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**ИБП Liebert APS (5-20 кВА) - брошюра на продукцию. Юниджет**

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**VERTIV™**

**Liebert®**

AP<sup>SM</sup> UPS

5-20 kVA

Flexible, efficient scalable UPS  
for room or row-based applications



## A Scalable Power Solution for Dynamic Demands

Provide mission-critical availability while reducing costs and maintaining flexibility for the future with the Liebert® APS™ UPS, a scalable, modular power solution for 5 to 20kVA applications.

### Low TCO

With the Liebert APS UPS, you can maintain flexibility for the future and ensure the availability of your critical systems— all while obtaining energy efficiency.

- **Industry-leading efficiency:**
  - **91.5-92%** efficiency: 200-240V in/out transformer-free models.
  - **90-91%** efficiency: 200/100-240/120V in/out transformer-free models.
  - **88.5-89.9%** efficiency: transformer-based models.
- **Modular batteries, controls and power components** to help reduce maintenance costs with user replacement.
- **Scalability** that allows you to cost-effectively add power capacity or battery modules as needed.
- **Module-level redundancy** eliminates the expense of purchasing and planning for additional cabinets.
- **Reduced installation time and cost** because units are shipped pre-configured and factory tested.
- **Integrated into one system:** power modules, batteries, maintenance bypass, and distribution in a single, small-footprint cabinet.
- **Integral battery monitoring** with temperature compensated charging to prolong battery life and help reduce replacement costs.
- **Two year hassle-free factory warranty program** for repair or replacement.



**FlexPower core hardware assemblies** enable quick and easy capacity increases

**Hot-swappable FlexPower assemblies and battery modules** may be added without powering down connected equipment.



## Reliability and Serviceability

Your business depends on the data center and the IT network to run. With the Liebert® APS™ UPS solution, you get peace of mind that your critical IT functions – and your business – will be available and running as expected through power disruptions, fluctuations and outages.

- **Internal redundancy capability** (N+2/20kVA) enhances reliability and provides multiple layers of protection.
- **No single point of failure** - Full redundant design allows the critical load to run on conditioned power if there is a failure of any component.
- **Configurable** design provides your desired level of capacity and redundancy.
- **Fault-tolerant design**, enables the power, battery and control modules to take themselves offline if there is a problem, without sacrificing overall system integrity.
- **Superior overload capabilities**, able to provide conditioned power to temporary overloads without transfers to/from bypass power.
- **Internal wrap-around maintenance bypass and Frame-level bypass with independent controls** in separate assembly provide higher reliability and availability.

## Low TCO for Today, Flexibility for the Future

### Flexibility

The Liebert APS UPS helps you enhance flexibility to stay ready for what's next:

- **Capacity on demand** with FlexPower™ core modules delivers capacity changes in 5 kVA/4.5 kW increments - without powering down.
- **More real kW** - 0.9 power factor provides more real power to support the I.T. load than many other solutions in this size range.
- **Isolated and non-isolated models** to provide the protection and efficiency you need.
- **Trellis™ platform connectivity**, so the Liebert APS can easily be integrated with this robust, real-time data center optimization solution.
- **Communications card option to fit your needs**, allow integration with a variety of infrastructure management solutions.
  - **IS-UNITY-DP** provides LIFE Services, Web Interface, SNMP, Modbus IP / RTU, BACNet IP / MSTP, & Environmental Sensor support. (temperature, humidity, contact closure, leak detection and more).
  - **IS-485EXI** provides communication with Liebert® SiteScan™
  - **IS-RELAY** provides 5 contact closures
  - **IS-MULTIPOINT** provides interface from Liebert MultiLink shutdown software to up to 4 computers
- **Optional matching external battery cabinets.**
- **Installation Flexibility** – use on raised floors, non-raised or in rack.
- **Large input voltage window**, which minimizes transfer to battery and increases battery life; low line transfer can range down to 110v.
- **Integrated distribution PODs** create the right distribution options to meet application requirements.



## Service Solutions to Keep You Up and Running

To enhance the availability and trouble-free operation of your Liebert® APS™ UPS, Vertiv™ offers a range of optional service programs, including:

- **LIFE™ Services** remote monitoring and diagnostic features provides early warning of issues so you can respond to them more rapidly – or solve them before they happen.
- **Remote monitoring** by factory experts, 24 x 7 x 365.
- **Two year warranty** includes onsite repair.
- **Start-up** by factory-trained engineers to ensure proper installation and operation.
- **Customer resolution center** provides direct access to our engineers, whenever you need them.
- **Exclusive, guaranteed four-hour response time** so you never need to wait long for critical assistance.
- **Preventive maintenance visits** to assess your equipment and make corrective adjustments.



