

SLC CUBE3+ PS

On-line UPS from 7.5 to 200 kVA with peak shaving function

SLC CUBE3+ PS: Energy efficiency and reduced consumption peaks

Salicru's **SLC CUBE3+ PS** series is a range of high-performance UPSs with on-line double-conversion (VFI) technology. The main distinguishing feature of the **SLC CUBE3+ PS** series of UPSs is the energy storage system (ESS), which allows the device to reduce the loads' consumption peaks (a process known as "peak shaving"), thereby enabling users to optimise the sizing of the system.

Often, the size of an installation is determined by the highest peaks of its energy demand. However, the peak shaving function of the **SLC CUBE3+ PS** series provides the dual benefit of a lower contracted energy tariff and lower energy costs, without losing the capacity to supply the demands of the load. Another benefit of this function is the optimisation of distribution boards, protections, cabling, etc. And in addition to peak shaving, the **SLC CUBE3+ PS** series offers all the features of a high-performance UPS.

In terms of input supply, of particular interest is the unity input power factor (PF=1) and extremely low distortion rate (the THDi is even lower than 1.5%), which help to improve the quality of the electricity grid. Additionally, it is a UPS with bi-directional topology (four-quadrant converter), which makes it possible to inject energy upstream (negative power) when the loads are being supplied by the system and the grid is available. In terms of output features, of particular note is the low level of voltage harmonic distortion (THDv can reach levels of less than 0.5%), adapted to any type of load (resistive, inductive, capacitive, non-linear, etc.).

Moreover, the high levels of performance enable significant energy savings and reduce climate control needs.



Applications: Supplying loads with occasional high demand

High electrical performance, coupled with great adaptability (optional extras, growth, communication, etc.), make the **SLC CUBE3+ PS** series the best option regarding protection and security for a wide variety of environments. Plus, the series offers the added value of lower energy costs and the elimination of consumption peaks absorbed by the grid. Peak shaving can be used to increase the capacity of any existing installation that may be experiencing increased demand from the load, without having to resize the system (e.g. contracted power too low, generators, industrial machinery, etc.).

The series' four-quadrant converter topology makes it possible to re-absorb regenerative energy of all kinds (e.g. from industrial machinery braking, lifts descending, solar inverters, etc.). This bi-directionality can be combined with the peak shaving function.



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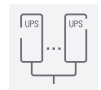
Performances

- On-line double-conversion technology (VFI) with DSP control.
- Option to limit the power absorbed from the grid with a resolution of 1 kW.
- Unity input power factor (PF=1).
- Very low input current distortion (THDi to <1.5%).
- Total flexibility in input/output voltage. (1)
- Designed to work with any kind of load.
- Capacity to absorb regenerative energy of up to -100%.
- Batt-Watch function for battery care and monitoring.
- High output power factor (PF=0.9) (2).
- Very low output voltage distortion rate (THDv even lower than 0.5%).
- Efficiency of up to 95%.
- 7" colour touch screen. (3)
- Very compact design that takes up little space.
- Can be integrated into the most advanced IT environments.
- Parallel redundant configuration (N+1) for critical installations. (4)
- Made from more than 80% recyclable materials.
- SLC Greenenergy solution.

ON
LINE

OPF=
0.9

TOWER



SNMP
SLOT



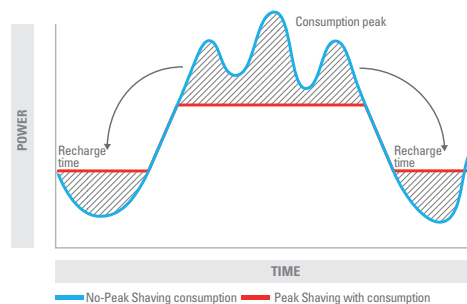
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- (1) Single/single, single/three and three/single configurations up to 100 kVA.
 (2) Only for three-phase input/output models. PF=0.8 for all other configurations.
 (3) Depending on the model.
 (4) Up to 4 units.

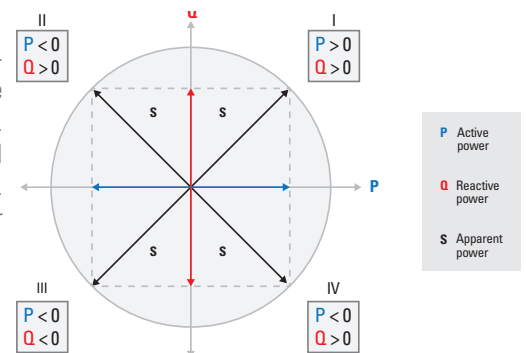
Peak Shaving

Peak shaving allows an installation's contracted power to be adjusted, thereby lowering the risk of being penalised as a result of peaks in demand. This feature, along with the balanced current consumption, helps to prevent unnecessary oversizing. Furthermore, the PF=1 and low input current distortion eliminate the consumption of reactive energy and harmonics in the grid.



