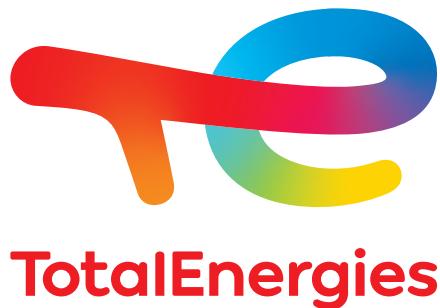




## Ni-Cd Block battery range

The sustainable approach to  
performance and reliability  
for industrial applications



# Meeting industry's power back-up challenges

## Make Saft your long term partner to help you reduce your CO<sub>2</sub> 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 with a reduced CO<sub>2</sub> emissions secure energy for stationary applications. 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 2023, 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,

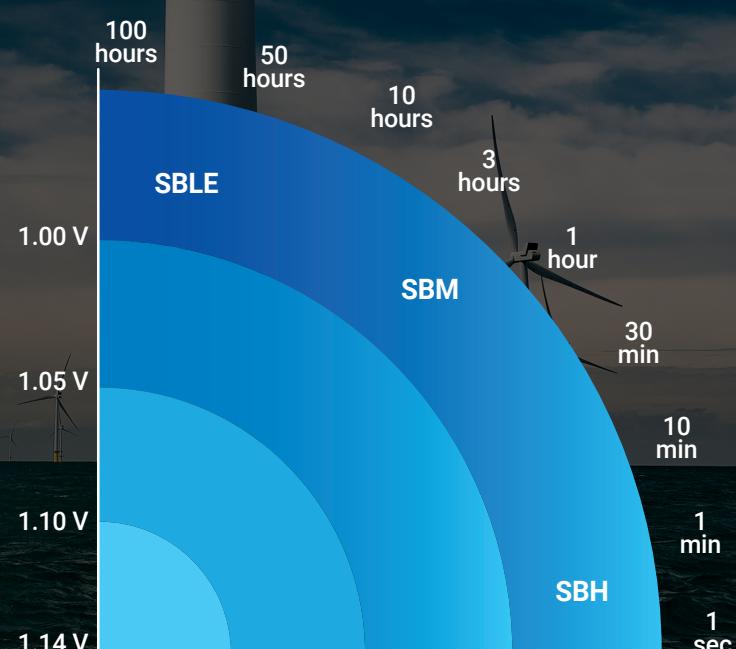
based on the required discharge time and end of discharge voltage. Thanks to the robust and reliable Saft Nife® pocket pocket plate technology they resist electrical abuse, shock and vibrations. Furthermore, a generous reserve of electrolyte means that the block

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

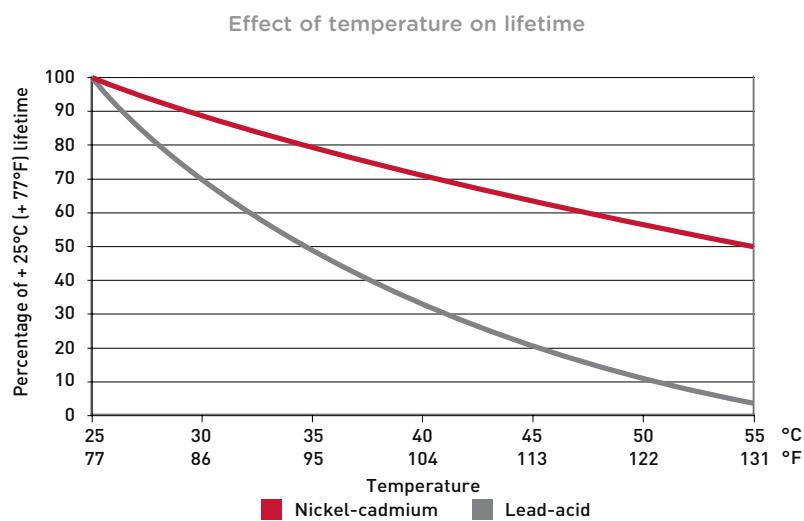
- Saft manufacturing process and recycling capability ensure lowest CO<sub>2</sub> footprint
- Saft Ni-Cd wide operating temperature range makes AC and heating redundant, hence saving energy

