



Product brochure

Vertiv™ Liebert® APM2

10-600kW, 208V and 480V/415V

Technology-driven, efficient, and scalable
power solution for mission critical facilities



Lithium-ion
Batteries



Consider the Vertiv™ Liebert® APM2 the next-generation mid-size UPS for mission critical applications

Introducing the innovative Vertiv™ Liebert® APM2 Modular UPS, a flexible high-density solution designed for mission-critical applications in small, medium, and large data centers, including high performance compute (HPC), or commercial, light industrial, retail telecommunications, and healthcare applications. Derived from the reliable Vertiv™ Liebert® EXM, the next-gen Vertiv Liebert APM2 builds on its proven track record and widespread usage in thousands of critical power sites.

The Vertiv Liebert APM2 UPS uses advanced three-level IGBT technology and silicon carbide converters to achieve a remarkable 97.5% peak efficiency driving operational cost savings and reducing environmental impact. The modular and scalable construction provides optimized flexibility for capacity growth and is built with system redundancies to mitigate single point of failures.



**Vertiv™ Liebert®
APM2 10-150kVA,
208/220V**

**Vertiv™ Liebert®
APM2 20-300kVA,
480V/415V**



**Vertiv™ Liebert®
APM2 300-600kVA,
480V/415V**



**Compact
design**



**Flexible
battery
configuration**



**Proven hot-
swappable**

**Vertiv™ Liebert® APM2
is poised to lead in the
industry and is designed
with latest technological
advancements, and
innovative features.**



Robust



**High
efficiency**



**Large and
intuitive
9" Touchscreen
HMI**

Highlights

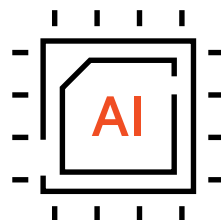
The Vertiv™ Liebert® APM2 UPS is an online, three-phase (in/out), 208/220V; 480V and 415V UPS, optimized with a flexible high-density design.

Key benefits

- Higher capacity and more flexible ratings 10-150kVA 208/220V or 20-600kVA 480V/415V.
- Maximum efficiency with up to 99% ECO mode, 98.8% dynamic online mode and 97.5% in double conversion mode.
- Diverse application scenarios- In-row, room and against-the-wall and for high-density architectures.
- Unity power factor delivers more usable power.
- Modular and scalable design provides optimal flexibility.
- Easy serviceability due to hot swappable power modules, bypass modules, HMI and communication modules and internal battery modules.
- Improved battery management with intelligent BMS for VRLA and Lithium-ion internal batteries 10-120kVA.
- High-capacity continuous rated battery charger enables quicker charging recovery and flexibility with battery energy storage applications.
- Compatible with external VRLA or Lithium-ion cabinet solutions optimized for modern applications.
- Integrated paralleling capability up to 4 units for capacity and redundancy.
- Operate up to 50 °C and reduce cooling costs and expand application use.
- Intelligent real-time monitoring and controls improve system performance visibility and reaction time.
- UL 924 and CSA 22.2 No.141 certified UPS, offered in 10-120kVA 208V and 480V configurations to support compliant emergency power systems.
- OSHPD (HCAI) OSP-certified, supporting seismic compliance for California healthcare and critical infrastructure environments.



Vertiv™ Liebert® APM2 provides exceptional performance and reliability for critical power in data centers along with critical infrastructure in commercial and industrial settings



Saves footprint of up to 55%

Vertiv™ Liebert® APM2 UPS is optimized for a variety of critical power applications



Banking

- Highly reliable backup for banks, financial services and Insurance companies.
- IT branches- support server room computers, ATMs and other onsite equipment.
- Protect critical processes and customer data in case of an outage.



Retail

- Highly reliable backup for retail stores, back offices, and e-commerce operations.
- Designed to support uptime for critical daily business operations.
- Protect inventory log data in case of an outage.



Healthcare

- Provides maximum equipment uptime to non-life critical medical equipment including imaging equipment.
- Provides a wide power capacity range to support small to large site and campus deployments.
- Support back up operations and critical data processing.



Manufacturing and light industrial

- Deliver efficient back-up power to small-to-medium manufacturing production lines.
- Reliable back up power for testing environments of manufacturing operations to avoid interruptions and maintain quality.
- Reduce downtime and support monitoring systems to maintain processes.
- Ideal for room-based applications in electrical rooms of industrial facilities.

Flexible and optimized design

Seamlessly integrate aesthetic design into your infrastructure

- Ideal for in-row server rack applications requiring front to rear airflow.
- Place against the wall with integrated top fan for front to top airflow, limiting the amount of required footprint.
- Compact high-density footprint saves significant floor space in all configurations.



Designed for easy service and maintenance

Designed for ease of service

Vertiv™ Liebert® APM2 is designed with front-access serviceability which allows easy access and a plug-and-play replacement experience thanks to the enhanced modular features including power modules, bypass, controls internal battery, and HMI that provides an efficient and user-friendly process to minimize downtime and service labor.

Modular and hot-swappable design- Optimized mean time to repair <0.5h

Hot-swappable and modular architecture building blocks sub-assembly enables an easy and fast on-site replacement, thus reducing MTTR. It is quick and easy to add, replace, or remove modular components and minimize downtime.

Internal modular battery modules in Vertiv™ Liebert® APM2 10-120kVA are also hot-swappable, and easy to expand or replace offered in both VRLA and Lithium-ion.

Easy detection of power modules

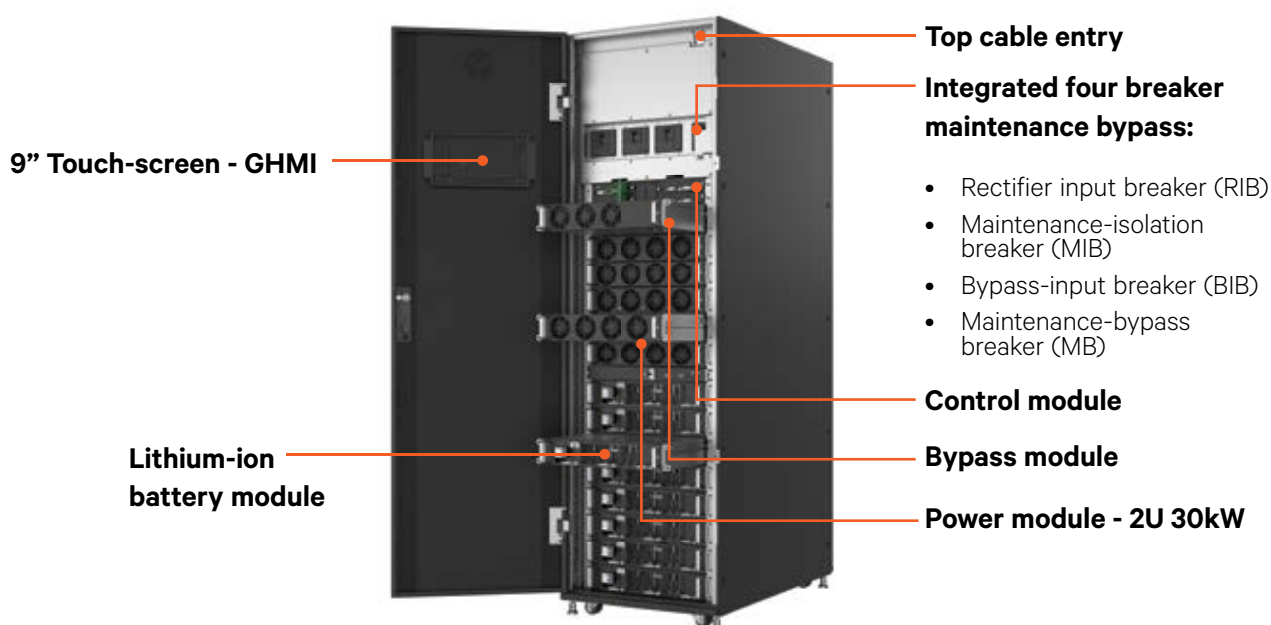
Vertiv Liebert APM2 effortlessly detects the newly added power modules and updates its configuration settings and notifies the status-at-a-glance through the LED light bar of the monitoring system.



