



ELHIM ISKRA JSC



BULGARIA, 4400 Pazardjik, 9, Iskra Str.
Executive Manager:
tel.:+359 34 444548, fax:+359 34 443438
Sales Dept.:
tel.:+359 34 441751, fax:+359 34 444206
e-mail: office@elhim-iskra.com
www.elhim-iskra.com



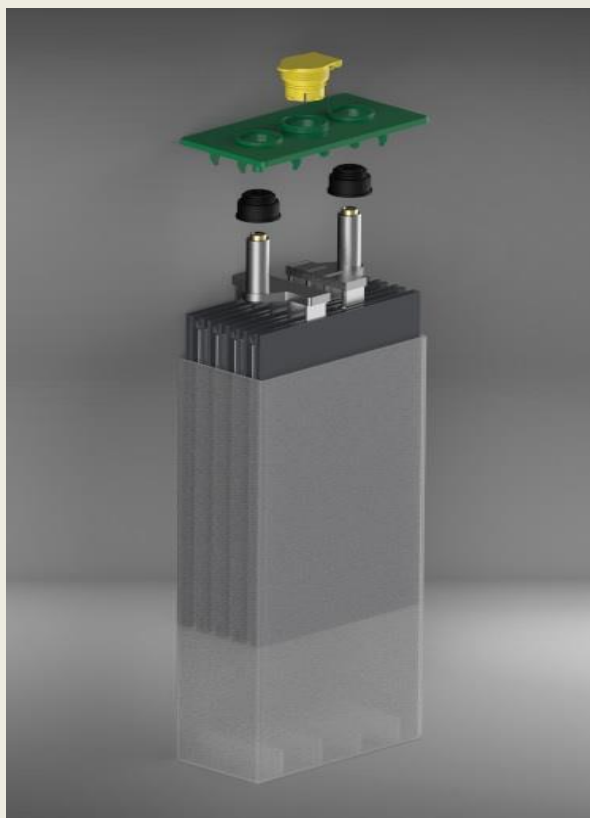
Reserve Power ES OPzS Batteries

Advantages

- Long life under cycling use
- Extended topping-up intervals
- Maximum charging efficiency
- Minimal positive growth
- Improved safety against accidental contacts

Main Applications

- Renewable energy
- Energy storage
- Emergency power
- Railways
- Telecommunications

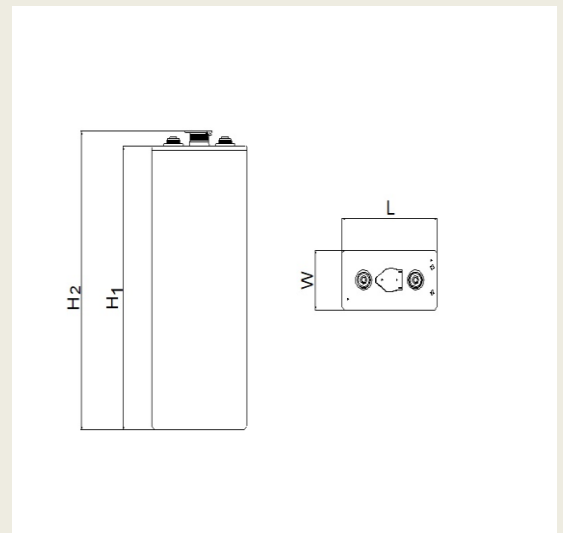


Certified Quality

- Manufactured at Elhim-Iskra production facilities, certified with ISO 9001
- Compliant with IEC 61427 requirements for photovoltaic energy systems
- “Long Life” according to Eurobat classification
- Fully compliant with IEC 60896-11 requirements for vented lead-acid batteries
- Compliant with the safety requirements of EN 50272-2 for stationary batteries

Product Range

ES OPzS model	Capacity (Ah) at 20°C				Dimensions (mm)				Weight (kg)		Internal Resistance Ri (mOhm)	Short Circuit Current Isc (kA)
	C120 1.85V	C48 1.80V	C24 1.80V	C10 1.80V	Length (L)	Width (W)	Height 1 (H1)	Height 2 (H2)	Dry	Wet		
ES 2OPzS215	215	200	175	145	198	65	410	435	7,50	11,70	1,75	1,15
ES 3OPzS310	310	290	255	215	198	83	410	435	10,20	15,80	1,20	1,70
ES 3OPzS390	390	365	325	270	198	83	480	505	12,30	18,60	1,02	1,95
ES 4OPzS500	500	470	420	345	198	101	480	505	15,40	23,10	0,75	2,60
ES 5OPzS605	605	565	505	420	198	119	480	505	18,90	28,20	0,65	3,15
ES 4OPzS720	720	685	620	515	198	101	615	640	22,00	32,00	0,62	3,18
ES 5OPzS860	860	820	745	620	198	119	615	640	26,00	37,20	0,52	3,90
ES 6OPzS965	965	930	845	710	198	137	615	640	30,50	43,80	0,45	4,55
ES 7OPzS1270	1270	1205	1085	900	198	173	615	640	35,50	51,50	0,40	5,20
ES 8OPzS1380	1380	1315	1185	990	198	191	615	640	40,00	58,30	0,35	5,80



Non portable metallic trays



Technical Features

Specification

Positive plates	Tubular plates with special low-antimony lead alloy ($\leq 2,0\%$ Sb).
Negative plates	Pasted negative plates of grid design with optimized low-antimony lead alloy ($\leq 2,0\%$ Sb).
Separators	Low resistance, microporous.
Electrolyte	Sulfuric acid of $1,24 \pm 0,01$ kg/l
Container, lid material	Polypropylene (translucent for the container) with lid welding, trimming and tightness control.
Poles	Premium design with insert and rubber seal in the lid for hardness and Poles acid resistance. M10 brass inlay. Impedance measurements possible.
Connectors	Flexible insulated copper cable, with cross-section of 35, 50, or 70 mm ²
Vents	*Flame arresting design (optional).

