



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 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.



SP_B batteries technical features & applications

Technical Features

High Performance

With low internal resistance and efficient discharge characteristics, SUNLIGHT SP_B 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 SP_B 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 SP_B 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



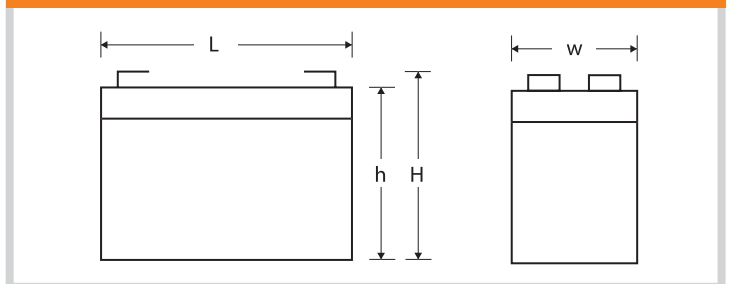
SPB Series

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 V _{pc}	L	W	h	Overall H				
SPB 12 - 33	12	34	33	195	130	155	168	10.20	A	M6/φ14	10
SPB 12 - 40	12	44	41	197	165	170	170	13.50	B	M6/φ14	9.5
SPB 12 - 55	12	62	56	229	138	208	213	19.50	A	M6/φ14	6
SPB 12 - 65	12	70	66	350	167	179	179	23.40	A	M6/φ14	6
SPB 12 - 75	12	78	76	258	166	206	215	24.00	A	M6/φ14	5.7
SPB 12 - 80	12	84	81	350	167	179	179	24.00	A	M6/φ14	5.5
SPB 12 - 100	12	106	102	330	171	215	220	32.00	A	M6/φ14	5
SPB 12 - 120	12	126	122	410	176	227	227	38.00	A	M8/φ16	4.3
SPB 12 - 150	12	166	153	485	172	240	240	47.00	A	M8/φ16	3.7
SPB 12 - 200	12	212	203	522	238	218	223	65.00	D	M8/φ16	3.5
SPB 6 - 100	6	108	100	193	168	204	208	16.00	C	M6/φ14	4
SPB 6 - 160	6	172	160	298	171	226	229	26.00	C	M6/φ16	2
SPB 6 - 180	6	198	177	260	180	247	250	30.00	E	M8/φ18	2
SPB 6 - 200	6	200	182	318	178	225	228	31.00	C	M8/φ18	<2

