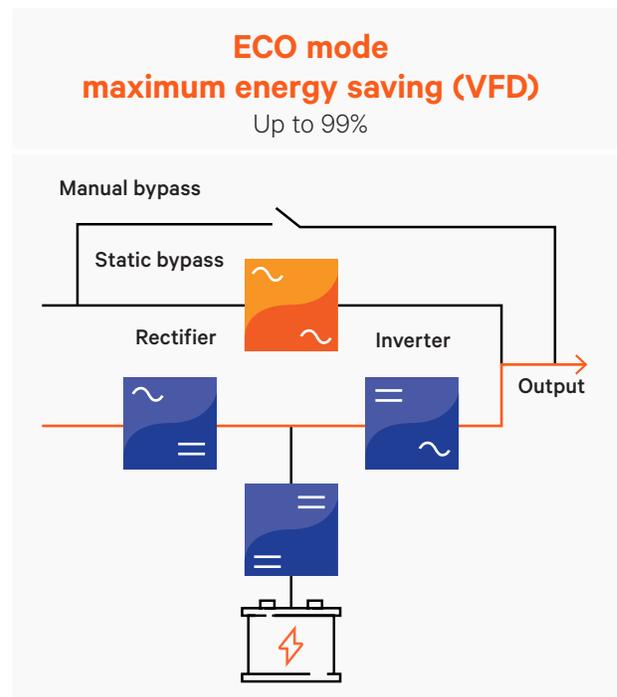
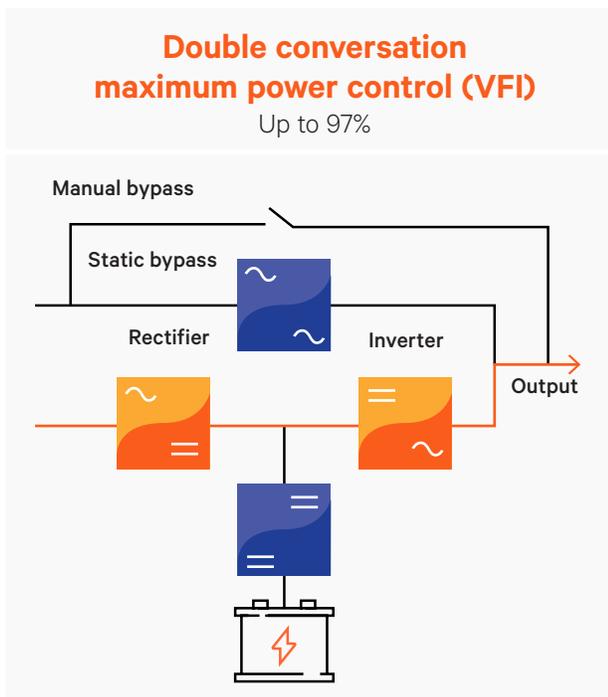
High efficiencies leading to cost savings

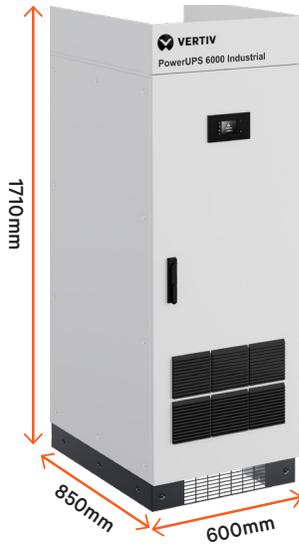
Provides optimum performance with maximum efficiency

- **OPEX Savings:** Vertiv™ PowerUPS 6000 Industrial UPS system deliver an outstanding Double conversion efficiency of up to 97% without transformer and up to >93% with transformer, which further increases up to 99% efficiency in ECO Mode, consequently reducing operating costs and energy dissipation (kW) to a minimum. This also supports in parallel operation, significantly minimizing the consumption of the cooling system, providing an overall TCO reduction and rapid payback time.
- **CAPEX Savings:** Vertiv™ PowerUPS 6000 Industrial UPS offers significant CAPEX savings by optimizing the layout and reducing costs in the upstream distribution network, including transformers, circuit breakers, and cables. This is achieved through its high input power factor (0.99) and reduced current Total Harmonic Distortion (THDi).