Flexible architectures

The innovative and flexible architecture of the Vertiv™ Liebert® APM2 reduces cost, improves management, and speed of deployment. The modular architecture of the Vertiv™ Liebert® APM2 allows a single unit capacity to be scaled up to a maximum of 600 kW in one single unit and up to 2.4MW solution in parallel. There are three different product architectures available, each with a specific maximum cabinet capacity and feature set.

Modular lithium-ion internal batteries



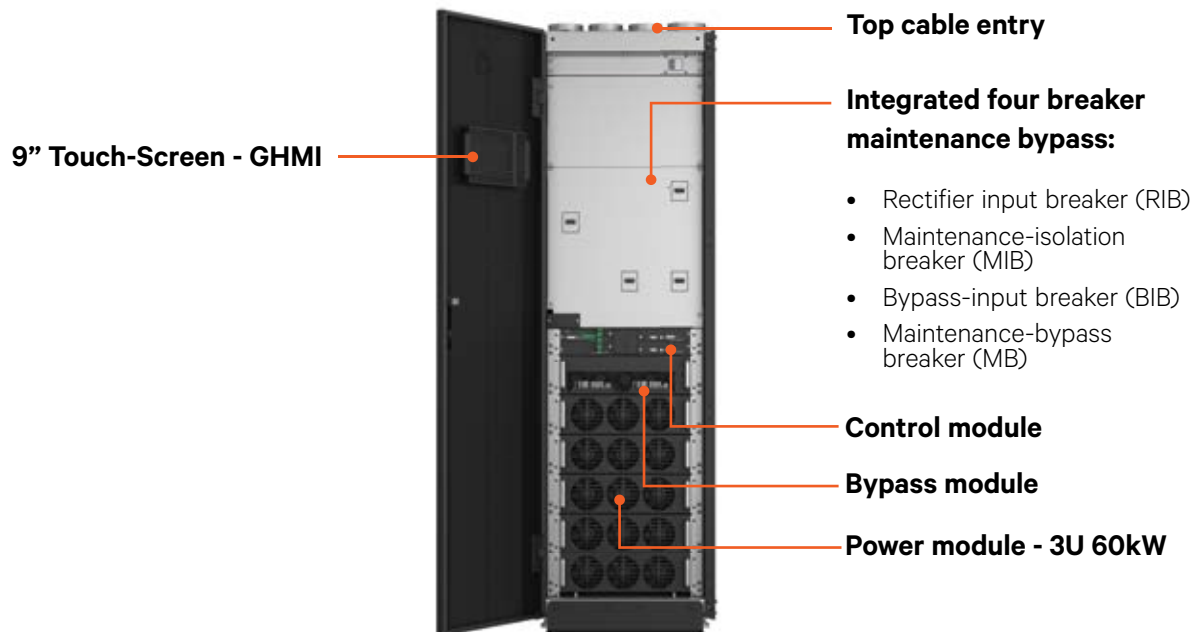
Vertiv™ Liebert® APM2 10-120 kW
 Compatible with Lithium-ion/VRLA internal modular batteries
 External modular VRLA, Standard VRLA,
 and Lithium-ion battery cabinets.

Modular VRLA internal batteries

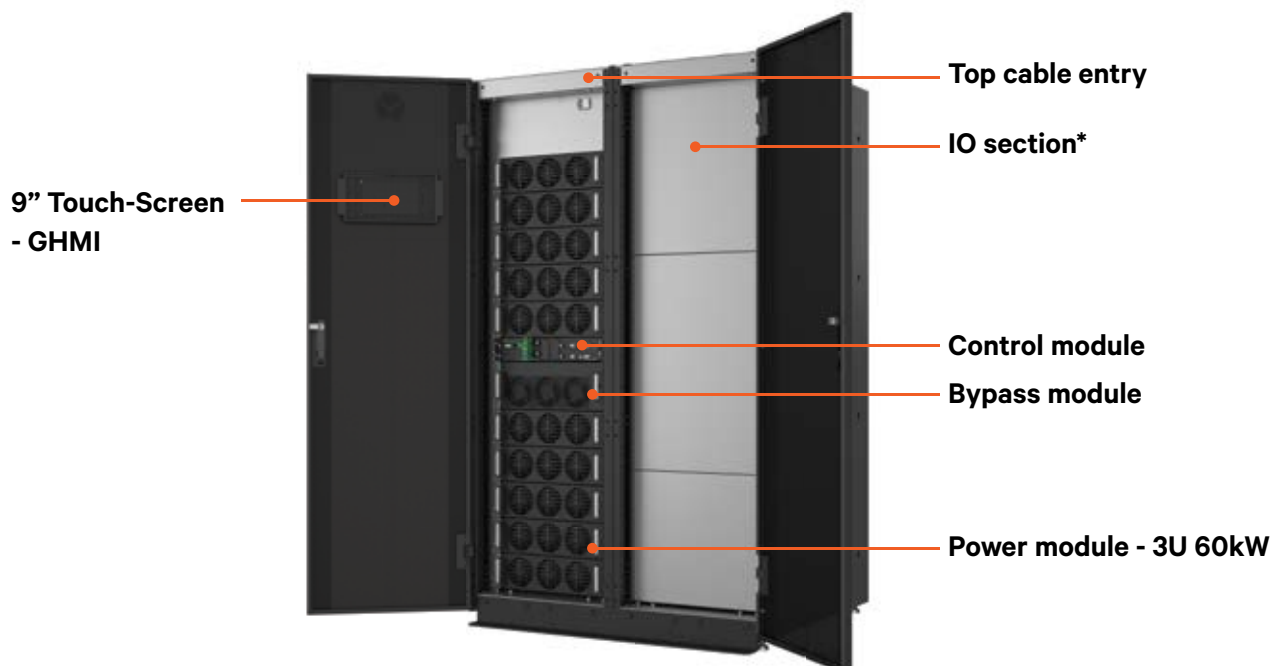


Modular VRLA external battery cabinet





Vertiv™ Liebert® APM2 60-300 kW
 Compatible with External standard VRLA
 and Lithium-ion battery cabinets