Battery Cabinet  
Liebert APS UPS

12 Bay  
Transformer-based  
Liebert APS UPS

16 Bay  
Transformer-based  
Liebert APS UPS

16 Bay  
Transformer-free  
Liebert APS UPS

10 Bay  
Transformer-free  
Liebert APS UPS

**LIEBERT® APS™ UPS**

| Parameters                         | Units           | 10 Bay   | 16 Bay        | 12 Bay  | 16 Bay                     | 10 Bay  | 16 Bay        |               |
|------------------------------------|-----------------|--|---------------|---|----------------------------|---|---------------|---------------|
|                                    |                 | Xfmr-free  |               | Xfmr-based  |                            | Xfmr-free dual inverter                                   |               |               |
| Frame Rating                       | kVA             | 15   | 20            | 15  | 20                         | 15  | 20            |               |
|                                    | kW              | 13.5   | 18            | 13.5  | 18                         | 13.5  | 18            |               |
| <b>General &amp; Environmental</b> |                 |  |               |   |                            |   |               |               |
| Conducted and radiated EMC levels  |                 | IEC/EN/AS 62040-2 Cat 2, CISPR22 Class A, FCC Part 15 Class A                            |               |   |                            |   |               |               |
| Compliant safety standards         |                 | IEC/EN/AS 62040-1:2008, UL 1778 4th Ed and CSA 22.2 No. 107.1                            |               |   |                            | UL 1778 4th Ed and CSA 22.2 No. 107.1                     |               |               |
| Compliant immunity standards       |                 | IEC/EN/AS 61000-4-2, 3, 4, 5, 6  |               |   |                            |   |               |               |
| Environmental                      |                 | WEEE and ROHS2 (6 by 6), REACH Compliant   |               |   |                            |   |               |               |
| <b>Mechanical</b>                  |                 | <b>Units</b>   | <b>10 Bay</b> | <b>16 Bay</b>   | <b>12 Bay</b>              | <b>16 Bay</b>   | <b>10 Bay</b> | <b>16 Bay</b> |
| Width                              | mm (in)         | 440 (17)   | 440 (17)      | 440 (17)  | 440 (17)                   | 440 (17)  | 440 (17)      | 440 (17)      |
| Depth                              | mm (in)         | 800 (32)   | 850 (34)      | 800 (32)  | 850 (34)                   | 800 (32)  | 850 (34)      | 850 (34)      |
| Height                             | mm (in)         | 695 (27)   | 970 (38)      | 1060 (42)   | 1240 (49)                  | 695 (27)  | 970 (38)      | 970 (38)      |
| Weight<br>(frame rating populated) | Unit weight     | kg (lbs)   | 256.3 (565)   | 317.5 (700)   | 360.6 (795)                | 417.3 (920)   | 256.3 (565)   | 317.5 (700)   |
|                                    | Shipping weight | kg (lbs)   | 274.4 (605)   | 335.7 (740)   | 378.7 (835)                | 435.4 (960)   | 274.4 (605)   | 335.7 (740)   |
| <b>Environmental</b>               |                 | <b>Units</b>   |               |   |                            |   |               |               |
| Operating temperature              | °C (°F)         | 0 - 40 (32 - 104)  |               |   |                            |   |               |               |
| Relative humidity                  | %               | 0 - 95%, non-condensing  |               |   |                            |   |               |               |
| Altitude                           | m (ft)          | 3000 (10000) @ 25°C (77°F)   |               |   |                            |   |               |               |
| Efficiency (AC-AC)                 | %               | 91.8-92.0  | 91.6-92.0     | 88.5-89.9   | 88.6-89.7                  | 90.4-91.0   | 90.0-91.0     |               |
| Nominal heat dissipation           | BTU/Hr (max)    | 4208   | 5747          | 5528  | 7965                       | 4904  | 6768          |               |
| <b>Input Data</b>                  |                 | <b>Units</b>   |               |   |                            |   |               |               |
| Nominal input voltage              | VAC             | 200/208/220/230/240; Single Phase  |               |   |                            | 200/100, 208/120, 220/110, 230/115, 240/120; Single Phase |               |               |
| Input voltage range                | VAC             | 380/400/415; 3 Phase   |               |   |                            |   |               |               |
| Power factor                       | Cos             | Single-phase input, > 0.99; three-phase input, > 0.95                                    |               |   | Single-phase input, > 0.99 |   |               |               |
| Input frequency range              | Hz              | 40 to 70 auto-sensing  |               |   |                            |   |               |               |
| <b>Battery Module</b>              |                 | <b>Units</b>   |               |   |                            |   |               |               |
| Battery capacity                   | W               | 36W @ 15min-rate to 1.67V per cell @ 25°C (77°F)   |               |   |                            |   |               |               |
| Backup time (full load)            | minutes         | 5 (for non-redundant system which has equal number of battery strings and power modules) |               |   |                            |   |               |               |
| Maximum charge current (full load) | Amps            | Power module internal charger: 1.8A / Charger module: 10A                                |               |   |                            |   |               |               |
| Nominal voltage                    | VDC             | 144  |               |   |                            |   |               |               |
| Recharge time                      | Hrs             | < 5 to 90% capacity (PM internal charger with 1:1 ratio of PM to Battery Strings)        |               |   |                            |   |               |               |
| <b>Output Data</b>                 |                 | <b>Units</b>   |               |   |                            |   |               |               |
| Output voltage                     | VAC             | 200/208/220/230/240; Single Phase  |               | 100/100/173/200/110/110/190/220, 115/115/199/230, 120/120/208/240; Single Phase |                            | 200/100, 208/120, 220/110, 230/115, 240/120; Single Phase |               |               |
| Voltage regulation                 | %               | ±3   |               |   |                            |   |               |               |
| Voltage stability (100% step load) | %               | ±7   |               |   |                            |   |               |               |
| Voltage Recovery time              | ms              | ≤ 60   |               |   |                            |   |               |               |
| Voltage distortion                 | %               | ≤ 3, linear load   |               |   |                            |   |               |               |
|                                    |                 | ≤ 5, non-linear load   |               | ≤ 7, non-linear load  |                            | ≤ 5, non-linear load                                      |               |               |
| Output frequency                   | Hz              | 50/60  |               |   |                            |   |               |               |
| Output overload capability         | %               | < 104% continuous  |               |   |                            |   |               |               |
|                                    |                 | 105% - 130% for 1 min  |               |   |                            |   |               |               |
|                                    |                 | 131% - 150% for 10 sec   |               |   |                            |   |               |               |
|                                    |                 | 151% - 200% for 1 sec  |               |   |                            |   |               |               |
|                                    |                 | > 201% for 250 msec  |               |   |                            |   |               |               |



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