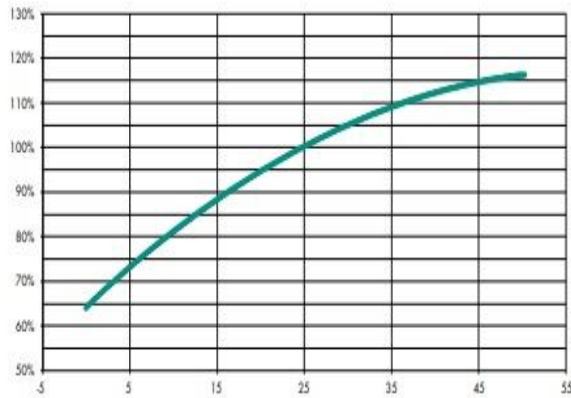
Operation

Number of cycles	2000 cycles for 60% DoD at 20°C.
Design life	18 years (stand-by float, 20°C).
Operating temperature	Recommended 15°C to 35°C. Max: 50°C.
Storage Time	Maximum shelf life up to 3 months at 20°C, 2 months at 30°C or 1 month at 40°C.
Self discharge rate	Approx. 2.5% per month at 20°C.

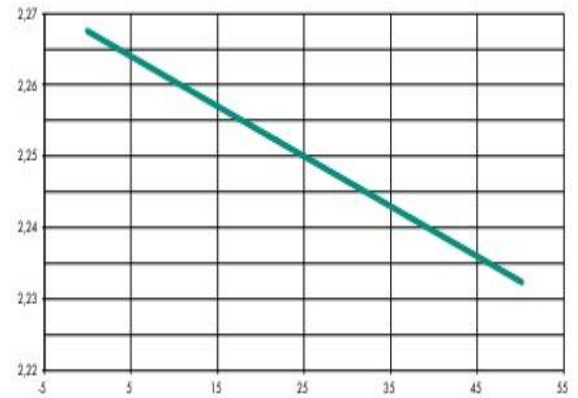
Operation Parameters

- Float Voltage (Vpc) 2.23 to 2.25 Vpc
- Max Float Current (A) 0.15 C10
- Boost Voltage (Vpc) 2.35 to 2.45 Vpc
- Max Boost Current (A) 0.15 C10
- Operating Temperature -10°C to +50°C
- Self Discharge <3% /month at 20°C
- Torque setting 25 ± 1 Nm (bolts on connections)

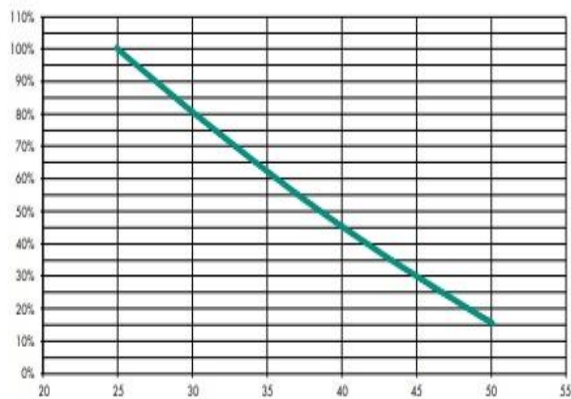
PERFORMANCE Capacity vs Temperature (°C)



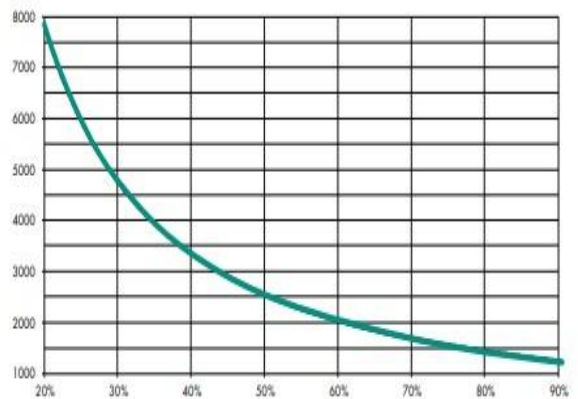
TEMPERATURE COMPENSATION Float Voltage vs Temperature (°C)



THERMAL DEGRADATION Lifetime vs Temperature (°C)



LIFECYCLES No. of Cycles vs D.o.D. (% C10)



*ELHIM-ISKRA reserves the right to carry out at any time any kind of modification to the technical data, to the manufacturing procedures and/or top the range of products, without giving previous written information

Maintenance

EVERY 6 MONTH

- ✓ Check battery voltage pilot block voltage, temperature

EVERY 12 MONTH

- ✓ Take down battery voltage block voltage, temperature