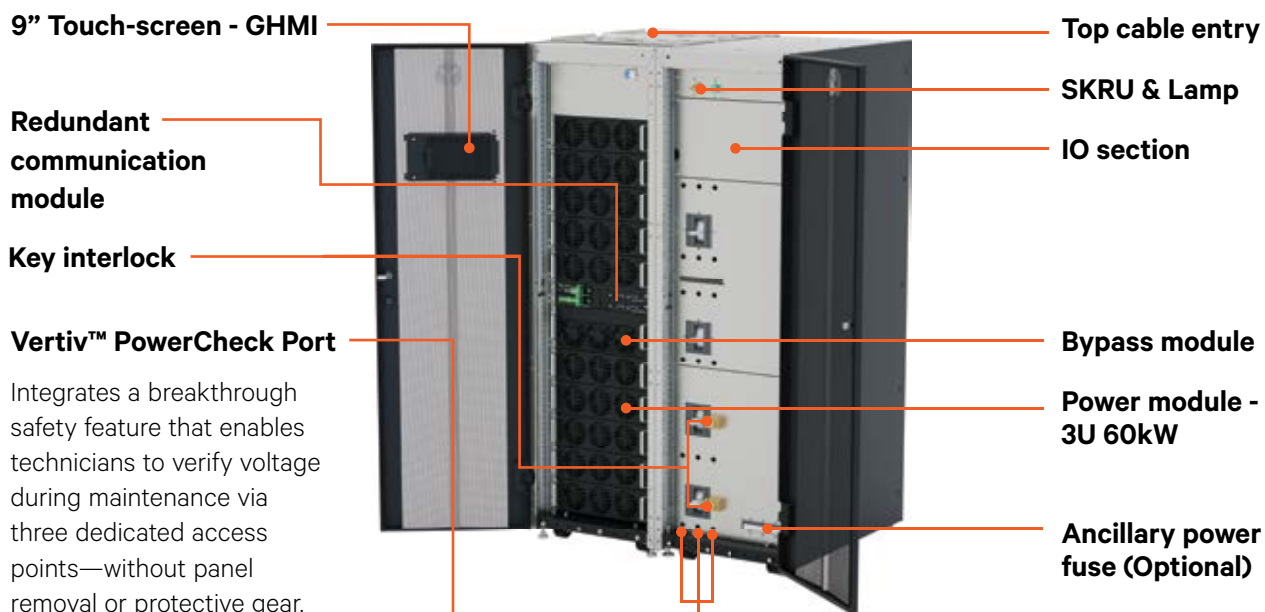


Vertiv™ Liebert® APM2 300-600 kW
 Compatible with External standard VRLA
 and Lithium-ion battery cabinets

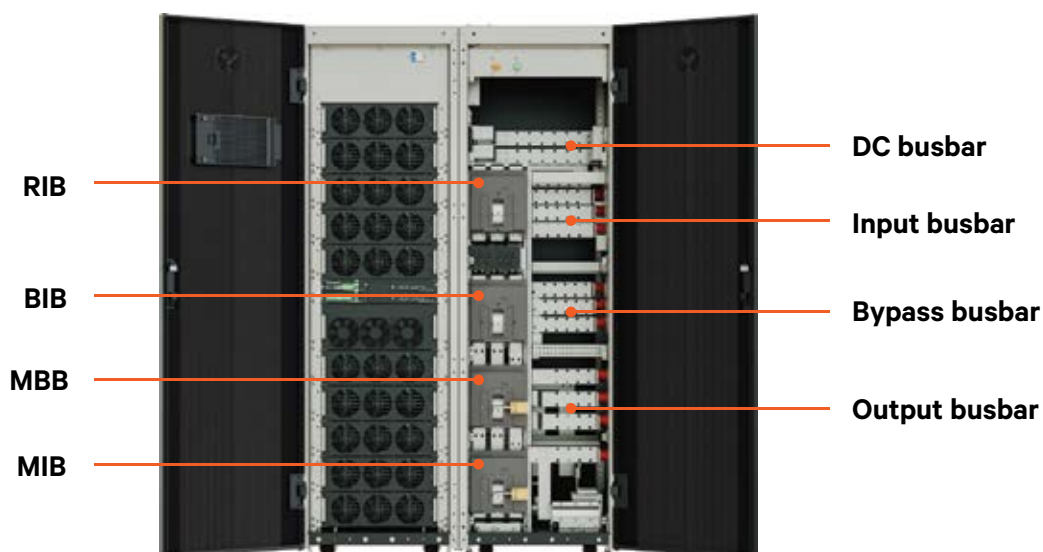


Vertiv™ Liebert® APM2 300-600kW with integrated maintenance bypass

Compatible with External standard VRLA and Lithium-ion battery cabinets.



Vertiv™ Liebert® APM2 300-600 kW
With Integrated maintenance bypass



The most compact 600kW UPS design available in the market, featuring an integrated maintenance bypass.

Available in 100kAIC.

Flexible Configurations - Vertiv™ Liebert® APM2 at-a-glance



Vertiv™ Liebert® APM2

Unit capacity range	10-120kVA	60-300kVA	300-600kVA
Ratings			
208V/220V	10-60kVA	60-150kVA	N/A
480V/415V	20-120kVA	120-300kVA	300-600kVA
Hot swappable power modules size			
208V/220V	15kVA (2U)	30kVA (3U)	N/A
480V/415V	30kVA (2U)	60kVA (3U)	60kVA (3U)
Wiring configurations			
208/220V 4W	10-60kVA	30-150kVA	N/A
480/415 3W/4W	20-120kVA	60-300kVA	60-600kVA
Internal modular batteries			
VRLA	Yes	No	No
Lithium-ion	Yes	No	No
Power module redundancy N+1	Yes	Yes	Yes
Paralleling	Yes	Yes	Yes
BMS	Yes (1U)	No - External battery cabinet	No - External battery cabinet
Internal maintenance bypass breakers	Optional	Optional	No
DC ground fault	Optional	Optional	Optional
Backfeed protection	Yes	Yes	Yes
Dimensions (wxdxh) mm	600x1030x2000	600x1030x2000	1200x1030x2000
Ancillaries			
Maintenance bypass cabinet (MBC)	Yes	Yes	No
MBC +UPS width dimensions (mm)	800mm-1600mm	900mm-1600mm	No
Bypass distribution cabinet (BDC)	Optional – distribution (≥250kVA), input (≥100kVA), output transformer (≥150kVA)	BDC (up to 150kVA 480V/208V out)	No
BDC+UPS width dimensions(mm)	1200mm	1200mm	No
Dual input transformer cabinet	Yes (208V UPS)	Yes- (≥100kVA 208V UPS)	No
Distribution cabinet	Yes	Yes (≥250kVA 480V UPS)	No
External battery cabinet			
Standard VRLA	Yes	Yes	Yes
Modular VRLA	Yes	No	No
Lithium-ion	Yes	Yes	Yes



Flexible configurations and deployment options

Adapt and scale with ease

The flexible, scalable, redundant design of the Vertiv™ Liebert® APM2 UPS is available in many system configurations to deliver optimal power protection.



Up to 60kW 208V 4W
Up to 120kW 480V/415V
3W/4W



Up to 150kW 208V 4W
Up to 300kW 480V/415V
3W/4W



Up to 600kW 480V/415V
3W/4W



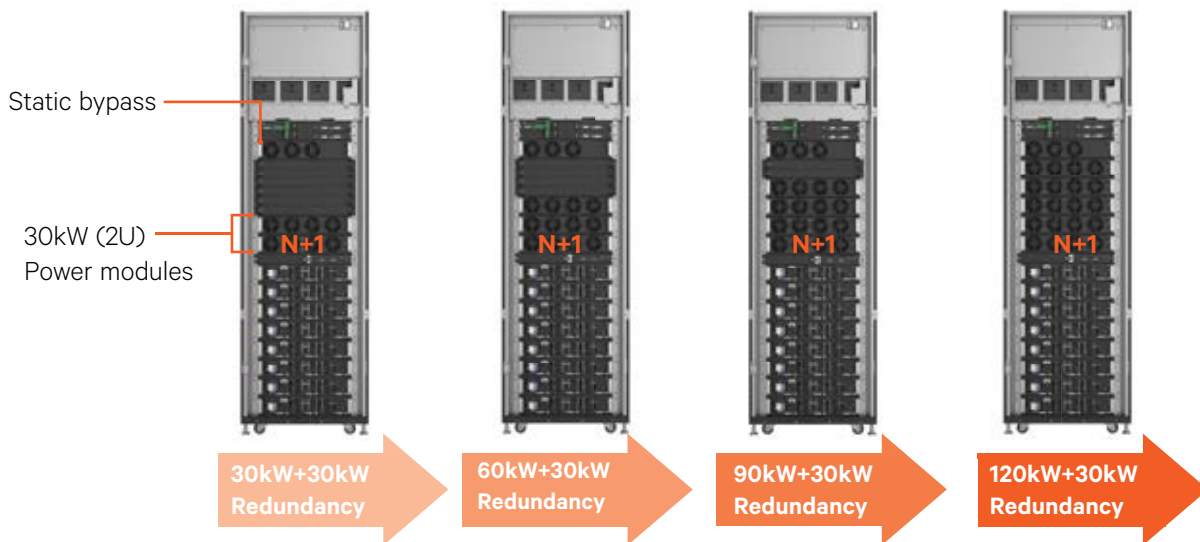
GROW	FROM	TO
Flexible scalability paths meet your capacity/redundancy plans. • Rapid deployment with ease. • Provide flexibility to support growing power needs. • Eliminate point of failure with power module or unit parallel redundancy. *400V and 415V 4W are available at 480V ratings	10kW 208V Internal batteries	60kW 208V Internal batteries
	60kW 208V	150kW 208V
	30kW 480V	120kW 480V
	120kW 480V	300kW 480V
	300kW 480V	600kW 480V

