VERTIV.

Product brochure

Power solutions for emergency lighting applications

Reliable emergency lighting power for life safety applications

Designed for reliability: Vertiv™ Liebert® APM2 (10-120kVA) as a high-capacity centralized emergency lighting UPS

The vital role of emergency lighting compliance

In the event of a power failure, fire, or structural emergency, visibility is the primary factor that stands between an orderly evacuation and a life-threatening crisis. Emergency lighting is not merely a convenience; it is a critical life safety requirement mandated by the National Fire Protection Association (NFPA 101) and the National Electrical Code (NEC). These standards exist to make sure that exit pathways, stairwells, and high-occupancy zones remain illuminated for a minimum of 90 minutes, providing building occupants the clear, calm direction needed to reach safety. Without a certified power source, even the most advanced lighting fixtures are rendered useless during a blackout, leading to disorientation, physical injury, and severe legal and regulatory liabilities for facility owners.

The standby lighting is often confused with emergency lighting. Standby lighting is for business continuity (in areas such as data centers and server rooms), not just life safety. It allows work to continue during a power outage, whereas emergency lighting is designed for safe evacuation, with its applications varying depending on building design.

Architecture of safety: Types of emergency lighting

Emergency escape route lighting

- Designed to illuminate and make the means of egress (the path to exit) clearly visible so people can leave a building safely.
- ***Functional areas:*** Hallways, corridors, stairwells and lobbies that lead to an exit.

Open area (anti-panic) lighting

- Used in large spaces where people may not be familiar with the layout. The goal is to provide enough light to reduce "panic" and allow people to see obstacles and reach an escape route.
- ***Functional areas:*** Open-plan offices, assembly halls, gymnasiums, shopping malls, and large hotel ballrooms.

High-risk task area lighting

- This is a specialized critical application required in areas where people are involved in a potentially dangerous process that must be shut down safely before they can evacuate.
- ***Functional areas:*** Operating rooms (surgery), laboratories handling hazardous chemicals, control rooms for power plants, or factory floors with heavy machinery/moving parts.

When safety is non-negotiable, compliance is the foundation. The **UL 924** (US standards) and **CSA C22.2 No. 141** (Canada standards) represent the highest benchmarks for **emergency lighting** and **power equipment** in North America. These certifications require that critical life safety systems, from exit paths to high-risk task areas, remain fully operational during a total power failure. Meeting these rigorous thermal, electrical, and mechanical requirements goes beyond regulation, it defines reliability when every second counts. As a result, a dedicated UPS certified to these standards such as the **Vertiv™ Liebert® APM2 UL 10-120kVA 208/480V** is necessary to support life safety system performance.

Why a dedicated UL 924 and CSA 22.2 UPS is essential

A standard IT Uninterruptible Power Supply (UPS) is designed to protect data and maintain continuity for digital loads. The Vertiv™ Liebert® APM2 UL 10–120kVA 208/480V UPS is based on a proven IT-grade UPS platform but is additionally engineered and certified to support emergency lighting and life safety systems.

Rigorously tested to UL 924 and CSA C22.2 No. 141, the Vertiv™ Liebert® APM2 UL UPS is available in high power density configurations up to 60kVA (208V) and up to 120kVA (480V). It meets code-mandated requirements enforced by authorities having jurisdiction (AHJs) and addresses operational demands, such as extended runtime, inrush tolerance, and automated compliance testing that conventional IT UPS systems are not designed to handle.

Vertiv™ Liebert® APM2 10-120kVA 208/480V

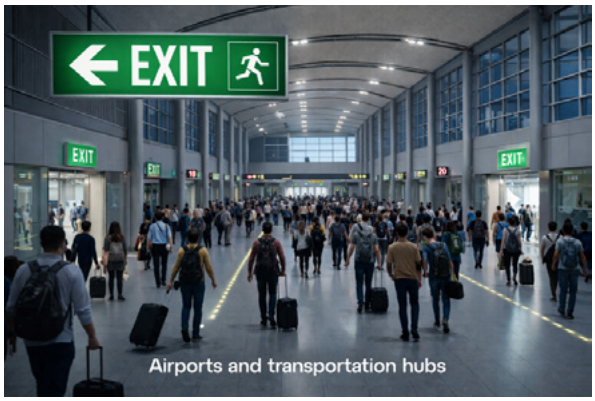
Built to meet critical life safety requirements:

- **The 90-minute code mandated runtime:** Life safety codes require emergency lighting systems to operate for a minimum of 90 minutes during a power outage. Unlike standard UPS systems designed for short-ride through (5-15 minutes of backup runtime), the Vertiv Liebert APM2 UL UPS is properly sized and certified to meet this requirement.
- **High LED inrush tolerance:** Emergency lighting loads, particularly modern LED fixtures, can generate very high short-duration inrush currents during startup, while legacy HID and fluorescent fixtures introduce additional transient loading. The Vertiv Liebert APM2 UL UPS is designed with a robust inverter and high crest-factor capability to accommodate these conditions without unintended UPS output interruption, maintaining continuous illumination during emergency operation.
- **Zero transfer time for continuous illumination:** With online double conversion efficiency of up to 97%, the Vertiv Liebert APM2 UL UPS delivers 0 ms transfer time, preventing HID and LED fixtures from flickering or extinguishing during power events. Eco mode operation increases efficiency up to 99% while maintaining seamless power continuity.
- **Automated Readiness:** The Vertiv Liebert APM2 UL 10-120kVA UPS supports the required monthly and annual discharge tests. It maintains a digital event and test log reports to support the AHJ inspections and life safety compliance.

Bridging the gap:

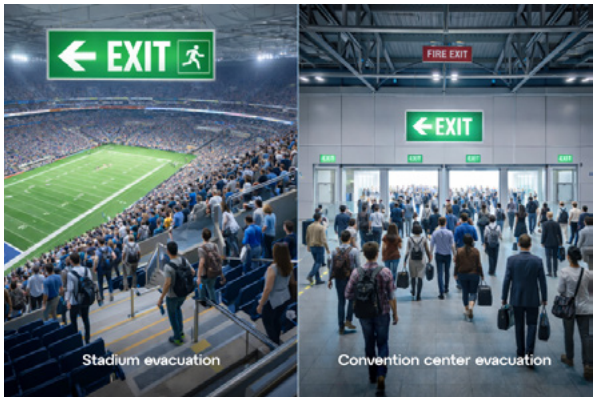
The Vertiv™ Liebert® APM2 UL UPS 10-120kVA 208/480V for emergency power applications

In modern infrastructure, compliance with UL 924 certification is no longer optional—it represents a baseline requirement for commercial and public-facing facilities. High-occupancy commercial buildings, high-rise offices, and mixed-use developments are governed by strict life safety codes so that power failures do not result in a complete loss of visibility along required egress paths. Vertiv Liebert APM2 UL 10-120kVA UPS serves as a critical bridge between utility power and emergency preparedness. By centralizing the emergency power source, it replaces distributed, wall-mounted battery fixtures with a single, resilient and centrally managed UPS solution. It is tested and certified to UL 924 and CSA C22.2 No. 141 to support reliable and compliant emergency lighting operation.



Airports and transportation hubs

In sprawling terminals where thousands of travelers are unfamiliar with the layout, the Vertiv™ Liebert® APM2 UL 10-120kVA UPS provides high-capacity power needed to illuminate the egress corridors and signage, preventing panic during a utility failure.



Stadiums and convention centers

The Vertiv™ Liebert® APM2 UL 10–120kVA UPS supports the inrush demands of high-intensity arena lighting, maintaining continuous illumination during blackout conditions to support safe evacuations.

Healthcare and hospital facilities

In medical environments, structural integrity is as vital as electrical reliability. The Vertiv™ Liebert® APM2 UL UPS is seismic rated and OSHPD (HCAI) certified as well, meaning it is built to remain operational even after a major seismic event. This makes it the premier choice for healthcare facilities where critical paths and patient transfer zones must remain illuminated so care can continue without interruption.

Higher education campuses

For large university lecture halls and high-rise dormitories, the Vertiv™ Liebert® APM2 UL UPS 10-120kVA UPS offers a centralized, modular approach to emergency power, simplifying the mandatory 30-day and annual testing across the academic building from a single, intelligent interface.

Technical specifications and compliance comparison

UL 1778	Standard IT UPS	Vertiv™ Liebert® APM2 (UL 924)
Certifications	UL 1778	UL1778; UL 924 & CSA C22.2 No. 141
Seismic certification	Typically, none	OSHPD (HCAI) / seismic rated
Inrush handling	Low ~150% for 30 cycles	High (up to 1000% capacity)
Typical runtime	5–15 minutes	90 minutes (standard)
Testing	Manual/software	Automated & mandatory logging
Transfer time	4–10ms	0ms (no flicker)

Simplifying compliance: Automated maintenance and reporting

The most significant burden of managing a life safety system isn't the initial installation, it's the decades of mandatory testing that follow. Fire marshalls and building inspectors require strict adherence to NFPA 101 and NEC testing protocols. Failure to provide documented proof of these tests can lead to heavy fines or the loss of a building's occupancy permit.

