

# SLC CUBE3+

Uninterruptible Power Supplies (UPS) from 7.5 to 200 kVA

salicru



# SLC CUBE3+

## Energy efficiency with superior electrical protection

Salicru's **SLC CUBE3+** series is an Uninterruptible Power Supplies (UPS) range featuring high-performance, On-line double conversion technology (VFI) that provides a reliable, high-quality power supply while achieving significant energy and financial savings in terms of installation and operating costs.

Particularly noteworthy is its unity input power factor (PF=1) and its extremely input current low distortion rate (THDi even lower than 1%), which help to reduce installation and operating costs, and contribute to improving the quality of the electricity mains.

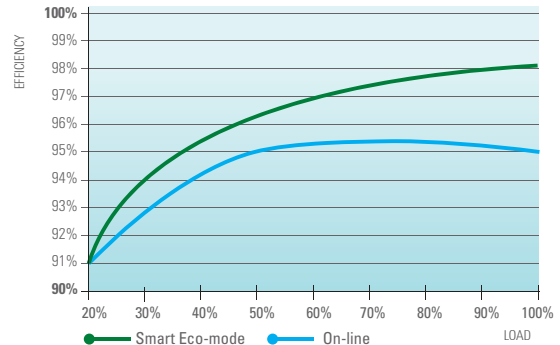
And regarding its output performance, particularly noteworthy is its power factor (PF=0.9), which provides optimum electrical protection to existing IT systems and low output voltage harmonic distortion (THDv down to below 0.5%), capable of protecting any type of linear load (resistive, inductive or capacitive), non-linear load (electronic equipment, servers, etc.) or combinations of these. In addition, the efficiency achieved (up to 95% in On-line mode or 98.4% in Smart Eco-mode) produces significant energy consumption savings and reduces air conditioning needs.

To achieve a full optimum solution, **SLC CUBE3+** series devices provide maximum adaptability, including, with the standard model, the possibility of parallel redundant expansion and extensive communication options. Finally, also worth noting is the unit's lightweight design and reduced dimensions, enabling it to be easily installed and ensuring that the footprint is minimal.

## TCO - Total Cost of Ownership

Up to 95% efficiency in On-line double-conversion mode

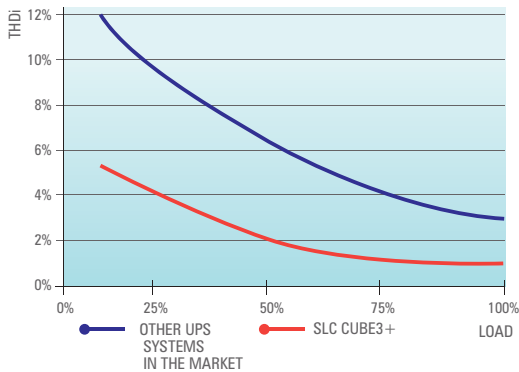
The technology used enables maximum use of the energy consumed in any power range demanded. *This contributes to significant savings in energy consumption and reduces the need for installation and air conditioning.*



SLC CUBE3+ 40kVA

## The lowest input current distortion THDi in the market

Input current distortion THDi < 1%<sup>(1)</sup> at full load, and even THDi < 5% with only 10% load. *This prevents contamination of upstream mains supply, enables use of smaller power generators, cabling, protections, etc., and contributes to improving the quality of the electricity mains.*



(1) Models up to 80 kVA

## Unity input power factor

Near unity power factor, irrespective of the load percentage (from 10% load, the PF is greater than 0.99). *This results in less reactive power consumption and reduces operating and installation costs.*

## Smart Eco-mode with efficiency of up to 98.4%

Loads powered directly from the mains with the inverter in stand by and operating only if a power failure occurs. *This achieves significant energy savings and high system efficiency (up to 98.4%).*

## Compact design

Maximum power density in the smallest space, including, up to the 40 kVA model, backup batteries in the same cabinet. *Up to 60% space savings.*

