VERTIV™

Liebert®

EXS
from 10 to 20 kW

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

Vertiv™

Vertiv designs, builds and services mission critical technologies that enable the vital applications for data centers, communication networks, and commercial and industrial environments. We support today's growing mobile and cloud computing markets with our portfolio of power, thermal, infrastructure management products, software and solutions, all complemented by our global service network. Bringing together global reach and local knowledge, and our decades-long heritage including brands like ASCO®, Chloride®, Liebert®, NetSure™ and *Trellis*™, our team of experts is ready to take on your most complex challenges, creating solutions that keep your systems running—and your business moving. Together, we're building the future of a world where critical technologies always work.

YOUR VISION, OUR PASSION.
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Liebert® EXS from 10 to 20 kVA

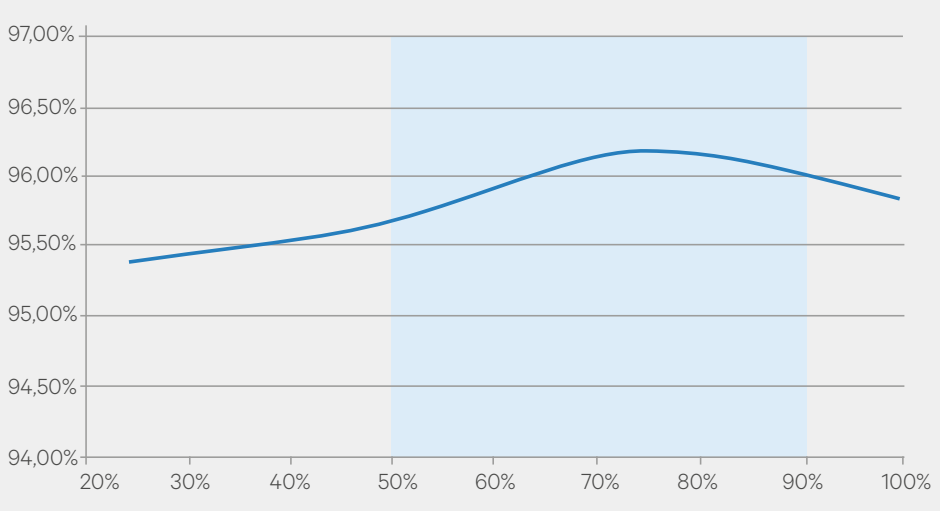
Compact design and improved performances

The new Liebert® EXS is a monolithic transformer-free UPS which brings exceptional features for mission-critical applications. Its extraordinary double conversion efficiency up to 96.2% ensures remarkable operational cost savings, reducing both the Total Cost of Ownership (TCO) and the environmental impact.

At the same time, with its unity output power factor and high power density, Liebert EXS is able to provide the utmost active power possible in a compact footprint. In fact, its improved design reduces its footprint to a minimum, providing continuous power protection with optimized internal runtime in a standalone solution, making the Liebert EXS perfect for both IT installations and other mission critical applications, such as transportation, emergency lighting, healthcare, retail and government facilities.

FEATURES AND PERFORMANCES

- Output power factor up to 1
- Double conversion efficiency up to 96.2%
- ECO mode efficiency up to 99%
- Compact footprint with multiple internal runtime configurations
- Available in 3/3 and 3/1 versions
- Integrated maintenance bypass
- Integrated input and output breakers/switches
- Parallel capability for capacity and redundancy



Liebert EXS efficiency curve

Central Power Supply System (CPSS)

Liebert EXS can be used for CPSS applications* as defined in the EN 50171 standard, and is hence capable of supplying the necessary emergency power to essential safety equipment. In fact, the unit can be used to power emergency escape lighting in case of normal supply failure and may also be suitable for powering other safety systems such as automatic fire extinguishing installations, signaling safety installations and smoke extraction equipment.

* Subject to additional prescriptions

Flexibility

To ensure superior protection for critical loads, the Liebert® EXS range has been designed to optimize specific rating requirements, thus enhancing flexibility and installation space needs.

Liebert EXS's flexibility is further enhanced through:

- Single and three phase output configurations
- Integrated parallel capability up to 4 units
- Common or distributed battery bank
- Internal and external battery configurations for optimized back up time management
- Casters for easy UPS repositioning

Output Configuration

Liebert EXS models up to 20 kVA can be configured on-site to deliver three (3/3) or single (3/1) phase output giving it the flexibility to adapt to changes in installation environments.