The Vertiv™ Liebert® APM2 UL 10-120kVA UPS transforms this logistical nightmare into a hands-off automated process. While traditional "bug-eye" battery packs require a technician to walk the building with a ladder every month, the Vertiv Liebert APM2 centralizes this process.

- **Intuitive** to use
- **Customer-configurable data** & views
- **Status-at-a glance** LED light bar
- **Multiple** screen colors available

- **Automated self-testing:** The Vertiv Liebert APM2 UL 10-120kVA UPS is factory programmed to perform the mandatory 30-day functional (30 seconds) and the annual discharge test (full 90 minutes) without human intervention.
- **Digital compliance logging:** Maintains an internal electronic record of every test performed, including date, duration, and battery health. These logs can be exported or viewed instantly during an inspection.
- **Real-time health monitoring:** The system continuously monitors battery jars for temperature and impedance. If a single cell shows signs of degradation, the Vertiv Liebert APM2 triggers visual and audible alarms.
- **Remote monitoring:** Through the Vertiv™ Liebert® Intellislot™ Unity Card and RDU 120 card, the Vertiv Liebert APM2 UL UPS can alert a Building Management System (BMS) via SNMP, Modbus or BACnet if a fault is detected before an emergency occurs.

Sizing a code-compliant emergency UPS system

The tables below summarize UL 924 and CSA C22.2 No. 141 compliant configurations for the Vertiv™ Liebert® APM2 UL 10–120kVA 208V/480V UPS, showing the required external battery cabinet (EBC) quantity and installed footprint by UPS kVA rating to achieve code-mandated emergency runtime.

Vertiv™ Liebert® APM2 10-120kVA 208/480V (23.60 in (600mm) width)

Standard VRLA EBC (available in 34.65 in (880mm) & 47.24 in (1200mm) width)

Tested and certified for UL 924 and CSA 22.2 No. 141 (Canada equivalent)

Certification	Voltage	Rating	Battery	#of EBC's	Footprint In (mm) width
UL924 & CSA 22.2 90 min	208V	10kW	VRLA battery (24jars/VRLA EBC)	1	58.27 (1480)
		15KW		1	58.27 (1480)
		20kW		2	92.91 (2360)
		25kW		2	92.91 (2360)
		30kW		2	92.91 (2360)
		40kW		3	127.56 (3240)
		45kW		3	127.56 (3240)
		50kW		3	127.56 (3240)
		60kW		4	162.20 (4120)
UL924 & CSA 22.2 90 min	480V	20kW	VRLA battery (40jars/VRLA EBC)	1	70.87 (1800)
		30kW		1	70.87 (1800)
		40kW		2	118.11 (3000)
		50kW		2	118.11 (3000)
		60KW		2	118.11 (3000)
		80kW		3	165.35 (4200)
		90kW		3	165.35 (4200)
		100kW		4	212.60 (5400)
		120KW		4	212.60 (5400)
CSA 22.2 30 min	208V	10kW	VRLA battery (24jars/VRLA EBC)	1	58.27 (1480)
		15KW		1	58.27 (1480)
		20kW		1	58.27 (1480)
		25kW		1	58.27 (1480)
		30kW		1	58.27 (1480)
		40kW		1	58.27 (1480)
		45kW		2	92.91 (2360)
		50kW		2	92.91 (2360)
		60kW		2	92.91 (2360)
CSA 22.2 30 min	480V	20kW	VRLA battery (40jars/VRLA EBC)	1	70.87 (1800)
		30kW		1	70.87 (1800)
		40kW		1	70.87 (1800)
		50kW		1	70.87 (1800)
		60KW		1	70.87 (1800)
		80kW		2	118.11 (3000)
		90kW		2	118.11 (3000)
		100kW		2	118.11 (3000)
		120KW		2	118.11 (3000)
CSA 22.2 30 min	208V	10kW	VRLA battery (24jars/VRLA EBC)	1	58.27 (1480)
		15KW		1	58.27 (1480)
		20kW		1	58.27 (1480)
		25kW		1	58.27 (1480)
		30kW		1	58.27 (1480)
		40kW		1	58.27 (1480)
		45kW		2	92.91 (2360)
		50kW		2	92.91 (2360)
		60kW		2	92.91 (2360)
CSA 22.2 30 min	480V	20kW	VRLA battery (40jars/VRLA EBC)	1	70.87 (1800)
		30kW		1	70.87 (1800)
		40kW		1	70.87 (1800)
		50kW		1	70.87 (1800)
		60KW		1	70.87 (1800)
		80kW		2	118.11 (3000)
		90kW		2	118.11 (3000)
		100kW		2	118.11 (3000)
		120KW		2	118.11 (3000)

