



Main Technical Characteristics

- 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 and halogen-free container and lid (SAN).
- Gas- and acid-tight pole bush with double O ring seal allows for trouble-free positive plate growth during ageing.
- Screw terminals (M10 brass insert) allow easy interconnections using flexible insulated copper cables, with cross-section of 35, 50, 70, or 95 mm². Interconnect protection IP 25 (DIN 40050), touch protected to VBG 4.
- Pressure relief valve with flame arrestor assures operational safety. Opens at approximately 100 mbar and closes at approximately 50 mbar.
- Initial capacity 100% of nominal value.
- Very good recovery capability from deep discharge.

Naps Photovoltaic Batteries for Industrial 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 318 to 4460 Ah (C₁₀₀). They are normally supplied as fully assembled batteries of the required voltage and capacity including necessary cables and interconnects. Optionally, a wide variety of rack configurations is available for complete battery systems.

Featuring the highest standards of construction, Secura OPzV cells feature 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.

- High capacity and reliability is achieved with the use of proven materials and design.
- Long lifetime is assured by the tubular plate construction.
- No water additions during service life.
- Gelled acid provides the same water reserve as an open tubular cell design, and ensures good heat conduction from the plates to the surroundings.
- Double O ring pole seal allows for plate growth as the battery ages.
- Safe operation due to minimal production of hydrogen gas.
- Safe and economical transportation, due to lack of liquid acid.

Naps Secura OPzV Single Cells Technical Data

Name	Capacity* (Ah)					Dimensions			Weight Kg
	10h	50h	100h	200h	300h	L mm	W mm	H mm	
40PzV200	231	289	318	333	337	105	208	420	19.5
50PzV250	289	361	397	416	422	126	208	420	23.5
60PzV300	346	433	477	498	505	147	208	420	28
50PzV350	415	519	571	598	606	126	208	535	31
60PzV420	497	621	684	716	726	147	208	535	36.5
70PzV490	580	725	798	835	847	168	208	535	42
60PzV600	708	885	975	1020	1034	147	208	710	50
80PzV800	944	1180	1300	1359	1378	215	193	710	68
100PzV1000	1180	1475	1600	1699	1723	215	235	710	82
120PzV1200	1420	1775	1955	2045	2073	215	277	710	97
120PzV1500	1620	2025	2230	2333	2365	215	277	855	120
160PzV2000	2160	2700	2973	3110	3154	215	400	815	160
200PzV2500	2700	3375	3717	3888	3942	215	490	815	200
240PzV3000	3240	4050	4460	4666	4730	215	580	815	240

* Initial 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

Conforms to: DIN 40 742 part 1

Tested to: IEC 896 - 2

Safety standard: VDE 0510 part 2

Transport: non-hazardous goods for road transport

Estimation of service life in photovoltaic systems

average working temperature °C	years	if daily cycling less than
20	12	13%
25	8	19%
30	6	26%
35	4	37%
40	3	53%

of C₁₀

If daily cycling is greater than above limits lifetime will be reduced.

Service life of float charge (not photovoltaics)

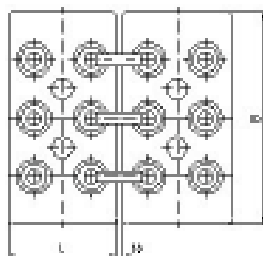
average working temperature °C	years
20	>15
30	>7.5
40	ca 4

Cycle life

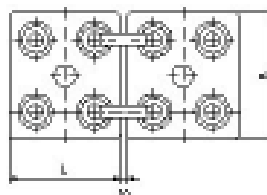
1200 cycles under IEC 896-1 conditions, equivalent to 60% of nominal C₁₀ per cycle. This cycle life is only applicable at a constant 20°C and full recharge on each cycle.



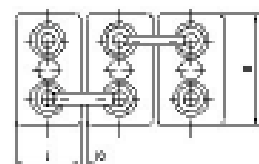
20 OPzV 2500 to 24 OPzV 3000



16 OPzV 2000



8 OPzV 800 to 12 OPzV 1500



OPzV 200 to 6 OPzV 600