

SAFT



Ni-Cd Block battery range

The sustainable approach to
performance and reliability
for industrial applications



TotalEnergies

Meeting industry's power back-up challenges

Make Saft your long term partner to help you reduce your CO₂ emissions

Saft has been a trusted battery partner for the world's leading industrial players for over 100 years, with a range of well-proven solutions that deliver secure energy for stationary applications with a reduced CO₂ emissions. Saft's products are designed to meet the environment, reliability, safety and security challenges of today's industrial landscape where they provide power back-up, starting power and bulk energy storage. Saft's commitment to research and development and innovative engineering ensures that our nickel-cadmium (Ni-Cd) batteries offer the very latest in design, quality and industrial process technology to minimize their material consumption. They also come with comprehensive through-life global service support, from initial consultancy to volume delivery, including training, maintenance and expert technical back-up.

Saft Block batteries: flexible solutions for a wide range of industrial applications

Sustainable, reliable, and robust batteries for back-up power

Stationary batteries are used in refineries, power plants, onshore & offshore oil & gas industries, substations, airports & building infrastructure – locations where it is absolutely critical to have batteries that will work when they should, even under extreme operating conditions. Saft nickel cadmium batteries capable of operating at higher temperature with very limited performances changes will allow the end users to reduce their energy consumption by limiting the need to cool down the batterie room. Power is absolutely vital to Uninterruptible Power Supply (UPS) systems, switching and transmission functions, emergency and security systems, industrial fire monitors and alarms, process control installations, substation switchgear, signaling systems and more.

If the primary power source for these applications is suddenly unavailable, a back-up system provides a temporary source of power until primary power re-engages or while systems operators perform a controlled shutdown. But back-up power is only as good as the stationary battery that enables it!

Instant starting power

Cranking up an emergency generator or switching on heaters, pumps or other equipment requires batteries that are very reliable, offer high discharge capabilities and function properly in extreme temperatures. Saft batteries recover their voltage instantaneously, making them the ideal choice for starting applications.



In 2022, the sustainability performance of Saft was evaluated by Ecovadis, a leading Environment and Social Responsibility rating agency. This evaluation focuses on the following matters: environment, labor and human rights, ethics as well as sustainable procurement.

Saft is ranked within the top 1% of companies involved in the manufacture of batteries and accumulators.

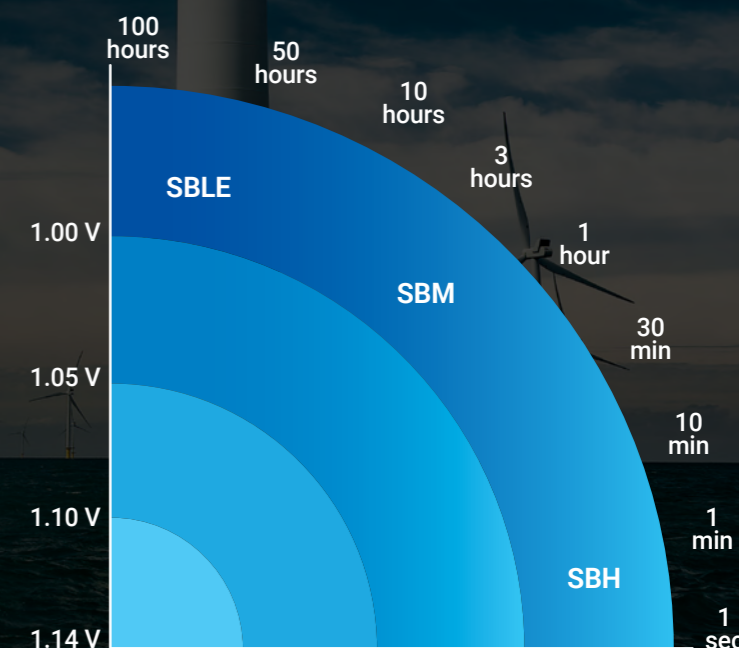
Saft LE/M/H Block battery range: a wide choice of capacity and performance to select to optimized product limiting the usage of raw material

Saft has developed the SBLE, SBM and SBH ranges of block batteries to offer the optimum, flexible solution for all stationary applications. The choice of low rate discharge, medium and high performance types makes it easy to select the ideal battery, based on the required discharge time and end of discharge voltage. Thanks to the robust and reliable Saft Nife® pocket pocket plate technology they resist electrical abuse, shock and vibrations. Furthermore, a generous reserve of electrolyte means that the block batteries need only basic maintenance, while operating across a wide range of fluctuating temperatures. This ensures an optimized solution as regard to environment and economics that can last 20 years or more.

	LE Type	M Type	H Type
Capacity steps	58	68	51
Capacity	7.5 – 1690 Ah	11 - 1445 Ah	8.3 – 920 Ah
Performance	For low rate discharge over long periods between 1 and 100 hours	For varied loads with low and high discharge rates between 30 minutes and 3 hours	For high rate discharge over short periods less than 30 minutes
Applications	Power back-up applications		Power back-up and starting applications

From seconds to hours - every discharge need is covered

Saft has a Block battery range to suit every discharge profile from 1 second to 100 hours



Saft Ni-Cd technology - the proven advantages of a sustainable, safe and robust design



Specify the ideal battery for every application

- Performance optimized for each application according to plate thickness.

LE type

- Thicker plates
- High energy
- Low cost per Amp at low rates

M type

- Thinner plates
- Medium power
- Optimised between H and L design for mixed loads

H type

- Thinnest plate
- High power
- Low cost per Amp at high rates

- Optimized design boosts electrical performance by up to 10% depending on discharge time.

- Twice the number of capacity steps compared with previous designs enables accurate matching with calculated amp-hour requirements.

Improved performance and more capacity steps allow you to select the best, cost-effective battery for your application.

Ni-Cd battery benefits:

► Sustainable

- Saft manufacturing process and recycling capability ensure lowest CO₂ footprint.
- Saft Ni-Cd wide operating temperature range makes AC and heating redundant, hence saving energy.

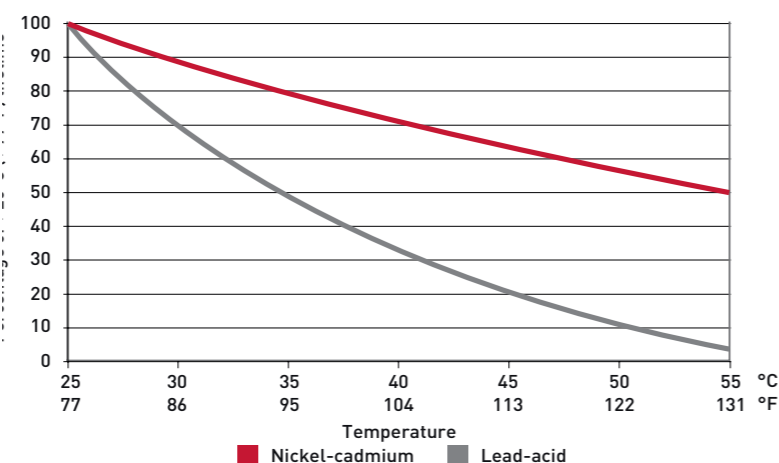
► Reliable

- Long operational life of over 20 years, at least 3 times longer than lead-acid batteries.
- No risk of sudden death failure.

► Economical

- Lowest total cost of ownership.

Effect of temperature on lifetime



Block battery construction -

- The steel pocket plate structure does not suffer from « sudden death » or internal corrosion since there is no interaction between the active material and the electrolyte.

- Tough polypropylene casing ensures structural integrity throughout a long life.

- An engineered electrolyte solution delivers optimum performance without causing degradation of plate materials.

- Plenty of space is allowed for a good reserve of electrolyte.

- A special electrolyte is available for extremely low temperature applications.

- A specially designed flame arresting flip top vent ensures the battery does not produce corrosive emissions.

- The Block battery offers a long shelf life when stored under Saft's recommended conditions and is easy to install.

