



Liebert® APM UPS

15-90 kVA/kW

Scalable, Highly Efficient,
Row-Based Power Protection



A Scalable UPS as Dynamic as Your Data Center

Prevent power interruptions and ensure the future flexibility and efficiency of your data center infrastructure, with the Liebert® APM UPS. Leverage the innovative modular configuration, cost-efficient operation and flexibility to match increasing power demands all while ensuring critical reliability.

AVAILABILITY AND FLEXIBILITY IS ENHANCED WITH STANDARD AND OPTIONAL FEATURES

Obtain redundancy and scalability using innovative Liebert® modular power core assemblies. Each includes distributed intelligence and scalable power in one common module.

This technology allows configuration of a completely redundant power and control system, sized to match the capacity of the protected equipment. When power requirements change, capacity is easily added – without increasing the system footprint.

The Liebert APM UPS scales from 15 to 45kW in a cabinet configuration that includes internal batteries, or from 15 to 90kW in 15kW increments in a configuration that reserves a cabinet for capacity that is paired with an external battery cabinet. This approach allows for right-sizing of the UPS, resulting in improved energy efficiency and reduced power expenditures.

Liebert® APM UPS supports dynamic environments and IT growth

Flexibility

- Capacity can be expanded in 15kW increments using modular power core assemblies
- 45kW model includes internal batteries and can also obtain extended run time with external battery cabinets
- 90kW model uses external battery cabinets only
- Easy Installation – front service access, smaller footprint
- 208V, 480V and 600V input configurations
- Matching bypass and distribution cabinet – increase reliability and safety by switching the protected load to bypass power for maintenance and service
- Top or bottom cable entry – enables installation on raised or non-raised floors



Resilient and Reliable for Mission Critical Applications

The Liebert® APM UPS ensures reliable operation through quality components, intelligent design, and the industry's largest local support network.

Higher Availability

- Minimizes single points of failure
- Redundant Internal power supply
- Distributed controls – each power core assembly includes DSP controls
- Standalone static bypass module – features independent controls in separate assembly to provide higher reliability
- Parallel UPS Systems - configure for redundancy or increased capacity



Liebert® APM 45 kW UPS with internal batteries

Capacity and Agility, On Demand

With the innovative power modules, capacity deployments can occur rapidly.



Power core hardware assemblies enable quick and easy capacity increases.

Expand for capacity or redundancy in 15kW increments within a single cabinet – 15kW to 45kW to 90kW.

Power assemblies may be added without powering down connected equipment.

Distributed controls – Each power core assembly includes DSP controls, minimizing possibility of single point of failure.

Standalone static bypass module features independent controls in separate assembly to provide higher reliability.



Liebert® APM 90 kW UPS



Independent Static Bypass assembly with Liebert® Intellislot ports

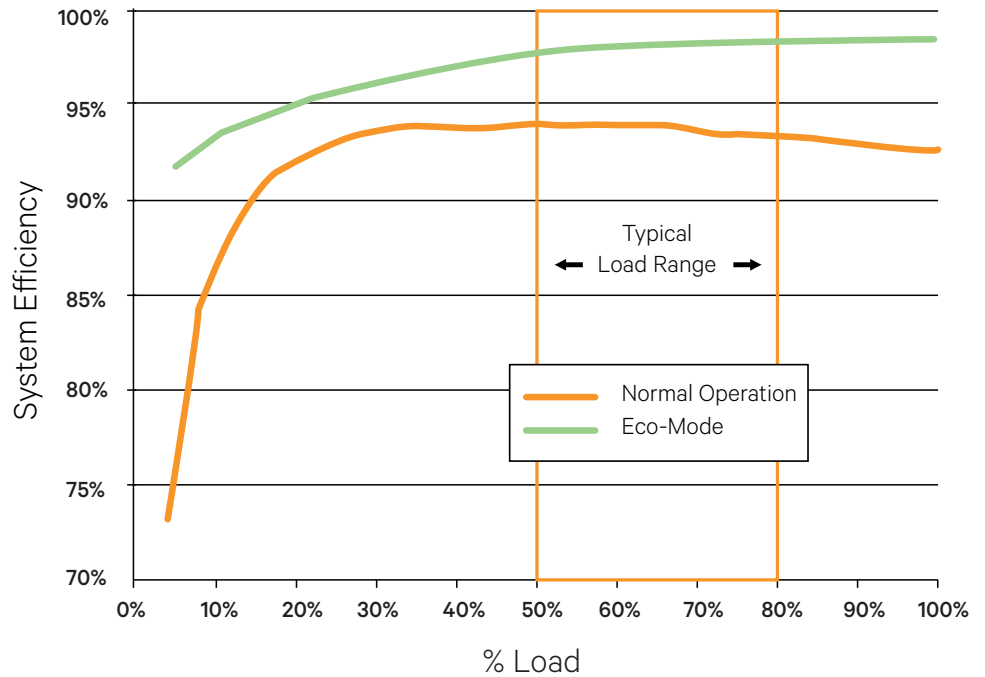
Efficient Design and Operation Through-out the Lifecycle

ECONOMICAL AND EFFICIENT – SAVES ON OPERATING AND CAPITAL EXPENSES

Liebert® APM UPS offers excellent efficiency, up to 94% in double conversion and up to 98% in Active Eco-mode. More importantly, with its optimized modular design, high efficiency levels can be obtained with the initial system, instead of purchasing larger capacity systems to anticipate future requirements.

