



OP_zV STANDBY batteries

 **SUNLIGHT**
creating energy

OPzV batteries introduction

SUNLIGHT OPzV range are valve regulated lead acid cells that use a proven combination of gel and tubular plate technology to offer a very high level of reliability and performance. They are designed and manufactured according to DIN standards, with capacities in excess of the DIN standard values. They are characterized by their long float and cycle life in standby applications. SUNLIGHT OPzV cells due to their suitability for a very wide range of applications are a really flexible solution to the market's requirements.

Technical Features

- Compliant to DIN 40742 and EN 50272-2
- Optimized plate design delivers capacities exceeding DIN nominal values
- Excellent cyclic and deep discharge performance
- Protected pole with PP
- Special design pole for high current applications
- "Long life" Eurobat classification
- Maintenance free Valve Regulated Design with integral flame arrestor
- Vertical and horizontal placement enable space optimization

Applications

- Telecommunications
- Control and monitoring systems in power plants and distribution stations
- Railway, airport and seaport signalling
- Emergency lighting
- Data processing systems
- Automation
- UPS
- Renewable energy systems (solar, wind, hydro)



OPzV batteries cell construction



Positive Plates

SUNLIGHT OPzV cells are manufactured with tubular positive plates. The tubular plate design is well proven and known for its high reliability and long service life in float charging operation. The plate composition is of Lead Calcium Tin Alloy.

Negative Plates

SUNLIGHT negative plates are manufactured with grid design. In this case a lead calcium tin alloy is used.

Separators

The separators are manufactured from microporous PVC, a material of high porosity, low electrical resistance and high acid resistance. The separators are permeable and allow the migration of ions during the charging and discharging process of the battery. Thus the solid particle migration between the plates is prevented and any short circuit avoided.

Connectors

A wide variety of flexible and solid copper connectors are used for the connection of the cells. Voltage measurements are permissible due to bolt-on type design.

Vent Plugs

The Vent Plug is a one way pressure release valve with an integral flame arrestor.

The Electrolyte

The Electrolyte of the cell is sulfuric acid, immobilized as gel.

Cell Containers and Covers

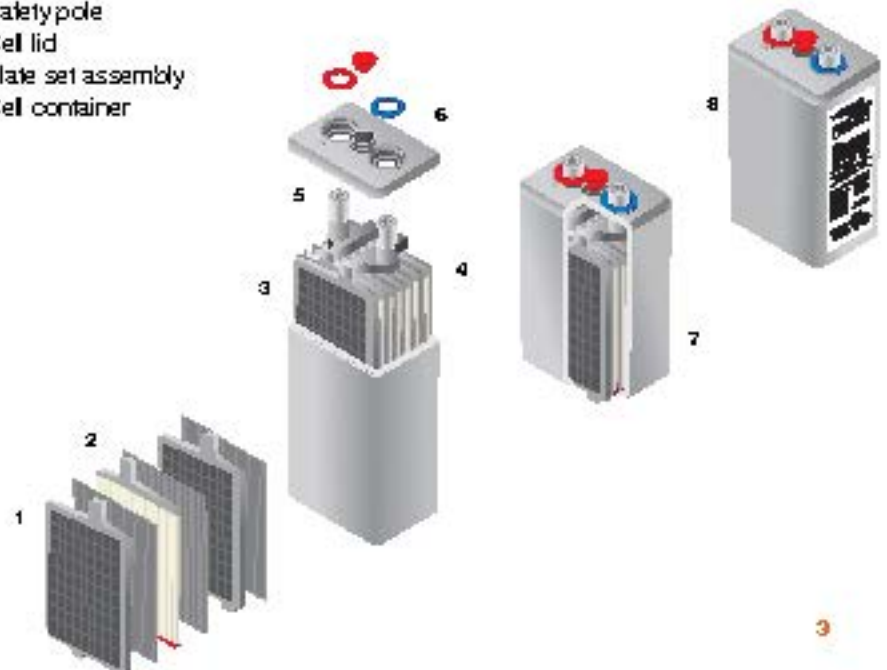
Acrylonitrile-butadiene-styrene copolymer (ABS) is used on the lids and containers of SUNLIGHT OPzV cells. ABS provides a robust and durable solution on the design of the cells.

Poles

Specially designed safety poles, effectively prevent acid leakage and pillar corrosion thus increasing the lifetime of the battery.

Mechanical Construction

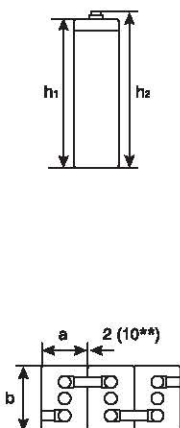
1. Negative plate
2. Tubular positive plate
3. Set of tubular plates with terminal bridge
4. Set of negative grid plates with terminal bridge
5. Safety pole
6. Cell lid
7. Plate set assembly
8. Cell container



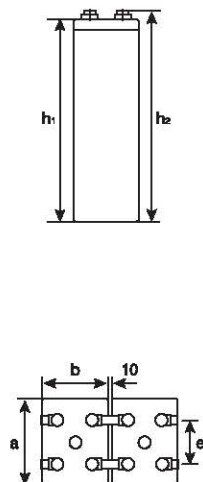
Technical Characteristics

Type Designation	Positive plate		Capacity (Ah) C_{10} V/cell 1.8 at 20 °C	Cell dimensions in mm					Weight (kg)	Short Circuit Current (A)	Internal Resistance (mOhm)
	No	Size (Ah)		a	b	h1	h2	e			
2V Cells	No	Size (Ah)		a	b	h1	h2	e			
4 OPzV 200	4	50	213	103	206	354	378	-	19.5	2010	1.02
5 OPzV 250	5		267	124	206	354	378	-	23.5	2470	0.83
6 OPzV 300	6		319	145	206	354	378	-	28.0	2930	0.70
5 OPzV 350	5	70	383	124	206	471	495	-	31.0	3080	0.66
6 OPzV 420	6		453	145	206	471	495	-	36.5	3880	0.53
7 OPzV 490	7		520	166	206	471	495	-	42.0	4080	0.50
6 OPzV 600	6	100	654	145	206	643	667	-	50.0	4170	0.49
8 OPzV 800	8		891	191	210	644	668	80	68.0	5840	0.35
10 OPzV 1000	10		1105	233	210	646	670	110	82.0	7170	0.29
12 OPzV 1200	12	1340	275	210	645	669	140	97.0	8540	0.24	
12 OPzV 1500	12	125	1611	275	210	796	820	140	120.0	9360	0.22
16 OPzV 2000	16		2148	399	214	771	795	2x110	165.0	12200	0.17
20 OPzV 2500	20		2687	487	212	769	793	3x110	200.0	15190	0.13
24 OPzV 3000	24		3326	576	212	769	793	3x140	240.0	18300	0.11

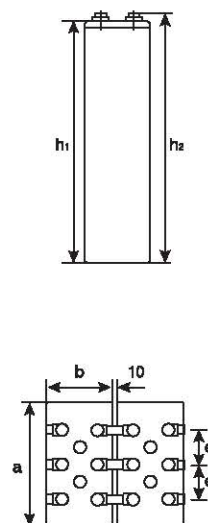
4 OPzV 200 -
6 OPzV 600



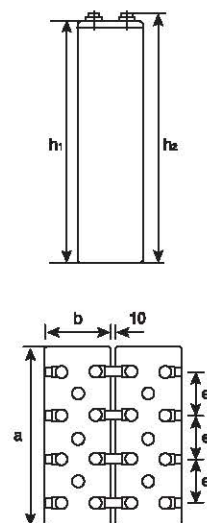
8 OPzV 800 -
12 OPzV 1500



16 OPzV 2000



20 OPzV 2500 -
24 OPzV 3000



Discharge Table in Amperes

End voltage 1.90 V/cell

Type	10 min	15 min	30 min	45 min	1 h	2 h	3 h	4 h	5 h	6 h	7 h	8 h	9 h	10 h	12 h	20 h
2V-4 OPzV 200	117.1	110.3	93.5	81.1	71.9	50.2	39.1	32.2	27.6	24.2	21.6	19.6	17.9	16.5	14.3	9.4
2V-5 OPzV 250	143.7	135.9	116.0	101.0	89.8	62.8	48.9	40.4	34.6	30.3	27.1	24.5	22.4	20.6	17.9	11.7
2V-6 OPzV 300	169.0	159.7	136.4	119.0	105.9	74.3	58.1	48.0	41.1	36.1	32.3	29.2	26.7	24.6	21.3	14.1
2V-5 OPzV 350	189.3	180.2	156.0	137.6	123.2	88.1	69.4	57.7	49.7	43.8	39.2	35.6	32.5	30.1	26.1	17.3
2V-6 OPzV 420	235.8	223.2	191.3	167.5	149.4	105.8	83.1	68.9	59.3	52.1	46.6	42.3	38.6	35.7	31.0	20.5
2V-7 OPzV 490	251.7	240.0	208.6	184.2	165.1	118.4	93.6	78.0	67.1	59.1	53.0	48.1	44.1	40.7	35.4	23.4
2V-6 OPzV 600	252.0	245.3	222.1	201.6	184.5	138.3	111.5	94.1	81.6	72.3	65.1	59.4	54.5	50.5	44.0	29.4
2V-8 OPzV 800	350.0	348.2	313.7	283.5	258.4	191.9	154.1	129.4	112.2	99.2	89.1	81.3	74.3	69.0	60.0	40.0
2V-10 OPzV 1000	433.4	420.7	379.6	344.0	314.2	234.7	189.2	159.4	138.4	122.5	110.2	100.6	92.2	85.5	74.5	49.8
2V-12 OPzV 1200	500.7	486.1	442.0	402.6	369.4	278.8	225.8	191.0	166.1	147.3	132.7	121.3	111.2	103.3	90.1	60.4
2V-12 OPzV 1500	548.0	534.2	489.6	448.7	413.8	315.9	257.3	218.1	190.2	168.9	152.7	138.8	128.0	118.1	103.4	69.4
2V-16 OPzV 2000	715.0	700.2	642.3	589.4	543.6	416.7	340.4	289.3	252.6	224.6	203.3	184.8	170.6	157.6	138.0	92.9
2V-20 OPzV 2500	909.8	886.9	811.9	743.7	685.6	524.2	427.5	362.9	316.8	281.6	254.7	231.6	213.7	197.3	172.8	116.2
2V-24 OPzV 3000	1150.9	1123.4	1029.9	945.4	871.7	665.1	541.7	459.9	400.4	356.0	321.3	293.1	269.4	249.7	218.2	146.1

End voltage 1.87 V/cell

Type	10 min	15 min	30 min	45 min	1 h	2 h	3 h	4 h	5 h	6 h	7 h	8 h	9 h	10 h	12 h	20 h
2V-4 OPzV 200	138.8	129.7	108.3	93.5	82.5	57.1	44.2	36.3	31.1	27.2	24.2	21.9	20.1	18.4	15.9	10.5
2V-5 OPzV 250	170.8	160.2	134.8	116.8	103.2	71.6	55.4	45.6	38.9	34.1	30.3	27.4	25.1	23.1	19.9	13.2
2V-6 OPzV 300	200.7	188.3	158.6	137.4	121.5	84.6	65.7	54.1	46.3	40.5	36.2	32.7	30.0	27.5	23.8	15.7
2V-5 OPzV 350	225.3	212.8	181.6	158.7	141.3	100.1	78.4	65.0	55.8	49.1	43.8	39.7	36.4	33.5	29.1	19.2
2V-6 OPzV 420	279.8	262.8	221.9	192.8	171.0	120.1	93.7	77.5	66.4	58.3	52.1	47.1	43.2	39.8	34.5	22.8
2V-7 OPzV 490	299.7	283.6	242.5	212.6	189.7	134.6	105.8	87.7	75.4	66.2	59.2	53.7	49.3	45.3	39.3	26.1
2V-6 OPzV 600	304.4	293.9	262.5	236.1	214.6	158.7	127.2	106.7	92.4	81.6	73.3	66.6	61.3	56.5	49.3	32.8
2V-8 OPzV 800	432.7	416.8	370.2	331.7	300.5	220.2	175.5	146.8	126.8	111.9	100.4	91.1	83.7	77.3	67.3	44.6
2V-10 OPzV 1000	522.3	503.3	447.7	401.8	364.7	268.9	215.4	180.6	156.4	138.2	124.1	112.8	103.7	95.8	83.5	55.5
2V-12 OPzV 1200	605.0	582.6	522.6	471.8	429.9	319.9	257.5	216.5	188.0	166.4	149.6	136.1	125.3	115.8	101.0	67.3
2V-12 OPzV 1500	662.0	641.7	581.9	529.3	484.9	364.8	295.2	249.2	216.7	192.2	173.0	157.7	144.8	134.1	116.8	78.4
2V-16 OPzV 2000	866.2	841.1	762.7	694.5	636.9	481.2	390.4	330.1	287.6	255.4	230.1	210.0	193.0	178.8	155.8	104.8
2V-20 OPzV 2500	1098.5	1064.5	963.9	876.2	802.6	604.7	490.0	414.2	360.5	320.1	288.3	263.1	241.7	223.9	195.1	131.2
2V-24 OPzV 3000	1378.7	1339.4	1215.0	1106.3	1015.0	765.6	619.1	522.8	453.9	402.0	361.9	329.3	303.7	280.1	244.7	163.8

End voltage 1.85 V/cell

Type	10 min	15 min	30 min	45 min	1 h	2 h	3 h	4 h	5 h	6 h	7 h	8 h	9 h	10 h	12 h	20 h
2V-4 OPzV 200	152.5	141.8	117.7	101.1	88.9	61.2	47.3	38.8	33.0	28.9	25.7	23.2	21.2	19.6	16.9	11.1
2V-5 OPzV 250	188.0	175.5	146.7	126.4	111.4	76.9	59.4	48.7	41.5	36.3	32.3	29.1	26.6	24.5	21.2	13.9
2V-6 OPzV 300	220.9	206.3	172.5	148.6	131.3	90.9	70.4	57.9	49.3	43.2	38.5	34.7	31.8	29.2	25.3	16.6
2V-5 OPzV 350	248.3	233.3	197.6	171.7	152.7	107.4	83.9	69.3	59.4	52.0	46.4	42.0	38.4	35.5	30.7	20.2
2V-6 OPzV 420	307.8	287.6	241.0	208.2	184.3	128.6	100.1	82.5	70.5	61.8	55.1	49.8	45.5	42.1	36.4	23.9
2V-7 OPzV 490	330.6	311.1	263.9	230.3	204.9	144.4	113.1	93.6	80.1	70.4	62.9	56.9	52.1	48.0	41.6	27.4
2V-6 OPzV 600	338.8	325.3	288.1	257.9	233.6	171.4	136.6	114.4	98.6	87.1	78.1	70.9	65.0	60.1	52.3	34.6
2V-8 OPzV 800	481.2	461.3	406.1	361.8	326.7	237.6	188.7	157.3	135.5	119.2	106.7	96.7	88.6	82.0	71.1	47.0
2V-10 OPzV 1000	580.2	556.9	490.9	438.7	396.8	290.5	231.5	193.6	167.0	147.2	132.0	119.8	109.8	101.7	88.4	58.5
2V-12 OPzV 1200	670.7	645.2	573.9	515.4	468.0	345.7	276.9	232.3	200.8	177.4	159.3	144.6	132.7	123.0	107.0	71.1
2V-12 OPzV 1500	736.5	712.5	641.4	580.6	530.2	396.1	319.1	268.5	233.0	206.2	185.3	168.6	155.2	143.3	125.0	83.3
2V-16 OPzV 2000	964.0	933.0	840.2	761.3	695.9	521.9	421.6	355.6	309.1	273.9	246.4	224.4	206.8	191.1	166.8	111.4
2V-20 OPzV 2500	1221.8	1181.2	1061.5	960.3	876.8	655.9	529.2	446.0	387.4	343.2	308.7	281.0	258.9	239.2	208.9	139.4
2V-24 OPzV 3000	1528.6	1480.4	1334.2	1209.1	1105.6	827.9	666.2	561.4	486.3	430.7	387.1	352.0	323.3	299.6	260.9	173.6

Design and/or specifications are subject to change without prior notice. For clarifications and updated information, please contact your local SUNLIGHT sales representative.

Discharge Table in Amperes

End voltage 1.83 V/cell

Type	10 min	15 min	30 min	45 min	1 h	2 h	3 h	4 h	5 h	6 h	7 h	8 h	9 h	10 h	12 h	20 h
2V-4 OPzV 200	165.6	153.3	126.5	108.2	95.1	65.1	50.0	40.9	34.8	30.3	26.9	24.3	22.1	20.4	17.6	11.5
2V-5 OPzV 250	204.4	190.0	157.9	135.5	119.4	81.8	62.9	51.4	43.7	38.1	33.8	30.5	27.8	25.6	22.1	14.4
2V-6 OPzV 300	240.2	223.3	185.6	159.5	140.5	96.7	74.5	61.1	52.0	45.3	40.3	36.3	33.1	30.6	26.4	17.2
2V-5 OPzV 350	270.4	252.9	212.5	184.3	163.4	114.1	88.8	73.1	62.3	54.5	48.6	43.9	40.0	36.9	31.9	20.9
2V-6 OPzV 420	334.5	311.1	258.9	223.0	196.9	136.4	105.7	86.8	74.0	64.7	57.5	51.9	47.4	43.7	37.7	24.7
2V-7 OPzV 490	360.3	337.6	284.6	246.9	219.0	153.7	119.5	98.5	84.2	73.7	65.6	59.3	54.1	50.0	43.2	28.3
2V-6 OPzV 600	372.0	356.1	312.9	278.7	251.6	183.1	145.3	121.1	104.3	91.7	82.0	74.3	68.0	62.8	54.4	35.9
2V-8 OPzV 800	528.4	504.5	440.5	390.6	351.7	254.2	200.6	166.7	142.9	125.6	112.1	101.4	92.7	85.6	74.0	48.8
2V-10 OPzV 1000	637.3	608.9	533.0	473.9	427.4	310.4	245.9	205.0	176.3	155.1	138.7	125.6	115.0	106.2	91.9	60.8
2V-12 OPzV 1200	736.4	706.5	623.3	557.0	504.3	369.7	294.3	246.2	212.3	187.1	167.6	151.9	139.1	128.5	111.3	73.8
2V-12 OPzV 1500	810.3	781.7	699.0	630.1	573.7	425.7	341.3	286.7	247.7	219.0	196.6	178.6	163.7	151.8	132.0	87.6
2V-16 OPzV 2000	1062.2	1023.2	915.2	825.4	752.3	560.4	450.7	379.5	328.5	290.9	261.5	237.8	218.1	202.4	176.2	117.2
2V-20 OPzV 2500	1344.2	1295.1	1155.9	1041.0	947.7	704.2	565.6	475.8	411.7	364.4	327.5	297.7	273.1	253.3	220.4	146.6
2V-24 OPzV 3000	1679.5	1619.6	1450.9	1309.8	1193.5	887.2	712.1	597.1	516.9	456.2	409.1	371.6	340.7	315.4	273.8	182.0