Protective cover
In line with IEC 62485-2 / EN 50272-2 (safety) with IP2 level

Flame-arresting vents
Compliant with UL 1989 - Section 7 - Flame arrester vent cap tests

Plate group bus

Plate tab

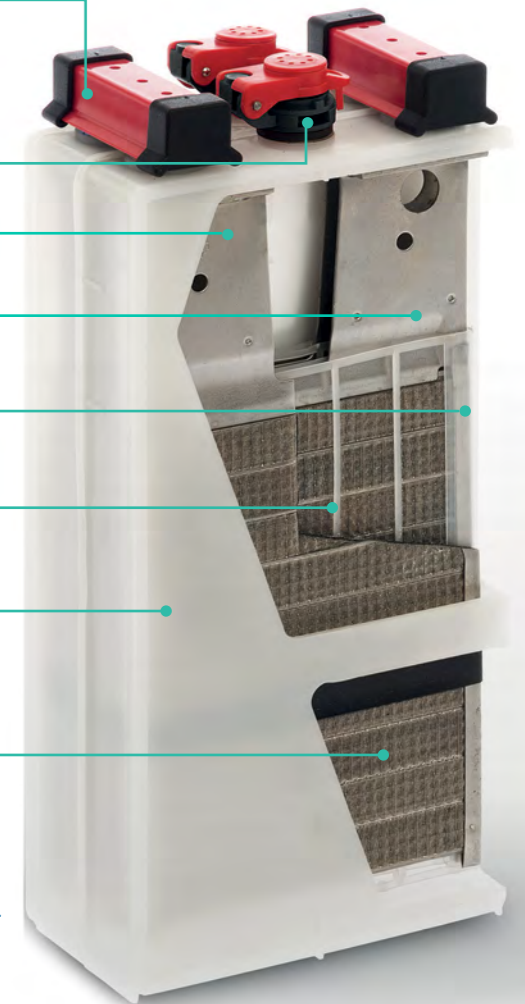
Plate frame

Separating grids

Cell container

Saft Nife® pocket plate technology

Note: The cells are welded together to form rugged blocks of 1-6 cells depending on the cell size and type. Saft cells fully comply with the requirements of the IEC 60623 standard.



Setting the benchmark for industrial batteries

Low maintenance means lower CO₂ emissions during the operational life of the product.

- Topping-up intervals are now up to two times longer under standard conditions at +20°C (+68°F) and at float voltage.
- A simple annual maintenance exercise is recommended to check correct functioning of the charging system, battery and the auxiliary electronics.
- Easy maintenance thanks to:
 - Visible electrolyte level
 - Simple bolted connector for fast installation and allowing the battery to be quickly commissioned



Higher chargeability minimises down time

- Faster recharge time enables at least 80% recovery of capacity from fully discharged conditions in 15 hours at float voltage level to be quickly commissioned.

Recommended charging voltage:

→ For two level charge:

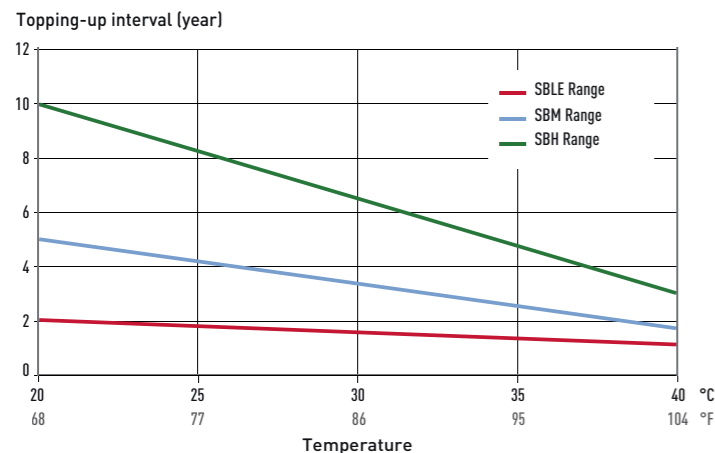
- Float level:
 - 1.42 ± 0.01 V/cell for SBLE
 - 1.40 ± 0.01 V/cell for SBM and SBH
- High level:
 - 1.47 - 1.70 V/cell for SBLE
 - 1.45 - 1.70 V/cell for SBM and SBH

A high voltage will increase the speed and efficiency of the recharging.

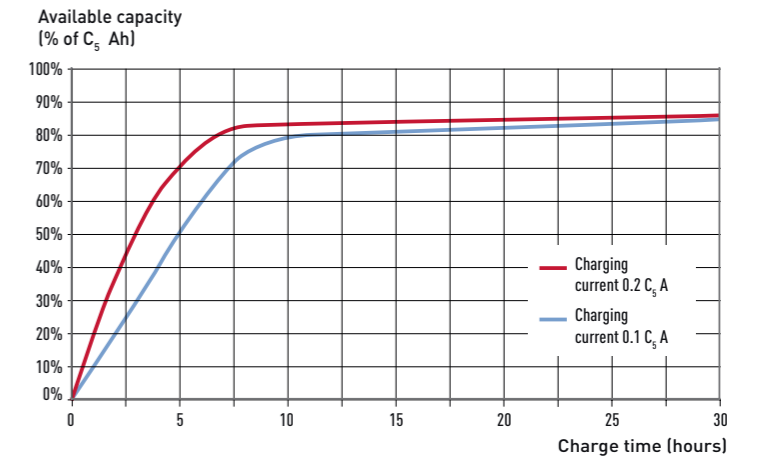
→ For single level charge:
1.43 - 1.50 V/cell.



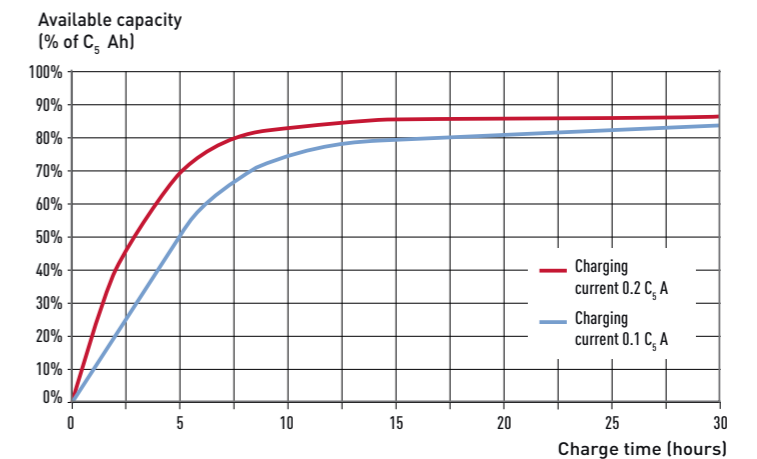
Typical topping up intervals at recommended charge voltage



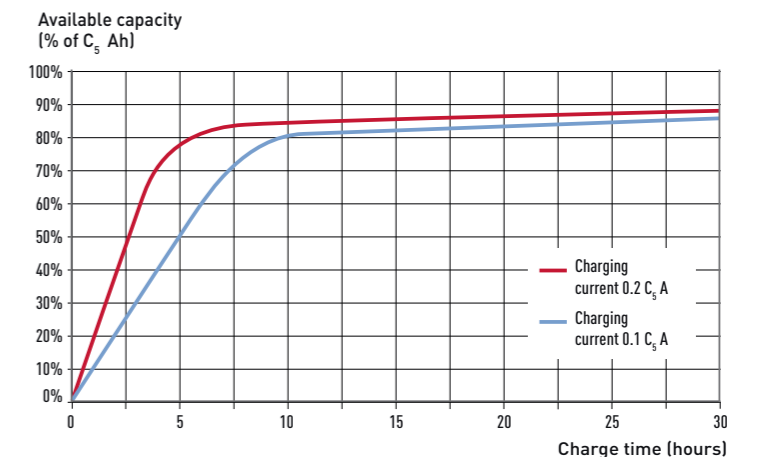
SBLE Range - Available capacity after constant voltage charge at 1,42 V at +20°C (+68°F)



SBM Range - Available capacity after constant voltage charge at 1,40 V at +20°C (+68°F)



SBH Range - Available capacity after constant voltage charge at 1,40 V at +20°C (+68°F)



Quality built, quality tested for sustainability, durability and performance



Saft Block batteries are designed in full compliance with the highest quality, safety and environmental standards

Electrical characteristics

- Certified IEC 60623 - Secondary cells and batteries containing alkaline or other non-acid electrolytes - Vented nickel-cadmium prismatic rechargeable single cells.