Highly available fault tolerant and reliable design

- On-line double conversion design delivers the most reliable power protection and highest levels of uptime.
- Advanced modularity features enhances the reliability and availability of UPS systems by mitigating the risk of single-point failures. Multi-module (MMS) parallel configurations provide redundant power protection with enhanced availability.
- Internally redundant component design protects uptime and reduces potential bypass occurrences.
- Redundancy can be easily combined with power scalability.
- Enhanced performances due to high power factor, high density and highest efficiency making it a complete fault tolerant and a resilient design.
- Higher short circuit withstand capacity of 65kA.
- Designed to seamlessly operate up to 40 °C without any capacity impact and further can sustain high ambient temperatures up to 50 °C with auto-derating.
- Increased environmental protection and PCB life expectancy provided by conformal coating.
- Increased availability due to high mean time between failure (MTBF) performance.
- Easy access to key components and reduced mean time to repair (MTTR < 0.5 hrs.) owing to modular hot swappable design supporting reduced risk of downtime.
- Redundant parallel and LBS communication mitigates system point of failure.

Scalability and redundancy

The Vertiv™ Liebert® APM2 modular UPS design allows for quick and easy slide in or out connection for capacity expansion or redundancy for both power and battery, thereby reducing downtime and associated costs. The advantage of this feature lies in its ability to enhance cost savings by leveraging existing equipment instead of investing in a new UPS system. Simply purchase a base factory installed capacity to the current required capacity and install more capacity on site within the limits of the product purchased.



The Vertiv™ Liebert® APM2 10-120kW N+1 packs an entire UPS system including power, maintenance bypass and battery into a single 600mm wide footprint, which provides up to 20% more power within its feature set compared to alternative products on the market. This new generation power module is our highest density solution achieving 15kW/2U 208/220V or 30kW/3U 480/415V. Modular battery runtimes can be achieved with 9Ah VRLA internal modular batteries with BMS and can be extended using an external matching modular battery cabinet.

The product also includes an optional ultra-high density lithium battery module designed specifically for Vertiv Liebert APM2.

Similarly, Vertiv Liebert APM2 is offered at larger configurations including 60-150kW 208/220V with 30kW/3U power modules and up to 120-600kW 480/415V with 60kW/ 3U power modules with a variety of runtimes and energy storage technologies including matching external VRLA or Lithium-ion cabinet solutions.

Intelligent paralleling

Increases in capacity and redundancy can be made within the unit through power module expansion and within a parallel system configuration up to 4 units up to 2.4 MW total system capacity. Integrated and redundant parallel and LBS communication ports provides a user friendly and reliable single touch to initiate inverter ON/OFF for all parallel connected UPS systems. The intelligent paralleling controls on Vertiv Liebert APM2 provide real time controls and operation of the system that manages unit performance to provide peak efficiency operation by actively balancing power module and system capacities based on load variation to achieve greatest operating efficiencies.



30%



Vertiv™ Liebert® APM2 Intelligent Paralleling 10-120kVA up to 4 units.

2 units at 30% load each = 97.2%

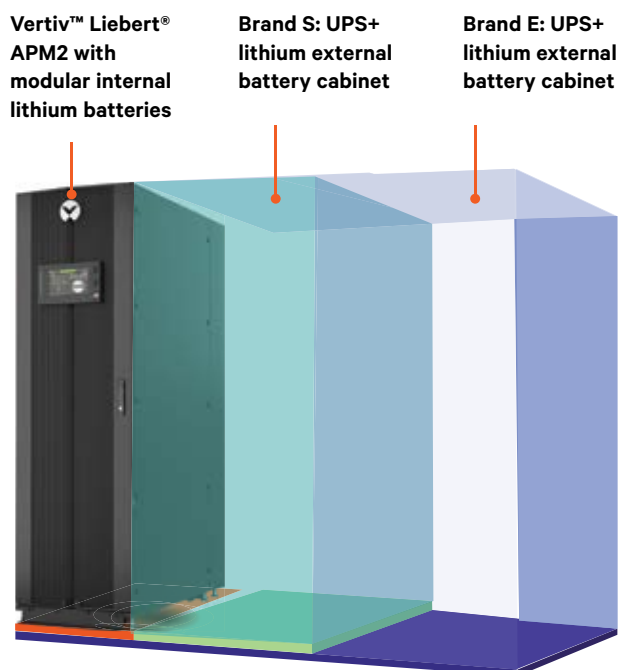


Compact and resilient footprint

High power density

Thanks to the innovative design, the Vertiv™ Liebert® APM2 next-generation power module employs a three-level IGBT topology with silicon carbide (SiC) converters to deliver up to 100% higher power density (kVA/kW per U) compared to prior-generation products. Vertiv Liebert APM2 is designed with the latest technology components to offer high-density 30kW(2U) and 60kW(3U) power module building blocks to achieve the most optimized power capacity footprint within the power ratings offered. Coupled with advancements in the battery solutions and technologies offered with Vertiv Liebert APM2, and the internal maintenance bypass feature option, this product provides superior density and space utilization which can be alternatively deployed for other revenue generating equipment.

Saves up to 30–72% footprint



Vertiv™ Liebert® APM2 10-120kW with modular internal Lithium-ion batteries – Saves up to 72% space.

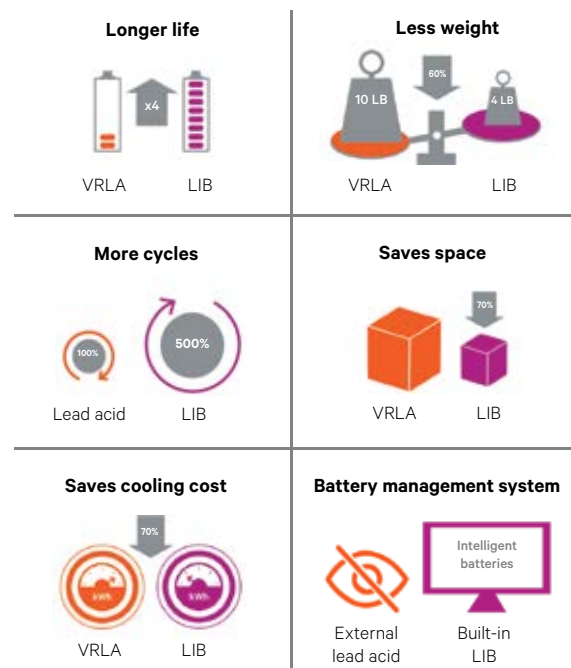


Vertiv™ Liebert® APM2 is compatible with Vertiv™ EnergyCore Li-ion battery cabinet

Vertiv Liebert APM2 is designed to work efficiently with a variety of battery solutions, including the Vertiv™ EnergyCore battery system. Optimize efficiency and free up space by pairing it with the Vertiv EnergyCore Lithium-ion battery system that fits your requirements. The Vertiv EnergyCore features a high-power density energy storage solution optimized at 250kW+ and arrives fully equipped to streamline deployment. Vertiv EnergyCore is the ultimate 5-minute EOL solution that removes the need for extra cabinets compared to other Lithium solutions in the market.

