



FRENCH MANUFACTURER OF SOLAR AND ELECTRICAL EQUIPMENT, SPECIALIZING IN ON-BOARD AND OFF-GRID ENERGY





## UNITECK

## A FRENCH INDUSTRIAL DESIGNING, MANUFACTURING AND MARKETING INNOVATIVE AND HIGH QUALITY PRODUCTS

Uniteck is an innovative French industrial company (Béziers - dept 34) specialising in the design and manufacture of solar and electrical equipment for on-board energy and off-grid applications.

Thanks to its modern and efficient industrial tool (electronic design, wiring, sheet metal work) and to a dynamic multidisciplinary team (photovoltaic, mechanics, power electronics, energy conversion), Uniteck is positioned as a reference partner for its distributors and users.

Uniteck thus offers a complete range of products perfectly adapted to the targeted markets: motor homes, boating, road signs and domestic applications, with:

- Charge controllers integrating innovative features to optimise solar and battery charging (charging algorithm + LCD screen + MPPT technology);
- Compact high efficiency solar panels;
- Unique and innovative mounting brackets, made in France;
- Inverters for intensive use: 12V>230V / 24V>230V and 24V/12V;
- DC and solar power cables made in France (battery cable, inverter, DC circuit...);
- High performance GEL and AGM batteries (lead/carbon technology).
- Quality accessories: battery chargers, splitter couplers, LED lighting, charge distributors...













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## UNITECK

## THE SPECIALIST IN ENERGY FOR EMBARKED AND REMOTE SITES











#### A MADE IN FRANCE Brand



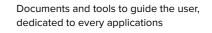
Aesthetic and didactic products



A full range of high-quality products



A multilingual website (with user manuals, datasheets, pictures for download...)





A detailed product documentation

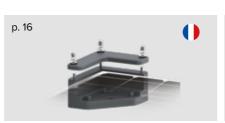
#### **■ PRODUCTS**



Rigid solar panels UNISUN M & BC



Slim solar panels UNISUN MS



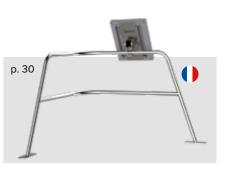
Mounting brackets UNIFIX - Vehicles



Mounting brackets UNIFIX - Floor & Wall



Mounting brackets UNIFIX - Pole & Mast



Mounting brackets UNIFIX - Boating



Wiring
Panel(s) > Charge controller > Battery(ies)



MPPT solar charge controller UNIMPPT



PWM solar charge controller UNISOLAR



AGM batteries UNIBAT



GEL batteries UNIBAT



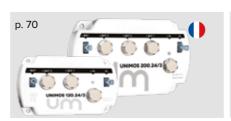
Inverters
UNIPOWER Quasi Sinus



Pur Sinus Inverter UNIPOWER PRO



Battery chargers UNICHARGE



Battery isolators UNIMOS



Coupler/splitter UNISPLIT



Lighting
UNILEDBAR & UNILEDLIGHT



Accessories

#### I SOLAR KITS



Kit - Vehicle



Kit - Sheds



#### I UNITECK SIMPLIFIES YOUR CHOICE

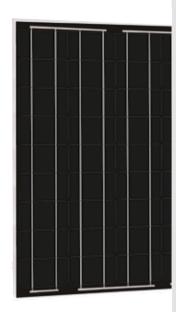






The recycling

#### I UNISUN M



Monocrystalline module: series connections on the front face of the cells



10% of the surface is hidden by the electrical connections

ex. panels with 125  $\,$  mm x 125  $\,$  mm cells

intensity (Imp)	2,5-2,8 A
voltage (Vmp)	0,5-0,52 V
electrical contact	front contact
cell efficiency	20,5%
number of cells necessary for battery charging	36 cells (36 × 0,5 V) = 18 V

compactness of panel ++
saving money +++

#### I UNISUN BC



Back contact module: series connections on the back of the cells



No areas covered on the front face  $% \left\{ 1,2,...,n\right\}$ 

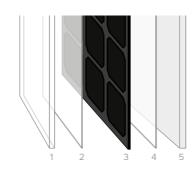
ex. panels with 125 mm x 125 mm cells

intensity (Imp)	3,2-3,3 A
voltage (Vmp)	0,56-0,57 V
electrical contact	back contact
cell efficiency	23-24%
number of cells necessary for battery	32 cells (32 × 0,57 V)

panel compactness +++
saving money ++



## HIGH QUALITY STRUCTURE



- 1. Tempered glass 3.2mm, high transmissibility (low iron content)
- 2. EVA Resin 0,45mm
- 3. Highly efficient cells
- 4. EVA Resin 0,45mm
- 5. Frame (anodised aluminium)

