

# SUNBEAM<sup>SYSTEM</sup>

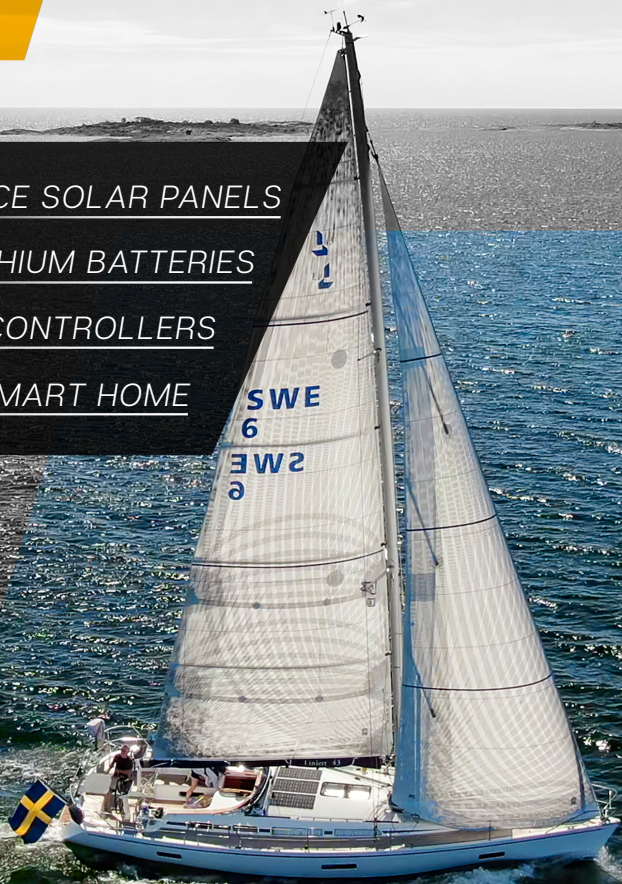
## CATALOGUE 2021

HIGH PERFORMANCE SOLAR PANELS

SMART LITHIUM BATTERIES

ADVANCED CHARGE CONTROLLERS

MOBILE SMART HOME



[WWW.SUNBEAMSYSTEM.COM](http://WWW.SUNBEAMSYSTEM.COM)



# INNOVATIVE POWER SOLUTIONS SWEDISH TECHNOLOGY AND QUALITY



Picture by Rosättra Båtvarv | Linjett 43

The Swedish company SUNBEAMsystem is renowned for its power solutions. Innovation is our main driving force - simply the pure will to always lead the race.

We take pride in distinguishing ourselves with a series of unique products and features that you will not find elsewhere.

We strive for high quality and performance, but always with the aim that our products should solve a problem. Achieving this goal in a discrete manner while offering a pleasant user experience.

No matter if you are based in the arctic or tropic regions: we offer a cutting edge solution in all circumstances.

# PREMIUM SOLAR PANELS



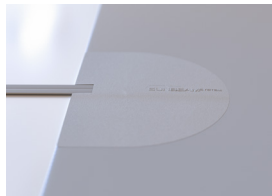
## THE BEST SOLAR CELLS

SUNBEAMsystem only uses highly efficient Sunpower™ solar cells, with our top range cells featuring the highest possible efficiency: a world record 25.2%.



## TOUGH SURFACE

Made by extremely durable materials, the Tough surface catches more light than glass. Walkable and antislip with unrivaled UV-protection.



## UPGRADED CELL PROTECTION

All our 2021 models have been structurally improved by a stronger and more sturdy cell protection.

## FLUSH 2021 EDITION

The newest iteration of the invisible flat flush cable features a reinforced cable integration to ensure a perfect result.



## SHADOW OPTIMIZED

Our unique Shadow Optimized technology performs best in shadow-rich environments, ensuring the highest possible yield aboard yachts.

## UNIQUE 5-YEAR WARRANTY MODELS RANGE

### THE TOUGH SERIES

#### TOUGH++ | TOUGH + | TOUGH

Multiple tests winner, premium walkable panels with antislip surface, invisible flush cable and shadow optimized technology.

### THE BLACK SERIES

#### TOUGH+ BLACK | TOUGH BLACK

The best tough features, but with a discreet black look. The premium design option for full deck integration.

### REINFORCED SERIES

#### CARBON TOUGH+

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

### THE PORTABLE SERIES

#### TOUGH FOLD SERIES

A truly portable solar panel. Lightweight & waterproof.

\*Fold series features 2 years warranty.

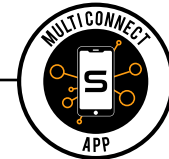
# PLUG & PLAY

## CAN HANDLE INSANE CURRENTS UP TO 600A

Extreme performance in a modest guise - Hardware and electronics none alike, allowing currents up to 600A. While maintaining a safe level better than both new and old competitors.