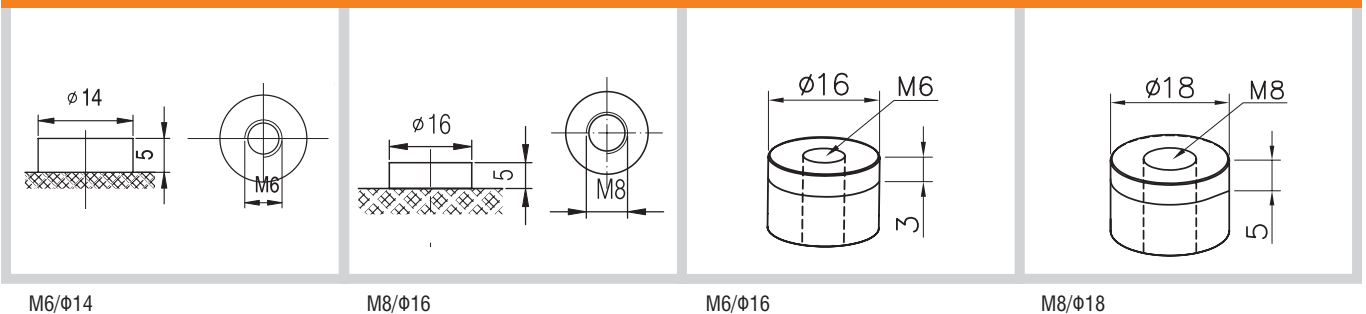
Terminal Torque Settings

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

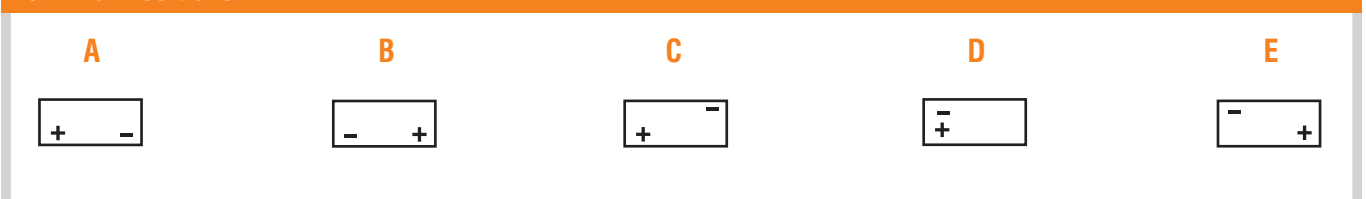
Case Dimensions



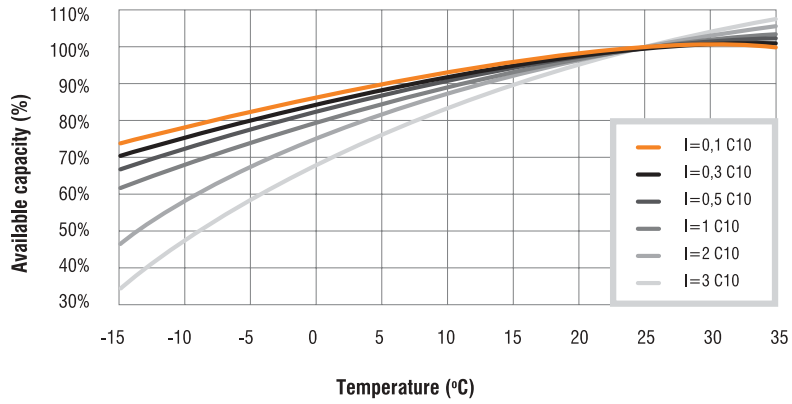
Terminals



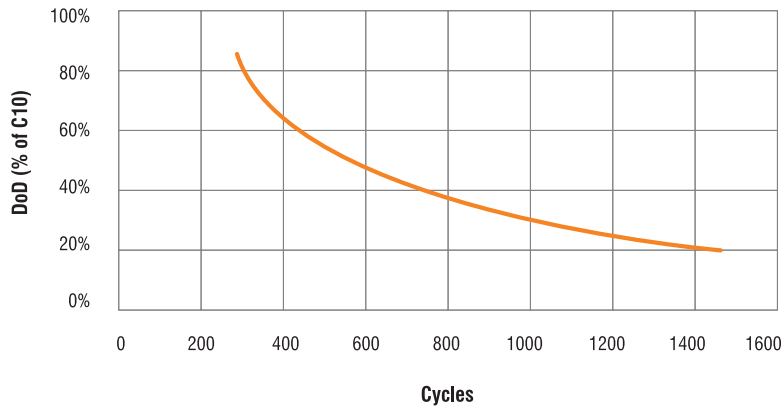
Terminal Positions



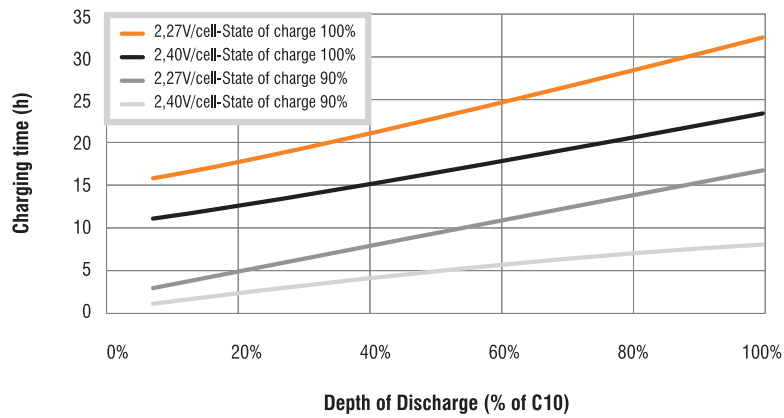
Available capacity vs. Temperature



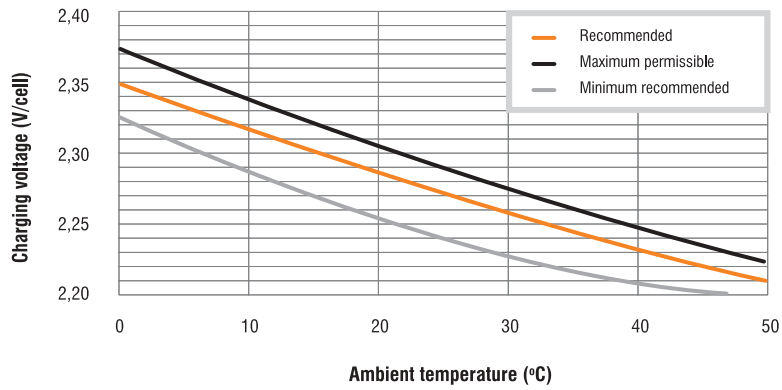
Cycle life vs. Depth of Discharge (DOD)