#### I QUICK CONNECTORS



#### I ANTI HOT-SPOT





Protection against Hot-spots and surges

#### UNISUN M & BC rigid solar panels

## HIGH EFFICIENCY

UNISUN is the range of high performance monocrystalline panels for leisure applications (boating and camping-car), isolated sites or signage.

Their multi-layer structure guarantees exceptional yields, even in very low sunlight conditions.

The thickness of their aluminum frame (35 or 40 mm) allows a better heat dissipation and thus more power.

On the surface, their high transmissibility tempered glass and their anodized aluminum frame protect them from external attacks (shocks, oxidation, corrosion)

Modular for more power, their series or parallel connection is made easy thanks to their fast solar connectors.

The UNISUN range is available in standard monocrystalline cells and back contact monocrystalline cells.

UNISUN Back Contact (electrical contact at the back) has the entire cell surface to capture light energy.

With the same power, thanks to their higher efficiency (power/surface ratio), back contact panels offer the advantage of being more compact and therefore ideal for applications where space or weight are criteria of choice.

For more aesthetics and sobriety, the standard UNISUN monocrystalline panels from 50W are equipped with the premium design "Black Backsheet". (black background).



Quality guaranteed by Uniteck

Made in P.R.C.







Highly efficient cells

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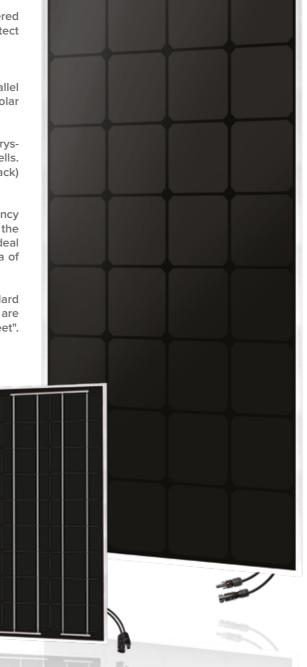
Excellent impact and weight resistance (3.2 mm tempered glass + aluminum frame)



TÜV certified waterproof junction box with hot-spot protection



Exceptional output even under weak light



#### SOLAR PRODUCTION EXPLANATION

Intensity/voltage curve (eg. panel of 150W) depending on solar radiation W/m²



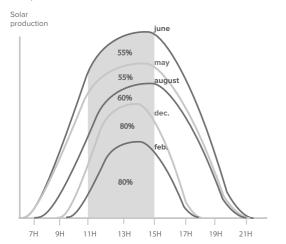
Example of 150W panel

• in Lille : winter= 200W/m² summer= 700W/m²

• in Marseille : winter= 500 W/m² summer= 850 W/m²

With solar radiation in Marseille, during winter, a solar panel will produce 50% of its power (=500W/m<sup>2</sup>)

#### Distribution of daily solar production in France



The solar production has a Gaussian curve (bell-shaped curve), with a sunlight main period between 11 a.m. and 3 p.m. During winter, 80% of the production is made during this period when the data is between 50% and 60% during summer (it is because the sunlight period is more spread).

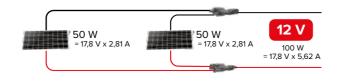
#### Average coefficient of solar production in France.

	Lille	Bordeaux	Marseille
January	x 0,7 - 1	x 1 - 1,5	x 1,5 - 2
February	x 1 - 1,5	x 1,5 - 2,5	x 2 - 3
March	x 2 - 2,5	x 3 - 3,5	x 3 - 4
April	x 3 - 3,5	x 3,5 - 4	x 4 - 5
May	x 3 - 4	x 4 - 5	x 4,5 - 6
June	× 4 - 4,5	× 4 - 6	× 5 - 6,5
July	× 4 - 4,5	× 4 - 6	× 5 - 7
August	x 3,5 - 4	x 4 - 5	x 4,5 - 6
September	x 2,5 - 3	x 3,5 - 4	x 4 - 4,5
October	x 1,5 - 2	x 2 - 2,5	x 2,5 - 3
November	x 0,7 - 1	x 1 - 1,5	x 1,5 - 2,5
December	x 0,5 - 0,7	x 0,8 - 1,5	x 1,5 - 2