AN EASY UPGRADE FOR ANYONE USING EXISTING EQUIPMENT  
Simply remove your old-fashioned batteries and upgrade them to the latest effortlessly. No need for extensive installation planning or support.



# DRIVE

## THE BEST BATTERIES FOR ELECTRIC PROPULSION

### MORE POWER AND BETTER HANDLING

Boosted agility, instantly get more out of your motor.

### 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 per weight and carefree maintenance.

### ALL MOTOR TYPES

Batteries model range suited from small to big sized electrical engines.



# OPTIMIZED FOR SHADED AND LOW-LIGHT CONDITIONS

# MOONRAY SERIES

WIRELESS APP MONITORING  
SUITED FOR ALL BATTERY TYPES  
ENHANCED FOR YACHTS & RV'S



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 MPPT curve, MoonRay maintains a flat efficiency curve over the whole input range. Perfectly adapted to small systems with one or a few panels.

# MULTI CONNECT APP & SMART MOBILE HOME

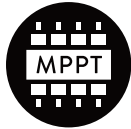


NEW: SMART MOBILE HOME PRODUCTS  
UPDATED: MULTI CONNECT 2021  
WIRELESS NETWORK PLATFORM  
CARE-FREE: AUTOMATE YOUR LIFE

2021 brings a major update to the SUNBEAMsystem Multi Connect platform with the introduction of the Smart Hub and the addition of Smart Mobile 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, or connect a variety of equipment to the Smart Switch to enable remote control. Anxious about empty batteries? With our new Battery Monitors series, you can easily unlock wireless monitoring on your existing batteries.



INTELLIGENT & EFFECTIVE MPPT



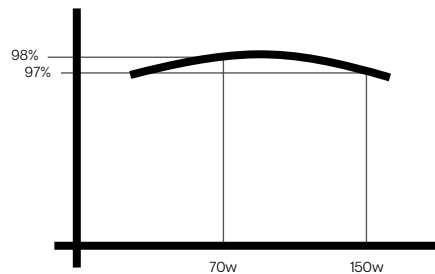
LOW SELF CONSUMPTION  
≤ 13mA



DEVELOPED FOR REAL-LIFE WEATHER

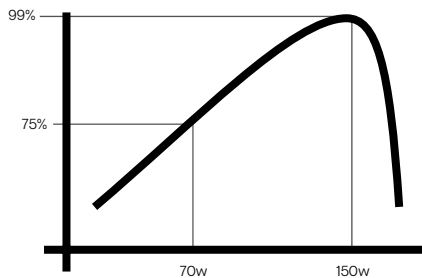


IP33  
DRIPPING WATER PROTECTION



MOONRAY SMART MPPT

A flat curve with a high MPPT efficiency from low to high yield, not depending on a perfect weather condition or minimum amount of solar panels connected.



COMPETITOR MPPT

Showing a typical peak, indicating the need for a minimum amount of solar panels and perfect weather conditions. Resulting in bad inefficiency most of the time.

# TOUGH++

THE BEST AND MOST EFFICIENT SOLAR PANEL ON THE MARKET!

Mark Slats, a born adventurer and epic athlete. In 2017 he broke the world record for rowing solo across the Atlantic. Arriving after just 30 days, he slashed the previous record by an impressive 22 days and left his competition far behind. In 2020 he won the TWAC again with his teammate Kai, setting another world record.

Out on the open ocean, you are fully dependent on your equipment. Therefore, Mark had his boat outfitted with the best solar panels available. Lightweight, highly durable, and extremely efficient: when aiming for gold SUNBEAMsystem Tough++ is the winning choice.



Mark Slats & Kai Wiedmer  
Team Row4Cancer - TWAC 20/21  
Pictures: EVABLOEM

## TOUGH++ | WORLD RECORD EFFICIENCY AT 25.2%

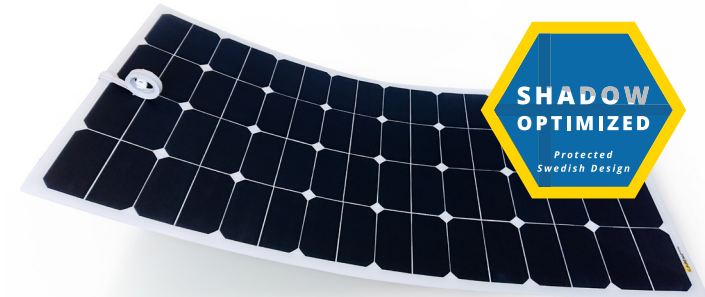
Tough++ is a state-of-the-art solar panel, with the newest and most powerful technology currently available. Built with the best materials to ensure it is resilient against the most demanding circumstances.



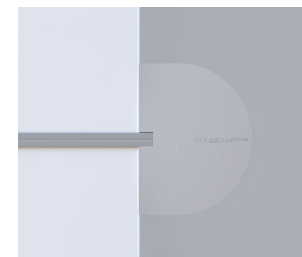
# TOUGH+

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 premier choice for users who place high demands on their materials.



