



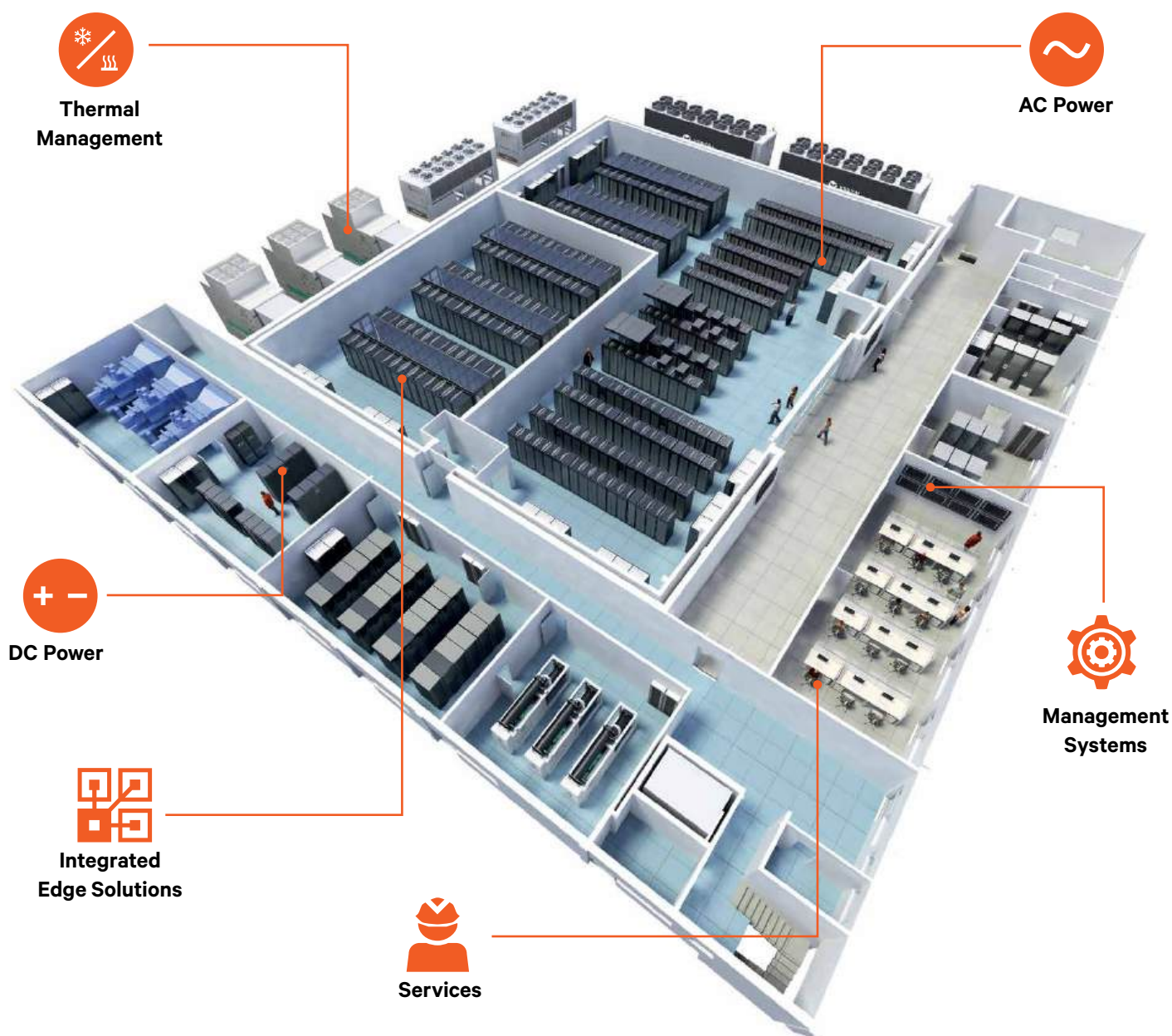
Liebert®

Channel Product Portfolio
for Channel Partners



Vertiv is a global leader in ensuring critical data continuity, by combining visionary expertise and precise execution to enable vital applications for data centers, communication networks, and commercial and industrial facilities.

Architects of Continuity™



Vertiv, formerly Emerson Network Power, designs, builds, and services mission critical technologies that enable vital applications for data centers, communication networks, and commercial & industrial environments.

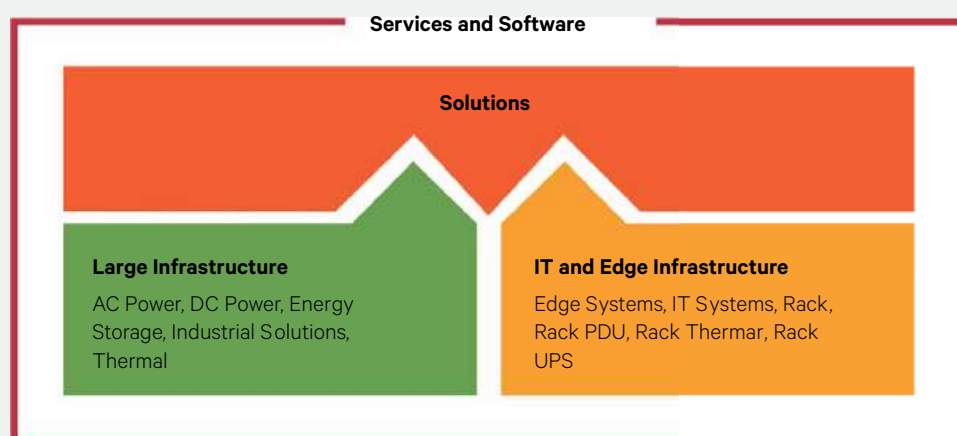
We support today's growing mobile and cloud computing markets with our portfolio of power, thermal and infrastructure management products, software and solutions, all complemented by our extensive global service network.

We help strengthen the world's most vital applications by bringing together global reach and local knowledge, and our decades-long heritage, including brands like Chloride, Liebert, NetSure, Avocent and Geist.

Architects of Continuity™

As industry experts and Architects of Continuity, we collaborate with our customers to envision and build futureready infrastructures.

We help our customer meet the worlds demand for data.



Avocent® IT Management

Our industry-leading software gives customers an integrated view of operations across IT and facilities resources, enabling better decisions that save time and money.

Chloride® Industrial Power

Our global industrial power solutions meet the most demanding technical specifications and provide safe, reliable power- no matter the challenge.

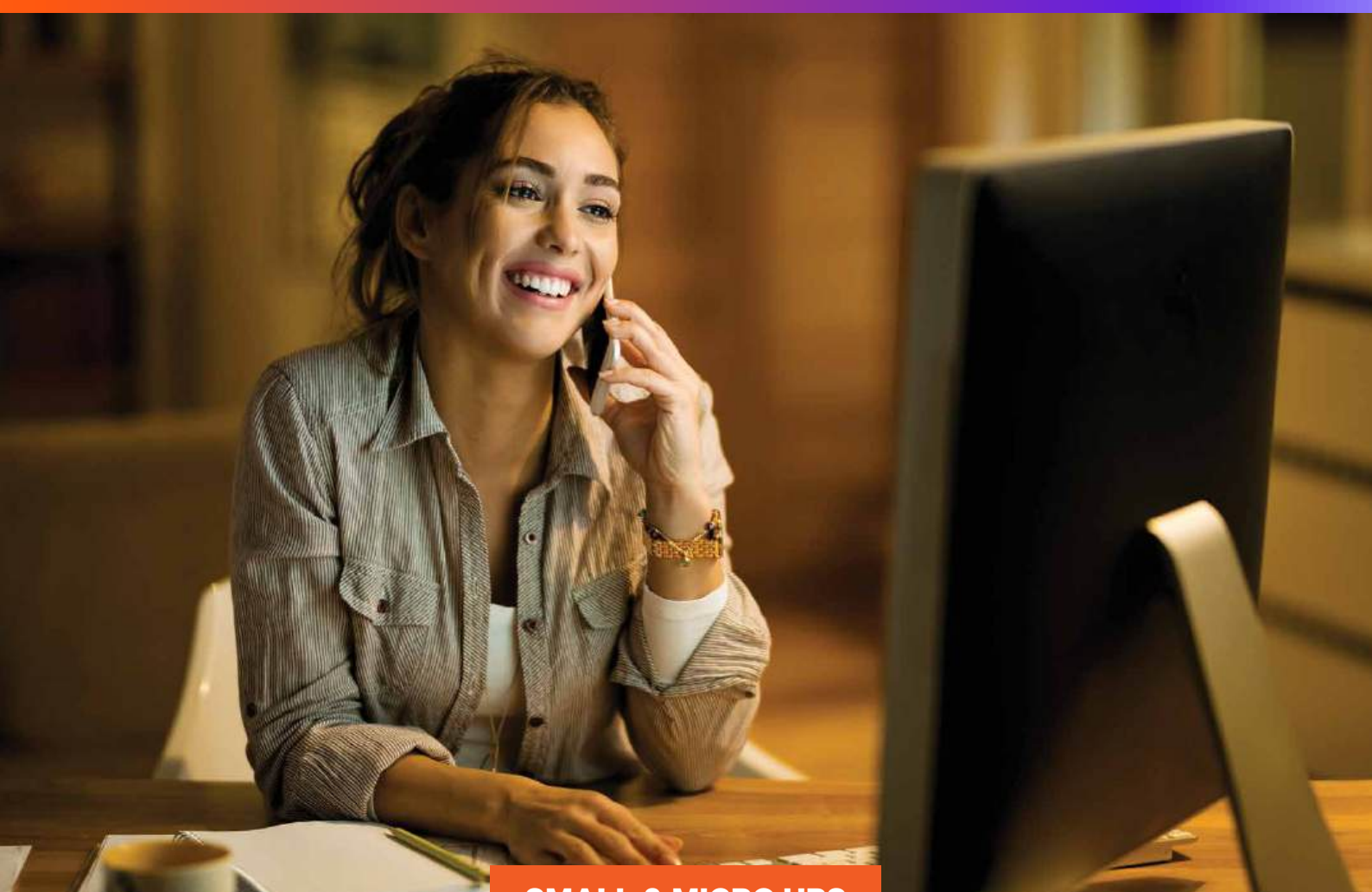
Liebert® AC Power and Thermal

Our global power and thermal management solutions are some of the world's most efficient and reliable power and cooling technologies.

NetSure™ DC Power

Our global intelligently engineered DC power systems deliver high availability, energy efficiency and scalability for converged networks.

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SMALL & MICRO UPS



Best in class power protection and back up technologies for Offices and Home

The Liebert® ITON™ 600VA CX is an economical line-interactive UPS that offers full-featured power protection for home or small office computers and electronic equipment. With its unique features and extraordinary performance not normally found in similar products in range.

Features and Benefits

- Excellent microprocessor control guarantees high reliability
- AVR boost and buck for voltage stabilisation
- Auto restart while AC is recovering
- Simulated sine wave
- Auto charging at Off-mode
- Cold start function
- Generator compatible



Liebert® ITON™ 600VA CX



Technical Specifications

Model	Specification	CX 600 VA	1000 VA LB
Capacity	VA/W	600 VA/360 Watt.	1000 VA/600 Watt.
Input	Voltage	220/230 VAC	
	Voltage Range	140-300 VAC	
	Frequency Range	50 Hz	
Output	AC Voltage Regulation (Batt. Mode)	±10%	
	Frequency Range (Batt. Mode)	50 Hz ±1 Hz	
	Transfer Time	Typical 2-6 ms	
	Waveform (Batt. Mode)	Simulated Sine Wave	
	Overload	110% +/-10% Shutdown after 5 mins	
Battery	Battery Type & Number	12 V/7 Ah x 1	12VDC
	Floating Charge Voltage		13.7 VDC ± 2%
	Overcharge Protection		14.5VDC ± 2%
	Maximum Charge Current		20 A
	Typical Recharge Time	6-8 hours up to 90% capacity	
Transfer Time	Minimum line break for transfer to battery	Typical 4-8 msec	
Indicators	AC Mode	Green lighting	
	Battery Mode	Green flashing	
	Fault	Red lighting	
Alarms	Battery Mode, Low Battery, Overload, Battery replacement, fault	Audible alarm is provided	
Protection	Full Protection	Overload, discharge, and overcharge protection	
Physical	Dimension, D X W X H (mm)	279 X 101 X142	350 x 146 x 160
	Net Weight (kgs)	4.2	9.0
Environment	Operating Environment	0-40 Deg C.	
	Storage Temp	-15°C to 50°C	
	Humidity	0-95 % RH @ 0- 40°C (non-condensing)	
	Noise Level	Less than 40dB	

Model	Specification	CX 1000 VA	CX 1500 VA
Capacity	VA/W	1000 VA/600 Watt.	1500 VA/900 Watt.
Input	Voltage	220/230 VAC	
	Voltage Range	140-300 VAC	
	Frequency Range	50 Hz	
Output	AC Voltage Regulation (Batt. Mode)	±10%	
	Frequency Range (Batt. Mode)	50 Hz ±1 Hz	
	Transfer Time	Typical 2-6 ms	
	Waveform (Batt. Mode)	Simulated Sine Wave	
	Overload	110% +/-10% Shutdown after 5 mins	
Battery	Battery Type & Number	12 V/7 Ah x 2	12 V / 9 Ah x 2
	Typical Recharge Time	6-8 hours up to 90% capacity	
Indicators	AC Mode	Green lighting	
	Battery Mode	Green flashing	
	Fault	Red lighting	
Alarms	Battery Mode, Low Battery, Overload, Battery replacement, fault	Audible alarm is provided	
Protection	Full Protection	Overload, discharge, and overcharge protection	
Physical	Dimension, D X W X H (mm)	369 X 141 X 160	369 X 141 X 160
	Net Weight (kgs)	10	11.1
Environment	Operating Environment	0-40 Deg C.	
	Storage Temp	-15°C to 50°C	
	Humidity	0-95 % RH @ 0- 40°C (non-condensing)	
	Noise Level	Less than 40dB	

* Product specifications are subject to change without further notice
 *Battery run time may vary depending upon load.

Features

- IGBT based Rectifier and inverter
- True Online Double Conversion with DSP Control Technology for High Performance and Reliability.
- New Graphical LCD Display Provides UPS Data, Alarms and Helps in faults diagnostics and trouble shooting.
- Double Conversion Efficiency upto 90%.
- Inbuilt programmable outlet
- Active Input Power Factor Correction 0.99.
- 0.8 Output Power Factor.
- Wide Input Voltage window
- Environmental Condition and for Optimized Battery Performance.
- Configurable Output Voltage (200/208/220/230/240 Vac.)
- Generator Compatible with Wide Input Frequency Range (40 Hz-70 Hz).
- 4 Stage Extendable Charging Design for optimized Battery Performance.
- Adjustable Battery Charging Current 1/2/4/6/8 Amps according to Battery Capacity and Rating.
- Intelligent Monitoring with Standard RS232/USB Port Plus Slot Available for RS485/Dry Contact/SNMP Card.
- Inbuilt OVCD.

True Online Double Conversion UPS with optional & with extended runtime capabilities

Liebert® GXT MT+ Series systems is true double conversion online UPS systems designed to provide with a capacity of 1, 2 & 3 kVA. Liebert® GXT MT+ units making the systems ideal for Data Networks / Small Data Centers/VOIP application.



Liebert® GXT-MT+ 1/2/3 kVA



Technical Specifications

Model		GXT MT + 1 kVA	GXT MT + 2 kVA	GXT MT + 3 kVA
Phase		1 phase in / 1 phase out		
Capacity		1000 VA / 800 W	2000 VA / 1600 W	3000 VA / 2400 W
Input				
Nominal Voltage		230 Vac		
Voltage Range	Low Line Loss	110 VAC ± 3% at 60% Load 176 VAC ± 3% at 100% Load		
	Low Line Comeback	120 VAC ± 3% at 60% Load 186 VAC ± 3% at 100% Load		
	High Line Loss	300 VAC ± 3%		
	High Line Comeback	270 VAC ± 3%		
Frequency Range		40 Hz ~ 70 Hz		
Power Factor		≥ 0.99 @ 100% load		
Output				
Nominal Voltage		208/220/230/240VAC		
Ac Voltage Regulation		± 1%		
Frequency Range (Synchronized Range)		47.5Hz to 52.5 or 57.5Hz to 62.5Hz		
Frequency Range (Batt. Mode)		50 Hz ± 0.1 Hz or 60 Hz ± 0.1 Hz		
Current Crest Ratio		3:1 (max.)		
Harmonic Distortion		<=5% THD (non linear load)		
Transfer Time	Bypass to Inverter (Line mode)	Zero		
	Inverter to Bypass (Line mode)	4 ms (Typical)		
Waveform (Batt. Mode)		Pure Sinewave		
Efficiency on AC to AC Mode@ 100% Load.		89%	89%	89%
Inbuilt Isolation Transformer		No		
Battery				
Standard Run Model	Battery Type	12V/ 7 AH	12V/ 7 AH	12V/ 9 AH
	Numbers	3	6	6
	Typical Recharge Time	4 hours recover to 90% capacity		
	Charging Current (max.)	1.0 A		
	Charging Voltage	27.4VDC ± 1%	82.1DC ±1%	82.1 VDC ±1%
Long Run Model	Battery Type	Depending on the capacity of external batteries		
	Numbers	3	8	8
	Charging Current	1.0/2.0/4.0/6.0/8.0		
	Float Charging Voltage	41.0 VDC ± 1%	110 VDC ±1%	110 VDC *1%
Indicator				
Lcd Panel		UPS status, Load level, Battery level, Input/Output voltage, Discharge timer, and Fault		
Alarm				
Battery Mode		Sounding every 4 seconds		
Low Battery		Sounding every second		
Overload		Sounding twice every second		
Fault		Continuously sounding		
Physical				
Standard Run Model	Dimension, D x W x H (mm)	388.5 X 145 X 220	387 X 190 X 318	387 X 190 X 318
	Net Weight (kgs)	13	26	28
Long Run Model*	Dimension, D x W x H (mm)	388.5 X 145 X 220	387 X 190 X 318	387 X 190 X 318
	Net Weight (kgs)	7	13	13
Environment				
Operation Humidity And Temperature		20-90 % RH @ 0- 45°C (non-condensing)		
Noise Level		Less than 50dBA @ 1 Meter		
Management				
Smart Rs-232/Usb		Supports Windows® 2000/2003/XP/Vista/2008, Windows® 7, Linux, Unix, and MAC		
Optional Snmp		manager and web browser		

** Product specifications are subject to change without further notice

Features

- IGBT Based Rectifier
- True Online Double Conversion with DSP Control Technology for High Performance and Reliability.
- New Graphical LCD Display Provides UPS Data, Alarms and Helps in faults diagnostics and trouble shooting.
- Double Conversion Efficiency upto 90%.
- Active Input Power Factor Correction 0.99.
- 0.8 Output Power Factor.
- Wide Input Voltage window
- (110 - 280 Vac) for Indian
- Environmental Condition and for Optimized Battery Performance.
- Configurable Output Voltage (200/208/220/230/240 Vac.)
- Generator Compatible with Wide Input Frequency Range (40 Hz-70 Hz).
- 4 Stage Extendable Charging Design for optimized Battery Performance.
- Adjustable Battery Charging Current 1/2/4/6 Amps according to Battery Capacity and Rating.
- 50/60 Hz Automatic Frequency Converter Mode.
- Intelligent Monitoring with Standard RS232/USB Port Plus Slot Available for RS485/Dry Contact/SNMP Card.
- Inbuilt OVCD.

True Online Double Conversion UPS with optional built - in galvanic isolation & with extended runtime capabilities

Liebert® GXT MT+ Series systems is true double conversion online UPS systems designed to provide with a capacity of 1 , 2 & 3 kVA. Liebert® GXT MT+ units feature total isolation of the load from the mains - isolating input and output sections, and making the systems ideal for Data Networks / Small Data Centers/VOIP application. The units support hot standby configuration, making them suited for critical applications like banks.



Liebert® GXT-MT+ CX 1/2/3 kVA
Liebert® GXT-MT+ CX 1/2/3 kVA XB*

* Adjustable Battery Charging Current 2/4/6/8/10/12/14/16 Amps according to Battery Capacity Rating.

Technical Specifications

Model		GXT MT + CX 1 kVA	GXT MT + CX 2 kVA	GXT MT + CX 3 kVA
Phase		1 phase in / 1 phase out		
Capacity		1000 VA / 800 W	2000 VA / 1600 W	3000 VA / 2400 W
Input				
Nominal Voltage		230 Vac		
Voltage Range	Low Line Loss	110 VAC ± 3% at 50% Load 176 VAC ± 3% at 100% Load		
	Low Line Comeback	120 VAC ± 3% at 50% Load 186 VAC ± 3% at 100% Load		
	WHigh Line Loss	280 VAC ± 3%		
	High Line Comeback	270 VAC ± 3%		
Frequency Range		40 Hz ~ 70 Hz		
Power Factor		≥ 0.99 @ 100% load		
Output				
Nominal Voltage		208/220/230/240VAC		
Ac Voltage Regulation		± 1%		
Frequency Range (Synchronized Range)		46Hz ~ 54 Hz or 56Hz ~ 64 Hz		
Frequency Range (Batt. Mode)		50 Hz ± 0.1 Hz or 60 Hz ± 0.1 Hz		
Current Crest Ratio		3:1 (max.)		
Harmonic Distortion		≤ 3 % THD (Linear Load), ≤ 7 % THD (Non-linear Load)		
Transfer Time	Bypass to Inverter (Line mode)	Zero		
	Inverter to Bypass (Line mode)	4 ms (Typical)		
Waveform (Batt. Mode)		Pure Sinewave		
Efficiency on AC to AC Mode@ 100% Load.		88%	88%	90%
Inbuilt Isolation Transformer		No		
Battery				
Standard Run Model	Battery Type	12V/ 9 AH	12V/ 9 AH	12V/ 9 AH
	Numbers	2	4	6
	Typical Recharge Time	4 hours recover to 90% capacity		
	Charging Current (max.)	1.0 A		
	Charging Voltage	27.4VDC ± 1%	54.7 VDC ±1%	82.1 VDC ±1%
Long Run Model	Battery Type	Depending on the capacity of external batteries		
	Numbers	3	6	6
	Charging Current	1.0A/2.0A/4.000A, 6.0A default		
	Float Charging Voltage	41.0 VDC ± 1%	82.1 VDC ±1%	82.1 VDC *1%
Indicators				
Lcd Panel		UPS status, Load level, Battery level, Input/Output voltage, Discharge timer, and Fault		
Alarm				
Battery Mode			Sounding every 4 seconds	
Low Battery			Sounding every second	
Overload			Sounding twice every second	
Fault			Continuously sounding	
Physical				
Standard Run Model	Dimension, D x W x H (mm)	282 x 145 x 220	397 x145 x220	421 x 190 x 318
	Net Weight (kgs)	9.8	17	27.6
Long Run Model*	Dimension, D x W x H (mm)	282 x 145 x 220	397 x145 x220	397 x145 x220
	Net Weight (kgs)	4.1	6.8	7.4
Environment				
Operation Humidity And Temperature			20-90 % RH @ 0- 45°C (non-condensing)	
Noise Level			Less than 50dBA @ 1 Meter	
Management				
Smart Rs-232/Usb		Supports Windows® 2000/2003/XP/Vista/2008, Windows® 7, Linux, Unix, and MAC		
Optional Snmp		manager and web browser		

* Derate to 80% of capacity in Frequency converter mode,the output voltage is adjusted to 100/200/208VAC and the ambient temperature during 45°C to 50°C

** Product specifications are subject to change without further notice

Liebert® GXT RT +

1, 2, 3 kVA Online UPS System

Liebert® GXT RT+ DX series is a full featured transformer free scalable UPS designed to offer compact, efficient and reliable power to power thirsty modern electronic gadgets.

It features double conversion online design that ensures continuous high quality power even when the main AC power fails. Utilize state of the art technology and components to withstand fluctuation of input main voltage. Extra wide input voltage and frequency range effectively reduces the discharging period of battery; thus prolong battery life.

