

Technical specifications

ZenergiZe

ZBP 40-60

Voltage: 240 V Split phase

Frequency: 60HZ



General description

Modular energy storage system designed to meet the requirements of applications such as rental, events and telecom. Ideal for any metropolitan job or event. Based in lithium ion batteries, this portable product is ready to supply power, working in island mode or a hybrid solution together with a diesel generator. Giving flexibility to the final product with a list of options such as solar panel connection to increase its sustainability or cold weather kit for the most critical environments. A greener solution for a more efficient performance.

TECHNICAL INFORMATION

Nominal rated power (PF=0,8)	kW / kVA	32 / 40
Nominal energy storage capacity	kWh	76.8
Net energy stored*	kWh	71.42
Rated voltage (60Hz)	VAC	240V (Adjustable 190 - 256)
Battery system voltage	VDC	48
Nominal rated current	A	77
Passthrough	A	200
Depth of discharge	%	90%
Autonomy at rated power (90%)	h	C1 - 1.5 hour
Recharging time (@DoD%)	h	2.6
THDu	%	
THDi	%	
Parking mode recharging (@DoD%)	h	62
Cell chemistry		Lithium Ion phosphate LiFePO4
Operating temperature**	°C / F	-10 to 50 / 14 to 122
Dimensions (L x W x H)	in	57" x 49" x 74"
Weight	lbs	3174
Sound pressure level (1 meter)	dB(A)	<70

The standard reference conditions are: 25 °C, 100 kPa and 30% relative humidity. For nominal values efficiencies, deratings and DoD are not considered and tested parameter related to PF=1. *Due to use this may decrease

**Options for Cold weather might be needed

Batteries

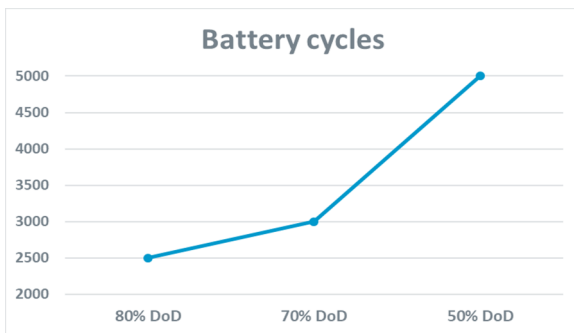
Lithium-iron-phosphate (LiFePO₄ or LFP) is the safest of its family. Also does not need to be fully charged to perform correctly. Service life even slightly improves in case of partial charge instead of a full charge. This is a major advantage, in addition, its wide operating temperature range, excellent cycling performance, low internal resistance and high efficiency.

LFP is therefore the chemistry of choice for very demanding applications

Quantity	12	Efficiency %	92%
Nominal voltage (V)	48	Min Charge temperature (°C/F)	-8 / 17.6
Nominal capacity (Wh)	4800	Overcurrent capability	up to 2 x Nominal current
Maximum DoD %	95%	End of discharge volt (V)	11
Cycles	check chart	IP	22

**Option for cold weather needed*

Nominal values for standard conditions and performance



Terms:

SOC%: State of Charge, measures the remaining energy content in a battery

SOH%: State of Health, ratio of the recharging capacity, compared to a new battery

DOD%: Depth of discharge, defines the energy consumed in the battery

Cycle: Complete charge and discharge of its usable energy stored (DoD%)

Inverter

Power electronics that combines inverter and charger. It is needed to transform the energy supply from batteries (DC) to the loads (AC) with or without additional sources as diesel generators or grid.

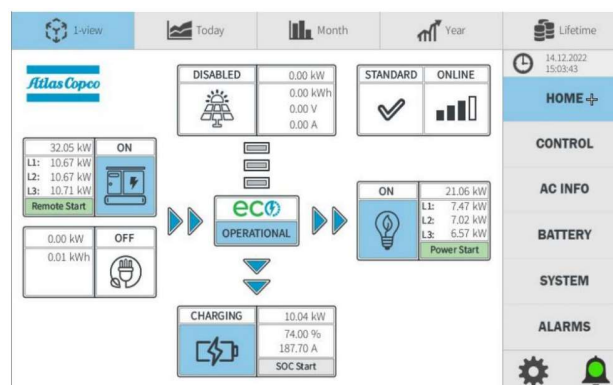
Quantity	4	Efficiency %	96%
Input voltage range (V DC)	38 - 66	Charger (A)	200
Individual nominal power (kVA)	5	Storage mode (Vdc)	53
Overload capability (kW)	up to 2 x Nominal power	Current starter battery (A)	4

Nominal values for standard conditions and performance

Controller

The ECO controller provides intuitive control and monitoring for all batteries and power electronics integrated in the battery pack. A highly customizable start/stop system. Use state of charge, voltage, load and other parameters. Define a special set of rules for quiet times, and optionally a monthly test run. Can be connected to internet with an Ethernet cable and via Wi-Fi (as option).

