

SUNBEAM SYSTEM

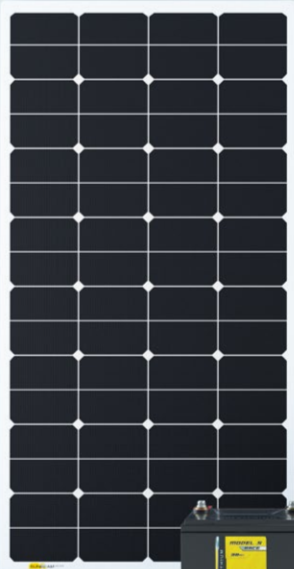


CATALOGUE 2023



OFF-GRID POWER SOLUTIONS

SUNBEAM^{SYSTEM}



HIGH PERFORMANCE SOLAR PANELS LOW TEMPERATURE COEFFICIENT

Independently tested by Kippari magazine!

No need to be concerned with cooling your solar panels to get decent production: at working temperatures our SUNBEAMsystem panels only lose 6% in power thanks to our solar cells having the lowest available temperature coefficient.

SMART LITHIUM BATTERIES WITH CYLINDRICAL CELLS

We believe that the ultimate user experience consists of ZERO effort with FULL feedback. We present you with the 3rd generation of our no-nonsense lithium battery, baldly named Plug&Play. Using bolted cylindrical cells for maximum performance, just like any modern Electric Vehicle.



INNOVATIVE POWER SOLUTIONS SWEDISH TECHNOLOGY AND QUALITY

After more than 10 years SUNBEAMsystem has left its mark on the industry and became renowned for its power solutions - both on the road and on the high seas. For more than a decade we've been driven by innovation to provide you with state-of-the-art power solutions.

We take pride in distinguishing ourselves from the competition with unique, durable and environmentally conscious products.

Since our foundation we have strived for the highest quality and performance. We have never lost the aim that each and every product must solve a problem - doing so in a discrete manner while offering a pleasant user experience.

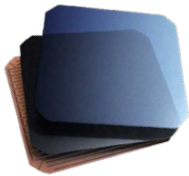
It does not matter whether you are based in the arctic or in the tropic regions - our cutting edge solutions are ready to power your adventure.

TOUGH BLACK HOLE - GAP FILLER SEAMLESS INSTALLATION



Simple yet ingenious! Multiple individual solar panels will provide the highest daily yield aboard your yacht. Supplement your solar panels with our filler panels to create a fully integrated surface. Simply cut these into custom shapes and easily mount them with 3M tape.

PREMIUM SOLAR PANELS

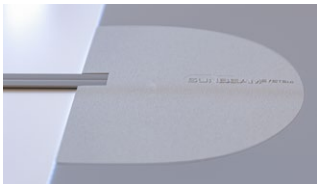
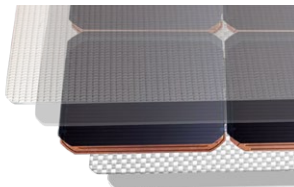


WORLD'S BEST SOLAR CELLS

SUNBEAMsystem uses extremely efficient Sunpower™ cells to ensure the highest possible durability and unmatched efficiency of up to 25.2%.

TOUGH TOP & INTERNAL PROTECTION

The internal stringer grants versatile durability. Materials with extreme UV endurance and transparency, foundations for the 5-year warranty.



FLUSHED CONNECTION (PROTECTED DESIGN)

The invisible flat Flush cable features a reinforced cable integration for a perfect result.

SHADOW OPTIMIZED (PROTECTED DESIGN)

Our unique and proprietary Shadow Optimized technology ensures maximum power output in shaded conditions.



WALKABLE SERIES TOUGH



Multiple test winner, premium panels with antislip surface and 5 years warranty.

REINFORCED SERIES CARBON TOUGH+



The long-life solar panel for canvas & bimini, with internal carbon fiber stringer.

PORTABLE SERIES FOLD



A truly portable solar panel. Lightweight & waterproof.

PLUG & PLAY

EXTREMELY SMART & POWERFUL

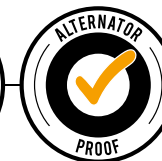
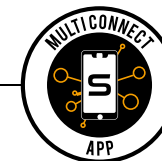
NEW IMPROVED CAPACITIES!

Enjoy the most advanced user experience on the market. Or simply have peace of mind knowing that your battery is equipped with the latest technology, featuring cylindrical cells and fire proof chemistry.



AN EASY UPGRADE USING EXISTING EQUIPMENT

Plug & Play offers an effortless upgrade. Even for the most demanding setup with legacy equipment. No need for extensive planning or support.



DRIVE

THE BEST BATTERIES FOR ELECTRIC PROPULSION



- WINTERMODE
- EASY CHARGE REBOOT

FOR ALL VESSEL SIZES

DRIVE batteries can power anything from small outboards to large inboard electric drivetrains.

NEVER WITHOUT JUICE

Keep an eye on your state of charge with the wireless Multi Connect app.

LONGER RANGE AND LIFETIME

Up to 4.5 times longer range than traditional batteries with zero maintenance.



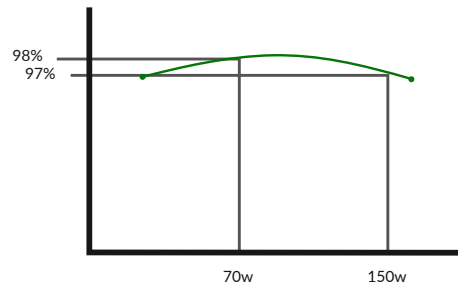


MOONRAY SERIES

- ◆ DEVELOPED FOR YACHTS AND RV'S
- ◆ WIRELESS APP MONITORING
- ◆ SUITED FOR ALL BATTERY TYPES
- ◆ OPTIMIZED FOR REAL-WORLD CONDITIONS

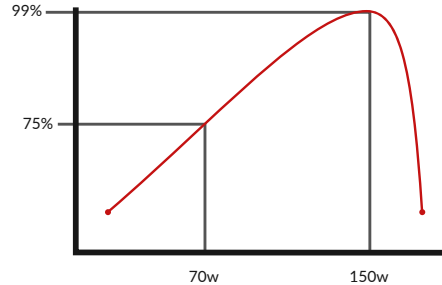
MoonRay achieves a uniquely high peak efficiency in all conditions, with the charge already starting at low PV voltages.