Liebert® GXT RT+ DX provides customers with a reliable source of uninterruptible power even in Harsh power environments, including very wide input voltage/Frequency window, Better output voltage regulation, frequency regulation, internal bypass, and input power factor correction and Low THDi.

Features

- IGBT Based Rectifier
- True online double Conversion with DSP control Rack Mount
- UPS with 1/2/3 kVA Capacity
- User friendly LCD display
- Wide Input voltage range
- Input power factor correction
- Smart battery charger design for optimized battery performance
- Generator compatible
- SNMP, USB & RS232 Multiple communication
- Eco Mode operation for energy saving
- Emergency power off function



Liebert™ GXT - RT+ 1, 2, 3 kVA

Applications

- PCs & Workstations
- Small / Medium server rooms
- Datacenter
- Network Closet
- VoIP Telecom



Technical Specifications

Model		GXT RT+ 1 kVA	GXT RT+ 2 kVA	GXT RT + 3 kVA
Phase	1 phase in / 1 phase out			
Capacity	1000 VA / 800 W		2000 VA / 1600 W	3000 VA / 2400 W
Input				
Nominal Voltage	230 Vac			
Voltage Range	Low Line Loss	110 VAC ± 3% at 50% Load 176 VAC ± 3% at 100% Load		
	Low Line Comeback	120 VAC ± 3% at 50% Load 186 VAC ± 3% at 100% Load		
	High Line Loss	280 VAC ± 3%		
	High Line Comeback	270 VAC ± 3%		
Frequency Range	40 Hz ~ 70 Hz			
Power Factor	≥ 0.99 @ 100% load			
Output				
Nominal Voltage	208/220/230/240VAC			
Ac Voltage Regulation	± 1%			
Frequency Range (Synchronized Range)	46 Hz ~ 54 Hz or 56 Hz ~ 64 Hz			
Frequency Range (Batt. Mode)	50 Hz ± 0.1 Hz or 60 Hz ± 0.1 Hz			
Current Crest Ratio	3:1 (max.)			
Harmonic Distortion	≤ 3 % THD (Linear Load), ≤ 6 % THD (Non-linear Load)			
Transfer Time	Bypass to Inverter (Line mode)	Zero		
	Inverter to Bypass (Line mode)	4 ms (Typical)		
Waveform (Batt. Mode)	Pure Sinewave			
Efficiency On Ac To Ac Mode@ 100% Load.	86%	88%	88%	
Inbuilt Isolation Transformer	No			
Battery				
Standard Run Model	Battery Type	12V/ 9 AH	12V/ 9 AH	12V/ 9 AH
	Numbers	2	4	6
	Typical Recharge Time	4 hours recover to 90% capacity		
	Charging Current (max.)	1.0 A		
Long Run Model*	Charging Voltage	27.4VDC ± 1%	54.7 VDC ±1%	81.5 VDC ±1%
	Battery Type	Depending on the capacity of external batteries		
	Numbers	2	4	6
	Charging Current	4 and 8 Amps, 8 Amps default		
Long Run Model**	Float Charging Voltage	27.4VDC ± 1%	54.7 VDC ±1%	81.5VDC
Indicators				
Lcd Panel	UPS status, Load level, Battery level, Input/Output voltage, Discharge timer, and Fault conditions			
Alarm				
Battery Mode	Sounding every 4 seconds			
Low Battery	Sounding every second			
Overload	Sounding twice every second			
Fault	Continuously sounding			
Physical				
*Standard Run Model	Dimension, D x W x H (mm)	380x438x88(2U)	480x438x88(2U)	600x438x88(2U)
	Net Weight (kgs)	12.9	20.6	28
Long Run Model**	Dimension, O x W x H (mm)	380x438x88(2U)	480x438x88(2U)	600x438x88(2U)
	Net Weight (kgs)	8.6	11.3	13.8
Environment				
Operation Humidity And Temperature	20-95 % RH @ 0- 40°C (non-condensing)			
Noise Level	Less than 50dBA @ 1 Meter			
Management				
Smart Rs-232/Usb	Supports Windows® 2000/2003/XP/Vista/2008, Windows® 7, Linux, Unix, and MAC			
Optional Snmp	Power management from SNMP manager and web browser			

*Derate capacity to 60% of capacity in CVCF mode and to 90% when the output voltage is adjusted to 208VAC.

**When using internal batteries from 16-19, the unit will de-rate according to below formula: $P = Prating \times N/20$

***If the UPS is installed or used in a place where the altitude is above than 1000m, the output power must be derated one percent per 100m.

Product specifications are subject to change without further notice

Features

- IGBT Based Rectifier
- True Online Double Conversion with DSP Control Technology for High Performance and Reliability.
- New Graphical LCD Display Provides UPS Data, Alarms and Helps in faults diagnostics and trouble shooting.
- Double Conversion Efficiency upto 90%.
- Active Input Power Factor Correction 0.99.
- 0.8 Output Power Factor.
- Wide Input Voltage window
- (110 - 280 Vac) for Indian
- Environmental Condition and for Optimized Battery Performance.
- Configurable Output Voltage (200/208/220/230/240 Vac.)
- Generator Compatible with Wide Input Frequency Range (40 Hz-70 Hz).
- 4 Stage Extendable Charging Design for optimized Battery Performance.
- Adjustable Battery Charging Current 1/2/4/6 Amps according to Battery Capacity and Rating.
- 50/60 Hz Automatic Frequency Converter Mode.
- Intelligent Monitoring with Standard RS232/USB Port Plus Slot Available for RS485/Dry Contact/SNMP Card.
- Inbuilt OVCD.

True Online Double Conversion UPS with optional built - in galvanic isolation & with extended runtime capabilities

Liebert® GXT MT+ Series systems is true double conversion online UPS systems designed to provide with a capacity of 10-20kVA. Liebert® GXT MT+ units feature total isolation of the load from the mains - isolating input and output sections, and making the systems ideal for Data Networks / Small Data Centers/VOIP application. The units support hot standby configuration, making them suited for critical applications like banks.



Liebert® GXT-MT+ 10-20 kVA

* Adjustable Battery Charging Current 2/4/6/8/10/12/14/16 Amps according to Battery Capacity Rating.

Technical Specifications

Model	GXT MT+ 10 kVA	GXT MT+ 10KVA	GXT MT+ 20KVA
Phase	1 phase in / 1 phase out		3 phase in / 1 phase out
Capacity	10000 VA/8000	10000 VA / 9000 W	20000 VA / 18000 W
Input Characteristics			
Nominal Voltage	230 Vac (1 Ph+ N)		3 x 400 VAC (3Ph+N)
Voltage Range	160 Vac-300 Vac (1-phase) @ 100% load		305-478 VAC (3-phase) @ 100% load
Frequency Range	46~54 Hz or 56~64Hz		
Power Factor	≥ 0.99 @ 100% load		
Thdi	< 6% @ 100% load		
Output Characteristics			
Output Voltage	208 **/220/230/240VAC		
Ac Voltage Regulation (Batt. Mode)	± 1%		
Frequency Range (Synchronized Range)	46~54Hz or 56~64Hz		
Frequency Range (Batt. Mode)	50 Hz ± 0.1 Hz or 60 Hz ± 0.1 Hz		
Current Crest Ratio	3:1 (max.)		
Harmonic Distortion	≤ 2 % THD (Linear Load) ; ≤ 5 % THD (Non-linear Load)		
Transfer Time	AC Mode to Batt. Mode	zero	
	Inverter to Bypass	zero	
Waveform (Batt. Mode)	Pure Sinewave		
Ac Mode Efficiency	91%	>92%	
Eco Mode Efficiency	97%		
Battery Characteristics			
Battery Type	SMF	SMF or Tubular	
Numbers	16-20*** (adjustable)	18-20**** (adjustable)	
Charging Current (Max.)	6 Amps settable to 1/2/3/4/5/6 Amps	12A settable to 2/4/6/8/10/12 Amps	
Charging Voltage	273 VDC ± 1% (Based on 20pcs bateries)		
Indicators			
Lcd Panel	UPS status, Load level, Battery level, Input/Output voltage, Discharge timer, and Fault conditions		
Alarm			
Battery Mode	Sounding every 4 seconds		
Low Battery	Sounding every second		
Overload	Sounding twice every second		
Fault	Continuously sounding		
Physical			
Dimension, D X W X H (Mm)	442 x 190 x 318	592 X 250 X 576	592 x 250 x 826
Net Weight (Kgs)	23	28	45
Environment			
Operation Humidity	0-95 % RH @ 0- 40°C (non-condensing)		
Noise Level	< 55 dB @ 1 meter	< 58dB @ 1 Meter	< 60dB @ 1 Meter
Management			
Smart Rs-232/Usb	Supports Windows® 2000/2003/XP/Vista/2008, Windows® 7/8, Linux, Unix, and MAC		
Optional SNMP	Power management from SNMP manager and web browser		

* Product specifications are subject to change without further notice

**Derate capacity to 90% of capacity when the output voltage is adjusted to 208VAC

** *When using batteries from 16-19, the unit will be de-rate according to formula ; $P = Prating \times N/20$

*** *When using batteries from 18-19, the unit will be de-rate according to formula ; $P = Prating \times N/20$

In today's dynamic world, it is not enough for enterprises to have basic power protection. With digital trends constantly emerging and transforming the way you do business, business continuity is all the more vital. You simply cannot afford downtime in your critical system or waste time recovering these systems after a disruption. What you need is a robust, high-speed, reliable UPS system, which offers perennial, round-the-clock protection to diverse application needs.

Our Solution

The Liebert® ITA2™ is a fully-digital, highly reliable, True Online double conversion UPS solution that delivers clean and consistent power. This highly efficient solution is ideal for various deployments, whether it's IT racks, network closets, automation control systems, and precision instruments to small-sized control rooms among other edge applications.

- Cutting -edge design enables seamless integration into various ecosystems
- Tailored for global deployment in a low carbon, compact footprint

The ultimate level of engineering and dynamics that have gone beyond the development of this next-generation, innovative product facilitate top-notch availability and excellent performance at a low cost of ownership, giving you ultimate peace of mind.



5-10kVA



16-20kVA

Application Areas

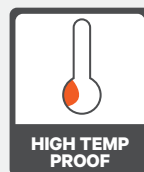
- Edge Networks
- Data Centers
- Automation industries
- Server Farms
- Workstations
- Telecom
- Marine

Key Features

- Robust structure with cuttingedge channelized airflow design
- Wide input voltage range, making it immune to grid interference
- Programmable output outlets/ terminals with cascade protection to protect key devices during heavy load
- Integrated Ethernet port with HTTP protocol compatibility & streamlined remote monitoring
- Easy to install, repair, and maintain
- Compliance with seismic conduction & vehicle carrying test
- Gravity sense LCD Display
- Turnkey Dust-resistant design with ability to operate under high ambient temperature of up to 50°C

Liebert® ITA 2™

Robust power
protection solution
in a compact
package



Technical Specifications

Nominal Ratings(kVA)	5	6	10	16	20
Standard/Long Backup Model	ITA-05k00AL1102P00/ ITA-05k00AE1102P00	ITA-05k00AE1102P00 ITA-10k00AEA102P00	ITA-06k00AL1102P00/ ITA-16k00AL3A02P00	ITA-06k00AE1102P00 ITA-16k00AE3A02P00	ITA-10k00ALA102P00/ ITA-20k00AL3A02P00
Input parameters					
Nominal input voltage(V)	220/230/240VAC		220/230/240VAC 1-Phase, 2Wire 380/400/415VAC 3-Phase,4Wire		380/400/415VAC 3-Phase,4Wire
Input voltage range(V)	176-288VAC at full load; 100-176VAC at linear derating; 100VAC at half load				
Nominal input frequency(Hz)	50/60				
Input frequency range(Hz)	40-70				
Input power factor(kW/kVA)*	0.99				
Input phase reversal correction	NA		Yes		No
Current THD at full linear load(THDi%)*	<5				
Battery					
Battery number	12 ⁽¹⁾ , 16, 20		12 ⁽¹⁾ , 16, 20		24 ⁽¹⁾ , 32, 40
Battery Charger max. power (A)	5A (Long back-up model) 2A (Standard model)		8A (Long back-up model) 4A (Standard model)		13A (Long back-up model) 5A (Standard model)
Battery Option	P/C : ITA-BCI0020K01 (built-in battery module of 16 block X 12V X 9AH) Battery cabinet dimensions in rack mounted arrangement-430(W) x 739(D) x 85(H) in mm				
Output					
Nominal output voltage (V)	220/230/240VAC (1-Phase)			220/230/240VAC (1-Phase), 380/400/415VAC (3-Phase)	
Nominal output frequency (Hz)	50/60				
Rated power factor(kW/kVA)	Unity				
Voltage harmonic distortion(%)	<2% for Linear loads & <5% for Non-linear loads				
Overload capacity	At 25°C: 105% ~ 125%, 5min; 125% ~ 150%, 1min; 150%, 200ms				
Crestfactor	3:1				
Split bypass option	No		Yes		Yes
Output waveform	Pure Sinewave				
Efficiency					
Online mode efficiency	Up to 95.5%		Up to 95.8%		Up to 96.2%
ECO mode efficiency	Up to 99%				
Dimensions and weight					
Dimensions (W x D x H) in mm Rack Mounted Arrangement	430x450x85		430x560x85		430x570x130
Weight(kg)	11		15		23
General					
Nosie at 1 m(dBA)	55		58		
Operating temperature(°C)	0 ~ 50 ⁽²⁾				
Relative humidity (%RH)	5 ~ 95, non-condensing				
Altitude(m)	3000m				
General and safety requirements for UPS *	IEC/EN 62040-1				
EMC requirements for UPS	IEC/EN 62040-2				
UPS classification according to IEC 62040-3	VFI-SS-111				

*Conditions apply

Note: Specification are subject to change without any further notification

(1) Power derates to 70% of total capacity

(2) 0-25 deg no power derating , derate to 80% at 40deg and 70% at 50deg

Liebert® Powerbank 600

In today's dynamic world, it is not enough for enterprises to have basic power protection. With digital trends constantly emerging and transforming the way you do business, business continuity is all the more vital. You simply cannot afford downtime in your critical system or waste time recovering these systems after a disruption. What you need is a robust, high-speed, reliable UPS system, which offers perennial, round-the-clock protection to diverse application needs.

Our Solution

The Liebert® Powerbank 600 is a fully-digital, highly reliable, True Online double conversion UPS solution that delivers clean and consistent power. This highly efficient solution is ideal for various deployments, whether it's IT racks, network closets, automation control systems, and precision instruments to small-sized control rooms among other edge applications.

- Cutting –edge design enables seamless integration into various ecosystems
- Tailored for global deployment in a low carbon, compact footprint

The ultimate level of engineering and dynamics that have gone beyond the development of this next-generation, innovative product facilitate top-notch availability and excellent performance at a low cost of ownership, giving you ultimate peace of mind.

APPLICATION AREAS

- Edge Networks
- Data Centers
- Analytical instruments
- Server Farms
- Workstations
- Telecom

Inbuilt isolation transformer

Efficiency >89% with inbuilt transformer

Settable battery options

LI-ion battery compatible

Integrated SNMP for monitoring and modbus function

Unity power factor

Higher operating temp-0° to 50°

Operates in a parallel configuration upto 4 nos

Graphical touch screen system LCD display provides user-friendly operating interface



The Most Efficient UPS

Liebert® Powerbank 600 offers best-in-class efficiency of up to 89% over a wide range of load conditions, resulting in significant OPEX cost savings. Liebert® Powerbank 600's integrated Smart Sleep technology in ECO mode provides a superlative efficiency of up to 94%.

Technical Specifications

Model		POWERBANK 600
Input	Rating	6kVA (1in - 1out)
	Rated voltage	230VAC 1-phase,3-wire
	Voltage Range	176 -288VAC at 100% load; 100VAC - 288VAC on 50% load
	Rated Frequency	50Hz/60Hz
	Frequency Range	40Hz ~ 70Hz
	Power factor	≥0.99 at full load , ≥0.98 at full load ,
Output	Rated power	6KVA/6kW
	Voltage	220/230/240VAC (single phase)
	Frequency synchronization range	Rated frequency±3Hz. Configurable range: ±0.5Hz ~ ±5Hz
	Rated Power Factor	Unity
	Crest Factor	3:1
	Voltage harmonic distortion	< 1% (linear load)
	Voltage Regulation	1%
	Dynamic response recovery time	60ms
	Isolation transformer	Inbuilt
	Parallel function	Max 4 (N+1)
	Inverter Overload Capability on utility mode	At 25°C: 105% ~ 125%- 5min; 125% ~ 150%-1min; 150%- more than 200ms
	Inverter Overload Capability on battery mode	At 25°C :105% ~125%-60~ 30 s; >125%- more than 200ms
Bypass	Output waveform	Pure Sinewave
	Seperate bypass	No
	Static bypass	Inbuilt
	Manual bypass	Inbuilt
Efficiency	ECO Mode	94%
	Online mode (AC-AC)	> 89%
	Inverter Efficiency(DC-AC)	>88%
Battery	Type	Sealed, lead-acid, Tubular, LI-ION
	No's of Batteries	12(1), 16, 20; 16 by default
	Battery Fuse disconnecter	Inbuilt
	Battery charging capacity	5A
	Mains - Battery	0ms
Transfer Time	Inverter-Bypass	Synchronous transfer: ≤0ms
		Asynchronous transfer (default): ≤20ms
Noise		<65db
Panel display mode		Graphical LCD display
Ambient conditions	Operating temperature	0°C ~ 50°C(2)
	Storage temperature	-40°C ~ +70°C (battery excluded); -25°C ~ +55°C (battery included)
	Relative humidity	5%RH ~ 95%RH, non-condensing
	Altitude	≤3000m; derating when higher than 3000m
Mechanical parameter	W*D*H (mm)	500 X 525 X 400
	Weight (Kg)	85Kg
	Ventilation	Forced -air cooled
	Ingress protection	IP20
	Color	Powder coated Black Texture finish
	Cable entry	Bottom
Network Management	Smart RS232/USB	Supports Windows 2000/2003/XP/Vista/2008, Windows 7, Linux, unix and MAC
	SNMP	Inbuilt for web monitoring only
	Optional SNMP	Power management from SNMP manager and web browser
	Modbus	Inbuilt via multifunction port

In today's dynamic world, it is not enough for enterprises to have basic power protection. With digital trends constantly emerging and transforming the way you do business, business continuity is all the more vital. You simply cannot afford downtime in your critical system or waste time recovering these systems after a disruption. What you need is a robust, high-speed, reliable UPS system, which offers perennial, round-the-clock protection to diverse application needs.

Our Solution

The Liebert® S600™ is a fully-digital, highly reliable, double conversion UPS solution that delivers clean and consistent power. This highly efficient solution is ideal for various deployments, whether it's IT racks, network closets, automation control systems, and precision instruments to small-sized control rooms among other edge applications.

- Cutting-edge design enables seamless integration into various ecosystems
- Tailored for global deployment in a low carbon, compact footprint

The ultimate level of engineering and dynamics that have gone beyond the development of this next-generation, innovative product facilitate top-notch availability and excellent performance at a low cost of ownership, giving you ultimate peace of mind.

Application Areas

- Edge Networks
- Data Centers
- Analytical instruments
- Server Farms
- Workstations
- Telecom

The Most Efficient UPS

Liebert® S600™ offers best-in-class efficiency of up to 91% over a wide range of load conditions, resulting in significant OPEX cost savings. S600D's integrated Smart Sleep technology in ECO mode provides a superlative efficiency of up to 94%.

Inbuilt isolation transformer

Unity power factor

Efficiency >91% with inbuilt transformer

Higher operating temp- 0° to 50°

Settable battery options



10-20kVA

Operates in a parallel configuration upto 4 nos

LI-ion battery compatible

Graphical touch screen system LCD display provides user-friendly operating interface

Integrated SNMP for monitoring

Technical Specifications

Model	Rating	10KVA	20KVA	20KVA (3in/3out)
System parameter	Rating	10kVA (3in -1out)	20kVA (3-in -1out)	20KVA/20kw (3in-3out)
Input	Rated voltage	400vac 3-phase,4 wire	400Vac 3-Phase,4 wire	
	Volatge Range	176 -288VAC at 100% load; 100VAC - 288VAC at 50% load		
	Rated Frequency	50Hz/60Hz		
	Frequency Range	40Hz ~ 70Hz		
	Power factor	≥0.95 at full load		
	Input phase reversal correction	Yes	No	
	Output	Rated power	10KVA/10kW	20KVA/20kW
Voltage		220/230/240VAC (single phase)		
Frequency synchronization range		Rated frequency±3Hz. Configurable range: ±0.5Hz ~ ±5Hz		
Rated Power Factor		Unity		
Crest Factor		3:1		
Voltage harmonic distortion		< 2% (linear load)		
Voltage Regulation		2%		
Dynamic response recovery time		60ms	40ms	
Isolation transformer		Inbuilt at UPS output		
Inverter Overload Capability the utility mode		At 25°C: 105% ~ 125%- 5min; 125% ~ 150%-1min; 150%- more than 200ms		
Inverter Overload Capability the battery mode		At 25°C :105% ~125%-60~ 30 s >125%- more than 200ms		
Bypass	Bypass Voltage range	Upper limit: +10%, +15% or +20%; default: +20% Lower limit: -10%, -20%, -30% or -40%; default: -40%		
	Seprate bypass	Yes		
	Manual bypass	Inbuilt		
Efficiency	ECO Mode	> 94%	> 94%	
	Online mode (AC-AC)	> 91%	> 91%	
	Inverter Efficiency(DC-AC)	88%	88%	
Battery	Type	Sealed, lead-acid,Tubular,LI-ION		
	No's of Batteries	12 ⁽¹⁾ , 16, 20; 16 by default	24 ⁽¹⁾ , 32, 40; 32 by default	
	Battery Fuse disconnecter	Inbuilt		
	Battery charging capacity	8A	13A	
Transfer Time	Mains - Battery	0ms		
	Inverter- Bypass	Synchronous transfer: ≤0ms Asynchronous transfer (default): ≤20ms		
UPS Parallel Numbers		4		
Noise		<65db		
Panel display mode		Graphical LCD display		
Ambient Conditions	Operating temperature	0°C ~ 50°C ⁽²⁾		
	Storage temperature	-40°C ~ +70°C (battery excluded); -25°C ~ +55°C (battery included)		
	Relative humidity	5%RH ~ 95%RH, non-condensing		
	Altitude	≤3000m; derating when higher than 3000m		
Mechanical parameter	W*D*H (mm)	550 X 620 X 700	550 X 620 X700	550X620X700
	Weight (Kg)	138	158	
	Ventilation	Forced -air cooled		
	Ingress protection	IP20		
	Color	Powder coated Black Texture finish		
	Cable entry	Bottom	Rear bottom	
Technology	IGBT based Double conversion PWM based true OnlineUPS with double conversion technology based on Digital Signal Processor (DSP), noiseless operation. Pure & steady Sine wave output. Full proof protection. Compact & rugged with wheels at base.			
Network Management	Smart RS232/USBPort.			
	SNMPinterface for network management.			
	Relay/Dry Contact/Modbus.			
Codes and Standards	UPS shall comply with the following IS/IEC standards:			
	IEC 62040-1, IEC 62040-2, IEC 62040-3, IEC 61643			
	ISO 9001, ISO 14001			
	RoHS			

Note : (1) UPS power will derate to 70% of the total capacity
 (2) UPS power will derate to 80% at 40deg, 70% at 50deg
 *conditions apply

A Modular Power Protection Solution for today and the Future

LOW TCO

With the Liebert® APS™, you can maintain flexibility for the future and ensure the availability of your critical systems— all without sacrificing cost or energy efficiency.