## Availability

### Fourth generation trench gate IGBT technology

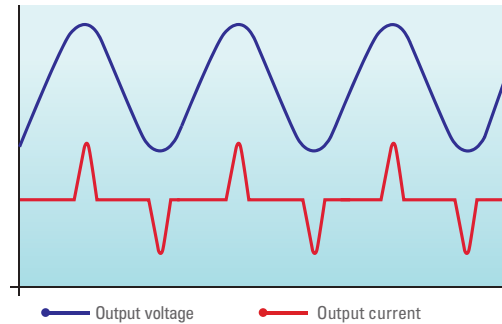
Fourth generation insulated-gate bipolar transistors (IGBTs) that allow higher switching frequencies with lower losses. *This reduces acoustic noise while increasing performance.*

### DSP (digital signal processing) control

This provides excellent computing power for complex digital control loops, which are responsible for high system performance. *Excellent output current distribution in UPS connected in parallel and high reliability due to current control providing greater immunity.*

## Excellent THDv output distortion

THDv < 0.5 % at full linear load and THDv < 1.5 % with non-linear load. This provides a perfect sinusoidal supply voltage for high crest factor critical loads with a resultant improvement in functioning and greater longevity. *Fully flexible and adaptable to any work environment.*



## Battery care and monitoring (Batt-Watch)

Improvement of battery charging functions and monitoring of essential parameters, such as the critical voltage at the end of backup and charging depending on the ambient temperature, connected loads or battery type. *This extends battery life, reduces maintenance costs and recharges batteries quickly.*

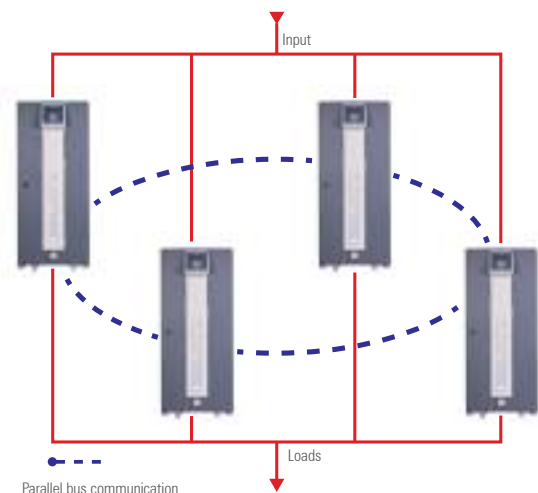
## Static and maintenance bypass

Enabling loads to be transferred without interruption directly to the mains in the event of severe overload or for maintenance work. *This provides greater availability of service in abnormal situations (severe overload, short circuit, malfunction, etc.)*

## Flexibility and adaptability

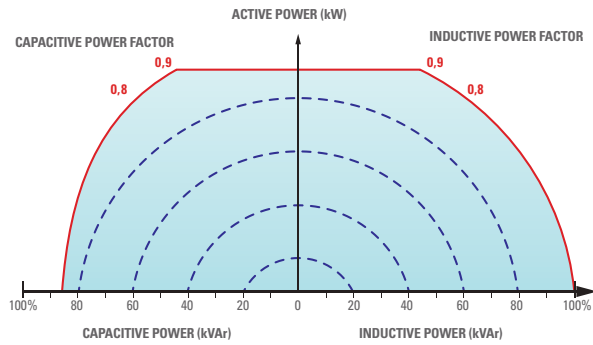
### Parallel-redundant configuration (N+1)

Designed to connect up to 4 UPS without additional hardware for installations with redundancy objectives and for power increases. *This provides the loads with greater safety and improves system reliability in critical installations.*



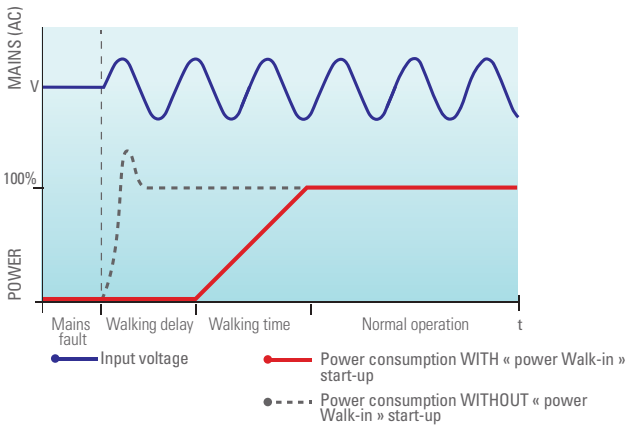
### Output power factor = 0,9

Optimum energy protection for existing IT equipment with active power supplies. *This provides a greater power protection capability and versatility for the type of loads to be protected.*