End voltage 1.80 V/cell

Type	10 min	15 min	30 min	45 min	1 h	2 h	3 h	4 h	5 h	6 h	7 h	8 h	9 h	10 h	12 h	20 h
2V-4 OPzV 200	183.9	169.3	138.5	118.3	103.6	70.1	53.4	43.4	36.7	31.9	28.3	25.4	23.1	21.3	18.3	11.9
2V-5 OPzV 250	227.6	210.3	173.3	148.4	130.2	88.4	67.3	54.6	46.1	40.1	35.5	31.9	29.1	26.7	23.0	15.0
2V-6 OPzV 300	267.6	247.2	203.6	174.6	153.2	104.4	79.7	64.8	54.8	47.7	42.4	38.1	34.7	31.9	27.5	17.9
2V-5 OPzV 350	301.8	280.4	233.4	201.7	177.9	122.9	94.5	77.2	65.6	57.1	50.7	45.7	41.6	38.3	33.0	21.6
2V-6 OPzV 420	372.1	343.9	283.5	243.5	214.0	146.6	112.3	91.6	77.7	67.6	60.0	54.1	49.3	45.3	39.0	25.5
2V-7 OPzV 490	402.8	374.9	313.2	270.2	238.7	165.5	127.6	104.4	88.6	77.3	68.7	61.9	56.4	52.0	44.8	29.3
2V-6 OPzV 600	420.8	400.4	348.2	308.0	276.9	199.1	156.7	129.5	110.7	96.8	86.3	77.9	71.1	65.4	56.6	37.2
2V-8 OPzV 800	597.0	566.5	489.8	431.5	386.8	276.3	215.8	177.7	151.6	132.3	117.8	106.2	96.8	89.1	77.1	50.5
2V-10 OPzV 1000	720.1	684.1	592.3	523.3	469.8	337.2	264.8	218.8	187.1	163.5	145.8	131.7	120.1	110.5	95.8	62.8
2V-12 OPzV 1200	833.5	794.8	694.0	615.9	555.0	402.1	317.7	263.3	225.7	197.6	176.3	159.4	145.4	134.0	116.3	76.4
2V-12 OPzV 1500	920.1	883.6	782.4	700.9	635.7	467.1	372.0	310.8	267.5	235.5	210.7	190.8	174.6	161.1	139.4	92.2
2V-16 OPzV 2000	1204.6	1156.1	1023.8	917.7	832.9	614.3	490.6	411.1	354.7	312.8	280.2	254.0	232.6	214.8	186.0	123.3
2V-20 OPzV 2500	1525.1	1462.7	1292.4	1156.7	1048.8	771.6	615.6	515.4	444.3	391.7	350.7	317.9	291.1	268.7	232.7	154.2
2V-24 OPzV 3000	1899.7	1824.4	1618.7	1452.8	1318.9	971.4	774.3	645.8	555.4	488.2	436.4	395.0	360.9	332.6	288.8	190.2

End voltage 1.75 V/cell

Type	10 min	15 min	30 min	45 min	1 h	2 h	3 h	4 h	5 h	6 h	7 h	8 h	9 h	10 h	12 h	20 h
2V-4 OPzV 200	211.0	192.7	156.0	132.3	115.2	75.9	57.0	45.9	38.5	33.4	29.5	26.5	24.1	22.1	19.0	12.4
2V-5 OPzV 250	262.2	240.4	195.8	166.7	145.5	96.1	72.0	57.9	48.6	42.0	37.1	33.3	30.2	27.7	23.9	15.5
2V-6 OPzV 300	308.4	282.6	230.1	196.0	171.0	113.3	85.2	68.7	57.7	50.0	44.2	39.7	36.1	33.1	28.5	18.5
2V-5 OPzV 350	348.9	321.4	264.2	226.5	198.4	133.1	100.7	81.5	68.7	59.6	52.8	47.5	43.2	39.7	34.2	22.3
2V-6 OPzV 420	428.2	392.3	319.4	272.2	237.4	157.8	119.2	96.3	81.2	70.5	62.4	56.1	51.0	46.9	40.4	26.3
2V-7 OPzV 490	467.1	430.9	354.8	304.4	266.4	179.3	135.9	110.0	92.9	80.6	71.5	64.3	58.5	53.7	46.3	30.2
2V-6 OPzV 600	497.7	469.4	401.4	352.3	314.3	220.0	169.4	138.1	117.0	101.8	90.3	81.3	74.0	68.1	58.8	38.4
2V-8 OPzV 800	704.4	662.3	563.4	493.2	438.3	304.5	233.0	189.3	159.8	139.0	123.2	110.9	100.9	92.7	80.0	52.0
2V-10 OPzV 1000	850.5	799.9	682.0	597.0	532.0	371.8	286.0	233.1	197.4	171.9	152.5	137.4	125.1	115.0	99.4	64.8
2V-12 OPzV 1200	986.9	932.5	800.6	704.9	630.5	445.1	344.3	281.4	238.7	208.1	184.8	166.6	151.8	139.6	120.8	78.7
2V-12 OPzV 1500	1097.0	1045.4	912.5	809.8	729.7	527.3	413.4	340.4	290.1	253.2	225.0	202.9	184.9	170.1	147.2	96.2
2V-16 OPzV 2000	1435.1	1367.1	1192.6	1059.9	955.7	692.9	544.9	450.3	384.7	336.2	299.2	270.1	246.4	226.9	196.5	128.8
2V-20 OPzV 2500	1816.3	1728.3	1503.7	1334.4	1202.0	869.5	682.9	563.7	481.4	420.7	374.4	337.8	308.2	283.7	245.7	161.0
2V-24 OPzV 3000	2253.9	2149.8	1884.2	1676.0	1511.6	1092.5	856.6	704.4	598.6	522.5	464.3	418.2	381.0	350.3	303.2	197.5

Design and/or specifications are subject to change without prior notice. For clarifications and updated information, please contact your local SUNLIGHT sales representative.

Discharge Table in Watts

End voltage 1.90 V/cell

Type	10 min	15 min	30 min	45 min	1 h	2 h	3 h	4 h	5 h	6 h	7 h	8 h	9 h	10 h	12 h	20 h
2V-4 OPzV 200	219.4	205.6	173.4	150.7	133.7	94.2	73.7	61.1	52.4	46.0	41.2	37.4	34.2	31.5	27.4	18.1
2V-5 OPzV 250	269.8	253.7	215.3	187.7	166.9	117.8	92.3	76.4	65.6	57.6	51.6	46.8	42.8	39.4	34.2	22.6
2V-6 OPzV 300	317.1	298.2	253.4	220.9	196.9	139.3	109.5	90.9	78.1	68.7	61.5	55.8	51.1	47.1	40.9	27.1
2V-5 OPzV 350	356.1	337.1	290.3	255.6	229.4	165.3	130.9	109.4	94.5	83.3	74.7	68.0	62.2	57.6	50.1	33.3
2V-6 OPzV 420	442.6	417.0	355.6	311.2	278.1	198.7	156.8	130.6	112.7	99.3	88.9	80.9	74.0	68.5	59.5	39.5
2V-7 OPzV 490	473.7	449.1	387.8	342.4	307.5	222.0	176.6	147.7	127.5	112.5	101.1	92.0	84.3	77.9	67.9	45.1
2V-6 OPzV 600	478.8	462.2	415.2	375.8	343.6	258.5	209.6	177.5	154.5	137.2	123.8	113.1	103.9	96.4	84.3	56.5
2V-8 OPzV 800	680.2	655.4	585.3	527.6	480.7	358.9	289.7	244.3	212.5	188.4	169.5	154.9	141.8	131.8	114.9	77.0
2V-10 OPzV 1000	820.7	791.7	709.0	640.6	584.8	439.0	355.6	300.8	261.9	232.5	209.5	191.7	175.8	163.3	142.6	95.8
2V-12 OPzV 1200	948.2	916.4	826.6	750.7	688.0	521.1	424.2	360.1	314.3	279.4	252.1	230.9	211.9	197.1	172.3	116.1
2V-12 OPzV 1500	1039.7	1007.8	915.9	836.5	769.9	588.4	481.0	409.2	357.9	318.7	288.6	262.6	242.6	224.2	196.6	132.7
2V-16 OPzV 2000	1361.5	1320.9	1200.9	1097.9	1011.6	776.2	636.3	542.5	475.1	423.5	384.0	349.8	323.3	298.9	262.4	177.5
2V-20 OPzV 2500	1725.7	1672.2	1518.0	1385.9	1275.6	976.3	799.3	680.8	596.0	531.1	481.3	438.2	405.1	374.4	328.6	222.1
2V-24 OPzV 3000	2184.1	2118.7	1926.6	1760.4	1620.2	1240.7	1014.1	864.3	754.7	672.8	608.3	556.0	511.9	475.0	416.0	280.0

End voltage 1.87 V/cell

Type	10 min	15 min	30 min	45 min	1 h	2 h	3 h	4 h	5 h	6 h	7 h	8 h	9 h	10 h	12 h	20 h
2V-4 OPzV 200	254.8	237.1	197.9	171.3	151.8	106.3	82.8	68.5	58.8	51.6	46.0	41.7	38.2	35.2	30.5	20.2
2V-5 OPzV 250	314.0	293.3	246.4	213.9	189.8	133.2	103.9	85.9	73.6	64.6	57.7	52.2	47.9	44.0	38.2	25.3
2V-6 OPzV 300	369.0	344.8	289.5	251.7	223.4	157.4	123.2	102.0	87.6	76.9	68.7	62.3	57.1	52.6	45.6	30.2
2V-5 OPzV 350	415.1	390.2	332.2	291.0	260.0	186.3	147.1	122.6	105.6	93.1	83.4	75.7	69.5	64.1	55.8	37.0
2V-6 OPzV 420	514.6	481.3	405.5	353.6	314.8	223.6	175.9	146.2	125.8	110.8	99.1	89.9	82.6	76.0	66.1	43.9
2V-7 OPzV 490	552.8	520.3	444.0	389.5	348.8	250.4	198.3	165.3	142.7	125.7	112.7	102.3	94.1	86.6	75.3	50.2
2V-6 OPzV 600	565.8	542.9	481.4	432.5	393.6	293.7	237.1	200.0	173.9	154.1	138.7	126.4	116.6	107.6	94.1	63.1
2V-8 OPzV 800	803.7	769.5	678.9	608.1	551.8	408.0	327.4	275.5	239.0	211.6	190.2	173.0	159.2	147.2	128.4	85.7
2V-10 OPzV 1000	969.9	929.0	821.7	736.9	669.8	497.9	401.8	338.6	294.5	261.1	235.0	214.1	197.2	182.4	159.3	106.6
2V-12 OPzV 1200	1120.8	1077.0	958.7	864.0	788.2	591.7	479.8	405.7	353.6	314.0	283.1	258.1	238.0	220.3	192.7	129.2
2V-12 OPzV 1500	1232.2	1188.3	1067.6	968.5	887.1	671.9	547.1	464.3	405.1	360.4	325.2	297.2	273.4	253.6	221.4	149.5
2V-16 OPzV 2000	1613.2	1556.5	1399.9	1271.1	1165.5	885.7	723.2	614.7	537.5	478.9	432.5	395.7	364.2	338.0	295.3	199.9
2V-20 OPzV 2500	2044.1	1969.9	1767.7	1603.1	1468.4	1113.3	908.1	771.5	674.1	600.3	542.1	495.7	456.3	423.3	369.8	250.1
2V-24 OPzV 3000	2568.2	2479.1	2232.7	2028.0	1860.0	1411.4	1149.0	975.3	850.3	755.7	682.1	622.2	574.7	530.9	465.2	313.4

End voltage 1.85 V/cell

Type	10 min	15 min	30 min	45 min	1 h	2 h	3 h	4 h	5 h	6 h	7 h	8 h	9 h	10 h	12 h	20 h
2V-4 OPzV 200	276.1	256.1	212.8	183.8	162.5	113.5	88.4	73.0	62.4	54.8	48.9	44.2	40.5	37.3	32.3	21.3
2V-5 OPzV 250	340.9	317.3	265.3	229.8	203.5	142.5	111.0	91.6	78.3	68.6	61.3	55.4	50.7	46.7	40.5	26.6
2V-6 OPzV 300	400.7	372.7	312.0	270.1	239.6	168.3	131.5	108.7	93.0	81.7	73.0	66.1	60.5	55.8	48.4	31.9
2V-5 OPzV 350	451.3	422.5	357.8	312.1	278.7	198.9	156.8	130.3	112.1	98.5	88.2	79.9	73.2	67.8	58.8	38.9
2V-6 OPzV 420	558.3	519.9	436.3	378.8	336.8	238.5	187.3	155.3	133.4	117.2	104.8	94.9	86.9	80.4	69.7	45.9
2V-7 OPzV 490	601.3	563.8	477.9	418.5	374.0	267.4	211.3	175.9	151.2	133.3	119.4	108.2	99.2	91.7	79.6	52.7
2V-6 OPzV 600	621.0	593.3	521.9	467.7	424.8	315.3	253.6	213.6	185.0	164.0	147.5	134.2	123.3	114.3	99.6	66.3
2V-8 OPzV 800	881.5	840.5	736.4	656.9	594.7	437.5	350.6	294.1	254.5	224.7	201.8	183.4	168.2	156.0	135.7	90.3
2V-10 OPzV 1000	1063.4	1014.8	890.6	795.3	721.5	534.6	429.8	361.7	313.5	277.5	249.6	227.0	208.4	193.4	168.5	112.3
2V-12 OPzV 1200	1230.1	1177.3	1039.8	934.6	850.8	635.6	513.5	433.6	376.6	333.9	300.7	273.8	251.6	233.7	203.8	136.3
2V-12 OPzV 1500	1354.1	1301.9	1162.4	1051.1	960.8	724.3	588.1	497.8	434.0	385.5	347.5	316.9	292.3	270.4	236.6	158.7
2V-16 OPzV 2000	1772.6	1704.9	1523.5	1378.6	1261.3	954.3	776.9	659.3	575.6	511.9	461.9	421.7	389.3	360.4	315.6	212.3
2V-20 OPzV 2500	2245.4	2157.1	1923.5	1738.4	1589.0	1199.5	975.5	827.0	721.8	641.7	578.8	528.3	487.6	451.4	395.1	265.6
2V-24 OPzV 3000	2811.9	2706.4	2422.7	2192.9	2007.0	1515.9	1230.0	1042.9	907.9	807.1	727.6	663.3	610.5	566.7	495.1	331.7

Design and/or specifications are subject to change without prior notice. For clarifications and updated information, please contact your local SUNLIGHT sales representative.

Discharge Table in Watts

End voltage 1.83 V/cell

Type	10 min	15 min	30 min	45 min	1 h	2 h	3 h	4 h	5 h	6 h	7 h	8 h	9 h	10 h	12 h	20 h
2V-4 OPzV 200	295.9	273.5	226.8	195.2	172.7	120.2	93.3	76.8	65.6	57.4	51.1	46.2	42.2	39.0	33.7	22.1
2V-5 OPzV 250	365.8	339.4	283.0	244.4	216.5	150.9	117.3	96.5	82.4	72.0	64.1	57.9	52.9	48.8	42.2	27.7
2V-6 OPzV 300	429.7	398.7	332.6	287.5	254.8	178.3	138.9	114.5	97.9	85.7	76.4	69.0	63.0	58.3	50.4	33.1
2V-5 OPzV 350	484.7	452.2	381.2	332.2	296.2	210.4	165.4	137.1	117.5	103.2	92.1	83.4	76.3	70.4	61.0	40.2
2V-6 OPzV 420	598.6	555.6	464.5	402.5	357.6	252.0	197.3	163.1	139.7	122.5	109.3	98.9	90.4	83.5	72.3	47.6
2V-7 OPzV 490	646.7	603.8	510.0	445.2	396.9	283.2	222.6	184.7	158.8	139.4	124.5	112.8	103.1	95.4	82.7	54.4
2V-6 OPzV 600	673.1	640.9	560.7	500.7	453.8	335.0	268.6	225.4	195.2	172.4	154.7	140.5	128.8	119.3	103.6	68.9
2V-8 OPzV 800	954.9	907.2	790.2	701.9	634.4	465.5	371.3	310.7	267.9	236.4	211.8	192.1	176.0	162.6	141.0	93.7
2V-10 OPzV 1000	1152.0	1095.1	954.7	851.2	770.8	568.2	454.7	381.8	330.3	291.8	261.8	237.7	218.0	201.7	175.1	116.6
2V-12 OPzV 1200	1333.6	1272.2	1117.3	1000.5	909.0	675.7	543.5	458.0	397.2	351.5	315.8	287.1	263.5	243.8	212.0	141.5
2V-12 OPzV 1500	1471.3	1410.6	1252.5	1129.2	1030.4	773.6	626.1	529.5	460.0	408.4	367.9	335.1	307.9	286.0	249.4	166.7
2V-16 OPzV 2000	1925.9	1846.1	1640.6	1479.7	1351.3	1018.1	826.4	700.7	609.7	542.3	489.0	445.9	410.1	381.1	332.8	223.0
2V-20 OPzV 2500	2438.7	2335.7	2071.0	1865.8	1702.4	1279.8	1037.5	878.9	764.5	679.5	612.6	558.4	513.5	477.1	416.5	279.0
2V-24 OPzV 3000	3046.9	2923.6	2601.4	2346.7	2143.9	1613.5	1308.0	1104.9	961.7	852.6	767.3	698.8	642.4	595.8	519.0	347.5

End voltage 1.80 V/cell

Type	10 min	15 min	30 min	45 min	1 h	2 h	3 h	4 h	5 h	6 h	7 h	8 h	9 h	10 h	12 h	20 h
2V-4 OPzV 200	322.3	296.9	245.1	211.3	186.4	128.9	99.3	81.3	69.1	60.3	53.6	48.3	44.1	40.6	35.0	22.9
2V-5 OPzV 250	399.4	369.1	306.4	264.8	234.1	162.2	125.0	102.2	86.8	75.7	67.3	60.7	55.3	50.9	43.9	28.7
2V-6 OPzV 300	469.4	433.7	360.1	311.4	275.3	191.5	148.1	121.4	103.2	90.2	80.2	72.3	65.9	60.7	52.4	34.4
2V-5 OPzV 350	530.4	492.6	412.9	359.6	319.6	225.5	175.6	144.6	123.5	108.0	96.2	86.9	79.3	73.0	63.2	41.6
2V-6 OPzV 420	653.0	603.6	502.0	435.0	385.3	269.5	209.1	171.9	146.4	128.1	114.0	102.9	93.9	86.5	74.7	49.2
2V-7 OPzV 490	708.4	658.9	553.5	481.7	428.6	303.3	237.0	195.4	166.7	146.1	130.2	117.6	107.4	99.1	85.6	56.3
2V-6 OPzV 600	745.9	706.8	613.8	545.9	493.4	361.6	288.3	240.4	206.7	181.8	162.6	147.3	134.7	124.2	107.7	71.3
2V-8 OPzV 800	1057.0	999.1	864.3	764.9	689.8	502.5	397.6	330.4	283.7	248.7	222.1	200.9	183.5	169.2	146.9	96.8
2V-10 OPzV 1000	1275.3	1206.1	1044.3	927.5	837.5	612.8	487.6	406.4	349.7	307.1	274.8	248.9	227.6	209.8	182.4	120.5
2V-12 OPzV 1200	1478.6	1403.4	1223.5	1091.0	988.4	729.5	583.9	488.3	421.3	370.6	331.9	301.1	275.3	254.2	221.2	146.3
2V-12 OPzV 1500	1637.4	1563.3	1377.4	1237.2	1126.4	841.1	677.7	571.1	494.8	437.8	393.1	357.2	327.7	303.1	263.2	175.3
2V-16 OPzV 2000	2142.4	2045.1	1803.2	1620.0	1476.1	1106.0	893.7	755.2	655.9	581.2	522.6	475.3	436.4	404.0	351.1	234.6
2V-20 OPzV 2500	2712.1	2586.4	2275.3	2042.0	1858.8	1389.8	1121.8	947.2	821.9	728.1	654.4	595.1	546.3	505.6	439.3	293.4
2V-24 OPzV 3000	3377.8	3228.6	2853.8	2563.6	2337.3	1750.9	1412.9	1189.2	1029.6	909.7	816.5	741.6	679.5	627.5	546.8	363.0