Additional features to help lower costs include:

Industry-leading efficiency:

- 91.5-92% efficiency: 200-240V in/out transformer- free systems.
- 88.5-89.9% efficiency: transformer-based systems.
- Scalability that allows you to cost-effectively add power capacity or battery modules as needed.
- Modular batteries, controls and power components to help reduce maintenance costs with user replacement.
- Two year hassle-free factory warranty program for repair or replacement of your Liebert® APS UPS.
- Module-level redundancy eliminates the expense of purchasing and planning for any additional cabinets.
- Reduced installation time and cost because units are shipped pre-configured and factory tested, no need for on-site assembly.
- Everything you need for efficiency and availability in one box: 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.

Reliability and Serviceability

At the core of your business sits your data center and the services running in it. 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 power 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 in the system.
- Configurable design allows you to customize the Liebert® APS UPS for 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.



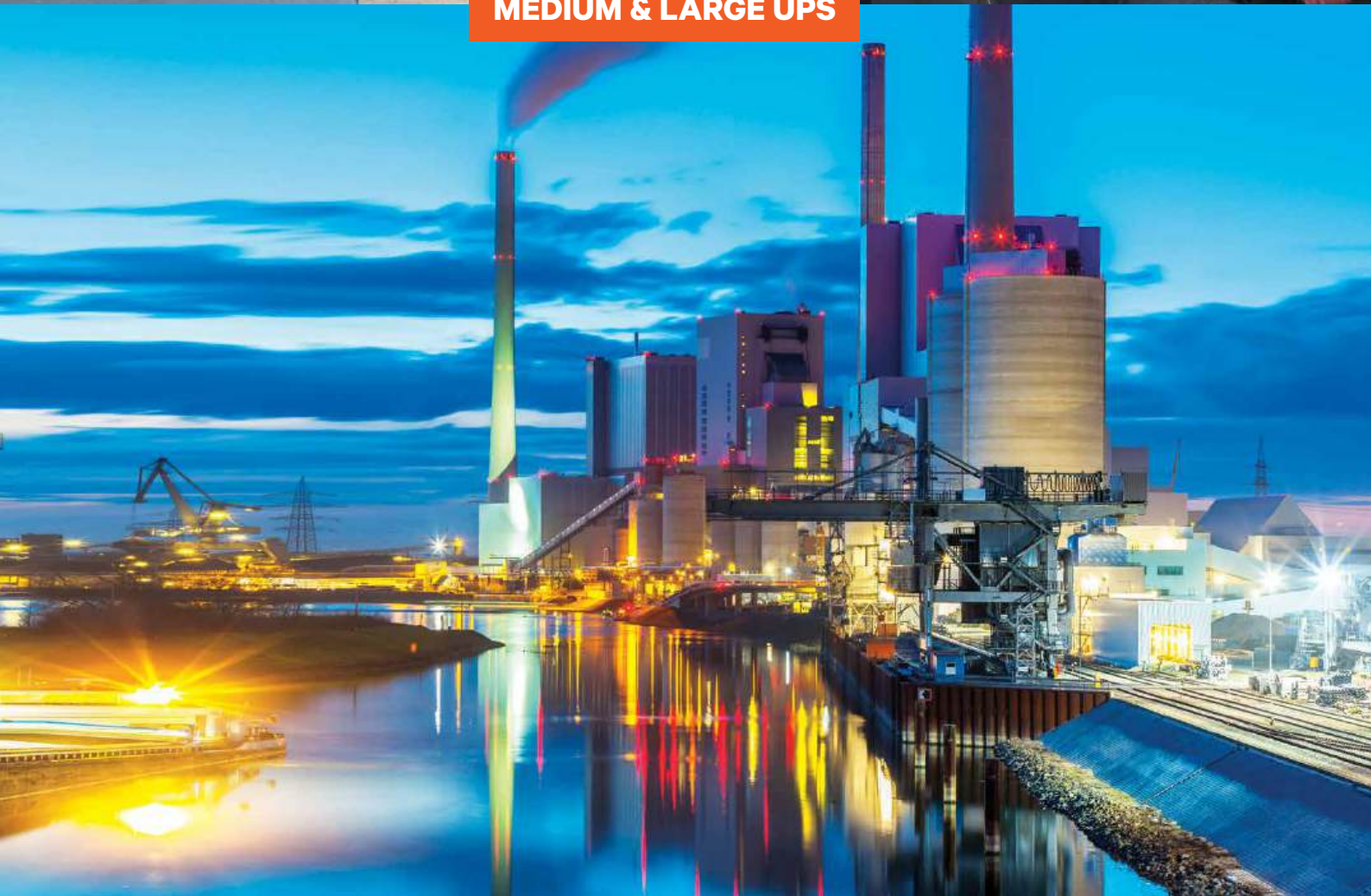
The Liebert® APS™ UPS can be installed on raised floors, traditional flooring, or in rack enclosures.

Technical Specifications

Unit Size, Type	10 Bay	16 Bay	12 Bay	16 Bay
	No Transformer		Tranformer Based	
Frame Rating, kVA/kW	5/4.5, 10/9,15/13.5	15/4.5, 10/9, 15/13.5, 20/18.5/	4.5, 10/9, 15/13.5 15/	4.5, 10/9,15/13.5,20/18
Input Parameter				
Nominal Input Voltage Range	200/208/220/230/240; Single Phase			
	380/400/415: Three Phase			
Input Voltage Range; Vac	Input Voltage Range Depends on the 0/13 Loading			
Power Factor	Single Phase Input 0.99 Three Phase Input 0.95		Single Phase Input 0.99	
Input Frequency Hz	50/60 Hz			
Input Current Distortion THDi	Less than 5%			
Input Frequency Range	40/70 Hz Auto Sensing			
Output Parameter				
Output Voltage Vac	200/208/220/230/240 Vac			
Voltage Regulation %	±3			
Voltage Stability %	±7			
Voltage Recovery Time, ms	560			
Voltage Distortion %	5 3 on Linear Load			
	5 on Non-Linear Load		7 on Non-Linear Load	
Output Frequency; Hz	50/60			
	104% Continuous			
	105%-130% For 1 Min			
OverLoad Capability %	131%-150% For 10 Sec			
	151%-200% for 1 Sec			
	> 201% for 250 msec			
Battery Module				
Lead Acid Batteries Per String	12			
Batteries Cells Per String ,Pieces	72			
Battery Capacity,W	36 W@15 Min rate to 1.67 V Per Cell@ 25 Degree Cel			
Maximum Charging Current	Power Module Internal Charger 1.8 Amps			
	Charger Module 10 Amps			
Nominal Voltage, Vdc	144			
General and Environmental Condition				
Dimension WxDxH in mm	440x712x920			
Operating Temp	0 to 40 Degree Celsius			
Storage Temperature	Without battery: -4 to 140 (-20 to 60)			
	With battery: 5 to 104 (-15 to 40)			
Relative Humidity	0-95% Non Condensing			
Altitude ft (m)	10000 (3000)			



MEDIUM & LARGE UPS



Utmost Reliable Power Solution for Critical Business Applications

The Liebert® Hipulse-U™ offers a reliable, scalable and user-friendly solution to ensure availability of various critical applications. The Liebert® Hipulse-U™ offers protection to your investment, and provide lower cost of ownership through its digital architecture and range of options which you can customize specifically for your needs.



Feature-Loaded UPS

We have studied the emerging needs of our customers and have engineered what we have learned into the new, upgraded Liebert® Hipulse-U™. Now it offers you more value and power per square meter. You will find that the Liebert® Hipulse-U™ offers unique features that address the needs of your business today and is designed to handle the needs that are anticipated in the future.



Built Investment Protection

- Automatic battery testing
- Field settability of EOD of the battery
- Selectable times for boost charging duration of the battery (15 steps with each step of 1 hour)
- Protection against deep discharge of battery
- Short-circuit proof inverter
- Back-feed protection
- D-level lightning protection
- With 3 auxiliary power supply to ensure redundancy under any condition
- Standard dry contacts
- Choice between 6 or 12 pulse rectifier for 120kVA to 500kVA capacity range
- Choice of array of input harmonic filter options
- Temperature-compensated battery charging (optional)

FEATURES

- Fully Digital, twin DSP controlled
- Rated at 0.9 output power factor to deliver more active power
- Handle leading power factor loads without KW derating under specified conditions
- On-Line Double Conversion IGBT- based PWM Inverter
- Wide input voltage tolerance (+20/-20%)
- Wide input frequency range of 45Hz to 65Hz
- High overload capability of static bypass (14 times for 10 milliseconds and 10 times for 100 milliseconds)
- Capability to handle:
 - High crest factor loads
 - 100% non-linear loads
 - 100% unbalanced loads
- Built-in maintenance bypass
- Front access for spares replacement and preventive maintenance
- Easy Dual bus configuration architecture
- Adjustable frequency synchronization window up to 6% in the static bypass
- Field protocols ModBus / Jbus
- Network protocols SNMP
- Overload capability of the UPS:
 - 110% full load for 60 minutes
 - 125% full load for 10 minutes
 - 150% full load for 1 minutes
- Compact footprint

Liebert® Hipulse U™ Accessories

Intelligent Paralleling

- Intended to increase system efficiency and to reduce the operating hours on the UPS
- This feature will put one or more paralleled units into standby operation when number of redundant modules is above the user-specified threshold

Liebert® Active Filter

- Optional super filter to reduce THDi to <5% and improve input PF up to 0.93 without additional system footprint.*

Isolation Transformer

- Additional transformer for output or bypass supply depending on application

Rectifier or Bypass supply

- This allows UPS to be configured in Single or Dual Main supply to ensure system adaptability and reliability

DC Ground Fault Indications

- This provides indication of occurrence of battery ground fault problems

Protection Degree (IP)

- To address stressed environmental conditions, Hipulse-U™ UPS with higher than IP 20 degree of protection can be made available for most of the kVA ratings

Top Cable Entry

- Available for a wide range of our Hipulse-U™ ratings

Load Bus Synchronisation (LBS)

Ensures the synchronisation of outputs of two independent UPS systems to form Dual Bus Architecture for High availability of Critical BUS

Liebert® LTS, STS2 or Hiswitch2

- This allows critical load to be automatically transferred between two independent, synchronized AC power sources without any risk of load disturbances

TVSS (Transient Voltage Surge Suppressor)

- This offers protection from damaging transients and electrical line noises
- This is normally connected at the bypass path of Hipulse-U™ or inside the Static Transfer Switch as an optional item



Communication Options

When choosing the best system to protect your mission critical applications, an important consideration would be the software and communication options. As part of our commitment to provide the best solution for you, we offer a wide range of sophisticated software and communication options for Hipulse-U™.

- Control through Building Management Systems via Modbus and Jbus protocols
- Web-enabled Monitoring and Management through SNMP protocols
- Network Management Systems ready (HP OpenView, CA unicenter, Novell Managewise, etc)
- Software Solutions
 - Site Monitor Software
 - Facility wide monitoring by Site Scan
 - Shutdown software for your computer

Technical Data

Nominal Ratings	30	40	60
Rectifier Type	6P	6P	6P

Input

Nominal input voltage	380/400/415Vac -wire plus ground
Input voltage range	290 to 498Vac
Nominal input frequency	50/60Hz
Input frequency range	45-55Hz / 55-65Hz

Output

Nominal output voltage	380/400/415Vac - 3 Phase with Neutral
------------------------	---------------------------------------

Frequency

Voltage stability		±1% (Steady state); ±5% (Transient state)
Transient recovery time		20 milliseconds to 1%
Frequency stability		±0.1% (Synchronized with internal clock); ±6% (max)(Synchronized with bypa ss)
Overload capability		101-110%, 60minutes; 111-125%,10minutes; 126-150%, 1 minute;
Voltage distortion with linear load		<1%
Voltage distortion with 100% Non- linear load		<5%
Permissible load unbalance		100%
Non linear load capability		100%
Load handing capability without kVA derating		0.5 lagging to 0.9 leading
Phase angle displacement accuracy	100% balanced load	±1°
	100% unbalanced load	±1°

Dimensions and weight

Depth (mm)	810		
Width (mm)	715		
Height (mm)	1250		
Weight(kg)	520	580	660

General

General and safety requirements for UPS	IEC 62040-1-1
EMC requirements for UPS	IEC 62040-2
Design & Test Methods (1999)	IEC 62040-3

*Conditions apply

Specifications are subject to change without any prior notification

Specifications considering 400V nominal voltage

Technical Data

Nominal Ratings	80	100	120		160		200		300		400		500
Rectifier Type	6P	6P	6P	12P	6P	12P	6P	12P	6P	12P	6P	12P	6P

Input

Nominal input voltage	380/400/415Vac 4-wire plus ground												
Input voltage range	290 to 498Vac												
Nominal input frequency	50/60Hz												
Input frequency range	40-70Hz												
Input current distortion with linear load (with filter)	3 to 10% with optional filter												
Power factor (with filter)	0.88 to 0.97 with optional filter												

Output

Nominal output voltage	380/400/415Vac 4-wire plus ground												
------------------------	-----------------------------------	--	--	--	--	--	--	--	--	--	--	--	--

Frequency

Voltage stability		±1% (Steady state); ±5% (Transient state)	
Transient recovery time		20 milliseconds (max)	
Frequency stability		±0.1% (Synchronized with internal clock); ±6% (max)(Synchronized with bypass)	
Overload capability		101-110%, 60minutes; 111-125%,10minutes; 126-150%, 1 minute;	
Voltage distortion with linear load		<1%	
Voltage distortion with 100% Non- linear load	<5%	<3.5%	
Permissible load unbalance		100%	
Non linear load capability		100%	
Load handing capability without KVA derating		0.5 lagging to 0.9 leading	
Phase angle displacement accuracy	100% balanced load	±1°	
	100% unbalanced load	±1°	

Dimensions and weight

Depth (mm)	855												
Width (mm)	900	1540	1250	1640	1240	1740	1640	2280		2640			
Height (mm)	1900												
Weight(kg)		900		1400	1200	1750	1200	1850	1600	2550	2200	2900	

General

General and safety requirements for UPS	IEC 62040-1												
EMC requirements for UPS	111												
UPS classification according to CEN/EN 6240-3	IEC 62040-3												

*Conditions apply
Specifications are subject to change without any prior notification

FEATURES

- Online mode Efficiency exceeding 96% at partial load
- ECO mode availability for parallel configurations
- Unity output PF (kVA=kW)
- Powerful battery charging capability
- Flexible air flow management; from back and top
- Top or bottom cable entry
- Integrated transformer option
- Full frontal access for installation and service
- LIFE™ remote diagnostic and preventive monitoring service
- Robust internal architecture makes it suitable for light industrial application

Efficient, Flexible Power Optimized For Medium Size UPS Applications

Medium Size UPS as dynamic as your business

Small and Medium sized businesses need UPS solutions that deliver lower first costs and ongoing operational savings, high reliability, and enable speed and flexibility in a dynamic IT environment.

Vertiv's commitment is to deliver the most technologically advanced product for our customer's mission critical applications, is once again reiterated by our next generation UPS series Liebert® eXM™

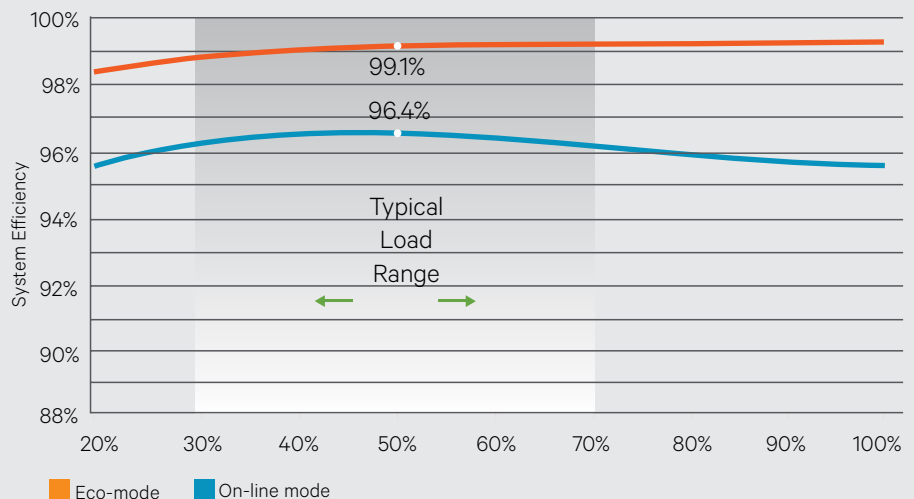


Highly Efficient, most flexible and reliable transformer free UPS for small and mid-tier applications.

Efficient power protection that can meet your capital requirements. Our latest ECO Mode option delivers over 99% efficiency, while the Double Conversion Mode has been optimized to exceed 96%.

Flexible configurations provides an ideal mix of both row-based and room-based benefits, optimized to deliver excellent performance at low total cost of ownership and allow organizations to meet stringent Service Level Agreements.

Reliability is the epicenter of Liebert® eXM™ Its Internal and external architecture is rugged enough to handle input faults, load faults, temporary overloads, input power disturbances and even light industrial environment.



Liebert® eXM™ efficiency curve in double-conversion mode: Liebert® eXM™ UPS saves over USD1,000/year for every percentage point gain in efficiency. **USD 0.1/kWh



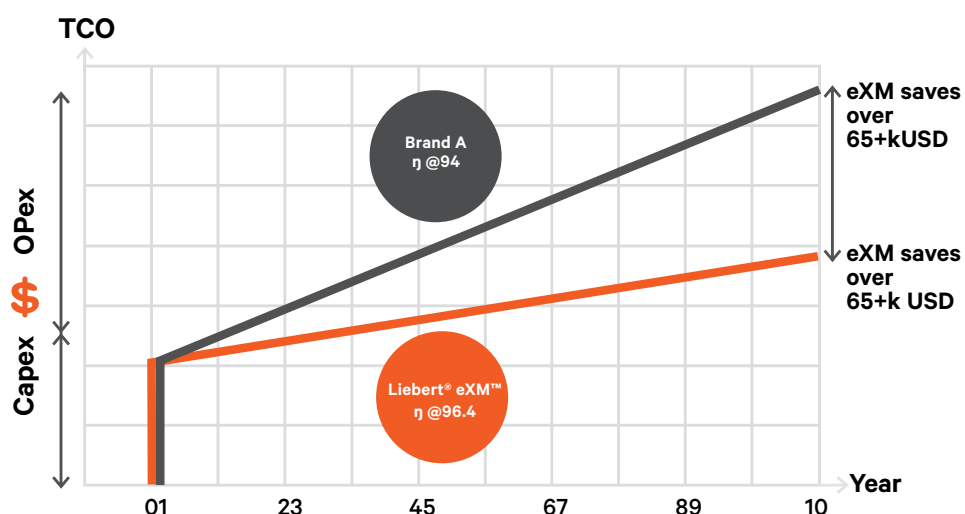
Liebert® eXM™ efficiency credentials and performance is certified by TÜV -Rheinland in accordance with IEC/ EN 62040-1, IEC/ EN 62040- 3

Efficient System

Since the need for improving energy efficiency has become more ubiquitous, many manufacturers have introduced energy efficient UPS system to meet the customers' needs on energy conservation. But they fail to communicate the true picture of efficiency with respect to load at the typical operating condition.

Mostly, UPS efficiency is judged at full load calculations –but your system rarely runs at full load. Compare double conversion efficiencies in the 30-70 percent load ranges to get a true picture of operating costs.

TCO performance at typical 40-60% load level



This is where Liebert® eXM™ draw out the critical difference by consistently exceeding unmatched over 96% efficiency level.

Similarly, under ECO mode Liebert® eXM™ constantly delivers over 99% efficiency across the typical load range and it is able to do so even in parallel operation without the need for an external accessories thus saving on initial cost and also, while ensuring high level of availability by transferring the load to inverter and vice versa in less than 2ms, in case of utility voltage anomaly or failure.

When two or more UPS are paralleled to reach the required capacity, an integrated Intelligent Paralleling algorithm can be established. Intelligent Paralleling evenly distributes the operating hours across the connected UPS units by rotating the active ones thus maximizing the total system efficiency.

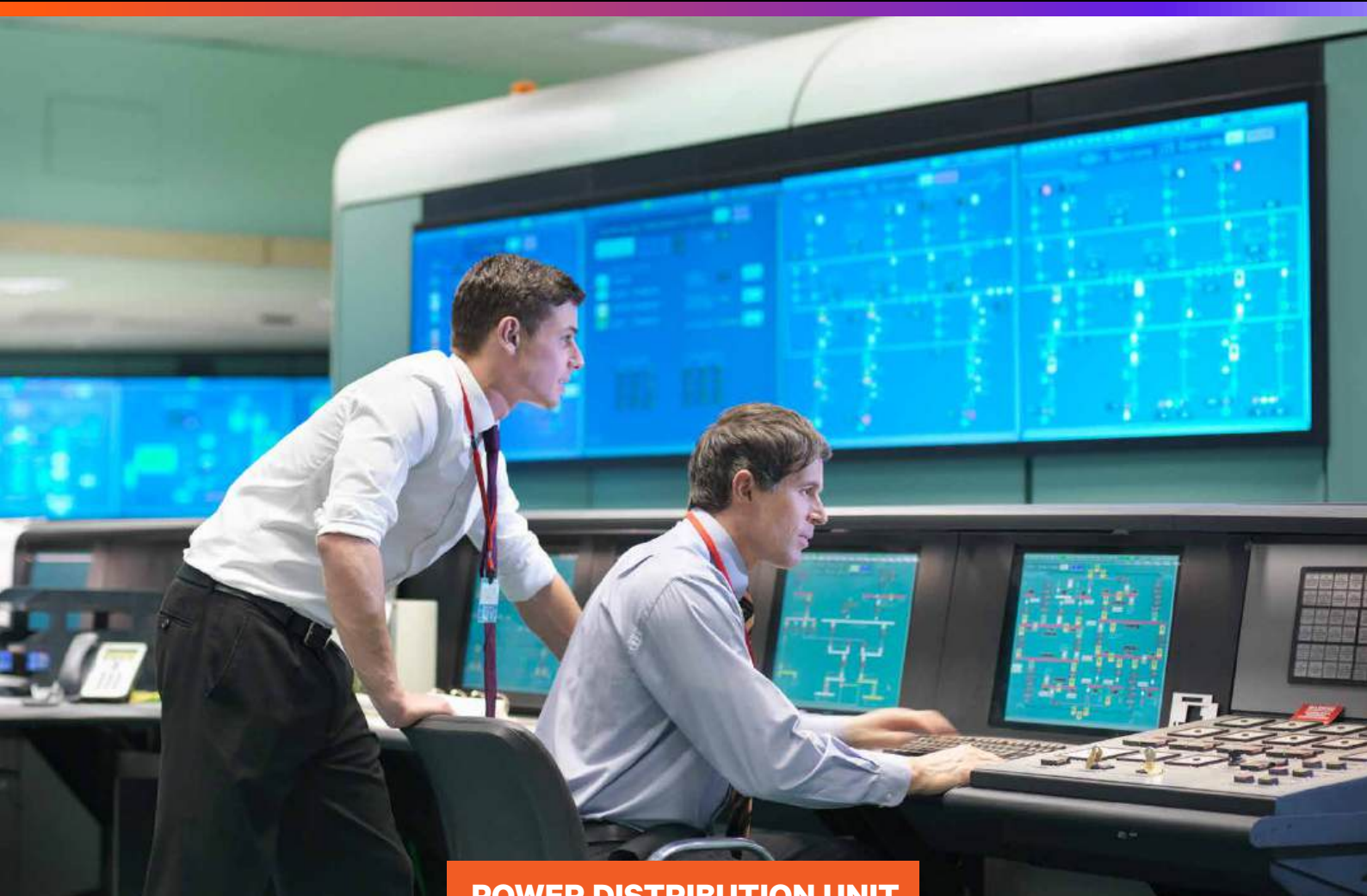
With its advanced efficiency techniques, Liebert® eXM™ contribute to minimizing the carbon footprint of mission critical applications, helping data centers to meet the industry's environmental and efficiency compliance standards.