### ► Reliable

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

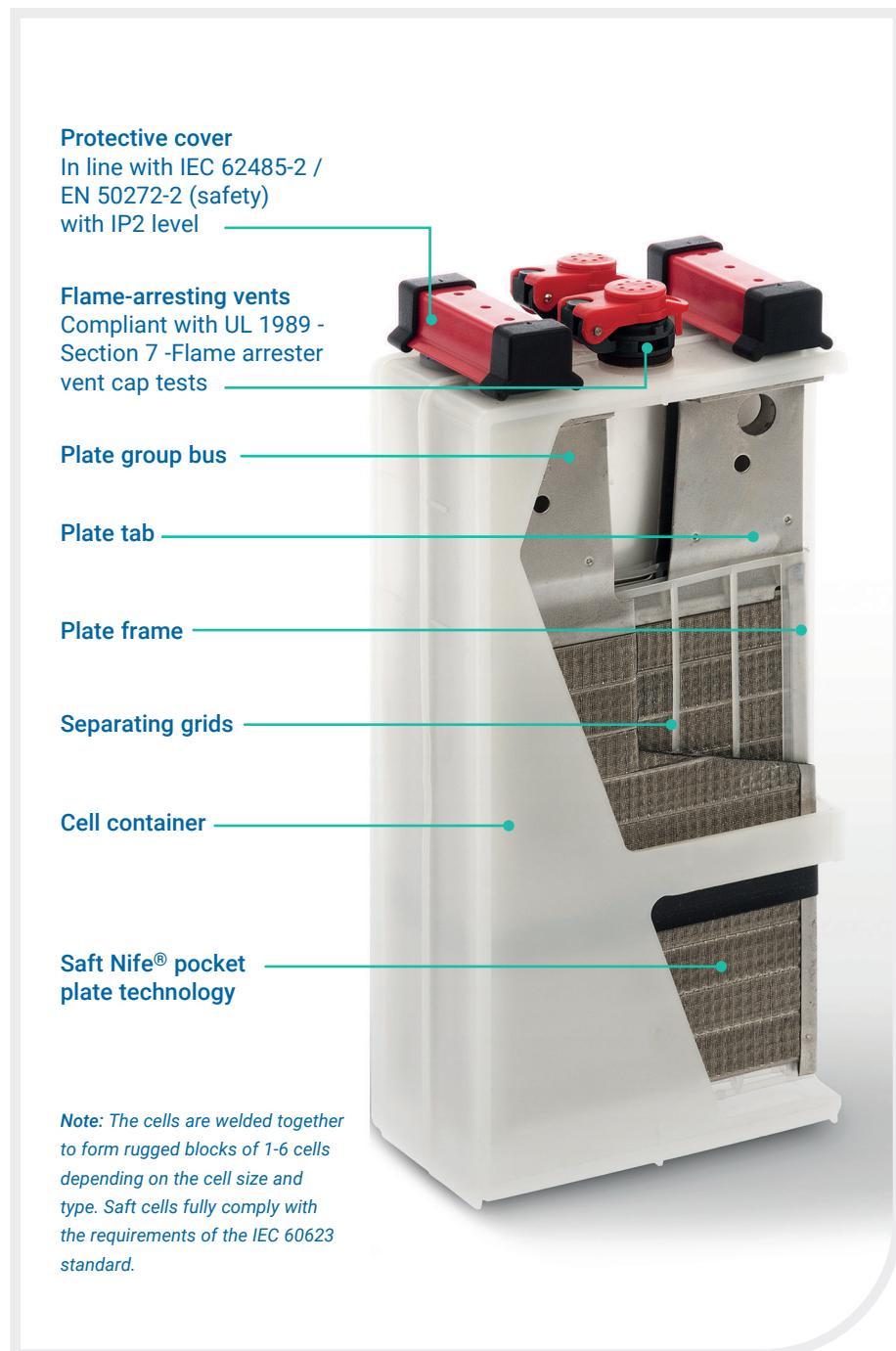
### ► Economical

- Lowest total cost of ownership



## 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.



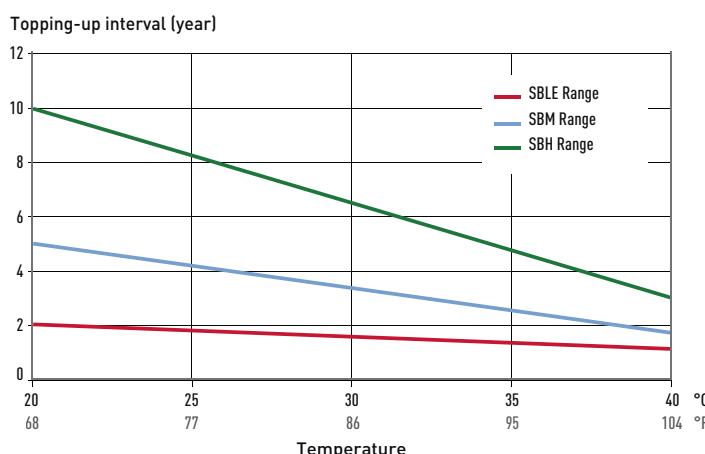
# Setting the benchmark for industrial batteries

**Low maintenance means lower CO<sub>2</sub> needed 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



Typical topping up intervals at recommended charge voltage