Lithium-ion battery compatibility

- Consider the benefits lithium-ion batteries provide over traditional deployments. Not only do users enjoy the longer life, more cycles and fewer replacements, they also benefit from the compact, smaller size and lower weight. Plus, the higher operating temperature and lower maintenance add to the savings.
- All these advantages directly impact IT facilities to drive an impressive total cost of ownership experience.
- Vertiv leverages its DNA in critical systems to deliver a lithium-ion battery system that is integrated seamlessly into the power chain.
- Our capabilities and processes come together to help align the UPS, batteries, monitoring, management, service, and support offerings are orchestrated for delivering on our customer expectations.



Internal modular lithium-ion battery compatibility

High energy density

- High power:** The 14Ah energy packed modular design utilizes the latest high-density lithium-ion technologies to deliver superior power and life expectancy compared to traditional VRLA solutions.
- More runtime, less space:** Delivers up to 10 minutes at 120kVA 480V without the need of an external lithium-ion battery cabinet.

Simple and easy

- Modular design:** plug-in and lock, unlock and pull-out.
- Easy:** Easy and fast installation and startup, self-configuring.
- Hot-swappable:** Easy and fast on-site replacement within a few minutes.

Smart and flexible

- Rich battery data and information on display:** All battery cell voltage and temperature. SOC, SOH, Runtime.
- Optimized runtime:** Install between 1 and 8 modules to optimize your runtime/load configuration.
- Pre-charging circuit:** pre-charging the battery with temperature monitoring algorithm.

Safety and availability

- Smart BMS inside each lithium battery module provides enhanced protection for the battery health and optimal operation, performance and safety.
- Isolation between battery strings provides benefits of utilizing available capacity if one string fails.
- Quick charging:** UPS can charge the battery from 0% to 100% in 1.8h.
[Note: This quick charging time does not include the battery cooling time after high power discharging]



Vertiv™ Liebert®
APM2- Lithium Module



Vertiv™ Liebert® APM2 120kVA

Internal Lithium-ion battery modules offers superior energy density compared to VRLA

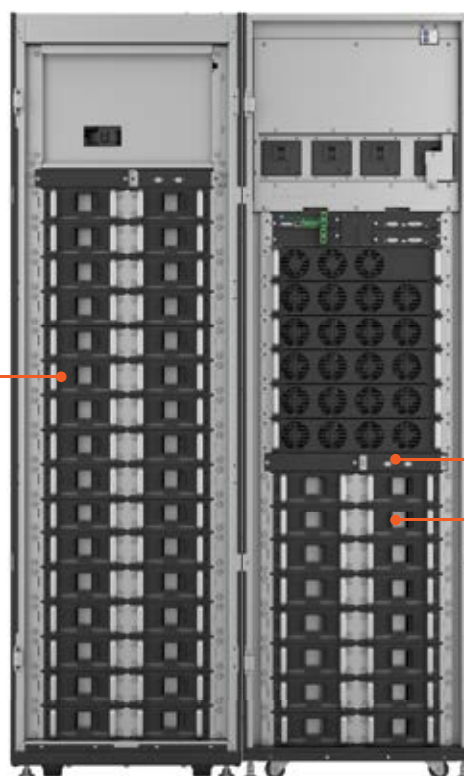


600mm

Vertiv™ Liebert® APM2 10-120kW with modular internal Lithium-ion batteries.

Modular VRLA battery cabinet

Lithium-ion battery modules



1200mm

Vertiv™ Liebert® APM2 10-120kW with modular internal VRLA batteries and modular battery cabinet.

BMS

VRLA battery modules

Voltage ratings	Capacity (kVA/kW)	Lithium-ion peak runtime	VRLA batteries and battery cabinet
208V	60kW	20 mins	19.7 mins
480V	120kW	10 mins	7.8 mins

Note: Runtimes are given at power factor 1 with 100% load, beginning of life (BoL)

Vertiv™ Liebert® APM2 208V internal modular battery runtimes (Minutes)

VRLA

208V VRLA

Output load (kW) battery module quantity	10	15	20	25	30	40	45	50	60	Installed location
2	2.2									UPS
4	8.0	4.0	2.2							
6	14.7	8.0	5.0	3.4	2.2					
8	21.8	12.7	8.0	5.6	4.0	2.2	1.2			
10	29.1	17.1	11.5	8.0	6.0	3.7	2.9	2.2		
12	37.7	21.8	14.7	10.7	8.0	5.0	4.0	3.0	2.2	
14	44.5	27.0	18.2	13.5	10.1	6.6	5.4	4.5	3.2	
16	53.5	31.7	21.8	16.1	12.7	8.0	6.7	5.6	4.0	
18	61.3	37.7	25.8	18.8	14.7	9.6	8.0	6.9	5.0	UPS & modular cabinet 600mm
20	72.3	42.5	29.1	21.3	17.1	11.5	9.5	8.0	6.0	
22	81.3	47.5	33.4	25.1	19.2	13.2	11.1	9.3	7.1	
24	88.6	53.4	37.7	27.9	21.8	14.7	12.7	10.7	8.0	
26	90.0	58.5	41.4	30.4	24.6	16.5	14.1	12.2	9.1	
28		65.2	44.5	34.3	27.0	18.2	15.4	13.5	10.1	
30		72.3	49.1	37.7	29.1	19.7	17.1	14.7	11.5	
32		78.4	53.4	40.7	31.7	21.8	18.5	16.1	12.7	
34		83.9	57.3	43.3	34.9	23.9	19.8	17.5	13.7	
36		88.7	61.3	46.2	37.7	25.8	21.8	18.8	14.7	
38		90.0	67.1	50.0	40.2	27.5	23.7	19.9	15.8	
40			72.3	53.4	42.5	29.1	25.4	21.8	17.1	
42			77.0	56.6	44.5	30.9	27.0	23.5	18.2	
44			81.2	59.4	47.5	33.4	28.4	25.1	19.2	
46			85.1	63.7	50.6	35.6	29.7	26.5	20.2	
48			88.7	68.2	53.4	37.7	31.7	27.9	21.8	

Note: Runtimes are given at power factor 1 with 100% load, beginning of life (BoL)

Lithium-Ion

208V Lithium-Ion

Output load (kW) battery module quantity	10	15	20	25	30	40	45	50	60	Installed location
1	15.0	10.0	7.2	5.2	3.8					UPS
2	30.0	20.0	15.0	12.0	10.0	7.2	6.0	6.0	3.8	
3	45.0	30.0	22.0	18.0	15.0	11.0	10.0	10.0	7.2	
4	60.0	40.0	30.0	24.0	20.0	15.0	13.0	13.0	10.0	
5	75.0	50.0	36.0	30.0	25.0	18.0	16.0	16.0	12.0	
6	90.0	60.0	45.0	36.0	30.0	22.0	20.0	20.0	15.0	
7	105.0	70.0	51.0	42.0	35.0	26.0	24.0	24.0	17.0	
8	120.0	80.0	60.0	48.0	40.0	30.0	26.0	26.0	20.0	