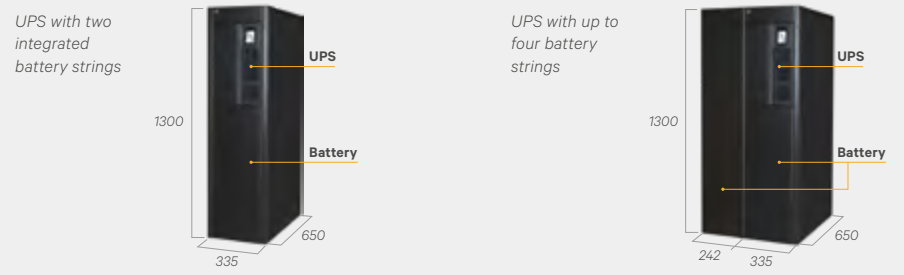
Integrated Autonomy

Liebert EXS provides an optimized integrated autonomy which results in back up times in a compact footprint. Its internal architecture is able to house up to four battery strings, further optimizing integrated autonomy and delivering the added advantage of virtually eliminating the need for an external battery cabinet.
This furthermore reduces installation costs and minimizes the demand on physical space. In addition, Liebert EXS's powerful battery charger ensures rapid recharge, increasing its ability to manage longer back up times.

Full Galvanic Isolation

Liebert EXS offers integrated full galvanic isolation, meaning that an isolation transformer may be housed inside the UPS cabinet. This greatly reduces the system footprint, thus providing space saving advantages.
The transformer may be connected to the input or to the output of the UPS, providing:

- Full galvanic isolation for medical and other critical applications
- Installation with two independent input sources (with different neutrals)
- Installation in distribution without neutral.



Liebert EXS 10 - 20 kVA architecture

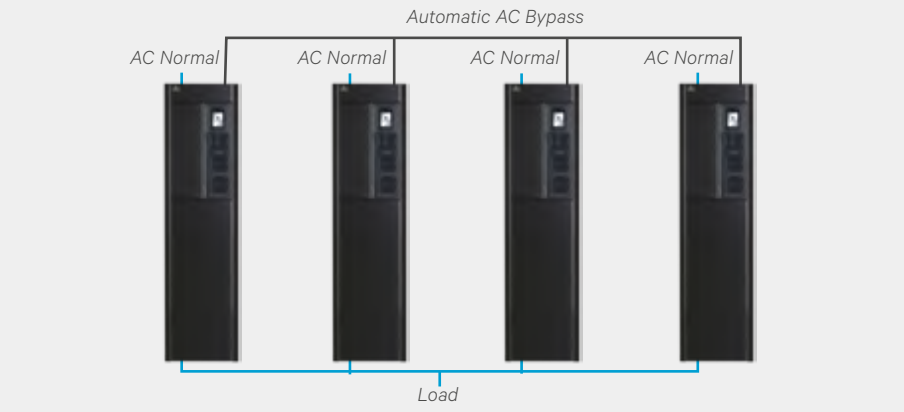
VERTIV™ *TRELLIS™*

Vertiv *Trellis* platform is a real-time infrastructure optimization platform that enables the unified management of data center IT and facilities infrastructure.
The Vertiv *Trellis* platform software can manage capacity, track inventory, plan changes, visualize configurations, analyze and calculate energy usage, and optimize cooling and power equipment as well as enable for virtualization.
The Vertiv *Trellis* platform monitors the data center, providing a thorough understanding of system dependencies to help IT and facilities organizations keep the data center running at peak performance. This unified and complete solution, delivers the power to see the real situation in your data center, make the right decision and take action with confidence.

In The Field

Parallel Ready

Liebert EXS can be connected with up to four units in parallel. A single unit can be upgraded to parallel operation via easy to modify software settings, allowing the system to be customized for the requested configuration. The loop parallel connection used in paralleling the system delivers ultimate reliability and eliminates the possibility of a single point of failure, ensuring perfect load sharing and fast detection of any variation in the system status.



Liebert EXS - Parallel configuration

Communication

Liebert® EXS features a multi-lingual LCD user interface allowing close control and monitoring of system status and performance. The UPS offers the following communication features:

- Voltage-free contacts
- Intellislot for SNMP, Modbus or Relay communication
- USB interface

These communication capabilities make Liebert EXS compatible with any building management system.