Safety

- Complies with EN 50272-2/ IEC 62485-2 - Safety requirements for secondary batteries and battery installations - Part 2: Stationary batteries - The protective covers for terminals and connectors, the insulated cables are compliant with IP2 level protection against electrical shocks according to safety standard.
- Complies with UL 1989 - Section 7: Flame arrester vent cap tests - UL standard for safety for standby batteries.

Quality

- ISO 9001 and ISO 14001
- Saft Excellence System

Environment & Recycling of Ni-cd

- Fully recyclable
- RoHS – Although batteries and accumulators are not within the scope of the RoHS directive, Saft has taken voluntary measures to make sure that the substances forbidden by RoHS are not present in the battery, with the exception of the electro-chemical core.
- REACH - The Saft Group has adopted internal procedures to ensure conformity with the European REACH (Registration, Evaluation, Authorisation and Restriction of Chemical Substances) Regulation.
- Saft operates the only plant in the world that produces nickel-cadmium batteries incorporating metals that have been reclaimed on site from spent batteries, reducing their eco-footprint. The recycling of Ni-Cd batteries is a complex process that involves separating the nickel, cobalt and cadmium from the electrodes, a process perfected by Saft's plant in Oskarshamn, Sweden. This plant in Sweden is the only one in the world which combines the recycling of used batteries and the manufacturing of new ones, hence facilitating the incorporation of recycled materials into new products.

Providing a wide scope of support and services

Saft offers total end to end application support

Saft's stationary battery experts offer a comprehensive range of skills and expertise to help our global customers specify the ideal battery solution for their particular application.

This end to end support starts at the design stage, such as advice on battery sizing, and carries customers through installation and commissioning.

Saft's after-sales service covers support, maintenance and diagnostics as well as end of life recycling.

Saft organizes battery training seminars for consultants, engineering team and maintenance departments.

To ensure that customers receive the optimum service, wherever they are in the world, we are continuing to expand and enhance our network of approved service stations in the Middle East, Asia, Europe and North America.

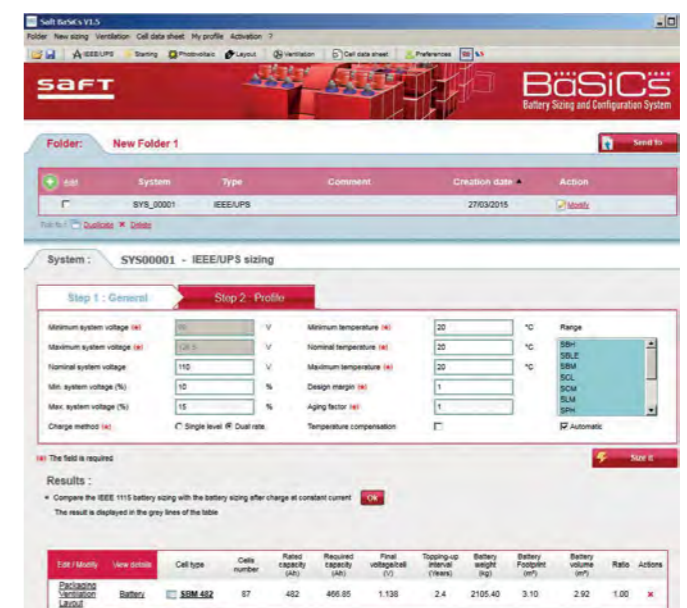
Perform your own sizing

Saft's Battery Sizing and Configuration System, known as BaSiCs, helps our customers to quickly and easily find the right battery for their back-up or starting applications. BaSiCs helps users create the layout for one or more stands as well as the battery layout itself.

This tool allows you to evaluate your environmental footprint against lead acid and see the Saft Nickel cadmium benefits

To download the BaSiCs application, search for "BaSiCs" on our web site:

www.saftbatteries.com



Connecting your batteries for optimum efficiency

Standard layouts

Soft has developed a series of standard layouts for ordering a battery. Whether the battery is being installed on a rack, in a cabinet or is simply freestanding, the same configuration principals can be applied.

Two ways to configure the battery

	Normal connection	Crosswise connection
SBLE	7.5 → 510	550 → 1690
SBM	11 → 392	415 → 1445
SBH	8.3 → 157	177 → 920

Length-to-length connection

Width-to-Width connection

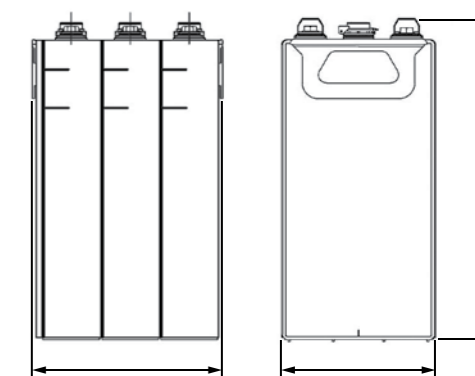
The cell is turned through 90° and then connected width-to-width. This is referred to as «crosswise» mounted and its purpose is to minimize the installation's over-all length. The cell's width is used to calculate the row length.

Dimensions

The dimensions of all available cell types are listed in the tables. The block length is determined by the cell length and the number of cells in the block.

- All block types with a cell weight exceeding 8.4 kg (18.5 block length includes 6 mm for handles for these types).

- All the cell heights given in the tables include the height of the IP2X terminal cover.

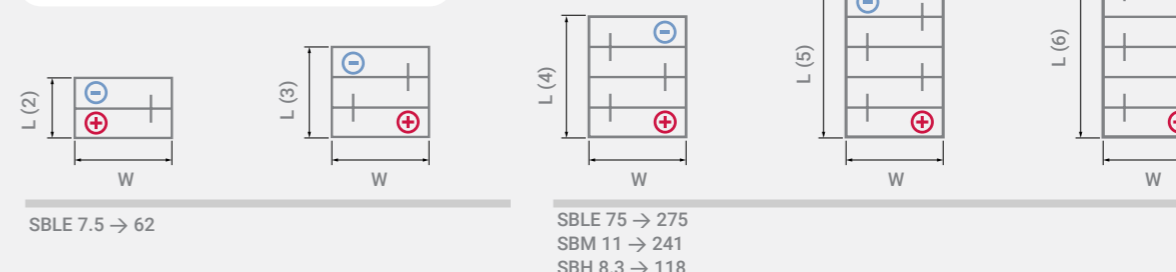


Notes:

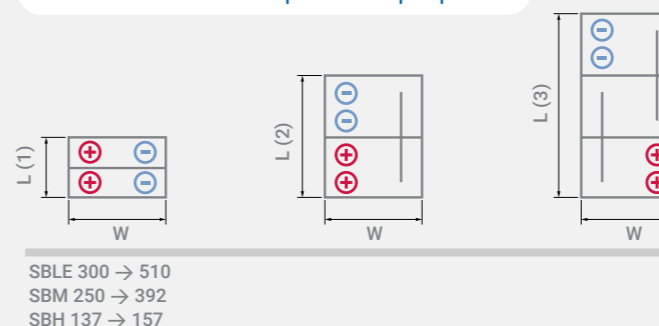
•All the tabulated dimensions are maximum values.