Specifications

Nominal Ratings(kVA/kW)	80kVA/kW	100kVA/kW	120kVA/kW	160kVA/kW	200kVA/kW
Input					
Nominal input voltage(V)	380/400/415				
Input voltage range without battery discharge (V)	229-478				
Nominal input frequency(Hz)	50/60				
Input frequency range(Hz)	40-70				
Bypass voltage tolerance(%)	Upper limit: +10%, +15%, or +20% default: +15%; Lower limit: -10%, -20%, -30% or -40% default: -20%				
Bypass frequency tolerance(%)	+/- 10% or +/- 20%, default: +/-10%				
Input power factor(kW/kVA)	>0.99				
Current THD at full linear load(THDi%)	<3%				
Battery					
Number 12V battery per string(Min-Max)	30-44				
Temperature compensation (mV/°C/c1)	-3.0 (selectable from 0 to -5.0 around 25°C or 30°C, or inhibit)				
Battery Charger max. (A)	20	24.5	30	40	49
Output					
Nominal output voltage (V)	380/400/415				
Nominal output frequency (Hz)	50/60				
Nominal active power (kW)	PF=1				
THDv with 100% linear load (%)	<1%				
Inverter overload capacity	110% for 60 mirr, 125% 10min; 150% for 1 min				
Efficiency					
Online mode efficiency	Up to 96.4%				
ECO mode efficiency	Up to 99.1%				
Dimensions and weight					
Dimensions (W x D x H) mm	700 x 1000 x 1500	900 x 1000 x 2000	900 x 1000 x 2000	1200 x 1000 x 1700	1200 x 1000 x 1700
Weight(Net weight)	350	480	480	580	625
General					
Nosie at 1 m dB(A)	57	59	59	61	64
Altitude	=1500; derate power by 1% per 100m between 1500m and 300m				
Ventilation	Front to back standard/ Front to top (optional)				
Protection level IEC (60629)	IP 20 Standard				
General and safety requirements for UPS	EN62040-1/ IEC62040-1 /A562040-1				
EMC requirements for UPS	EN62040-2 / IEC62040-2 / AS62040-2 (Class C2*)				
Method of specifying the performance and test requirements of UPS	EN62040-3 / IEC62040-3 / AS62040-3 (VFI-SS-111)				

*Class C3 is standard whereas class C2 is optional
Specifications are subject to change without any prior notification

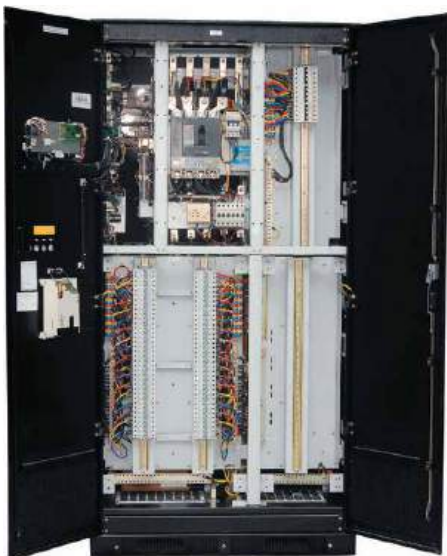


POWER DISTRIBUTION UNIT



FEATURES

- **Computer-grade grounding** - the Vertiv PPC automatically establishes a single point ground to meet grounding requirement major Manufacturers' recommendations and the requirements of the National Electric Code.
- **Handles non-linear loads** - fully compatible with the non-linear loads of modern computer systems and other electronic equipment.
- **Monitoring** - built-in metering and alarm annunciation with communication to Vertiv centralized monitoring & modbus for third party monitoring.
- **Space savings** - compact single cabinet conserves valuable floor space.
- **Easy installation** - single input cable connection reduces installation time and cost.
- **Location flexibility** - the unit can be easily relocated to protect your investment.



Liebert® delivers the packaged power solution

Liebert® Precision Power Center is an affordable and reliable packaged Power management for a variety of applications, including computer rooms, LANS/WANS, communication facilities and manufacturing units.

Creating high quality power is a major step towards protecting the operation of a critical facility. But don't stop there. Once you've created a better level of power, you need to make sure that it can be distributed properly to each piece of important equipment

Critical power distribution made easy

This is why Liebert® designed the Precision Power Center (PPC) to bring you a distribution system that will close the power delivery loop in your critical facility. Liebert PPC offers the benefits of a custom-tailored power system, with the convenience and cost savings of a pre-packaged, factory-tested unit. Housed in a single, self-contained cabinet, it combines distribution, computer-grade grounding and power monitoring to provide the protection your vital computer or communications equipment demands. Available In 50-300 kVA capacity systems. The PPC offers flexible expansion capabilities to fit growing sites.

A proven system

The packaged system approach of the Vertiv PPC is convenient and space-saving, reducing installation time and cost compared to a conventional approach using multiple interconnected components. The Vertiv PPC is built on a proven system design used in thousands of Installations, and unlike the one-of-a-kind, built-up distribution constructed at the site, it undergoes thorough factory testing as a complete system to assure reliable consistent performance.



Technical Specifications

Rated Power	50	75	100	125	150	200	225	250	300
-------------	----	----	-----	-----	-----	-----	-----	-----	-----

Electrical parameters

Rated Input Mains Voltage ¹	380 - 400 - 415 Vac
Input Supply	Three phase, 3 wire and Ground
Input voltage tolerance	± 10 %
Frequency	50/60Hz
Input frequency tolerance	± 5 %
Output Supply	Three phase or Single phase
Rated Output Voltage ²	220/380 - 230/400 - 240/415 Vac

Environmental parameters

Operating Temperature	0 to 40°C, (average 35°C max)
Relative Humidity	90% at 31°C
Altitude of operation	1000m above sea level
Storage/ transport temperature	-25 to 70°C

Mechanical parameters

Height	With transformer	2000mm	
	Without transformer		
Width	With transformer	900mm	1200mm
	Without transformer	600mm	1000mm
Depth	With transformer	1050mm	
	Without transformer	600mm	
Colour		Structured Black, Epoxy Polyester	
Cooling		By Internal Intake Fans	
Cable Entry / Exit		Outgoing cables = Bottom side; Incoming cables = Top & Bottom side	
Protection grade		IP 20	

* 1. 380V, 400V or 415V is to configured by software.

2. Rated output voltage is as per input mains voltage.

3. Specification are subject to change without any prior notification

Reliable Redundant protection to your mission critical Applications

The LTS™ is a single-pole automatic transfer device with the capacity of 10/16/32 A.

It performs the core functions of detection and transfer in the dual-bus system composed of two ways of AC power, and is used in the high-end uninterruptible power supply applications that require high power supply reliability.

Redundancy

Currently, only the high- end servers are equipped with dual power. Other types of equipment, including hub, exchange, router, elementary server, and specialized instrument and meter. are singlepower products. You can connect the key equipment to two ways of redundant power through LTS™. The main power and the standby power can directly connect to the LTS™ on the rack can provide redundancy control on the power. Once the main power fails, it will automatically switch to the standby power

Reliability

The LTS™ adopts the control technology of “First Disconnect Then Connect”

- If one-way power fails, the LTS™ can ensure the uninterruptible power supply to the equipment through the redundant power supply
- Once short circuit occurs, the LTS™ can ensure that the failure will not extend to the standby power, and thus ensure the uninterruptible power supply to the mission critical equipments

Redundant Design

To ensure that the equipment can still operate normally upon the failure of one single power.

Compact Size

Optimized 1U size designed to integrate in same server rack

Full DSP Control

Ensures strong data processing capacity and improves the system reliability.

Advanced Power-off Detection

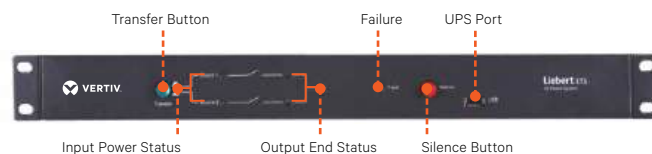
Enables quick judgment of power -off failure.

Advanced Communication

Realizes the remote management through SNMP card (option)

Applications

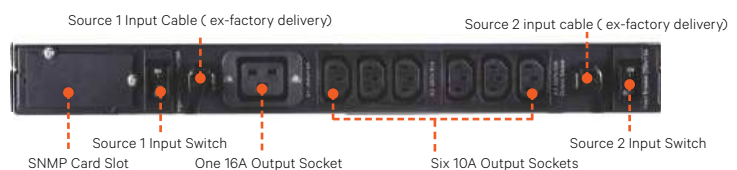
- Computer equipment rooms
- Internet data centers
- Telecom&Financial data centers
- Industrial process control centers



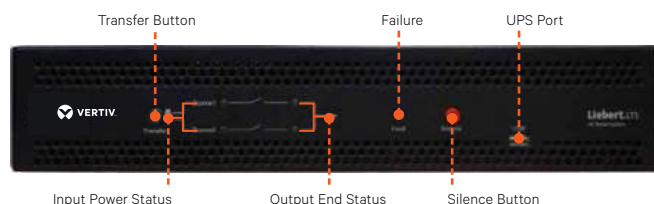
10A And 16A Front Panel Schematic Diagram



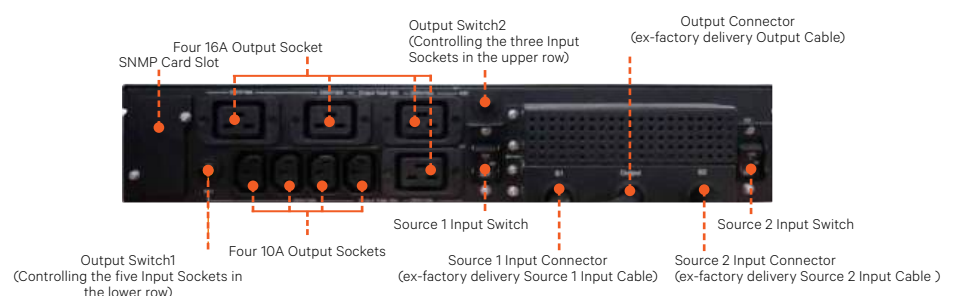
10A And 16A Front Panel Schematic Diagram



16A Back Panel Schematic Diagram



32A Front Panel Schematic Diagram



32A Back Panel Schematic Diagram

Technical Specifications

Rating	10A	16A		32A
Input				
Input connectors type	C14 x 2	IEC309 x 2 (Model 1)	IEC-C20 x 2 (Model 2)	Hard-wired
Input source	Two ways of input sources			
Input mode	1 +N+PE			
Rated voltage	220/230Vac			
Rated frequency	50/60Hz			
Voltage range	150 ~ 300Vac			
Frequency range	Rated frequency ±5Hz			
Voltage distortion	<10%			
Output				
Output connectors type	C13	C13 & C19		C13 & C19
Rating & Quantity	10A x 8	10A x 6, 16A x 1		10A x 4, 16A x 4
Power factor	0.8 ~ 1.0 lead or lag			
Overload capacity	125%, 30min (tested at 30°C)			
Efficiency (100% linear load)	99%			
Transfer				
Numbers of poles	2 poles			
Automatic transfer interval	<6ms (typical), <11ms (maximum)			
Environment Parameters				
Operating temperature	0 ~ 40°C			
Storage temperature	-40 ~ 70°C			
Relative humidity	5 ~ 95%, no condensation			
Elevation	3000m			
Pollution level	Level II			
Mechanical Parameters				
Dimension (H x W x D)	44mm x 430mm x 250mm			84mm x 430mm x 340mm
Weight	4.5kg			5kg

*Specifications are subject to change without any prior notification

Liebert® Network Power Switch

Intelligent static transfer switches

Network Power Switch - I, Network Power Switch - II

Ensures maximum reliability to critical loads by eliminating system failures that are caused by power distribution problems.

Network Power Switch - I

NPS-I R31 16A, 32A, 63A, 100A, 150A, 200A, 250A, 300A Single Phase -1 Pole

Network Power Switch - I N

NPS-I R32 16A, 32A, 63A, 100A, 150A, 200A, 250A, 300A Single Phase -2 Pole

Network Power Switch - II

NPS-II FL3 60 to 400A Three Phase - 3 Pole

Network Power Switch - II N

NPS-II FL4 100 to 300A Three Phase - 4 Pole



FUNCTION

In a typical connection (see diagram) two different power sources (UPS, Stabiliser, Power conditioner etc.) are connected to the critical load through NPS-I / NPS-II switch, which will intelligently monitor the power from the sources. Depending upon the preset limits, it will allow the power to be passed to the critical load & thus making it as the best solution for mission critical applications.

APPLICATIONS

- Data Centers
- Call Centers
- Process Control
- Automation

FRONT VIEW (3U SIZE)



REAR VIEW (3U SIZE)



Output { Source 1 Input Source 2 Input

NOTE : 4U size is also available

FEATURES

Uses Power Semiconductors as Switching Element

It acts like protective barrier to the load. When power supply feeding to the load goes beyond the preset limits (Frequency or voltage) the switch instantly disconnects from load and protects it.

Microcontroller Feature

Microcontroller enables source functioning and its control scheme. The smart control enables user to select the priority of source.

Simple & Rugged design

Low component count, giving high level of reliability.

User friendly display^A & Control

Display provides status of incoming power source and the condition of static switch.

Exceptional Performance

It is tailored to suit the requirements of different operating conditions. It tracks the Input Voltage, Phase & Frequency, Distortion levels at the terminal points. If these parameters are within the limits then depending upon the priority selection, it activates the respective switch. This ensures the power availability to the load

MODBUS RS 232/485

Interface (optional)

To connect your building Management System (BMS) for monitoring of all status & alarms

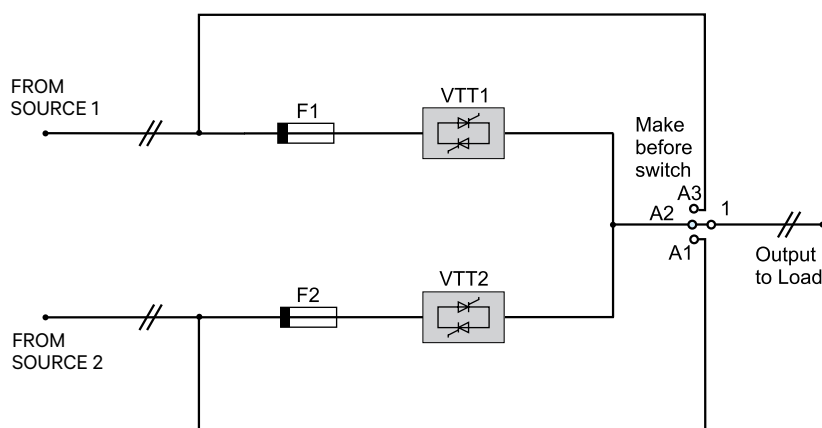
Potential Free contacts^B (optional)

For remote monitoring of the switch activity

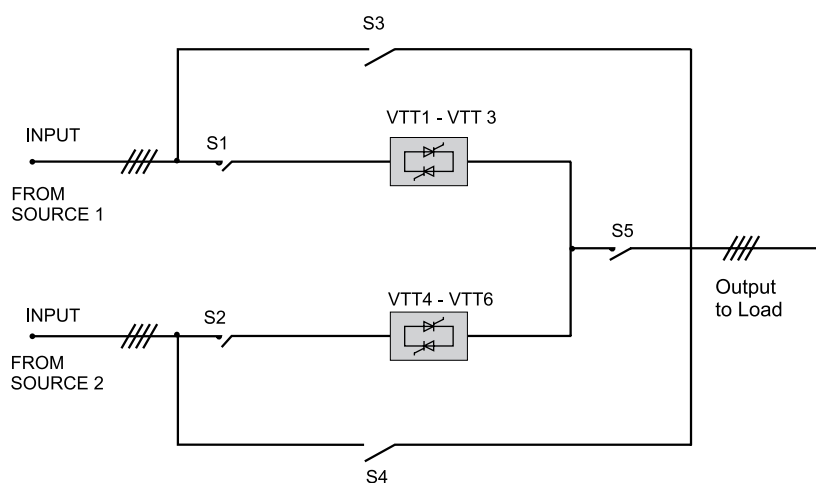
The NPS-I & NPS-II switches allow instantaneous transfer of load between two power sources. It can be used to ensure complete redundancy of power supply up to the last piece of wire. It is useful in many applications, where redundant power supply is available, either from two UPS systems or one UPS and bypass source.

These switches are comprised of semiconductor switches, they ensure continuity of power to the load in the event of failure of one of the power sources. They have different user selectable parameters and in-built microprocessor.

SINGLE LINE DIAGRAM



NPS-I



NPS-II

NOTE: A : Display is available for NPS-II; NPS MON is available for NPS-I

B : Potential free contact optional feature is available in NPS-I

For NPS-II if potential free contacts are required, contact Product / Marketing

Liebert® Network Power Switch

Technical Specifications

Model	NPS-I R31			NPS-I R32		
No. of Switching Poles	1 Pole (Ph)			2 Pole (Ph + N)		
Nominal Output Current ⁽¹⁾	16 A	32 A	63 A	16 A	32 A	63 A
Nominal Voltage ⁽¹⁾⁽⁴⁾	220 / 230 / 240 V, 1 Phase (110 / 120 V optional)					
Voltage Tolerance ⁽²⁾	- 15% to + 10% (Default)					
Nominal Frequency	50 / 60 Hz, ± 2 Hz (Default)					
Efficiency ⁽⁵⁾	At full load & nominal input voltage					
Efficiency AC to AC ⁽⁷⁾	Static Switch Rating		Efficiency (%) for 1P		Efficiency (%) for 2P	
	16A / 110Vac		97		96	
	16A / 230Vac		98.5		98	
	32A / 110Vac		98		96.5	
	32A / 230Vac		99		98	
	63A / 110Vac		98		97	
	63A / 230Vac		99		98	
Overload Capacity ⁽⁸⁾	106% to 125% for < 1 Hrs., 125 to 150% for < 10 min., 150 to 200% for < 1 min., 200 to 400% for < 700 ms., 400 to 700% for < 100 ms, >700% for < 60 ms					
Duty	Continuous					
Protections ⁽⁸⁾	Input Under Voltage, Input Over Voltage, Output Overload, Output Short Circuit					
Transfer / Re-transfer Time ⁽²⁾⁽⁷⁾	< 5 ms for Sync. condition					
	< 5 ms / < 15 ms (selectable) for No Sync. Condition					
Manual Bypass facility	Make before break					
Acoustic Noise Level ⁽⁶⁾	<45 dBA					
Operating Temperature	0 to 40° C					
Relative Humidity	Up to 95% (Non-condensing)					
Altitude	< 1000 meter, above sea level (without de-rating)					
Reference standard	IEC 62310					
Enclosure Protection	IP 20					
Cooling	Natural Cooling					
Dimension (in mm) WxDxH	440 x 450 x 132 (480 Including Side Clamp x 450 x 132), 19" Rack mountable, 3U Height					
Color	RAL 7021					
Weight (Approx)	20 kg					
Cable Entry	Rear Side					
LED Indications	Source 1 Healthy		Source 1 Feeding load		Source 1 Priority	
	Source 2 Healthy		Source 2 Feeding load		Source 2 Priority	
	Source 1 Fuse Fail		No Sync			
	Source 2 Fuse Fail		Alarm			
	Load on Manual Bypass - Source 1		Load on Manual Bypass - Source 2		Load on Static Switch	
PFC ⁽¹⁾	Source 1 Abnormal or Back Feed (Optional)		Source 2 Abnormal or Back Feed (Optional)		Alarm	
Other Features	• DSP Based control		• Hot Swappable Electronics static switching module			
	• Back feed protection (Optional)		• Fixed or variable source priority mode and selection of preferred source ⁽³⁾			
	• Inbuilt Static Switch fault detector		• Short circuit protection by electronic circuit			
	• INSTAMON Software for monitoring all status & alarm (Optional)					
Communication Interface	RS 232 or Ethernet Connectivity, RS 485 MODBUS (Optional)					
Output Sockets	6 Outlets as per IEC320-C13 (Default) (Rating 10 A / 250 VAC)		or	2 Outlet as per IEC320-C19 (Optional) (Rating 16 A / 250 VAC)		

(1) Factory setting (2) Settable from "Insta Mon Software" (3) Settable from "Insta Mon Software" as well as from "Operator control panel"

(4) Allowable source voltage distortion (THD) < 10% (5) For tolerance see IEC 60146-1-1

(6) Acoustic Noise Level from 1 meter (Ref. ISO 3746)V (7) Efficiency & Transfer time is specified for Linear load

(8) Settable from "Insta Mon Software" & Overload Capacity calculated using I2T method, Also No tripping action on overload.

Technical Specifications

Model		NPS-II FL3				NPS-II FL4		
Ampere Rating		60 / 100 A	200 A	300 A	400 A	100 A	200 A	300 A
Input / Output		3 Phase				3 Phase		
No. of Switching Poles		3 Pole (Ph)				4 Pole (Ph+N)		
Nominal Output Current		60 / 100 A	200 A	300 A	400 A	100 A	200 A	300 A
Nominal Voltage		400 / 415 V (3 Ph + N)						
Voltage Tolerance		Low band: -30% to +15% (Default), Medium band : -25% to +15%, Narrow Band : -15% to +15%						
Nominal Frequency		Nominal: 48 - 52 Hz, Wide 40 - 70 Hz (Default)						
Efficiency ⁽¹⁾		> 98%				> 97%		
Overload Capacity ⁽³⁾		110% for 1 hour, 150 % for 1 min., 200 % for 10 sec., 1000 % for 100 ms						
Duty		Continuous						
Protections ⁽³⁾ ⁽⁴⁾		Input Under Voltage, Input Over Voltage, Output Overload, Output Short Circuit						
Transfer / Retransfer Time		Low Sensitivity : < 8 ms, Medium Sensitivity : < 5 ms (Default), High Sensitivity: < 3 ms						
Manual Bypass facility		Provided						
Acoustic Noise Level ⁽²⁾		< 60 dBA						
Operating Temperature		0 to 40° C						
Relative Humidity		up to 95% (Non-condensing)						
Altitude		< 1000 meter, above sea level (without de-rating)						
Testing Standard		IEC 62310 -3						
Enclosure Protection		IP 20						
Cooling		Forced Cooling						
Dimension (in mm)	- Width	800	800	1000	1000	800	1000	1000
	- Depth	600	600	600	600	600	600	600
	- Height	1750	1750	1950	1950	1750	1950	1950
Weight in kg (approx)		225	225	275	350	225	250	275
Color		RAL 7021						
LCD Display parameters	Source 1 R phase voltage	Source 2 R phase voltage			Output Load R		Date & Time	
	Source 1 Y phase voltage	Source 2 Y phase voltage			Output Load Y			
	Source 1 B phase voltage	Source 2 B phase voltage			Output Load B			
LED Indications	Source 1 Healthy	Source 1 Feeding			Source 1 Priority		Sensitivity Low	
	Source 2 Healthy	Source 2 Feeding			Source 2 Priority		Sensitivity Medium Sensitivity High	
Fault Indications		Overload						
Communication Interface		RS 485 Modbus (optional)						

(1) For tolerance see IEC 60146-1-1

(2) Acoustic Noise measured @ 1.0 meter as per ISO 3746

(3) No tripping action on overload, message is displayed.

(4) Output Short Circuit is for protection of SCRs; Customer need to provide upstream fuses or ask for semiconductor fuse box (This wall mounted box is an optional).

Specifications subject to change without prior notice.