End voltage 1.75 V/cell

Type	10 min	15 min	30 min	45 min	1 h	2 h	3 h	4 h	5 h	6 h	7 h	8 h	9 h	10 h	12 h	20 h
2V-4 OPzV 200	359.1	329.7	271.3	233.2	205.2	139.0	105.7	85.8	72.5	63.0	55.9	50.3	45.8	42.1	36.3	23.7
2V-5 OPzV 250	446.3	410.9	339.8	293.1	258.4	175.6	133.4	108.2	91.3	79.3	70.2	63.2	57.5	52.8	45.5	29.7
2V-6 OPzV 300	524.7	482.9	399.4	344.6	303.7	207.1	157.9	128.3	108.5	94.3	83.7	75.4	68.6	63.0	54.4	35.6
2V-5 OPzV 350	594.6	549.6	458.1	397.7	352.1	243.0	186.6	152.4	129.2	112.7	100.1	90.2	82.2	75.7	65.5	42.8
2V-6 OPzV 420	729.1	671.3	555.3	479.5	422.8	289.1	221.4	180.5	153.0	133.3	118.4	106.7	97.2	89.5	77.4	50.6
2V-7 OPzV 490	796.2	736.6	614.7	534.0	472.4	327.0	251.7	205.7	174.7	152.2	135.5	122.2	111.4	102.4	88.5	58.1
2V-6 OPzV 600	852.6	802.3	690.6	611.6	550.5	396.3	310.5	255.7	218.3	190.8	169.9	153.5	140.2	129.1	111.9	73.5
2V-8 OPzV 800	1205.2	1131.8	970.1	857.3	769.0	549.8	427.7	351.2	298.7	261.0	232.2	209.6	191.2	175.9	152.4	99.8
2V-10 OPzV 1000	1455.5	1367.5	1173.7	1037.3	933.0	670.4	524.5	432.1	368.6	322.5	287.2	259.6	237.0	218.3	189.3	124.3
2V-12 OPzV 1200	1691.2	1593.7	1376.7	1222.6	1103.2	800.5	630.0	520.6	445.0	389.8	347.6	314.3	287.2	264.6	229.7	150.9
2V-12 OPzV 1500	1886.2	1789.6	1564.4	1396.1	1266.9	937.8	747.3	622.7	534.9	469.5	419.1	379.3	346.7	319.7	277.6	183.0
2V-16 OPzV 2000	2466.5	2339.2	2043.9	1826.8	1659.2	1232.1	984.8	823.3	708.9	623.3	557.1	504.9	461.9	426.2	370.5	244.8
2V-20 OPzV 2500	3120.5	2956.6	2578.7	2300.8	2088.0	1547.1	1235.0	1031.4	887.7	780.2	697.3	631.7	577.8	533.2	463.5	306.2
2V-24 OPzV 3000	3874.2	3680.8	3228.4	2890.9	2625.7	1945.5	1551.8	1291.3	1107.0	971.7	867.5	784.3	716.5	660.3	573.6	376.9

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Discharge Table in Watts

End voltage 1.70 V/cell

Type	10 min	15 min	30 min	45 min	1 h	2 h	3 h	4 h	5 h	6 h	7 h	8 h	9 h	10 h	12 h	20 h
2V-4 OPzV 200	388.0	355.8	291.7	249.3	217.8	144.7	109.2	88.3	74.5	64.6	57.2	51.4	46.8	43.0	37.1	24.2
2V-5 OPzV 250	483.2	444.3	366.4	314.4	275.4	183.0	137.9	111.4	93.7	81.3	71.9	64.6	58.8	54.0	46.5	30.3
2V-6 OPzV 300	568.6	522.4	430.4	369.2	323.5	215.9	163.2	132.2	111.5	96.8	85.7	77.0	70.1	64.4	55.6	36.2
2V-5 OPzV 350	645.7	595.4	494.0	425.8	374.4	252.9	192.5	156.6	132.5	115.3	102.3	92.1	83.9	77.2	66.8	43.6
2V-6 OPzV 420	789.5	725.2	596.7	511.3	447.5	300.3	228.2	185.4	156.8	136.4	121.0	108.9	99.3	91.3	78.9	51.6
2V-7 OPzV 490	866.8	799.8	663.9	572.7	503.8	341.0	260.0	211.6	179.2	156.0	138.3	124.6	113.6	104.5	90.4	59.1
2V-6 OPzV 600	942.1	882.4	754.5	665.6	595.8	418.0	322.5	264.1	224.3	196.0	174.2	157.1	143.3	131.9	114.3	74.8
2V-8 OPzV 800	1328.2	1241.6	1058.1	930.6	831.1	578.0	443.8	362.2	307.4	267.8	237.8	214.3	195.3	179.6	155.5	101.5
2V-10 OPzV 1000	1605.1	1501.3	1280.7	1127.2	1008.1	705.6	544.1	445.8	379.0	331.0	294.3	265.5	242.2	222.9	193.2	126.5
2V-12 OPzV 1200	1870.0	1753.9	1504.5	1331.0	1194.8	845.0	654.7	537.6	458.0	400.2	356.3	321.6	293.5	270.1	234.4	153.5
2V-12 OPzV 1500	2099.9	1982.7	1721.4	1534.8	1387.6	1009.8	791.7	652.5	555.8	486.9	433.6	391.5	357.5	329.1	285.2	187.0
2V-16 OPzV 2000	2744.8	2591.3	2249.3	2005.1	1815.4	1325.4	1043.5	862.7	736.6	646.4	576.5	521.1	476.2	438.7	380.7	250.2
2V-20 OPzV 2500	3470.0	3272.6	2835.5	2524.2	2283.2	1662.7	1307.4	1080.2	921.9	808.8	721.2	651.8	595.6	548.8	476.1	312.8
2V-24 OPzV 3000	4301.2	4068.3	3544.2	3169.2	2870.8	2091.6	1637.8	1347.9	1149.9	1004.6	894.6	807.6	736.9	677.8	587.6	384.7

End voltage 1.65 V/cell

Type	10 min	15 min	30 min	45 min	1 h	2 h	3 h	4 h	5 h	6 h	7 h	8 h	9 h	10 h	12 h	20 h
2V-4 OPzV 200	410.7	375.9	306.2	259.6	225.6	148.2	111.4	89.9	75.7	65.7	58.1	52.2	47.5	43.6	37.6	24.5
2V-5 OPzV 250	512.3	470.4	385.7	328.3	285.8	187.8	140.9	113.4	95.4	82.7	73.1	65.7	59.7	54.8	47.2	30.7
2V-6 OPzV 300	602.9	553.6	453.1	385.6	335.8	221.4	166.6	134.5	113.3	98.4	87.1	78.3	71.2	65.4	56.4	36.7
2V-5 OPzV 350	686.4	631.7	520.2	444.4	388.3	258.9	196.4	159.2	134.7	117.1	103.9	93.5	85.2	78.3	67.7	44.1
2V-6 OPzV 420	836.8	767.2	626.0	531.7	462.9	307.0	232.3	188.5	159.3	138.6	122.9	110.6	100.7	92.5	80.0	52.2
2V-7 OPzV 490	923.6	850.5	700.7	598.6	523.0	349.3	265.1	215.2	182.1	158.5	140.6	126.5	115.3	106.0	91.6	59.9
2V-6 OPzV 600	1015.8	948.6	807.0	706.4	626.9	430.2	329.9	269.1	228.4	199.2	177.1	159.6	145.5	133.8	115.9	75.7
2V-8 OPzV 800	1428.3	1331.7	1129.1	985.5	873.3	594.9	454.5	369.3	312.9	272.0	241.6	217.6	198.2	182.2	157.6	102.7
2V-10 OPzV 1000	1728.1	1611.6	1367.1	1193.9	1059.0	725.4	556.9	454.0	385.8	336.3	299.0	269.6	245.8	226.1	195.8	127.9
2V-12 OPzV 1200	2017.2	1886.2	1609.8	1413.6	1258.8	870.3	670.8	548.2	466.3	406.6	362.0	326.6	297.9	274.0	237.6	155.6
2V-12 OPzV 1500	2280.4	2145.8	1856.0	1649.5	1487.0	1055.6	817.0	669.3	569.7	496.8	442.0	398.9	363.9	334.8	290.1	189.7
2V-16 OPzV 2000	2981.2	2804.6	2422.8	2155.3	1942.5	1385.5	1075.9	885.1	754.9	659.6	587.6	530.8	484.7	446.3	387.2	253.8
2V-20 OPzV 2500	3766.2	3539.5	3052.9	2711.8	2441.9	1736.5	1347.3	1107.8	944.6	825.2	735.1	664.0	606.2	558.2	484.2	317.3
2V-24 OPzV 3000	4663.0	4395.8	3813.7	3399.2	3068.5	2183.2	1690.6	1384.1	1176.3	1024.7	910.8	821.7	749.3	689.0	597.0	390.7

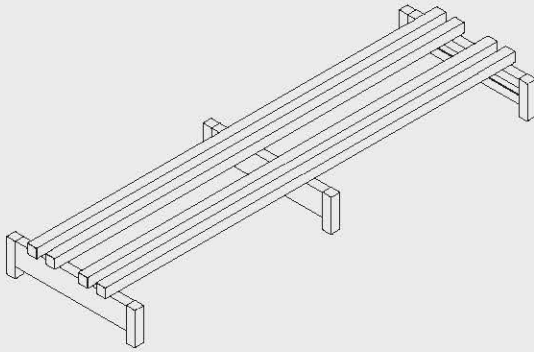
End voltage 1.60 V/cell

Type	10 min	15 min	30 min	45 min	1 h	2 h	3 h	4 h	5 h	6 h	7 h	8 h	9 h	10 h	12 h	20 h
2V-4 OPzV 200	427.8	390.7	315.5	266.1	230.4	150.6	113.1	91.0	76.7	66.5	58.8	52.8	48.0	44.1	38.0	24.7
2V-5 OPzV 250	534.6	490.0	398.2	337.0	292.2	191.0	143.1	114.9	96.7	83.6	74.0	66.4	60.4	55.4	47.7	31.0
2V-6 OPzV 300	629.8	576.8	468.2	395.9	343.5	225.1	169.2	136.3	114.8	99.5	88.1	79.2	72.0	66.1	57.0	37.0
2V-5 OPzV 350	717.8	659.1	537.5	455.9	397.0	263.1	199.2	161.3	136.3	118.4	105.0	94.5	86.0	79.0	68.3	44.5
2V-6 OPzV 420	872.8	798.0	644.7	544.2	472.6	311.6	235.6	190.8	161.2	140.1	124.2	111.8	101.7	93.5	80.8	52.6
2V-7 OPzV 490	968.0	889.4	725.3	615.2	535.2	354.7	268.7	218.0	184.1	160.3	142.1	127.9	116.5	107.1	92.6	60.4
2V-6 OPzV 600	1076.0	1002.9	847.0	734.2	647.2	438.7	335.1	272.8	231.5	201.5	179.0	161.4	147.1	135.2	117.1	76.4
2V-8 OPzV 800	1509.4	1404.8	1181.9	1021.8	899.0	606.5	461.3	374.6	316.9	275.3	244.2	220.0	200.3	184.0	159.2	103.8
2V-10 OPzV 1000	1827.6	1701.2	1432.2	1238.8	1091.5	739.9	565.5	460.7	390.9	340.0	302.3	272.5	248.4	228.3	197.8	129.2
2V-12 OPzV 1200	2137.4	1994.7	1690.9	1470.9	1300.1	888.2	681.3	556.3	472.5	411.7	365.9	330.1	301.0	276.8	239.9	157.2
2V-12 OPzV 1500	2431.2	2283.5	1968.6	1741.2	1558.9	1084.1	834.6	681.1	578.8	503.9	448.2	404.2	368.4	338.7	293.5	191.7
2V-16 OPzV 2000	3178.0	2983.7	2569.4	2272.6	2034.5	1420.9	1099.3	899.9	766.8	668.9	595.8	537.9	490.7	451.5	391.6	256.6
2V-20 OPzV 2500	4012.6	3763.8	3235.8	2857.5	2554.7	1780.2	1376.2	1126.3	959.5	836.8	745.3	672.7	613.7	564.6	489.8	320.8
2V-24 OPzV 3000	4963.1	4670.1	4039.8	3584.3	3215.6	2242.1	1724.7	1407.3	1194.1	1040.2	923.2	831.8	758.0	697.6	603.6	395.1

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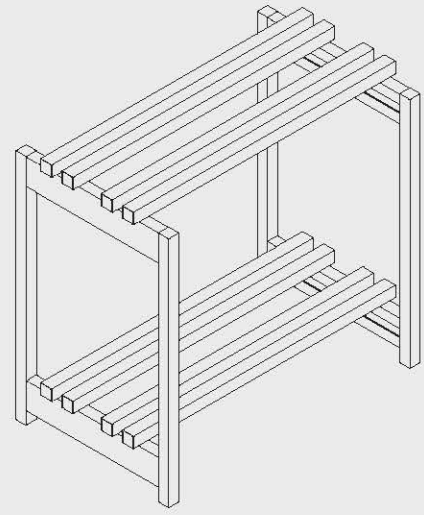
Indicative Installation Racks

Rack 1 floor - 2 rows



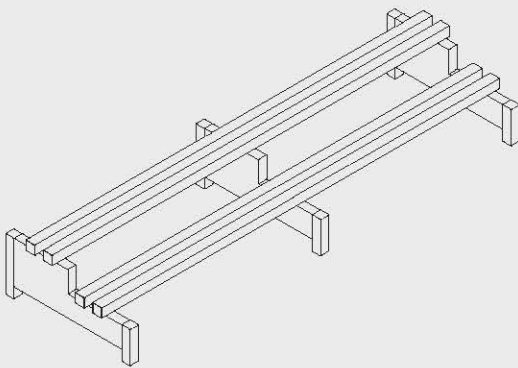
1

Rack 2 floors - 2 rows



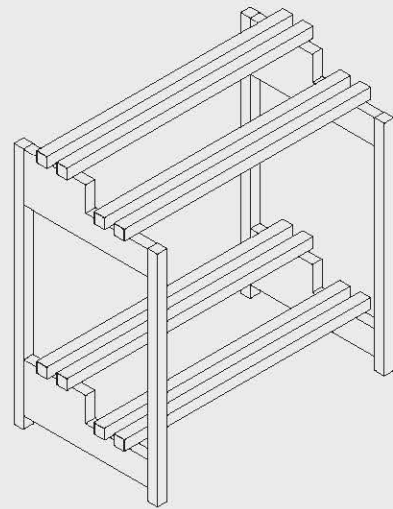
1A

Rack 1 floor - 2 steps



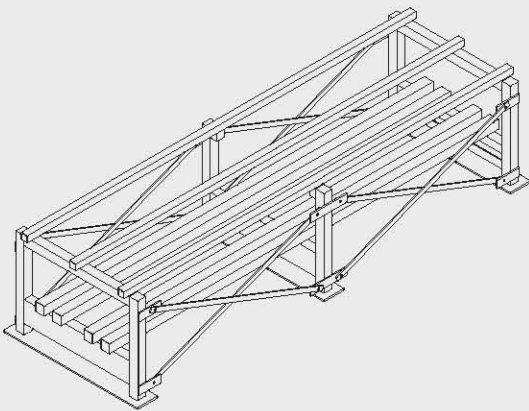
2

Rack 2 floors - 2 steps



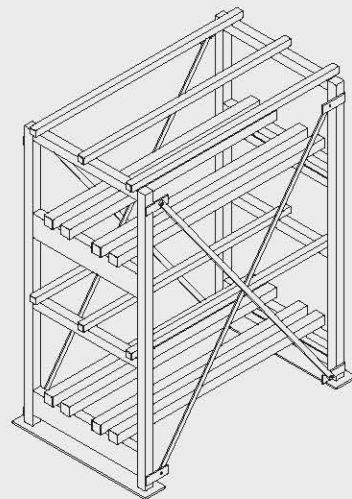
2A

Rack 1 floor - 2 rows (antiseismic)



3

Rack 2 floors - 2 rows (antiseismic)



3A

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Distributor Area

SUNLIGHT MANUFACTURING PLANT

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- Silver-Zinc batteries for combat and exercise torpedoes
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- Sealed Lead-Acid batteries (VRLA)
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- Battery packs for military and commercial applications
- Assembly of Power Supply Systems for telecommunication applications
- Assembly of Uninterruptible Power Systems (UPS)
- Assembly of Industrial Rectifiers
- Assembly of Generating Sets ranging from 7 to 3,300 kVA

MANAGEMENT SYSTEMS for QUALITY, ENVIRONMENTAL CONTROL, OCCUPATIONAL HEALTH & SAFETY

The SUNLIGHT Manufacturing Plant has established and maintains management systems for Quality (ISO 9001), Environmental control (ISO 14001) and Occupational Health and Safety (OHSAS 18001).

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SAP Code 0242159 / JULY 2009



OPzV SOLAR batteries

 **SUNLIGHT**
creating energy

OPzV SOLAR batteries introduction

SUNLIGHT Solar OPzV range are valve regulated lead acid cells that use a proven combination of gel and tubular plate technology to offer a very high level of reliability and performance. They are designed and manufactured according to DIN standards, with capacities in excess of the DIN standard values. They are characterized by their long float and cycle life in solar applications. SUNLIGHT OPzV cells due to their suitability for a very wide range of applications are a really flexible solution to the market's requirements.

Technical Features

- Compliant to DIN 40742, EN 50272-2, IEC 896-2 and IEC 61427
- Optimized plate design delivers capacities exceeding DIN nominal values
- Excellent cyclic and deep discharge performance
- Protected pole with PP
- Special design pole for high current applications
- "Long life" Eurobat classification
- Maintenance free Valve Regulated Design with integral flame arrestor
- Vertical and horizontal placement enable space optimization

Applications

- Telecommunications
- Solar Renewable Energy Systems
- Hybrid Autonomous Power Supply Systems
- Wind Renewable Energy Systems
- Hydro Renewable Energy Systems



OPzV SOLAR batteries cell construction



Positive Plates

SUNLIGHT OPzV cells are manufactured with tubular positive plates. The tubular plate design is well proven and known for its high reliability and long service life in float charging operation. The plate composition is of Lead Calcium Tin Alloy.

Negative Plates

SUNLIGHT negative plates are manufactured with grid design. In this case a lead calcium tin alloy is used.

Separators

The separators are manufactured from microporous PVC, a material of high porosity, low electrical resistance and high acid resistance. The separators are permeable and allow the migration of ions during the charging and discharging process of the battery. Thus the solid particle migration between the plates is prevented and any short circuit avoided.