Vertiv™ Liebert® APM2 480V internal modular battery runtimes (Minutes)

VRLA

480V VRLA

Output load (kW) battery module quantity	20	30	40	50	60	80	90	100	120	Installed location
4	2.4									UPS
8	8.5	4.3	2.4							
12	15.3	8.5	5.3	3.6	2.4					
16	22.9	13.3	8.5	5.9	4.3	2.4	1.5			
20	30.0	17.8	12.1	8.5	6.4	3.8	3.1	2.4		UPS & Modular Cabinet 600mm
24	39.2	22.9	15.3	11.3	8.5	5.3	4.3	3.6	2.4	
28	46.4	28.0	18.9	14.1	10.8	6.9	5.7	4.7	3.4	
32	55.5	33.4	22.9	16.9	13.3	8.5	7.1	5.9	4.3	
36	64.8	39.2	26.9	19.5	15.3	10.0	8.5	7.2	5.3	
40	75.4	43.8	30.0	22.9	17.8	12.1	9.9	8.5	6.4	
44	84.0	49.7	35.0	26.1	19.9	13.8	11.7	9.7	7.4	
48	90.0	55.5	39.2	28.8	22.9	15.3	13.3	11.3	8.5	

Note: Runtimes are given at power factor 1 with 100% load, beginning of life (BoL)

Lithium-ion

480V Lithium-ion

Output load (kW) battery module quantity	20	30	40	50	60	80	90	100	120	Installed location
2	15.0	10.0	7.2	5.2	3.8					UPS
4	30.0	20.0	15.0	12.0	10.0	7.2	6.0	5.2	3.8	
6	45.0	30.0	22.0	18.0	15.0	11.0	10.0	9.0	7.2	
8	60.0	40.0	30.0	24.0	20.0	15.0	13.0	12.0	10.0	

Note: Runtimes are given at power factor 1 with 100% load, beginning of life (BoL)

Provides optimum performance with maximum efficiency

Vertiv™ Liebert® APM2 delivers an exceptional double conversion efficiency of up to 97.5%, which further increases up to 98.8% with the dynamic online mode, consequently reducing operating costs and energy dissipation (kW) to a minimum. Dynamic online mode also supports in parallel operation, this significantly minimizes the consumption of the cooling system, providing an overall TCO reduction and rapid payback time.

Furthermore, the Vertiv™ Liebert® APM2 can optimize efficiency at partial load thereby attaining additional cost savings through the intelligent paralleling feature. The efficiency and electricity cost savings of Vertiv Liebert APM2 can be attributed to:

- Silicon carbide technology.
- Latest generation IGBT.
- Three-level converter topology.
- DC-controlled fan speed.
- Intelligent paralleling operation.
- Advanced digital technology and fast transfer.

Vertiv Liebert APM2 series is powered by the latest generation three-level IGBT topology in conjunction with Silicon Carbide (SiC) converter that helps to reduce recovery losses and thereby improves system efficiency

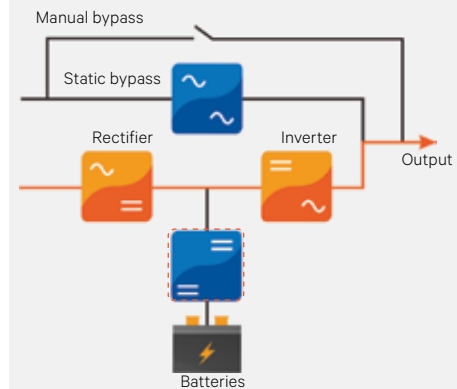
The seamless activation of Vertiv Liebert APM2's functioning modes is designed to deliver the highest level of efficiency without compromising power quality and availability. The dynamic online mode is designed to deliver Class 1* output performance under most stringent conditions:

- Network fault (voltage variation, high/ low impedance mains failures)
- Load fault (short circuit downstream of the UPS)
- Type of load connected (PDU transformer)

The unit discriminates between various interferences and responds rapidly, meanwhile also supporting compatibility with downstream equipment (such as Transformers, STS, mechanical loads, etc).

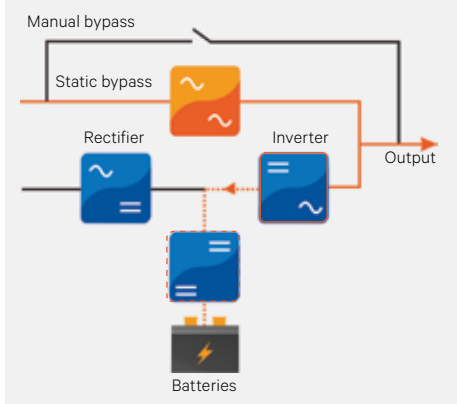
Double conversion Maximum power control (VFI)

Up to 97.5%



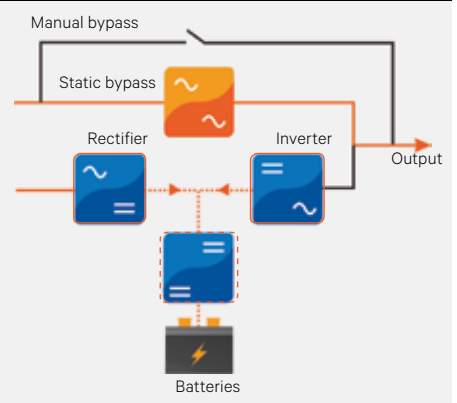
Dynamic online mode High efficiency & Power conditioning (VI)

Up to 98.8%



ECO Mode Maximum Energy Saving (VFD)

Up to 99%





Matching system ancillary suite provides an optimized UPS solution

The Vertiv™ Liebert® APM2 UPS includes optional OEM matching ancillary cabinet products to provide the ultimate line-in-match solutions to optimize the overall UPS system, integration, and performance.

External Battery Cabinets (EBC)

The flexible battery configurations of the Vertiv™ Liebert® APM2 provides a superior range of optimized energy solutions to meet various applications and user requirements.

Vertiv Liebert APM2 is compatible with numerous battery configurations including internal modular solutions (VRLA/Lithium-Ion), modular VRLA cabinet (10-120kVA), traditional VRLA external battery cabinets, and premium Lithium-ion cabinet technologies.



*Standard VRLA EBC
(600,880,1200mm)*



*Modular VRLA battery
cabinet 10-120kVA*



*Vertiv™ Liebert® EnergyCore
– Lithium-ion*

Bypass Distribution Cabinet (BDC)

The Vertiv Liebert APM2 BDC is one of the most flexible and optimized maintenance bypass solutions on the market. The Vertiv Liebert APM2 BDC has been further enhanced to include optional input or output transformers, subfeed or panelboard distribution, and a three-breaker bypass with optional solenoid key released unit (SKRU). Configurations include up to 100kVA input or 150kVA output transformers and distribution or up to 250kVA.