- Low Total Cost of Ownership
- High-efficiency rating (up to 94%), from 50-100% load
- ENERGY STAR qualified UPS
- Expand as you need with the flexibility to add capacity as demand increases
- One-year warranty – provides full system coverage

Efficiencies with and without Eco-Mode



Liebert® APM UPS Efficiency Curve

The 90kW Liebert® APM UPS at full load has up to 2% efficiency advantage over competitive UPS, saving up to \$1800 annually (assuming \$0.10 per kW/Hr).



From left: Liebert® APM BDC — Liebert® APM UPS — Liebert® APM External Battery Cabinet

Dynamic Configurations Enhance Deployment

UPS Cabinet

- One assembly per cabinet may be used for redundancy (up to 30kW + 15kW redundant; up to 75kW + 15kW redundant)

Battery Cabinet

- Add runtime for 45 kW system; required for 90 kW system
- Optional Albér™ factory integrated battery monitoring for proactive battery management to ensure availability

Bypass Distribution Cabinet

- External maintenance bypass for complete serviceability while load is running on bypass utility power
- Integral distribution saves space and cost
- Kirk-key interlock ensures proper operation
- 65 kAIC rating meets high electrical withstand requirements Battery Cabinet

Intelligence — Where and How You Need It

The Liebert® APM UPS provides robust, flexible ancillary features to ensure the system meets your demands.

Simple and Comprehensive Monitoring

The menu-driven control panel on Liebert APM UPS is easy to read and use. Multiple parameters are monitored; data is recorded, stored and easily viewable. Unit metering and status information is displayed in a logical format, and is selectable in multiple languages.

Enterprise-Quality Batteries Increase Reliability

Battery quality is key to the reliability of the UPS and to the availability of the protected equipment. Liebert APM UPS provides the same reliable battery technology that supports enterprise UPS systems.

- Lower initial cost
- Better service life
- Battery warranty – 3 years full warranty, 7 years pro-rated
- Backed by the largest service organization in the industry
- Optional Albér® battery monitoring ensures battery reliability allowing for proactive management

Management and Control Solutions

The UPS includes multiple Liebert communication ports for important connectivity and visibility for rich infrastructure management:

- The *Trellis™* Platform
- Liebert® SiteScan™
- Liebert® Nform
- Third party BMS systems

Albér™ Battery Monitoring Systems:



Albér™ Battery Xplorer Dashboard

Simplified Monitoring with the Unity Communications Card

- Up to 10 Liebert® sensors can be wired in series and can report a discrete SNMP trap when their status changes
- Any SNMP monitoring and notification software, such as Liebert Nform can be used
- Monitor temperature, humidity, door open status, leak detection and more



Shown: Optional Albér™ integrated battery monitoring

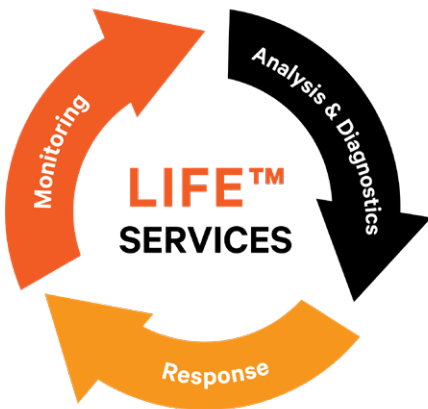
Services Can Provide Local or Remote Coverage, 24x7

CRITICAL SERVICES AND SUPPORT

LIFE™ Services, offered by Vertiv, provides increased uptime and operational efficiency through continuous monitoring, expert analysis, and proactive response that ultimately helps you optimize the health of the Liebert® APM UPS and have peace of mind.

Detailed parametric data is continuously captured with advanced technology embedded in the Liebert APM UPS. The data is transmitted safely and efficiently to an authorized remote service center staffed with system engineers. Should an operating anomaly or alarm condition arise, the engineer performs an immediate analysis and initiates an appropriate response to quickly, safely, and accurately restore to its proper operating condition.