Furthermore, the Vertiv™ PowerUPS 6000 Industrial UPS can optimize efficiency at partial load thereby attaining additional cost savings through the intelligent paralleling feature. The efficiency and electricity cost savings of industrial UPS can be attributed to:

- Latest generation IGBT
- Adoption of a three-level converter topology
- DC-controlled fan speed
- Intelligent paralleling mode
- Advanced digital technology and fast transfer
- Advanced battery management
- Intelligent cooling control
- Advanced EMI/RFI protection





Vertiv™ PowerUPS 6000 Industrial 6-40kVA



Vertiv™ PowerUPS 6000 Industrial 60-120kVA



Vertiv™ PowerUPS 6000 Industrial 200kVA



Operating specifications

- Voltage: 380, 400, 415 VAC
- Frequency: 50 or 60Hz
- Overload capacity: 105% of full load continuously at 30°C ambient ; 105-125% of full load for 10 minutes at 30°C ambient; 125-150% of full load for a minimum of 60 seconds at 30°C ambient
- Operating temperature:
 - 0 to 50°C
- De-rating value with IP42 6-200kVA
 - @30°C: 100%
 - @ 35°C : 90%
 - @ 40°C : 80%
 - @ 45°C : 75%
 - @ 50°C : 70%



Standard features

- IP-42 enclosure
- Fully Front accessible for easy installation and serviceability
- 9" Color touch-screen LCD interface
- Intuitive user interface with drop- down menus and dialog boxes
- Main input without N line support dual-power supplies for bypass and main input
- Online replaceable rack fans
- Bottom cable entry
- Input/output waveform analytics
- LSOH (Low Smoke Zero Halogen) internal cable
- IEC 62040 & EN 50171 & EN 50121 & SEMI F47 compliant
- Standard switch: Battery / Main input / Bypass / Maintenance bypass / Output
- Standard factory built in output transformer only in 6-40kVA UPS units
- Standard C-class lightning arrester



Optional features

- Vertiv™ PowerUPS 6000 Industrial UPS have a full range of monitoring and communications options via Vertiv™ RDU-120
- Programmable output relays for custom customer alarms and connections
- Factory-built Output Transformer (only for 60-200kVA UPS units)
- Input Transformer cabinet option
- Top cable entry cabinet option
- Temperature Sensor
- Seismic Anchors Sub (Class 9)
- Heater options
- 65KAIC bypass input fuses option
- Battery ground fault detector

Optional ancillary cabinets



Optional- input transformer cabinet aligned with Vertiv™ PowerUPS 6000 Industrial (6-200kVA). The respective input transformer cabinets can be aligned with the UPSs on either side of the UPS.



Optional top cable entry cabinet. The Vertiv™ PowerUPS 6000 Industrial has standard bottom cable entry

Optional factory built in output transformer



High availability with waveform capture



Intuitive HMI (human machine interface) and advanced diagnostic

Vertiv™ PowerUPS 6000 Industrial UPS creates a peaceful mission-critical space with advanced diagnostics, event analysis, and a multi-language touch screen. The system's advanced logic control and Vector Control technology keeps power converter performance and output quality, guaranteeing continuous operation and premium protection. Additionally, the user-friendly HMI interface features a full-color LCD display with color graphics and LED indicators, allowing control of UPS operations, checking status parameters, and viewing event logs and records.

- **Bypass input:** Voltage and frequency measurements
- **Mains input:** Current, voltage and frequency values of the three input phases.
- **Warning/fault:** Alerts of anomalies on bypass, rectifier, inverter, booster/charger, battery and load
- **Events log:** Date and time of important UPS events, alarms and other warnings.
- **Measurements:** Voltage, current and frequency values of each functional block.

Waveform capture: real-time insights to enhance reliability

Waveform capture is a diagnostic tool that records the electrical waveform of voltage and current. This capability is needed to understand and analyze power quality issues at critical moments (such as during power disturbances or faults) and to maintain the reliability of the power supply system.

The main advantages of Waveform Capture in Vertiv™ PowerUPS Industrial UPS systems are:

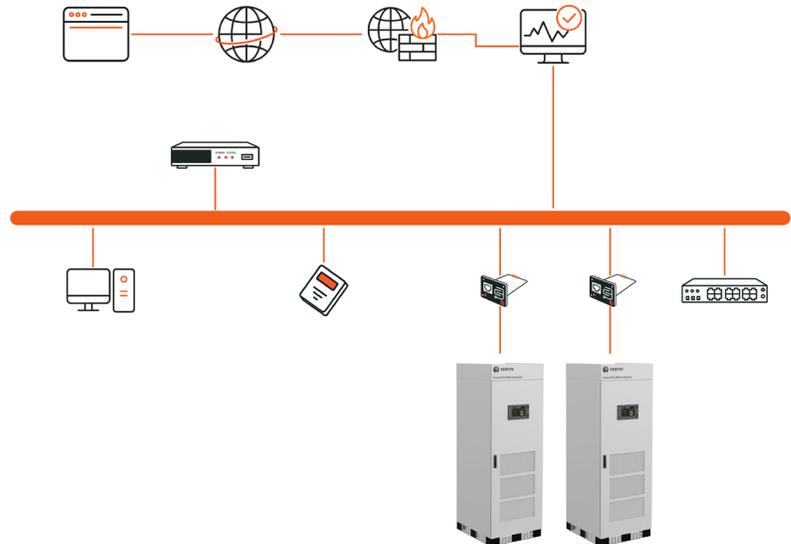
- **Precise event analysis:** Captures voltage and current waveforms during irregularities to understand disturbances.
- **Preventive maintenance:** Regular waveform monitoring predicts potential power train problems, aiding preventive maintenance.
- **Troubleshooting Support:** Stored waveform data provides insights for troubleshooting, reducing restoration time.
- **Historical data logging:** Captures and stores waveform data over time to analyze trends and detect emerging problems.
- **Customizable data capture:** Users can select specific time frames and channels for tailored power monitoring.