Where other controllers have a sharp efficiency curve, MoonRay maintains a consistent efficiency curve over the whole input range.



MOONRAY SMART MPPT

The in-house developed MPPT algorithm provides a consistent efficiency output curve from the MoonRay controllers that ensures the highest possible daily output.



COMPETITOR MPPT

Showing a characteristic peak output that is dependant on optimal conditions, leading to lower overall efficiency.



MULTI CONNECT APP & MOBILE SMART HOME

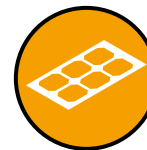


- ◆ SMART HOME FUNCTIONALITY
- ◆ NEW - 2023 FEATURES
- ◆ WIRELESS CONTROL

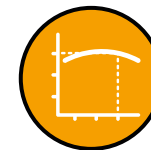
2023 brings a major update to the SUNBEAMsystem Multi Connect platform with the introduction of the Smart Hub and the addition of Mobile Smart Home products.

You can now use any Android tablet as the central Hub in your system, connecting all compatible products as well as multiple smartphones for both monitoring and controlling.

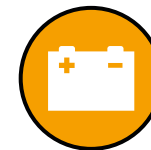
Upgrade existing lights with the smart dimmer. Connect your equipment to the smart switch for instant remote control. Battery Monitor products, for less anxiety.



LIVE AND HISTORIC SOLAR CHARGE PERFORMANCE



COMBINE DATA FROM MULTIPLE MOONRAYS



OVERVIEW OF YOUR TOTAL BATTERY BANK



CONNECT MULTIPLE SMARTPHONES SIMULTANEOUSLY

TOUGH++

THE BEST AND MOST EFFICIENT SOLAR PANEL ON THE MARKET!

Mark Slats, a born adventurer and athlete broke the world record for rowing across the Atlantic. In 2017 Mark Slats cut 22 days off the previous record and crossed the Atlantic in just 30 days - leaving his competition far behind. In 2020 Mark teamed up with Kai and won the TWAC again, adding another world record to his accomplishments.

“Out on the open ocean, you are fully dependent on your equipment. Therefore my boat was outfitted with the best solar panels available on the market.” - Mark Slats

Sunbeamsystem is a proud partner of Mark Slat's campaigns and will continue to deliver lightweight, durable, and extremely efficient solar panels for his future endeavors.

Mark Slats & Kai Wiedmer - Team Row4Cancer - Picture: Eva Bloem



TOUGH++ | WORLD RECORD EFFICIENCY AT 25.2%

TOUGH++ is a state-of-the-art solar panel, with the newest and most powerful technology currently available. Built with the best materials to ensure it is resilient against the most demanding circumstances.



Pictures: Atlantic Campaigns

TOUGH+



DEVELOPED FOR PROFESSIONAL APPLICATIONS

SUNBEAMsystem TOUGH+ has been developed for professional purposes and high-end applications. Fitted with Sunpower™ cells with an impressive 23.7% efficiency, these models are the first choice for any user that's ready to put the highest demand on their panels.



TOUGH+ can be installed on any solid surface, providing a safe anti-slip surface to walk on - even in wet conditions. The TOUGH+ design is clean without any traditional eyelets and is instead delivered with a 3M double-sided adhesive sheet for a quick and trouble-free installation, paired with our flat Flush cable to create a seamless integration on any yacht deck.



	TOUGH++ 126W	TOUGH+ 116W	TOUGH+ 82W	TOUGH+ 58W	TOUGH+ 39W
Shadow Optimized	Yes	Yes	Yes	-	-
Size (cm)	106x54	106x54	77.8x54	54x54	37.8x53.5
Weight (Kg)	2.6	2.6	1.9	1.3	0.7
Cable	Flush - 2m	Flush - 2m	Flush - 2m	Flush - 2m	Flush - 2m

TOUGH+

BLACK SERIES

BALTIC 68 CAFÉ RACER FROM BALTIC YACHTS

Designed to deliver electrifying performance in more ways than one, the BALTIC 68 Café Racer is a groundbreaking yacht built to leave a mark on its spectator but not the environment. Her 'un-plug and go' electric propulsion and generation system is extremely eco-friendly and she's finished to a luxurious standard both on deck and below.

This Baltic 68 Café Racer's e-credentials include 12 TOUGH+BLACK solar panels mounted on the roof of the cabin. These power the air conditioning and ensure that the battery bank stays fully charged. The black panels blend into the superstructure perfectly, complemented with a series of cut-to-size TOUGH+ BLACK HOLE Gap Filler panels to complete the aesthetic lines of the design.

“ *This is a yacht which tackles today's challenges of sustainability and low carbon targets head on – she's fun and easy to handle, offering a genuinely rewarding sailing experience.* **”**

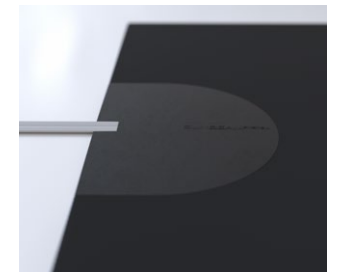
Henry Hawkins EVP Baltic Yachts



Photos: Stuart Pearce - Yacht-Shot



TOUGH+BLACK is the solution for any high-end yacht where aesthetics and seamless integration are a priority. TOUGH+BLACK features 24.4% cell efficiency, is free from eyelets and comes with a 3M double-sided adhesive for rapid and durable installation.