Connectors

A wide variety of flexible and solid copper connectors are used for the connection of the cells. Voltage measurements are permissible due to bolt-on type design.

Vent Plugs

The Vent Plug is a one way pressure release valve with an integral flame arrestor.

The Electrolyte

The Electrolyte of the cell is sulfuric acid, immobilized as gel.

Cell Containers and Covers

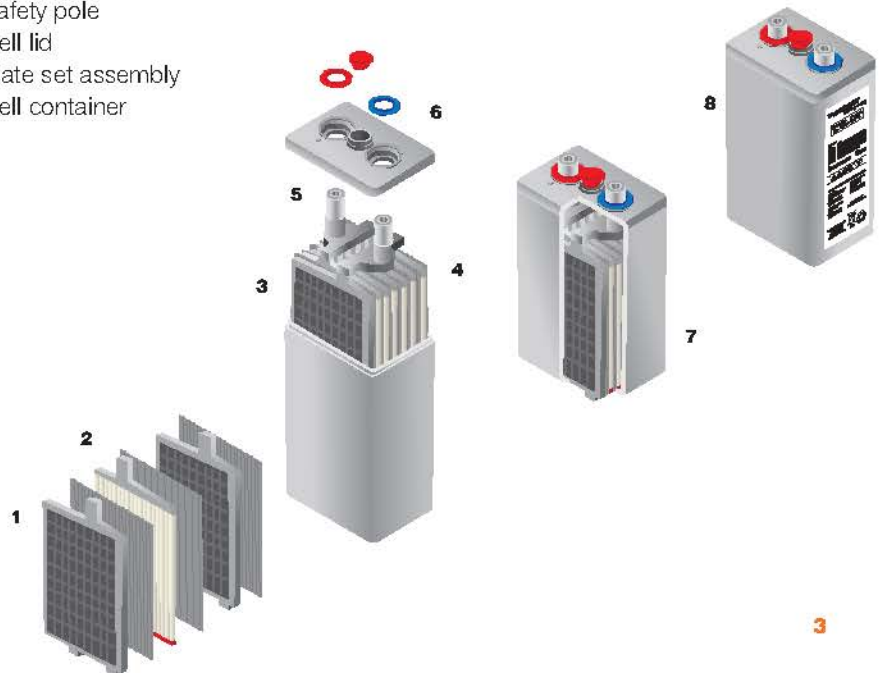
Acrylonitrile-butadiene-styrene copolymer (ABS) is used on the lids and containers of SUNLIGHT OPzV cells. ABS provides a robust and durable solution on the design of the cells.

Poles

Specially designed safety poles, effectively prevent acid leakage and pillar corrosion thus increasing the lifetime of the battery.

Mechanical Construction

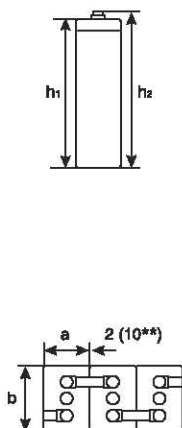
1. Negative plate
2. Tubular positive plate
3. Set of tubular plates with terminal bridge
4. Set of negative grid plates with terminal bridge
5. Safety pole
6. Cell lid
7. Plate set assembly
8. Cell container



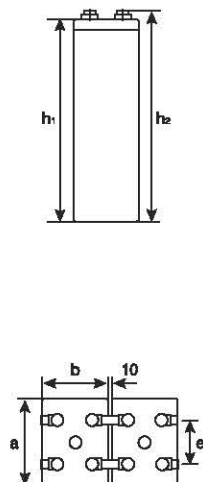
Technical Characteristics

Type Designation	Positive plate		Capacity (Ah) $C_{120V}/\text{cell } 1.85 \text{ at } 20^\circ\text{C}$	Cell dimensions in mm					Weight (kg)	Short Circuit Current (A)	Internal Resistance (mOhm)
	No	Size (Ah)		a	b	h1	h2	e			
2V Cells	No	Size (Ah)		a	b	h1	h2	e			
4 OPzV 272	4	50	272	103	206	354	378	-	19.5	2010	1.02
5 OPzV 341	5		341	124	206	354	378	-	23.5	2470	0.83
6 OPzV 409	6		409	145	206	354	378	-	28.0	2930	0.70
5 OPzV 499	5	70	499	124	206	471	495	-	31.0	3080	0.66
6 OPzV 589	6		589	145	206	471	495	-	36.5	3880	0.53
7 OPzV 676	7		676	166	206	471	495	-	42.0	4080	0.50
6 OPzV 861	6	100	861	145	206	643	667	-	50.0	4170	0.49
8 OPzV 1166	8		1166	191	210	644	668	80	68.0	5840	0.35
10 OPzV 1457	10		1457	233	210	646	670	110	82.0	7170	0.29
12 OPzV 1774	12		1774	275	210	645	669	140	97.0	8540	0.24
12 OPzV 2106	12	125	2106	275	210	796	820	140	120.0	9360	0.22
16 OPzV 2828	16		2828	399	214	771	795	2x110	165.0	12200	0.17
20 OPzV 3536	20		3536	487	212	769	793	3x110	200.0	15190	0.13
24 OPzV 4370	24		4370	576	212	769	793	3x140	240.0	18300	0.11

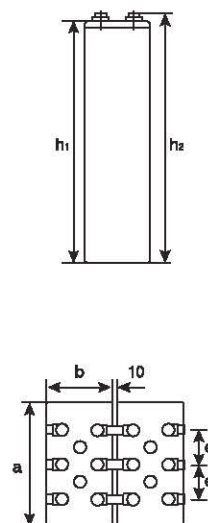
4 OPzV 272 -
6 OPzV 861



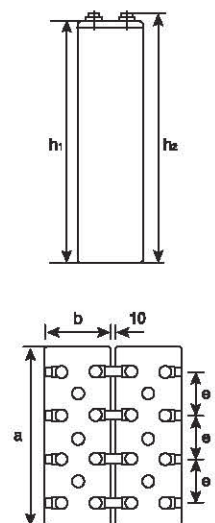
8 OPzV 1166 -
12 OPzV 1774



16 OPzV 2828

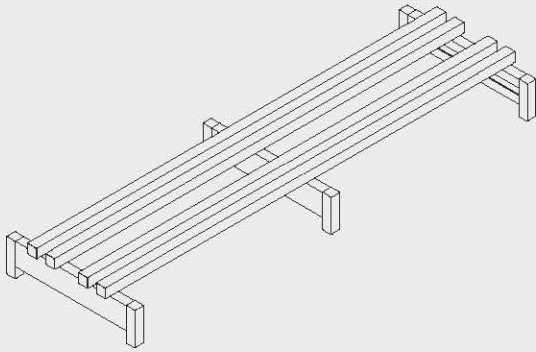


20 OPzV 3536 -
24 OPzV 4370



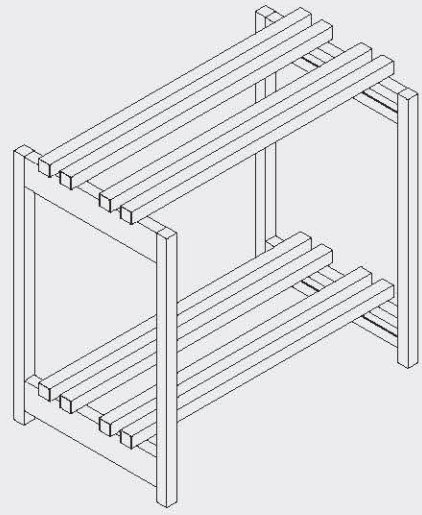
Indicative Installation Racks

Rack 1 floor - 2 rows



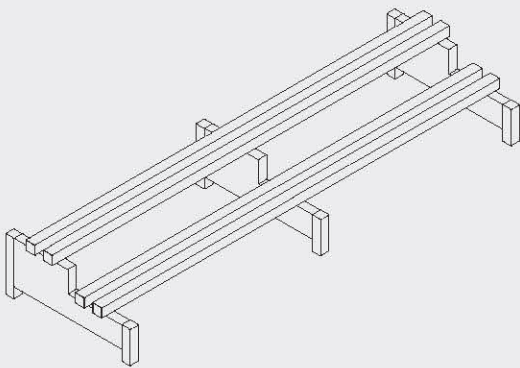
1

Rack 2 floors - 2 rows



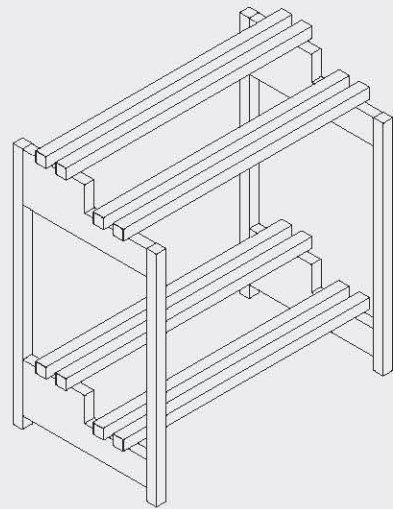
1A

Rack 1 floor - 2 steps



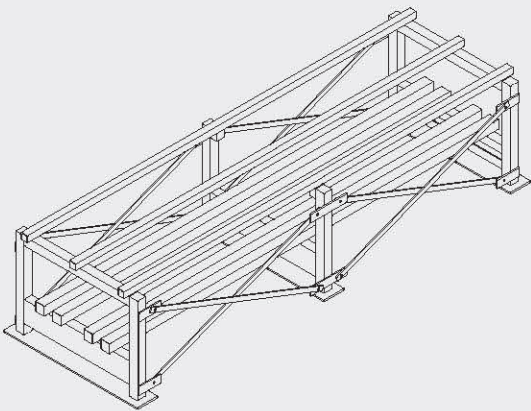
2

Rack 2 floors - 2 steps



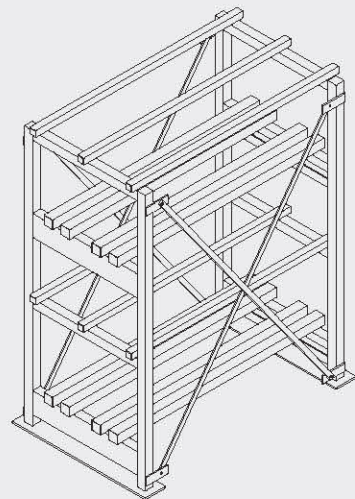
2A

Rack 1 floor - 2 rows (antiseismic)



3

Rack 2 floors - 2 rows (antiseismic)

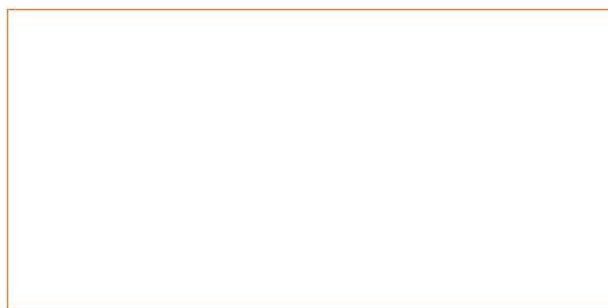


3A

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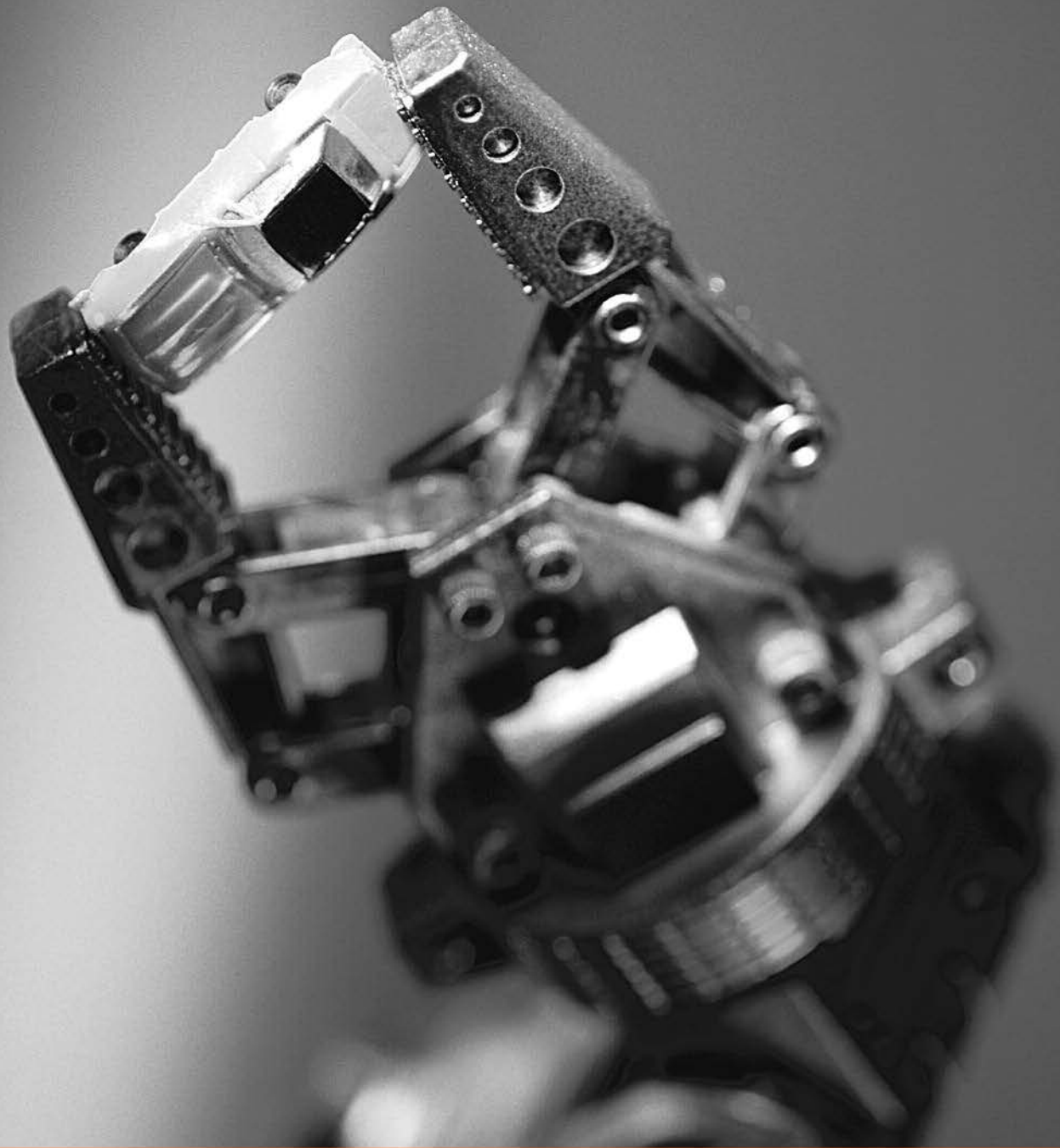
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SP_B AGM VRLA batteries

 **SUNLIGHT**
creating energy



[Energy is what we do]

SPB batteries introduction

Product Information

The SPB range of SUNLIGHT Valve Regulated Lead Acid batteries has been developed as advanced series, to provide reliable performance in the Uninterruptible Power Supply, Telecom, Information Technology and Emergency Power Supply Systems.

The Valve Regulated Lead Acid (VRLA) battery is a rechargeable battery type with a safety valve, which allows the internal pressure to be released in case of overcharge. This battery type is maintenance free as there is no need for topping-up water or electrolyte during the entire service life.

The SUNLIGHT SPB range of VRLA batteries features models with capacity from 33 up to 200Ah. SUNLIGHT SPB batteries have been developed to offer competitive solutions to the demanding market requirements, with specifications focused on high quality and reliability.

Features of the SPB range

- Capacity Range: 33Ah to 200Ah
- Design Life: 10-12 years at 20°C
- Classified as: High Performance, according to EUROBAT guide 1999
- Configurations: 6V and 12V blocks available

Quality and Standards

- The SUNLIGHT SPB 12V batteries are recognized by UL (File No MH18852).
- The SUNLIGHT Manufacturing Plant is certified according to ISO 9001:2000 and ISO 14001:2004.
- The SUNLIGHT SPB batteries comply with IEC 60896 Part 21 & 22 and BS6290 Part 4.
- As a member of EUROBAT organization SYSTEMS SUNLIGHT S.A. closely monitors the latest developments in the battery industry.
- Products are 100% tested and checked prior to shipment.
- The SUNLIGHT SPB batteries are completely recyclable.



SPB batteries technical features & applications

Technical Features

High Performance

With low internal resistance and efficient discharge characteristics, SUNLIGHT SPB batteries can be applied to many fields, both in cycle and stand by use.

Maintenance free

During the service life, there is no need to check the level of the electrolyte or to add water. The gases produced during electrolysis are almost completely recombined to water (up to 99%) through an effective reaction between hydrogen and oxygen.

Safety Valve design

Excessive gas produced by overcharge or an incorrect charging method is released through the safety valve, which detects rising internal pressure and allows gas to exit; then automatically reseals.

Separator Technology

The Absorbent Glass Mat (AGM) separator, used in the SUNLIGHT batteries, is a highly porous material, which achieves maximization of oxygen diffusion and facilitates the reaction of active materials in the plates. The separator also maintains a constant distance between the positive and the negative plates and immobilizes the electrolyte, so that the possibility of acid leakage is minimized.

Performance on wide temperature range

SUNLIGHT SPB batteries operate within a wide range of temperature while the optimum temperature for the operation of the battery is 20°C - 25°C.

Low Self-discharge Rate

Using a lead / calcium grid alloy, the self discharge is minimum. The battery can be stored for 9 months under normal conditions (20°C - 25°C) with no permanent effect on the capacity or the expected service life.

Leak and spill proof container

The construction of the SUNLIGHT SPB battery guarantees that no electrolyte leakage can occur from the terminals or case. A highly resistant plastic material is used, available in either standard ABS (UL94 HB) or flame retardant type (UL94 V-0).

Float service life

The nominal service life is 10 to 12 years in float / standby applications (20°C).

Multi-position usage

The sealed construction of the battery allows perfect operation in any position (vertical or horizontal but not completely inverted position).