In july a panel in Marseille will produce from 5 to 7 times its power (eg. for a panel of 100W = 500 to 700Wh/j)

#### I UPGRADABLE COMBINATION

Parallel connection: for more power (Watt)

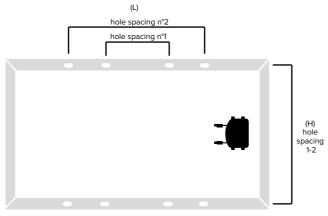


Series connection: for your 24V batteries



	20 W	40 W	100 W	150 W	300 W
UNISUN 20.12M	×1	×2	-	_	-
UNISUN 50.12M	_	-	×2	×3	_
UNISUN 150.12M	_	-	_	_	×2
UNICONNECT 1.6	×1	×1	×1	×1	×1
Parallel connectors kit	_	2 pan.	2 pan.	3 pan.	2 pan.

#### **HOLE SPACING ADAPTED TO** UNITECK MOUTING BRACKETS



hole diam. : 14 x 9 mm (excepted UNISUN 5.12M ø 5mm)

#### UNISUN M & BC rigid solar panels

		UNISUN 5.12 M	UNISUN 10.12 M	UNISUN 10.24 M	UNISUN 20.12 M	UNISUN 20.24 M
Electrical perfo	ormance	Ref 0491	Ref 0798	Ref 1436	Ref 0071	Ref 0804
Max. power (P	Pm)*	5 W	10 W	10 W	20 W	20 W
Power toleran	ce*	0/+3 %	0/+3 %	0/+3 %	0/+3 %	0/+3 %
Operating vol	tage	12 V	12 V	24 V	12 V	24 V
Technology		mono	mono	mono	mono	mono
	x. power (Vmp)*	17,4 V	17,6 V	35,2 V	17,8 V	35,2 V
-	ax. power (Imp)*	0,29 A	0,57 A	0,29 A	1,12 A	0,57 A
-	en circuit (Voc)*	21,6 V	21,77 V	43,54 V	22,3 V	43,54 V
	ort circuit (Icc/ ISC)*	0,32 A	0,65 A	0,33 A	1,21 A	0,65 A
Cell efficiency	1	20,60%	18,4%	18,4%	20,60%	20,60%
Module efficie	ency* ery charging power***	7,56%	11,52%	11,52%	12,65%	12,65%
12V	with PWM controller	0,23 A	0,46 A	n.a.	0,90 A	n.a.
Battery	with PWM controller	0,33 A	0,65 A	0,65 A	1,30 A	1,30 A
24V	with PWM controller	n.a.	n.a.	0,23 A	n.a.	0,46 A
Battery	with MPPT controller	n.a.	n.a.	0,33 A	n.a.	0,65 A
Temperature c						
Operating ten	•	-40/+85°C	-40/+85°C	-40/+85°C	-40/+85°C	-40/+85°C
NOCT / TUC**		45 ±2°C	45 ±2°C	45 ±2°C	45 ±2°C	45 ±2°C
Temperature	Pm	-0,43%/°C	-0,48 %/°C	-0,48 %/°C	-0,48%/°C	-0,48%/°C
coefficient	Voc	-0,34%/°C	-0,34 %/°C	-0,34 %/°C	-0,34%/°C	-0,34%/°C
<b>Mechanical ch</b> Anodised alur		0,05%/°C	0,037 %/°C	0,037 %/°C	0,037%/°C	0,037%/°C
		yes	yes	yes	yes	yes
Black backsho		154 × 195	120 x 260	120 x 260	120 x 260	120 x 260
fixing (mm)	forn°1 - L x H n°2 - L x H	- 134 ^ 193	183 x 260	183 x 260	420 x 260	420 x 260
Cable length (	(with connectors)	-	-	-	-	-
Module dimer	nsions (mm)	216×306×18	310×280×35	310×280×35	510×310×35	510×310×35
Module weigh		0,8 kg	1,3 kg	1,3 kg	2 kg	2 kg
Product warra	nty		-		F	
Period		5 years	5 years	5 years	5 years	5 years

\*According to standard test conditions (STC): irradiance 1000 W/m2, AM= 1,5, cell temperature 25°C.