Position of terminals

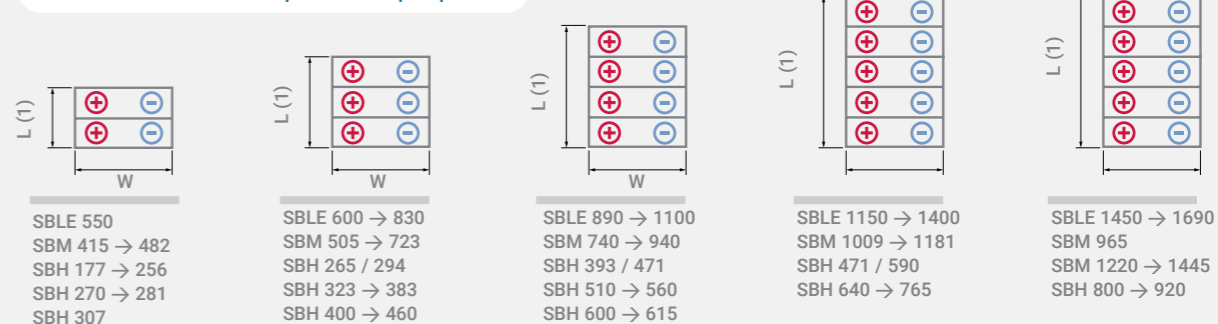
Blocks of cells with single pole bolt



Blocks of cells with 2 poles bolt per poles



Blocks of cells with 2 poles bolt per poles



Cell Type	Capacity C, Ah	Height		Width		Length per block						Approx. Weight per cell		Approx. Electrolyte vol. between level marks cm³	Approx. electrolyte per cell		Internal Resistance mOhm	Cell connection bolt per pole				
		mm	in	mm	in	1 cells		2 cells		3 cells		4 cells			5 cells				6 cells			
		mm	in	mm	in	mm	in	mm	in	mm	in	mm	in		mm	in			mm	in	kg	lb
SBLE 7.5	7,5	190	7,5	123	4,8					101	4,0	125	4,9	149	5,9	0,8	1,8	87	0,08	0,24	14,00	M6
SBLE 15	15	270	10,6	123	4,8					101	4,0	125	4,9	149	5,9	1,1	2,4	87	0,12	0,35	8,33	M6
SBLE 22	22	270	10,6	123	4,8					143	5,6	178	7,0	212	8,3	1,7	3,7	129	0,17	0,53	5,45	M6
SBLE 30	30	270	10,6	123	4,8					143	5,6	178	7,0	212	8,3	1,8	4,0	129	0,15	0,46	4,17	M6
SBLE 34	34	270	10,6	123	4,8					191	7,5	238	9,4	284	11,2	2,3	5,1	177	0,23	0,70	3,53	M6
SBLE 40	40	270	10,6	123	4,8					239	9,4	298	11,7	356	14,0	3,0	6,6	224	0,29	0,90	3,00	M6
SBLE 47	47	270	10,6	123	4,8					191	7,5	238	9,4	284	11,2	2,3	5,1	177	0,20	0,59	2,66	M6
SBLE 62	62	270	10,6	123	4,8					239	9,4	298	11,7	356	14,0	3,2	7,1	224	0,25	0,70	2,02	M6
SBLE 70	70	350	13,8	195	7,7	79	3,1	115	4,5							4,1	9,0	299	0,33	1,00	2,29	M8
SBLE 75	75	350	13,8	195	7,7	79	3,1	115	4,5							4,1	9,0	299	0,38	1,00	2,13	M8
SBLE 85	85	411	16,2	195	7,7	79	3,1	115	4,5							4,9	10,8	299	0,45	1,40	1,94	M8
SBLE 95	95	411	16,2	195	7,7	79	3,1	115	4,5							4,7	10,4	299	0,45	1,20	1,74	M8
SBLE 100	100	350	13,8	195	7,7	103	4,1	151	5,9							5,4	11,9	404	0,49	1,50	1,60	M10
SBLE 110	110	350	13,8	195	7,7	103	4,1	151	5,9							5,6	12,3	404	0,49	1,20	1,45	M10
SBLE 125	125	411	16,2	195	7,7	103	4,1	151	5,9							6,7	14,8	404	0,58	1,70	1,32	M10
SBLE 140	140	411	16,2	195	7,7	103	4,1	151	5,9							6,5	14,3	404	0,58	1,80	1,18	M10
SBLE 149	149	350	13,8	195	7,7	127	5,0	187	7,4							6,6	14,6	510	0,59	1,80	1,07	M10
SBLE 165	165	411	16,2	195	7,7	127	5,0	187	7,4							8,4	18,5	510	0,71	2,20	1,00	M10
SBLE 176	176	350	13,8	195	7,7	153	6,0	226	8,9							7,9	17,4	624	0,72	2,20	0,91	M10
SBLE 185	185	411	16,2	195	7,7	127	5,0	187	7,4							8,4	18,5	510	0,71	2,00	0,89	M10
SBLE 200	200	411	16,2	195	7,7	159	6,3	232	9,1							10,2	22,5	624	0,86	2,60	0,83	M10
SBLE 215	215	411	16,2	195	7,7	159	6,3	232	9,1							10,2	22,5	624	0,86	2,60	0,77	M10
SBLE 220	220	350	13,8	195	7,7	183	7,2	268	10,6							9,1	20,1	729	0,81	2,50	0,73	M10
SBLE 230	230	411	16,2	195	7,7	159	6,3	232	9,1							9,9	21,8	624	0,86	2,30	0,72	M10
SBLE 255	255	411	16,2	195	7,7	183	7,2	268	10,6							11,9	26,2	729	1,00	3,00	0,65	M10
SBLE 275	275	411	16,2	195	7,7	183	7,2	268	10,6							11,5	25,4	729	1,00	2,90	0,60	M10
SBLE 285	285	411	16,2	195	7,7	183	7,2	268	10,6							11,9	26,2	729	0,98	3,00	0,58	M10
SBLE 300	300	411	16,2	195	7,7	229	9,0	337	13,3							14,8	32,6	914	1,29	3,90	0,55	2xM10
SBLE 325	325	411	16,2	195	7,7	229	9,0	337	13,3							14,5	32,0	914	1,29	3,50	0,51	2xM10
SBLE 334	334	411	16,2	195	7,7	253	10,0	373	14,7							14,8	32,6	1019	1,27	3,90	0,49	2xM10
SBLE 344	344	411	16,2	195	7,7	253	10,0	373	14,7							16,5	36,4	1019	1,40	4,30	0,48	2xM10
SBLE 355	355	411	16,2	195	7,7	253	10,0	373	14,7							16,5	36,4	1019	1,42	4,30	0,46	2xM10
SBLE 365	365	411	16,2	195	7,7	253	10,0	373	14,7							16,5	36,4	1019	1,42	4,30	0,45	2xM10
SBLE 375	375	411	16,2	195	7,7	253	10,0	373	14,7							16,8	37,0	1019	1,42	4,00	0,44	2xM10
SBLE 395	395	411	16,2	195	7,7	146	5,7	279	11,0							18,0	39,7	1133	1,57	4,70	0,42	2xM10
SBLE 415	415	411	16,2	195	7,7	146	5,7	279	11,0							18,3	40,3	1133	1,57	4,30	0,40	2xM10
SBLE 425	425	411	16,2	195	7,7	146	5,7	279	11,0							18,3	40,3	1133	1,53	4,70	0,39	2xM10
SBLE 435	435	411	16,2	195	7,7	159	6,3	305	12,0							19,8	43,7	1247	1,73	5,20	0,38	2xM10
SBLE 460	460	411	16,2	195	7,7	159	6,3	305	12,0							19,8	43,7	1247	1,73	4,60	0,36	2xM10