### Soft start for power walk-in rectifier

Progressive rectifier start-up based on a pre-set time when the UPS is in battery discharge and the mains is restored. *Greater compatibility with power generators.*



### Input/output configuration flexibility

All voltage input and output combinations (three/three, three/single, single/single, single/three) available up to 60 kVA. For higher powers only three/three. *Adaptable to electrical and load requirements.*

### Wide range of options available

Extended backup, charger for Ni-Cd and gel batteries, external manual bypass, separate bypass line, humidity and temperature sensors, frequency converter, battery monitoring, common battery set for parallel systems, etc. *Customisation of the UPS according to the needs of each installation.*

## Easy installation and service

### Incorporation of wheels

On models up to 120 kVA, the UPS systems are equipped with wheels as standard. *This makes the device easier to move when installing and during maintenance.*

### Front access for connections and operations

All electrical and communication connections and operations are carried out from the front of the device. *This facilitates operability, eliminating the need for side or rear access.*

## Management and communication

### Backup calculation

Estimation of remaining backup time in the event of a prolonged mains voltage outage. *Valuable information for decision making in the event of lengthy power outages.*

### Extensive control and monitoring options

Multilingual LCD display (6 languages) and multiple communication options. *This creates multiple communication channels for efficient and intelligent management.*



SLC CUBE3+ Display

### Android wireless link application

Access to the UPS measurements, alarms and operation from any Android smartphone or tablet through Bluetooth communication. *Ease of operation and management from remote devices.*



### Extensive communication options

Monitoring, management and shutdown software, as well as adapters and communication ports for any IT environment. *Integration of the UPS with the environment in which it operates.*

## Communications:

The communication elements that **SLC CUBE3+** incorporate as standard make them completely autonomous systems that can report on the status of the system and enable it to carry out pre-set actions.

- Relay interface.
- RS-232/485 port.
- 1 x free slot.
- MODBUS/SEC protocol: To facilitate communication with network management systems.
- 2 x connectors for parallel connection: No need for additional hardware for parallel/redundant operation.



SLC CUBE3+

## LOOKING AFTER THE ENVIRONMENT

### More than 80% recyclable materials

Once the UPS life cycle is completed, it is possible to recycle the majority of its components. *Environmentally friendly.*

### SLC Greenergy solution

A solution designed with criteria of maximum efficiency and energy savings. *Energy efficiency manifested as financial and CO<sub>2</sub> emission savings.*



### SLC Smart Solution

Designed under parameters of full integration and continuous adaptation to the environments in which it operates. *Greater adaptability to any operating environment.*



## TSS - Technical Support & Service

SALICRU puts at your disposal its **Technical Support & Service (TSS)** department with its extensive network of qualified technicians to provide support in the event of any eventuality or incident, regardless of location, day and time.

- **Start-up:** Cabling checks, start-up and training course.
- **Telephone technical support:** Technical support hotline.
- **Preventative/corrective intervention:** In-situ interventions to prevent possible faults (preventative) or repair faults (corrective).
- **Maintenance contracts:** Wide range of options and schedules.
- **Remote maintenance contracts:** 24/7 remote monitoring system.
- **Training courses:** To expand knowledge about the device.

### Applications:

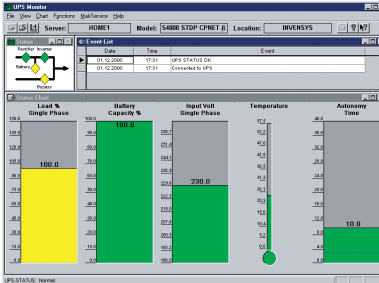
- **Data centres:** Critical elements in data availability (hosting, housing, parcel delivery, airline reservations, etc.) and the cost per hour of power failures are currently at astronomical levels.
- **IT networks:** Damage caused by power failures is much greater and more extensive than that caused by computer viruses.
- **Financial services:** The on-line and globalised operability of financial transactions requires continuous backup support to ensure uninterrupted operation in all areas.
- **Industrial processes:** Electrically complicated environments that require the added plus of electrical backup and the necessary flexibility to adapt to every circumstance.
- **Telecommunications:** It is vital to ensure power supply through the management of long backups that can provide coverage during systematic outages due to mains upgrading or maintenance.
- **Infrastructures:** Critical and essential installations for modern communities that must not stop functioning for any reason.



