



Naps Batteries for Industrial PV Systems

Valve-Regulated Gel Type Tubular Plate Single Cells Type Secura OPzV

'Sealed' (valve-regulated) tubular plate 2 Volt lead-acid single cells with gelled electrolyte are ideal for use in larger industrial renewable energy systems where regular additions of water to batteries are not possible or inconvenient.

Secura OPzV single cells are 2V tubular plate lead-acid valve-regulated units with nominal capacities in the range 336 to 4824 Ah (C_{120}). They are normally supplied as complete batteries of the required voltage and capacity, including necessary cables and interconnects. Optionally, various rack configurations are available for complete battery systems.

Featuring the highest standards of construction, Secura OPzV cells combine the excellent corrosion resistance and cycling capability of the tubular positive plate construction with a lead-calcium-tin alloy. The gelled acid means no water additions are needed throughout the life of the battery, reducing maintenance requirements to a simple periodic check of cell voltages and temperatures, plus simple cleaning and checking of interconnects.

Secura OPzV single cells Main Technical Characteristics

- High capacity and reliability is achieved with the use of proven materials and design.
- Gelled acid provides the same water reserve as an open tubular cell design, and ensures good heat conduction from the plates to the surroundings.
- Tubular positive plates with a woven polyester gauntlet combine excellent resistance to grid corrosion and good cycle life.
- Thick pasted negative plates with long life expander ensure a long service life.
- Lead-calcium-tin alloys in both positive and negative plates reduce self-discharge and corrosion throughout the lifetime of the battery.
- Microporous separator ensures electrical isolation between the plates and good retention of the active materials.
- The 1.24 acid density ensures a long service life.
- Acid gelled with fumed silica reduces stratification to a minimum.
- High impact ABS container and lid (grey), UL-94 rating HB as standard. Option: UL-94 rating V-0.
- Gas- and acid-tight pole bush with rubber ring seal allows for trouble-free positive plate growth during ageing.
- Screw terminals (M10 brass insert) allow easy interconnections using flexible insulated copper cables or solid copper connectors. Interconnect protection IP 25 (DIN 40050), touch protected to VBG 4.
- Measurement leads can be connected using special hollow terminal screws. Contact resistance measurement point also available on terminal.
- Pressure relief valve with flame arrestor assures operational safety. Opens at approximately 120 mbar and closes at approximately 50 mbar.
- Initial capacity 100% of nominal value.
- Very good recovery capability from deep discharge.

Information last updated 21st August 2008

Specifications may change without notice due to Naps continuous product improvement policy.
Please check actual specifications before ordering.

Naps Secura OPzV single cells Technical Data

name	Capacity* (Ah)				Dimensions			Weight
	10h	72h	120h	240h	L mm	W mm	H mm	kg
4OPzV200	239	316	336	350	105	208	420	20
5OPzV250	287	378	400	417	126	208	420	23
6OPzV300	359	473	504	525	147	208	420	28.8
5OPzV350	444	573	594	612	126	208	535	32
6OPzV420	533	688	712	734	147	208	535	36.7
7OPzV490	598	770	794	816	168	208	535	41
6OPzV600	701	914	942	981	147	208	710	52
8OPzV800	903	1173	1212	1257	215	193	710	68.9
10OPzV1000	1160	1512	1560	1620	215	235	710	84.6
12OPzV1200	1360	1764	1824	1896	215	277	710	99.6
12OPzV1500	1650	2160	2232	2296	215	277	855	115
16OPzV2000	2250	2952	3048	3144	215	400	815	156.2
20OPzV2500	2820	3708	3828	3936	215	490	815	195
24OPzV3000	3440	4521	4668	4824	215	580	815	236
26OPzV3250	3570	4680	4824	4968	215	580	815	239

* Capacity to 1.80V/cell at 20°C

Capacity (C₁₀₀) at low temperature

20°C	15°C	10°C	5°C	0°C	-5°C	-10°C	-20°C
100%	97%	93%	89%	85%	80%	74%	62%

Operating temperature: -20°C to 45°C. Optimum range is 10°C to 30°C. Short-time high temperature exposure in range 45°C to 55°C.

Self discharge rate: Approx 2% per month at 20°C

Maximum recommended depth of discharge: 80%

Standards

Test standards: IEC 60896-21, IEC 61427

Safety standard, ventilation: EN 50272-2

Transport: non-hazardous goods for road transport

Estimation of service life in PV systems

average working temperature °C	years	if daily cycling less than
20	16	12%
25	11	17%
30	8	25%
35	6	35%
40	4	49%

of C₁₀

if daily cycling is greater than above limits lifetime will be reduced

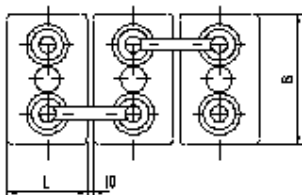
Service life on float charge (not PV)

average working temperature °C	years
20	20
30	10
40	5

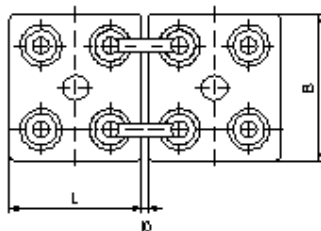
Cycle Life

1500 cycles under IEC 60896-2 conditions, equivalent to 60% of nominal C₁₀ per cycle (also to ca 80% of C₅). This cycle life is only applicable at a constant 20°C and full recharge on each cycle.

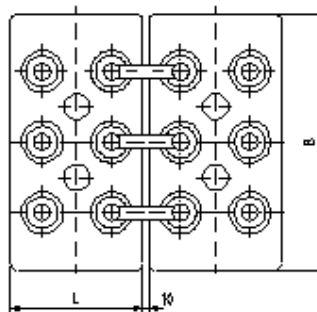
4 OPzV 200 to 6 OPzV 600



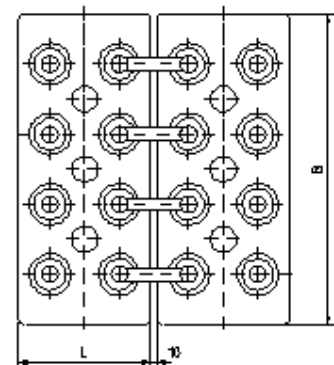
8 OPzV 800 to 12 OPzV 1500



16 OPzV 2000



20 OPzV 2500 to 26 OPzV 3250



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