* Height including the IP2X terminal cover

Cell Type	Capacity C, Ah	Height		Width		Length per block				Approx. Weight per cell		Approx. Electrolyte vol. between level marks cm³	Approx. electrolyte per cell		Internal Resistance mOhm	Cell connection bolt per pole
		mm	in	mm	in	1 cells		2 cells		kg			lb			
		mm	in	mm	in	mm	in	mm	in	kg	lb		cm³	L		
SBLE 480	480	411	16,2	195	7,7	171	6,7	329	13,0	21,8	48,1	1353	1,86	5,60	0,34	2xM10
SBLE 500	500	411	16,2	195	7,7	171	6,7	329	13,0	21,8	48,1	1353	1,86	5,60	0,33	2xM10
SBLE 510	510	411	16,2	195	7,7	171	6,7	329	13,0	21,4	47,2	1353	1,86	5,20	0,32	2xM10
SBLE 550	550	411	16,2	195	7,7	183	7,2			23,0	50,7	1458	1,99	5,80	0,30	2xM10
SBLE 570	570	411	16,2	195	7,7	183	7,2			23,5	51,8	1458	1,95	6,00	0,29	2xM10
SBLE 600	600	411	16,2	195	7,7	206	8,1			26,7	58,9	1643	2,28	6,30	0,28	3xM10
SBLE 620	620	411	16,2	195	7,7	206	8,1			26,1	57,5	1643	2,21	6,80	0,27	3xM10
SBLE 650	650	411	16,2	195	7,7	219	8,6			28,0	61,7	1757	2,44	6,60	0,25	3xM10
SBLE 700	700	411	16,2	195	7,7	232	9,1			30,0	66,1	1871	2,59	6,90	0,24	3xM10
SBLE 750	750	411	16,2	195	7,7	244	9,6			31,3	69,0	1977	2,72	7,50	0,22	3xM10
SBLE 762	762	411	16,2	195	7,7	244	9,6			31,4	69,2	1977	2,72	8,10	0,22	3xM10
SBLE 790	790	411	16,2	195	7,7	256	10,1			33,4	73,6	2082	2,85	8,50	0,21	3xM10
SBLE 830	830	411	16,2	195	7,7	268	10,6			34,5	76,1	2187	2,99	8,70	0,20	3xM10
SBLE 855	855	411	16,2	195	7,7	268	10,6			35,0	77,2	2187	2,89	8,90	0,19	3xM10
SBLE 890	890	411	16,2	195	7,7	292	11,5			37,2	82,0	2381	3,30	9,80	0,19	4xM10
SBLE 905	905	411	16,2	195	7,7	292	11,5			37,8	83,3	2381	3,18	9,80	0,18	4xM10
SBLE 925	925	411	16,2	195	7,7	305	12,0			39,6	87,3	2495	3,45	9,20	0,18	4xM10
SBLE 980	980	411	16,2	195	7,7	317	12,5			41,0	90,4	2600	3,58	10,70	0,17	4xM10
SBLE 1000	1000	411	16,2	195	7,7	329	13,0			43,0	94,8	2706	3,72	11,10	0,17	4xM10
SBLE 1020	1020	411	16,2	195	7,7	329	13,0			42,8	94,4	2706	3,72	10,40	0,16	4xM10
SBLE 1070	1070	411	16,2	195	7,7	341	13,4			45,0	99,2	2811	3,85	11,50	0,15	4xM10
SBLE 1100	1100	411	16,2	195	7,7	353	13,9			46,0	101,4	2917	3,98	11,60	0,15	4xM10
SBLE 1125	1125	411	16,2	195	7,7	353	13,9			46,6	102,7	2917	3,87	11,90	0,15	4xM10
SBLE 1150	1150	411	16,2	195	7,7	378	14,9			48,6	107,1	3119	4,31	12,90	0,14	5xM10
SBLE 1200	1200	411	16,2	195	7,7	390	15,4			51,1	112,7	3224	4,45	12,10	0,14	5xM10
SBLE 1250	1250	411	16,2	195	7,7	402	15,8			52,6	116,0	3330	4,58	13,60	0,13	5xM10
SBLE 1300	1300	411	16,2	195	7,7	413	16,3			54,3	119,7	3426	4,69	13,60	0,13	5xM10
SBLE 1350	1350	411	16,2	195	7,7	426	16,8			56,6	124,8	3540	4,84	14,40	0,12	5xM10
SBLE 1400	1400	411	16,2	195	7,7	438	17,2			57,5	126,8	3646	4,98	14,50	0,12	5xM10
SBLE 1450	1450	411	16,2	195	7,7	463	18,2			60,2	132,7	3848	5,31	15,80	0,11	

Cell Type	Capacity C, Ah	Height		Width		Length per block				Approx. Weight per cell		Approx. Electrolyte vol. between level marks cm³	Approx. electrolyte per cell		Internal	Cell connection bolt per pole
						2 cells		3 cells								
						mm	in	mm	in							
SBM 11	11	190	7,5	123	4,8	64	2,5	94	3,7	0,9	2,0	109	0,09	0,30	5,00	M6
SBM 15	15	190	7,5	123	4,8	74	2,9	109	4,3	1,2	2,6	129	0,10	0,33	3,67	M6
SBM 22	22	270	10,6	123	4,8	64	2,5	94	3,7	1,5	3,3	109	0,13	0,46	2,82	M6
SBM 30	30	270	10,6	123	4,8	74	2,9	109	4,3	1,8	4,0	129	0,15	0,46	2,07	M6
SBM 39	39	270	10,6	123	4,8	98	3,9	145	5,7	2,4	5,3	177	0,28	0,70	1,59	M6
SBM 43	43	350	13,8	195	7,7	69	2,7	100	3,9	3,4	7,5	255	0,32	0,95	1,81	M6
SBM 46	46	270	10,6	123	4,8	122	4,8	181	7,1	2,8	6,2	224	0,29	0,90	1,35	M6
SBM 50	50	350	13,8	195	7,7	69	2,7	100	3,9	3,6	7,9	255	0,32	1,00	1,56	M6
SBM 55	55	270	10,6	123	4,8	122	4,8	181	7,1	3,4	7,5	224	0,36	1,10	1,13	M6
SBM 56	56	411	16,2	195	7,7	69	2,7	100	3,9	4,0	8,8	255	0,38	1,10	1,54	M6
SBM 65	65	350	13,8	195	7,7	79	3,1	115	4,5	4,1	9,0	299	0,37	1,00	1,20	M8
SBM 72	72	350	13,8	195	7,7	79	3,1	115	4,5	4,4	9,7	299	0,36	1,10	1,08	M8
SBM 77	77	270	10,6	123	4,8	191	7,5	284	11,2	4,8	10,6	353	0,46	1,40	0,81	2xM6
SBM 84	84	411	16,2	195	7,7	79	3,1	115	4,5	4,9	10,8	299	0,43	1,20	1,02	M8
SBM 86	86	350	13,8	195	7,7	94	3,7	138	5,4	5,2	11,5	365	0,44	1,30	0,91	M8
SBM 90	90	350	13,8	195	7,7	94	3,7	138	5,4	5,7	12,6	365	0,42	1,30	0,87	M8
SBM 93	93	411	16,2	195	7,7	79	3,1	115	4,5	5,1	11,2	299	0,43	1,30	0,92	M8
SBM 100	100	411	16,2	195	7,7	94	3,7	138	5,4	6,4	14,1	365	0,52	1,60	0,86	M8
SBM 107	107	350	13,8	195	7,7	127	5,0	187	7,4	7,0	15,4	510	0,62	1,90	0,73	M10
SBM 112	112	411	16,2	195	7,7	94	3,7	138	5,4	6,3	13,9	365	0,52	1,40	0,77	M8
SBM 118	118	411	16,2	195	7,7	94	3,7	138	5,4	6,3	13,9	365	0,52	1,60	0,73	M8
SBM 125	125	350	13,8	195	7,7	127	5,0	187	7,4	7,4	16,3	510	0,59	1,80	0,62	M10
SBM 130	130	350	13,8	195	7,7	127	5,0	187	7,4	7,5	16,5	510	0,61	1,80	0,60	M10
SBM 138	138	411	16,2	195	7,7	115	4,5	169	6,7	7,6	16,8	457	0,66	1,70	0,62	M10
SBM 150	150	350	13,8	195	7,7	159	6,3	232	9,1	8,9	19,6	624	0,77	2,30	0,52	M10
SBM 161	161	411	16,2	195	7,7	127	5,0	187	7,4	8,4	18,5	510	0,71	2,10	0,53	M10
SBM 168	168	350	13,8	195	7,7	183	7,2	268	10,6	10,1	22,3	729	0,92	2,70	0,46	M10
SBM 169	169	411	16,2	195	7,7	127	5,0	187	7,4	8,9	19,6	510	0,68	2,10	0,51	M10
SBM 184	184	411	16,2	195	7,7	159	6,3	232	9,1	9,9	21,8	624	0,91	2,40	0,47	M10
SBM 192	192	411	16,2	195	7,7	159	6,3	232	9,1	10,5	23,1	624	0,91	2,70	0,45	M10
SBM 200	200	411	16,2	195	7,7	183	7,2	268	10,6	12,0	26,5	729	1,08	3,20	0,43	M10
SBM 208	208	411	16,2	195	7,7	183	7,2	268	10,6	11,5	25,4	729	1,08	2,90	0,41	M10
SBM 216	216	411	16,2	195	7,7	183	7,2	268	10,6	12,0	26,5	729	1,08	3,20	0,40	M10
SBM 225	225	411	16,2	195	7,7	187	7,4	274	10,8	12,8	28,2	729	1,04	3,20	0,38	2xM8
SBM 231	231	411	16,2	195	7,7	183	7,2	268	10,6	12,0	26,5	729	1,01	2,90	0,37	M10
SBM 241	241	411	16,2	195	7,7	183	7,2	268	10,6	12,5	27,6	729	1,01	3,00	0,36	M10
SBM 250	250	411	16,2	195	7,7	229	9,0	337	13,3	15,5	34,2	914	1,32	3,90	0,34	2xM10
SBM 260	260	411	16,2	195	7,7	229	9,0	337	13,3	15,5	34,2	914	1,32	3,90	0,33	2xM10
SBM 270	270	350	13,8	195	7,7	279	11,0	412	16,2	16,5	36,4	1133	1,33	4,10	0,29	2xM10