## Options:

- **Extended backup times:** For cases in which greater backup is required, additional battery cabinets are available.

- **Monitoring and management software:** For sending emails and SMS messages and performing scheduled UPS shutdowns, etc.



- **Shutdown software:** For computers in heterogeneous networks in which different operating systems coexist.

- **SICRES adapter for remote management:** Sicres is a web-based remote management platform for monitoring all system parameters, reporting on the status of the UPS and detecting possible anomalies with automatic alerts sent to the maintenance service.

- **Ethernet/SNMP adapter:** Enables management of the UPS without the need for an associated PC.

- **Android wireless link.**

- **1 x additional RS-232/485 serial port.**

- **Temperature and humidity sensors.**

- **External manual bypass.**

- **Frequency converter 50 to 60 Hz or 60 to 50 Hz.**

- **BACS II:** Monitoring, regulation and alarm system for lead batteries.

- **Common battery set for parallel systems.**

- **Dual-level charger for NiCd and gel batteries.**

- **Voltage input/output configurations up to 60 kVA single/single-phase, three/single-phase and single/three-phase.**

- **Isolation transformer:** For cases that require complete galvanic isolation between the UPS input and output.

## TECHNICAL SPECIFICATIONS

MODEL		SLC CUBE3+		
TECHNOLOGY		On-line, double conversion, HF, DSP control		
INPUT	Nominal voltage <sup>(1)</sup>	Single-phase 120 / 127 / 220 / 230 / 240 V Three-phase 3 x 208 / 3 x 220 / 3 x 380 / 3 x 400 / 3 x 415 V (3Ph+N)		
	Voltage margin	+15% / -20% (configurable)		
	Frequency	50 / 60 Hz		
	Total Harmonic Distortion (THDi)	7.5 ÷ 20 kVA	100% load: <1.5% / 50% load: <2.5% / 10% load: <6.0%	
		30 ÷ 80 kVA	100% load: <1.0% / 50% load: <2.0% / 10% load: <5.0%	
		100 ÷ 200 kVA	100% load: <1.5% / 50% load: <2.0% / 10% load: <6.0%	
Power factor	1 from 10% load			
Rectifier topology	Three-phase IGBT full wave, soft start, PFC, transformerless			
OUTPUT	Nominal voltage <sup>(1)</sup>	Single-phase 120 / 127 / 220 / 230 / 240 V Three-phase 3 x 208 / 3 x 220 / 3 x 380 / 3 x 400 / 3 x 415 V (3Ph+N)		
	Accuracy	State	± 1% steady / ± 2% dynamic	
		Response time	20 ms for load steps 0% ÷ 100% and voltage drop up to -5%	
	Frequency	Synchronised	50/60 Hz ±5 Hz (selectable)	
		Free running	50/60 Hz ±0.05%	
	Maximum synchronisation speed	From 1 Hz/s to 10 Hz/s (programmable)		
	Total Harmonic Distortion (THDv)	Linear load	<0.5%	
		Nonlinear load	<1.5% (EN-62040-3)	
	Output Power Factor	0.9		
	Admissible overload	125% for 10 min / 150% for 60 s		
	Admissible crest factor	>3:1		
Total efficiency in On-line mode	7.5÷60 kVA: 92.0%÷93.0% / 80÷200 kVA: 94.0%÷95.0%			
Efficiency in Smart Eco-mode	Up to 98,4%			
STATIC BYPASS	Type and activation criteria		Solid state, controlled by microprocessor	
	Transfer time	On-line mode	Nil	
		Smart Eco-mode	4 ms (typical)	
	Transfer to bypass	Immediate, for overloads exceeding 150%		
Retransfer	Automatic, after alarm deactivation			
MANUAL BYPASS	Type	Without interruption		
BATTERIES	Type (standard)	Lead acid, sealed, maintenance free		
	Charge voltage regulation	Batt-Watch		
COMMUNICATION	Ports	1 x RS232/RS485 + 1xUSB, with Modbus protocol		
	Interface to relays	4 x AC failure, bypass, low battery and general		
	Free slots	1, for SNMP/SICRES		
	Parallel connection	2 x connectors		
GENERAL	Operating temperature	0° C ÷ +40° C		
	Relative humidity	Up to 95%, non-condensing		
	Operating altitude	2,400 masl <sup>(3)</sup>		
	Acoustic noise at 1 metre	<52 dB(A) <sup>(2)</sup>		
STANDARDS	Safety	EN-62040-1-2; EN-60950-1		
	Electromagnetic Compatibility (EMC)	EN-62040-2		
	Operating	VFI-SS-111 according to EN 62040-3		
	Quality and Environmental Management	ISO 9001 and ISO 14001		

