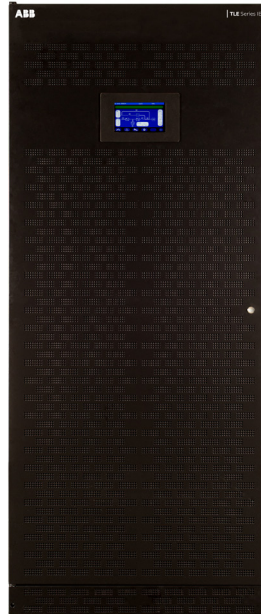


TLE Series IEC

Clean, reliable power for your critical load



ABB's TLE Series UPS 200-400 kW

The TLE Series is one of the best-performing three-phase UPS systems for providing critical power protection in a wide range of applications. The UPS operates in VFI (voltage frequency independent) mode and uses an innovative control algorithm with three-level converter technology to achieve very high efficiency levels. This innovative product provides best-in-class efficiency in both double conversion mode and in eBoost™

operating mode. The TLE Series UPS provides industry-leading reliability and efficiency, as well as clean power and unity power factor at the output. Reliability can be further increased by using ABB's unique RPA™ (redundant parallel architecture) technology to operate multiple units in parallel. Throughout their entire life cycle, all ABB UPS systems are fully supported by teams that provide training, application expertise and 24/7 preventive and corrective service.

High efficiency

- Efficiency of up to 96.6 percent in VFI mode and up to 98.3 percent in eBoost mode, reducing operational costs and minimizing energy losses
- The UPS ensures low current total harmonic distortion (THDi), ideal output voltage regulation and excellent dynamic response
- The UPS is optimized to provide high efficiency under part-load conditions

Low cost of ownership

- eBoost - available on 200-400 kW models - provides considerable additional energy cost savings over the lifetime of the UPS.
- ABB's RPA is a unique technology that allows a UPS to run in a parallel arrangement and with true redundancy by eliminating any single point of failure.

High performance and availability

- RPA for reliability, redundancy and scalability, offering up to six UPSs in parallel and power up to 2.4 MW
- Advanced control, monitoring and diagnostic capability, ensuring maximum performance of the UPS
- With unity output power factor, the TLE Series provides more output power.

Easy installation and configuration flexibility

- Intelligent energy management integrated operating mode maximizes efficiency at partial load by dynamically configuring the parallel UPS modules
- Variety of options for energy backup available, including lithium-ion batteries

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Product features

Clean input performance

The TLE Series IGBT-based rectifier and innovative control algorithm ensure an input THDi of less than 3 percent and allow a pure sinusoid to be drawn from the mains. This arrangement also provides UPS input power factor of 0.99.

Advantages

Reduction in the size of upfront equipment eg, emergency generators, cabling, and circuit breakers
No disturbance to nearby equipment; eliminates perturbation and outages on downstream electrical equipment, avoiding also any investigation and analysis costs arising from malfunction

THDu

A distorted output voltage waveform affects the proper functioning of the load's equipment. The TLE Series has very low output voltage THD, even with 100 percent unbalanced or 100 percent nonlinear loads connected.

TLE Series power capability

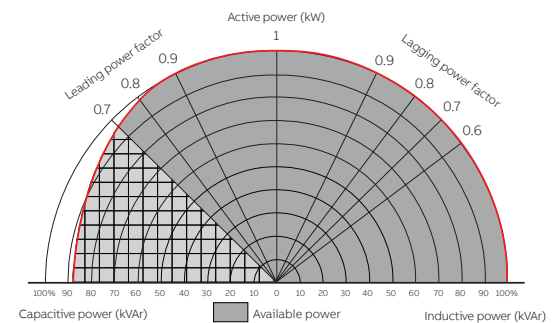
With unity output power factor, the TLE Series provides more output power. The output power factor diagram is symmetrical with respect to zero - no derating with any load. Suitable for modern power supply application with unity or capacitive power factor, crest factor up to 3:1

Overload capabilities

The TLE Series UPS has a robust inverter capable of delivering 150 percent overload for 30 secs and 125 percent overload for 1 min, thus ensuring power protection continuity for applications requiring start-up overcurrent and for temporary peak loads.

Short-circuit capability

The TLE Series inverter supplies 2.2 (for 100 ms) times the nominal current for ph-ph and ph-N/PE short circuits, respectively, ensuring the proper selectivity of the protection devices (fuses and breakers).