* Height including the IP2X terminal cover

Cell Type	Capacity C, Ah	Height		Width		Length per block				Approx. Weight per cell		Approx. Electrolyte vol. between level marks cm³	Approx. electrolyte per cell		Internal	Cell connection bolt per pole		
						1 cells		2 cells									3 cells	
						mm	in	mm	in								mm	in
SBM 286	286	411	16,2	195	7,7			229	9,0	337	13,3	15,6	34,4	914	1,27	3,90	0,30	2xM10
SBM 287	287	350	13,8	195	7,7			305	12,0	451	17,8	16,0	35,3	1247	1,54	4,20	0,27	2xM10
SBM 300	300	411	16,2	195	7,7			241	9,5	355	14,0	15,5	34,2	966	1,37	3,70	0,29	2xM10
SBM 323	323	411	16,2	195	7,7			253	10,0	373	14,7	17,3	38,1	1019	1,43	3,90	0,27	2xM10
SBM 335	335	411	16,2	195	7,7			253	10,0	373	14,7	17,6	38,8	1019	1,36	4,20	0,26	2xM10
SBM 346	346	411	16,2	195	7,7	146	5,7	279	11,0			19,5	43,0	1133	1,62	4,80	0,25	2xM10
SBM 359	359	350	13,8	195	7,7	183	7,2	353	13,9			20,0	44,1	1458	1,73	5,00	0,22	2xM10
SBM 369	369	411	16,2	195	7,7	159	6,3	305	12,0			20,5	45,2	1247	1,81	4,80	0,23	2xM10
SBM 382	382	411	16,2	195	7,7	159	6,3	305	12,0			20,5	45,2	1247	1,72	5,30	0,23	2xM10
SBM 392	392	411	16,2	195	7,7	171	6,7	329	13,0			22,1	48,7	1353	1,99	5,30	0,22	2xM10
SBM 404	404	411	16,2	195	7,7	171	6,7	329	13,0			22,3	49,2	1353	1,92	5,90	0,21	2xM10
SBM 415	415	411	16,2	195	7,7	183	7,2					23,7	52,2	1458	2,16	5,80	0,21	2xM10
SBM 431	431	350	13,8	195	7,7	232	9,1					25,5	56,2	1871	2,31	6,40	0,18	3xM10
SBM 438	438	411	16,2	195	7,7	183	7,2					23,5	51,8	1458	2,09	5,80	0,20	2xM10
SBM 450	450	411	16,2	195	7,7	183	7,2					24,3	53,6	1458	1,98	6,10	0,19	2xM10
SBM 461	461	411	16,2	195	7,7	183	7,2					24,0	52,9	1458	2,03	5,70	0,19	2xM10
SBM 482	482	411	16,2	195	7,7	183	7,2					24,7	54,5	1458	2,03	5,90	0,18	2xM10
SBM 505	505	411	16,2	195	7,7	213	8,4					27,5	60,6	1704	2,47	6,50	0,17	3xM10
SBM 526	526	411	16,2	195	7,7	213	8,4					27,6	60,8	1704	2,47	7,30	0,16	3xM10
SBM 540	540	350	13,8	195	7,7	268	10,6					31,5	69,4	2187	2,59	7,50	0,14	3xM10
SBM 555	555	411	16,2	195	7,7	232	9,1					30,0	66,1	1871	2,72	7,20	0,15	3xM10
SBM 575	575	411	16,2	195	7,7	305	12,0					34,0	75,0	2495	2,72	8,60	0,14	4xM10
SBM 576	576	411	16,2	195	7,7	232	9,1					30,3	66,8	1871	2,72	8,00	0,15	3xM10
SBM 600	600	411	16,2	195	7,7	244	9,6					32,1	70,8	1977	2,89	8,50	0,14	3xM10
SBM 625	625	411	16,2	195	7,7	268	10,6					35,5	78,3	2187	3,24	8,70	0,14	3xM10
SBM 649	649	411	16,2	195	7,7	268	10,6					35,4	78,0	2187	3,24	9,50	0,13	3xM10
SBM 674	674	411	16,2	195	7,7	268	10,6					35,9	79,1	2187	3,18	9,30	0,13	3xM10
SBM 690	690	411	16,2	195	7,7	268	10,6					37,0	81,6	2187	3,04	8,60	0,12	3xM10
SBM 703	703	411	16,2	195	7,7	268	10,6					36,5	80,5	2187	2,96	9,10	0,12	3xM10
SBM 720	720	411	16,2	195	7,7	353	13,9					40,5	89,3	2917	3,04	10,00	0,11	4xM10
SBM 723	723	411	16,2	195	7,7	268	10,6					37,0	81,6	2187	3,04	8,90	0,12	3xM10
SBM 740	740	411	16,2	195	7,7	305	12,0					40,0	88,2	2495	3,63	9,60	0,12	4xM10
SBM 768	768	411	16,2	195	7,7	305	12,0					40,2	88,6	2495	3,63	10,60	0,11	4xM10
SBM 792	792	411	16,2	195	7,7	317	12,5					42,0	92,6	2600	3,80	11,20	0,11	4xM10
SBM 808	808	411	16,2	195	7,7	329	13,0					44,5	98,1	2706	3,80	11,70	0,11	4xM10
SBM 830	830	411	16,2	195	7,7	353	13,9					47,0	103,6	2917	4,32	11,70	0,10	4xM10
SBM 849	849	411	16,2	195	7,7	341	13,4					46,0	101,4	2811	4,03	12,40	0,10	4xM10