Bypass distribution cabinet (600mm W)



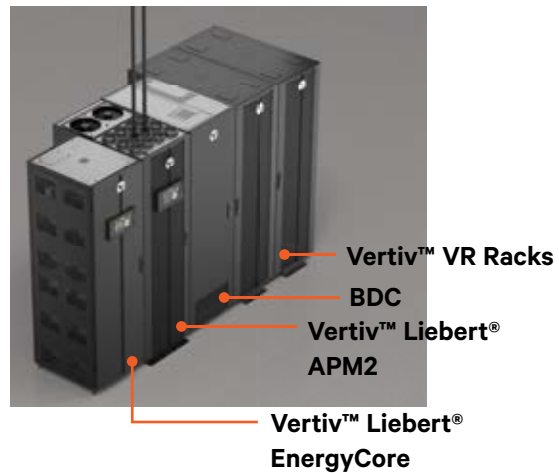
- SKRU
- Bypass Breakers
- Panelboard or Subfeeds



- Vertiv™ VR Racks
- BDC
- Vertiv™ Liebert® APM2
- Vertiv™ Liebert® EnergyCore

Maintenance bypass cabinet (MBC)- [Various sizes available]

The maintenance bypass cabinet ancillary provides a factory line-in-match wrap around bypass OEM solution that can be attached to the UPS for close-coupling. The MBC is designed with varying sizes ranging from 200-800mm for Vertiv™ Liebert® APM2 to provide solutions for ratings up to 300kVA and can be configured in Three (3) or Four (4) breaker configurations. The MBC allows for transfer of connected loads to an alternate power path allowing full isolation of the UPS. The UPS can then be turned “OFF” and removed from service with no interruption of power to connected loads.



Powering critical cooling equipment

The Vertiv™ Liebert® APM2 provides robust performance features and technologies that enable compatibility to supply power backup for critical liquid cooling equipment including the Vertiv™ Liebert® XDU and Vertiv™ Liebert® XDM liquid cooling products used for liquid cooling of high performance compute (HPC) applications.

Vertiv Liebert APM2, with its modular and compact high-density architecture, wide range of capacities and operating voltages, and battery technologies positions this as a leading solution for this application.

Please consult with Vertiv technical support for sizing and equipment verification.

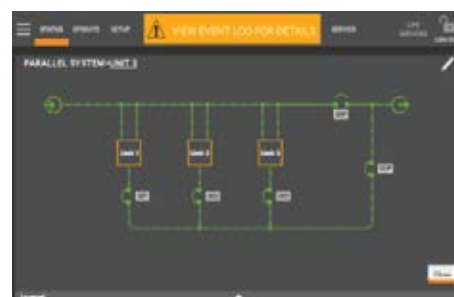


Illustration of liquid cooling high-density compute row

User interface and advanced diagnostic



- **Intuitive** to use.
- **Consistent** with other Vertiv touchscreens.
- **Customer configurable data** & views.
- **Status-at-a-glance** LED light bar.
- **Multiple** screen colors available.



Vertiv™ Liebert® APM2 makes your mission critical space a peaceful place through its advanced diagnostic capability, measuring and logging, enhanced event analysis as well as an intelligent colored multi-language touch screen display.

Vertiv™ Liebert® APM2 advanced DSP control platform together with the vector control technology enables increased performance of the three-level power converters and real-time control of output power quality, supporting continuous operation and premium protection for your business.

65kA short-circuit withstand capacity

The Vertiv Liebert APM2 product architecture features a robust withstand short circuit protection of 65kA.

Vertiv Liebert APM2 includes a standard 65kA withstand rating to clear short circuit capacity and provide protection of the SCRs against short circuits or overloads which protects the equipment and the safety of operation during a fault interruption.



KAIC fuses

Flexible monitoring and management options

Hardware connectivity

Vertiv™ Liebert® APM2 allows for the monitoring and control of networked UPS through different protocol options.

The integration of UPS with network management systems, via SNMP protocol, and building management systems, via MODBUS TCP/RTU and BACnet MSTP/IP. As an option, environmental sensors can also be attached to the UPS via a monitoring card.

The integration with synoptic panels via a dry contact board.

Software

Vertiv connects and protects your network with core-to-edge solutions and unmatched expertise.

For maximum visibility and effective monitoring in one view, pair your Vertiv™ UPS with a software solution.



Vertiv™ Environet™ alert

Vertiv™ Environet™ Alert provides industrial companies with critical facility monitoring software that is affordable and easy to use. This solution delivers superior monitoring, alerting, trending, and data organization. Get monitoring, alerting, and trending at a price that's right for your business.

Vertiv™ LIFE™ Services remote diagnostic and preventive monitoring



Vertiv's service program is designed to help keep your critical power protection system maintained in an optimum state of readiness at all times.

Vertiv™ LIFE™ Services provides continuous insight into critical equipment operation to improve performance, streamline service processes for faster issue resolution, and add deep equipment and service expertise to any organization without overhead.

With Vertiv LIFE Services you will benefit from:

- Data-driven insight.
- Real-time response.
- Connected service.
- Reduce downtime
- Maintain optimum performance.
- Minimize overhead.
- Comprehensive information.



Technical specifications 208/220V

Models (kVA/kW)	Vertiv™ Liebert® APM2 10-60 kW	Vertiv™ Liebert® APM2 60-150 kW
Ratings (Input)	10, 15, 20,25,30,40,45,50,60	60,75,80,90,100,120,140,150
Power module capacity	15kW/kVA	30kW/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	Modular VRLA or Lithium ion	External battery only
External battery	VRLA, Lithium	VRLA, Lithium
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	600 A
Output		
Nominal output voltage	208/220V (3-phase 3-wire + N + PE)	
Nominal output frequency	50/60 Hz	
Output power factor	Unity	
THDv 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%	Up to 95.7%
ECO mode efficiency	Up to 98%	Up to 98.8%
Dynamic online	Up to 97%	Up to 97%
Dimensions and Weight		
Frame dimensions (w x d x h) mm	600 x 1030 x 2000 mm	600 x 1030 x 2000 mm
Kg	328 kg (without power module)	332k (without power module)
Power module (w x d x h) mm	440 x 510 x 87 mm	440 x 630 x 130 mm
Kg	26.4 kg	35.5 kg
Battery module VRLA (w x d x h) mm	230 x 730 x 87 mm	-
Battery module weight (Kg)	35.5kg	-
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 1m (no fan)	≤ 65 dB	≤ 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) 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	Vertiv™ Liebert® APM2 120-300 kW	Vertiv™ Liebert® APM2 300-600 kW
Ratings (Input)	20,30,40,50,60,80,90,100,120	120,150,180,200,225,250,300	300,360,400,420,480,500,540,600
Power module capacity	30kW/kVA	60kW/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	Modular VRLA or Lithium-ion	External battery only	
External battery	VRLA, Lithium Ion, Nickel Zinc	VRLA, Lithium Ion, Nickel Zinc	
Battery bus voltage	384-528V (32~44 jars)	360-600V (30~50 jars)	
Voltage temperature compensation	-3.0 mV/°C/Cell		
Battery charger max. current*	140 A	600 A	1200 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		
THDv 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%	Up to 97.5%	
ECO mode efficiency	Up to 99.5%		
Dynamic Online	Up to 98%	Up to 99.2%	
Dimensions and Weight			
UPS dimensions (w x d x h), mm	600 x 1030 x 2000 mm	600 x 1030 x 2000 mm	1200 x 1030 x 2000 mm
UPS weight (kg) (no power modules)	328 kg	332kg	638.5kg
Power module dimensions (w x d x h), mm	440 x 518 x 87 mm	440 x 630 x 130 mm	
Power module weight (kg)	26.4 kg	35.5 kg	
Battery module VRLA (w x d x h) mm	230 x 730 x 87 mm		
Battery module weight (Kg)	30kg		
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		≤ 70dB
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, OSHPD (HCAI) OSP-Seismic Compliant, UL 924, CSA 22.2 No.141		
EMC requirements for UPS	IEC 62040-2; FCC Part 15, Class A		
Transportation	ISTA Procedure 3B		