**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:

$1.42 \pm 0.01$  V/cell for SBLE

$1.40 \pm 0.01$  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

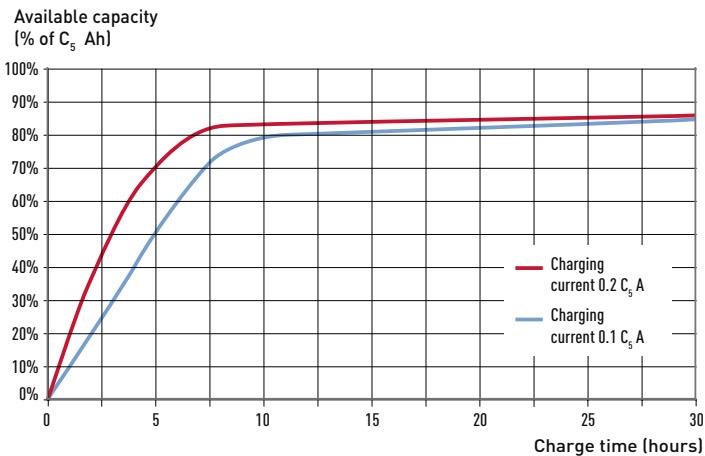
A high voltage will increase the speed and efficiency of the recharging.

→ For single level charge:

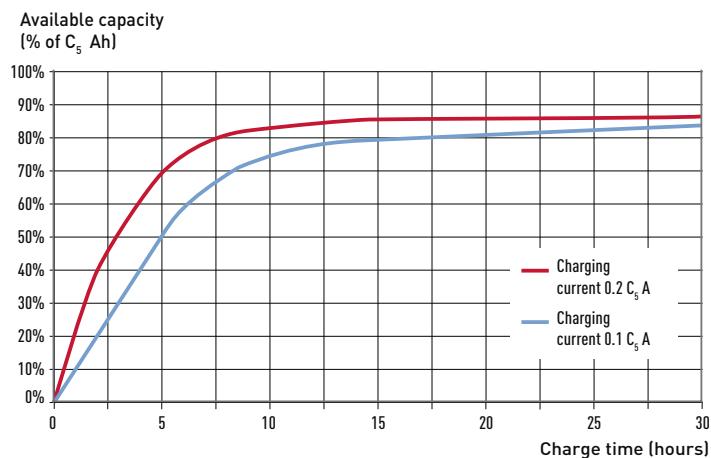
1.43 - 1.50 V/cell.