Liebert® Network Power Switch

Technical Specifications

Type	NPS-I FL I					NPS-I FL II				
Input / Output										
Nominal Voltage ⁽¹⁾ ⁽⁴⁾		220 / 230 / 240 V, 1 Phase (110 / 120 V optional)								
Voltage Tolerance ⁽²⁾		-15 % to +10 % (Default)								
Frequency ⁽⁵⁾		50 / 60 Hz								
Frequency Tolerances		± 3 Hz (Default)								
Nominal Output Current ⁽¹⁾	100A	150 A	200 A	250 A	300A	100A	150A	200 A	250 A	300 A
Input Sources		2 Nos.								
No. Of Switching Poles		1 Pole (Ph)				2 Pole (Ph+N)				
Overload Capacity ⁽⁸⁾		106% To 125% For <1 Hrs, 125 To 150% For <10 Min., 150 To 200% For <1 Min., 200 To 400 For <700 ms., 400 To 700% For< 100 ms, >700% For <60 ms								
Duty		Continuous								
Load Power Factor Range		0.6 to unity leading or lagging								
Static Switch										
Transfer/Retransfer Time		< 5 ms								
For Sync Condition ⁽²⁾ ⁽⁷⁾										
Transfer/Retransfer Time		< 5 ms / < 15 ms								
For No-Sync Condition ⁽²⁾ ⁽⁷⁾										
Manual Bypass Switch		Provided								
Efficiency (Ref. Iec 60146-1-1)		At full load & nominal input voltage								
Efficiency-Ac To Ac ⁽⁷⁾	Static Switch Rating		Efficiency (%) For 1pole				Efficiency (%) For 2pole			
	100A / 110V ac		98				97			
	100A / 230V ac		99				98			
	150A / 110V ac		98				97			
	150A / 230V ac		99				98			
	200A / 110V ac		98				97			
	200A / 230V ac		99				98			
	250A / 110V ac		98				97			
	250A / 230V ac		99				98			
	300A / 110V ac		98				97			
	300A / 230V ac		99				98			

(1) Factory setting

(2) Settable from "Insta Mon Software"

(3) Settable from "Insta Mon Software" as well as from "Operator control panel"

(4) Allowable source voltage distortion (THD) < 10%

(5) For tolerance see IEC 60146-1-1

(6) Acoustic Noise Level from 1 meter (Ref. ISO 3746)V

(7) Efficiency & Transfer time is specified for Linear load

(8) Settable from "Insta Mon Software" & Overload Capacity calculated using I2T method, Also No tripping action on overload.

Technical Specifications

ENVIRONMENTAL

Acoustic Noise Level from 1 Meter (Ref. ISO 3746) ≤ 60 dB (For 100A & 150A), ≤ 65 dB (For 200A, 250A & 300A)

Operating Temperature 0 to 40 Deg C

Storage Temperature 0 to 70 Deg C

Relative Humidity Up to 95% RH, (Non-condensing)

Altitude < 1000 meter above sea level (without de-rating)

Physical

Enclosure Protection IP 42 - Standard

Grade

Cooling Forced Air

Color RAL 7021 (Default)

Cable Entry Bottom

Dimensions (In Mm) For FL I & FL II

Width 800

Depth 600

Height 1600 + 150 + 100 (Panel Height + Plinth + Canopy)

Weight 230 kg Appx.

Installation Free standing floor mounted

Led Mimic

Indications On Mimic	➡ Source 1 Healthy	➡ Source 1 Feeding load	➡ Source 1 Fuse Fail
	➡ Source 2 Healthy	➡ Source 2 Feeding load	➡ Source 2 Fuse Fail
	➡ Source 1 Priority	➡ No Sync	
	➡ Source 2 Priority	➡ Alarm	
For Switch Position	➡ Load on STSW	➡ Load on Source 1	➡ Load on Source 2
		Manual Bypass	Manual Bypass

Pfc ⁽¹⁾

Available Signals	➡ Source 1 Abnormal or Source 1 Back Feed (Optional)	➡ Source 2 Abnormal or Source 2 Back Feed (Optional)	➡ Alarm
	➡ 2 Amp for 30 VDC 1 Amp for 125 VAC		

Communication Interface RS 232 or Ethernet Connectivity, RS 485 MODBUS (Optional)

(1) Factory setting

(2) Settable from "Insta Mon Software"

(3) Settable from "Insta Mon Software" as well as from "Operator control panel"

(4) Allowable source voltage distortion (THD) < 10%

(5) For tolerance see IEC 60146-1-1

(6) Acoustic Noise Level from 1 meter (Ref. ISO 3746)V

(7) Efficiency & Transfer time is specified for Linear load

(8) Settable from "Insta Mon Software" & Overload Capacity calculated using I2T method, Also No tripping action on overload.



THERMAL MANAGEMENT



Efficiency, Compactness, Flexibility, 24 X 7 Operations

Liebert® SRC is designed for high air quantity to match the equipment sensible load application. It is coupled with high energy efficient components and advanced control system which helps in maximum energy efficiency and guarantees proper environmental conditions inside Critical Technological

rooms. It is compact in size and being wall mounted type split AC it does not require any floor space too. Liebert® SRC is preconfigured for 24 X 7 operations with the metal body construction, inbuilt sequencing and monitoring features which makes a fully featured product to cater Critical Technology room cooling needs.



First In Industry With Premium Technology

Liebert® SRC is first to introduce High SHR Split AC in Metallic Body construction, evaporator fan with EC Motor, inbuilt sequencing and control logic, green refrigerant, Integrated optional free cooling and Communication card for remote monitoring.

Optimized Air Distribution

Liebert® SRC is designed to deliver 500-600 CFM per TR. This ensures optimum Air distribution for technological room without wasting unwanted power. Liebert® SRC is equipped with field adjustable louvers to set desired air distribution for equipment cooling and heat source. This allows for proper temperature inside the equipment and also increases efficiency of the cooling equipment.

Industry's Most Advanced Controller

Liebert® SRC is equipped with the industries most advanced controller. The controller is built with multiunit communication, sequencing, fault failure switch over to achieve highest UPTIME in technology Room. The controller has an optional feature of free cooling coupled with a temperature sensor to utilize lowest compressor run time and maximum energy saving.

Maximizing Site Reliability

Critical Technology rooms, ATMs, equipment rooms, operates continuously and always require proper environmental conditions 24/7. Thanks to Liebert® SRC's modern design and components such as Efficient Compressor, Evaporator Plug type Fans, higher Heat exchanger surfaces and Airflows and unit operation upto 430 C guarantees uninterrupted 24/7 unit operation.

Fully Featured Product

Moisture control with high SHR unit design, dust control with G4 grade filtration, system safety with all necessary refrigeration control (HP/LP, TXV), remote monitoring with inbuilt Modbus protocol and suitability to work at higher ambient makes Liebert® SRC a fully featured product for technology rooms.



BENEFITS

- **Less Risk**
 - Year-round cooling
 - Real-time remote monitoring and alarming"
 - Easy to service and maintain
 - Trouble Free operation even at High ambient
- **Industry Leading Energy Efficiency**
 - Highest industry NSEER ratings
 - High efficient EC fan and compressor
- **Fast, Simple Installation, Reliable**
 - Less expensive and faster to deploy, compared to ducted system
 - Backed by Proven Service and Support

Supremacy

Parameters	Liebert src	Comfort split ac	Level of Importance
24 X 7 operation	✓	✗	★★★★★
G4 filtration	✓	✗	★★★★★
RS485 communication	✓	✗	★★★★★
Green Refrigerant	✓	90% ✗	★★★
EC Fan	✓	✗	★★★★★
Metallic body	✓	✗	★★★★★
430 C ambient ready condenser	✓	✗	★★★★★
>90% SHR	✓	✗	★★★★★
Load sharing	✓	✗	★★★★★
Free cooling	Optional ✓	✗	★★★
Auto restart	✓	✗	★★★★★

Key features



Temperature control



EC Fan



Green refrigerant



Free cooling for optimizing



High SHR



Metallic body



Energy efficiency



24 x 7 operation



Load sharing



Remote monitoring



High ambient

Air cooled

Model		SRC03ES	SRC04ES	SRC07ES	SRC07ET	SRC11ET
Net sensible capacity ¹	kW	2.8	4.22	7	7.1	10.6
SHR	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9
Airflow	CMH	750	1100	1900	1900	2800
Unit Power Supply		230 V, 1phase, 50 Hz	230 V, 1phase, 50 Hz	230 V, 1phase, 50 Hz	400 V, 3phase, 50 Hz	400 V, 3phase, 50 Hz
Condenser type		Air cooled	Air cooled	Air cooled	Air cooled	Air cooled
Refrigerant		R410A	R407C	R407C	R407C	R407C
Indoor unit dimension		1105 x 375 x 515	1105 x 375 x 515	1105 x 375 x 515	1105 x 375 x 515	1405 x 375 x 515
Indoor unit net weight W x D x H - mm	Kgs	48	50	58	58	68
Outdoor unit dimension W x D x H - mm	MM	850 x 325 x 590	970 x 390 x 800	970 x 390 x 800	970 x 390 x 800	970 x 390 x 1170
Outdoor unit net weight	Kgs	63	65	69	70	80
Liquid line diameter	Inch	3 / 8	3 / 8	3 / 8	3 / 8	1 / 2
Suction line diameter	Inch	1 / 2	1 / 2	5 / 8	5 / 8	3 / 4
Control		Microprocessors based with corded remote				
Communications		RS485 based modbus				

Issues when using Comfort Cooling in Small Data Centers/- Computer Rooms (Datacom Rooms)

1. Using rigid over head ducts provides insufficient air volume (45-55l/ sec per kW) which results in hot spots, and they are also difficult to relocate.
2. Comfort cooling systems cannot control humidity levels and do not typically have integral humidity control.
3. Using separate humidification systems, not controlled by the cooling system, can waste energy and reduce the stability of the environment.

Start with the right kind of cooling

Some operations use standard comfort cooling systems to save money or to avoid using additional floor space within the facility. But this approach may provide some benefits in the short term-they must be balanced against the cost of downtime and equipment damage resulting from serious overheating as well as the risk of financial loss.



Liebert® DM™ VS Comfort Cooling

	Liebert® DM™	Domestic/ Split Systems	Benefits	Comment
Temperature Control	+/- 1° C	+/- 3° C]	Stable temperatures ensure operational integrity and reliability of IT equipment.	Wide temperature fluctuations shorten operational life of IT equipment and will increase the risk of catastrophic failure.
Humidity Control	+/- 5%RH	>+/- 15%RH	Only thermal management units can control room humidity.	High humidity can lead to condensation and corrosion, low humidity increases the risk of electrostatic discharge, both are major threats to IT equipment.
Network Managed	Yes IP network Managed`	No	TM Liebert® DM is a network managed device. It will notify you if there is a failure or potential threat to your equipment.	Standard IP connectivity: • Email (SMTP) • SMS (through email gateway) • SNMP (MIB and trap support) • HTTP (browser) • Optional temperature and humidity sensors can be placed directly into the racks
Reliability and Warranty for 24x7 operation	Yes	No	TM Liebert® DM thermal management is designed to run nonstop in demanding IT environments.	Domestic air conditioning warranty only covers applications for human comfort and explicitly not for the climatic control of electronic equipment.
Load sharing/ Duty operation	Yes	No	Interconnected units provide stand by rotation and lead/lag operation through a single cable.	Domestic units require third party or customised management devices adding complexity, warranty and operational risk.
Operational life	10 years+	1-3 years est, Not designed for IT operations	TM Liebert® DM is designed to run 24hrs x 365 with a mean time of failure of 4 years. Domestic units typically designed to run only 2000-4000 hours/year.	If you run a Domestic unit 24 hrsx365 the expected mean time to failure is 1 year!!
Operating Range	Operating Range	Most Domestic units will only provide cooling when the outside temperature is above 10° C	Liebert® DM™ provides continuous cooling operation down to -10° C outdoor temperatures. (-30° C optional). Most comfort systems can only cool if the outside temperature is above 10° C.	Domestic systems are designed to cool in summer and heat in winter, IT equipment requires cooling all year round. Misapplication may lead to loss of cooling.

FEATURES & BENEFITS

ENERGY SAVING

- High sensible heat ratio and high energy efficiency
- Equipped with Copeland Scroll Compressors
- Provides stable temperature and humidity condition
- Fans for outdoor units feature easy to access full range speed regulation
- Manageable and unique ECO-Mode option
- Energy saving component options

SPACE SAVING

- Small footprint - 100% front door access

USER-FRIENDLY AND MAINTENANCE-FREE

- Large screen display with multi-level password protection and expert fault-diagnosis functions
- Automatic startup on power and scheduled startup also available
- Standard Rs485 Monitoring Interface
- Equipped with alarm for irregularities on blast reduction, fan failure and filter clogging
- Email and SMS notification (thru the Liebert® RDU™) for remote monitoring functions

HIGHLY ADAPTIVE

- 24/7 operation capable
- Ultra wide input voltage range: multiple power protection functions
- Environment adaptability: adoption to outdoor temperature while meeting cooling requirements
- Adaptive to heat dissipation of the main equipment



The Liebert® DM™ Air Cooled Thermal Management System is suitable for precise air conditioning of small and medium sized computer rooms and UPS & Battery rooms. Designed with the latest thermal management technology, the Liebert® DM™ Air Cooled and has passed industry standards for thermal management systems and features high energy efficiency, excellent reliability and long service life. The Air Cooled series is configured with constant temperature and humidity adjustment functionalities that can be easily managed and monitored at the on-screen display.

**ENERGY
SAVING**

**WATER LEAK
DETECTION SYSTEM**

**RDU-SIC
CARD**

*Power protection available, please contact Vertiv sales for more details.



Liebert DM-Air COOLED

Model	DME07	DME12
Total Capacity, kW (24°C/50% RH inside;35°C ambient)	7.5kw	12.5kw
Available configuration	Upflow Plenum Only	
Indoor Unit Power Supply	380V/3ph/50Hz + N	
Condenser Type	Outdoor Condenser	
Refrigerant	R407C	
1 Humidifier	Infrared	
Electric Heater Power, kW	3.2	
No. of fans	1	
Indoor Unit Dimension (H x W x D),mm	1850x510x385	1975x600x500
Outdoor Unit Dimension (H x W x D),mm	830x790x355	1240x790x355
Indoor Net Weight, kg	95	145
Outdoor Net Weight, kg	40	60
Liquid line diameter, inch	1/2"	5/8"
Discharge line diameter, inch	3/4"	5/8"
2 FLA ,A	7.5 - 12	15 - 18.5
Air breaker	32	

* 1 This is an optional feature.

* 2 FLA is Full load Ampere; the maximum full load current value of the air conditioner is not the sum of rated maximum full load current of all components. It is the sum of rated maximum full load current value of the operating components, which may operate at the same time on the Maximum work load condition

The Thermal Management Solution for Small and Medium Data Centers

The Liebert® PDX direct expansion cooling unit is equipped with the most advanced industry technology which allows the unit to reach significant levels of efficiency, guaranteeing precise cooling of data centers and server rooms.

Liebert® PDX is designed to provide efficient small and large room cooling for data centers, where efficiency, flexibility and simplicity of installation are key factors.



FEATURES

- Extended Units
- Full load Efficiency +10%
- EC Fan 2.0
- pPUE 1.12
- Partial Load Efficiency +30%
- Up to 100m Length
- Economizer, Freecooler, SmartAisle™
- Digital & EEV
- Up to 38°C Room Temperature with SmartAisle™

APPLICATIONS

- Variable Frequency Drives Rooms
- Electrical Panel Rooms
- Control Rooms
- UPS, Battery & RACK Room
- Instrument Calibration Room



Liebert® PDX direct expansion cooling unit

Equipped with the most advanced industry technology which allows the unit to reach significant levels of efficiency, Liebert® PDX guarantees an efficient thermal management of data centers and server rooms.

Liebert® PDX is available both in air cooled and water cooled versions to suit various site installation requirements. It also allows multiple freecooling modes of operation (Direct Air, Indirect Water, Chilled Water on Freecooling Chiller and Liebert® EconoPhase™ pumped refrigerant economizer) increasing its ability to adapt to diverse application demands.

The Liebert® EconoPhase™ pumped refrigerant economizer is compatible with Liebert PDX and Liebert MC to improve thermal management and control, while drastically cutting energy costs and lowering pPUE.

The unit's Digital Scroll configuration, instead, is responsible for modulating cooling capacity while the fresh air economizer function, operated by the iCOM™ control, is adopted when outside air temperature is colder than the return temperature.

In addition, the combination of R410A refrigerant, Electronic Expansion Valve (EEV) and new generation Liebert® EC Fans 2.0 all allow the unit to reach significant levels of efficiency.

Single Circuit

Model		PX015	PX021	PX025	PX031	PX033	PX041	PX045	PX059	PX047	PX051	PX057
Total Gross Cooling Capacity	kW	13.9	19.1	25.0	30.1	34.2	40.41	44.6	57.3	46.28	53.1	59
Net Sensible Cooling Capacity	kW	13.4	18.2	23.2	26.5	28.7	35.8	39.1	45.1	43.8	50.0	54.6
SHR		1.00	1.00	0.98	0.94	0.90	0.93	0.93	0.82	1.00	1.00	0.98
Net Sensible EER		4.37	3.93	3.53	3.21	3.09	3.51	3.33	2.99	3.70	3.47	3.40
Airflow	m³/h	4462	5672	6792	7752	7944	10000	10900	11200	14500	15800	16300
Max. ESP	Pa	250	250	250	220	180	250	100	80	300	300	300
Dimensions (WxD)	mm	844x890	844x 890	844x 890	844x 890	844x 890	1200x890	1200x890	1200x890	1750x890	1750x890	1750x890
Height (H)	mm	1970	1970	1970	1970	1970	1970	1970	2570	1970	1970	1970
Weight	kg	290	300	320	340	340	452	456	593	620	621	675
Number of Capacity Steps		1	1	1	1	1	1	1	2	1	1	2
Airflow Delivery		↓ Down Flow UP - Fans Over the Raised Floor ↑ Up Flow → Frontal ↻ Downflow Down - Fans in Raised Floor				↓ ↑ → ↻		↓ ↑ ↻	↓ ↑ → ↻			
Cooling Version		🌊 Air Cooled 💧 Water Cooled 🔄💧 Dual fluid (Chilled water + DX Air Cooled) 🔄💧 Dual fluid - Chilled water + DX Water Cooled ❄️ Freecooling 🌊💧 EconoPhase				🌊 💧		🌊 🔄💧 ❄️	🌊 💧 🔄💧 ❄️		🌊 💧	

Double Circuit

Model		PX044	PX054	PX062	PX068	PX074	PX092	PX082	PX094	PX104	PX120
Total Gross Cooling Capacity	kW	44.8	55.1	62.5	66.1	74.8	92.5	85.7	94.5	106.5	123.9
Net Sensible Cooling Capacity	kW	42.3	51.2	55.6	62.2	62.9	72.2	78.4	84.9	91.7	100.7
SHR		0.99	0.99	0.95	0.98	0.9	0.82	0.97	0.96	0.92	0.86
Net Sensible EER		3.79	3.53	3.35	4.08	3.09	2.93	3.6	3.38	3.1	2.95
Airflow	m³/h	12500	15500	16300	18500	17600	17950	24000	26000	27000	27000
Max. ESP	Pa	300	200	200	300	80	180	250	150	100	100
Dimensions (WxD)	mm	1750x 890	1750x 890	1750x 890	2550x 890	1750 x890	1750x 890	2550x 890	2550x 890	2550x 890	2550x 890
Height (H)		1970	1970	1970	1970	1970	2570	1970	1970	1970	1970
Weight	kg	638	642	680	887	680	776	901	901	901	954
Number of Capacity Steps		2	2	2	2	2	2	2	2	2	4
Airflow Delivery Down Flow UP - Fans Over the Raised Floor Up Flow Frontal Downflow Down - Fans in Raised Floor											
Cooling Version Air Cooled Water Cooled Dual fluid (Chilled water + DX Air Cooled) Dual fluid - Chilled water + DX Water Cooled Freecooling EconoPhase											

Liebert® PDX - Digital Scroll - SmartAisle™

Single Circuit

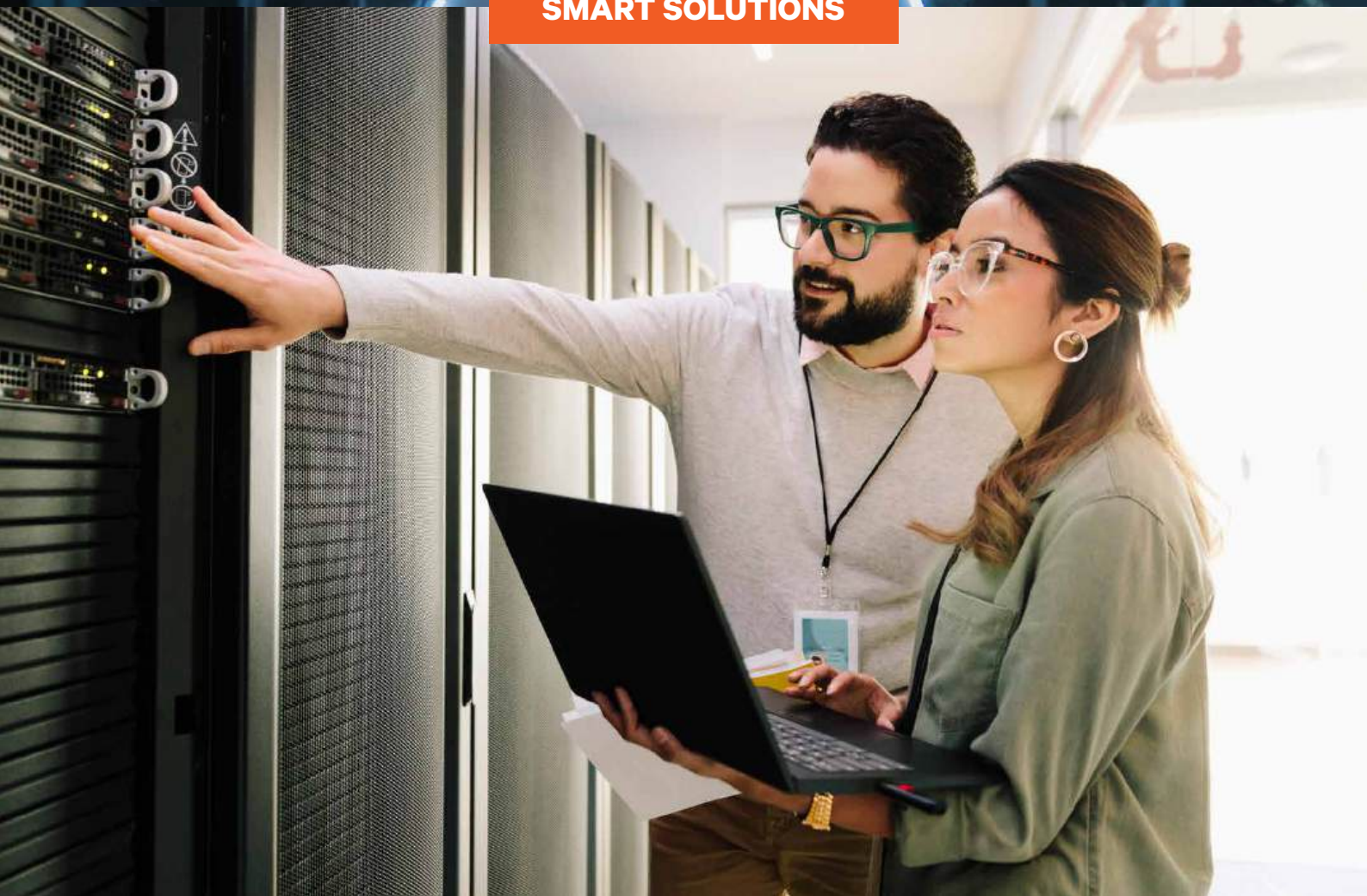
Model		PX021	PX025	PX031	PX033	PX041	PX045	PX059	PX047	PX051	PX057	PX057
Total Gross Cooling Capacity	kW	24.9	32.4	37.8	41.9	50.3	55.4	68.8	63	67.4	74.6	59
	kW	24.1	31.1	36	39.9	48.4	53	66.4	60.5	64.3	71.3	54.6
SHR		1	1	1	1	1	1	1	1	1	1	0.98
Net Sensible EER		4.79	4.65	4.24	4.18	4.62	4.36	4.35	4.58	4.53	4.37	3.40
Airflow	m³/h	5672	6792	7752	7944	10000	10900	11200	14500	15800	16300	16300
Max. ESP	Pa	250	250	230	200	250	100	80	300	300	300	300
Dimensions (WxD)	mm	844x890	844x 890	845x 890	844x 890	1200x890	1200x890	1200x890	1750x890	1750x890	1750x890	1750x890
Height (H)	mm	1970	1970	1970	1970	1970	1970	2570	1970	1970	1970	1970
Weight	kg	300	320	340	340	452	456	593	635	637	675	675
Minimum Nominal Capacity Modulation		20%	20%	20%	20%	20%	20%	25%	25%	25%	25%	25%
Airflow Delivery  Down Flow UP - Fans Over the Raised Floor  Up Flow  Frontal  Downflow Down - Fans in Raised Floor												
Cooling Version  Air Cooled  Water Cooled  Dual fluid (Chilled water + DX Air Cooled)  Dual fluid - Chilled water + DX Water Cooled  Freecooling  EconoPhase												

Double Circuit

Model		PX044	PX054	PX062	PX068	PX074	PX092	PX082	PX094	PX104	PX120
Total Gross Cooling Capacity	kW	61	72.8	80.4	90.1	94.5	113.3	111.8	126.3	133.4	153.4
Net Sensible Cooling Capacity	kW	59.0	69.3	76.6	87.5	89.8	109.3	106.6	120.1	126.5	146.5
SHR		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Net Sensible EER		5.19	4.8	3.28	5.6	4.34	4.38	4.46	4.33	4.35	4.22
Airflow	m³/h	12500	15500	16300	18500	17600	17950	24000	26000	27000	27000
Max. ESP	Pa	300	200	200	300	80	180	250	150	100	100
Dimensions (WxD)	mm	1750x 890	1750x 890	1750x 890	2550x 890	1750 x890	1750x 890	2550x 890	2550x 890	2550x 890	2550x 890
Height (H)	mm	1970	1970	1970	1970	1970	2570	1970	1970	1970	1970
Weight	kg	638	642	680	887	680	776	931	931	931	954
Minimum Nominal Capacity Modulation		10%	10%	10%	10%	10%	10%	12,5%	12,5%	12,5%	12,5%
Airflow Delivery  Down Flow UP - Fans Over the Raised Floor  Up Flow  Frontal  Downflow Down - Fans in Raised Floor											
Cooling Version  Air Cooled  Water Cooled  Dual fluid (Chilled water + DX Air Cooled)  Dual fluid - Chilled water + DX Water Cooled  Freecooling  EconoPhase											



SMART SOLUTIONS



Rapidly deploy and manage IT infrastructure in just weeks without building new data center space. Our SmartSolutions™ products help you meet your IT needs with significant savings. With simplified, standardized designs, you can start small and expand over time.