Tough+ can be seamlessly integrated on any hard surface, providing a safe anti-slip surface to walk on. Featuring no eyelets, but instead shipped with a 3M mounting sticker sheet. Combined with the flat and invisible Flush cable, the Tough+ series is the perfect solution for yacht deck installations.



	Tough++ 126W		Tough+ Series			
	Yes		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)	2.5		2.6	1.9	1.3	0.7
Cable	Flush - 2m		Flush - 2m	Flush - 2m	Flush - 2m	Flush - 2m

# TOUGH+

BLACK SERIES

## FULL DECK INTEGRATION

Tough+ Black is the designer solution for high-end yachts. Developed to cover atypical deck surfaces with an uninterrupted layer of black solar panels. Featuring no eyelets and fitted with Sunpower™ cells with an insane 24.4% efficiency.



# BLACK HOLE GAP FILLER

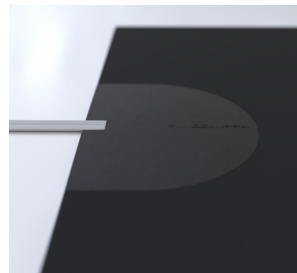
Tough Black Hole is an aesthetic filler to fill up the space between solar panels. It allows you to seamlessly cover a part of the deck, without the need for large and expensive custom panels. Never before have solar panels resulted in a visual upgrade for your yacht!



# TOUGH

BLACK SERIES

The Tough Black series is the all-round solution for users aiming for an inconspicuous solar installation. With their full black appearance they blend in with any background. State of the art Tough panels incorporating 22.5% efficient Sunpower™ cells that outshines the competition.



- BLACK DESIGN PANELS
- AESTHETIC INTEGRATION
- VISUAL DECK UPGRADE
- CUSTOM SHAPES

	Tough 114W B	Tough 111W B	Tough 78W B	Tough 55W B	Tough 55W Long
Shadow Optimized	Yes	Yes	Yes	Yes	Yes
Size (cm)	78.5x74	106x54	77.8x54	54x54	106x27.7
Weight (Kg)	2.6	2.5	1.9	1	1
Cable	Flush - 1.5m	Flush - 1.5m	Flush - 1.5m	Flush - 1.5m	Flush - 1.5m
Eyelets	No	6x6mm	4x6mm	4x6mm	No

	Tough+ 116W B	Tough+ 82W B	Tough+ 46W Long B
Shadow Optimized	Yes	Yes	Yes
Size (cm)	106x54	77.8x54	85x27.7
Weight (Kg)	2.6	1.9	0.8
Cable	Flush - 2m	Flush - 2m	Flush - 2m

# CARBON

## DURABLE & LONG-LIFE

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

Mounting solar panels on a canvas has always been a challenge. Using thin, flexible and lightweight panels seem to be the perfect solution, but will always lead to a shortened lifespan. Due to the lack of structural support solar panels develop all kinds of problems. The alternative, building a steel structure to mount glass solar panels, is not an appetizing option for most yacht owners.

### ENTER THE CARBON SERIES:

Protected design with an internal Carbon fiber plate. Light as not to burden the cloth and Stiff to provide structural integrity, protecting the precious interior. Exquisite Sunpower™ cells provides an unbeatable amount of Watt per area. Combined with our Shadow Optimized technology, ensuring a better output during partial shadowing.



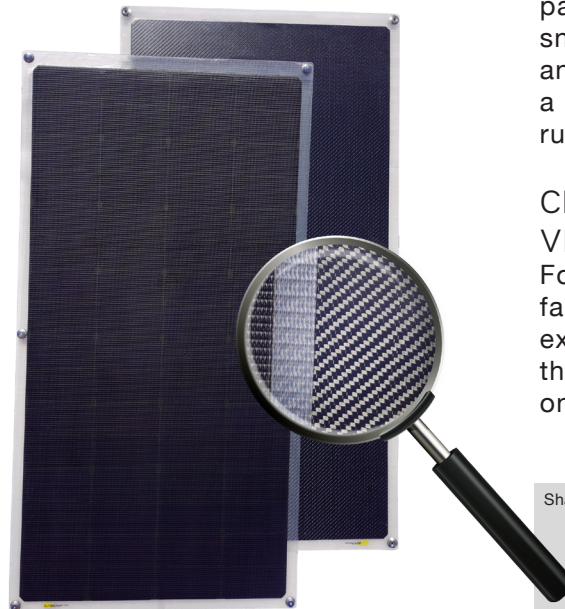
QUICK FIX  
BUTTONS



LIGHT & STIFF  
CARBON FIBER



5 YEARS  
WARRANTY



A LONG LIFE SOLAR PANEL FOR CANVAS & BIMINI

With attention to detail in all aspects, the Carbon panels cannot be more suited for its intended use. The snap fasteners allow for a quick and easy mounting and the waterproof MC4 electrical connectors ensure a safe connection. The edges are made from a soft rubber like material to protect the fabric.