The Waveform Capture feature enhances uptime and reliability through detailed electrical waveform analysis, offering a robust tool for maintaining critical infrastructure. This feature can be installed via configuration by service teams. The Waveform Capture is standard in Vertiv™ PowerUPS 6000 Industrial (60-200kVA units).

Vertiv™ PowerUPS 6000 Industrial communication and product options

Dry contacts

Featuring a dry contact interface, multi-function communication port (RJ 45) and smart card interface, it can be expanded by RDU 120 and other communication options.



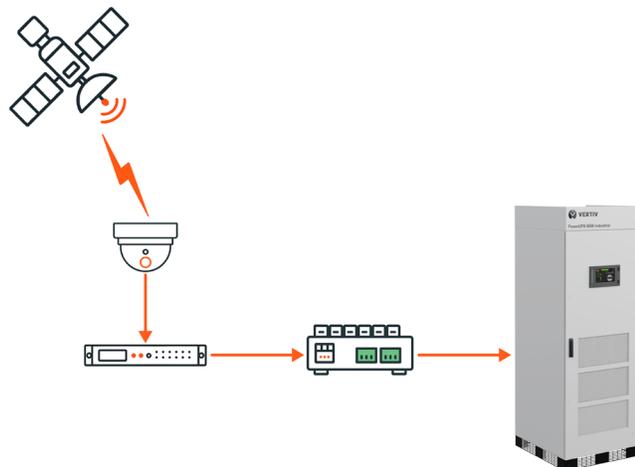
Vertiv™ Liebert® IntelliSlot™ RDU120 Communications Card

Vertiv™ Liebert® IntelliSlot™ RDU120 communications card

Available as an optional card Vertiv™ Liebert® IntelliSlot™ RDU120 Communications Card provides connectivity to a TCP/IP-based Ethernet network to allow the device to communicate with network management systems (NMS) via SNMP, Modbus or BACnet. Events can be communicated to the NMS to provide remote status monitoring and alarm detection. The card includes an RJ-45 port for Ethernet connectivity via a Category 5 cable.

Time synchronization function

Vertiv™ PowerUPS 6000 Industrial UPS host features NTP clock synchronization, enabling real-time time updates from a time server and adjusts its internal clock accordingly. This keeps the UPS internal clock remains synchronized with field equipment, meeting the precise time synchronization requirements of applications such as subways, oil and gas transportation, and power dispatching.





Rely on integrated project and lifecycle UPS services for superior critical infrastructure protection

Guarantee continuity to your business activities with a service partner who stands by you throughout your critical equipment lifecycle. From the project phase with start-up and testing, to lifecycle maintenance contracts and operational support, Vertiv secures your solution performs optimally.

Global presence & local resources



With the broadest, most comprehensive service presence in the industry and more than 3,500 engineers dedicated to servicing the entire world, Vertiv secures that your business is always protected, and that service is available whenever needed 24 hours a day.

Project services



From project planning and design, through to equipment procurement, installation, and commissioning, our project team offers comprehensive capabilities, providing speed of deployment and execution according to pre-defined and repeatable procedures.

Comprehensive capabilities include factory witness testing and site acceptance inspection.

Expertise & training



All service engineers are regularly certified according to country-specific regulations as well as wider international regulations and standards.

Vertiv service engineers are trained, experienced professionals who undergo an average of one week of intensive training each quarter, totalling one month of full-time training per year. Training includes both technology and safety, to secure competent and safe field operations, reinforced by established procedures to follow and central technical support in case of need.

Premium response



With Vertiv you can count on an extensive supply of critical parts plus crash-kits ready for deployment, and on service engineers that can respond to requests in record time. To do so, they can rely on a solid knowledge-base, and established escalation procedures valid across the regions. In addition, they can also benefit from advanced incident management, and widespread presence of Service Centres all enabling them to deliver premium restoration capabilities.

Supporting your business around the globe



Regular service of critical equipment supports maximum uptime and reduces total cost of ownership. A service programme ensures timely and proactive maintenance for avoiding unexpected, costly equipment downtime and enables optimal equipment operation. Vertiv™ service programmes cover all technologies and can be tailored to suit individual business needs.