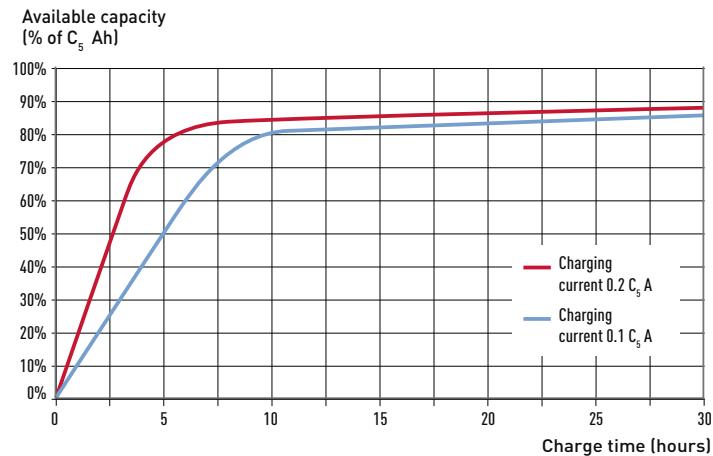
### SBLE Range – Available capacity after constant voltage charge at 1,42 V at + 20°C (+ 68°F)



### 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 Excellence System



**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 world class continuous programme

## 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 electrochemical core.
- REACH - Saft has adopted internal procedures to ensure conformity with the European REACH (Registration, Evaluation, Authorisation and Restriction of Chemical Substances) Regulation 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.
- Saft operates a network of over 30 bring back points worldwide that receive spent Ni-Cd batteries manufactured by Saft. The bring back points located in northern Europe bring these used batteries back to Oskarshamn, minimizing transportation. Other bring back points work with other fully permitted recycling partners selected by Saft. This take back and recycling service ensures that the recycling efficiency mandated by the EU battery directive is met and that we have closed the loop on responsible production of Ni-Cd batteries.

# 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 teams 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.saft.com](http://www.saft.com)

The screenshot shows the Saft BaSiCs V1.5 software interface. At the top, there's a navigation bar with links like 'Folder', 'New sizing', 'Ventilation', 'Cell data sheet', 'My profile', and 'Activation'. Below the navigation bar, there's a toolbar with icons for 'Add', 'System', 'Type', 'Comment', 'Creation date', 'Action', 'Duplicate', and 'Delete'. A 'Send to' button is also present. The main area has a red header with the 'saft' logo and 'BaSiCs Battery Sizing and Configuration System'. Below the header, there's a 'Folder' section showing 'New Folder 1' and a table with one item: 'SYS\_00001' (IEEE/UPS) created on '27/03/2015'. Underneath this, there's a sub-section titled 'SYS00001 - IEEE/UPS sizing' with two tabs: 'Step 1 : General' (selected) and 'Step 2 : Profile'. The 'General' tab contains fields for 'Minimum system voltage', 'Maximum system voltage', 'Nominal system voltage', 'Min. system voltage (%)', 'Max. system voltage (%)', 'Charge method', 'Nominal temperature', 'Maximum temperature', 'Design margin', 'Aging factor', and 'Temperature compensation'. The 'Profile' tab contains a dropdown menu for 'Range' with options like 'SBH', 'SBLE', 'SBM', 'SCL', 'SCM', 'SLM', and 'SPH'. At the bottom of the profile tab, there's a note: '(\*) The field is required' and a 'Size it' button. Below the profile tab, there's a 'Results' section with a note: 'Compare the IEEE 1185 battery sizing with the battery sizing after charge at constant current' and an 'Ok' button. The results are displayed in a table with columns: 'Edit / Modify', 'View details', 'Cell type', 'Cells number', 'Rated capacity (Ah)', 'Required capacity (Ah)', 'Final voltage/cell (V)', 'Topping-up interval (Years)', 'Battery weight (kg)', 'Battery Footprint (m²)', 'Battery volume (m³)', 'Ratio', and 'Actions'. One row in the table is visible: 'Packaging Ventilation Layout' (Battery), 'SBM 482', '87', '482', '466.85', '1.138', '2.4', '2105.40', '3.10', '2.92', '1.00', and a delete icon.