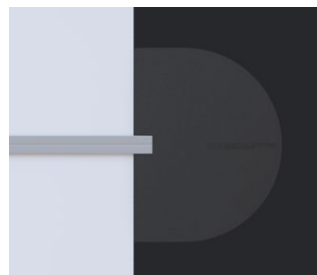
	TOUGH+ 121W B	TOUGH+ 86W B	TOUGH+ 61W B	TOUGH+ 46W Long B
Shadow Optimized	Yes	Yes	-	Yes
Size (cm)	106x54	77.8x54	54x54	85x27.7
Weight (Kg)	2.6	1.9	1.5	0.8
Cable	Flush - 2m	Flush - 2m	Flush - 2m	Flush - 2m



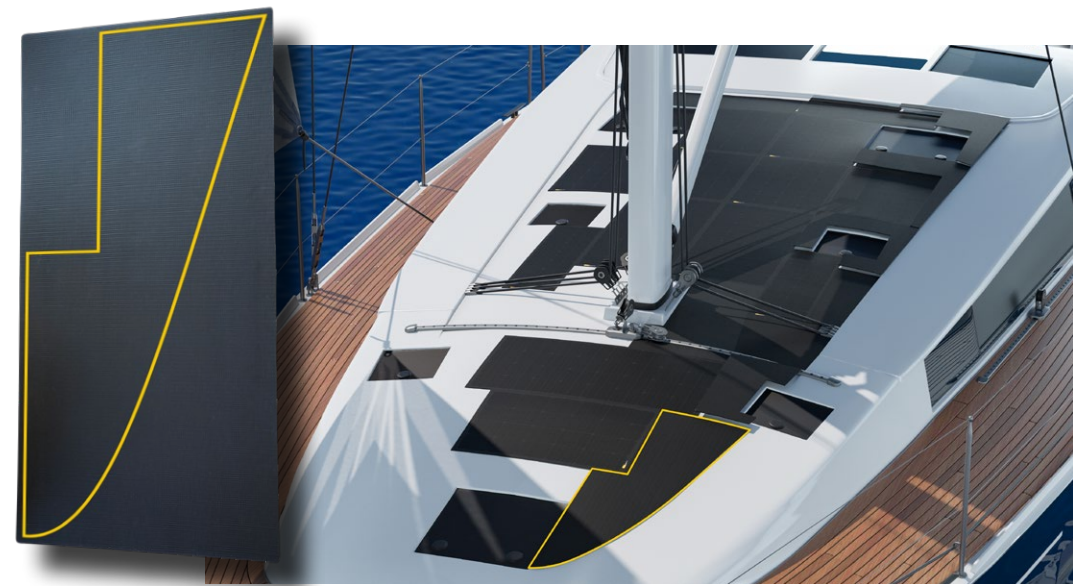


TOUGH BLACK SERIES

The TOUGH BLACK series is the all-round solution for any user aiming for an inconspicuous solar panel installation. With their full black appearance and boasting a 22.6% efficiency, the TOUGH BLACK series outshines the competition.



	TOUGH 114W B	TOUGH 111W B HOLELESS	TOUGH 111W B	TOUGH 78W B	TOUGH 55W B	TOUGH 55W B LONG	TOUGH 21W B LONG
Shadow Optimized	Yes	Yes	Yes	Yes	Yes	Yes	-
Size (cm)	79x74	106x54	106x54	77.8x54	54x54	106x27.7	14.7x85
Weight (Kg)	2.6	2.5	2.5	1.9	1	1	1
Cable	Flush - 1.5m	Flush - 1.5m	Flush - 1.5m	Flush - 1.5m	Flush - 1.5m	Flush - 1.5m	Flush - 1.5m
Eyelets	No	6x6mm	6x6mm	4x6mm	4x6mm	No	No



TOUGH BLACK HOLE - GAP FILLER

The TOUGH BLACK HOLE - gap filler panels allow for a seamless deck integration. This aesthetic solution lets you fill-up the space around your panels with ease: simply cut the filler panels to the desired size to create an uninterrupted surface. The filler panels measure 106 by 54 cm and are available with or without 3M double-sided adhesive to match your panels of choice.



BLACK HOLE VIDEO

EASY INSTALL WITH A CUSTOM FINISH

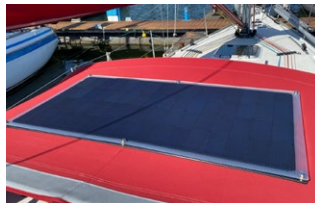
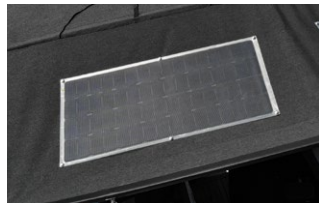


CARBON

DURABLE & LONG-LIFE

After years of development, there is finally a truly durable solution for using solar panels on a canvas surface: SUNBEAMsystem TOUGH+ CARBON. The CARBON series allows you to transform your sprayhood and bimini into efficient solar power generators.

Mounting solar panels on soft surfaces has traditionally been a challenge where you either had to choose between an expensive heavy customized structure to support your panels, or experience how lightweight solar panels would fail prematurely due to the lack of structural support.



ENTER THE CARBON SERIES:

Protected Design with an internal carbon fiber stringer. Light as not to burden the cloth and stiff to provide structural integrity, protecting the precious interior. Powerful Sunpower™ cells provides an unbeatable amount of Watt per area. Combined with our Shadow Optimized technology they ensure a better output during partial shading.



QUICK FIX
BUTTONS



LIGHT & STIFF
CARBON FIBER



5 YEARS
WARRANTY

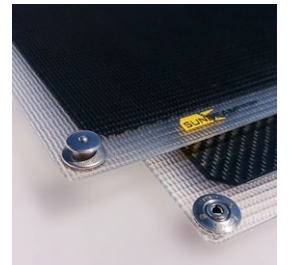


THE PREFERRED CHOICE FOR SOFT SURFACES

With attention to every detail, the CARBON panels are the perfect solution for installation on soft surfaces. The solar panels arrive with pre-installed waterproof MC4 connections and the edges are coated with a flexible material to protect the fabric.

CHOOSE BETWEEN BUTTON OR VELCRO ATTACHMENT

For general use you can simply attach button fasteners in the fabric yourself. Advanced users, experiencing hard winds or high speeds, can opt for the **CARBON VELCRO BATTEN** which distribute the forces over a larger area of fabric using velcro strips.



	T+ Carbon 116W	T+ Carbon 82W	T Carbon 55W
Shadow Optimized	Yes	Yes	Yes
Size (cm)	107.8 x 55.4	79.6x55.4	56.3x55.4
Weight (Kg)	2.8	2	1.4
Cable	7dm+MC4	7dm+MC4	7dm+MC4
Eyelets	6 x QuickFix	6 x QuickFix	4 x QuickFix



CARBON SERIES VIDEO





TOUGH

WINNER IN MULTIPLE REAL-LIFE TESTS

Since its introduction, the TOUGH series has been a first-prize winner in multiple independent real-life tests, carried out by third parties. Thanks to a broad range with different sizes, the TOUGH series offers a universal power solution for a wide variety of applications.