\*\*Nominal Operating Cell Temperature: Irradiance 800 W/m2, wind speed 1 m/s, ambient temperature 25°C.

\*\*\*According NMOT standard- Nominal Module Operating Temperature (=test condition in real situation): irradiance 800W/m², ambiante temperature 20°C, wind speed 1 m/s

#### UNISUN M & BC rigid solar panels

UNISUN	M & BC rigid solar	panels													
													2		
		UNISUN	UNISUN	UNISUN	UNISUN	UNISUN	UNISUN	UNISUN	UNISUN	UNISUN	UNISUN	UNISUN	UNISUN	UNISUN	UNISUN
Electrical perf	ormance	<b>30.12 M</b> Ref 0842	<b>50.12 M</b> Ref 0088	<b>55.12 BC</b> Ref 1238	<b>50.24 M</b> Ref 1870	<b>80.12 M</b> Ref 0095	<b>100.12 M</b> Ref 0446	<b>120.12 BC</b> Ref 1245	<b>100.24 M</b> Ref 1443	<b>150.12 M</b> Ref 0453	<b>150.12 BC</b> Ref 1528	<b>150.24 M</b> Ref 1887	<b>200.12 BC</b> Ref 3324	<b>200.24 M</b> Ref 1337	<b>300.12 M</b> Ref 2013
Max. power (F	Pm)*	30 W	50 W	55 W	50 W	80 W	100 W	120 W	100 W	150 W	150 W	150 W	200 W	200 W	300 W
Power tolerar	nce*	0/+3 %	0/+3 %	0/+3 %	0/+3 %	0/+3 %	0/+3 %	0/+3 %	0/+3 %	0/+3 %	0/+3 %	0/+3 %	0/+3 %	0/+3 %	+/-3 %
Operating vo	ltage	12 V	12 V	12 V	24 V	12 V	12 V	12 V	24 V	12 V	12 V	12 V	12 V	24 V	12 V
Technology		mono	mono	back contact	mono	mono	mono	back contact	mono	mono	back contact	mono	back contact	mono	mono
	ax. power (Vmp)*	17,8 V	17,8 V	18,6 V	36.6 V	17,8 V	17,8 V	19,80 V	36,6 V	17,8 V	27 V	36,6 V	34 V	35,6 V	30,5 V
	ax. power (Imp)*	1,69 A	2,81 A	2,96 A	1,4 A	4,49 A	5,62 A	6,06 A	2,81 A	8, 43 A	5,67 A	4,2 A	6,24 A	5,62 A	9,82 A
	en circuit (Voc)*	22,3 V	22,3 V	21,8 V	42,7 V	22,3 V	22,3 V	23,30 V	42,7 V	21,3 V	32,4 V	42,7 V	40,0 V	42,7 V	35,5 V
	nort circuit (Icc/ ISC)*	1,82 A	3,03 A	3,13 A	1,5 A	4,85 A	6,07 A	6,42 A	3,04 A	9,10 A	6,12 A	4,5 A	5,88 A	6,07 A	11,1 A
Cell efficiency  Module efficie		20,60%	20,60%	23,80%	20,60%	20,60% 15,15%	20,60% 17.32%	23,80% 19,05%	20,60% 15,15%	20,60%	23,80% 18,67%	20,60%	23,8%	20,60% 15,8%	20,60%
	tery charging power***	11,60%	14,20%	10,1076	14,20%	13,1376	17.32%	15,03%	13,1376	10,36%	10,0776	10,36%	20,43%	13,676	13,0%
12V battery	with PWM controller	1,35 A	2,25 A	2,50 A	n.a.	3,88 A	4,86 A	n.a.	n.a.	7,28 A	n.a.	n.a.	n.a.	n.a.	n.a.
	with MPPT controller	1,96 A	3,26 A	3,59 A	3,26 A	5,22 A	6,52 A	7,17 A	6,52 A	9,78 A	9,78 A	9,78 A	13,04 A	13,04 A	19,57A
24V battery	with PWM controller	n.a.	n.a.	n.a.	1,20 A	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	3,60 A	n.a.	4,86 A	n.a.
Temperature o	with MPPT controller	n.a.	n.a.	n.a.	1,63 A	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	4,89 A	n.a.	6,52 A	n.a.
Operating ter	mperature	-40/+85°C	-40/+85°C	-40/+85°C	-40/+85°C	-40/+85°C	-40/+85°C	-40/+85°C	-40/+85°C	-40/+85°C	-40/+85°C	-40/+85°C	-40/+85°C	-40/+85°C	-40/+85°C
NOCT / TUC*	•	45 ±2°C	45 ±2°C	45 ±2°C	45 ±2°C	45 ±2°C	45 ±2°C	45 ±2°C	45 ±2°C	45 ±2°C	45 ±2°C	45 ±2°C	45 ±2°C	45 ±2°C	45 ±2°C
Temperature		-0,43%/°C	-0,43%/°C	-0,3%/°C	-0,43%/°C	-0,43%/°C	-0,43%/°C	-0,3%/°C	-0,43%/°C	-0,48%/°C	-0,3%/°C	-0,43%/°C	-0,3%/°C	-0,43%/°C	-0,43%/°C
coefficient	Voc	-0,34%/°C	-0,34%/°C	-0,28%/°C	-0,34%/°C	-0,34%/°C	-0,28%/°C	-0,28%/°C	-0,34%/°C	-0,34%/°C	-0,28%/°C	-0,34%/°C	-0,28%/°C	-0,34%/°C	-0,34%/°C
Mechanical ch	lcc naracteristics	0,05%/°C	0,05%/°C	0,05%/°C	0,05%/°C	0,05%/°C	0,05%/°C	0,05%/°C	0,05%/°C	0,037%/°C	0,05%/°C	0,05%/°C	0,05%/°C	0,05%/°C	0,05%/°C
Anodised alu	minium frame	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Black backsh	eet design	no	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Hole spacing	for n°1 - L x H	200 x 500	120 x 500	120 x 500	120 x 500	127 x 500	127 x 500	127 x 500	127 x 500	600 x 626	600 x 626	600 x 626	600 x 626	800 x 768	720 x 950
fixing (mm) *	n°2- L x H		420 x 500	420 x 500	420 x 500	860 x 500	710 x 500	860 x 500	860 x 500	1100 x 626	1100 x 626	1100 x 626	1100 x 626	1300 x 768	1220 x 950
Cable length	(with connectors)	900 mm	900 mm	900 mm	900 mm	900 mm	900 mm	900 mm	900 mm	900 mm	900 mm	900 mm	900 mm	900 mm	900 mm
Module dime	nsions (mm)	460×550×35	640×550×35	550×550×35	660×550×35	960×550×35	1050×550×35	1050×550×35	1200×550×35	1340×675×35	1190×675×35	1500×675×35	1450×675×35	1580×808×40	1500×990×40
Module weight		3,1 kg	4,1 kg	3,8 kg	4,1 kg	6,3 kg	7,0kg	7,0 kg	7,5 kg	9,8 kg	9,3 kg	10,8 kg	12,9 kg	13,6 kg	15,5 kg
Period		5 years	5 years	5 years	5 years	5 years	5 years	5 years	5 years	5 years	5years	5 years	5 years	5 years	5 years
		,	. ,	, ,	. ,	, ,	. ,	- ,	. ,	. ,	-,	,	,	, ,	, ,