# Connecting your batteries for optimum efficiency

## Standard layouts

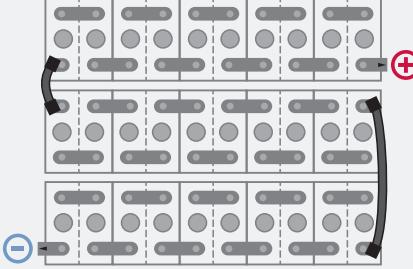
Saft has developed a series of standard layouts for ordering a

battery. Whether the battery is being installed on a rack, in a cabinet or is simply

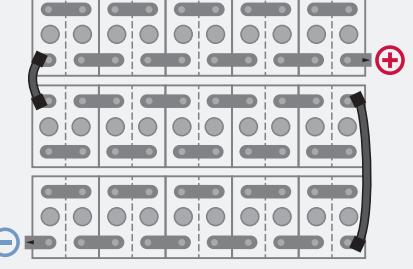
freestanding, the same configuration principals can be applied.

## Two ways to configure the battery

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



**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

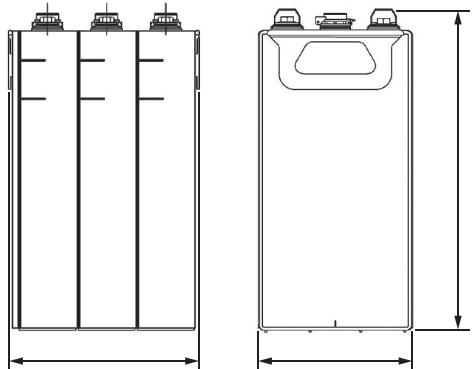
The dimensions of all available cell types are listed in the tables. The block length is determined by the cell length and the number of cells in the block.

### Notes:

- All the tabulated dimensions are maximum values.

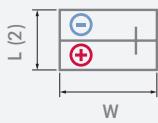
- All block types with a cell weight exceeding 8.4 kg (18.5 block length includes 6 mm for handles for these types.

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

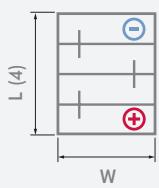
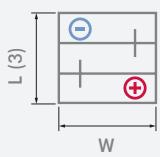


## Position of terminals

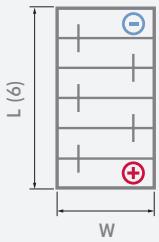
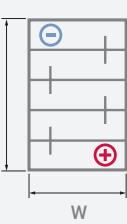
### Blocks of cells with single pole bolt



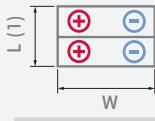
SBLE 7.5 → 62



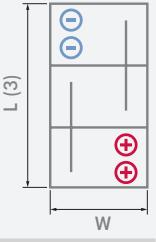
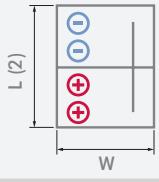
SBLE 75 → 275  
SBM 11 → 241  
SBH 8.3 → 118



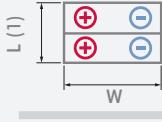
### Blocks of cells with 2 poles bolt per poles



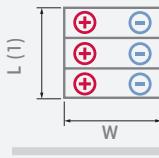
SBLE 300 → 510  
SBM 250 → 392  
SBH 137 → 157



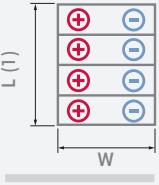
### Blocks of cells with 2 poles bolt per poles