Software Connectivity

Vertiv™ shutdown software offering prevents unexpected server shutdowns and minimizes downtime warning of pending power losses and initiating safe shutdown of operating systems if required. Vertiv Nform™ network communications system enables customers to leverage the distributed monitoring capabilities of network connected equipment, providing centralized management of distributed systems.

Serviceability

The architecture of the Liebert EXS is designed to optimize installation and simplify service with its easily removable power assembly. This architecture considerably minimizes the time needed for repairs and optimizes serviceability. Liebert EXS also comes equipped with casters to facilitate ease of movement and relocation.

Connectivity cards

Liebert EXS 10 - 20 kVA

Vertiv LIFE™ Services Remote Diagnostic and Preventive Monitoring

Vertiv's service program is designed to ensure that your critical power protection system is maintained in an optimum state of readiness at all times.
The **Vertiv LIFE™ Services** remote diagnostic and preventive monitoring service provides early warning of UPS conditions and out of tolerances.
This allows effective proactive maintenance, fast incident response and remote trouble shooting, giving customers complete security and peace of mind.
With **Vertiv LIFE Services** you will benefit from:

Uptime Assurance

Constant monitoring of UPS parameters, thus maximizing the system's availability.

First Time Fix Rate

Pro-active monitoring and data measuring ensure that when our customer engineers are dispatched on-site, they arrive prepared for first time resolution.

Proactive Analysis

From Vertiv LIFE Services centers, our experts proactively analyze the data and trends of your equipment, to recommend actions to ensure their best performance.

Minimized Total Cost of Ownership of Your Equipment

The continuous monitoring of all relevant parameters in turn maximizes unit performance, reduces on-site maintenance and extends the life of your equipment.

Fast Incident Response

Vertiv LIFE Services allow for immediate definition of the best course of action, as a result of the regular communication between your Liebert EXS system and our **Vertiv LIFE Services** centers.

Reporting

You will receive a comprehensive report detailing the working order of your equipment and its operational performance.

Liebert® EXS Specifications

Technical Characteristics			
Ratings (kVA)	10	15	20
INPUT			
Nominal input voltage (V)	380/400/415 (three-phase + neutral)		
Input voltage range without battery discharge (V)	173 to 498*		
Nominal frequency (Hz)	50/60		
Input frequency range (Hz)	40 to 70		
Input power factor at full load (kW/kVA)	0.99		
Current THD at full linear load (THDI%)	≤ 3%*		
Bypass voltage tolerance (%)	selectable from +20 to -40		
Bypass frequency tolerance (%)	±20 (±10 selectable)		
BATTERY			
Battery blocks per string	24-40*		
Voltage temperature compensation (mV/°C/Cell)	-3.0		
Battery charger max. current (A)	13		
OUTPUT			
Nominal output voltage (V)	380/400/415 (three-phase) or 220/230/240 (single-phase)		
Nominal output frequency (Hz)	50/60		
Maximum active power (kW)	10	15	20
THDv at full linear load (%)	2		
Inverter overload capacity	105% for 60 min; 125% for 5 min; 150% for 1 min; >150% for 200ms		
Double conversion efficiency	Up to 96.2%		
ECO mode efficiency (%)	Up to 99%		
DIMENSIONS			
Dimensions (W x D x H) mm	335 x 650 x 1300		
Net/Shipping weight (excluding battery) kg	85/115		
Net/Shipping weight (including 2*32 batteries) kg	285/315		
GENERAL			
Noise at 1 m (dBA)	≤58		
Maximum altitude	1500 m without derating (max. 3000 m)		
Operating Temperature (°C)	up to 50*		
Protection level IEC (60529)	IP20		
General and safety requirements for UPS	EN/IEC/AS 62040-1		
EMC requirements for UPS	EN/IEC/AS 62040-2		
UPS classification according to CEI EN 62040-3	VFI-SS-111		