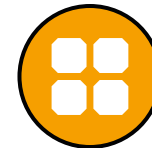
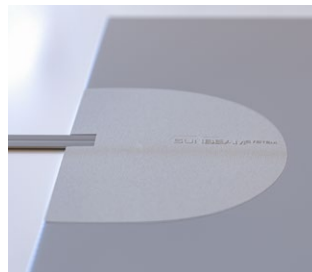
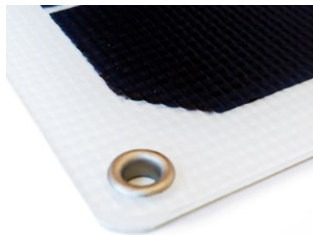
The unique TOUGH surface makes it the preferred panel not only for the yachting industry, but also for industrial off-grid purposes due to its resilience to the harshest conditions.

Every TOUGH model is built with Sunpower™ cells with a minimum efficiency of 22.6%. The walkable surface is incredibly durable, resistant to high UV-exposure and offers more light transmission than glass, especially in low light angles. Thanks to our Flushed connection (protected design), installing TOUGH panels will result in both an aesthetic and safe installation, without any risk of tripping on exposed cables.

In addition, all TOUGH panels from 55W and above are equipped with SHADOW OPTIMIZED technology, SUNBEAMsystem's own protected feature ensuring maximized power output in partially shaded conditions.



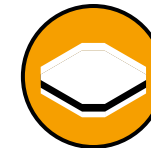
Picture by Rosättra Båtvärv | Linjett 43



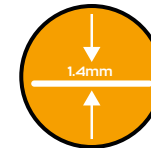
HIGH EFFICIENCY SOLAR CELLS



ANTISLIP SURFACE



UPGRADED CELL PROTECTION



INVISIBLE FLAT FLUSH CABLE



5 YEARS WARRANTY

	TOUGH 111W	TOUGH 78W	TOUGH 55W	TOUGH 37W	TOUGH 21W	TOUGH 21W Long
Shadow Optimized	Yes	Yes	Yes	-	-	-
Size (cm)	106x54	77.8x54	54x54	37.8x53.5	43.4x27.7	14.7x85
Weight (Kg)	2.6	1.9	1.3	0.7	0.3	0.3
Cable	Flush - 1.5m	Flush - 1.5m	Flush - 1.5m	Flush - 1.5m	Flush - 1.5m	Flush - 1.5m
Eyelets	6x6mm	4x6mm	4x6mm	4x6mm	4x6mm	No



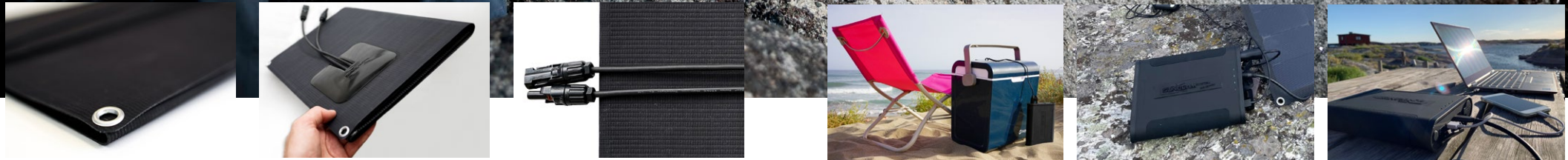
TOUGH SERIES VIDEO

FOLD SERIES

SMART POWER STATION

The FOLD Series is the perfect companion when you need solar power on the go. Our waterproof FOLD series are available in four different sizes to power all your needs: simply unfold, connect and you'll be charging in no time.

Whether you are working from your 'remote office' or planning your next expedition - the SMART POWER STATION is the travel companion to cover your power needs on the road. Fully compatible with FOLD panels.



POWER YOUR ADVENTURES

The FOLD panels are extremely small in relation to the wattage. When folded the size is comparable with a laptop. Fully laminated in one piece with soft corners offering unique

protection against water and dust ingress.

The waterproof MC4 connectors feature a quick-release system.

	Fold 124.5W	Fold 62W	Fold 41.5W	Fold 21W
Size Folded (cm)	42 x 29	42 x 28.5	30 x 28	30.5 x 16
Size Unfolded (cm)	171.5 x 42	85 x 42	84 x 30	47 x 30.5
Weight (Kg)	2.6	1.3	1	0.45
Cable	Short + MC4	Short + MC4	Short + MC4	Short + MC4
Eyelets	4 x 9mm	4 x 9mm	4 x 9mm	4 x 9mm



FOLD SERIES VIDEO

SMART & VERSATILE - SOLAR AND GRID CHARGE

Featuring the same cobalt-free lithium cells as the rest of our batteries, it packs an astonishing 154Wh capacity while being environmentally conscious. The SMART POWER STATION easily fits your bag, can charge a typical modern laptop 3 times or a mobile phone 10 to 15 times. Features a USB-C 60W PD

port, 2 x USB-A and we have even included a 12V socket to power your mobile fridge!

Fully charged in 4 hours using the included 230V adapter or a USB-C PD charger. Rather charge your SMART POWER STATION on the go? Simply plug in one of our FOLD panels to get an instant solar charge!



Download on the
App Store

GET IT ON
Google Play

MULTI CONNECT

Gain full insight in your energy production and consumption using our SUNBEAMsystem Multi Connect application, available for both Android and iOS.

The application provides you with a care-free experience, giving fingertip control and access to all of your SUNBEAMsystem smart devices aboard your vessel.

Fully customizable: combine multiple devices, add shortcuts or switch to dark mode after sunset.

Newly introduced is the Smart Hub functionality, which allows you to use any Android tablet as a central hub for monitoring and accessing all connected SUNBEAMsystem smart devices - no more need for expensive proprietary displays.

CONNECT ALL YOUR SMART GEAR



MOONRAY

MoonRay Solar Charge controllers can be added to your Multi Connect app with the optional bluetooth module. This makes the initial setup a breeze: simply select the right charging profile and you're good to go.

It also allows for monitoring both real-time and historic solar charge data. Combine data from multiple MoonRay's in a single view to show total production, or view their data separately to compare performance.