(1) Single-phase 120 / 127 V available up to 30 kVA inclusive and three-phase 3 x 208 / 3 x 220 V available up to 100 kVA inclusive.

(2) <65 dB(A) for 80 to 120 kVA models / <70 dB(A) for 160 and 200 kVA models.

(3) Power derating for higher altitudes up to 5000 masl.

Information subject to change without notice.

## RANGE

MODEL	POWER (kVA / kW)	N° CABINETS (UPS + BAT)	UPS DIMENSIONS (D x W x H mm)	WEIGHT (kg)	BAT DIMENSIONS (D x W x H mm)	WEIGHT (kg)
SLC-7.5-CUBE3+	7.5 / 6.75	1 + 0	775 x 450 x 1100	207	-	-
SLC-10-CUBE3+	10 / 9	1 + 0	775 x 450 x 1100	207	-	-
SLC-15-CUBE3+	15 / 13.5	1 + 0	775 x 450 x 1100	209	-	-
SLC-20-CUBE3+	20 / 18	1 + 0	775 x 450 x 1100	235	-	-
SLC-30-CUBE3+	30 / 27	1 + 0	775 x 450 x 1100	319	-	-
SLC-40-CUBE3+	40 / 36	1 + 0	775 x 450 x 1100	417	-	-
SLC-50-CUBE3+	50 / 45	1 + 1	775 x 450 x 1100	185	775 x 450 x 1100	321
SLC-60-CUBE3+	60 / 54	1 + 1	775 x 450 x 1100	185	775 x 450 x 1100	551
SLC-80-CUBE3+	80 / 72	1 + 1	880 x 590 x 1325	265	1050 x 650 x 1325	1020
SLC-100-CUBE3+	100 / 90	1 + 1	880 x 590 x 1325	290	1050 x 650 x 1325	1020
SLC-120-CUBE3+	120 / 108	1 + 1	880 x 590 x 1325	290	1050 x 650 x 1325	1020
SLC-160-CUBE3+	160 / 144	1 + 1	850 x 900 x 1905	540	850 x 1305 x 1905	1655
SLC-200-CUBE3+	200 / 180	1 + 1	850 x 900 x 1905	550	850 x 1305 x 1905	1690

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

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## DELEGATIONS and TECHNICAL SUPPORT & SERVICE (TSS)

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BARCELONA	PALMA DE MALLORCA
BILBAO	SAN SEBASTIÁN
CORUNNA	SANTA CRUZ DE TENERIFE
GIJÓN	SEVILLE
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CANARIA	VALLADOLID
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CUBA	ITALY	RUSSIA	AMERICA
CZECH REPUBLIC	JORDAN	SAUDI ARABIA	URUGUAY
DENMARK	KUWAIT	SINGAPORE	VENEZUELA
ECUADOR	LATVIA	SLOVAKIA	VIETNAM
EGYPT	LITHUANIA	SWEDEN	
ESTONIA	MALAYSIA	SWITZERLAND	

## Product Range

Uninterruptible Power Supplies – Lighting Flow Dimmer Stabilisers – Voltage Stabilisers & Power Line Conditioners – DC Power Systems – Static Inverters – Photovoltaic Inverters