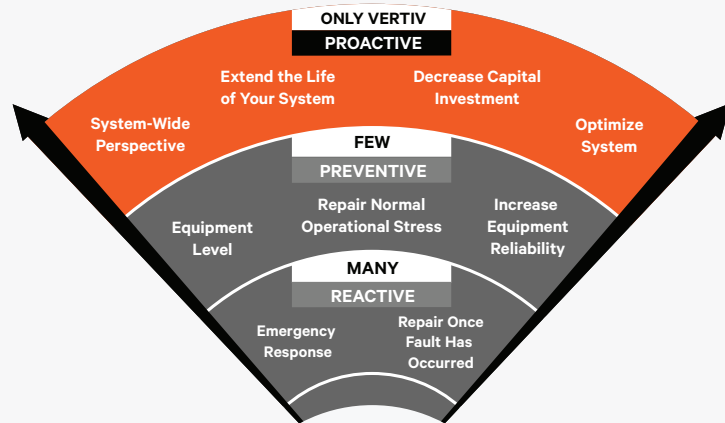
- 24x7 continuous remote monitoring
- Expert analysis and diagnosis
- Quick, safe and accurate response



LIFE Services offers following benefits:

- 1. Uptime assurance** delivered by 24x7 monitoring; early detection of trends and operating anomalies that may lead to critical failures if not addressed; and interpretation of alarm and status messages to understand potential impact.
- 2. Rapid incident response** delivered by the Liebert APM UPS alarm messages and relevant data automatically transmitted for analysis, trending and diagnosis; remote diagnosis of the equipment while customer engineer is being dispatched to the site; and shipment of parts necessary to perform the corrective maintenance.
- 3. Increased insight and ease of management** delivered by notification of operating conditions that may impact the health of the Liebert APM UPS; explanation of critical system health with trend and analysis reports delivered quarterly; and integration of services from remote detection of critical and anomaly conditions through on-site response to restore the critical system.

Vertiv Services



The Vertiv Difference

Maximizing the performance and efficiency of your data center's uninterruptible power supply (UPS) and other power distribution systems requires systems be properly maintained by factory-trained technicians. Trust Vertiv Services to take your critical maintenance to the next level — proactive maintenance that can significantly extend the life of your power systems, decrease your capital investment, optimize system efficiency and effectiveness, and increase overall system availability.

Technical Specifications - Liebert® APM UPS

Power Rating – kW/kVA	15, 30, 45	15, 30, 45, 60, 75, 90
Frame Size	45kW	90kW
Input AC Specifications		
Phase	3	
Power Factor	0.99 lagging minimum at full load	
Frequency Range	40-70 Hz	
Input Voltage	208, 220, 480, 600VAC, 60Hz, 3-phase, 4-wire plus ground	
General Specifications		
UPS Technology	On-Line, Double Conversion	
Battery Specifications		
Battery Test Type	Online	
Battery Technology	Valve-regulated lead acid battery; supplied by EnerSys	
Output AC Specifications		
Voltage	208/120, 220/127VAC, 60Hz 3-phase, 3- or 4-wire plus ground	
Frequency – Hz	60 Hz	
Communications		
Communications Options	Liebert® IntelliSlot IS-485EXT, Liebert® SiteScan™, IS-WEBL, Liebert® Nform	
Physical Data UPS		
Dimensions, W X D X H in (mm)	31.8 x 39.5 x 78.7 (800, 1000, 2000) Note: 12 inches of rear clearance required for cooling	
UPS Rating	Unit Weight lb (kg)	
15kW	919 (417)	705 (320)
30kW	994 (451)	780 (354)
45kW	1069 (485)	855 (388)
60kW	NA	930 (422)
75kW	NA	1005 (456)
90kW	NA	1080 (490)
Physical Data Bypass Distribution Cabinet		
Dimensions, W X D X H in (mm)	23.625 x 39.5 x 78.75 (600 x 1000 x 2000)	
Weight lb (kg)	902 (410)	
Physical Data Battery Cabinet		
Dimensions, W X D X H in (mm)	23.625 x 39.5 x 78.75 (600 x 1000 x 2000)	
Weight lb (kg)	1554 (705) with Hx150 batteries, 1693 (768) with HX205 batteries, 2101 (953) with HX300 batteries, and 2366 (1073) with HX330 batteries.	
Environmental		
Operating Temperature, °F (°C)	UPS: 32° to 104°F (0-40°C); Battery: 68° to 86°F (20-30°C)	
Relative Humidity	0% to 95%, non-condensing	
Operating Altitude	Up to 3,300 ft. (1,000m) without derating	
Acoustical Noise, db, at 39 in.	Less than 56 dBA typical, 3.3 ft. (1m) from the unit	
Agency/Certification/Conformance		
	Listed to UL 1778 and UL 924 UPS standards, and CSA certified. Meets current requirements for safe high performance UPS operation. ENERGY STAR qualified UPS – 208V models	
Warranty		
Standard	1 Year	



Vertiv.com | Vertiv Headquarters, 1050 Dearborn Drive, Columbus, OH, 43085, USA

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