SMART LITHIUM

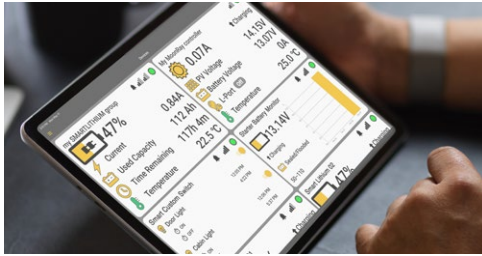
All our SMART LITHIUM batteries have Multi Connect functionality right out of the box. The built-in module provides a rich amount of data, making shunts redundant. You can fully personalize how you want to group and show battery data, regardless of how many batteries you have in your vessel.

Easily switch between the combined view of all batteries to that of a single one, receive smart notifications or set alarms to warn for low levels of charge.



MOBILE SMART HOME

You can now add existing devices to the Multi Connect network with our newly launched Mobile Smart Home products.



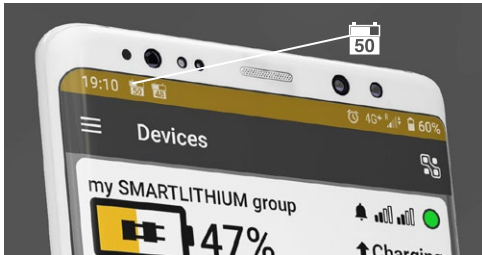
SMART HUB FEATURE

- Central tablet display
- Remote equipment monitoring
- Free Download



MOBILE SMART HOME

- Automate your yacht | motorhome
- Remote monitoring on all your family devices



SMART NOTIFICATIONS

- Top bar icon
- Out-of-focus notifications
- Wearables supported
- Configurable alarms



SMART CUSTOM SWITCH



SMART DIMMER CONTROL



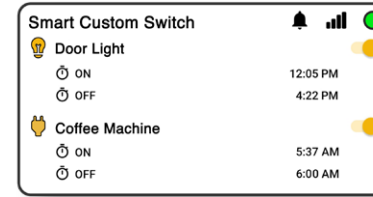
TURN ON/OFF WITH A CLICK



DETAILED MONITORING

Place your Smart Hub tablet in a convenient spot using the magnetic wall mount, easily detached for normal tablet use. By adding the proximity sensor your Hub tablet will automatically switch the screen on when you approach, switching off to save energy when nobody's near.

With the Smart Hub permanently connected to all devices in your network, it is possible to connect all family smartphones via the Hub to the Multi Connect network simultaneously. Remote internet access to the Smart Hub will soon be available.

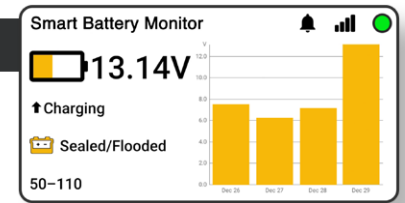


SMART SWITCH & SMART DIMMER

Upgrade existing equipment with our Smart Switch or Smart Dimmer! Simply connect up to two existing consumers and enjoy remote control and automated schedules via the SUNBEAMsystem Multi Connect app. The Smart Switch offers simple on/off functionality, while the Smart Dimmer also allows for dimming your lighting to the desired brightness. Both the Smart Switch and Dimmer can control currents up to 10A (max 120W - 12V system), feature two channels that can be separately controlled and are powered by any 5-12V DC source.

SMART BATTERY MONITORS

Monitor your existing 12V lead-acid batteries with the Multi Connect APP using our Smart Battery Monitors, available in three models. The Smart Battery Monitor (in both 500A or 1000A version) is a highly precise shunt, measuring the state of charge as well as in- and outgoing currents. Their smaller brother, the Smart Battery Monitor Light, provides you with an accurate voltage for a simple and easy charge reading.



All can be installed within minutes, allowing you to keep track of your battery's charge remotely.

	Smart Switch
Power source	5 - 12V
Number Switches	2
Max Switch Current	10A
Dimensions	50 x 82 x 31mm

	Smart Dimmer
Power source	5 - 12V
Number Switches	2
Max Switch Current	10A
Dimensions	50 x 82 x 31mm

SUPERIOR TECHNOLOGY MULTI-LAYERED SAFETY & ALTERNATOR PROOF

SMART LITHIUM



-  **VIBRATION PROOF**
-  **CYLINDRICAL BOLTED CELLS**
-  **DISCHARGE UP TO 700A**
-  **SUPER QUICK CHARGE**
-  **AIR TRANSPORT CERTIFIED**

NEW IMPROVED CAPACITIES!

54AH

120AH

108AH



PLUG & PLAY

AN EASY UPGRADE FOR ANYONE



1 - ULTIMATE SAFETY

Our batteries feature the safest lithium phosphate (LiFePO4) chemistry and are UN38.3 CERTIFIED: a guarantee for total safety. Equipped with fire safety valves and multiple electronic safeguards.



2 - ALWAYS COMPATIBLE

The superior internal electronics and built-in BMS allow for an effortless upgrade with instant performance increase.



3 - THE SMARTEST OF THEM ALL

As part of the smart mobile home product family our batteries receive continuous updates. Connect all phones aboard to enjoy instant monitoring or easy configuration.

The 3rd generation of our Plug & Play series: an even higher capacity density with incredible performance. A unique DROP-IN replacement for any lead-acid battery. The advanced electronics simulate lead-acid behavior, making it ALTERNATOR FRIENDLY. This allows for a powerful upgrade WITHOUT CHANGING OTHER EQUIPMENT with our ONE model allowing for peak discharge up to 700A!'

Just like an EV sports car we use cylindrical instead of prismatic cells, offering unbeatable long-term stability during heavy use. Combined with the oversized internal construction our ONE model might be the most powerful battery on the market.

Looking for a bigger storage capacity? Our Multi models are designed for use in parallel to create larger banks.