Vertiv™ Liebert® APM2 10-120kVA 208/480V with internal modular lithium-ion batteries

Tested and certified for UL 924 and CSA 22.2 No. 141 (Canada equivalent)

Certification	Voltage	Rating	Battery	# of modules	Footprint In (mm) width
UL924 90 min	208V	10kW	Vertiv Liebert APM2 internal lithium-ion	8	23.62 (600)
CSA 22.2 30 min	208V	10kW	Vertiv Liebert APM2 internal lithium-ion	3	23.62 (600)
		15KW		4	23.62 (600)
		20kW		6	23.62 (600)
		25kW		7	23.62 (600)
		30kW		8	23.62 (600)
CSA 22.2 30 min	480V	20kW	Vertiv Liebert APM2 internal lithium-ion	6	23.62 (600)
		30kW		8	23.62 (600)
CSA 22.2 60 min	208V	10kW	Vertiv Liebert APM2 internal lithium-ion	5	23.62 (600)
		15KW		8	23.62 (600)
CSA 22.2 90 min	208V	10kW	Vertiv Liebert APM2 internal lithium-ion	8	23.62 (600)

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

Maintain continuity of operations with a service partner that provides coverage across the critical equipment lifecycle. From project start-up and testing to lifecycle maintenance contracts and operational support, Vertiv helps maintain optimal system performance.

Global presence & local resources

With a broad service presence across more than 130 countries and over 5,000 engineers dedicated to supporting global operations, Vertiv delivers reliable infrastructure performance, with service available 24 hours a day.

Project services

From project planning and design through equipment procurement, installation, and commissioning, the project team delivers comprehensive capabilities that support faster deployment and consistent execution based on pre-defined, repeatable procedures.

Comprehensive capabilities include factory witness testing and site acceptance inspection.

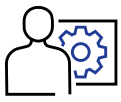
Expertise & training

Service engineers are regularly certified in accordance with country-specific regulations, as well as international standards.

Vertiv service engineers are trained, experienced professionals who complete an average of one week of intensive training each quarter, totaling approximately one month of full-time training per year. Training covers both technology and safety to support competent and safe field operations, reinforced by established procedures and access to central technical support when needed.

Premium response

Vertiv provides access to an extensive supply of critical parts, including crash kits ready for deployment, with service engineers able to respond to requests quickly. This is reinforced by a solid knowledge base and established escalation procedures applied across regions. Advanced incident management and a widespread network of service centers further enable strong restoration capabilities.



Supporting business operations around the globe

Regular service of critical equipment helps maintain high availability and reduces total cost of ownership. A service program delivers timely, proactive maintenance to help avoid unplanned, costly equipment downtime and maintain optimal equipment operation. Vertiv™ service programs cover all technologies and can be tailored to specific business requirements.

Vertiv infrastructure expertise is enhanced by field data and analytics, enabling data-based services such as advanced incident management and condition-based maintenance. These services complement our portfolio by providing additional insight into operating trends, enabling informed decision-making, and reducing operational complexity.