Applications

- UPS systems
- Emergency power supply in power generation plants and substations
- Telecommunications and electrical equipment
- Switchboards
- Robots, control equipment and other factory automation equipment
- Security and fire alarm systems
- Broadcasting systems
- Various telemeter equipment
- Signalization



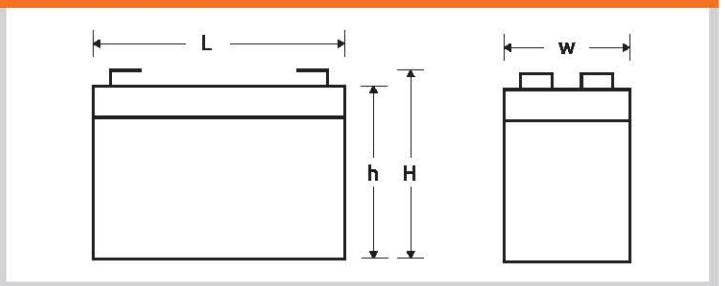
SPB Series

Battery Type	Nominal Voltage (V)	Nominal Capacity (Ah)		Dimensions (mm)				Typical Weight (kg)	Terminal Position	Terminal Type	Internal Resistance (mΩ)
		20h	10h at 1.75 Vpc	L	W	h	Overall H				
SPB 12 - 33	12	34	33	195	130	155	168	10.20	A	M6/Ø14	10
SPB 12 - 40	12	44	41	197	165	170	170	13.50	B	M6/Ø14	9.5
SPB 12 - 55	12	62	56	229	138	208	213	19.50	A	M6/Ø14	6
SPB 12 - 65	12	70	66	350	167	179	179	23.40	A	M6/Ø14	6
SPB 12 - 75	12	78	76	258	166	206	215	24.00	A	M6/Ø14	5.7
SPB 12 - 80	12	84	81	350	167	179	179	24.00	A	M6/Ø14	5.5
SPB 12 - 100	12	106	102	331	172	216	221	35.00	A	M6/Ø18	5
SPB 12 - 120	12	126	122	410	176	227	227	38.00	A	M8/Ø16	4.3
SPB 12 - 150	12	166	153	477	172	239	241	49.00	A	M8/Ø18	3.7
SPB 12 - 200	12	212	203	522	238	218	223	65.00	D	M8/Ø16	3.5
SPB 6 - 100	6	108	100	193	168	204	208	16.00	C	M6/Ø14	4
SPB 6 - 160	6	172	160	298	171	226	229	26.00	C	M6/Ø16	2
SPB 6 - 180	6	198	177	260	180	247	250	30.00	E	M8/Ø18	2
SPB 6 - 200	6	200	182	318	178	225	228	31.00	C	M8/Ø18	<2

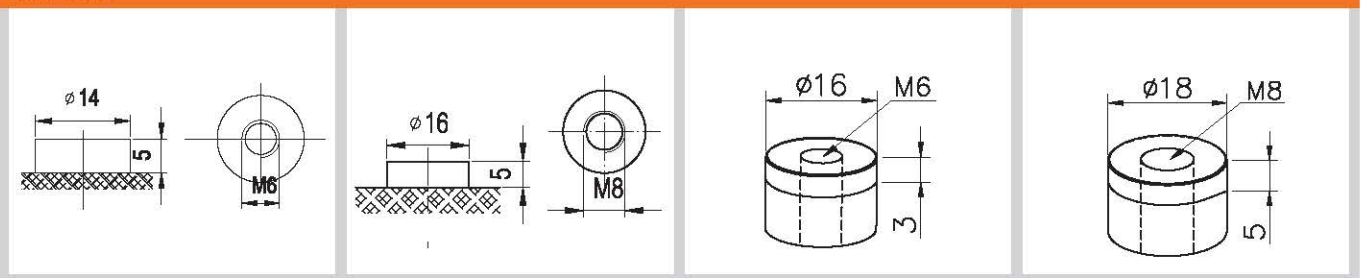
Terminal Torque Settings

M6 Terminal	6-8 Nm
M8 Terminal	9-12 Nm

Case Dimensions



Terminals



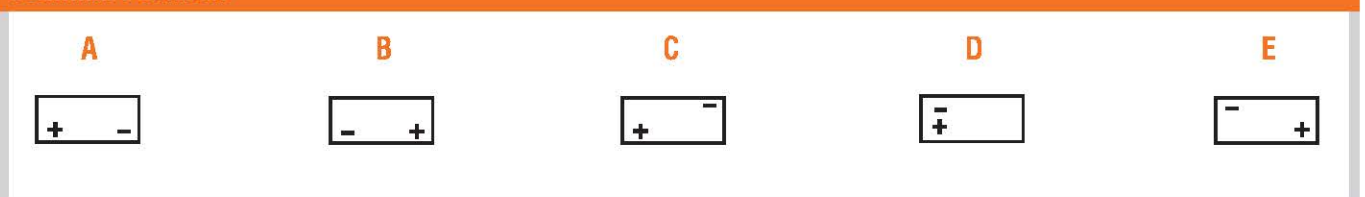
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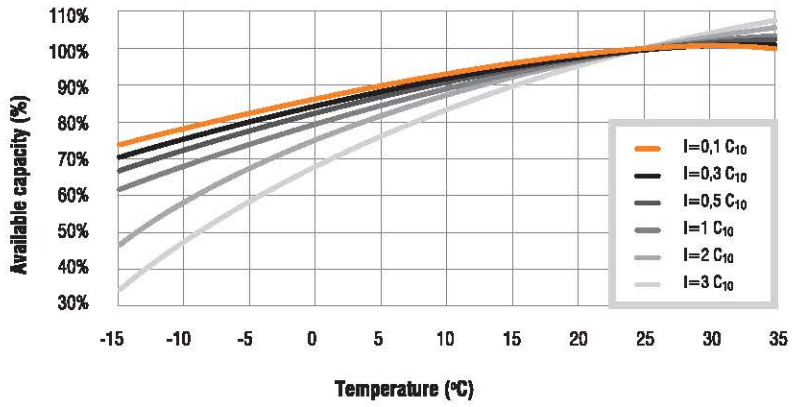
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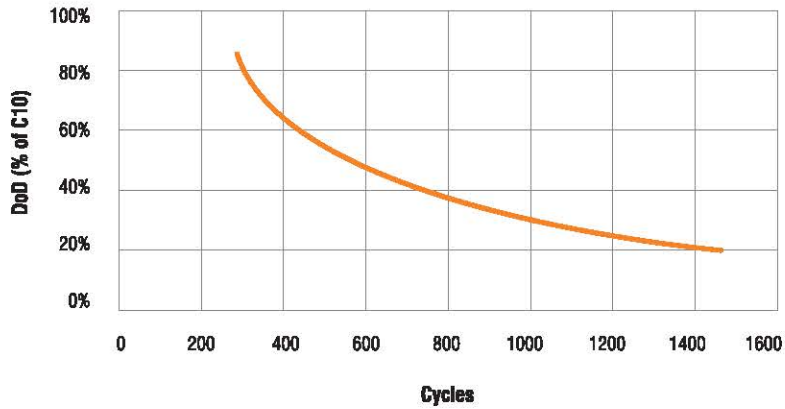
Terminal Positions



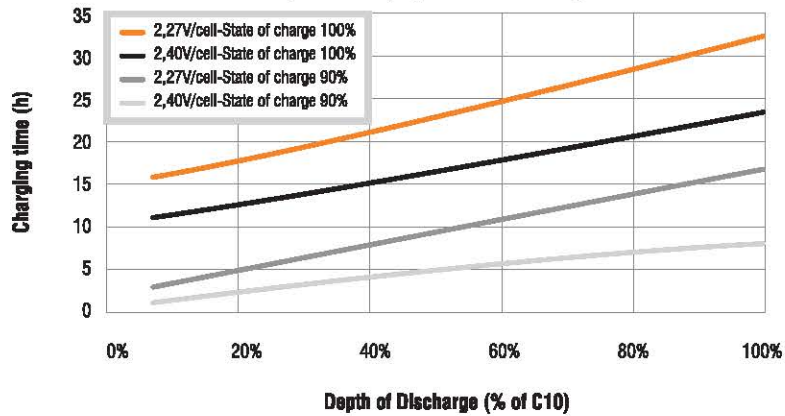
Available capacity vs. Temperature



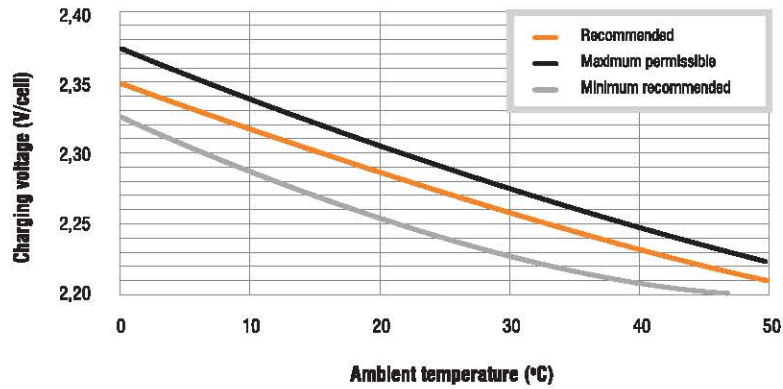
Cycle life vs. Depth of Discharge (DOD)



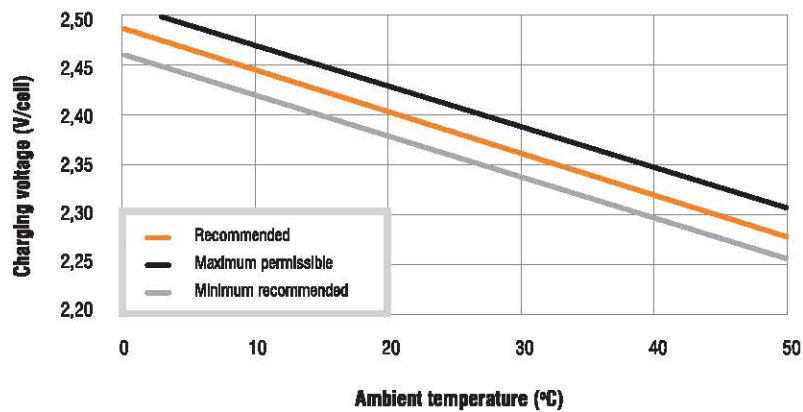
Typical charging time vs. Depth of Discharge (initial charging current=0,2C₁₀)



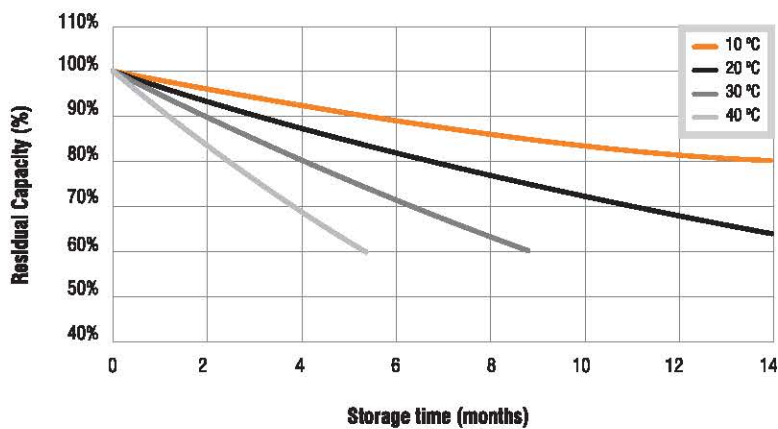
Charging voltage - Stand by use



Charging voltage - Cycle use



Self-discharge characteristics



Temperature	Shelf Life
0 - 20 °C	12 months
21 - 30 °C	7 months
31 - 40 °C	4 months
41 - 50 °C	2,5 months

Temperature	Shelf Life
0 - 20 °C	12 months
21 - 30 °C	7 months
31 - 40 °C	4 months
41 - 50 °C	2,5 months

Discharge Table in Amperes

End voltage 1.90 V/cell at 25°C

	Time	10 min	15 min	30 min	45 min	1 h	2 h	3 h	5 h	10 h	20 h
Type	SPB 12-33	52.6	41.7	27.5	20.9	17.3	11.5	9.0	5.9	3.2	1.7
	SPB 12-40	64.9	51.4	33.4	25.3	20.8	13.3	10.2	6.9	3.9	2.1
	SPB 12-55	94.1	76.5	51.0	38.3	31.3	18.9	14.1	9.3	5.3	3.0
	SPB 12-65	106.8	86.7	55.9	41.7	34.1	20.3	15.0	10.3	6.3	3.3
	SPB 12-75	127.0	108.0	71.8	53.7	43.5	25.6	18.8	12.9	7.3	3.8
	SPB 12-80	136.3	112.6	73.8	55.5	45.1	26.7	19.7	13.2	7.8	4.0
	SPB 12-100	145.9	121.5	82.7	63.0	52.2	32.1	24.2	16.4	9.7	5.1
	SPB 12-120	184.2	153.4	100.9	76.3	61.0	36.3	26.8	18.7	11.6	6.1
	SPB 12-150	224.2	191.3	128.4	96.9	79.0	48.5	36.5	24.6	14.5	8.0
	SPB 12-200	273.0	233.0	163.7	129.1	106.2	65.4	49.2	33.4	19.3	10.2
	SPB 6-100	131.0	122.0	93.3	72.1	59.2	34.9	25.6	16.9	9.3	5.1
	SPB 6-160	178.0	173.0	143.0	113.8	94.6	56.2	41.5	27.0	14.7	8.1
	SPB 6-180	166.0	162.0	136.0	109.8	92.5	57.2	43.2	29.1	16.5	9.2
	SPB 6-200	189.0	186.0	167.0	132.7	110.0	65.0	47.8	31.1	17.0	9.4

End voltage 1.85 V/cell at 25°C

	Time	10 min	15 min	30 min	45 min	1 h	2 h	3 h	5 h	10 h	20 h
Type	SPB 12-33	56.2	44.1	28.8	21.7	17.9	11.8	9.2	6.1	3.2	1.7
	SPB 12-40	69.3	54.5	35.0	26.3	21.5	13.7	10.5	7.1	3.9	2.1
	SPB 12-55	100.5	81.1	53.4	39.8	32.4	19.4	14.4	9.5	5.4	3.0
	SPB 12-65	114.0	91.9	58.5	43.4	35.4	20.9	15.3	10.5	6.4	3.4
	SPB 12-75	134.0	112.0	73.9	55.3	44.4	26.1	19.1	13.1	7.4	3.8
	SPB 12-80	143.5	117.4	76.0	56.9	46.1	27.2	20.0	13.4	7.9	4.1
	SPB 12-100	158.8	132.5	91.8	65.5	54.0	33.0	24.7	16.7	9.8	5.2
	SPB 12-120	196.5	161.9	105.0	79.0	62.9	37.2	27.4	19.1	11.8	6.1
	SPB 12-150	241.7	207.1	141.9	100.8	81.6	49.9	37.4	25.1	14.7	8.1
	SPB 12-200	291.0	246.0	170.4	133.8	109.6	67.1	50.3	34.1	19.7	10.4
	SPB 6-100	189.0	158.0	104.0	78.2	63.3	36.5	26.5	17.4	9.6	5.3
	SPB 6-160	260.0	228.0	160.0	123.2	101.0	58.8	42.9	27.8	15.1	8.3
	SPB 6-180	242.0	213.0	152.0	119.4	98.9	60.0	44.8	30.0	17.0	9.5
	SPB 6-200	295.0	262.0	186.0	143.1	117.0	68.0	49.5	32.0	17.5	9.7

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Discharge Table in Amperes

End voltage 1.80 V/cell at 25°C

Type	Time	10 min	15 min	30 min	45 min	1 h	2 h	3 h	5 h	10 h	20 h
Type	SPB 12-33	59.8	46.6	30.0	22.5	18.5	12.1	9.4	6.2	3.3	1.7
	SPB 12-40	73.7	57.5	36.5	27.3	22.3	14.0	10.7	7.2	4.0	2.2
	SPB 12-55	106.9	85.6	55.8	41.4	33.6	19.9	14.7	9.7	5.5	3.1
	SPB 12-65	121.3	97.0	61.1	45.1	36.6	21.5	15.7	10.7	6.5	3.4
	SPB 12-75	141.0	117.0	76.1	56.4	45.4	26.6	19.4	13.3	7.5	3.8
	SPB 12-80	150.7	122.2	78.2	58.2	47.0	27.7	20.3	13.6	8.0	4.1
	SPB 12-100	171.0	141.1	96.1	68.0	55.8	33.9	25.3	17.1	10.0	5.3
	SPB 12-120	209.0	170.4	109.2	81.8	64.9	38.3	28.1	19.5	12.0	6.2
	SPB 12-150	258.3	219.2	148.0	104.0	84.1	51.2	38.3	25.7	15.0	8.2
	SPB 12-200	310.0	259.0	177.2	138.1	113.0	68.8	51.5	34.8	20.0	10.5
	SPB 6-100	215.0	173.0	110.0	82.1	65.8	37.6	27.1	17.7	9.8	5.4
	SPB 6-160	302.0	255.0	172.0	130.6	106.0	61.0	44.1	28.5	15.5	8.5
SPB 6-180	281.0	238.0	163.0	126.3	104.0	62.2	46.0	30.7	17.4	9.7	
SPB 6-200	343.0	293.0	200.0	151.6	123.0	70.4	50.8	32.8	17.9	9.9	

End voltage 1.75 V/cell at 25°C

Type	Time	10 min	15 min	30 min	45 min	1 h	2 h	3 h	5 h	10 h	20 h
Type	SPB 12-33	63.4	49.1	31.3	23.4	19.1	12.4	9.6	6.3	3.4	1.7
	SPB 12-40	78.1	60.5	38.0	28.3	23.0	14.4	11.0	7.3	4.1	2.2
	SPB 12-55	113.3	90.1	58.1	43.0	34.7	20.5	15.1	9.9	5.6	3.1
	SPB 12-65	128.6	102.1	63.7	46.7	37.8	22.1	16.1	10.9	6.6	3.5
	SPB 12-75	148.0	121.0	78.2	58.0	46.4	27.0	19.7	13.5	7.6	3.9
	SPB 12-80	157.9	127.0	80.5	59.7	48.0	28.1	20.6	13.8	8.1	4.2
	SPB 12-100	183.2	148.5	99.1	70.4	57.6	34.8	25.9	17.4	10.2	5.3
	SPB 12-120	221.0	178.9	113.4	84.3	66.9	39.2	28.7	19.9	12.2	6.3
	SPB 12-150	275.0	228.8	152.2	107.3	86.6	52.4	39.1	26.2	15.3	8.3
	SPB 12-200	328.0	272.0	184.0	142.8	116.4	70.6	52.7	35.5	20.3	10.6
	SPB 6-100	235.0	186.0	116.0	85.3	68.4	38.8	27.8	18.1	10.0	5.4
	SPB 6-160	334.0	276.0	182.0	136.7	110.0	62.8	45.3	29.1	15.8	8.6
SPB 6-180	311.0	257.0	172.0	132.1	108.0	64.1	47.2	31.4	17.7	9.9	
SPB 6-200	379.0	318.0	211.0	158.8	128.0	72.7	52.2	33.5	18.2	10.0	

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Discharge Table in Amperes

End voltage 1.70 V/cell at 25°C

Time	10 min	15 min	30 min	45 min	1 h	2 h	3 h	5 h	10 h	20 h
SPB 12-33	67.0	51.5	32.6	24.3	19.8	12.8	9.9	6.4	3.4	1.8
SPB 12-40	82.5	63.6	39.6	29.4	23.8	14.8	11.2	7.5	4.1	2.2
SPB 12-55	119.7	94.6	60.5	44.5	35.8	21.0	15.4	10.1	5.7	3.2
SPB 12-65	135.8	107.2	66.3	48.4	39.1	22.6	16.4	11.1	6.7	3.5
SPB 12-75	154.0	126.0	80.3	59.5	47.3	27.5	20.0	13.7	7.7	3.9
SPB 12-80	165.1	131.9	82.7	61.0	49.0	28.6	20.9	14.0	8.2	4.2
SPB 12-100	194.8	156.3	100.2	72.9	59.4	35.7	26.5	17.8	10.3	5.4
SPB 12-120	233.0	187.4	117.5	87.0	68.8	40.2	29.3	20.3	12.4	6.4
SPB 12-150	290.5	240.1	153.3	110.7	89.2	53.8	40.0	26.7	15.5	8.4
SPB 12-200	347.0	285.0	190.7	147.5	119.8	72.3	53.8	36.2	20.7	10.8
SPB 6-100	251.0	197.0	121.0	88.8	70.5	39.7	28.4	18.4	10.1	5.5
SPB 6-160	358.0	292.0	189.0	141.6	114.0	64.6	46.3	29.6	16.0	8.7
SPB 6-180	333.0	273.0	180.0	137.5	112.0	65.8	48.2	31.9	18.0	10.0
SPB 6-200	407.0	336.0	220.0	164.6	132.0	74.5	53.3	34.1	18.5	10.1