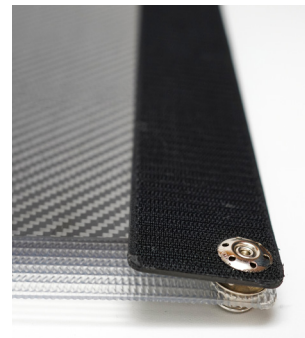
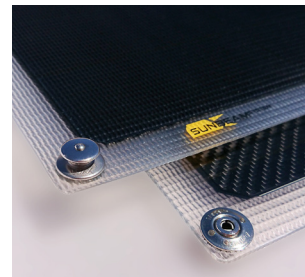
### CHOOSE FROM BUTTON OR VELCRO ATTACHMENT

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. Spreading out the forces on the fabric with its large area velcro.

	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



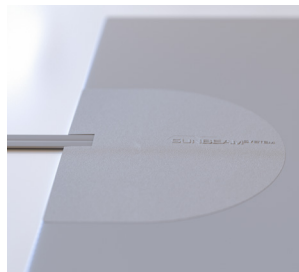
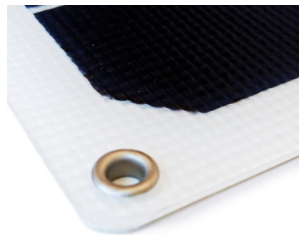
# TOUGH

## WINNER IN MULTIPLE REAL-LIFE TESTS

Since its introduction, the SUNBEAMsystem Tough series has been the absolute winner in multiple real-life tests. Due to the wide range of different models, the Tough series provides a universal solution for numerous applications. The Tough surface is the preferred choice for the yachting industry, but also for industrial off-grid purposes.

All Tough models are fitted with Sunpower™ cells with an efficiency of 22.5% or higher. The surface of the Tough series is extremely durable and resistant to strong and long UV exposure. It transmits more light than standard materials, contributing to a higher daily production. The ribbed profile provides a steady grip when walking on the panel, but also catches more light in low sun angles. In addition, all Tough models from 55W and up are equipped with SUNBEAMsystems protected Shadow Optimized technology, improving output in partially shaded conditions.

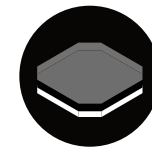
Tough models equipped with a flat Flush power cable are by far the best choice for marine installations. The anti-slip profile provides a safe and walkable surface, without any cables to trip on.



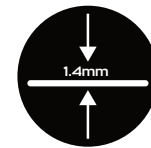
HIGH EFFICIENCY SOLAR CELLS



ANTISLIP SURFACE



2021 UPGRADED CELL PROTECTION



INVISIBLE 2021 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



TOUGH FOLD SERIES

# TOUGH FOLD SERIES

## POWER YOUR ADVENTURES

Tough Fold is the perfect companion for tough adventures. Whether you are out enjoying nature or surviving the city jungle: our Fold panels got you covered. Available in three different sizes to power any charging need.

The Tough Fold panels are extremely small when folded, with the largest 124.5W model only being as small as a laptop! They are fully laminated, meaning they are waterproof and well protected against dust and dirt. The waterproof MC4 connectors feature a quick release system to easily connect to your charging equipment.

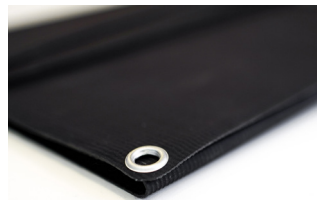


SMART POWER STATION

# SMART POWER STATION

This compact powerbank features an array of options to power your every need. Want to try how true remote working feels? Or enjoy a fresh drink at the beach? With the Smart Power Station you never run out of charge.

Featuring LiFePO4 cells it packs a whopping 154Wh capacity, while still being portable and light enough to fit your bag. It holds enough capacity to charge modern laptops three times over via its USB-C 60W PD port, but also features two standard USB ports so you can connect multiple devices simultaneously. We have even included a 12V cigarette socket to power your mobile fridge!



The Smart Power Station may be charged in +4 hours by either USB-C PD or incl. adapter or any solar panel directly. Combine the Smart Power Station with a Tough Fold panel and you will get the Swiss knife equivalent of power solutions.



## MINI-R

Combined with our extremely small Mini-R charge controller you have got the most portable battery charging system one can find. This tiny controller might be the smallest 65W solar charge controller you have ever seen! Using the included adapter cables you can connect it directly to a 12V battery to instantly start charging.



Tough Fold 124.5W Tough Fold 62W Tough Fold 41.5W Tough 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

# MULTI CONNECT APP & SMART MOBILE HOME



## SMART MOBILE HOME

- Manage data from all devices
- Personalize your dashboard
- Control your boat

## SMART HUB FEATURE

- Central display: wall-mounted tablet
- Connect multiple smartphones simultaneously

## SMART NOTIFICATIONS

- Out of focus notifications
- Wearables support
- Top bar icon\*

\*Android only



## LET'S BE SMART!

At SUNBEAMsystem we strongly believe in a care-free experience. This is why we created the Multi Connect platform: an app-based network to knit all your SUNBEAMsystem tech together. The Multi Connect app (available on Android and iOS) allows you to both monitor and control your SUNBEAMsystem smart devices.