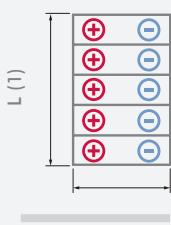
SBLE 550  
SBM 415 → 482  
SBH 177 → 256  
SBH 270 → 281  
SBH 307



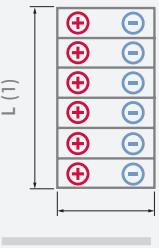
SBLE 600 → 830  
SBM 505 → 723  
SBH 265 / 294  
SBH 323 → 383  
SBH 400 → 460



SBLE 890 → 1100  
SBM 740 → 940  
SBH 393 / 471  
SBH 510 → 560  
SBH 600 → 615



SBLE 1150 → 1400  
SBM 1009 → 1181  
SBH 471 / 590  
SBH 640 → 765



SBLE 1450 → 1690  
SBM 965  
SBM 1220 → 1445  
SBH 800 → 920



Cell Type	Capa- city C <sub>a</sub> Ah	Height		Width		Length per block		Approx. Weight per cell		Approx. Electrolyte vol. between level marks cm <sup>3</sup>	Approx. electrolyte per cell L kg	Internal Resistance mΩhm	Cell connection bolt per pole
		mm	in	mm	in	1 cells	2 cells	kg	lb				
<b>SBLE 480</b>	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
<b>SBLE 500</b>	500	411	16.2	195	7.7	171	6.7	329	13.0	21.8	4.1	1353	1.86 5.60 0.33 2xM10
<b>SBLE 510</b>	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
<b>SBLE 550</b>	550	411	16.2	195	7.7	183	7.2			23.0	50.7	1458	1.99 5.80 0.30 2xM10
<b>SBLE 570</b>	570	411	16.2	195	7.7	183	7.2			23.5	51.8	1458	1.95 6.00 0.29 2xM10
<b>SBLE 600</b>	600	411	16.2	195	7.7	206	8.1			26.7	58.9	1643	2.28 6.30 0.28 3xM10
<b>SBLE 620</b>	620	411	16.2	195	7.7	206	8.1			26.1	57.5	1643	2.21 6.80 0.27 3xM10
<b>SBLE 650</b>	650	411	16.2	195	7.7	219	8.6			28.0	61.7	1757	2.44 6.60 0.25 3xM10
<b>SBLE 700</b>	700	411	16.2	195	7.7	232	9.1			30.0	66.1	1871	2.59 6.90 0.24 3xM10
<b>SBLE 750</b>	750	411	16.2	195	7.7	244	9.6			31.3	69.0	1977	2.72 7.50 0.22 3xM10
<b>SBLE 762</b>	762	411	16.2	195	7.7	244	9.6			31.4	69.2	1977	2.72 8.10 0.22 3xM10
<b>SBLE 790</b>	790	411	16.2	195	7.7	256	10.1			33.4	73.6	2082	2.85 8.50 0.21 3xM10
<b>SBLE 830</b>	830	411	16.2	195	7.7	268	10.6			34.5	76.1	2187	2.99 8.70 0.20 3xM10
<b>SBLE 855</b>	855	411	16.2	195	7.7	268	10.6			35.0	77.2	2187	2.89 8.90 0.19 3xM10
<b>SBLE 890</b>	890	411	16.2	195	7.7	292	11.5			37.2	82.0	2381	3.30 9.80 0.19 4xM10
<b>SBLE 905</b>	905	411	16.2	195	7.7	292	11.5			37.8	83.3	2381	3.18 9.80 0.18 4xM10
<b>SBLE 925</b>	925	411	16.2	195	7.7	305	12.0			39.6	87.3	2495	3.45 9.20 0.18 4xM10
<b>SBLE 980</b>	980	411	16.2	195	7.7	317	12.5			41.0	90.4	2600	3.58 10.70 0.17 4xM10
<b>SBLE 1000</b>	1000	411	16.2	195	7.7	329	13.0			43.0	94.8	2706	3.72 11.10 0.17 4xM10
<b>SBLE 1020</b>	1020	411	16.2	195	7.7	329	13.0			42.8	94.4	2706	3.72 10.40 0.16 4xM10
<b>SBLE 1070</b>	1070	411	16.2	195	7.7	341	13.4			45.0	99.2	2811	3.85 11.50 0.15 4xM10
<b>SBLE 1100</b>	1100	411	16.2	195	7.7	353	13.9			46.0	101.4	2917	3.98 11.60 0.15 4xM10
<b>SBLE 1125</b>	1125	411	16.2	195	7.7	353	13.9			46.6	102.7	2917	3.87 11.90 0.15 4xM10
<b>SBLE 1150</b>	1150	411	16.2	195	7.7	378	14.9			48.6	107.1	3119	4.31 12.90 0.14 5xM10
<b>SBLE 1200</b>	1200	411	16.2	195	7.7	390	15.4			51.1	112.7	3224	4.45 12.10 0.14 5xM10
<b>SBLE 1250</b>	1250	411	16.2	195	7.7	402	15.8			52.6	116.0	3330	4.58 13.60 0.13 5xM10
<b>SBLE 1300</b>	1300	411	16.2	195	7.7	413	16.3			54.3	119.7	3426	4.69 13.60 0.13 5xM10
<b>SBLE 1350</b>	1350	411	16.2	195	7.7	426	16.8			56.6	124.8	3540	4.84 14.40 0.12 5xM10
<b>SBLE 1400</b>	1400	411	16.2	195	7.7	438	17.2			57.5	126.8	3646	4.98 14.50 0.12 5xM10
<b>SBLE 1450</b>	1450	411	16.2	195	7.7	463	18.2			60.2	132.7	3848	5.31 15.80 0.11 6xM10
<b>SBLE 1500</b>	1500	411	16.2	195	7.7	487	19.2			64.2	141.5	4059	5.58 15.60 0.11 6xM10
<b>SBLE 1560</b>	1560	411	16.2	195	7.7	499	19.6			66.2	145.9	4164	5.71 17.00 0.11 6xM10
<b>SBLE 1600</b>	1600	411	16.2	195	7.7	511	20.1			67.4	148.6	4270	5.84 16.80 0.10 6xM10
<b>SBLE 1660</b>	1660	411	16.2	195	7.7	523	20.6			69.0	152.1	4375	5.97 17.40 0.10 6xM10
<b>SBLE 1690</b>	1690	411	16.2	195	7.7	523	20.6			69.8	153.9	4375	5.97 17.80 0.10 6xM10
<b>SBLE 1710</b>	1710	411	16.2	195	7.7	523	20.6			69.8	153.9	4375	5.78 17.80 0.10 6xM10