Energy efficiency is our focus

eBoost provides considerable additional energy cost savings over the lifetime of the UPS. The savings become particularly significant for large energy users, such as data centers. With eBoost, organizations can reduce energy costs without sacrificing system reliability. Further details:

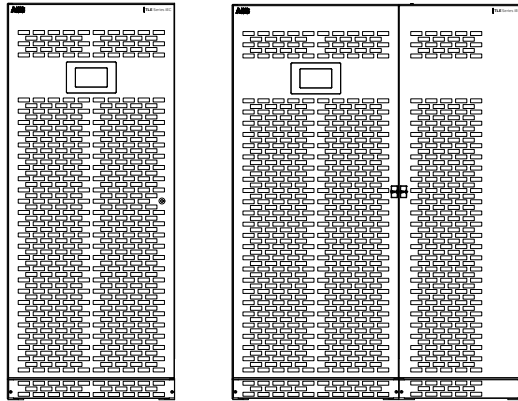
- η = high efficiency, up to 99 percent
- Boost = fast transfer to inverter: < 2 ms
- Input voltage range: ± 10 percent
- Input frequency range: ± 2 percent
- Compliant with ITI (CBEMA) curve during transient events
- Patented power conditioning/filtering design via bypass inductor and output transformer/capacitor while in eBoost mode
- Battery trickle charge in eBoost operating mode

Redundant parallel architecture (RPA)

RPA provides a scalable paralleling approach that reduces operating footprint and increases system reliability by eliminating the need for external paralleling equipment and cabinets (centralized bypass and master control). One UPS in the system intelligently takes the leadership role, while the other UPSs have access to all control parameters. If one UPS fails to operate, the load is automatically redistributed among the others.

TLE Series

Available models



Cabinet type	200 kW	400 kW
Dimensions w x h x d (mm)	820 x 1905 x 865	1420 x 1905 x 865
Weight in kg (without battery)	500	980

Key features

- eBoost, lithium batteries and RPA with intelligent energy management™ (IEM) further improve efficiency
- Input from mains conditioned to a sinusoid with 0.99 input power factor and <3 percent THDi
- Double conversion efficiency up to 96.6 percent
- Output power factor: 1
- True front access design
- Compact footprint
- Intuitive user interface
- Extremely low output voltage distortion
- Superior battery management

TLE Series

Technical specification

General data		
System power range	200 kW	400 kW
Active power / frame	200 kW	400 kW
Output power factor	1.0	
Topology	Online double conversion	
UPS type	Standalone tower	
Parallel configuration	Up to 6 units in parallel with redundant parallel architecture (RPA)	
Input		
Nominal input voltage	3 x 380/400/415 V + N	
Voltage tolerance	340-460 V	
Input distortion THDi	<3%	
Frequency	50/60 Hz	
Frequency range	45-66 Hz	
Power factor	>0.99	
Walk-in /soft start	Yes	
Output		
Rated output voltage	3 x 380/400/415 V + N	
Voltage tolerance	+/-1% static, +/-3% dynamic, +/-3% unbalanced load	
Voltage distortion THDU	<2.5% linear load, <5% nonlinear load (EN 62040)	
Frequency	50/60 Hz	
Overload capability (at 25 C environmental temperature)	150% 30 s, 125% 1 min, 100% 10 min, 105% continuous	
Output short-circuit capability	2.2*In (Ph-N/PE and Ph-Ph)	
Crest factor	>3:1	
Efficiency		
Overall efficiency	Up to 96.6%	Up to 96.6%
In eco-mode (eBoost) configuration*	Up to 98.3%	Up to 98.3%
Environment		
Storage temperature	UPS: -25° C +55° C	
Operating temperature	0-40° C	
Humidity	Max. 95% (non-condensing)	
Altitude configuration	Up to 1000 m with no de-rating, at 1500 m:-2.5%/ 2000 m:-5%/ 2500 m:-7.5%/ 3000 m:-10% (EN/IEC 62040-3)	
Communications		
HMI	Multilingual graphic display (LCD)	
Relay contractors	6 voltage-free contacts for 27 programmable alarms	
Input signals	EPO, Gen-ON (emergency power supply ON, n/o contact), 1 auxiliary signal (settable functionality)	
Communication ports	RS232, SNMP (Modbus IP, RS232, RS485 & BacNet IP)	
Electrical / mechanical		
Degree of protection	IP20	
Color	RAL 9005 (black)	
Cable entry	Top/bottom (top optional only for 160-200 kW)	
Back-feed protection	Built-in as standard	
Serviceability	Fully front serviceable	
Ventilation	From front to top	
Batteries		
Type	VRLA batteries, vented lead-acid batteries, wet batteries, NiCd, flywheel, Li-Ion	
DC floating voltage	545-600 V	
Standards		
Safety	IEC / EN 62040-1	
Electromagnetic compatibility (EMC)	IEC / EN 62040-2	
Performance	IEC / EN 62040-3	
Product certification	CE marking	
Manufacturing	ISO 9001	
Weight, dimensions		
Weight (kg)	500	980
Dimensions w x h x d (mm)	820 x 1905 x 865	1420 x 1905 x 865

* Optional feature for all available models