Cell Type	Capacity C, Ah	Height		Width		Lenght per block		Approx. Weight per cell		Approx. Electrolyte vol. between level marks cm ³	Approx. electrolyte per cell		Internal mOhm	Cell connection bolt per pole
		mm	in	mm	in	mm	in	kg	lb		L	kg		
		1 cells												
SBM 920	920	411	16,2	195	7,7	353	13,9	49,5	109,1	2917	4,06	11,80	0,09	4xM10
SBM 940	940	411	16,2	195	7,7	353	13,9	48,7	107,4	2917	4,12	12,00	0,09	4xM10
SBM 965	965	411	16,2	195	7,7	373	14,7	50,5	111,3	3057	4,28	11,40	0,09	6xM10
SBM 1009	1009	411	16,2	195	7,7	402	15,8	53,7	118,4	3330	4,88	14,30	0,09	5xM10
SBM 1040	1040	411	16,2	195	7,7	438	17,2	57,5	126,8	3646	5,40	14,60	0,08	5xM10
SBM 1082	1082	411	16,2	195	7,7	438	17,2	58,8	129,6	3646	5,40	16,70	0,08	5xM10
SBM 1107	1107	411	16,2	195	7,7	438	17,2	59,3	130,7	3646	5,34	15,60	0,08	5xM10
SBM 1150	1150	411	16,2	195	7,7	438	17,2	60,0	132,3	3646	5,07	15,70	0,07	5xM10
SBM 1181	1181	411	16,2	195	7,7	438	17,2	60,9	134,3	3646	5,14	15,00	0,07	5xM10
SBM 1220	1220	411	16,2	195	7,7	511	20,1	67,5	148,8	4270	6,31	16,90	0,07	6xM10
SBM 1250	1250	411	16,2	195	7,7	499	19,6	68,5	151,0	4164	5,85	18,00	0,07	6xM10
SBM 1274	1274	411	16,2	195	7,7	511	20,1	69,0	152,1	4270	6,31	18,50	0,07	6xM10
SBM 1324	1324	411	16,2	195	7,7	523	20,6	71,0	156,5	4375	6,42	18,80	0,06	6xM10
SBM 1390	1390	411	16,2	195	7,7	523	20,6	72,0	158,7	4375	6,09	17,40	0,06	6xM10
SBM 1445	1445	411	16,2	195	7,7	523	20,6	73,7	162,5	4375	6,09	17,70	0,06	6xM10
SBM 1465	1465	411	16,2	195	7,7	523	20,6	73,7	162,5	4375	6,09	17,70	0,06	6xM10

* Height including the IP2X terminal cover

Cell Type	Capacity C, Ah	Height		Width		Lenght per block			Approx. Weight per cell		Approx. Electrolyte vol. between level marks cm ³	Approx. electrolyte per cell		Internal mOhm	Cell connection bolt per pole			
		mm	in	mm	in	mm	in	mm	in	mm		in	kg			lb		
		1 cells		2 cells		3 cells												
SBH 12	12	270	10,6	123	4,8			64	2,5	94	3,7	1,5	3,3	109	0,13	0,44	2,50	M6
SBH 16	16	270	10,6	123	4,8			74	2,9	109	4,3	1,8	4,0	129	0,15	0,48	1,88	M6
SBH 19	19	350	13,8	195	7,7			57	2,2	82	3,2	2,8	6,2	202	0,28	0,77	2,05	M6
SBH 25	25	411	16,2	195	7,7			57	2,2	82	3,2	3,2	7,1	202	0,36	0,92	1,68	M6
SBH 29	29	350	13,8	195	7,7			69	2,7	100	3,9	3,7	8,2	255	0,34	0,95	1,34	M6
SBH 34	34	270	10,6	123	4,8			122	4,8	181	7,1	3,6	7,9	224	0,36	1,10	0,88	M6
SBH 38	38	411	16,2	195	7,7			69	2,7	100	3,9	4,0	8,8	255	0,40	1,20	1,11	M6
SBH 39	39	350	13,8	195	7,7			79	3,1	115	4,5	4,5	9,9	299	0,38	1,10	1,00	M8
SBH 49	49	350	13,8	195	7,7			94	3,7	138	5,4	5,4	11,9	365	0,47	1,30	0,80	M8
SBH 51	51	411	16,2	195	7,7			79	3,1	115	4,5	4,9	10,8	299	0,45	1,30	0,82	M8
SBH 59	59	350	13,8	195	7,7			103	4,1	151	5,9	6,2	13,7	404	0,55	1,50	0,66	M10
SBH 64	64	411	16,2	195	7,7			94	3,7	138	5,4	6,3	13,9	365	0,55	1,60	0,66	M8
SBH 69	69	350	13,8	195	7,7			127	5,0	187	7,4	7,3	16,1	510	0,66	1,80	0,57	M10
SBH 77	77	411	16,2	195	7,7			103	4,1	151	5,9	6,7	14,8	404	0,55	1,60	0,55	M10
SBH 79	79	350	13,8	195	7,7			127	5,0	187	7,4	7,7	17,0	510	0,62	1,80	0,49	M10
SBH 88	88	350	13,8	195	7,7			159	6,3	232	9,1	9,1	20,1	624	0,80	2,20	0,44	M10
SBH 89	89	411	16,2	195	7,7			115	4,5	169	6,7	7,6	16,8	457	0,67	1,90	0,47	M10
SBH 98	98	350	13,8	195	7,7			159	6,3	232	9,1	9,4	20,7	624	0,76	2,20	0,40	M10
SBH 102	102	411	16,2	195	7,7			127	5,0	187	7,4	8,4	18,5	510	0,74	2,10	0,41	M10
SBH 110	110	350	13,8	195	7,7			183	7,2	268	10,6	10,6	23,4	729	0,92	2,90	0,35	M10
SBH 115	115	411	16,2	195	7,7			159	6,3	232	9,1	9,9	21,8	624	0,95	2,80	0,37	M10
SBH 118	118	350	13,8	195	7,7			183	7,2	268	10,6	11,0	24,3	729	0,88	2,70	0,33	M10
SBH 128	128	411	16,2	195	7,7			159	6,3	232	9,1	10,5	23,1	624	0,90	2,60	0,33	M10
SBH 137	137	350	13,8	195	7,7			253	10,0	373	14,7	14,5	32,0	1019	1,32	3,70	0,28	2xM10
SBH 141	141	411	16,2	195	7,7			183	7,2	268	10,6	11,5	25,4	729	1,09	3,30	0,30	M10
SBH 149	149	350	13,8	195	7,7			253	10,0	373	14,7	14,9	32,8	1019	1,33	4,10	0,26	2xM10
SBH 153	153	411	16,2	195	7,7			183	7,2	268	10,6	12,0	26,5	729	1,04	3,20	0,27	M10
SBH 157	157	350	13,8	195	7,7			253	10,0	373	14,7	15,3	33,7	1019	1,24	3,70	0,25	2xM10
SBH 170	170	350	13,8	195	7,7			279	11,0	412	16,2	16,8	37,0	1133	1,49	4,60	0,23	2xM10
SBH 177	177	350	13,8	195	7,7			305	12,0	451	17,8	17,6	38,8	1247	1,60	4,50	0,22	2xM10
SBH 179	179	411	16,2	195	7,7			229	9,0	337	13,3	14,5	32,0	914	1,33	3,80	0,23	2xM10
SBH 190	190	411	16,2	195	7,7	127	5,0					16,5	36,4	966	1,53	4,70	0,22	2xM10
SBH 196	196	350	13,8	195	7,7	159	6,3					18,3	40,3	1247	1,52	4,40	0,20	2xM10
SBH 204	204	411	16,2	195	7,7	133	5,2					18,0	39,7	1019	1,47	4,60	0,21	2xM10
SBH 218	218	411	16,2	195	7,7	146	5,7					19,2	42,3	1133	1,75	5,40	0,19	2xM10
SBH 230	230	411	16,2	195	7,7	159	6,3					20,0	44,1	1247	1,89	5,60	0,18	2xM10
SBH 236	236	350	13,8	195	7,7	183	7,2					21,4	47,2	1458	1,76	5,70	0,17	2xM10
SBH 244	244	411	16,2	195	7,7	159	6,3					20,5	45,2	1247	1,88	5,80	0,17	2xM10
SBH 256	256	411	16,2	195	7,7	159	6,3					21,7	47,8	1247	1,79	5,20	0,16	2xM10