Power supply (V DC)	8 - 70	Internal data storage capacity (h)	48
Communication ports	2 x (VE.Direct ports, RJ45, USB)		
Operating temperature °C	-20 to 50°C / -4 to 122F		



Performance and applications

This battery pack is design to work in island mode, ideal for remote applications, events or night loads demand. Zero noise and emission are the main benefits you will find and a long running performance. As hybrid solution with a diesel generator is ideal to solve low loads problems or cover peak demands, fuel saving are an evidence of its sustainability.

Here we can see a load profile example where ZBP can work in Island during the night and then helping the generator covering peaks while gets recharged when batteries are not needed:



ISLAND MODE			HYBRID MODE	
Discharge autonomy 75% nominal power (h)	1.9		Max passthrough current (A)	200.0
Discharge autonomy 50% nominal power (h)	2.9		Recommended generator size (kVA)	25-125
Discharge autonomy 25% nominal power (h)	5.8		Max outlet hybrid system (A)	277
Considering PF=1 & Useable energy 90% (DOD)			Generator stop criteria: loads below 30% of its nominal power	

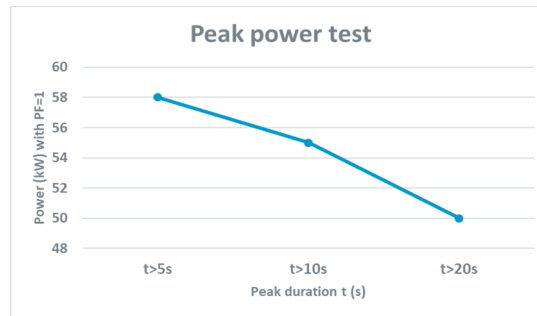
Derating table

As with the generators, temperature and altitude can affect the nominal output of the machinery with a loss of efficient. Please check here the %

Cont-output %	Altitude (m)				
	0	1000	1500	3000	4500
Temperature °C					
0	100	100	100	95	95
25	100	88	88	80	70
30	90	80	80	70	62
35	80	70	62	48	36
40	70	62	48	36	0
45	62	48	36	0	0
50	48	36	0	0	0
55	36	0	0	0	0

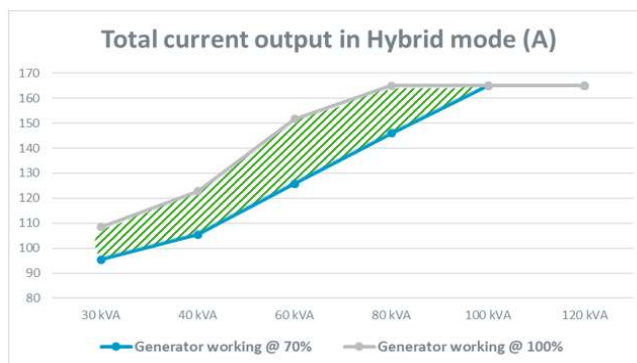
Peak power

The system has a overloading capability up to twice their nominal values, although considering the loss of the efficiency we can conclude the following values tested



Current output in Hybrid mode

There exist some limitations while working in hybrid mode as, socket size, battery pack passthrough...so here is a graph with the maximum current output for different working points of the generator (70 and 100%)



Features

The ZenergiZe delivers zero CO2 emissions, zero noise, and have zero maintenance needs, enabling operators to minimize environmental impact . A greener solution for a more efficient performance.

BATTERY TECHNOLOGY		CONNECTIVITY	
Zero emissions	High energy density	Smart load management with the Energy management system (EMS)	
Overcurrent capability	Fuel consumption savings	Configurable parameters	Parking mode
Zero maintenance	40.000 hours lifespan	Alarms and warnings	Remote monitoring
Battery management included (BMS)			

CANOPY		POWER AND CONTROL CUBICLE	
Galvanized skid	16 units in a 40ft truck	Earth pin	Curve C breakers
Footprint 1,5 sqm	Sling guides	IP54 protection	
Integrated lifting beam		Emergency stop	
Removable panels		TN-S	



Options

To ensure the most flexible and versatile product to work in any application and any hybrid system components here some of the available options for this models

Sockets

		ZBP 40-60/75
IN	Parking Mode NEMA L6-20P	1
	Terminal board 3ph	1
	Cam Locks 3ph	1
	MC4 solar charger (Option)	3
OUT	Terminal board 3ph	1
	Cam Locks	1
	Socket NEMA 5-20R	4
	CS6364 (California style) 125/250V 50A	2

Others

ELECTRICAL		MECHANICAL	
Solar charger + PV connectors	250 V / 85 A + 3 Pair MC4	Color	White and grey
Cold weather kit	Option	Trailer	Option
GPS + GSM 3G or WIFI	Included		