End voltage 1.65 V/cell at 25°C

Time	10 min	15 min	30 min	45 min	1 h	2 h	3 h	5 h	10 h	20 h
SPB 12-33	70.5	54.0	33.9	25.1	20.4	13.1	10.1	6.5	3.5	1.8
SPB 12-40	86.9	66.6	41.1	30.3	24.5	15.2	11.5	7.6	4.2	2.3
SPB 12-55	126.1	99.2	62.9	46.0	36.9	21.6	15.8	10.3	5.8	3.2
SPB 12-65	143.1	112.4	68.9	50.2	40.3	23.2	16.8	11.3	6.8	3.6
SPB 12-75	161.0	131.0	82.5	60.6	48.3	28.0	20.3	13.9	7.8	4.0
SPB 12-80	172.4	136.7	84.9	62.4	50.0	29.1	21.2	14.2	8.3	4.3
SPB 12-100	209.8	163.0	101.7	75.3	61.2	36.6	27.1	18.1	10.5	5.5
SPB 12-120	246.0	196.0	121.7	89.8	70.8	41.2	30.0	20.6	12.6	6.5
SPB 12-150	311.5	248.7	155.1	114.0	91.7	55.0	40.8	27.2	15.8	8.5
SPB 12-200	365.0	298.0	197.5	152.2	123.2	74.1	55.0	36.9	21.0	10.9
SPB 6-100	262.0	203.0	124.0	90.6	71.7	40.2	28.7	18.5	10.2	5.5
SPB 6-160	373.0	302.0	194.0	144.9	116.0	65.4	46.8	29.9	16.1	8.7
SPB 6-180	347.0	282.0	184.0	138.9	113.0	66.5	48.8	32.2	18.1	10.0
SPB 6-200	423.0	347.0	225.0	168.3	135.0	75.6	53.9	34.4	18.6	10.2

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Discharge Table in Amperes

End voltage 1.60 V/cell at 25°C

Time	10 min	15 min	30 min	45 min	1 h	2 h	3 h	5 h	10 h	20 h
SPB 12-33	74.1	56.5	35.1	25.9	21.0	13.4	10.3	6.7	3.5	1.8
SPB 12-40	91.3	69.7	42.7	31.4	25.3	15.6	11.7	7.8	4.3	2.3
SPB 12-55	132.5	103.7	65.2	47.5	38.1	22.1	16.1	10.5	5.9	3.2
SPB 12-65	150.3	117.5	71.5	51.8	41.5	23.8	17.2	11.6	6.9	3.6
SPB 12-75	168.0	135.0	84.6	62.1	49.2	28.4	20.6	14.0	7.9	4.0
SPB 12-80	179.6	141.5	87.1	63.8	51.0	29.6	21.5	14.4	8.4	4.3
SPB 12-100	221.3	169.7	104.0	77.7	63.0	37.5	27.7	18.5	10.7	5.6
SPB 12-120	258.0	204.0	125.9	92.5	72.7	42.1	30.6	21.0	12.8	6.6
SPB 12-150	326.2	258.2	159.7	117.9	94.3	56.4	41.7	27.7	16.0	8.6
SPB 12-200	384.0	311.0	204.0	156.6	126.6	75.8	56.1	37.6	21.4	11.1
SPB 6-100	268.0	207.0	126.0	91.4	72.4	40.5	28.8	18.6	10.2	5.5
SPB 6-160	382.0	308.0	197.0	146.6	117.0	65.8	47.0	30.0	16.2	8.7
SPB 6-180	356.0	287.0	187.0	141.2	115.0	67.1	49.0	32.3	18.1	10.0
SPB 6-200	434.0	354.0	228.0	169.7	136.0	76.1	54.2	34.5	18.6	10.2

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Discharge Table in Watts/cell

End voltage 1.90 V/cell at 25°C

	Time	5 min	10 min	15 min	30 min	45 min	1 h	2 h	3 h	5 h	10 h
Type	SPB 12-33	138.6	103.8	81.4	54.7	41.7	34.6	23.1	18.2	12.3	6.7
	SPB 12-40	168.1	125.8	100.0	65.9	50.7	42.2	27.6	21.1	14.4	8.1
	SPB 12-55	233.0	183.7	147.2	100.2	76.5	63.3	40.8	29.9	18.6	10.6
	SPB 12-65	264.0	201.0	164.6	111.0	83.4	68.5	42.6	31.1	20.9	12.8
	SPB 12-75	285.0	235.0	194.0	132.0	101.0	83.0	50.6	36.9	24.8	14.1
	SPB 12-80	322.0	267.0	222.0	151.1	115.2	94.4	57.4	41.6	27.5	16.3
	SPB 12-100	352.5	283.8	235.9	166.5	129.2	108.3	68.7	50.2	33.1	19.6
	SPB 12-120	407.0	351.0	297.0	210.0	161.0	129.9	77.4	57.1	39.5	24.5
	SPB 12-150	488.8	436.3	375.6	271.9	210.0	174.0	108.4	78.4	51.6	30.4
	SPB 12-200	591.0	530.0	453.0	346.0	274.0	226.0	139.9	102.1	69.7	40.3
	SPB 6-100	255.0	244.0	229.0	176.0	137.0	113.0	68.5	49.9	33.1	18.3
	SPB 6-160	336.0	333.0	324.0	271.1	217.0	181.0	111.0	80.8	53.0	28.9
	SPB 6-180	315.0	310.0	303.0	257.5	209.1	177.0	113.0	84.2	57.1	32.4
	SPB 6-200	361.0	353.0	349.0	315.0	252.0	210.0	128.0	93.1	61.0	33.3

End voltage 1.85 V/cell at 25°C

	Time	5 min	10 min	15 min	30 min	45 min	1 h	2 h	3 h	5 h	10 h
Type	SPB 12-33	148.8	109.9	85.6	56.9	43.1	35.7	23.6	18.6	12.4	6.5
	SPB 12-40	180.4	133.2	105.1	68.6	52.5	43.5	28.2	21.5	14.6	8.0
	SPB 12-55	250.0	194.5	154.8	104.3	79.2	65.3	41.7	30.5	18.8	10.7
	SPB 12-65	284.0	213.0	173.0	115.5	86.3	70.7	43.5	31.6	21.2	12.9
	SPB 12-75	305.0	247.0	202.0	136.0	104.0	84.8	51.4	37.5	25.2	14.2
	SPB 12-80	341.0	277.0	229.0	154.0	116.8	95.4	57.8	41.8	27.7	16.3
	SPB 12-100	389.6	305.0	254.4	182.9	133.1	111.1	70.0	50.9	33.4	19.6
	SPB 12-120	442.0	370.0	309.0	216.0	165.0	132.8	78.8	57.9	39.8	24.6
	SPB 12-150	535.5	464.1	400.7	296.9	216.0	177.9	110.3	79.6	52.1	30.5
	SPB 12-200	641.0	559.0	472.0	356.0	281.0	231.0	142.4	103.6	70.3	40.6
	SPB 6-100	394.0	354.0	296.0	197.0	149.0	121.0	71.5	51.7	34.0	18.8
	SPB 6-160	480.0	486.0	427.0	302.0	235.0	194.0	116.0	83.7	54.6	29.7
	SPB 6-180	450.0	452.0	399.0	287.0	227.0	189.0	118.0	87.2	58.8	33.3
	SPB 6-200	516.0	552.0	492.0	351.0	273.0	225.0	134.0	96.4	62.8	34.3

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Discharge Table in Watts/cell

End voltage 1.80 V/cell at 25°C

	Time	5 min	10 min	15 min	30 min	45 min	1 h	2 h	3 h	5 h	10 h
Type	SPB 12-33	159.0	116.0	89.8	59.1	44.6	36.8	24.1	18.9	12.6	6.7
	SPB 12-40	192.7	140.6	110.2	71.3	54.3	44.8	28.9	21.9	14.7	8.2
	SPB 12-55	267.0	205.0	162.4	108.4	81.9	67.3	42.7	31.0	19.0	10.8
	SPB 12-65	303.0	225.0	181.5	120.0	89.2	72.8	44.5	32.2	21.4	13.0
	SPB 12-75	326.0	259.0	210.0	140.0	106.0	86.6	52.3	38.2	25.6	14.4
	SPB 12-80	360.0	288.0	236.0	156.8	118.4	96.5	58.1	42.0	27.8	16.4
	SPB 12-100	425.4	324.9	268.3	190.0	137.0	114.0	71.3	51.7	33.7	19.7
	SPB 12-120	476.0	389.0	322.0	222.0	169.0	135.7	80.1	58.8	40.2	24.7
	SPB 12-150	580.2	490.0	419.6	306.6	221.0	181.8	112.2	80.7	52.6	30.7
	SPB 12-200	691.0	587.0	491.0	366.0	287.0	236.0	144.8	105.1	71.0	40.8
	SPB 6-100	488.0	395.0	320.0	206.0	155.0	125.0	72.9	52.6	34.6	19.2
	SPB 6-160	628.0	557.0	471.0	321.0	246.0	201.0	119.0	85.6	55.7	30.3
	SPB 6-180	588.0	518.0	440.0	305.0	238.0	197.0	121.0	89.2	60.0	34.0
	SPB 6-200	674.0	632.0	543.0	373.0	286.0	234.0	137.0	98.6	64.1	35.0

End voltage 1.75 V/cell at 25°C

	Time	5 min	10 min	15 min	30 min	45 min	1 h	2 h	3 h	5 h	10 h
Type	SPB 12-33	169.2	122.1	93.9	61.3	46.1	37.8	24.6	19.2	12.7	6.9
	SPB 12-40	205.0	148.0	115.4	74.0	56.1	46.1	29.5	22.2	14.9	8.4
	SPB 12-55	284.0	216.0	169.9	112.4	84.6	69.2	43.6	31.5	19.2	10.9
	SPB 12-65	322.0	237.0	189.9	124.5	92.1	74.9	45.5	32.7	21.6	13.1
	SPB 12-75	346.0	272.0	218.0	144.0	109.0	88.5	53.2	38.8	25.9	14.6
	SPB 12-80	379.0	299.0	243.0	159.6	120.0	97.5	58.5	42.2	27.9	16.4
	SPB 12-100	461.4	345.1	279.8	194.6	140.9	116.9	72.6	52.5	34.0	19.8
	SPB 12-120	510.0	408.0	334.0	229.0	172.9	138.6	81.4	59.6	40.6	24.9
	SPB 12-150	625.2	516.0	434.7	312.2	226.0	185.7	114.1	81.8	53.1	31.0
	SPB 12-200	741.0	615.0	510.0	376.0	294.0	241.0	147.2	106.5	71.7	41.0
	SPB 6-100	558.0	428.0	341.0	216.0	160.0	129.0	74.8	53.8	35.2	19.4
	SPB 6-160	729.0	609.0	505.0	337.0	257.0	209.0	122.0	87.7	56.8	30.8
	SPB 6-180	683.0	566.0	471.0	320.0	248.0	204.0	124.0	91.4	61.2	34.5
	SPB 6-200	783.0	691.0	581.0	392.0	298.0	242.0	141.0	101.0	65.4	35.5

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Discharge Table in Watts/cell

End voltage 1.70 V/cell at 25°C

Type	Time	5 min	10 min	15 min	30 min	45 min	1 h	2 h	3 h	5 h	10 h
Type	SPB 12-33	179.4	128.2	98.1	63.5	47.5	38.9	25.1	19.5	12.9	6.9
	SPB 12-40	217.0	155.4	120.5	76.6	57.8	47.4	30.1	22.6	15.1	8.3
	SPB 12-55	301.0	227.0	177.5	116.5	87.3	71.2	44.5	32.1	19.4	10.9
	SPB 12-65	342.0	249.0	198.4	129.0	95.0	77.1	46.4	33.3	21.9	13.2
	SPB 12-75	368.0	284.0	227.0	148.0	112.0	90.4	54.1	39.4	26.4	14.8
	SPB 12-80	398.0	309.0	249.0	162.5	121.6	98.6	58.9	42.5	28.1	16.5
	SPB 12-100	495.4	363.6	292.1	195.1	144.8	119.7	73.9	53.2	34.3	19.8
	SPB 12-120	545.0	426.0	347.0	235.0	176.9	141.5	82.8	60.4	40.9	25.0
	SPB 12-150	667.4	539.7	450.1	311.5	231.0	189.6	116.0	83.0	53.6	31.1
	SPB 12-200	791.0	644.0	529.0	386.0	301.0	246.0	149.7	108.0	72.3	41.3
	SPB 6-100	615.0	455.0	358.0	223.0	166.0	133.0	76.5	54.9	35.8	19.7
	SPB 6-160	806.0	648.0	531.0	350.0	265.0	215.0	125.0	89.5	57.8	31.2
SPB 6-180	755.0	603.0	496.0	332.0	256.0	210.0	127.0	93.3	62.3	35.2	
SPB 6-200	866.0	736.0	612.0	407.0	308.0	249.0	145.0	103.0	66.5	36.1	

End voltage 1.65 V/cell at 25°C

Type	Time	5 min	10 min	15 min	30 min	45 min	1 h	2 h	3 h	5 h	10 h
Type	SPB 12-33	189.5	134.3	102.3	65.8	49.0	40.0	25.7	19.9	13.0	7.0
	SPB 12-40	230.0	162.8	125.7	79.3	59.6	48.8	30.7	23.0	15.2	8.4
	SPB 12-55	318.0	238.0	185.1	120.6	90.0	73.2	45.4	32.6	19.7	11.1
	SPB 12-65	361.0	260.0	207.0	133.5	98.0	79.2	47.4	33.8	22.1	13.3
	SPB 12-75	389.0	297.0	235.0	152.0	114.0	92.3	55.0	40.0	26.8	15.0
	SPB 12-80	418.0	320.0	256.0	165.3	123.2	99.6	59.2	42.7	28.2	16.5
	SPB 12-100	539.2	389.2	302.3	196.8	148.7	122.6	75.2	54.0	34.6	20.1
	SPB 12-120	579.0	445.0	359.0	241.0	180.9	144.4	84.1	61.2	41.3	25.3
	SPB 12-150	721.7	573.8	463.3	312.6	236.0	193.4	117.9	84.1	54.1	31.4
	SPB 12-200	840.0	672.0	548.0	396.0	308.0	251.0	152.1	109.5	73.0	41.5
	SPB 6-100	651.0	471.0	369.0	228.0	169.0	135.0	77.4	55.4	36.1	19.9
	SPB 6-160	853.0	672.0	547.0	357.0	270.0	218.0	127.0	90.5	58.3	31.4
SPB 6-180	799.0	625.0	511.0	339.0	260.0	214.0	129.0	94.3	62.8	35.3	
SPB 6-200	916.0	763.0	630.0	415.0	314.0	254.0	146.0	104.0	67.1	36.3	

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Discharge Table in Watts/cell

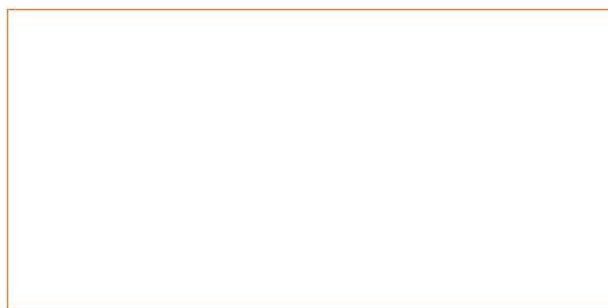
End voltage 1.60 V/cell at 25°C

Time	5 min	10 min	15 min	30 min	45 min	1 h	2 h	3 h	5 h	10 h
SPB 12-33	199.7	140.4	106.5	68.0	50.4	41.1	26.2	20.2	13.1	6.8
SPB 12-40	242.0	170.1	130.8	82.0	61.4	50.1	31.4	23.4	15.4	8.5
SPB 12-55	335.0	248.0	192.6	124.6	92.6	75.2	46.4	33.1	19.9	11.2
SPB 12-65	381.0	272.0	215.0	138.0	100.9	81.4	48.4	34.4	22.4	13.3
SPB 12-75	412.0	310.0	245.0	156.0	117.0	94.2	55.9	40.6	27.1	15.3
SPB 12-80	437.0	330.0	263.0	168.2	124.8	100.6	59.6	42.9	28.3	16.5
SPB 12-100	573.8	408.0	312.5	199.9	152.6	125.5	76.6	54.7	35.0	20.2
SPB 12-120	613.0	464.0	371.0	247.0	184.9	147.3	85.5	62.1	41.7	25.4
SPB 12-150	764.7	597.9	475.4	317.0	242.0	197.3	119.7	85.2	54.6	31.5
SPB 12-200	890.0	701.0	567.0	407.0	315.0	256.0	154.5	111.0	73.6	41.9
SPB 6-100	673.0	482.0	375.0	231.0	170.0	136.0	78.0	55.8	36.3	19.9
SPB 6-160	883.0	687.0	556.0	362.0	273.0	220.0	128.0	91.0	58.6	31.6
SPB 6-180	827.0	639.0	519.0	344.0	263.0	216.0	130.0	94.8	63.1	35.4
SPB 6-200	948.0	779.0	641.0	421.0	317.0	256.0	147.0	105.0	67.4	36.3

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Distributor Area

SUNLIGHT MANUFACTURING PLANT

The SUNLIGHT Manufacturing Plant is headquartered in Northern Greece. Since 1991, there has been a systematic investment in the development of one of the most modern industrial units of Europe in accordance with the strictest international standards.

In a total area of 142,000 m², with indoor areas of more than 55,000 m², the SUNLIGHT Manufacturing Plant has six high-end production units that are recognized for their high specialization.

Aiming at the production of high added value and quality products, the production and assembly lines of the SUNLIGHT Industrial Unit are used for:

- Cylindrical Zinc-Chloride cells such as R6HD (AA), R14HD (C) and R20HD (D) sizes
- Advanced Lead-Acid batteries for submarine propulsion
- Silver-Zinc batteries for combat and exercise torpedoes
- Stationary and traction Lead-Acid batteries (vented type)
- Sealed Lead-Acid batteries (VRLA)
- Photovoltaic Power Supply Systems
- Battery packs for military and commercial applications
- Assembly of Power Supply Systems for telecommunication applications
- Assembly of Uninterruptible Power Systems (UPS)
- Assembly of Industrial Rectifiers
- Assembly of Generating Sets ranging from 7 to 3,300 kVA

MANAGEMENT SYSTEMS for QUALITY, ENVIRONMENTAL CONTROL, OCCUPATIONAL HEALTH & SAFETY

The SUNLIGHT Manufacturing Plant has established and maintains management systems for Quality (ISO 9001), Environmental control (ISO 14001) and Occupational Health and Safety (OHSAS 18001).

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comrade design



SVT AGM VRLA batteries

 **SUNLIGHT**
creating energy



[Energy is what we do]

SVT batteries introduction

Product Information

The SVT range of SUNLIGHT Valve Regulated Lead Acid batteries has been designed as an advanced series, in order to provide solution in a wide range of capacity requirements.