Optimize your energy balance by getting full insight in your daily production and consumption.

Automate your life by creating timers and schedules for existing devices.

New in 2021 is the Smart Hub functionality. This setting allows you to use an Android tablet as the central hub. Instantly upgrade your outdated monitoring equipment to a single large touchscreen. No more need for expensive proprietary displays!

Add the proximity sensor to automatically wake your screen when you are close, turning off when nobody's around to save energy. Our magnet mount will keep your tablet firmly in place but also allows you to easily detach it for normal use.

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 rolled out.



SMART CUSTOM SWITCH



SMART DIMMER CONTROL



TURN ON/OFF WITH A CLICK



DETAILED MONITORING

# NEW MOBILE SMART HOME PRODUCTS

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

## SMART SWITCH & DIMMER

Connect up to two devices to the new Smart Switch and enjoy switching these on or off remotely. Going for a cosy atmosphere? Hook up your existing lights to our Smart Dimmer and control them from your smartphone. Or simply automate both Dimmer and Switch devices completely by setting timer schedules.

Programmable Smart Button to follow soon.

## SMART BATTERY MONITOR

Want to know your current state of charge? Our SMART LITHIUM batteries have built-in connectivity, but if you have older types of batteries you can use our Battery Monitors to connect them to your Multi Connect network as well. Select the Battery Monitor (shunt) for precise measurement data, or opt for the Battery Monitor Light (voltage meter) for a cost-effective estimation of the state of charge.



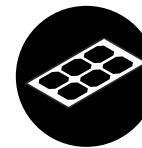
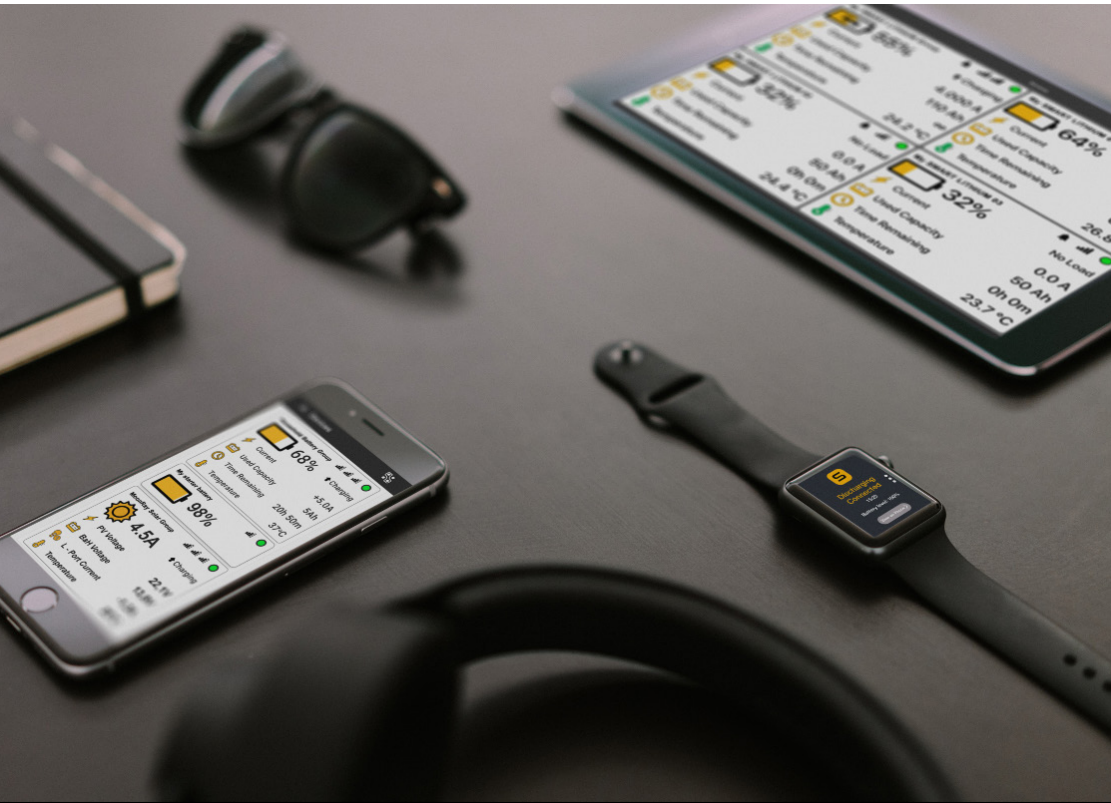
## CONNECT ALL SUNBEAM SYSTEM DEVICES

### MOONRAY

MoonRay Solar Charge controllers do not only provide the highest yield from modern solar panels on a yacht or RV: they can also be added to Multi Connect with the bluetooth module.