Technical specifications 208/220V

Models (kVA/kW)	Vertiv™ Liebert® APM2 10-60 kW
Ratings	10, 15, 20, 25, 30, 40, 45, 50, 60
Input	
Power module capacity	15kW/kVA
Nominal input voltage	208/220V (3-phase 3-wire + N + PE)
Input voltage range without battery discharge*	125-249V
Nominal input frequency	50/60 Hz
Input frequency range	40 to 70 Hz
Input power factor at full load	0.99
Current THD at full linear load*	< 3%
Bypass voltage tolerance	Upper limit: +10%,15%,or+20% Vac Default: +15% Vac Lower limit: -10%,-15%,-20%,-30%, or -40% Vac Default: -20% Vac
Bypass frequency tolerance	±10%
Battery	
Internal battery	lithium-ion
External battery	VRLA
Battery bus voltage	192-288v (16~24 jars)
Voltage temperature compensation	-3.0 mV/°C/Cell (selectable 0 to -5.0 at 25°C)
Battery charger max. current*	140 A
Output	
Nominal output voltage	208/220V (3-phase 3-wire + N + PE)
Nominal output frequency	50/60 Hz
Output power factor	Unity
THDi at full linear load	≤ 1%
Inverter overload capacity*	≤ 105% Continuous; 105% to 125% for 10 min; 125% to 150% for 1 min; >150% for 200 ms
Double conversion efficiency	Up to 98.4%
Eco mode efficiency	Up to 98%
Dynamic online	Up to 97%
Dimensions and weight	
Frame dimensions (w x d x h) mm kg	600 x 1030 x 2000 mm 328 kg (without power module)
Power module (w x d x h) mm kg	440 x 510 x 87 mm 26..4 kg
Battery module VRLA (w x d x h) mm	230 x 730 x 87 mm
Battery module weight (kg)	35.5 kg
Battery module li-ion (w x d x h) mm	796 x 440 x 87
Battery module li-ion weight (kg)	36 kg
General	
Noise within 1 m (no fan)	≤ 65 dB
Maximum altitude	<1500 m without derating (compliant with IEC/EN 62040-3 at altitudes exceeding 1500m)
Operating temperature	32°F to 122°F (0°C to 50°C)*C with automatic derating >40°C
Relative humidity	0% to 95%, non-condensing
Protection level IEC 60529	IP20
General and safety requirements for UPS	UL 1778 5th Edition; CSA 22.2 NO 107.3
EMC requirements for UPS	IEC 62040-2; FCC Part 15, Class A
Transportation	ISTA Procedure 3B

Technical specifications 480/415/400V

Models (kVA/kW)	Vertiv™ Liebert® APM2 20-120 kW
Ratings	20, 30, 40, 50, 60, 80, 90, 100, 120
Input	
Power module capacity	30kW/kVA
Nominal input voltage	380/400/415/480 V (3-phase 3-wire + N + PE); 480V (3-phase 3-wire+PE)
Input voltage range without battery discharge*	380/400/415V: 228~478V; 480V: 288~528V
Nominal input frequency	50/60 Hz
Input frequency range	40 to 70 Hz
Input power factor at full load	0.99
Current THD at full linear load*	< 3%
Bypass voltage tolerance	**For 380V/400V/415V models,** Upper limit selections: +10%, +15%, +20%; default +15%. Lower limit selections: -10%, -15%, -20%, -30%, -40%; default -20%. **For 480V models,** Upper limit selections: +10%. Lower limit selections: -10%, -15%; default -10%.
Bypass frequency tolerance	±10%
Battery	
Internal battery	lithium-ion
External battery	VRLA
Battery bus voltage	384-528V (32~44 jars)
Voltage temperature compensation	-3.0 mV/°C/Cell
Battery charger max. current*	140 A
Output	
Nominal output voltage	380/400/415/480 V (3-phase 3-wire + N + PE); 480V (3-phase 3-wire+PE)
Nominal output frequency	50/60 Hz
Output power factor	Unity
THDi at full linear load	≤ 1%
Inverter overload capacity*	≤ 105% Continuous; 105% to 125% for 10 min; 125% to 150% for 1 min; 150% to 200% for 200 ms
Double conversion efficiency	Up to 97%
Eco mode efficiency	Up to 99.5%
Dynamic online	Up to 98%
Dimensions and weight	
Frame dimensions (w x d x h) mm kg	600 x 1030 x 2000 mm 328 kg
Power module (w x d x h) mm kg	440 x 518 x 87 mm 26.4 kg
Battery module VRLA (w x d x h) mm	230 x 730 x 87 mm
Battery module weight (kg)	30 kg
Battery module li-ion (w x d x h) mm	796 x 440 x 87
Battery module li-ion weight (kg)	36 kg
General	
Noise within 1 m (no fan)	≤ 65 dB
Maximum altitude	<1500 m without derating (compliant with IEC/EN 62040-3 at altitudes exceeding 1500m)
Operating temperature	32°F to 122°F (0°C to 50°C)*C with automatic derating >40°C
Relative humidity	0% to 95%, non-condensing
Protection level IEC 60529	IP20
General and safety requirements for UPS	UL 1778 5th Edition; CSA 22.2 NO 107.3
EMC requirements for UPS	IEC 62040-2; FCC Part 15, Class A
Transportation	ISTA Procedure 3B

Specifications are subject to change without any further notification.

Vertiv.com | **Vertiv Headquarters,** 505 N Cleveland Ave, Westerville, OH 43082, USA

SL-80522 (R05/26)