* Height including the IP2X terminal cover

Cell Type	Capacity C, Ah	Height		Width		Length per block		Approx. Weight per cell		Approx. Electrolyte vol. between level marks cm ³	Approx. electrolyte per cell		Internal mOhm	Cell connection bolt per pole
		mm	in	mm	in	mm	in	kg	lb		L	kg		
		1 cells		1 cells		1 cells		1 cells						
SBH 270	270	411	16,2	195	7,7	171	6,7	23,4	51,6	1353	1,98	6,10	0,16	2xM10
SBH 281	281	411	16,2	195	7,7	183	7,2	24,8	54,7	1458	2,17	6,60	0,15	2xM10
SBH 293	293	411	16,2	195	7,7	183	7,2	25,2	55,6	1458	2,14	6,60	0,14	2xM10
SBH 294	294	350	13,8	195	7,7	232	9,1	27,2	60,0	1871	2,28	6,50	0,13	3xM10
SBH 307	307	411	16,2	195	7,7	183	7,2	25,6	56,4	1458	2,07	6,50	0,14	2xM10
SBH 323	323	411	16,2	195	7,7	206	8,1	28,1	61,9	1643	2,42	7,50	0,13	3xM10
SBH 334	334	411	16,2	195	7,7	219	8,6	29,4	64,8	1757	2,66	8,20	0,13	3xM10
SBH 345	345	411	16,2	195	7,7	232	9,1	31,3	69,0	1871	2,84	8,40	0,12	3xM10
SBH 353	353	350	13,8	195	7,7	268	10,6	31,8	70,1	2187	2,63	8,60	0,11	3xM10
SBH 363	363	411	16,2	195	7,7	232	9,1	31,5	69,4	1871	2,79	8,60	0,12	3xM10
SBH 375	375	411	16,2	195	7,7	232	9,1	31,9	70,3	1871	2,76	8,50	0,11	3xM10
SBH 383	383	411	16,2	195	7,7	232	9,1	32,2	71,0	1871	2,69	7,80	0,11	3xM10
SBH 393	393	350	13,8	195	7,7	305	12,0	36,1	79,6	2495	3,03	8,70	0,10	4xM10
SBH 400	400	411	16,2	195	7,7	244	9,6	33,9	74,7	1977	2,88	8,90	0,11	3xM10
SBH 410	410	411	16,2	195	7,7	256	10,1	35,1	77,4	2082	3,09	9,50	0,10	3xM10
SBH 422	422	411	16,2	195	7,7	268	10,6	37,0	81,6	2187	3,26	9,80	0,10	3xM10
SBH 440	440	411	16,2	195	7,7	268	10,6	37,4	82,5	2187	3,21	9,90	0,10	3xM10
SBH 450	450	411	16,2	195	7,7	268	10,6	37,9	83,6	2187	3,18	9,80	0,09	3xM10
SBH 460	460	411	16,2	195	7,7	268	10,6	38,3	84,4	2187	3,11	9,70	0,09	3xM10
SBH 471	471	350	13,8	195	7,7	353	13,9	42,2	93,0	2917	3,51	11,40	0,08	4xM10
SBH 473	473	411	16,2	195	7,7	305	12,0	40,6	89,5	2495	3,83	11,80	0,09	4xM10
SBH 484	484	411	16,2	195	7,7	305	12,0	41,4	91,3	2495	3,77	11,60	0,09	4xM10
SBH 491	491	350	13,8	195	7,7	378	14,9	45,1	99,4	3119	3,79	10,90	0,08	5xM10
SBH 510	510	411	16,2	195	7,7	305	12,0	42,7	94,1	2495	3,58	10,40	0,08	4xM10
SBH 510	510	411	16,2	195	7,7	305	12,0	42,7	94,1	2495	3,58	10,40	0,08	4xM10
SBH 523	523	411	16,2	195	7,7	305	12,0	42,7	94,1	2495	3,58	10,40	0,08	4xM10
SBH 537	537	411	16,2	195	7,7	329	13,0	44,4	97,9	2706	4,00	12,30	0,08	4xM10
SBH 560	560	411	16,2	195	7,7	353	13,9	49,2	108,5	2917	4,34	13,10	0,08	4xM10
SBH 575	575	411	16,2	195	7,7	353	13,9	49,7	109,6	2917	4,32	13,30	0,07	4xM10
SBH 589	589	411	16,2	195	7,7	353	13,9	50,2	110,7	2917	4,29	13,20	0,07	4xM10
SBH 590	590	350	13,8	195	7,7	438	17,2	52,6	116,0	3646	4,39	14,30	0,07	5xM10
SBH 600	600	411	16,2	195	7,7	353	13,9	50,6	111,6	2917	4,19	12,90	0,07	4xM10
SBH 615	615	411	16,2	195	7,7	353	13,9	51,0	112,4	2917	4,15	13,00	0,07	4xM10
SBH 630	630	411	16,2	195	7,7	378	14,9	52,5	115,7	3119	4,55	14,00	0,07	5xM10
SBH 640	640	411	16,2	195	7,7	378	14,9	52,5	115,7	3119	4,48	13,00	0,07	5xM10
SBH 655	655	411	16,2	195	7,7	390	15,4	55,0	121,3	3224	4,67	14,40	0,06	5xM10
SBH 670	670	411	16,2	195	7,7	402	15,8	56,7	125,0	3330	4,86	15,00	0,06	5xM10
SBH 680	680	411	16,2	195	7,7	414	16,3	56,7	125,0	3435	5,07	15,60	0,06	5xM10
SBH 690	690	411	16,2	195	7,7	426	16,8	57,6	127,0	3540	5,30	16,30	0,06	5xM10

* Height including the IP2X terminal cover

Cell Type	Capacity C, Ah	Height		Width		Length per block		Approx. Weight per cell		Approx. Electrolyte vol. between level marks cm ³	Approx. electrolyte per cell		Internal mOhm	Cell connection bolt per pole
		mm	in	mm	in	mm	in	kg	lb		L	kg		
		1 cells		1 cells		1 cells		1 cells						
SBH 753	753	411	16,2	195	7,7	438	17,2	63,5	140,0	3646	5,33	16,40	0,06	5xM10
SBH 765	765	411	16,2	195	7,7	438	17,2	60,0	132,3	3646	5,18	16,20	0,05	5xM10
SBH 785	785	411	16,2	195	7,7	463	18,2	64,9	143,1	3848	5,59	17,20	0,05	6xM10
SBH 800	800	411	16,2	195	7,7	463	18,2	65,9	145,3	3848	5,52	17,00	0,05	6xM10
SBH 825	825	411	16,2	195	7,7	499	19,6	68,5	151,0	4164	6,08	18,70	0,05	6xM10
SBH 840	840	411	16,2	195	7,7	511	20,1	69,5	153,2	4270	6,27	19,30	0,05	6xM10
SBH 865	865	411	16,2	195	7,7	498	19,6	72,6	160,1	4155	5,92	18,10	0,05	6xM10
SBH 890	890	411	16,2	195	7,7	523	20,6	74,7	164,7	4375	6,34	19,50	0,05	6xM10
SBH 910	910	411	16,2	195	7,7	523	20,6	75,8	167,1	4375	6,27	19,30	0,05	6xM10

* Height including the IP2X terminal cover

We energize
the world.
On land,
at sea,
in the air
and in space.

**Saft has launched a sustainability
initiative, Program Net Zero,
consisting of 5 pillars:**

1. Reducing the environmental footprint of our activities and that of our battery solutions.
2. Assisting Saft's customers in lowering their environmental footprint.
3. Using natural resources sustainably and implementing circular economy principles throughout our operations.
4. Prioritizing suppliers with strong environmental, social, and human rights records.
5. Working to always ensure compliance with environmental regulations and best practices in all locations.

Batteries facilitate the shift towards clean energy, but there is much work to do to achieve Net Zero. Therefore, Saft is committed to reducing its impact while respecting social and human rights all along the value chain.

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