Simply select the right charging profile and you are good to go, making the initial setup a breeze. You can then monitor both real-time and historic solar charge performance.

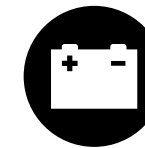
Combine data from multiple MoonRays to get a full overview of PV production, or view data from separate controllers to compare their performance.



LIVE AND HISTORIC SOLAR CHARGE PERFORMANCE



COMBINE DATA FROM MULTIPLE MOONRAYS



OVERVIEW OF YOUR TOTAL BATTERY BANK



CONNECT MULTIPLE SMARTPHONES SIMULTANEOUSLY

## SMART LITHIUM

A part of the Multi Connect family. With an unique overview thanks to the ability to combine multiple batteries into one virtual showing the total of the battery bank.

Get live data on power consumption, or set alerts for when your state of charge falls below a certain level. Smart notifications: no more need to enter the App to check your battery level!





## SMART LITHIUM PLUG & PLAY



The sturdy, bolted cells and the choice of LiFePO4 chemistry offer superior attributes compared to other lithium batteries. Enabling a stunning performance and durability but most important a total safety. A wider temperature usage range and prolonged lifetime widens the usability.

Paired with our advanced BMS which manage common safety control parameters, it does also enable our unique Plug&Play, Guaranteeing the unique compatibility with older equipment. All this while still allowing for a stunning quick charge. 90% charge in 30 min is astonishing!

# PLUG & PLAY

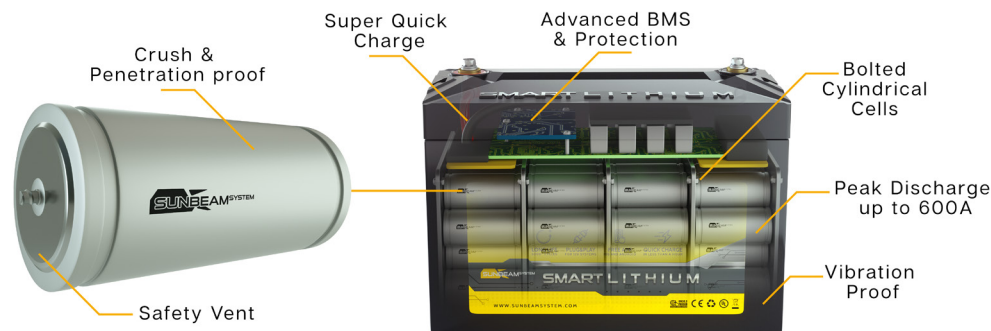
EASY UPGRADE FOR ANYONE

SMART LITHIUM is a true drop-in replacement for Yacht and Vehicles. Enjoy the benefits of lithium without common costly installation issues.

MULTI-LAYERED SAFETY (UN38.3 CERTIFIED):

MULTIPLE ELECTRONIC SAFEGUARDS | FIRE SAFETY VALVES | SAFEST CHEMISTRY

UN 38.3: A guarantee for total security, even though exposed to: Fire, Punctured/Crushed cells, Vibrations, Overcharging & Short-Circuit.



Certified for Air Transport

Following our philosophy everything inside is autonomous. Still the curious user have full information access via the advanced Multi Connect App.

The **ONE** is unique and offers exceptional performance for anyone in need of a single battery.

**BASIC** is optimized to be used in multiples for anyone with bigger capacity needs.



	ONE	BASIC	BASIC 24V
Capacity	100Ah	2x100Ah	2 x 50Ah
System Voltage	12V	12V	24V
Max Cont. Charge	190A	2x100A	2 x 50A
Max Cont. Discharge	190A	2x100A	2 x 50A
Peak Discharge (10s)	600A	2 x 450A	2 x 225A
Weight	14.2kg	14.2kg	14.2kg
Size (mm)	328 x 172 x 222	328 x 172 x 222	328 x 172 x 222

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

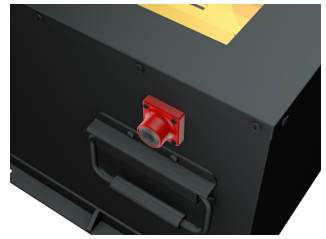


# DRIVE

Searching for the perfect marine propulsion battery? Look no further! The SMART LITHIUM DRIVE batteries are the perfect power source for your electric vessel. Suited for both small outboard trolling motors as well as larger inboard drive trains.



Based on the success of the Plug & Play series we have developed a battery range that suits all your electric propulsion needs. With these lightweight but powerful batteries you can expect to get better acceleration and higher top speeds, boosting the agility of your vessel.



Using LiFePO4 cells means we can ensure that the DRIVE batteries have a 2.5 times longer lifespan than other li-ion type batteries. The promise of 5000 cycles is backed by our standard 5-year warranty. It also means you can safely deplete the batteries to 0% without having to worry about damaging them. The multi-layered safety guards protect against both internal (overcharging) and external risks such as puncture or fall damage.