SMART LITHIUM
PLUG & PLAY VIDEO

	ONE 108Ah	ONE 120Ah	MULTI	MULTI 24V	MODEL S RACE
Capacity	108Ah	120Ah	108Ah	54Ah	38Ah
System Voltage	12V	12V	12V	24V	12V
Max Cont. Charge	200A	240A	100A	50A	60A
Max Cont. Discharge	200A	240A	100A	50A	80A
Peak Discharge (10s)	600A	750A	400A	200A	140A
Weight	14.2kg	14.9kg	14.2kg	14.2kg	4.75kg
Size (mm)	328 x 172 x 222	328 x 172 x 222	328 x 172 x 222	328 x 172 x 222	195 x 129 x 165



DEPTH OF DISCHARGE	80% OF FACTORY CAPACITY AFTER
50% DoD	5000 cycles
70% DoD	3000 cycles
80% DoD	2500 cycles
100% DoD	2000 cycles



SMART LITHIUM

DRIVE

Searching for the perfect marine propulsion battery? Our SMART LITHIUM DRIVE range offers a superior power source for both small outboard motors as well as large inboard drivetrains.

This year we've increased capacity across the whole range! Our new 10kWh flagship model features cylindrical cells, active balancing and can put out a massive 10kW of continuous power. All our batteries feature Multi Connect: a clear and customizable app to monitor and control your system.



WINTER MODE
Safely use your battery in low temperatures



SUPERIOR BMS
Offers the highest level of safety



EASY CHARGE REBOOT
Signals your charger for instant start



MULTI CONNECT APP
Monitor your range prognosis

Our DRIVE models are fitted with a superior BMS that will automatically adjust available capacity based on temperature. The Easy Charge Reboot function sends a go-charge signal from fully depleted batteries.

	12v 1000Wh	12v 1400Wh	24v 1400Wh	36v 1380Wh	48v 1440Wh
Capacity	1000Wh	1400Wh	1400Wh	1380Wh	1440Wh
System Voltage	12V	12V	24V	36V	48V
Max. motor	55 lbs	65 lbs	85 lbs	2.3kW	3kw
Weight	10.8kg	13.8kg	13.8kg	14.2kg	14.2kg
Size (mm)	328x172x222	328x172x222	328x172x222	328x172x222	328x172x222

	P 48v 5kWh	P 48v 10kWh 5kW	P 48v 10kWh	48v 10kWh
Capacity	5.1kWh	10kWh	10kWh	10kWh
System Voltage	48V	48V	48V	48V
Max. motor	5kW	5kW	10kW	10kW
Cell Type	Prismatic	Prismatic	Prismatic	Cyl 32650
Casing	Traditional	Metal casing	Metal casing	Metal casing
Weight	38kg	110kg	110kg	110kg
Size (mm)	520x269x220	640x492x295	640x492x295	640x492x295

	Silicone Cover
Max thickness	5 mm
Inside size (mm)	328 x 172 x 222
	Pole Adaptors
Material	Full Copper
Included	Pos+Neg+Bolts





Yachts and RV's are among the most difficult solar applications to create perfect PV conditions: no fixed orientation, small surfaces and a lot of partial shadowing. These hard requirements demand a unique and innovative approach. MoonRay has been developed specifically to get the most out of your SUNBEAMsystem solar panels in a complex, shadow-rich and moving environment - enhancing the properties of solar panels on a boat or vehicle.

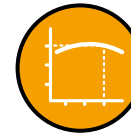


How did we optimize MoonRay for maximum production?



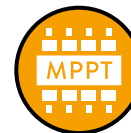
LOW PV VOLTAGE START

- Charging starts early: use all daylight hours
- Perfect for cloudy weather or low sun angles
- No serial connections needed



CONSISTENT EFFICIENCY CURVE

- Stable efficiency across all PV input
- No demands on solar angle and irradiation



BROAD MPPT RANGE

- Optimized for ANY panel 20W - 320W
- Enhances parallel or single panel setups
- Improves Shadow Optimized panel production

Art nr.	Product	Sys Voltage	Max. PV rated power	Weight	Dimensions (mm)
MR160	MoonRay160	12/24V DC	160W(12V) 320W(24V)	0.6 kg	175x143x48
MR320	MoonRay 320	12/24V DC	320W(12V) 640W(24V)	1.1 kg	217x158x56.5

LUNARK MISSION

MORIUSAQ, GREENLAND

Breaching new frontiers is in the human DNA - paired with the drive to explore some of the most inhabitable places, SAGA Space Architects has designed a foldable lunar habitat called Lunark.

SAGA

Space Architects

Karl-Johan Sørensen
Saga Space Architects



To power the first long-term test in the freezing arctic the Lunark was equipped with custom TOUGH++ Race solar panels which were integrated into the folding structure.

The energy supply consisted of our Smart Lithium batteries paired with Moonray charge controllers to ensure every bit of sunlight was captured and provide a comfortable living environment despite hurricane-level winds, snowstorms, and temperatures below -30°C .



From September to November 2020 the habitat was tested in a simulated moon mission, located in the arctic conditions of Moriusaq, Greenland. Sebastian Aristotelis and Karl-Johan Sorensen deployed the Lunark module and spent 60 days living inside isolated from the world.

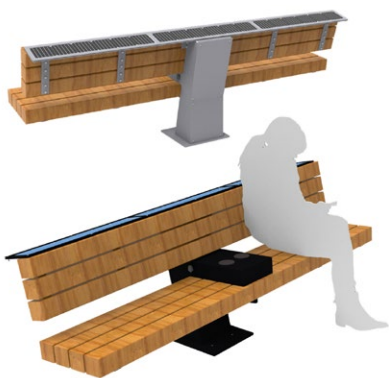




INDUSTRIAL APPLICATIONS

One of SUNBEAMsystems key markets has always been the marine sector - a harsh environment for any electronics where salt water, varying temperatures and rough conditions soon deteriorate any substandard products.

These high requirements mean that our products are perfect for a broad range of other applications as well. Get in touch if you're curious about our off-grid solutions!



TOUGH++

RACE SERIES

The TOUGH++ RACE Series features a never before seen power-to-weight ratio, without compromising the durability of the panel. Specifically developed for race applications, together with our own Joakim Brantingson who's currently preparing for the 2023 Mini Transat:

"When I set sail I trust my solar panels to provide adequate power for the approx. 20 days of sailing it takes to cross the Atlantic. As we are alone on our boats, we rely on our power-hungry autopilots when we sleep. Speeds over 20 knots are not uncommon. But even more impressive is that boats cross the finish line at the other side of the Atlantic within minutes of each other, meaning every kilogram of weight counts."