The Valve Regulated Lead Acid (VRLA) battery is a rechargeable battery type with a safety valve, which allows the internal pressure to be released in case of overcharge. This battery type is maintenance free as there is no need for topping-up water or electrolyte during the entire service life.

The SUNLIGHT SVT range of VRLA batteries features models with a capacity range from 150 up to 3850Ah. They have been designed with long service life, excellent performance and high reliability. The expanded range makes SVT batteries an ideal choice for versatile standby applications, providing also solutions for large capacity requirements.

Features of the SVT range

- Capacity Range: 150Ah to 3850Ah
- Design Life: 12+ years at 20°C
- Classified as: Long Life, according to EUROBAT guide 1999
- Configurations: 2V cells
- Connectors: Metal bar connectors provided as standard (for models >200Ah)

Quality and Standards

- The SUNLIGHT SVT batteries comply with the international standards IEC 60896 Part 21/22 and BS6290 Part 4.
- The SUNLIGHT Manufacturing Plant is certified according to ISO 9001:2000 and ISO 14001:2004.
- As a member of EUROBAT organization SUNLIGHT closely monitors the latest developments in the battery industry.
- Products are 100% tested and checked prior to shipment.
- SUNLIGHT SVT batteries are completely recyclable.



SVT batteries technical features & applications

Technical Features

High Performance

With low internal resistance and efficient discharge characteristics, SUNLIGHT SVT batteries ensure superior performance.

Maintenance free

During the service life, there is no need to check the level of the electrolyte or to add water. The gases produced during electrolysis are almost completely recombined to water (up to 99%) through an effective reaction between hydrogen and oxygen.

Safety Valve design

Excessive gas produced by overcharge or an incorrect charging method is released through the safety valve, which detects rising internal pressure and allows gas to exit; then automatically reseals.

Separator Technology

The Absorbent Glass Mat (AGM) separator, used in SUNLIGHT batteries, is a highly porous material, which achieves maximization of oxygen diffusion and facilitates the reaction of active materials in the plates. The separator also maintains a constant distance between the positive and the negative plates and immobilizes the electrolyte, so that the possibility of acid leakage is minimized.

Performance on wide temperature range

SUNLIGHT SVT batteries operate within a wide range of temperature while the optimum temperature is 20°C ~ 25°C.

Low Self-discharge Rate

Using a lead / calcium grid alloy, the self-discharge is minimum. The battery can be stored for 9 months under normal conditions (20°C ~ 25°C) with no permanent effect on the capacity or the expected service life.

Leak and spill proof container

The construction of SUNLIGHT SVT battery guarantees that no electrolyte leakage can occur from the terminals or case. A highly resistant plastic material is used, available in either standard ABS (UL94 HB) or flame retardant type (according to UL94 V-0) on request.

Float service life

The expected service life is 12+ years in float/standby applications (20°C).

Multi-position usage

The sealed construction of the battery allows perfect operation in any position for models up to 1250Ah capacity (vertical or horizontal but not completely inverted position). For models above 1500Ah capacity, the normal upright position is recommended.

Applications

- Emergency power supply in power generation/distribution sites and substations
- Telecommunications
- UPS systems
- Railroad signal and communication
- Electrical equipment
- Emergency lighting



SVT Series

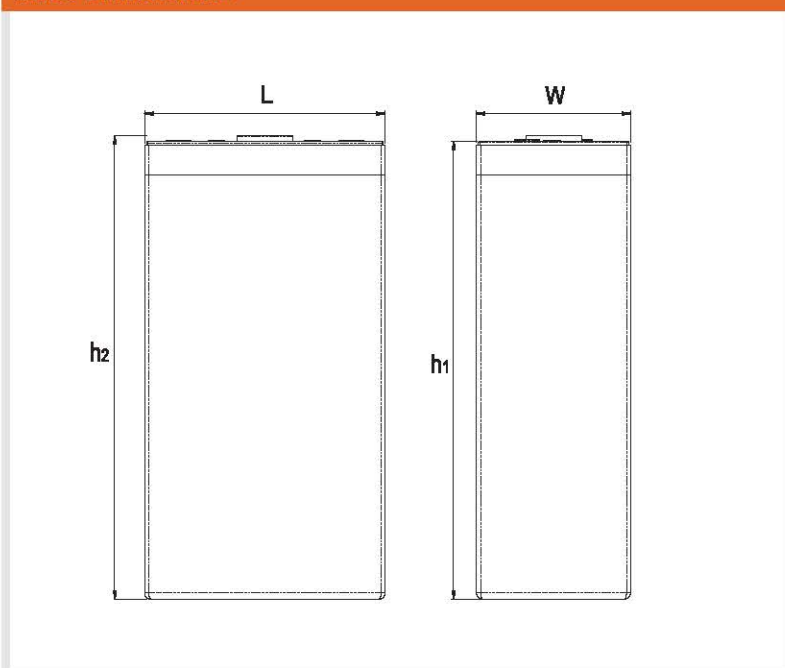
Battery Type	Nominal Voltage (V)	Nominal Capacity (Ah) 10h Rate at 1.80 Vpc	Dimensions (mm)					Typical Weight (kg)	Number of Terminals	Terminal Type	Internal Resistance (mΩ)	Maximum Charging Current (A)
			L	W	h1	h2	Overall H*					
SVT 150	2	150	172	102	205	210	---	8.1	2	M6	1.50	30
SVT 200	2	200	173	111	329	334	365	13.7	2	M8	0.50	40
SVT 250	2	250	173	111	329	334	365	16.0	2	M8	0.45	50
SVT 300	2	300	171	151	330	335	365	18.1	2	M8	0.40	60
SVT 375	2	375	171	151	330	335	365	21.7	2	M8	0.39	75
SVT 400	2	400	211	176	329	334	365	26.1	4	M8	0.36	80
SVT 500	2	500	241	172	331	336	365	30.8	4	M8	0.30	100
SVT 600	2	600	301	175	331	336	366	37.9	4	M8	0.28	120
SVT 800	2	800	410	175	330	335	365	50.3	8	M8	0.20	160
SVT 1000	2	1000	475	175	328	333	365	62.8	8	M8	0.16	200
SVT 1250	2	1250	475	175	328	333	365	70.2	8	M8	0.13	250
SVT 1500	2	1500	401	351	342	347	378	98.6	8	M8	0.11	300
SVT 1875	2	1875	401	351	342	347	378	115.5	8	M8	0.10	375
SVT 2000	2	2000	491	351	344	349	383	128.9	8	M8	0.09	400
SVT 2500	2	2500	491	351	344	349	383	144.9	8	M8	0.08	500
SVT 3000	2	3000	712	351	341	346	382	194.8	8	M8	0.08	600
SVT 3850	2	3850	712	351	341	346	382	245.3	8	M8	0.07	770

*Overall height includes the top covers, provided for batteries >200Ah

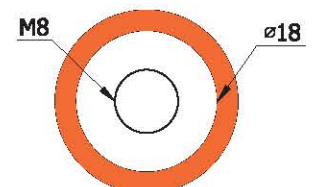
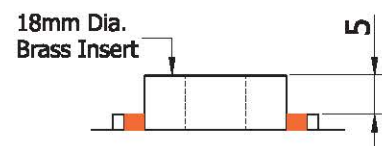
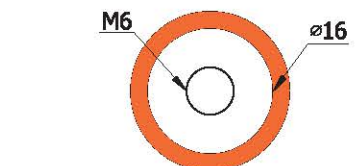
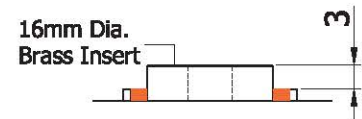
Terminal Torque Settings

M6 Terminal	6-8 Nm
M8 Terminal	8-12 Nm

Case Dimensions



Terminals

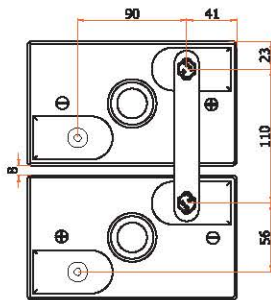


Connection Drawings

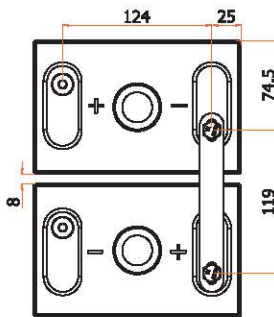
Dimensions in mm

SVT 150, 200, 250, 300, 375

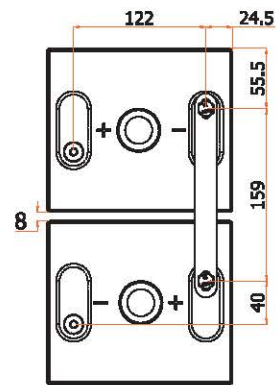
SVT 150



SVT 200
SVT 250

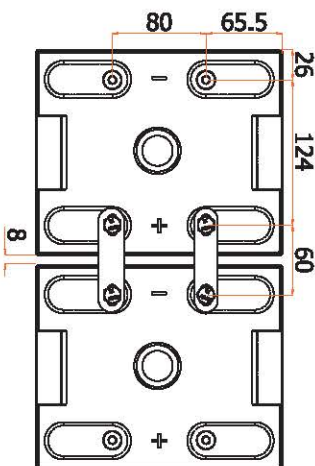


SVT 300
SVT 375

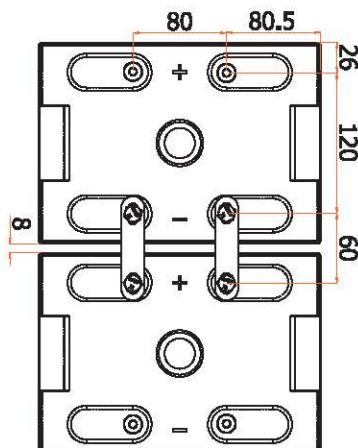


SVT 400, 500, 600

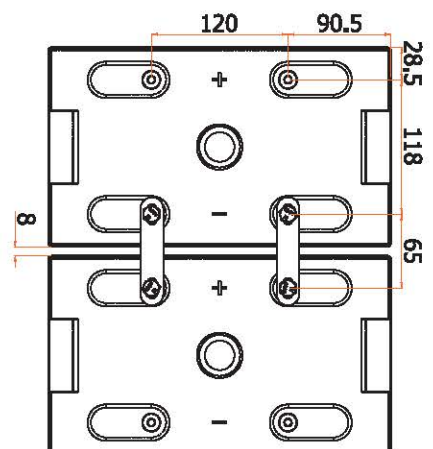
SVT 400



SVT 500

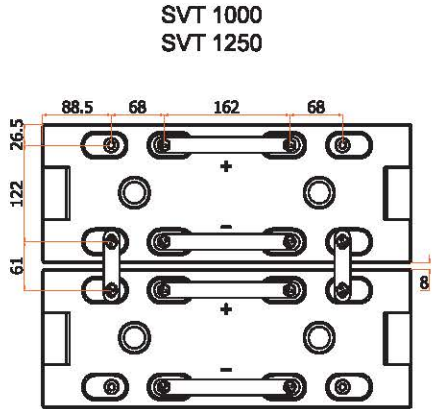
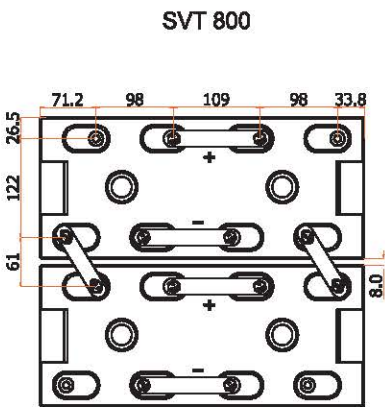


SVT 600

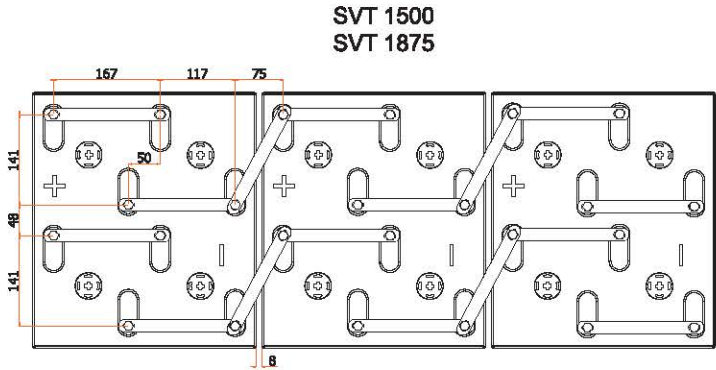


Dimensions in mm

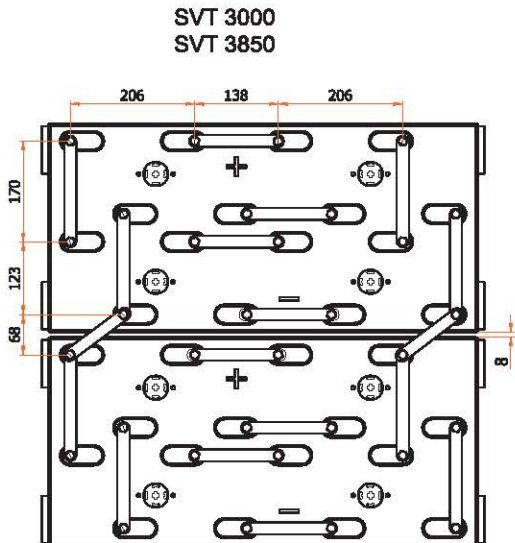
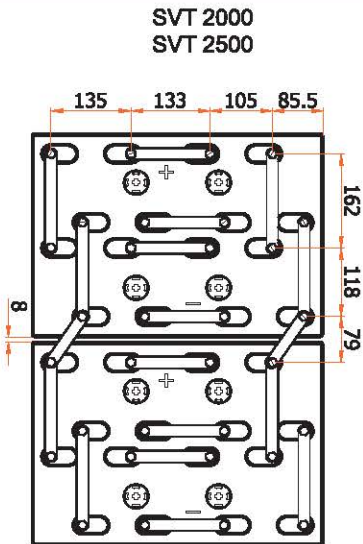
SVT 800, 1000, 1250



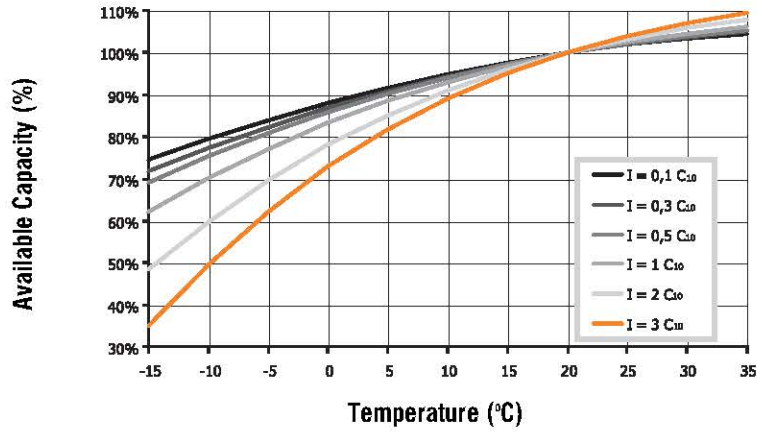
SVT 1500, 1875



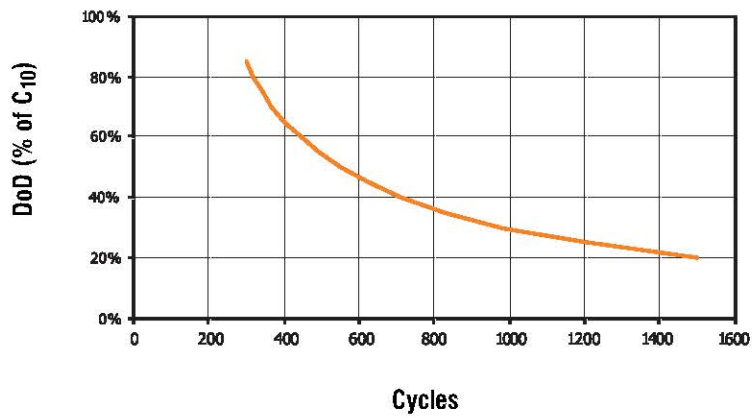
SVT 2000, 2500, 3000, 3850



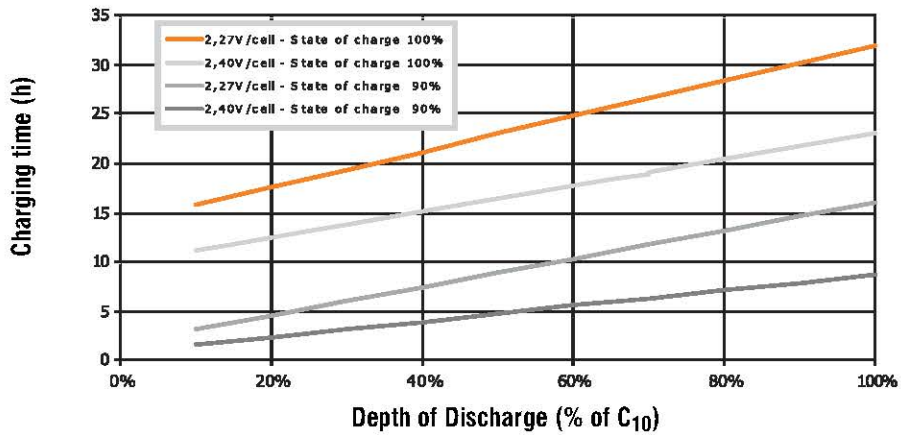
Available capacity vs. Temperature



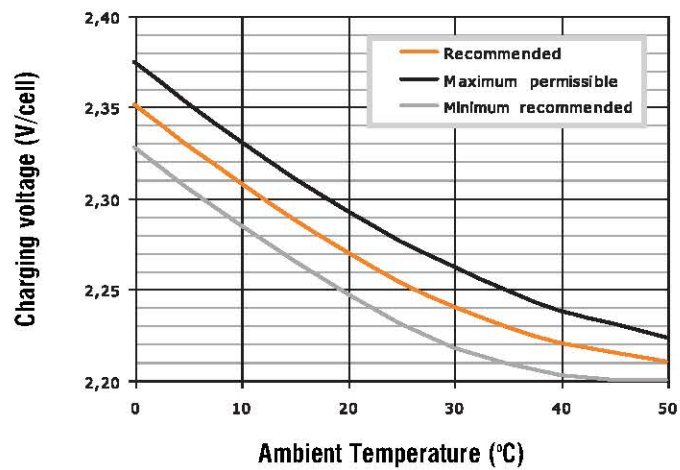
Cycle life vs. Depth of Discharge (DoD)



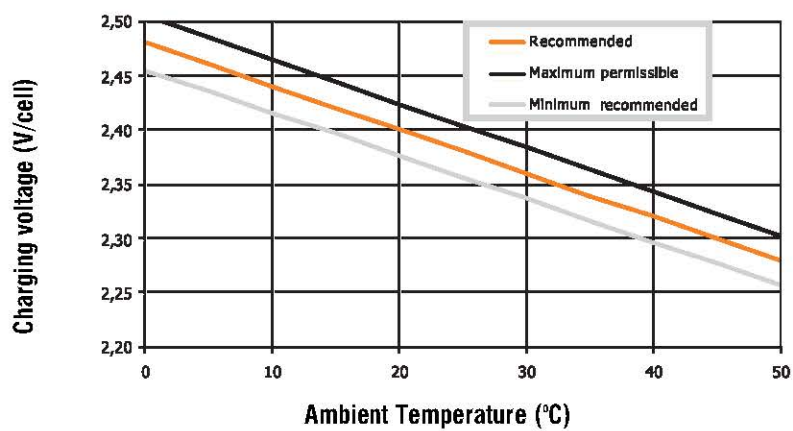
Typical charging time vs. Depth of Discharge (Initial charging current = 0,2 C₁₀)