The built-in BMS makes it possible to use standard charging equipment, and also connects wirelessly to the Multi Connect app to give you a real time insight in the remaining capacity. No more range anxiety!

The SMART LITHIUM DRIVE models come with a handy carrying strap included. For increased protection we have a silicone casing available. SMART LITHIUM batteries are cobalt free for a better and fair planet.

**ULTRA LIGHTWEIGHT**  
4.5X LESS WEIGHT

**EXTREME**  
POWER DELIVERY

**MULTI CONNECT**  
FREE APP

**QUICK CHARGE**  
UP TO 5X FASTER

	12v 1000Wh	12v 1300Wh	24v 1300Wh	48v 10kWh
Capacity	1000Wh	1300Wh	1300Wh	10kWh
System Voltage	12V	12V	24V	48V
Max. motor	55 lbs	65 lbs	85 lbs**	10kW
Max. 36V motor	125 lbs*	135 lbs*	-	-
Weight	10.9kg	14.3kg	14.3kg	110kg
Size (mm)	328 x 172 x 222	328 x 172 x 222	328 x 172 x 222	540 x 420 x 273

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

\*3-channel 12V charger or individual 12V chargers required  
\*\*Allow double max motor power by using two batteries in parallel

### LUNARK MISSION

Breaching new frontiers is in the human DNA. Driven by the need to explore the most inhabitable places, SAGA Space Architects have designed a foldable lunar habitat. To power their first long-term test in the freezing Arctic the Lunark was equipped with Tough+ Black solar panels, a perfect fit with the high-tech folding structure. The energy core consisted of SMART LITHIUM batteries, charged by MoonRay controllers to ensure every bit of sunlight was efficiently captured.



# MOONRAY SERIES

- PEAK PERFORMANCE IN ALL CONDITIONS
- SHADOW OPTIMIZED TECHNOLOGY
- OPTIMIZED FOR YACHTS & MOTORHOMES
- EASY TO BUILD LARGE PV ARRAYS

The MoonRay MPPT charge controllers are truly optimized for use on yachts and RV's. It allows you to get a maximum yield out of a single (or only a couple) of panels, while at the same time battling the negative influences of partial shadowing.

Combined with our Shadow Optimized panels it is easy to create a modular shadow-proof system, in which parts that catch full sun are not affected by their shaded counterparts.

The smart MPPT algorithm will immediately start to charge when the panel voltage rises to just above that of the battery, meaning you can utilize all available daylight. It is also efficient right from the start: the MPPT curve does not require a specific voltage to put out peak performance, but is effective over a wide input range.

The MoonRays have the option to connect wirelessly to the Multi Connect platform, allowing both monitoring and control settings. You can easily combine multiple MoonRays to create larger arrays, and combine all data in a single cluster view in the app.



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



# MAXA

The Maxa series is packed with a lot of the unique features you only find at SUNBEAMsystem. It features an ETFE surface (the next best thing after Tough) and comes at a very sharp price.



The Maxa series has been designed as the ideal solar panel for use on both motorhomes and utility vans, with a build quality and durability outshining the competition. The low weight and 3mm thickness make it perfect for rooftop integration. The ETFE surface is easily cleaned by the occasional rain shower.

The flat cable is easily glued along the roof to the cable entrance.

Fitted with high efficiency cells (22.3%), ensuring you get an impressive amount of power from the available roof space. Maxa models are also equipped with SUNBEAMsystems unique Shadow Optimized technology, which ensures a maximum charge in all conditions.

Avoid the weight and air turbulence caused by solid solar panels.

	Maxa Black 109W	Maxa 109W	Maxa 54W	Maxa 54W Long
Shadow Optimized	Yes	Yes	Yes	Yes
Size (cm)	106x54	106x54	54.5x53.5	106x27.7
Weight (Kg)	2	2	1	1
Cable	Flush - 1.5m	Flush - 1.5m	Flush - 1.5m	Flush - 1.5m

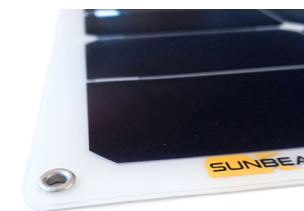
# NORDIC

The Nordic series has been developed by SUNBEAMsystem for use in its region of origin: the northern latitudes. It offers a universal solution for applications with a requirement for lightweight, flexible and compact solar panels.



All Nordic models are equipped with our unique Shadow Optimized technology for improved performance in partial shadowing. All Nordic models feature modern and more efficient solar cells, increasing the peak power output. The Flush models are shipped without stainless steel eyes allowing for a seamless integration on hard surfaces.

The Junction Box models are fitted with stainless steel eyes and MC4 connectors for easy mounting and a waterproof connection.