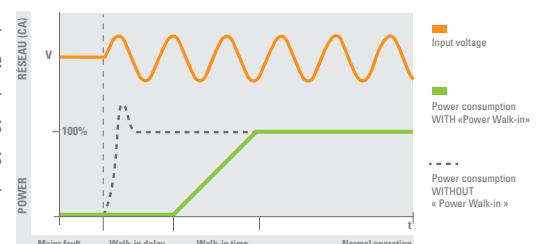
Bi-directional converter

The system's four-quadrant converter topology makes it possible to reabsorb regenerative energy of all kinds, whether occasional (e.g. kinetic or rotational energy from industrial machinery, lifts, etc.) or permanent (e.g. using the UPS as a voltage stabiliser for solar inverters injecting into the grid).



Power walk-in

Progressive rectifier start-up based on a pre-set time when the device is in battery mode and the mains are being restored. This function enables gradual absorption of the mains power, from 0% up to 100%; in turn, this helps to ensure that the generators or installations are functioning correctly.



Range

MODEL	CODE	INPUT POWER (W)	OUTPUT POWER (VA/W)	N° CABINETS (UPS + BAT)	DIMENSIONS (D × W × H mm)	BAT DIMENSIONS (D × W × H mm)
SLC-7,5-CUBE3+ PS	681RA000005	1000 ÷ 7000	7500 / 6750	1 + 0	770 × 450 × 1100	-
SLC-10-CUBE3+ PS	681RA000007	1000 ÷ 9000	10000 / 9000	1 + 0	770 × 450 × 1100	-
SLC-15-CUBE3+ PS	681RA000009	2000 ÷ 14000	15000 / 13500	1 + 0	770 × 450 × 1100	-
SLC-20-CUBE3+ PS	681RA000011	2000 ÷ 19000	20000 / 18000	1 + 0	770 × 450 × 1100	-
SLC-30-CUBE3+ PS	681RB000003	3000 ÷ 29000	30000 / 27000	1 + 0	770 × 450 × 1100	-
SLC-40-CUBE3+ PS	681RB000004	4000 ÷ 38000	40000 / 36000	1 + 0	770 × 450 × 1100	-
SLC-50-CUBE3+ PS	681RC000001	5000 ÷ 48000	50000 / 45000	1 + 1	770 × 450 × 1100	775 × 450 × 295
SLC-60-CUBE3+ PS	681RC000002	6000 ÷ 58000	60000 / 54000	1 + 1	770 × 450 × 1100	775 × 450 × 523
SLC-80-CUBE3+ PS	681RD000001	8000 ÷ 77000	80000 / 72000	1 + 1	880 × 590 × 1320	1050 × 650 × 624
SLC-100-CUBE3+ PS	681RD000002	10000 ÷ 97000	100000 / 90000	1 + 1	880 × 590 × 1320	1050 × 650 × 624
SLC-120-CUBE3+ PS	681RD000003	12000 ÷ 116000	120000 / 108000	1 + 1	880 × 590 × 1320	1050 × 650 × 750
SLC-160-CUBE3+ PS	681RE000001	16000 ÷ 155000	160000 / 140000	1 + 1	850 × 900 × 1900	850 × 1305 × 1595
SLC-200-CUBE3+ PS	681RE000002	19000 ÷ 194000	200000 / 180000	1 + 1	850 × 900 × 1900	850 × 1305 × 1918

Nomenclature, dimensions and weights for devices with input voltage of 3 x 400 V, output voltage of 3 x 400 V and standard backup.

The code only corresponds to the UPS module. Consult the codes for battery modules.

Selectable value within the range specified in the input power.