The SmartSolutions™ approach gives you the efficiency, economy, interoperability and control to implement an infrastructure strategy that outperforms any you've ever seen.

The SmartSolutions™ family helps you cost-effectively achieve and manage higher levels of density, availability and efficiency.



EFFICIENT	ECONOMICAL	SIMPLIFIED	CONTROLLABLE
Reduce annual energy costs –up to 27% through high-efficiency power, dedicated cooling and management technologies and containment Optimize space efficiency through an integrated system Reduce maintenance costs with reliable design and efficient operation that minimizes wear and tear and requires less servicing Increases IT efficiency by streamlining and centralizing monitoring and management	Reduce total time and cost of implementation order, install and implement within just weeks Save up to 28% on room upgrades compared to upfitting a room as a conventional data center	Simplify implementation through an integrated design Easily operate and manage infrastructure systems through integrated controls Ensure continuity of business operations with single system startup, warranty, preventive maintenance and repair Utilize industry-leading service and support provided by local data center design experts	Ensure efficiency and availability with Liebert® iCOM™ controls — manage cooling to optimize IT equipment performance and life Enhance performance and anticipate potential problems before they occur with infrastructure monitoring and management appliances and software Increase physical security and equipment protection with lockable cabinets and access alerts

Deploy a Fully Configured Data Center in Just Weeks.

The SmartRow™ infrastructure from Vertiv is a simplified, standardized and quickly deployable data center environment with significant CAPEX and OPEX savings over conventional designs. No other solution in the market provides such ease of deployment and integration.

Vertiv has demonstrated up to 10% CAPEX savings over conventional designs and 27% OPEX savings. Here's how SmartRow™ infrastructure does it:

- Significantly reduces the cost of room upgrades or modifications
- Optimizes use of space
- Reduces cooling power usage through contained airflow, and high efficiency technologies
- Increases IT control and productivity
- Deploys in weeks, not months

This complete data center infrastructure solution allows you to easily deploy and effectively manage an integrated IT infrastructure without being limited by building systems such as fire suppression and cooling.

SmartRow™ is available in two to eight -rack configurations for up to 40kVA. The solution allows the flexibility of starting small and expanding over time

Capacity	: 10-40kVA
Rack	: 2-8 Racks
Floor	: Primarily non raised
Key Application	: Datacenter, Disaster recovery sites



SmartRow™ Configuration

SPECIFICATIONS	SR-210 U10-2N	SR-210-RC U10-2N	SR-320 U20-2N	SR-320-RC U20-2N	SR-435 U40-2N	SR-435-RC U40-2N	SR-635 U40-2N	SR-635-RC U40-2N	SR-835 U40-2N	SR-835-RC U40-2N
IT Capacity	10 kVA	10 kVA	20 kVA	20 kVA	35 kVA	35 kVA	35 kVA	35 kVA	35 kVA	35 kVA
No. of Racks	2	2	3	3	4	4	6	6	8	8
Cooling Redundancy	Thru Emergency Ventilation	yes	Thru Emergency Ventilation	yes	Thru Emergency Ventilation	yes	Thru Emergency Ventilation	Yes	Thru Emergency Ventilation	yes
Emergency ventilation	yes	NA	yes	NA	yes	NA	yes	NA	yes	NA
UPS Capacity	2 X 10 kVA	2 X 10 kVA	2 X 20 kVA	2 X 20 kVA	2 X 40 kVA	2 X 40 kVA	2 X 40 kVA	2 X 40 kVA	2 X 40 kVA	2 X 40 kVA
UPS Redundancy	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Backup Time**	5 Mins each ups	5 Mins each ups	5 Mins each ups	5 Mins each ups	5 Mins each ups	5 Mins each ups	5 Mins each ups	5 Mins each ups	5 Mins each ups	5 Mins each ups
U Space available	68	68	99	99	117	117	199	199	283	283
Monitoring	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Fire Suppression and Access control	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes

DIMENSIONS

Width	2525	3225	3125	3825	3725	4425	4925	5625	6125	6825
Height	2450	2300	2450	2300	2450	2300	2450	2300	2450	2300
Depth	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800

* Option of water chilled cooling model also available

** Addition of backup possible with external batteries

*** Also available additional accessories as optional - KVM, LCD Console, Intelligent Rack PDU, Camera with local surveillance

SmartCabinet™- Premium

Optimize Your Existing or New IT Environments

The SmartCabinet™ - Premium empowers Enterprise Class IT Infrastructure through the provision of integrated enclosure, power, cooling and service. The biggest advantage is its Zero U space for non-core IT assets. Critically it also allows the most vital element - namely 360° visibility of all system components.

Customers can effectively manage and plan their IT Infrastructure with real time monitoring and insight into system performance.

Continuous availability in turn rests on the power and cooling infrastructure that supports these systems and is comprised of the following:

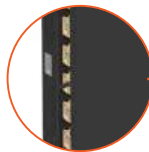
- Power Quality
- Cooling
- Enclosure and Physical Infrastructure
- Monitoring and Management



Vertiv
Liebert ITA2
UPS



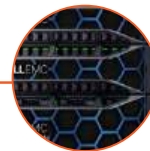
Vertiv Zero U
Cooling



Server



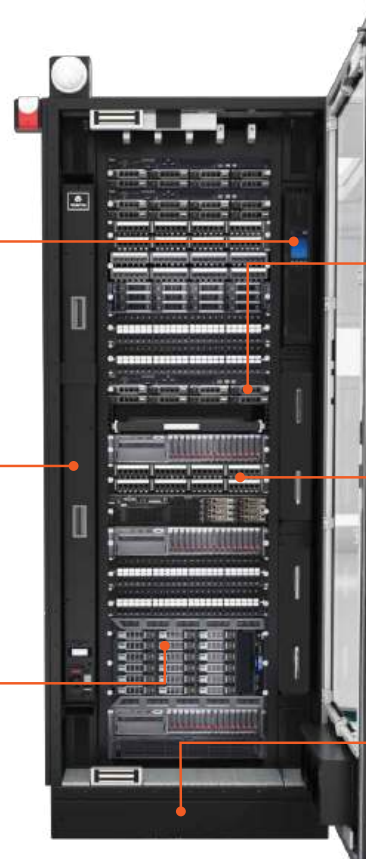
Storage



Network Switch



Vertiv Rack-
42U x 832 x 1100



SmartCabinet™ - Premium Configuration

Specifications	SCP-1-7-U6 N	SCP-1-7RC-U6 2N	SCP-2-7RC-U10 2N	SCP-3-14RC-U20 2N
Capacity	6 kVA	6 kVA	10 kVA	20 kVA
No.of Racks	1	1	2	3
Cooling Redundancy	N	N + N	N + N	N+1
Cooling Capacity	7KW	7KW	7KW	14 kW
UPS Capacity	6 KVA	2 X 6 KVA	2 X 10 KVA	2 x 20 kVA
UPS Redundancy	N	N + N	N + N	N + N
Backup Time	10 Mins on each	5 Mins on each	5 Mins on each	5 mins on each
Usable U Space	42	34	84	120

Dimensions

Width	832	832	1632	2432
Depth	1100	1100	1100	1100
Height	2100	2100	2100	2100

Note: Battery backup & cooling unit capacity can be modified as per requirement. U space available is subjected to change as per configuration.

*Also available additional accessories as optional - KVM, LCD Console, Intelligent Rack PDU, ATS/LTS, Camera with local surveillance, Access control and Fire suppression

The SmartCabinet™ empowers Enterprise Class IT Infrastructure through the provision of integrated enclosure, power, cooling and service.

Critically it also enables the most vital element - namely 360° visibility of all system components.

Customers can effectively manage and plan their IT Infrastructure with real time monitoring and insight into system performance.

Continuous availability in turn rests on the power and cooling infrastructure that supports these systems and is comprised of the following:

- Power Quality
- Cooling
- Enclosure and Physical Infrastructure
- Monitoring and Management

Capacity : 1-10kVA
Rack : 1-2 Racks
Floor : Primarily non raised
Key Application : Server room and Small datacenters

Camera

Beacon

UPS, N+N upto 10 kVA

Battery Bank

STS/NPS (Optional)

Precision Cooling unit 1TR. / 2TR



42 U HD Rack

Distribution Panel

RDU-A; Intelligent Monitoring

Cable Managers

Blanking Panels

Keyboard Tray with KVM (Optional)

SmartCabinet™ Configuration

Specifications	SC-1-3 U3-2N	SC-2-3-RC U6-2N	SC-2-7 U10-2N	SC-2-7-DS U10-2N	SC-2-7-RC U10-2N	SC-2-7-RC DS U10-2N
Capacity	3 kVA	6 kVA	10 kVA	10 kVA	10 kVA	10 kVA
No.of Racks	1	2	2	2	2	2
Cooling Redundancy	No	Yes	No	No	Yes	Yes
Cooling Capacity	3.5 KW	2X3.5 KW	7KW	7KW with DS	2X7KW	2X7KW with DS
UPS Capacity	2 X 3 KVA	2 X 6 KVA	2 X 10 KVA	2 X 10 KVA	2 X 10 KVA	2 X 10 KVA
UPS Redundancy	Yes	Yes	Yes	Yes	Yes	Yes
Backup Time	5 Mins each UPS	5 Mins each UPS	5 Mins each UPS	5 Mins each UPS	5 Mins each UPS	5 Mins each UPS
Fire Detection	Yes	Yes	Yes	Yes	Yes	Yes
Usable U Space	23	58	55	55	45	45

Dimensions

Width	800	1600	1600	1600	1600	
Height	2100	2100	2100	2100	2100	2100
Depth	1000	1000	1000	1000	1000	1000

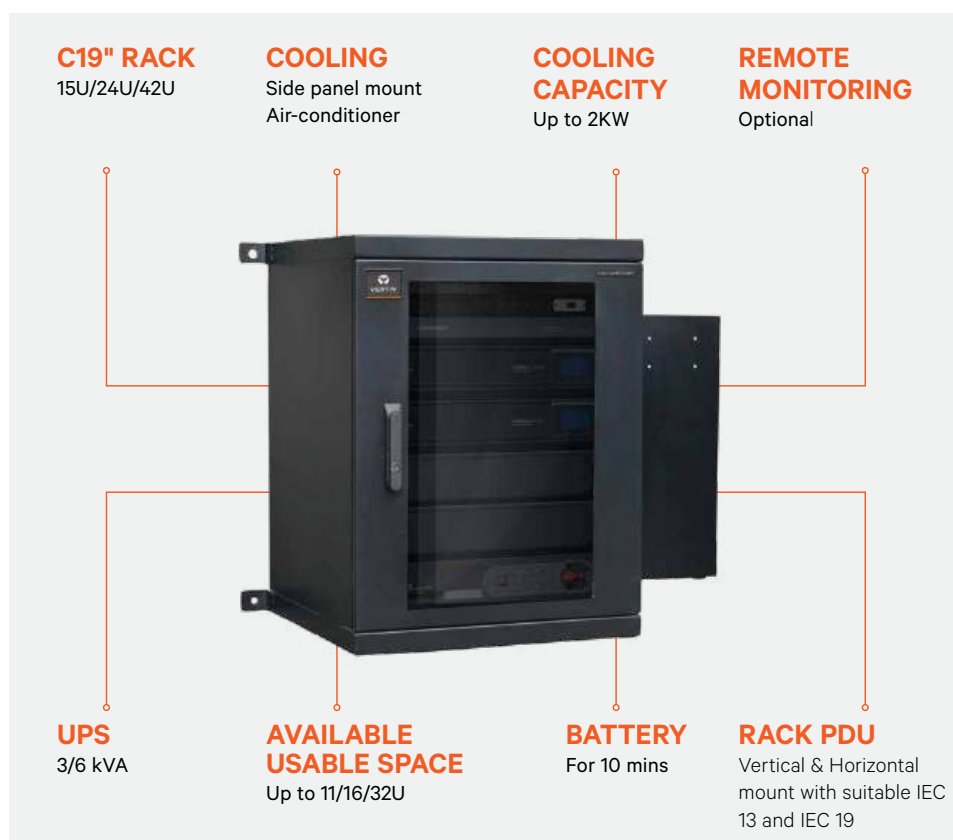
Note: Battery backup & cooling unit capacity can be modified as per requirement. U space available is subjected to change as per configuration.

*Also available additional accessories as optional - KVM, LCD Console, Intelligent Rack PDU, Camera with local surveillance, Access control and Fire suppression

SmartCloset™ is the new standalone self-contained rack from Vertiv, along with inbuilt power and cooling. It facilitates the housing and trouble-free installation of active IT equipment like switches, routers and so on - for which, an open environment is not conducive for healthy performance.

Compact and powerful with inbuilt power and cooling.

SmartCloset™ is suitable for any location like factories, warehouses, branch offices and retail stores where ambient conditions and temperatures are not in control; and also where dust and dirt are common.



Features and Benefits

- **Dedicated Rack mount cooling** - The air conditioner capacity is designed considering only rack equipment load and rack volume, thus saving on both capital and operating costs.
- **Rack mount UPS and Battery**
 - A single rack for housing both power and active equipment offers lesser footprint and saves on critical space area.
- **High sensible cooling and 24x7 application** - As IT equipment is designed to run 24x7 and typically dissipate sensible heat load, SmartCloset™ is exclusively designed for such applications to deliver maximum efficiency.
- **Cooling unit with safety features** - The air conditioner comes with HP/LP switch and Under/Over voltage protection for sites at remote locations and with high voltage fluctuations.
- **Rack Monitoring - (Optional feature)** Rack environment monitoring like temperature, humidity, door sensor, smoke sensor, etc.

SmartCloset™ Configuration

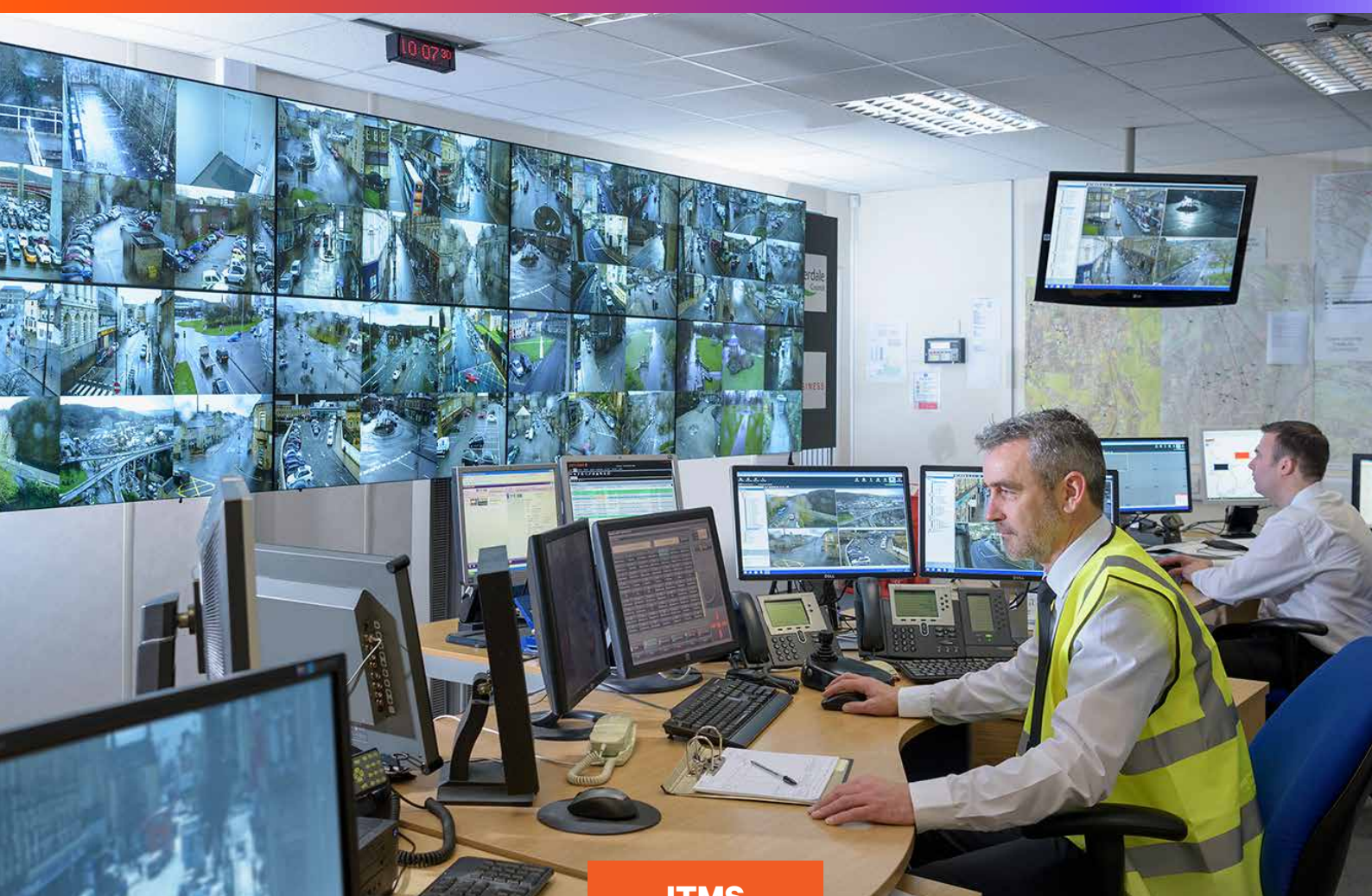
Specification	SCL -15 P* #**	SCL - 24 P* #* *	SCL - 42 P* #**
Rack Height	15U	24U	42UP-
UPS Capacity (P)*	NA External	3/6 kVA	
BatteryMin	NA External	10 mins	
Usable U space	11	16	32
Cooling Capacity # (Watts) * *	500	500 / 1000	500 / 1000 / 2000

While ordering

#	X	Y	Z
	500	1000	2000

Order sample

SCL 15 1 X, SCL 24 3 Y.....



ITMS



Avocent® 18.5" Local Rack Access Consoles

Advanced Data Center Local Rack Access

Benefits

Local Rack Console

- **Widescreen:** 18.5" LED LCD panel with a 16:9 aspect ratio. Supports resolutions up to 1600 x 1200 at both full screen and aspect ratio.
- **Form Factor:** Easy access in the 1U space. Detent lock engages when stowed in the rack. Room for KVM installation in the same 1U space.
- **KVM Compatibility:** LRA Consoles are compatible with all Avocent® data center KVM switches.
- **User Interface:** On-Screen menu has an intuitive design and can be accessed in 7 languages.
- **Data Center Local Access:** Complete entry point to local servers when needed.
- **Ease of use:** Full desktop style keyboard with number pad, touch pad and 2 USB 2.0 pass through ports.
- **Environmentally responsible:** Low power usage during operation and standby.
- **Global availability:** Certifications and keyboard language support.

KVM Models

- **Integrated KVM switch options** with 8- or 16-port, local and/or remote access to servers.

As a busy IT professional, it's important that you stay productive and on top of your to-do list. You can't afford to be hampered by inefficient, cumbersome, bulky crash carts and space-consuming monitors and keyboards.

You need a data center access point that gives you simplicity, efficiency and ease of use. The Avocent® LRA Console family is here to help make your job easier. We offer you quick and easy access to multiple servers, making software upgrades, troubleshooting and system monitoring more convenient and less time consuming.

Tray Only

Avocent® LRA Console trays let you view servers, network switches and other IT gear immediately without crash carts or other bulky access equipment. These trays feature standard USB and VGA interfaces that are natively compatible with a vast number of servers and network devices. You can easily and efficiently use our trays with many of the market-leading Avocent® access technologies, including all recent Avocent® data center KVM solutions.

Pre-Integrated KVM

You understand how valuable data center real estate can be. A crowded server rack can make your job a lot harder. The Avocent® LRA Console is available with pre-integrated 8- and 16- port KVM that seamlessly fits into the same 1U the LCD tray is occupying, providing vastly improved utility while conserving space.



Specifications

LRA185KMM

Height (rack units)	1U
Shipping (Console Only)	
Shipping Dimensions	29.5" x 23" x 8.5"
Shipping Weight	34 lbs.
Unit (Console Only)	
Unit Dimensions	19" x 21" x 1.75"
Unit Weight	22 lbs.

RACK POST DISTANCES (OUTSIDE-TO-OUTSIDE)

Includes round hole posts, square hole posts and threaded posts

Console Only	613mm [24.1"] - 909mm [35.8"]
Provision for KVM Switch	706mm [27.9"] - 909mm [35.8"]

18.5-INCH LED MONITOR

Power	
Maximum	20 Watts
Nominal	17 Watts
Standby	0.5 Watts
Auto-ranging power supply	Input: 90-264 VAC
Power Connection	IEC C-14 to the PDU
Display Type	18.5" LED LCD Monitor, 19:9 Aspect Ratio
Resolution	1366 x 768 @60Hz Standard Resolution 1600 x 1200 @60Hz maximum 640 x 400 @60Hz minimum Refresh range: 55Hz to 85Hz (scaled)
Scaling	Full Screen, Aspect, 1:1
Video Input	VGA
Display Active Area	409.8 mm x 230.4 mm
Diagonal Viewable Image	470.1 mm
Pixel Pitch	
Viewing Angle	170° Horizontal (typ.), 160° Vertical (typ.)