\* Height including the IP2X terminal cover

Cell Type	Capa- city	Height		Width		Length per block		Approx. Weight per cell		Approx. Electrolyte vol. between level marks	Approx. electrolyte per cell		Internal	Cell connection bolt per pole	
						2 cells		3 cells			kg	lb	cm³	L	
	C, Ah	mm	in	mm	in	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	4.99	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
SBM 277	277	411	16.2	195	7.7	229	9.0	337	13.3	14.5	32.0	914	1.32	3.50	0.31 2xM10

\* Height including the IP2X terminal cover

Cell Type	Capa- city	Height		Width		Length per block			Approx. Weight per cell	Approx. Electrolyte vol. between level marks	Approx. electrolyte per cell	Internal	Cell connection bolt per pole				
						1 cells	2 cells	3 cells									
	C, Ah	mm	in	mm	in	mm	in	mm	in	kg	lb	cm³	L	kg	mΩhm		
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
SBM 866	866	411	16.2	195	7.7	353	13.9				47.6	104.9	2917	4.32	12.70	0.10	4xM10
SBM 890	890	411	16.2	195	7.7	353	13.9				47.6	104.9	2917	4.26	12.50	0.10	4xM10
SBM 900	900	411	16.2	195	7.7	438	17.2				50.5	111.3	3646	4.06	12.50	0.09	5xM10

