

# BOXER

IP PROTECTION SERIES

10-120 kVA

3:3  
PHASE

10-30 kVA

3:1  
PHASE

ONLINE UPS



MARINE



AIRPORT



HARSH ENVIRON.



DEFENCE



DATA CENTER



MEDICAL



TRANSPORT



INDUSTRY



EMERGENCY



UPS ONLINE



TOWER



POWER FACTOR



SERVICE

## HIGHLIGHTS

- IGBT PWM Rectifier & Inverter Technology
- Low Input Current THD (<3%)
- High Input Power Factor (>0.99)
- IP32 and Above Protection Class
- Isolation Transformer (Optional)

## DSP Power Factor Corrected IGBT Rectifier

- Equipped with its new IGBT rectifier BOXER Series keeps your critical loads protected while its space-saving compact design and front access for maintenance successfully reduce mean time to repair (MTTR).
- Thanks to the wide variety of accessories and options BOXER Series presents maximum flexibility advantage to users and optimizes total cost of ownership.



The BOXER Series is attested by Bureau Veritas with regard to performance (EN 62040-3)

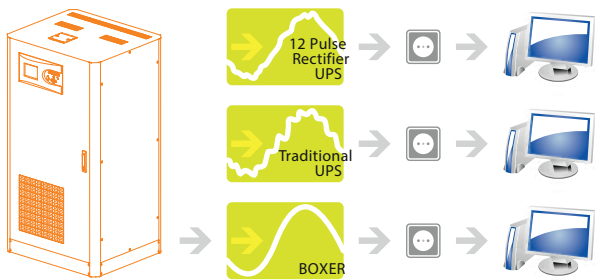


POWER  
FORLIFE

**Aytemiz**  
MAKELSAN®  
Uninterruptible Power Supplies/Generator

## High Performance & Low Total Cost of Ownership

- IGBT based power factor correction technology provides input power factor close to 1 ( $\geq 0,99$ ). The high input power leads to reduced electricity pay-out, minimizes cable, switchboard, fuse and generator requirements, thus reducing investment cost.
- Low input current total harmonic distortion (THDi) less than 3% helps to avoid the disturbance and expensive harmonic filters.
- Small footprint and easy maintenance.



	THD	Power Factor
BOXER with IGBT Rectifier	<3%	<0.99
Traditional UPS with Input Filter	<10%	<0.95
UPS without Input Filter	<25%	<0.85

## High Input Power Factor

- 0,99 Input power factor ensures clean and sinusoidal input current.
- The high input power leads to reduced electricity pay-out, minimizes cable, switchboard, fuse and generator requirements, thus reducing investment cost.

## Maximum Availability

- Parallel configuration up to 8 units per redundancy (N+1) and power increase.
- Loop connection helps the UPS system to continue the operation when the connection cable is interrupted.

## Standard Electrical Features

- Backfeed Protection
- Cold Start (Optional)
- Advanced Battery Management
- Short Circuit and Overload Protection
- Parallel Ready
- Redundant Power Supply
- Power Walk-in for Progressive Rectifier Start-up when the Mains is Restored.
- Battery Temperature Sensor
- Static & Manual Bypass Operation

## Advanced Communication Features

- 1500 Real Time Event Log with Detailed Parameters
- User Friendly Multilingual 320x240 Graphic Display Provides Operation Information
- Monitoring and Shutdown Software
- RS232 Serial and RS485 Ports
- 2 Communication Slots
- ModBUS RTU / ModBUS TCP (Optional)
- Remote Emergency Power Off (Optional)
- Remote Display Panel (Optional)
- Dry Contact (Optional)
- SNMP (Optional)
- ProfiBUS (Optional)

## Flexibility

- Temperature sensor for external battery cabinets for extended runtimes.
- External battery cabinets for different sizes of batteries to provide extended runtimes.
- Different sizes of 10-40kVA cabinets for larger capacity of internal batteries when long autonomy times are required.
- 3/1 Phase version is available for 10-30kVA power ratings
- Frequency converter mode.
- Isolation transformers to vary neutral connectivity in the event of separate power sources or for galvanic isolation between input and output.
- Compatible version with EN 50171 for supplying power to emergency lighting systems.