<sup>\*</sup>According to standard test conditions (STC): irradiance 1000 W/m2, AM= 1,5, cell temperature 25°C.

\*\* Nominal Operating Cell Temperature: Irradiance 800 W/m2, wind speed 1 m/s, ambient temperature 25°C.

\*\*\*According NMOT standard- Nominal Module Operating Temperature (=test condition in real situation): irradiance 800W/m², ambient temperature 20°C, wind speed 1 m/s



	Ref 1320	Ref 0552	Ref 0569
Electrical performance			
Max. power (Pm)*	50 W	100 W	150 W
Power tolerance*	0/+3%	0/+3%	0/+3%
Operating voltage	12 V	12 V	12 V

Technology	mono/slim	mono/slim	mono/slim
Voltage at max. power (Vmp)*	20 V	20 V	20 V
Intensity at max. power (Imp)*	2,5 A	5 A	7,5 A
Voltage in open circuit (Voc)*	23,6 V	23,6 V	23,6 V
Intensity in short circuit (lcc/ ISC)*	2,75 A	5,5 A	8,25 A
Cell efficiency	21%	21%	21%
Module efficiency*	13,23%	14,49%	14,02%

#### Maximum battery charging power\*\*\*

12V Battery	with PWM controller	2 A	4 A	6 A
	with MPPT controller	3,26 A	6,25 A	9,78 A