\* Height including the IP2X terminal cover

Cell Type	Capa- city	Height		Width		Length per block		Approx. Weight per cell		Approx. Electrolyte vol. between level marks	Approx. electrolyte Internal per cell		Cell connection bolt per pole	
		1 cells												
	C, Ah	mm	in	mm	in	mm	in	kg	lb	cm³	L	kg	mOhm	
<b>SBM 920</b>	920	411	16.2	195	7.7	353	13.9	49.5	109.1	2917	4.06	11.80	0.09	4xM10
<b>SBM 940</b>	940	411	16.2	195	7.7	353	13.9	48.7	107.4	2917	4.12	12.00	0.09	4xM10
<b>SBM 965</b>	965	411	16.2	195	7.7	373	14.7	50.5	111.3	3057	4.28	11.40	0.09	6xM10
<b>SBM 1009</b>	1009	411	16.2	195	7.7	402	15.8	53.7	118.4	3330	4.88	14.30	0.09	5xM10
<b>SBM 1040</b>	1040	411	16.2	195	7.7	438	17.2	57.5	126.8	3646	5.40	14.60	0.08	5xM10
<b>SBM 1082</b>	1082	411	16.2	195	7.7	438	17.2	58.8	129.6	3646	5.40	16.70	0.08	5xM10
<b>SBM 1107</b>	1107	411	16.2	195	7.7	438	17.2	59.3	130.7	3646	5.34	15.60	0.08	5xM10
<b>SBM 1150</b>	1150	411	16.2	195	7.7	438	17.2	60.0	132.3	3646	5.07	15.70	0.07	5xM10
<b>SBM 1181</b>	1181	411	16.2	195	7.7	438	17.2	60.9	134.3	3646	5.14	15.00	0.07	5xM10
<b>SBM 1220</b>	1220	411	16.2	195	7.7	511	20.1	67.5	148.8	4270	6.31	16.90	0.07	6xM10
<b>SBM 1250</b>	1250	411	16.2	195	7.7	499	19.6	68.5	151.0	4164	5.85	18.00	0.07	6xM10
<b>SBM 1274</b>	1274	411	16.2	195	7.7	511	20.1	69.0	152.1	4270	6.31	18.50	0.07	6xM10
<b>SBM 1324</b>	1324	411	16.2	195	7.7	523	20.6	71.0	156.5	4375	6.42	18.80	0.06	6xM10
<b>SBM 1390</b>	1390	411	16.2	195	7.7	523	20.6	72.0	158.7	4375	6.09	17.40	0.06	6xM10
<b>SBM 1445</b>	1445	411	16.2	195	7.7	523	20.6	73.7	162.5	4375	6.09	17.70	0.06	6xM10
<b>SBM 1465</b>	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	Capa- city C, Ah	Height mm in		Width mm in		Lenght per block 1 cells		Approx. Weight per cell kg lb	Approx. Electrolyte vol. between level marks cm³	Approx. electrolyte Internal per cell L kg mΩm			Cell connection bolt per pole	
		mm	in	mm	in	mm	in			L	kg	mΩm		
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	10.0	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 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
SBH 705	705	411	16.2	195	7.7	438	17.2	60.5	133.4	3646	5.43	16.40	0.06	5xM10

\* Height including the IP2X terminal cover

Cell Type	Capa-city	Height		Width		Length per block		Approx. Weight per cell		Approx. Electrolyte vol. between level marks	Approx. electrolyte Internal per cell		Cell connection bolt per pole	
		C <sub>2</sub> Ah	mm	in	mm	in	mm	in	kg	lb	cm <sup>3</sup>	L	kg	mΩhm
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
SBH 920	920	411	16.2	195	7.7	523	20.6	76.5	168.7	4375	6.22	19.20	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.



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**Saft is a company of TotalEnergies**  
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