* Conditions apply

Customer Experience Center

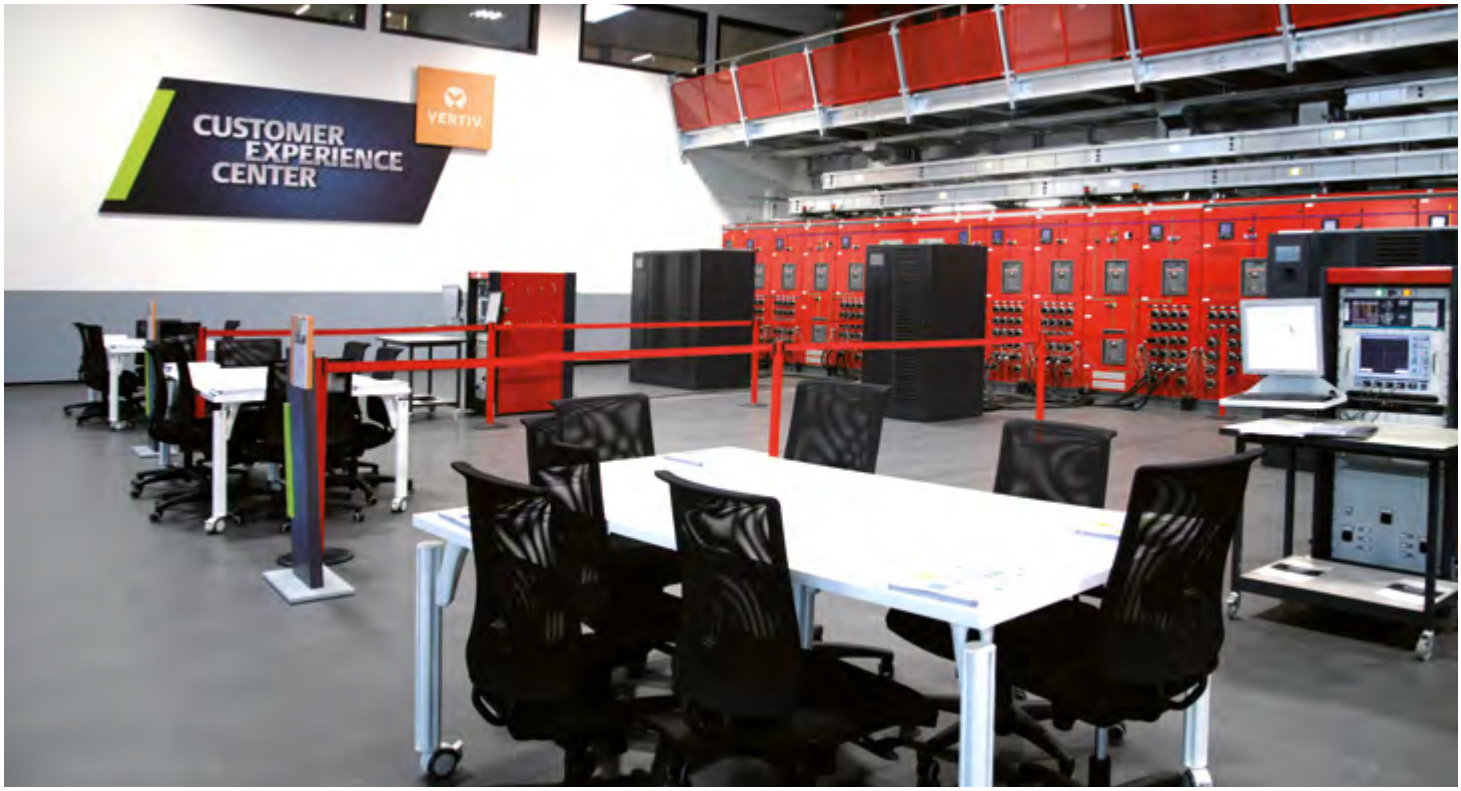
Vertiv™ state-of-the-art Customer Experience Center located in Castel Guelfo (Bologna - Italy), enables our customers to experience first-hand a wide variety of data center technologies, supported by constant consultation from R&D and engineering specialists.

Customers visiting the center will be able to witness pre-installation demonstrations, covering the technical performance, interoperability and efficiency of Vertiv UPS systems under real field conditions. These processes can be experienced from the facility's control room, where real-time performance measurements and reporting will be available while providing full visibility of the demonstration area. The center can host simultaneous tests at full load of up to 4000 A.

The customer validation area specifically dedicated to UPS consists of four testing stations, each one providing up to 1.2 MVA of capacity. Testing includes individual modules, as well as complete power systems, with the added possibility of the customer's switchgear support systems being connected, thus guaranteeing smooth, rapid installation and commissioning of large power systems.
Testing is also customized based on the complexity, size and number of UPS components in the configuration.

Our Customer Experience Center offers three validation experiences:

- Demo - carried out on new products to demonstrate UPS performance
- Standard - validation test showing UPS standard technical performances in compliance with UPS catalogue and IEC 62040-3 standards
- Customized - session tailored to validating customer's specific technical performance needs.



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