Luminance	250 [cd/m2] (typ.)
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KEYBOARD/MOUSE

Keyboard	Full size 103 keyboard with number pad
Pointing Device	Integrated touchpad with two buttons
Input	USB or PS/2

USB PORTS

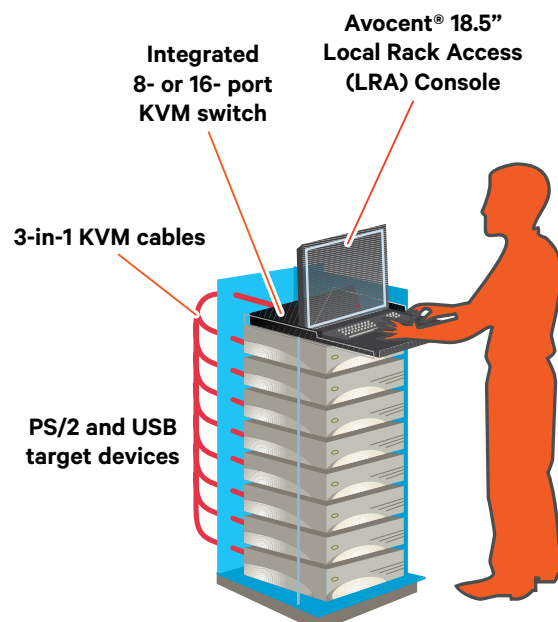
USB 2.0 compliant	Two pass through ports
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OPERATIONAL SPECIFICATIONS

Temperature	
Operational	0°C - 50°C
Storage	-20°C - 70°C
Humidity	
Operational	5% - 80%
Storage	5% - 90%
Altitude	
Operational	0 to 10,000 Feet
Storage	-50 to 35,000 Feet

GLOBAL CERTIFICATIONS

Certifications	UL, CE, CCC, BSMI, RCM, cUL, IC, EAC, VCCI, KCC FCC Class A
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The Avocent® LRA Console family provides the simplicity, efficiency and ease of use to make it the perfect in data center access point. The LRA line enables ease of access to multiple servers making software upgrades, troubleshooting and system monitoring convenient and less time-consuming.

Avocent 18.5” Local Rack Access Consoles

Ordering Details

PART NUMBER	DESCRIPTION
CONSOLE ONLY	
NORTH AMERICA	
LRA185KMM-001	18.5 LCD, USB KB, 2USB PASS-US INTL ENG
LRA185KMM-G01	18.5 LCD, USB KB, 2USB PASS-USA TAA
LRA185KMMP-001	18.5 LCD, PS2 KB, 2USB PASS-US INTL ENG
LRA185KMM8D-001	LCD, 8P KVM, 8 CABLES, USB KB-US INTL
LRA185KMM8D-G01	LCD, 8P KVM, 8 CABLES, USB KB-US TAA
LRA185KMM16D-001	LCD, 16P KVM, 16 CABLES, USB KB-US INTL
LRA185KMM16D-G01	LCD, 16P KVM, 16 CABLES, USB KB-US TAA
EUROPE	
LRA185KMM-201	18.5 LCD, USB KB, 2USB PASS-UK ENG
LRA185KMM-001	18.5 LCD, USB KB, 2USB PASS-US INTL ENG
LRA185KMM-203	18.5 LCD, USB KB, 2USB PASS-SWI
LRA185KMM-204	18.5 LCD, USB KB, 2USB PASS-FRA
LRA185KMM-205	18.5 LCD, USB KB, 2USB PASS-GER
LRA185KMM-206	18.5 LCD, USB KB, 2USB PASS-ITA
LRA185KMM-207	18.5 LCD, USB KB, 2USB PASS-SPA
LRA185KMM-214	18.5 LCD, USB KB, 2USB PASS-CYR
LRA185KMMP-001	18.5 LCD, PS2 KB, 2USB PASS-US INTL ENG
LRA185KMM8D-201	LCD, 8P KVM, 8 CABLES, USB KB-UK ENG
LRA185KMM8D-001	LCD, 8P KVM, 8 CABLES, USB KB-US INTL
LRA185KMM8D-203	LCD, 8P KVM, 8 CABLES, USB KB-SWI
LRA185KMM8D-204	LCD, 8P KVM, 8 CABLES, USB KB-FRA
LRA185KMM8D-205	LCD, 8P KVM, 8 CABLES, USB KB-GER
LRA185KMM8D-206	LCD, 8P KVM, 8 CABLES, USB KB-ITA
LRA185KMM8D-207	LCD, 8P KVM, 8 CABLES, USB KB-SPA
LRA185KMM8D-214	LCD, 8P KVM, 8 CABLES, USB KB-CYR
LRA185KMM8D-216	LCD, 8P KVM, 8 CABLES, USB KB-ARB
LRA185KMM16D-201	LCD, 16P KVM, 16 CABLES, USB KB-UK ENG
LRA185KMM16D-001	LCD, 16P KVM, 16 CABLES, USB KB-US INTL
LRA185KMM16D-203	LCD, 16P KVM, 16 CABLES, USB KB-SWI
LRA185KMM16D-204	LCD, 16P KVM, 16 CABLES, USB KB-FRA
LRA185KMM16D-205	LCD, 16P KVM, 16 CABLES, USB KB-GER
LRA185KMM16D-206	LCD, 16P KVM, 16 CABLES, USB KB-ITA
LRA185KMM16D-207	LCD, 16P KVM, 16 CABLES, USB KB-SPA
LRA185KMM16D-214	LCD, 16P KVM, 16 CABLES, USB KB-CYR
LRA185KMM16D-216	LCD, 16P KVM, 16 CABLES, USB KB-ARB

Ordering Details

PART NUMBER	DESCRIPTION
ASIA-PACIFIC	
LRA185KMM-101	18.5 LCD, USB KB, 2USB PASS-T-CHN
LRA185KMM-103	18.5 LCD, USB KB, 2USB PASS-S-CHN
LRA185KMM-104	18.5 LCD, USB KB, 2USB PASS-KO
LRA185KMM-110	18.5 LCD, USB KB, 2USB PASS-JPN
LRA185KMM-001	18.5 LCD, USB KB, 2USB PASS-US INTL ENG
LRA185KMM8D-101	LCD, 8P KVM, 8 CABLES, USB KB-T-CHN
LRA185KMM8D-103	LCD, 8P KVM, 8 CABLES, USB KB-S-CHN
LRA185KMM8D-104	LCD, 8P KVM, 8 CABLES, USB KB-KOR
LRA185KMM8D-110	LCD, 8P KVM, 8 CABLES, USB KB-JPN
LRA185KMM8D-001	LCD, 8P KVM, 8 CABLES, USB KB-US INTL
LRA185KMM16D-101	LCD, 16P KVM, 16 CABLES, USB KB-T-CHN
LRA185KMM16D-103	LCD, 16P KVM, 16 CABLES, USB KB-S-CHN
LRA185KMM16D-104	LCD, 16P KVM, 16 CABLES, USB KB-KOR
LRA185KMM16D-110	LCD, 16P KVM, 16 CABLES, USB KB-JPN
LRA185KMM16D-001	LCD, 16P KVM, 16 CABLES, USB KB-US INTL
MODULES	
AVRIQ-SRL	Server interface module for VT100 serial devices for extended distance (requires UPD-xxx)
DSVAIQ-PS2M(L)	Server interface module for VGA video, PS/2 keyboard & mouse with USB virtual media
MPUIQ-VMCHS	Server interface module for VGA, USB keyboard, mouse supporting virtual media, CAC and USB2.0
MPUIQ-VMCHD	Server Interface Module for HDMI video, USB keyboard/mouse supporting virtual media, CAC and USB2.0
MPUIQ-VMCDV	Server Interface Module for DVI video, USB keyboard/mouse supporting virtual media, CAC and USB2.0
MPUIQ-VMCDP	Server Interface Module for DisplayPort video, USB keyboard/ mouse supporting virtual media, CAC and USB2.0
CABLES	
PS2IAC-7	7 ft. PS2 CAT-5 integrated access cable
PS2IAC-10	10 ft. PS2 CAT-5 integrated access cable
PS2IAC-15	15 ft. PS2 CAT-5 integrated access cable
USBIAC-7	7 ft. USB CAT-5 integrated access cable
USBIAC-10	10 ft. USB CAT-5 integrated access cable
USBIAC-15	15 ft. USB CAT-5 integrated access cable

Avocent® Av100 Series - Rack Mount & Desktop Kvm Switches

Features & Benefits

Single-user, smaller form factor Avocent® AV100 local KVM switches are designed specifically for IT Rooms, small Data Centers and Branch Offices. Different bundle options are available which means KVM cables ship with the unit, simplifying the order and installation process.

Consolidated Server Management

Simplified local access, management and control of your server resources all from a single console.

Multiple Video and Target Connections

Supports both VGA and Display Port (DP) targets with a resolution of up to 2048x1536 as well as a variety of server connections with proprietary cable interface adapters

Easy to manage

- Switch between targets with the simple on-screen display (OSD)*, intuitiv touch buttons, hot-key operation and scan mode
- Standard "1U", "0U" rack-mount as well as desktop installation
- Dedicated USB port for firmware upgrades

Trusted brand

The Avocent® AV100 switches are backed by Avocent's renowned quality and reliability and come with a 2-year warranty.

Unplanned interruptions in service can have damaging effects on business no matter the scope or size of the server room.

The Avocent® AV100 switches from Vertiv offer a cost-efficient solution to streamline access and control to server resources and increase speed to remediation and operational efficiencies.

These single-user KVM switches, available in **4**, **8** and **16** port models, provide a straightforward user experience and help conserve space in your serve room and reduce cable clutter.



AV100 family front



AV100 family back

Product Specifications

	AV104	AV108	AV116
Form Factor	1U, 0U, or Desktop	1U, 0U, or Desktop	1U, 0U, or Desktop
Dimensions	Height: 1.72 inches (4.37cm) Width: 17 inches (43.2cm) Depth: 4.75 inches (12.07cm)	Height: 1.72 inches (4.37cm) Width: 17 inches (43.2cm) Depth: 4.75 inches (12.07cm)	Height: 1.72 inches (4.37cm) Width: 17 inches (43.2cm) Depth: 4.75 inches (12.07cm)
Weight	3.4 lbs	3.6 lbs	4.2 lbs
Device Connectors	• 4 ports for server targets • 4 USB Ports • VGA monitor local connection	• 8 ports for server targets • 4 USB Ports • VGA monitor local connection	• 16 ports for server targets • 4 USB Ports • VGA monitor local connection
Local Access	1 local user	1 local user	1 local user
Features Include	• KVM access • Push Button switching • Keystroke Switching • Cascade support	• KVM access • Push Button switching • Keystroke Switching • OSD • Cascade support	• KVM access • Push Button switching • Keystroke Switching • OSD • Cascade support
Video Support	• Appliance - VGA • Targets - VGA or DisplayPort	• Appliance - VGA • Targets - VGA or DisplayPort	• Appliance - VGA • Targets - VGA or DisplayPort
Power Supply Specifications	100-240V 50-60Hz AC 5v, 10W max Internal Single IEC C14 male connector 6 foot C14G power cable	100-240V 50-60Hz AC 5v, 10W max Internal Single IEC C14 male connector 6 foot C14G power cable	100-240V 50-60Hz AC 5v, 10W max Internal Single IEC C14 male connector 6 foot C14G power cable
Environmental	• Operating: 32 to 122 degrees Fahrenheit (0 to 50 degrees Celsius) • Non-operating: -22 to 158 degrees Fahrenheit (-30 to 70 degrees Celsius) • Fanless • Operating Humidity: 20% to 85% • Non-operating Humidity: 5% to 95%		
Approved Agencies	UL, FCC Class A, cUL, ICES Class A, CE, EAC, VCCI Class A, KCC Class A, RCM, BSMI		
Warranty	2 years		

CABLES AND ACCESSORIES

CBL0170	6-foot 26-pin to VGA target cable
CBL0171	12-foot 26-pin to VGA target cable
CBL0172	6-foot 26-pin to DP target cable
CBL0173	12-foot 26-pin to DP target cable
CBL0170-4	6-foot 26-pin to VGA 4-cable bundle
CBL0171-4	12-foot 26-pin to VGA 4-cable bundle
CBL0172-4	6-foot 26-pin to DP 4-cable bundle
CBL0173-4	12-foot 26-pin to DP 4-cable bundle
CBL0174	26-pin to VGA Cascade cable
RMK-94	1U/0U/desk mount kit



PART NUMBER	DESCRIPTION
AV104-400	1x4 KVM switch with USB, push (touch) button switching, keystroke switching, cascade support, internal power supply
AV108-400	1x8 KVM switch with USB, w/OSD, push (touch) button switching, keystroke switching, cascade support, internal power supply
AV116-400	1x16 KVM switch with USB, w/OSD, push (touch) button switching, keystroke switching, cascade support, internal power supply
AV104BND4-400	1x4 KVM switch with USB, push (touch) button switching, keystroke switching, cascade support, internal power supply, includes 4 CBL0170 cables
AV108BND8-400	1x8 KVM switch with USB, w/OSD, push (touch) button switching, keystroke switching, cascade support, internal power supply, includes 8 CBL0170 cables
AV116BND4-400	1x16 KVM switch with USB, w/OSD, push (touch) button switching, keystroke switching, cascade support, internal power supply, includes 8 CBL0170 cables

Avocent® AV3000 Series KVM Over IP Switching Solutions

Benefits

Powerful User Access Control

- Grant access to specified users or implement LDAP directory authentication.
- Limit KVM access to specific targets on the switch.
- Enable smart card or CAC readers to support two factor authentication.

Streamlined Management

Virtual Media support allows servers to access storage media attached to the KVM, enabling out-of-band file transfers and OS patch deployments.

Local Port Access

Support for virtual media, USB keyboards and mice.

Single Solution

Support for USB, PS/2, Sun and serial target devices in a single solution.

Graphical, Multilingual OSD

Advanced, graphical On-Screen Display eases system configuration and server selection.

Space-Saving

CAT-5, thin cabling saves space in the rack and allows up to a 30 meter distance between the server and the switch.

Intelligent Cabling

Server interface modules and integrated access cables automatically assign and retain unique server names for each attached server.

Server Management for Small Data Centers and Remote/Branch Offices

Unplanned interruptions in service can have damaging effects on business no matter the scope or size of the data center. Whether the data center is in a closet, next to a desk or across the globe in a remote office, IT professionals need tools that provide consolidated, streamlined access to server resources. The Avocent® AV3000 series of KVM over IP switching solutions provides streamlined management and control of server resources all from a single console

Flexible and Scalable

The Avocent AV3000 KVM over IP portfolio is available in two options to support different needs. The AV3108 switch supports one local and one remote user and up to eight server or serial devices. The AV3216 supports up to two local and one remote user and 16 server or serial devices.

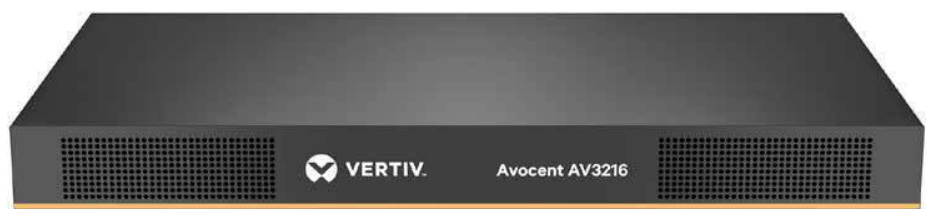
When in share mode, additional, authenticated users can share remote sessions for a total of up to 4 remote, concurrent users. Each AutoView switch supports VGA, Display Port, DVI and HDMI video targets and four USB 2.0 ports for USB enabled devices. When additional systems are added, AutoView switches can be tiered to provide consolidated management of up to 256 server or serial devices.

Streamlined Management

The Avocent AV3000 series KVM over IP switch ships with two intuitive, integrated management interfaces. The OSCAR™ on-screen display for local access and the Web User Interface for remote management. Additionally, AV3000 series KVM over IP switches are compatible with Avocent DSView™ management software for consolidated management across the infrastructure.

Secure

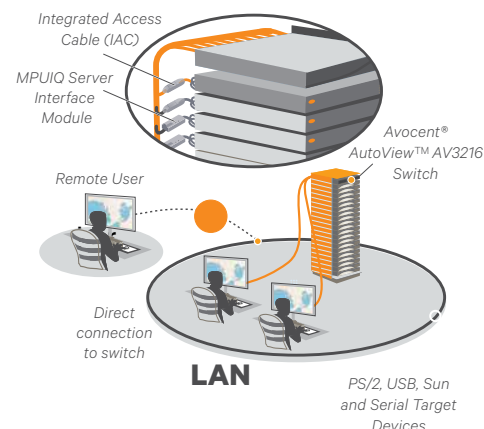
In high security environments, CAC support with encryption for smart cards and password protection for local users, provides security you can depend on for your virtual media sessions. Encryption options include 128-bit SSL, AES, DES and 3DES and they can be selected for keyboard, mouse and video signals and virtual media sessions.



Avocent AV3108 and AV 3216 KVM switches are designed for local and remote management of server resources.

Product Specifications

	AV 3216	AV3108
Form Factor	1U rack mount	1U rack mount
Dimensions	Height: 1.72 inches (4.37cm) (1U) Width: 17 inches (43.2 cm) Depth: 6.5 inches (16.5 cm)	Height: 1.72 inches (4.37cm) (1U) Width: 17 inches (43.2 cm) Depth: 6.5 inches (16.5 cm)
Weight	4.4 lbs. (2.0 kg)	4.2 lbs. (1.9 kg)
Device Connectors	• 16 ports for servers or serial devices • 4 USB 2.0 ports	• 8 ports for servers or serial devices • 4 USB 2.0 ports
Remote Access	1 remote KVM over IP user 10/100 Mbps Ethernet port	1 remote KVM over IP user 10/100 Mbps Ethernet port
Local Access	2 local ports 1 ACI port for tiering to another AutoView switch	1 local port 1 ACI port for tiering to another AutoView switch
VM/CAC Support	Virtual Media support over USB Common Access Card (CAC) capability for smart cards 128-bit SSL, AES, DES and 3DES encryption	
Features Include	Agentless control and access for 1 remote user LDAP authentication Single-stack IPv4 or IPv6 access Flash-upgradeable firmware AV KVM Switch and AVRIO	
Video Support	Local VGA connection. Supports VGA, DisplayPort, HDMI, or DVI targets 16:9 widescreen, up to 1680 x 1050 4:3 standard, up to 1600 x 1200	
Management Software	OSCAR™ On-Screen Display for local access Web User Interface Compatible with Avocent DSView™ management software	
Power Supply Specifications	Connector: IEC C14 Type: Internal Power: 18W Heat dissipation: 47 BTU/hr AC input range: 100 - 240 VAC AC frequency: 50/60 Hz auto-sensing AC input current rating: 5 A AC input power (maximum): 20W	
Environmental	Operating: 32 to 122 degrees Fahrenheit (0 to 50 degrees Celsius) Non-operating: -4 to 158 degrees Fahrenheit (-20 to 70 degrees Celsius) Airflow is from non-port side (Front) to port side (Back)	
Supported Server Interface Adapters	Multi-platform support: PS/2 and USB. Also support for Avocent PS/2, PS2M, USB, Sun, USB2, VMC modules; Dell PS/2, USB, USB2-VM, USB2-VM+CAC SIPs	
Approved Agencies	UL, FCC Class A, cUL, ICES Class A, CE, EAC, VCCI Class A, KCC Class A, C-Tick, BSMI	
Warranty		



PART NUMBER DESCRIPTION

AV3108-XXX	1x8 Cat-5 switch with USB, OSCAR™ graphical user interface OSD, virtual media and CAC support
AV3216-XXX	2x16 Cat-5 switch with USB, OSCAR™ graphical user interface OSD, virtual media and CAC support

SERVER INTERFACE MODULES

MPUIQ-VMCHS	Server interface module for VGA, USB keyboard, mouse supporting virtual media, CAC and USB2.0.
MPUIQ-VMCHD	Server Interface Module for HDMI video, USB keyboard/mouse supporting virtual media, CAC and USB2.0.
MPUIQ-VMCDV	Server Interface Module for DVI video, USB keyboard/mouse supporting virtual media, CAC and USB2.0.
MPUIQ-VMCDP	Server Interface Module for DisplayPort video, USB keyboard/mouse supporting virtual media, CAC and USB2.0.
AVRIO-SRL	Server interface module for VT100 serial devices for extended distance (requires UPD-AM)
DSAVIQ-PS2M	Server interface module for VGA video, PS/2 keyboard & mouse with USB virtual media

CABLES

PS2IAC-7	7 ft. PS2 CAT-5 integrated access cable
PS2IAC-10	10 ft. PS2 CAT-5 integrated access cable
PS2IAC-15	15 ft. PS2 CAT-5 integrated access cable
USBIAC-7	7 ft. USB CAT-5 integrated access cable
USBIAC-10	10 ft. USB CAT-5 integrated access cable
USBIAC-15	15 ft. USB CAT-5 integrated access cable

Avocent® Acs 8000 Advanced Console Server

A Next-Generation Console Management Solution

Benefits

Applications

- Secure console and power management
- Server and network management
- Secure access to test and development lab environments
- Telco central office and remote facilities

Benefits

- Secure in-band and out-of-band network remote management
- Fast, automated configuration with Zero Touch Provisioning
- Access and troubleshoot remote locations using automatic network failover to cellular (and failback)
- No need for adaptors with automatic Cyclades™ and Cisco pin-out conversions
- Compliance with data center access and security policies – customizable, multiple access levels
- NEW! - Expanded support for Rack PDUs from Vertiv™, ServerTech, APC, Raritan and Eaton
- NEW! - Support for Vertiv GXT4 UPS systems
- IPv6 and IPv4 support for new network deployments
- Support for Avocent® DSView™ management software
- Strong dial-up and secure dial-back using optional built-in modem
- Console event logging and notification, including “last gasp” capture
- Regulatory compliance and easy troubleshooting – online and off-line data logging with time stamps
- NEW! - Integrated support for 1Gb SFP fiber modules
- NEW! - 8 USB ports to support new IT equipment and external devices
- NEW! - Environmental sensor port



Avocent® ACS 8000 Advanced Console Server

The Avocent® ACS 8000 advanced console server series continues the long running success story with a new, ground-up platform of innovation, integrating important new connectivity features such as gigabit fiber, USB and sensors. IT professionals and network operations center (NOC) personnel can now harness these new capabilities to further enable them to perform secure, remote data center management and out-of-band management of IT assets from anywhere in the world. Featuring a dual-core ARM processor architecture with expanded memory capabilities, the updated Linux operating system and DSView™ management software, provides the Avocent® ACS 8000 optimal performance, security, reliability for a complete out-of-band management solution.

High-Performance Design and Advanced Features

The Avocent® ACS 8000 advanced console server series offers upgraded and advanced features that deliver scalable and high performance solutions for IT administrators. The console server features a dual ARM core processor platform with dual gigabit-Ethernet ports and dual gigabit-Fiber ports for redundancy and optional built-in modem. In addition, there is a new sensor port, to connect a variety of sensors for monitoring and logging on the appliance. Our serial ports are now auto sensing for pin-out and the Avocent® ACS 8000 advanced console server also offers robust software features to meet the requirements of the most demanding data center management applications. Features include automated discovery tools to ease identification of servers, routers, switches and power devices connected to any serial port, saving time at initial configuration and installation. To comply with existing data center network access policy, the Avocent® ACS 8000 advanced console server provides customizable, multiple access levels for secure management. The console servers provide a complete solution for secure, remote control with advanced console server features such as enhanced security, data logging and event monitoring. In addition, the Avocent® ACS 8000 advanced console server supports next-generation network standards such as Internet Protocol version 6 (IPv6). Available in 8-, 16-, 32- and 48-port models that fit in 1U of rack space with single and dual, AC and DC power options. With or without modem, the ACS 8000 console server helps maximize IT asset productivity while providing scalability and reducing operational costs. Uses an embedded cryptographic module that is based on the FIPS 140-2 validated cryptographic module (Certificate number 1747) running on a Linux ARM platform.