Vertiv deep infrastructure expertise is amplified by field data and analytics, enabling data-based services such as Advanced Incident Management and Condition Based Maintenance. These services complement our portfolio providing additional insight into operating trends allowing informed decision and minimising operational.

Technical specifications

Output capacity kVA		Vertiv™ PowerUPS 6000 industrial									
Single-phase input/single-phase output	6										
Three-phase input/single-phase output		10	20	30	40	60	80	100	120		
Three-phase input/three-phase output		10	20	30	40	60	80	100	120	160	200
Input characteristics											
Rated output voltage	220/230/240V(Single-phase input model)/380/400/415V(Three-phase input model)										
Input voltage range	- 40% ~ +25% *1										
Rated input frequency	50/60Hz										
Input frequency range	40Hz ~ 70Hz										
Input power factor	0.95										
Input current harmonic content	<5%										
DC characteristics											
Battery type	Lead acid, nickel cadmium, and lithium batteries *2										
Rated voltage of battery	For the single-phase output of 6–10 kVA, the options include 144 V, 192 V(Rated), 216 V, and 240 V. For other specifications, the options include 288 V, 360 V, 384 V(Rated), 432 V, and 480 V.*3					360V ~ 600V Adjustable 384V (Rated),*3					
Output characteristics											
Rated input voltage	220/230/240V(Single-phase)/380/400/415V(Three-phase)										
Output power factor	1										
Voltage stability	<1% in steady state, <5% in transient state										
Frequency stability	±0.1Hz										
Frequency synchronization range	±10%										
Transient response time	20ms										
Inverter overload capacity	<105% for long-term operating; 105%-125% for 10 minutes; 125%-150% for 1 minute										
Total harmonic content THDv	2% for linear load,5% for non-linear load										
Efficiency	92%					97%					
Switching time	0 ms for switching from the main power supply to the battery, and 0 ms for switching from the inverter to the bypass										
System											
Noise	≤ 55dB					≤ 65dB					
Protection rating	IP42										
Color	RAL7035(Other colors can be customized)										
Communication interface	Multi-function communication interface(RJ45)/dry contact interface/smart card box interface, MODBUS communication, SNMP communication										
Cable inlet	Bottom cabling (top cabling optional)										
Overall dimensions (W*D*H mm)	600*850*1710					60-120kVA: 800*850*2250 160-120kVA: 800*850*2250					
Operating temperature range	0C° ~ 50C° *5										
Relative humidity	0 ~ 95%										
Altitude	3000 m without derating										
Standards and Certifications	IEC62040 -1/2/3; EN50121; EN50171; EnergyStar; SEMI F47; Seismic; ISTA; Altitude (Infrabar); Rhos; REACH										

*1 When the input voltage is below -20%, the load derating, please see the user manual for details.

*2 nickel cadmium, and lithium batteries need special firmware.

*3 When the load capacity is lower than the rated value, the UPS load capacity needs to be derated. For the specific battery number of the model, refer to the user manual.

*4 For specific output power factor, please see the user manual.

*5 When the temperature is above 40°C, some models need to be derated. Please contact Vertiv for details.



Global presence for a close partnership. Everywhere.

Global AC power sites

-  4 Laboratories and R&D
-  5 Manufacturing sites
-  3 Witness test sites
-  9 Main training centers
-  Global network of regional sales and service representatives

AC power highlights

-  **100K+**
Square meter of manufacturing space
-  **Up to 12MW**
Available for witness tests
-  **Up to 92K**
Hours of technical training each year



Main witness test and customer experience center sites.

Vertiv™ state-of-the-art Customer Experience Centers enable our customers to experience first-hand a wide variety of data center technologies, including demo, standard, customized and remote virtual FAT experiences, supported by constant consultation from R&D and engineering specialists.

Bologna, Italy Customer experience center

- 800+ Customers every year
- From 50+ countries
- 10+ people dedicated
- 1700 m² Witness Testing
- 650 m² Showroom
- 650 m² Academy
- 5 testing stations, each providing up to 3.5 MVA of capacity = total 4 MW
- 140+ witness test every year
- 400+ UPS systems tested each year
- Up to 4000 A simultaneous test at full load

Delaware, US Power test center

- 4.000+ m², including 280+ m² customer observation suite
- 40 testing bays, each containing multiple distinct test stations - total 12 MW available
- 100+ tour-factory witness test each year

Mianyang, China Power test center

- 100+ Customers every year
- From 25+ countries
- 2 people dedicated
- 180 m² Witness Testing
- 60 m² Showroom
- 2 testing stations, each providing up to 1.2 MVA of capacity = total 2.5 MW
- 40+ witness test every year
- 100+ UPS systems tested each year
- Up to 1.8 A simultaneous test at full load