Vertiv™ Liebert® APM2 - Services

Part Number	Description	8x5 startup	24x7 Startup	Labor supplement	Total warranty supplement
AP2-15-A-100	Vertiv Liebert APM2 15kVA 208V 4W UPS, 8 minute internal battery modules with internal 4 breaker bypass.	SU56CMF	SU56CU7	1WARACPLAB-E	TOTWAR56C
AP2-20-A-100	Vertiv Liebert APM2 20kVA 208V 4W UPS, 8 minute internal battery modules with internal 4 breaker bypass.				
AP2-30-A-100	Vertiv Liebert APM2 30kVA 208V 4W UPS, 8 minute internal battery modules with internal 4 breaker bypass.				
AP2-40-A-100	Vertiv Liebert APM2 40kVA 208V 4W UPS, 8 minute internal battery modules with internal 4 breaker bypass.				
AP2-60-A-100	Vertiv Liebert APM2 60kVA 480V 4W UPS, 8 minute internal battery modules with internal 4 breaker bypass and Modular EBC.	SU56OMF	SU56OU7	1WARACPLAB-E	TOTWAR56O
AP2-30-C-100	Vertiv Liebert APM2 30kVA 480V 4W UPS, 8 minute internal battery modules with internal 4 breaker bypass.				
AP2-40-C-100	Vertiv Liebert APM2 40kVA 480V 4W UPS, 8 minute internal battery modules with internal 4 breaker bypass.				
AP2-60-C-100	Vertiv Liebert APM2 60kVA 480V 4W UPS, 8 minute internal battery modules with internal 4 breaker bypass and Modular EBC.	SU56OMF	SU56OU7	1WARACPLAB-E	TOTWAR56O
		-	-	1WARACPLAB-D	TOTWAR56EBC
AP2-80-C-100	Vertiv Liebert APM2 80kVA 480V 4W UPS, 8 minute internal battery modules with internal 4 breaker bypass and Modular EBC.	SU56OMF	SU56OU7	1WARACPLAB-E	TOTWAR56O
		-	-	1WARACPLAB-D	TOTWAR56EBC
AP2-120-C-100	Vertiv Liebert APM2 120kVA 480V 4W UPS, 8 minute internal battery modules with internal 4 breaker bypass and Modular EBC.	SU56OMF	SU56OU7	1WARACPLAB-E	TOTWAR56O
		-	-	1WARACPLAB-D	TOTWAR56EBC

Vertiv™ Liebert® APM2 - Services

Part Number	Description	Basic Opm	Essential 1PM	Essential 2PM	Preferred 1PM	Preferred 2PM
AP2-15-A-100	Vertiv Liebert APM2 15kVA 208V 4W UPS, 8 minute internal battery modules with internal 4 breaker bypass.	MU56C-BA0	MU56C-ES1	MU56C-ES2	MU56C-PR1	MU56C-PR2
AP2-20-A-100	Vertiv Liebert APM2 20kVA 208V 4W UPS, 8 minute internal battery modules with internal 4 breaker bypass.					
AP2-30-A-100	Vertiv Liebert APM2 30kVA 208V 4W UPS, 8 minute internal battery modules with internal 4 breaker bypass.					
AP2-40-A-100	Vertiv Liebert APM2 40kVA 208V 4W UPS, 8 minute internal battery modules with internal 4 breaker bypass.					
AP2-60-A-100	Vertiv Liebert APM2 60kVA 480V 4W UPS, 8 minute internal battery modules with internal 4 breaker bypass and modular EBC.	MU56O-BA0	MU56O-ES1	MU56O-ES2	MU56O-PR1	MU56O-PR2
AP2-30-C-100	Vertiv Liebert APM2 30kVA 480V 4W UPS, 8 minute internal battery modules with internal 4 breaker bypass.					
AP2-40-C-100	Vertiv Liebert APM2 40kVA 480V 4W UPS, 8 minute internal battery modules with internal 4 breaker bypass.					
AP2-60-C-100	Vertiv Liebert APM2 60kVA 480V 4W UPS, 8 minute internal battery modules with internal 4 breaker bypass and modular EBC.					
AP2-80-C-100	Vertiv Liebert APM2 80kVA 480V 4W UPS, 8 minute internal battery modules with internal 4 breaker bypass and modular EBC.	MU56O-BA0	MU56O-ES1	MU56O-ES2	MU56O-PR1	MU56O-PR2
		MU56EBC-BA0	MU56EBC-ES1	MU56EBC-ES2	MU56EBC-PR1	MU56EBC-PR2
AP2-120-C-100	Vertiv Liebert APM2 120kVA 480V 4W UPS, 8 minute internal battery modules with internal 4 breaker bypass and modular EBC.	MU56O-BA0	MU56O-ES1	MU56O-ES2	MU56O-PR1	MU56O-PR2
		MU56EBC-BA0	MU56EBC-ES1	MU56EBC-ES2	MU56EBC-PR1	MU56EBC-PR2



Vertiv™ Liebert® APM2 - Services

Part Number	Description	6m P&L Extension	18m P&L Extension	1y 1pm warranty premier	2y 1pm warranty premier	1y 1pm warranty premier+	2y 1pm warranty premier+
AP2-15-A-100	Vertiv Liebert APM2 15kVA 208V 4W UPS, 8 minute internal battery modules with internal 4 breaker bypass.	6MWPL56C	18MWPL56C	1YWP1PM56C	2YWP1PM56O	1YWPP1PM56C	2YWPP1PM56C
AP2-20-A-100	Vertiv Liebert APM2 20kVA 208V 4W UPS, 8 minute internal battery modules with internal 4 breaker bypass.						
AP2-30-A-100	Vertiv Liebert APM2 30kVA 208V 4W UPS, 8 minute internal battery modules with internal 4 breaker bypass.						
AP2-40-A-100	Vertiv Liebert APM2 40kVA 208V 4W UPS, 8 minute internal battery modules with internal 4 breaker bypass.						
AP2-60-A-100	Vertiv Liebert APM2 60kVA 480V 4W UPS, 8 minute internal battery modules with internal 4 breaker bypass and modular EBC.	6MWPL56O	18MWPL56O	1YWP1PM56O	2YWP1PM56O	1YWPP1PM56O	2YWPP1PM56O
AP2-30-C-100	Vertiv Liebert APM2 30kVA 480V 4W UPS, 8 minute internal battery modules with internal 4 breaker bypass.						
AP2-40-C-100	Vertiv Liebert APM2 40kVA 480V 4W UPS, 8 minute internal battery modules with internal 4 breaker bypass.						
AP2-60-C-100	Vertiv Liebert APM2 60kVA 480V 4W UPS, 8 minute internal battery modules with internal 4 breaker bypass and modular EBC.	6MWPL56O	18MWPL56O	1YWP1PM56O	2YWP1PM56O	1YWPP1PM56O	2YWPP1PM56O
		6MWPL56EBC	18MWPL56EBC	1YWP1PM56EBC	2YWP1PM56EBC	1YWPP1PM56EBC	2YWPP1PM56EBC
AP2-80-C-100	Vertiv Liebert APM2 80kVA 480V 4W UPS, 8 minute internal battery modules with internal 4 breaker bypass and modular EBC.	6MWPL56O	18MWPL56O	1YWP1PM56O	2YWP1PM56O	1YWPP1PM56O	2YWPP1PM56O
		6MWPL56EBC	18MWPL56EBC	1YWP1PM56EBC	2YWP1PM56EBC	1YWPP1PM56EBC	2YWPP1PM56EBC
AP2-120-C-100	Vertiv Liebert APM2 120kVA 480V 4W UPS, 8 minute internal battery modules with internal 4 breaker bypass and modular EBC.	6MWPL56O	18MWPL56O	1YWP1PM56O	2YWP1PM56O	1YWPP1PM56O	2YWPP1PM56O
		6MWPL56EBC	18MWPL56EBC	1YWP1PM56EBC	2YWP1PM56EBC	1YWPP1PM56EBC	2YWPP1PM56EBC