Hardware Specifications

CPU	Dual-core ARM® Cortex™-A9 MPCore™ with CoreSight™	
Memory	1GB DDR3L RAM 16GB eMMC Flash	
Interfaces	2 Gigabit Fiber SFP ports	
	2 Gigabit (10/100/1000BT) Ethernet interfaces on RJ45	
	1 RS-232 serial console port on RJ45	
	Up to 48 RS-232 serial ports on RJ45	
	First 2 ports selectable between RS-232/RS-422/RS-485	
	8 USB 2.0 Ports on Type A connector	
Power	1 full size SD Card slot	
	Environmental sensor port on RJ45 (1-wire)	
Power Usage	4 digital-in ports (smoke, leak, pressure and dry contact sensors)	
	Internal 100–240 VAC, 50/60 Hz Optional –48 VDC power supply	
	Optional dual entry, redundant AC and DC power supplies	
	Nominal voltage 120VAC:	
	Typical 0.13A, 6.2W	
	Maximum 0.47A, 28W	
	Nominal voltage 240VAC:	
	Typical 0.10A, 7W	
	Maximum 0.29A, 28W	
	Nominal voltage 48VDC (±20%)	
Operating Temp.	Typical 0.22A, 11W	
	Maximum 0.67A, 33W	
Storage Temp.	14°F to 140°F (-10°C to 60°C)	
Humidity	-4° to 158°F (-20° to 70°C)	
Non-perating Humidity	20% to 80% noncondensing	
Dimensions (W x D x H)	5% to 95% relative humidity	
Weight	17.250 x 9.5 D x 1.75 in. (43.82 x 24.13 x 4.45 cm)	
Certifications	7.5 lbs	
	Emissions and Immunity:	
	- FCC Class A - CE Class A (EU) - ICES-003 (Canada) - VCCI (Japan) - RCM (Australia) - Customs Union (CU) - KCC (Korea)	Safety:
		• UL (USA)
		• cUL (Canada)
		• EN-60950 (EU)
		• CB
		• Customs Union (CU)

Ordering Details

AC Power Supply Models

AC MODELS	DESCRIPTION
ACS8008SAC-400	ACS 8000 8-port unit single AC power supply
ACS8008DAC-400	ACS 8000 8-port unit dual AC power supply
ACS8008MDAC-400	ACS 8000 8-port unit dual AC power supply with built-in modem
ACS8016SAC-400	ACS 8000 16-port unit single AC power supply
ACS8016DAC-400	ACS 8000 16-port unit dual AC power supply
ACS8016MDAC-400	ACS 8000 16-port unit dual AC power supply with built-in modem
ACS8032SAC-400	ACS 8000 32-port unit single AC power supply
ACS8032DAC-400	ACS 8000 32-port unit dual AC power supply
ACS8032MDAC-400	ACS 8000 32-port unit dual AC power supply with built-in modem
ACS8048SAC-400	ACS 8000 48-port unit single AC power supply
ACS8048DAC-400	ACS 8000 48-port unit dual AC power supply
ACS8048MDAC-400	ACS 8000 48-port unit dual AC power supply with built-in modem
Additional models are also available. Contact your sales representative for more information	

DC MODELS	DESCRIPTION
ACS8008SDC-400	ACS 8000 8-port unit single DC power supply
ACS8008MDC-400	ACS 8000 8-port unit single DC power supply with built-in modem
ACS8032DDC-400	ACS 8000 32-port unit dual DC power supply
ACS8032MDDC-400	ACS 8000 32-port unit dual DC power supply with built-in modem
ACS8048DDC-400	ACS 8000 48-port unit dual DC power supply
ACS8048MDDC-400	ACS 8000 48-port unit dual DC power supply with built-in modem

Features

Operating System

- Embedded Linux

Accessibility

- Zero Touch Provisioning (ZTP)
- In-band (Ethernet) and out-of-band (dial-up/cellular modem) support
- Built-in v.92 analog modem connectivity
- External device connectivity such as LTE/4G cellular router

Availability

- Automatic Ethernet or Cellular failover using second GbE port for failover
- Support for multiple-routing tables
- Dual power supply design
- Dual GbE Ethernet support
- Dual 1Gb SFP Fiber support
- USB port support

Security

- Preset security profiles—secure, moderate and open
- Custom security profiles
- X.509 SSH certificate support
- SSHv1 and SSHv2
- Local, RADIUS, TACACS+, LDAP/AD, NIS and Kerberos authentication
- Two-factor authentication (RSA SecurID®)
- One-Time Password (OTP) authentication

- Local, backup-user authentication support
- PAP/CHAP and Extensible Authentication Protocol (EAP) authentication (for dial-up lines)
- Group authorization:
 - TACACS+, RADIUS and LDAP
 - Port access
 - Power access
 - Appliance privilege
- IP packet and security filtering
- User-access lists per port
- System event syslog
- IPSec with NAT traversal support
- IP forwarding support
- Secure factory defaults
- Strong password enforcement

Console Management

- Sun break-safe (Solaris Ready Certified)
- Break-over SSH support
- Off-line data buffering – local and remote (NFS/Syslog/DSView software)
- Level-based syslog filters
- Time stamp and rotations for data buffering
- Unlimited number of simultaneous sessions
- Simultaneous access on the same port (port sniffing) with ability to toggle
- Configurable event notification (e-mail, pager, SNMP trap)
- Customizable, global time zone support
- Multiple and customizable user levels of access

Port Access

- Directly by server name or device name
- CLI Command
- Simultaneous Telnet and SSH access
- HTTP/HTTPS

System Management

- Configuration wizard in Web for first-time users
- Auto-discovery for automatic deployment
- Command line interface (CLI)
- Web Management Interface (HTTP/HTTPS)
- SNMP
- Internal temperature sensor

Cabling

- CAT-5 compatible adapters for simpler cabling
- Autosensing for Cyclades and Cisco pin-outs for serial ports

Upgrades

- Upgrades available on FTP site, no charge
- TFTP support for network boot

Enhanced Performance and Management of Dynamic IT Spaces

Enhance Business Agility, Efficiency and Availability with Vertiv™ Rack PDUs

Data centre investments are sizable, and each component of the power chain from the facility entrance to the rack power distribution is crucial to enabling equipment availability. Enable your IT investment and your business to stay protected with Vertiv Geist family of Rack PDU (rPDU) offerings.

The next generation of rPDUs provides the industry's highest availability and most intelligent power monitoring and distribution - complete with simplified energy management, a future-proof design, and cost savings that ensure your data centre and your business - can operate at peak efficiency.

Our complete portfolio of rPDUs offers value beyond power distribution. They easily integrate to your data centre infrastructure management systems to make your organization more resilient, enhance your business and provide the technological support you need to grow your company.



POWER

MONITOR

INTEGRATE

BASIC rPDUs

Vertiv™ Geist™ Basic Rack PDUs (rPDUs) offer reliable, space saving, and cost-effective power distribution at the rack.

Our Basic rPDUs meet a broad range of power distribution requirements for all IT applications.

INTELLIGENT rPDUs

Vertiv Geist offers a wide range of monitored and switched rPDUs equipped with a network interface to allow for remote monitoring, management, and automated alerts. Vertiv™ Geist™ rPDUs offer important insights on how to improve data centre energy efficiency while enabling you to prevent downtime, providing notifications when user-specified thresholds for power and environmental conditions are breached.

- **Monitored:** Monitor power usage remotely with access to the rPDU's current, voltage, real power, apparent power, power factor and kilowatt hours.
- **Switched:** All the benefits of a Monitored rPDU plus the ability to remotely turn on, turn off, or reboot power at each outlet.



Outlet Control

Address unresponsive equipment or increase runtime of critical equipment upon power failure with outlet-level control.



Upgradable & Hot-Swappable

Easily update your rPDU's monitoring capabilities to adapt to latest technologies and changing business needs.



Environmental Monitoring

Proactively monitor environmental conditions within the cabinet to ensure optimal operating conditions. A variety of sensors are available to meet your needs including temperature, humidity, airflow, door position, flood detection and more.



Vertiv Intelligence Director

Daisy-chain up to 50 devices on a single IP address. Reduce deployment time with self-configuration of downstream devices.



U-Lock

Secure power cords and avoid accidental disconnections. Receptacles are color-coded by circuit for instant identification.



Available Features

Built-to-Order units provide additional features to include alternating phase/circuit outlets, colored chassis options, and varying power and receptacle configurations. Contact your Vertiv sales team for more information.

High Temperature Grade

Up to 60°C working ambient variants for high temperature environments.



Network Interface

Access the rPDU remotely to monitor power consumption and configure user-defined alert notifications to prevent downtime.



Fault-Tolerant Daisy Chaining

Simplifies intelligent rPDU connectivity and ensures data is reported even when a break in the network chain occurs.



Visible Light Communication (VLC)

Optically transmit data from the rPDU display to your mobile device using VLC for quick and secure access to unit and power consumption data.



Small Footprint and Low Profile Breakers

Compact size to install in tight spaces.



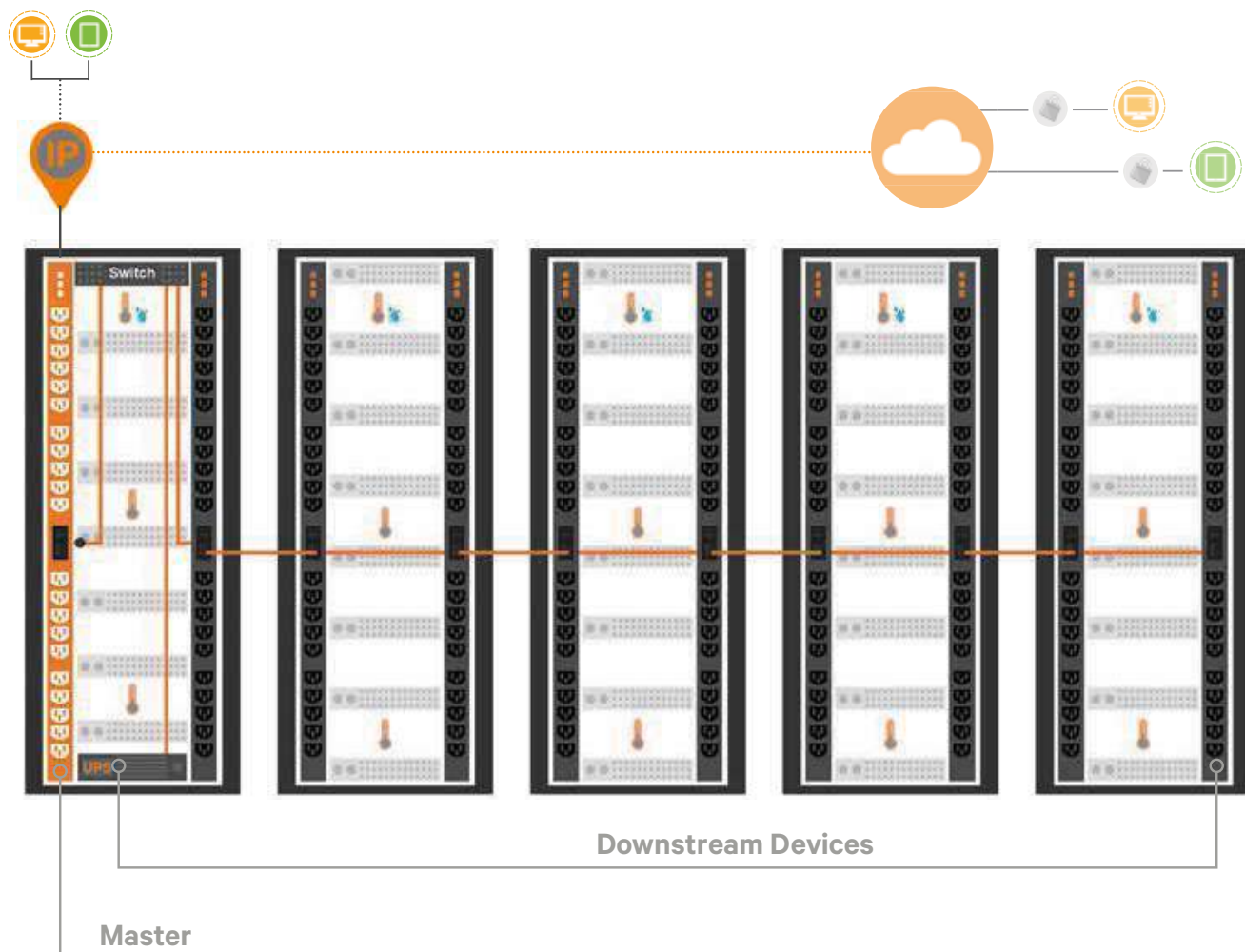
Input Power Monitoring

Allows data centre managers to accurately reconcile power usage with 1% monitoring accuracy tested to ANSI & IEC standards.



Vertiv Intelligence Director

Plug-n-Play Data Centre Infrastructure Enabling Lightning Fast Deployments



The next generation of Vertiv™ Geist™ rPDUs offer enhanced monitoring and simplified networking with the introduction of Vertiv Intelligence Director.

*One unit per group is required to have an IMD-03E or IMD-3E installed. The IMD-3E comes standard with Switched units. An IMD-03EV can be purchased separately to upgrade a Monitored unit.

**Vertiv Intelligence Director compatible with VertivLiebert GX T4 UPS product line.

- On Monitored* and Switched units, users have the ability to daisy chain up to 50 devices with a single IP address.
- Access data from all downstream rPDU and UPS** devices from one master rPDU.
- Users are able to aggregate data by grouping devices by rack or row.
- Downstream devices self-configure, significantly reducing deployment time.

- Securely transmit device data to the Vertiv Intelligence cloud for anytime access to critical infrastructure information.

HOW IT WORKS

1. Designate a Switched or Monitored unit with an IMD-3E or IMD-03E installed as the master unit. Switched units come standard with the IMD-3E.
2. Connect up to 50 devices through a network switch or by daisy chaining the rPDUs to the master unit.
3. Securely access downstream device data via SNMP or the master unit user interface through a single IP address and bring the consolidated data in your private cloud.
4. Bring your infrastructure data together with the option to connect to the Vertiv Intelligence cloud platform.

Rack PDUs Product Chart

MODEL	rPDU TYPE	rPDU SUB -TYPE	HORIZON- TAL/ VERTI- CAL	VOLTS	AMPS	MAX KW	PLUG TYPE	OUTPUT C13 C19	MAX OPERAT- ING TEMP*	VI DIRECTOR
VP9559	Basic	Standard	H	230 VAC	16 A	3.6 kVA	IEC60320 C20	10 2	45°C	N/A
VP7552	Basic	Standard	V	230 VAC	16 A	3.6 kVA	IEC60320 C20	20 4	45°C	N/A
VP7551	Basic	Standard	V	230 VAC	16 A	3.6 kVA	IEC60309 1ph/N/PE 6h	20 4	45°C	N/A
VP7553	Basic	Standard	V	230VAC	32 A	7.3 kVA	IEC60309 1ph/N/PE 6h	20 4	45°C	N/A
VP7557	Basic	Standard	V	230/400 VAC	16 A	11 kVA	IEC60309 3ph/N/PE 6h	36 6	45°C	N/A
VP8858	Monitored	Unit Level	V	230 VAC	16 A	3.6 kVA	IEC60320 C20	18 2	60°C	IMD Upgrade**
VP8853	Monitored	Unit Level	V	230 VAC	32 A	7.3 kVA	IEC60309 1ph/N/PE 6h	36 6	60°C	IMD Upgrade**
VP8881	Monitored	Unit Level	V	230/400 VAC	16 A	11 kVA	IEC60309 3ph/N/PE 6h	36 6	60°C	IMD Upgrade**
VP8886	Monitored	Unit Level	V	230/400 VAC	32 A	22 kVA	IEC60309 3ph/N/PE 6h	30 12	60°C	IMD Upgrade**
VP8959EU3	Switched	Unit Level	V	230 VAC	16 A	3.6 kVA	IEC60320 C20	21 U-Lock 3 U-Lock	50°C	YES
VP8953	Switched	Unit Level	V	230 VAC	32 A	7.3 kVA	IEC60309 1ph/N/PE 6h	20 U-Lock 4 U-Lock	50°C	YES

*See data sheet for maximum operating temperature requirements.

**Vertiv Intelligence Director requires one unit per group to have an IMD-03E or IMD-3E installed.

The IMD-3E comes standard with Switched units. An IMD-03EV can be purchased separately to upgrade a Monitored unit.

Product chart shows limited spec information. For complete product details visit VertivCo.com.

At a Glance

- Simple installation and maintenance; ability to ship pre-installed in racks
- Improve Power Usage Effectiveness with increased visibility on power usage.
- Reduce cost of ownership while maximizing ROI.
- Software supported mass firmware updates, backup and configuration.
- Reduce idle energy costs with bistable relays on Switched units.
- Manage and optimize power capacity with remote monitoring.
- Expert support with Distribution Assurance Package.
- Built-to-Order options available for additional configuration needs.
- Improve uptime with Monitored and Switched rPDUs.

Color

Black powder coat finish.

Red, Orange, Yellow, Green, Blue, White available on Built-to-Order units.

Warranty

5-Year limited warranty if registered within 120 days of purchase, otherwise warranty defaults to 3 years.

Certifications

- RoHS
- Assessed to EN 60950 for CE
- Assessed to EN 55032 and EN 55024 for CE
- UL & c-UL Listed 60950
- FCC Part 15 Class A Conformance

How you benefit from Vertiv™ Rack PDUs

DESIGNED FOR HIGH AVAILABILITY



- High operating temperature rating to accommodate increased rack densities.
- Secure cords with U-Lock outlets to prevent accidental dislodging.
- Hot-swappable and upgradeable monitoring device allows users to upgrade as technology advances and business needs change.

OPTIMIZED ENERGY AND CAPACITY MANAGEMENT



- Metering of key electrical parameters with +/-1% accuracy provides highly accurate comprehensive power monitoring.
- Lowest idle power consumption in the industry.
- Power and environmental trend reports through several Vertiv DCIM solutions to provide visibility and control of energy usage by IT equipment.

SIMPLIFIED INTEGRATION WITH MANAGEMENT TOOLS



- Integration with Vertiv software stack to simplify implementation and change management translating to real cost savings.
- IPv4 and IPv6 support.
- Support for all major management, authentication and encryption standards and protocols to fully integrate with higher level data centre management software provided by Vertiv or third parties

COMPATIBILITY WITH RACKS AND POWER CHAIN



- Compatible with all industry racks and can be preinstalled in Vertiv racks to reduce installation costs and implementation time.
- Available in all major global voltage and amperage combinations typically used in data centre or remote sites.
- Easily integrate with Vertiv's full line of power products. A Vertiv expert can assist in selecting the right rPDU for your power chain needs.

ENHANCED SECURITY FEATURES



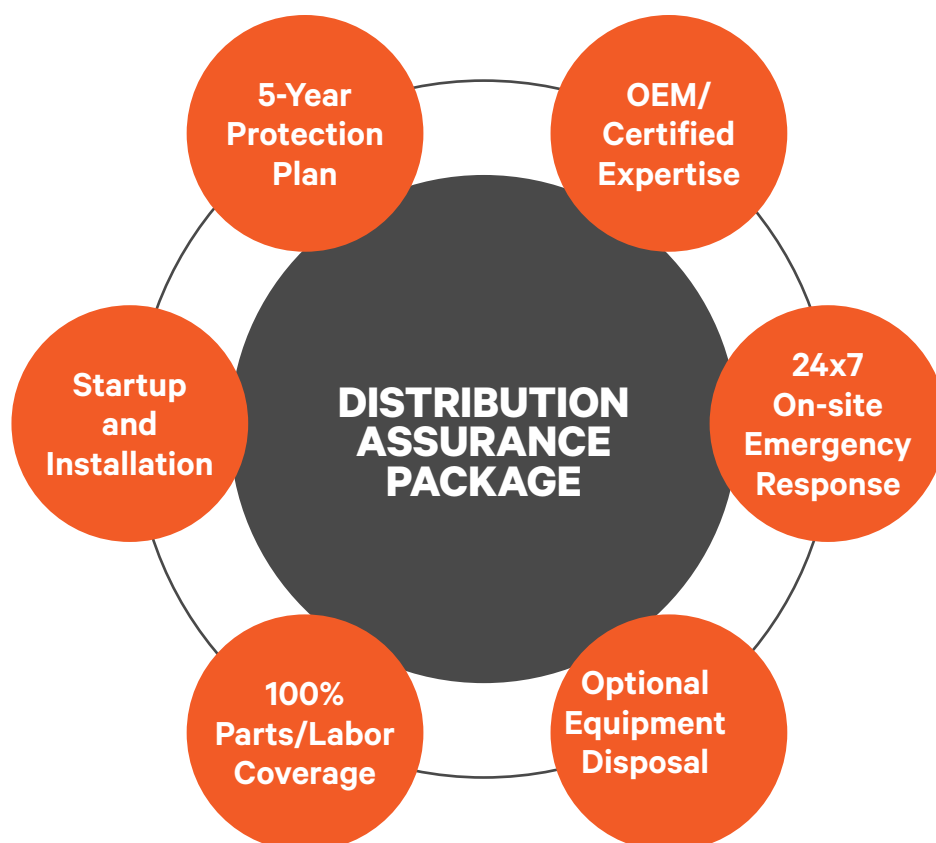
- Visible Light Communication (VLC) for quick and secure access to unit and power consumption with the Vertiv rPDU Scanner mobile app.
- Together with Avocent ACS VPN and Out-of-Band communication supports highest security communication for Edge applications.
- SNMPv3, SSH, HTTP(S) and IPv6 support.

Ensure Power System availability with Expert Support for Vertiv™ Geist™ rPDUs

The Distribution Assurance Package combines market-leading rPDU technology with a five-year protection plan and the industry's premier service capability.

Rack Power Distribution Units (rPDUs) are the last link in the power chain, ensuring delivery of critical power to IT loads. These critical components play a key role in data centre infrastructure management, giving you access to racklevel power consumption and environmental information. Rack PDUs also allow you to directly control power to IT equipment for better capacity and power management. Having rPDUs that are properly installed and maintained is essential for critical system availability. However, your internal resources who are dealing with time and budget constraints cannot always give rPDUs the attention they need. Additionally, services that aren't provided by the original equipment manufacturer (OEM) may not be comprehensive or include the level of expertise required.

By choosing a bundled solution that combines market-leading rPDU technology with lifecycle services provided by the OEM, you simplify the management of your IT equipment.



OUR DISTRIBUTION ASSURANCE PACKAGE FOR VERTIV™ GEIST™ RPDUS INCLUDES:

Startup and Installation

Factory-authorized Vertiv technicians handle rPDU installation and startup at your location. You'll enjoy the convenience and peace of mind that comes from having the experts do the job, and IT staff is free to attend to other tasks.

Five-Year Protection Plan

The Distribution Assurance Package provides 100 percent labor and travel coverage, and 100 percent parts coverage for maintenance, repair, or replacement for a full five years. With this level of protection, you avoid unexpected downtime costs and gain network availability.

Optional Removal and Disposal

If ordered with the Distribution Assurance Package, our technicians will remove and dispose of any old rPDUs while following all regulatory requirements. This optional task is handled when visiting to install and startup your new rPDUs.

On-site Support and Emergency Response

Vertiv's experienced team of technicians offers the industry's premier service capability for maintaining and supporting rPDUs. Should a problem ever arise, you'll have 24x7 access to Vertiv's Customer Resolution Center. You can count on quick recognition by support personnel as well as priority status during emergencies including guaranteed onsite emergency response.

Comprehensive Reports

We provide on-demand access to service histories and reports via the Customer Services Network portal. With this vital information at your fingertips, you will always know the status of your rPDUs under contract, and will have the information needed to simplify the management of this critical power system component.

ORDERING INFORMATION

To learn more about this service and other Vertiv solutions, visit

VertivCo.com or call
1-800-543-2378.



[Vertiv.com/en-in](https://www.vertiv.com/en-in) | E-mail : marketing.india@vertiv.com | Toll free : 1-800-2096070

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