	Nordic 104W JB	Nordic 104W	Nordic 54W JB	Nordic 54W
Shadow Optimized	Yes	Yes	Yes	Yes
Size (cm)	106x54	106x54	54.5x53.5	54.5x53.5
Weight (Kg)	2	2	1	1
Cable	7dm+MC4	Flush - 1.5m	7dm+MC4	Flush - 1.5m

TOUGH++

ART #	MODEL	W <sub>p</sub>	SHADOW OPT	SIZE (cm)	SUNPOWER CELL	MAX SYS VOLTAGE*	V <sub>mp</sub>	I <sub>mp</sub>	V <sub>oc</sub>	I <sub>sc</sub>	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+

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

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
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 <sub>p</sub>	SHADOW OPT	SIZE (cm)	SUNPOWER CELL	MAX SYS VOLTAGE*	V <sub>mp</sub>	I <sub>mp</sub>	V <sub>oc</sub>	I <sub>sc</sub>	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	No

TOUGH BLACK

ART #	MODEL	W <sub>p</sub>	SHADOW OPT	SIZE (cm)	SUNPOWER CELL	MAX SYS VOLTAGE*	V <sub>mp</sub>	I <sub>mp</sub>	V <sub>oc</sub>	I <sub>sc</sub>	PTOL +/-	Kg	FLUSH CABLE (M)	EYELETS 6mm
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	78.5x74	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	-

CARBON / QUICK FIX

ART #	MODEL	W <sub>p</sub>	SHADOW OPT	SIZE (cm)	SUNPOWER CELL	MAX SYS VOLTAGE*	V <sub>mp</sub>	I <sub>mp</sub>	V <sub>oc</sub>	I <sub>sc</sub>	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

\*Max System Voltage Include By-Pass-Diode

FOLD SERIES

ART #	MODEL	W <sub>p</sub>	FOLD SIZE (cm)	UNFOLD SIZE (cm)	SUNPOWER CELL	V <sub>mp</sub>	I <sub>mp</sub>	V <sub>oc</sub>	I <sub>sc</sub>	PTOL +/-	MAX SYS VOLTAGE	Kg	SHORT CABLE	EYELETS 9mm
22.6%	T 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
TZ85x42	T Fold 62W	62	42 x 28.5	85x42	22.6%	20.88	2.99	24.48	3.16	3%	30V	1.3	+ MC4	4
TZ86x30	T Fold 41.5W	41.5	30 x 28	84x30	22.6%	20.88	1.99	24.48	2.11	3%	30V	1	+ MC4	4
TZ47x30	T 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 <sub>p</sub>	SHADOW OPT	SIZE (cm)	SUNPOWER CELL	V <sub>mp</sub>	I <sub>mp</sub>	V <sub>oc</sub>	I <sub>sc</sub>	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
X54x53FS	Maxa 54W	54	Yes	54.5x53.5	22.3%	20.224	3.06	25.74	2.75	4%	30V	1	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

NORDIC

ART #	MODEL	W <sub>p</sub>	SHADOW OPT	SIZE (cm)	SUNPOWER CELL	V <sub>mp</sub>	I <sub>mp</sub>	V <sub>oc</sub>	I <sub>sc</sub>	PTOL +/-	MAX SYS VOLTAGE	Kg	CABLE	EYELETS 6mm
N106x54JB	Nordic 104W JB	104	Yes	106x54	Yes	17.55	5.93	22.69	6.34	5%	30V	2	7dm+MC4	6
N106x54F	Nordic 104W	104	Yes	106x54	Yes	17.55	5.93	22.69	6.34	5%	30V	2	Flush 1.5m	-
N54x53F	Nordic 54W	54	Yes	54.5x53.5	Yes	19.6	2.76	25.74	3.06	5%	30V	1	Flush 1.5m	-
N54x53JB	Nordic 54w JB	54	Yes	54.5x53.5	Yes	19.6	2.76	25.74	3.06	5%	30V	1	7dm+MC4	4

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

EXPLANATION OF LISTED VALUES

All values are measured in standard testing conditions:

- 1000W/M2, 1.5 atm, 25° Celsius
- Temperature coefficient I<sub>sc</sub> = 0.05 (%/°C)
- Temperature coefficient Voc = 0.27 (%/°C)
- Temperature coefficient Pmax = 0.29 (%/°C)

Weight: Listed weights without cables.

P<sub>max</sub> is the maximal attainable power.

V<sub>oc</sub> (Voltage open circuit), also referred to as the clamping voltage, is the maximum voltage when no load is connected.

I<sub>sc</sub> (Ampere short circuit) is the maximum current when the panel is short circuited.

V<sub>mp</sub> (Voltage maximum power) is the maximum voltage a panel produces under ideal circumstances.

I<sub>mp</sub> (Ampere maximum power) is the maximum current a panel produces under ideal circumstances.

INFORMATION ON DIFFERENT OPTIONS AND CORRECT MOUNTING CAN BE FOUND IN THE KNOWLEDGE BANK ON THE SUNBEAMSYSTEM WEBSITE





MAREX 360 CC

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