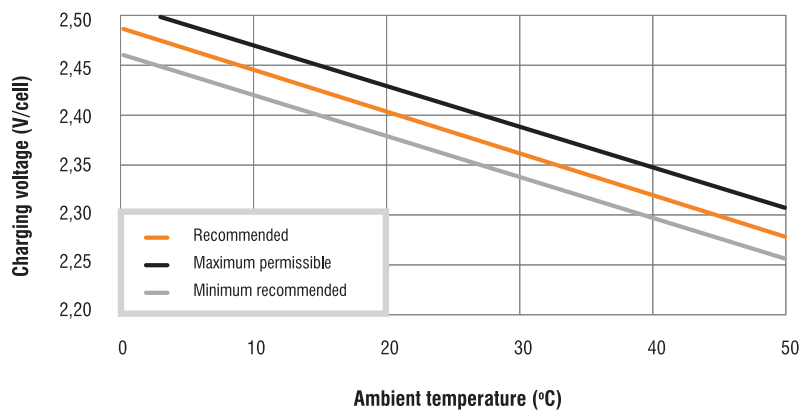
Typical charging time vs. Depth of Discharge (initial charging current=0,2C10)



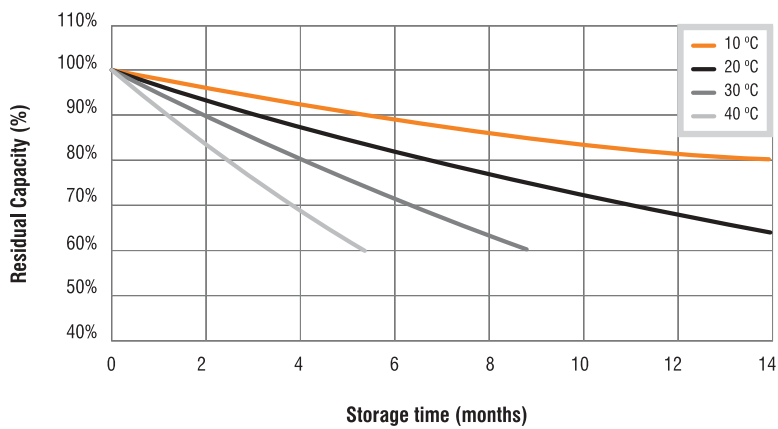
Charging voltage - Stand by use



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

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	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	144.5	120.0	81.5	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	222.0	189.0	126.6	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

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	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	155.7	127.6	85.3	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	237.0	199.5	131.9	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	166.8	135.2	89.0	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	252.0	210.0	137.1	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	177.9	142.8	92.7	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	267.0	220.0	142.3	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

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	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	189.1	150.4	96.5	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	282.0	231.0	147.6	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

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	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	200.0	158.0	100.2	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	297.0	241.0	152.8	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
Type	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	211.0	165.6	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	311.0	252.0	158.1	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

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	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	349.0	281.0	233.0	164.1	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	484.0	432.0	371.0	268.0	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

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	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	382.0	299.0	245.0	170.0	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	525.0	455.0	386.0	276.0	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

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	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	415.0	317.0	257.0	176.0	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	566.0	478.0	402.0	284.0	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

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	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	448.0	335.0	269.0	182.0	140.9	116.9	72.6	52.5	34.0	19.9
	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	607.0	501.0	418.0	292.0	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

	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	481.0	353.0	281.0	187.9	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	648.0	524.0	433.0	300.0	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

	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	514.0	371.0	293.0	193.9	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	688.0	547.0	449.0	308.0	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
Type	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	547.0	389.0	305.0	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	729.0	570.0	464.0	316.0	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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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 40,000 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).
- Autonomous Photovoltaic Hybrid 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 5 to 3,000 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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