#### Temperature characteristics

Operating temp	perature	-40/+85°C	-40/+85°C	-40/+85°C
NOCT / TUC**		45 ±2°C	45 ±2°C	45 ±2°C
Temperature	Pm	-0,48%/°C	-0,48%/°C	-0,48%/°C
coefficient	Voc	-0,34%/°C	-0,34%/°C	-0,34%/°C
	Icc	0,037%/°C	0,037%/°C	0,037%/°C

#### Mechanical characteristics

Mechanical characteristics			
Front structure	ETFE	ETFE	ETFE
Black backsheet design	yes	yes	yes
Back structure	fiberglass	fiberglass	fiberglass
Possible bending	< 5°	< 5°	< 5°
Cable length (with connectors)	900 mm	900 mm	900 mm
Fixing eyelet (marine bronze)	×4	×4	×8
Module dimensions	712×560×20	1110×695×20	1580×695×20
Module weight	2,5 kg	5,2 kg	7,5 kg

1 year

#### Product warranty

Period

*According to standard test conditions (STC): irradiance 1000 W/m2, AM= 1,5, cell temperature 25°C.
** Naminal Operating Cell Temperature: Irradiance 200 W/m2, wind speed 1 m/s, ambient temperature 25°C

\*\*\*\*According NMOT standard- Nominal Module Operating Temperature (=test condition in real situation): irradiance 800W/m², ambiante temperature 20°C, wind speed 1 m/s



Deck-pass/ bulkhead pass resistant to UV with quick solar connectors

Ref. 1481



1 year

Caps for solar connectors kit 1 male + 1 female

1 year

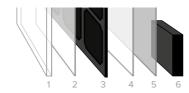
## HIGH QUALITY COATING

Entry-level price range	UNISUN MS			
<b>△</b> PET	<del>ڪ</del> ETFE			
Light tran	smission			
90-93%	95%			
Antireflexion	properties			
+	+++			
Self-cleaning	g properties			
+	+++			
Corrosion	resistant			
+	+++			
Resistant to a saline environment				
+	+++			

## HIGH QUALITY JUNCTION BOX

Entry-level price range	UNISUN MS			
[ <del></del>				
TÜV Certification				
rare	✓			
Cell protection (hot-s				
no	✓			
Mechanical	resistance			
+	+++			
Water	proof			
+	+++			
Sha	pe			
not streamlined	streamlined			

## HIGH QUALITY STRUCTURE



- 1. High quality ETFE plastic
- 2. EVA Resin
- 3. Highly efficient cells
- 4. EVA resin
- 5. PET + fiberglass
- 6. TÜV certified junction box

## UNITECK

%

High efficiency cells



High resistance plastic, anti-corrosion, high transmissibility of light



TÜV certified waterproof junction box with hot-spot protection, reverse current



Exceptional output even under weak light

UNISUN MS slim solar panels

## LIGHT AND MOBILE



## QUICK CONNECTORS + PROTECTION

For a safe use, Unisun MS is equipped with a solar connector (waterproof + electrical transfer quality), and with an anti-reverse diode integrated in the junction box (protection for reverse current battery ->panel)







UNISUN MS is the high performance monocrystalline slim panel range (possible bending up to 5° max.) ideal for leisure (boating, campervan), off-grid or nomad activities.

Their highly efficient monocrystalline cells guarantee exceptional output even under weak light or extreme heat.

Their multi-layer structure with a high-quality coating on the front (ETFE), and fiberglass on the back, provides the best performance on the market regard to electrical performance (high transmissibility plastic with self-cleaning properties), mechanical resistance and corrosion resistance (ideal for boating).

With a TÜV certified junction box, UNISUN MS is protected against all cell overvoltage or hot spots (anti-spot protection) due to grey areas or cells getting masked, very common in boating (sailing ropes etc...). Its streamlined shape minimises wind resistance and avoids ropes from getting stuck making it ideal for boating use.

Light and space-saving UNISUN MS can be placed or fixed with rigging or bungee ropes thanks to their integrated eyelets (diam.10).