Spectrum Solar Team

SMART LITHIUM



RACE SERIES

Tesla and Polestar make the finest high-tech cars. Yet still you will find they still use outdated technology in the form of lead acid batteries, used for powering computers, wipers etc. A battery type invented 100 years ago! These batteries impose unnecessary weight and siphon off energy from the main batteries,

during inefficient charging cycles. This loss is most noticeable during parking. We've developed special batteries for the three most popular EV's, offering increased efficiency, and weight reduction. With the same three-stage-security as all our batteries, these models are even safer in case of an accident.



POLESTAR 2



TESLA MODEL 3



TESLA MODEL S



TESLA MODEL S ULTRALIGHT

	Polestar 2	Model 3	Model S	Model S UL
Capacity	50Ah	40Ah	38Ah	19Ah
System Voltage	12V	12V	12V	12V
Weight	5.7kg	4.8kg	4.68kg	2.6kg
Size (mm)	279x175x189	238x133x198	195x130x165	195x130x165



RESEARCH & DEVELOPMENT

How to improve an already ingenious product? Our R&D department took up the challenge and succeeded in optimizing a Tesla Model S at both slow and high speeds, as well as during the parked phase.



AERODYNAMIC RANGE EXTENDER

By installing extra thin **TOUGH++ RACE** solar panels we added more than 20% of range in slow city traffic. To optimize highway use (100+km/h) we developed a **RANGE EXTENDING SPOILER**, resulting in a minimum of 5.5% reduction in drag. Made from carbon fiber, it adds range and not weight.



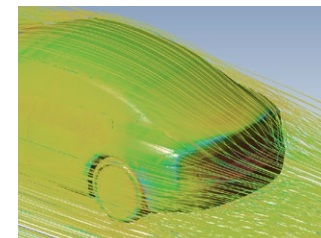
Model S Spoiler

Arrives April 2023



Polestar 2 Spoiler

Arrives June 2023





RV'S & UTILITY VEHICLES

All our products are designed with durability and reliability in mind, making them the perfect travel companions. Looking for power on rugged terrain? Our vibration-proof SMART LITHIUM batteries are compact and extremely safe,

allowing for installation in snug places. Combined with a set of light-weight solar panels your on-the-move power needs are sorted and easily monitored via our Multi Connect app.



MAXA



For RV's and utility vehicles we've developed the MAXA series: a set of four models perfectly suited for roof installation. The series is packed with a lot of the unique features you only find at SUNBEAMsystem: Shadow Optimized Technology, the

invisible flat Flush power cable and highly efficient (22.3%) Sunpower cells that also work well in higher temperatures. MAXA is fitted with an ETFE surface (the next best thing after TOUGH) and comes at a very sharp price.



	Maxa Black 109W	Maxa 109W	Maxa 109W JB	Maxa 54W Long
Shadow Optimized	Yes	Yes	Yes	Yes
Size (cm)	106x54	106x54	106x54	106x27.7
Weight (Kg)	2	2	2	1
Cable	Flush - 1.5m	Flush - 1.5m	7dm + MC4	Flush - 1.5m

TOUGH++

ART #	MODEL	W _p	SHADOW OPT	SIZE (CM)	SUNPOWER CELL	MAX SYS VOLTAGE*	V _{mp}	I _{mp}	V _{oc}	I _{sc}	PTOL +/-	Kg	FLUSH CABLE
TPP106x54FS	TOUGH++ 126W	125.8	Yes	106x54	25.20%	30V (80V)	20.48	6.08	23.264	6.45	3%	2.5	2m

TOUGH+

ART #	MODEL	W _p	SHADOW OPT	SIZE (CM)	SUNPOWER CELL	MAX SYS VOLTAGE*	V _{mp}	I _{mp}	V _{oc}	I _{sc}	PTOL +/-	Kg	FLUSH CABLE
TP106x54FS	TOUGH+ 116W	116.1	Yes	106x54	23.7%	30V (80V)	19.87	5.84	23.07	6.5	3%	2.5	2m
TP78x54FS	TOUGH+ 82W	82.3	Yes	77.8x54	23.7%	30V (80V)	21.12	3.9	24.52	4.36	3%	1.9	2m
TP54x54FS	TOUGH+ 58W	58.1	-	54x54	23.7%	30V (80V)	19.87	2.92	23.07	3.08	3%	1.3	2m
TP38x53FS	TOUGH+ 39W	38.7	-	37.8x53.5	23.7%	30V (80V)	19.88	1.95	23.08	2.05	3%	0.7	2m

TOUGH+BLACK

ART #	MODEL	W _p	SHADOW OPT	SIZE (CM)	SUNPOWER CELL	MAX SYS VOLTAGE*	V _{mp}	I _{mp}	V _{oc}	I _{sc}	PTOL +/-	Kg	FLUSH CABLE
TP106x54FS-B	TOUGH+ B 121W	121	Yes	106x54	24.40%	30V (80V)	20.16	6.01	23.17	6.43	3%	2.5	2m
TP78x54FS-B	TOUGH+ B 86W	85.7	Yes	77.8x54	24.40%	30V (80V)	21.42	4	24.52	4.36	3%	1.9	2m
TP5454FS-B	TOUGH+ B 61W	60.5	Yes	54x54	24.40%	30V (65V)	20.16	3.1	23.17	3.22	3%	1.5	2m
TP85x27FS-B	TOUGH+B 46W L	46.2	Yes	85x27.7	24.40%	30V (50V)	22.68	2.03	25.96	2.41	3%	0.8	2m

TOUGH SERIES

ART #	MODEL	W _p	SHADOW OPT	SIZE (CM)	SUNPOWER CELL	MAX SYS VOLTAGE*	V _{mp}	I _{mp}	V _{oc}	I _{sc}	PTOL +/-	Kg	FLUSH CABLE (M)	EYELETS 6mm
T106x54FS	TOUGH 111W	110.8	Yes	106x54	22.6%	30V (65V)	18.56	5.97	21.76	6.32	3%	2.6	1.5	6
T78x54FS	TOUGH 78W	78.4	Yes	77.8x54	22.6%	30V (65V)	19.72	3.98	23.12	4.48	3%	1.9	1.5	4
T54x54FS	TOUGH 55W	55.4	Yes	54x54	22.6%	30V (65V)	19.5	2.82	21.76	3.16	3%	1.2	1.5	4
T38x53FS	TOUGH 37W	36.9	-	37.8x53.5	22.6%	30V (50V)	18.57	1.99	21.77	2.11	3%	0.7	1.5	4
T28x43FS	TOUGH 21W	20.8	-	43.4x27.7	22.6%	30V (50V)	20.88	0.99	24.48	1.19	3%	0.3	1.5	4
T15x85FS	TOUGH 21W L	20.8	-	14.7x85	22.6%	30V (50V)	20.88	0.99	24.48	1.19	3%	0.3	1.5	-