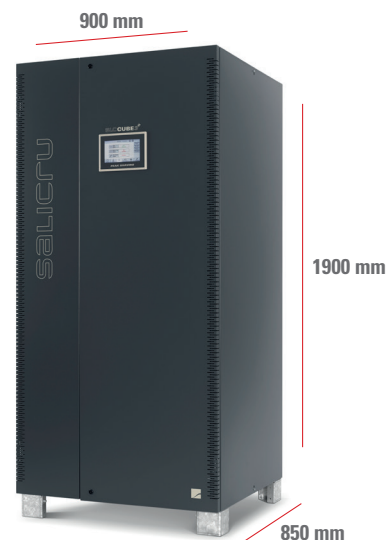
Dimensions



SLC-7,5÷60-CUBE3+ PS

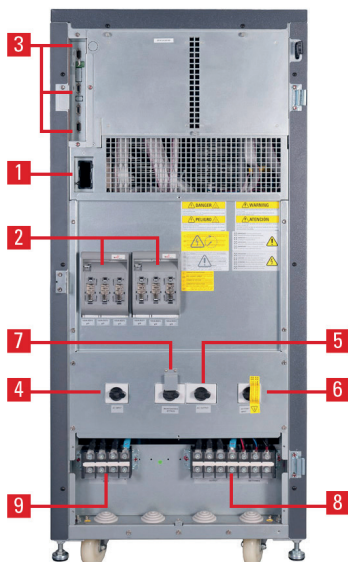


SLC-80÷120-CUBE3+ PS



SLC-160/200-CUBE3+ PS

Connections



SLC-7,5÷200-CUBE3+ PS

1. Slot for card (option).
2. Internal protection fuses. 80 kVA equipments only.
3. Communication interfaces.
4. Circuit breaker switch / Input switch.
5. Output switch.
6. Fuse holder / switch power.
7. Manual bypass.
8. Output terminals.
9. Input and output terminals.

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Technical specifications

MODEL		SLC CUBE3+ PS
TECHNOLOGY		On-line, double conversion, HF, DSP control
INPUT	Rated voltage	Single-phase 220 / 230 / 240 V ⁽¹⁾ / Three-phase 3 × 380 / 3 × 400 / 3 × 415 V (3P + N)
	Voltage range	+15% / -20% (configurable)
	Rated frequency	50 / 60 Hz
	Total harmonic distortion (THDi)	100% load: <1.5% / 50% load: <2.5% / 10% load: <6.0%
	Power factor	1 from 10% load
	Rectifier topology	Three-phase IGBT full wave, soft start, PFC, transformerless
	Input limit for peak shaving	Adjustable between 10%-100% of the power required for the output load
OUTPUT	Power factor	0,9 ⁽²⁾
	Rated voltage	Single-phase 220 / 230 / 240 V ⁽¹⁾ / Three-phase 3 × 380 / 3 × 400 / 3 × 415 V (3P + N)
	Dynamic accuracy	± 2% dynamic
	Static accuracy	± 1% steady
	Response time accuracy	20 ms for load steps 0% ÷ 100% and voltage drop up to -5%
	Total harmonic distortion (THDv)	<0.5% linear load / <1.5% (EN-62040-3) non-linear load
	Synchronised frequency	50/60 Hz ±5 Hz (selectable)
	Free running frequency	50/60 Hz ±0,05%
	Synchronous speed	From 1 Hz/s to 10 Hz/s (programmable)
	Total performance in On-line mode	7.5÷60 kVA: 92.0%÷93.0% / 80÷200 kVA: 94.0%÷95.0%
	Admissible overloads	125% for 10 min / 150% for 60 s / >150% for 20ms
	Crest factor	>3:1
MANUAL BYPASS	Type	No breaks
STATIC BYPASS	Type and activation criteria	Solid state, controlled by microprocessor
	Transfer times in On-line	Nil
	Transfer to bypass	Immediate, for overloads exceeding 150%
	Retransfer	Automatic, after alarm deactivation
	Peak Shaving	User configurable activation
BATTERY	Battery type	Lead acid, sealed, maintenance free
	Charging voltage regulation	Batt-Watch
	Peak shaving function	Sizing for energy storage and supplying the load's peaks in demand
COMMUNICATION	Ports	1 × RS232/RS485 + 1xUSB, with Modbus protocol
	Relay interface	4 × AC failure, bypass, low battery and general
	Intelligent slot	1, for SNMP
	Display from 80 kVA	Touch screen 7" color
	Display up to 60 kVA	LCD display, LEDs and keyboard
GENERAL	Operating temperature	0° C ÷ +40° C
	Relative humidity	Up to 95%, non-condensing
	Maximum operating altitude	2.400 m.s.n.m. ⁽³⁾
	Acoustic noise at 1 metre	<52 dB(A) ⁽⁴⁾
STANDARDS	Safety	EN-IEC 62040-1
	Electromagnetic compatibility (EMC)	EN-62040-2
	Operation	VFI-SS-11 (EN-62040-3)
	Corporate certification	ISO 9001, ISO 14001, ISO 45001

(1) Up to 100 kVA.

(2) Only for three-phase input/output models. PF=0.8 for all other configurations.

(3) Power degradation for higher altitudes up to a maximum of 5,000 masl.

(4) <65 dB(A) for 80 to 120 kVA models / <70 dB(A) for 160 to 200 kVA models.