Mounting Brackets - UNIFIX C

## **VEHICLE**

#### **BRACKET FOR** UNITECK PANELS

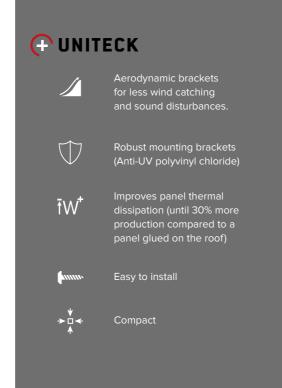
Innovative mounting brackets for a flat fixing of your Uniteck solar panel.

UNIFIX C sticks to all flat surfaces: car or commercial vehicle roof, boat deck. Its aerodynamic and « soundless » design prevents wind catching and sound disturbances.

Unifix C enables to raise the panel.

It improves your panel thermal dissipation, and thus your energy production (+30% compared to a panel glued without ventilation).

Robust and easy to install, it is simply glued, removing grease from your surface, and sticking your Unifix with instant glue (degreaser + glue not included).







Mounting Brackets - UNIFIX 1.C

## **VEHICLE**

#### **BRACKET FOR** UNIVERSAL PANELS

UNIFIX 1C is the innovative mounting bracket for fixing your panels on a flat surface. It sticks to the roof of your vehicle.

With its Easy Change system, you can easily replace or remove your panel for maintenance or cleaning.

Its compact design enables you to mount several panels, even on a surface filled with other components.

To place it, UNIFIX 1C only requires 2 steps (clean and stick) instead of the usual 3 (clean, prepare and stick).

\* 26,1 mm + 26,1 mm



Easy change system for maintenance or cleaning G



UV and corrosion resistant PA66 plastic+ fiberglass + stainless steel screws



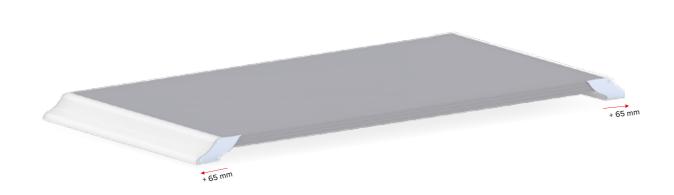
Improves panel thermal dissipation (until 30% more production compared to a panel glued on the roof)



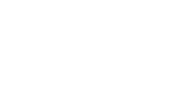
Easy to install



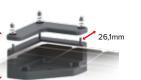














## **UNIFIX C100**

55.12BC/ 80.12M/ 100.12M/ 100.24M/ 120.12BC 200.12BC (degreaser + glue not included



#### **UNIFIX C150**

For Unisun 50.12M/ 50.24M/ For Unisun 150.12M/ 150.24M/ 150.12BC/ degreaser + glue not included) Ref 1979



### **UNIFIX C200**

For Unisun 200.24M (degreaser + glue not included) Ref 1986



For Unisun 300.12M

included)

Ref 2129

(degreaser + glue not

#### activator Ref 1184

Fixing glue Ref 2099

Degreaser/





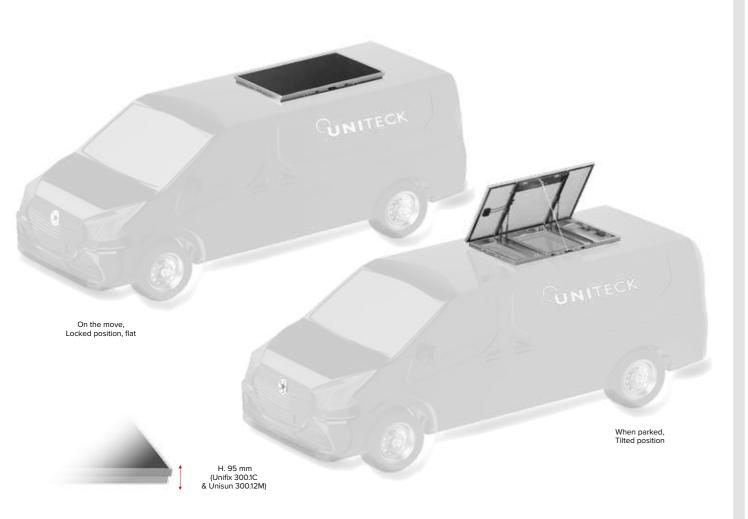
35 mm frame

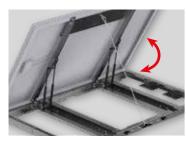
Ref 0255



40 mm frame Ref 1849

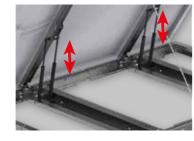
Ref 1962





#### **ADJUSTABLE INCLINATION**

Tilt system with 45° and 65° stop angles, or from 0 to 65° thanks to the rope system, to optimise your electrical performance according to the position of the sun during the day.