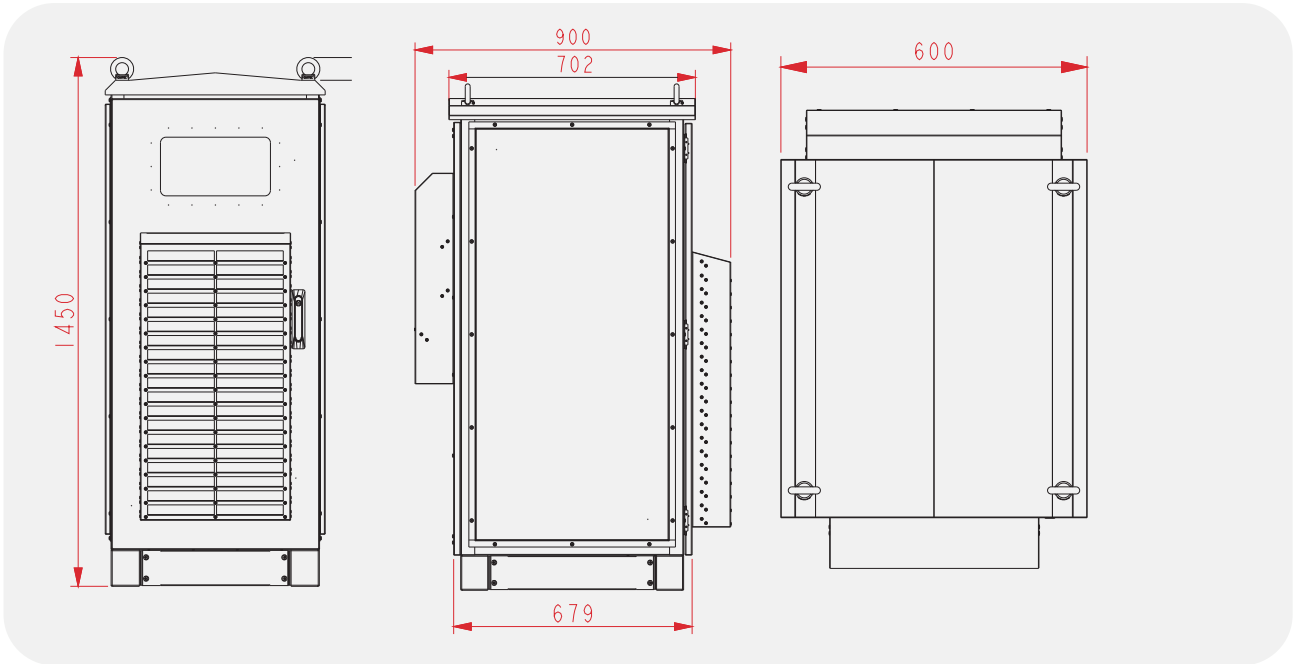
MODEL										
Capacity	10kVA	15kVA	20kVA	30kVA	40kVA	60kVA	80kVA	100kVA	120kVA	
Power Watt	9kW	13.5kW	18kW	27kW	36kW	54kW	72kW	90kW	108kW	
<b>INPUT</b>										
Nominal Voltage	380/400/415 VAC 3P+N (Optional 220/380 VAC -37% +22% 3P+N+PE)									
Voltage Tolerance	-20% +15%									
Frequency Tolerance	50-60 Hz ± 10% (Selectable)									
Power Factor	>0.99									
Total Harmonic Distortion	THDi <%3									
Connection	Front and Bottom Cable Entry									
<b>OUTPUT</b>										
Power Factor	0.9 (1 Optional)								0.9	
Nominal Voltage	380/400/415 VAC 3P+N									
Voltage Tolerance	Static ±1, Dynamic ±3									
Frequency Tolerance	50-60 Hz ±0,01% (Battery Mode)									
Output THD	Linear Load <1% / Non Linear Load <3%									
Crest Factor	3:1									
Overload Capacity*	At 125% Load 10min, At 150% Load 1min									
Efficiency (Online Mode)	Up to 92%									
Efficiency (Eco Mode)	Up to 99%									
<b>BYPASS</b>										
Nominal Voltage	380/400/415 VAC 3P+N									
Voltage Tolerance										
<b>ISOLATION TRANSFORMER (OP.)</b>	10 - 15 kVA			20 - 120 kVA						
Internal Isolation Transformer	Internal Isolation Transformer			External Isolation Transformer						
<b>BATTERY</b>										
Type	VRLA / GEL									
Quantity (12V DC VRLA)	62									
Charge Capacity	25% of Active Power (Nominal 0,1 C10, Adjustable)									
<b>ENVIRONMENTAL</b>										
Operating Temperature	For UPS 0°C/+40°C For Battery +15°C/+25°C									
Storage Temperature	For UPS -15°C/+45°C For Battery 0°C/+30°C									
Protection Class	IP32 Optional (Can be upgraded to IP54 up to 100 kVA.)									
Humidity	0-95% Without Condensation									
Altitude	<1000m Correction Factor 1, <2000m Correction Factor >0.92, <3000m Correction Factor >0.84									
Noise Level	<53dBA	<55dBA	<60dBA	<65dBA						
<b>COMMUNICATION</b>										
Communication Port	RS232 Standart, RS485 and SNMP Adapter Option									
<b>STANDARDS</b>										
Quality	ISO 9001, ISO 14001, ISO 45001, ISO 10002, CE, TSE, TSE-HYB									
Performance	EN62040-3 (VFI-SS-111, Bureau Veritas Certified)									
EMC/LVD	EN62040-2, EN62040-1, TS EN ISO/IEC 17025 Accredited Test Report									
<b>DIMENSIONS &amp; WEIGHT</b>										
	10kVA	15kVA	20kVA	30kVA	40kVA	60kVA	80kVA	100kVA	120kVA	
Cabinet Dimensions (mm)	Width	600						980		
	Depth	900						1065		
	Hight	1450						1928		
Net Weight (kg)	144			210			370	400	430	

\* under certain conditions.

3 Phase In / 1 Phase Out Version is Available. (10 to 30kVA)

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■ 10-60kVA



■ 80-120kVA