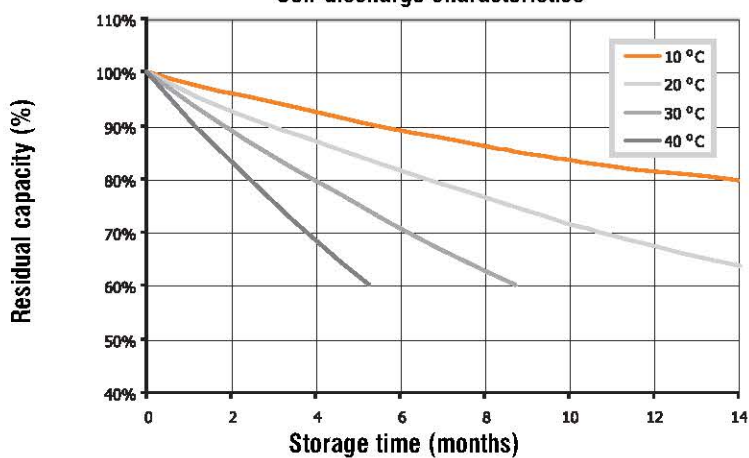
Charging voltage - Stand by use



Charging voltage - Cycle use



Self-discharge characteristics



Temperature	Shelf Life
0 - 20 °C	12 months
21 - 30 °C	7 months
31 - 40 °C	4 months
41 - 50 °C	2,5 months

Temperature	Shelf Life
0 - 20 °C	12 months
21 - 30 °C	7 months
31 - 40 °C	4 months
41 - 50 °C	2,5 months

Discharge Table in Amperes

End voltage 1.85 V/cell at 20°C

Time	15 min	20 min	30 min	45 min	1 h	2 h	3 h	5 h	8 h	10 h	20 h
SVT 150	210	180	143	108	87.3	51.4	38.0	25.7	17.7	14.7	7.6
SVT 200	227	206	175	138	113	69.3	50.8	34.5	24.0	19.8	10.3
SVT 250	290	257	219	176	146	89.7	66.1	44.2	30.4	25.1	13.1
SVT 300	340	300	257	209	173	107	78.8	53.0	36.5	30.2	15.8
SVT 375	426	387	331	264	217	133	98.9	66.2	45.5	37.5	19.8
SVT 400	490	449	369	293	242	146	107	71.3	48.4	40.0	21.4
SVT 500	567	512	442	357	293	177	129	86.4	59.6	49.4	26.5
SVT 600	681	621	525	412	340	204	150	102	70.3	57.8	30.8
SVT 800	922	833	699	552	454	275	204	138	94.9	78.4	41.8
SVT 1000	1128	1029	870	692	567	339	247	166	115	94.3	50.1
SVT 1250	1372	1270	1092	867	709.6	424	312	209	144	118	62.2
SVT 1500	1702	1557	1310	1030	851.0	509	373	249	172	142	75.0
SVT 1875	2099	1897	1616	1269	1045	637	467	313	215	177	94.0
SVT 2000	2164	2008	1724	1387	1135	679	497	334	230	189	100
SVT 2500	2760	2520	2164	1716	1418	849	621	414	287	236	125
SVT 3000	3280	2995	2550	2059	1702	1019	743	498	345	284	151
SVT 3850	4260	3822	3268	2643	2185	1308	969	639	441	363	193

End voltage 1.80 V/cell at 20°C

Time	15 min	20 min	30 min	45 min	1 h	2 h	3 h	5 h	8 h	10 h	20 h
SVT 150	226	193	150	113	91.2	53.5	39.4	26.4	18.3	15.2	7.9
SVT 200	244	221	188	148	121	72.3	53.0	35.8	24.7	20.5	10.7
SVT 250	313	276	231	184	151	92.0	67.8	45.4	31.2	25.8	13.4
SVT 300	366	323	270	219	180	110	80.5	54.0	37.3	30.8	16.1
SVT 375	458	416	347	275	225	137	102	68.1	46.8	38.4	20.2
SVT 400	518	464	380	301	247	149	109	72.5	49.7	40.9	21.9
SVT 500	610	551	470	373	303	183	133	89.0	61.4	50.7	27.3
SVT 600	732	660	556	443	362	217	159	106	73.4	60.2	32.2
SVT 800	988	888	752	590	480	289	212	142	97.8	81.0	43.3
SVT 1000	1232	1116	932	741	605	361	264	177	122	100	53.3
SVT 1250	1528	1386	1156	916	747	451	331	221	153	126	66.2
SVT 1500	1864	1671	1392	1107	902	541	394	265	183	151	79.9
SVT 1875	2340	2097	1738	1359	1114	677	497	332	229	188	100
SVT 2000	2428	2193	1856	1476	1205	722	530	353	245	201	107
SVT 2500	3084	2760	2326	1845	1509	903	662	443	306	251	133
SVT 3000	3588	3220	2750	2214	1804	1084	795	531	367	301	161
SVT 3850	4697	4224	3562	2842	2324	1391	1025	680	469	386	205

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Discharge Table in Amperes

End voltage 1.75 V/cell at 20°C

Time	15 min	20 min	30 min	45 min	1 h	2 h	3 h	5 h	8 h	10 h	20 h
SVT 150	237	202	157	118	94.8	55.3	40.5	27.3	18.8	15.5	8.1
SVT 200	277	240	196	154	125	74.7	54.7	36.8	25.4	20.9	10.9
SVT 250	326	287	239	189	154	94.1	69.1	46.4	31.7	26.2	13.7
SVT 300	386	338	283	226	186	113	82.7	55.1	38.1	31.5	16.4
SVT 375	498	439	363	285	232	140	104	69.3	47.4	39.2	20.6
SVT 400	553	483	393	308	251	151	111	74.0	50.6	41.7	22.3
SVT 500	668	591	492	385	312	188	138	92.2	63.1	52.3	28.0
SVT 600	820	726	598	467	382	226	165	111	76.3	62.7	33.6
SVT 800	1059	947	786	621	505	301	221	147	101	83.6	44.5
SVT 1000	1344	1185	982	776	631	375	275	184	127	104	55.5
SVT 1250	1668	1488	1228	968	789	469	348	231	159	131	68.9
SVT 1500	2008	1779	1476	1157	940	563	413	276	191	157	83.1
SVT 1875	2528	2244	1858	1447	1181	705	522	347	238	196	104
SVT 2000	2640	2358	1986	1555	1263	750	552	370	255	209	111
SVT 2500	3296	2952	2468	1957	1586	947	696	463	317	261	139
SVT 3000	3904	3498	2936	2348	1900	1128	832	554	381	313	167
SVT 3850	5064	4521	3764	3000	2438	1448	1067	708	489	402	214

End voltage 1.70 V/cell at 20°C

Time	15 min	20 min	30 min	45 min	1 h	2 h	3 h	5 h	8 h	10 h	20 h
SVT 150	247	209	162	121	96.9	56.5	41.5	27.9	19.1	15.7	8.2
SVT 200	283	245	204	159	129	76.2	55.6	37.2	25.7	21.3	11.1
SVT 250	339	295	244	192	157	95.3	70.0	47.0	32.1	26.5	13.9
SVT 300	405	350	290	231	189	114	83.6	55.9	38.6	31.9	16.6
SVT 375	529	460	372	291	237	141	105	70.5	48.0	39.5	21.0
SVT 400	576	503	406	313	255	154	113	75.2	51.4	42.6	22.8
SVT 500	707	620	508	395	319	191	139	93.4	63.9	52.8	28.3
SVT 600	865	755	618	483	391	230	169	113	77.8	63.9	34.2
SVT 800	1130	992	813	635	517	307	226	150	103	85.3	45.4
SVT 1000	1408	1233	1016	795	646	383	280	188	129	106	56.6
SVT 1250	1732	1530	1260	988	805	479	354	236	162	133	70.3
SVT 1500	2113	1856	1521	1187	959	575	426	283	195	160	84.5
SVT 1875	2647	2326	1905	1489	1213	719	532	355	243	200	106
SVT 2000	2764	2436	2033	1588	1288	767	568	377	260	213	113
SVT 2500	3476	3091	2540	1996	1618	964	710	471	323	267	141
SVT 3000	4164	3666	3049	2395	1938	1150	850	566	387	320	171
SVT 3850	5304	4701	3912	3074	2487	1477	1087	722	496	410	218

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Discharge Table in Amperes

End voltage 1.65 V/cell at 20°C

Time	15 min	20 min	30 min	45 min	1 h	2 h	3 h
SVT 150	254	214	166	123	98.4	57.3	41.9
SVT 200	303	264	211	163	131	77.3	56.3
SVT 250	356	306	249	197	159	96.4	70.9
SVT 300	422	359	298	235	193	116	84.5
SVT 375	546	472	380	295	241	143	107
SVT 400	604	521	413	318	259	156	114
SVT 500	740	645	520	400	322	193	141
SVT 600	900	784	632	491	398	234	171
SVT 800	1172	1020	833	646	525	313	228
SVT 1000	1452	1257	1036	804	654	387	284
SVT 1250	1776	1566	1290	1009	820	484	358
SVT 1500	2184	1905	1545	1216	987	585	431
SVT 1875	2720	2382	1935	1512	1233	731	539
SVT 2000	2856	2502	2088	1612	1311	786	580
SVT 2500	3564	3160	2602	2037	1649	983	722
SVT 3000	4312	3777	3114	2454	1980	1170	862
SVT 3850	5544	4863	4000	3143	2541	1505	1103

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Discharge Table in Watts/cell

End voltage 1.85 V/cell at 20°C

Time	15 min	20 min	30 min	45 min	1 h	2 h	3 h	5 h	8 h	10 h
SVT 150	385	337	272	208	169	101	75.5	51.7	35.8	29.9
SVT 200	415	378	325	265	220	135	100	68.3	47.2	39.4
SVT 250	546	501	427	342	284	174	130	87.6	60.4	50.5
SVT 300	623	565	488	408	343	208	155	106	73.0	60.9
SVT 375	784	714	624	513	422	257	194	131	90.5	75.9
SVT 400	831	771	662	543	451	279	206	139	95.7	79.8
SVT 500	1038	943	822	667	551	339	252	171	118	98.2
SVT 600	1288	1140	984	803	663	399	294	199	138	115
SVT 800	1661	1524	1301	1052	878	532	397	269	183	154
SVT 1000	2076	1865	1612	1311	1086	655	488	331	227	188
SVT 1250	2532	2337	2031	1636	1354	820	609	412	284	235
SVT 1500	3064	2812	2430	1980	1630	984	728	494	342	283
SVT 1875	3841	3491	3006	2425	2011	1231	910	617	425	353
SVT 2000	3976	3694	3216	2622	2173	1309	969	657	453	377
SVT 2500	5076	4632	4063	3277	2716	1641	1210	815	565	471
SVT 3000	6000	5490	4840	3960	3259	1970	1448	982	677	564
SVT 3850	7840	7033	6160	5048	4183	2528	1870	1259	867	724

End voltage 1.80 V/cell at 20°C

Time	15 min	20 min	30 min	45 min	1 h	2 h	3 h	5 h	8 h	10 h
SVT 150	414	357	285	216	177	105	78.4	53.1	36.8	30.6
SVT 200	447	407	350	281	231	141	104	70.6	48.7	40.6
SVT 250	588	529	446	353	292	178	132	89.4	61.6	51.4
SVT 300	670	613	525	422	354	214	159	108	74.5	62.0
SVT 375	838	745	655	529	432	263	198	134	92.5	77.4
SVT 400	893	822	699	563	463	285	211	142	98.0	81.6
SVT 500	1116	1014	874	703	578	349	261	177	122	101
SVT 600	1380	1227	1049	846	693	419	309	208	144	120
SVT 800	1786	1629	1399	1120	924	559	413	279	191	160
SVT 1000	2233	2006	1720	1410	1159	697	515	349	241	200
SVT 1250	2848	2556	2160	1737	1431	872	645	436	301	250
SVT 1500	3396	3030	2596	2103	1727	1046	767	522	363	301
SVT 1875	4192	3795	3233	2607	2152	1303	966	650	451	375
SVT 2000	4465	4041	3466	2811	2308	1389	1032	696	482	401
SVT 2500	5582	4981	4369	3524	2869	1745	1290	873	605	501
SVT 3000	6640	5925	5200	4227	3455	2095	1549	1046	721	600
SVT 3850	8596	7772	6728	5428	4450	2689	1998	1340	922	770

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Discharge Table in Watts/cell

End voltage 1.75 V/cell at 20°C

Time	15 min	20 min	30 min	45 min	1 h	2 h	3 h	5 h	8 h	10 h
SVT 150	432	372	294	222	181	108	80.6	54.3	37.4	31.1
SVT 200	491	433	367	289	237	145	108	72.5	49.7	41.4
SVT 250	618	547	458	360	299	181	135	90.8	62.4	52.1
SVT 300	751	655	553	439	364	218	162	110	75.4	62.9
SVT 375	904	792	680	543	441	269	203	136	94.0	78.3
SVT 400	976	867	732	579	477	291	217	145	99.6	82.9
SVT 500	1220	1080	918	732	602	362	270	183	125	104
SVT 600	1492	1314	1106	874	725	436	321	216	149	125
SVT 800	1952	1752	1474	1171	960	579	430	292	199	167
SVT 1000	2400	2136	1800	1463	1212	725	539	364	251	208
SVT 1250	3032	2706	2280	1819	1496	907	677	455	312	260
SVT 1500	3624	3240	2718	2180	1800	1089	813	545	376	313
SVT 1875	4548	4053	3412	2729	2236	1361	1011	684	469	391
SVT 2000	4840	4347	3670	2933	2419	1445	1076	728	500	417
SVT 2500	5940	5349	4607	3685	3009	1816	1357	912	628	521
SVT 3000	7120	6390	5530	4413	3639	2180	1621	1092	750	625
SVT 3850	9200	8250	7040	5640	4669	2798	2079	1394	960	801

End voltage 1.70 V/cell at 20°C

Time	15 min	20 min	30 min	45 min	1 h	2 h	3 h	5 h	8 h	10 h
SVT 150	447	382	300	227	185	111	82.0	55.4	38.0	31.6
SVT 200	511	446	375	294	241	147	109	73.8	50.4	42.0
SVT 250	639	563	466	366	302	184	136	92.2	62.9	52.6
SVT 300	789	677	566	444	369	220	164	112	76.4	63.5
SVT 375	958	837	704	552	450	274	206	138	95.0	79.1
SVT 400	1028	906	751	588	484	297	220	148	101	83.8
SVT 500	1279	1129	946	751	612	368	274	186	127	106
SVT 600	1565	1375	1143	907	740	445	329	222	153	127
SVT 800	2046	1806	1512	1196	979	588	437	297	202	169
SVT 1000	2508	2217	1848	1491	1236	740	549	370	256	212
SVT 1250	3136	2785	2320	1855	1520	925	691	463	317	264
SVT 1500	3825	3411	2814	2224	1836	1111	830	555	383	318
SVT 1875	4791	4233	3525	2800	2298	1390	1039	695	478	398
SVT 2000	5112	4530	3761	2985	2467	1472	1100	742	510	426
SVT 2500	6256	5568	4720	3773	3098	1853	1384	928	640	531
SVT 3000	7600	6660	5680	4520	3711	2224	1661	1115	765	637
SVT 3850	9680	8632	7237	5747	4762	2854	2120	1423	975	815

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Discharge Table in Watts/cell

End voltage 1.65 V/cell at 20°C

Time	15 min	20 min	30 min	45 min	1 h	2 h	3 h
SVT 150	455	389	306	231	187	112	83
SVT 200	550	479	387	300	244	148	110
SVT 250	660	575	473	369	306	186	138
SVT 300	842	714	579	453	373	223	166
SVT 375	992	870	722	557	455	275	207
SVT 400	1088	954	769	599	491	300	223
SVT 500	1340	1182	974	765	623	372	277
SVT 600	1652	1415	1170	925	754	454	334
SVT 800	2160	1905	1552	1218	994	597	443
SVT 1000	2608	2280	1896	1523	1260	752	557
SVT 1250	3244	2865	2361	1879	1542	936	698
SVT 1500	3952	3474	2866	2279	1877	1133	842
SVT 1875	4928	4335	3592	2851	2340	1412	1052
SVT 2000	5272	4675	3830	3043	2506	1500	1120
SVT 2500	6444	5704	4786	3836	3150	1890	1407
SVT 3000	7880	6895	5840	4600	3781	2262	1679
SVT 3850	10120	8899	7380	5857	4853	2900	2147

Design and/or specifications are subject to change without prior notice. For clarifications and updated information, please contact your local SUNLIGHT sales representative.



SUNLIGHT MANUFACTURING PLANT

The SUNLIGHT Manufacturing Plant is headquartered in Northern Greece. Since 1991, there has been a systematic investment in the development of one of the most modern industrial units of Europe in accordance with the strictest international standards.

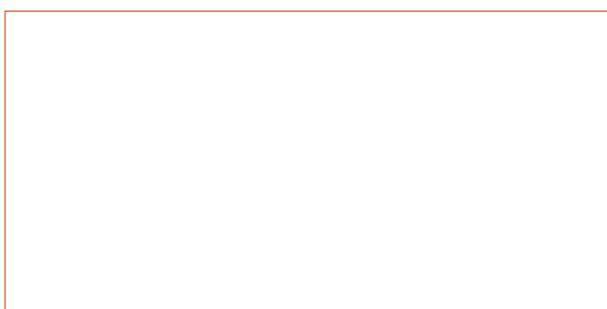
In a total area of 142,000 m², with indoor areas of more than 55,000 m², the SUNLIGHT Manufacturing Plant has six high-end production units that are recognized for their high specialization.

Aiming at the production of high added value and quality products, the production and assembly lines of the SUNLIGHT Industrial Unit are used for:

- Cylindrical Zinc-Chloride cells such as R6HD (AA), R14HD (C) and R20HD (D) sizes
- Advanced Lead-Acid batteries for submarine propulsion
- Silver-Zinc batteries for combat and exercise torpedoes
- Stationary and traction Lead-Acid batteries (vented type)
- Sealed Lead-Acid batteries (VRLA)
- Photovoltaic Power Supply Systems
- Battery packs for military and commercial applications
- Assembly of Power Supply Systems for telecommunication applications
- Assembly of Uninterruptible Power Systems (UPS)
- Assembly of Industrial Rectifiers
- Assembly of Generating Sets ranging from 7 to 3,300 kVA



www.sunlight.gr



Distributor Area

MANAGEMENT SYSTEMS for QUALITY, ENVIRONMENTAL CONTROL, OCCUPATIONAL HEALTH & SAFETY

The SUNLIGHT Manufacturing Plant has established and maintains management systems for Quality (ISO 9001), Environmental control (ISO 14001) and Occupational Health and Safety (OHSAS 18001).

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