TOUGH BLACK

ART #	MODEL	W _p	SHADOW OPT	SIZE (CM)	SUNPOWER CELL	MAX SYS VOLTAGE*	V _{mp}	I _{mp}	V _{oc}	I _{sc}	PTOL +/-	Kg	FLUSH CABLE (M)	EYELETS 6mm
T106x54FS-B-HL	TOUGH B 111W Holeless	110.8	Yes	106x54	22.6%	30V (65V)	18.56	5.97	21.76	6.32	3%	2.6	1.5	-
T106x54FS-B	TOUGH B 111W	110.8	Yes	106x54	22.6%	30V (65V)	18.56	5.97	21.76	6.32	3%	2.6	1.5	6
T79x74FS-B	TOUGH B114W	114.3	Yes	79x74	22.6%	30V (65V)	19.14	6.16	22.44	6.52	3%	2.6	1.5	-
T78x54FS-B	TOUGH B 78W	78.4	Yes	77.8x54	22.6%	30V (65V)	19.72	3.98	23.12	4.48	3%	1.9	1.5	4
T54x54FS-B	TOUGH B 55W	55.4	Yes	54x54	22.6%	30V (65V)	19.5	2.82	21.76	3.16	3%	1.2	1.5	4
T106x27FS-B	TOUGH B 55W L	55.4	Yes	106x27.7	22.6%	30V (65V)	19.5	2.82	21.76	3.16	3%	1.2	1.5	-
T15x85FS-B	TOUGH 21W L	20.8	-	14.7x85	22.6%	30V (50V)	20.88	0.99	24.48	1.19	3%	0.3	1.5	-

BLACK HOLE GAP FILLER

ART #	MODEL	SIZE	FIXING	CELLS
TBlackHole	TOUGH BLACK Hole	106x54 cm	Not included	No Cells
TPBlackHole	TOUGH+ BLACK Hole	106x54 cm	Included 3M Adhesive	No Cells

CARBON / QUICK FIX

ART #	MODEL	W _p	SHADOW OPT	SIZE (CM)	SUNPOWER CELL	MAX SYS VOLTAGE*	V _{mp}	I _{mp}	V _{oc}	I _{sc}	PTOL +/-	Kg	CABLE 7dm	FIXING
TPC 107x55QF	TOUGH+ 116W Carbon	116.1	Yes	107.8 x 55.4	23.70%	45V (80V)	19.87	5.84	23.07	6.15	3%	2.8	+MC4	6xQF
TPC 79x55QF	TOUGH+ 82W Carbon	82.3	Yes	79.6 x 55.4	23.70%	30V (80V)	21.12	3.9	24.52	4.36	3%	2	+MC4	6xQF
TC 56x55QF	TOUGH 55W Carbon QF	55.4	Yes	56.3 x 55.4	22.6%	45V (45V)	19.5	2.82	25.11	3.16	3%	1.4	+MC4	4xQF

FOLD SERIES

ART #	MODEL	W _p	FOLD SIZE (CM)	UNFOLD SIZE (CM)	SUNPOWER CELL	V _{mp}	I _{mp}	V _{oc}	I _{sc}	PTOL +/-	MAX SYS VOLTAGE	Kg	SHORT CABLE	EYELETS 9mm
Fold125	Fold 124.5W	124.5	42 x 29	171.5x42	22.6%	20.88	5.97	24.48	6.32	3%	30V	2.6	+ MC4	4
Fold62	Fold 62W	62	42 x 28.5	85x42	22.6%	20.88	2.99	24.48	3.16	3%	30V	1.3	+ MC4	4
Fold41	Fold 41.5W	41.5	30 x 28	84x30	22.6%	20.88	1.99	24.48	2.11	3%	30V	1	+ MC4	4
Fold21	Fold 21W	20.75	30.5 x 16	47x30.5	22.6%	20.88	0.99	24.48	1.19	3%	30V	.45	+ MC4	4

MAXA

ART #	MODEL	W _p	SHADOW OPT	SIZE (CM)	SUNPOWER CELL	V _{mp}	I _{mp}	V _{oc}	I _{sc}	PTOL +/-	MAX SYS VOLTAGE	Kg	FLUSH CABLE
X106x54FS-B	Maxa Black 109W	109.1	Yes	106x54	22.3%	18.432	5.92	21.696	6.29	4%	30V	2	1.5m
X106x54FS	Maxa 109W	109.1	Yes	106x54	22.3%	18.432	5.92	21.696	6.29	4%	30V	2	1.5m
X106x54JB	Maxa 109W JB	109.1	Yes	106x54	22.3%	18.432	5.92	21.696	6.29	4%	30V	2	1.5m
X106x27FS	Maxa 54W Long	54	Yes	106x27.7	22.3%	20.224	3.06	25.74	2.75	4%	30V	1	1.5m

*Max System Voltage Include By-Pass-Diode

EXPLANATION OF LISTED VALUES

All values are measured in standard testing conditions:

- 1000W/M², 1.5 atm, 25° Celsius

- Temperature coefficient I_{sc} = 0.05 (%/°C)

- Temperature coefficient V_{oc} = 0.27 (%/°C)

- Temperature coefficient P_{max} = 0.29 (%/°C)

Weight: Listed weights without cables.

P_{max} is the maximal attainable power.

V_{oc} (Voltage open circuit), also referred to as the clamping voltage, is the maximum voltage when no load is connected.

I_{sc} (Ampere short circuit) is the maximum current when the panel is short circuited.

V_{mp} (Voltage maximum power) is the maximum voltage a panel produces under ideal circumstances.

I_{mp} (Ampere maximum power) is the maximum current a panel produces under ideal circumstances.

PLEASE VISIT THE KNOWLEDGE BANK ON THE SUNBEAMSYSTEM

WEBSITE BEFORE PLANNING YOUR INSTALLATION !



IMPORT & DISTRIBUTION SAIL & SOLAR