Equipped with double gas struts to effortlessly change the tilt while keeping the selected position locked.



#### **EASY MAINTENANCE**

Maintenance-free, sealed cylinders with automatic internal lubrication.



#### LOCKING SYSTEM

Key lock to secure your system in a flat position when moving and protect it against theft.

#### **I COMPATIBLE ROOF**



#### WAVY



**RACK** 





#### **TITABLE BRACKET FOR** UNITECK PANELS

The UNIFIX 300.1C bracket has been specially designed to fix your 300W Uniteck solar panel on any flat and rigid surface (e.g.: fitted van, camper van, mobile home, barge...).

Its multi-position system on jacks allows you to optimise your performance by effortlessly choosing the most suitable inclination, from 0° to 65°, for a production that is up to 40% higher than a flat mounting.

Easy to install, the UNIFIX 300.1C can be fixed:

- -by gluing (glue to be provided)
- -by bolting (screws to be provided)
- -on the roof rack of your vehicle (brackets to be provided)

Its aluminium structure, combined with its stainless steel screws, offers strength and lightness.

For a perfect integration, UNIFIX 300.1C can be painted according to the colour of your vehicle (painting to be provided).



Adaptable to all types of

Reclinable from 0 to 65°

G

NEW



**UNITECK** 



Painting possible



Designed, made in France



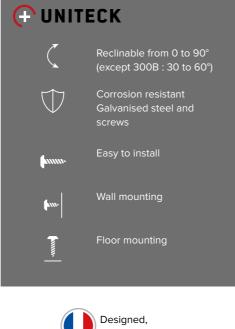
Mounting Brackets - UNIFIX B

## FLOOR & WALL

#### **I BASIC BRACKETS**

Robust and easy to use, UNIFIX Basic is the ideal economic support ideal economic support to fix your panels on all flat surfaces (wall, concrete floor, wood frame).

Its multi-position tilting system allows you to optimize your electrical performance.







#### **UNIFIX 100B**

560 mm panels max For Unisun 20.12M(x2)/ 20.24M(x2)/ 30.12M/ 50.12M/ 50.24M/ 55.12BC/ 80.12M/ 100.12M/ 100.24M/ 120.12BC Landscape orientation Ref 0644



#### **UNIFIX 150B**

700 mm panels max For Unisun 150.12M/ 150.24M/ 150.12BC/ 200.12BC Landscape orientation Ref 0545



#### **UNIFIX 300B**

1100 mm panels max (=350-400W) For Unisun 100.12M(x2)/ 100.24M(x2)/ 120.12BC(x2)/ 150.12M/ 150.24M/ 150.12BC/ 200.12BC/ 200.24M/ 300.12M Landscape or portrait orientation Ref 1092



Mounting Brackets - UNIFIX B

## **FLOOR**

#### I LARGE FORMAT BRACKET

UNIFIX 600B is the ideal mounting bracket for your large photovoltaic panels.

Its multi-position tilt system allows you to increase your electricity production by choosing the ideal orientation depending on the season.

It is suitable for all flat surfaces (concrete floor, wall, wooden frame...).





RECLINABLE

Multi-position reclinable system to optimize your electrical performance depending on the season and geographical area.



#### PORTRAIT OR LANDSCAPE

Adjustable in height, it allows you to fix your panels horizontally or vertically

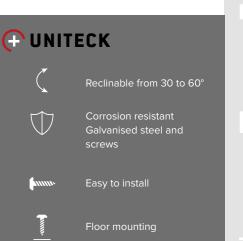


#### UNIVERSAL

Thanks to the oblong hole, it accepts the fixing of panels of different sizes: - length from 990 to 2500 mm max. - width from 990 to 1400

mm max.







UNIFIX 800 EGF For UNISUN 200.24M (x2)/ UNISUN 300.12M (x2)

or 2 panels :

- width from 808 to 1200mm
- length from 1200 to 2300mm Portrait orientation Ref 2105



SINGLE PANEL EXTENSION Ref 2686



**BALLAST BOX** Ref 2112



CONCRETE SLABS MOUNTING BRACKETS Ref 2679

#### UNIVERSAL

Thanks to their design based on the use of hole drilling, UNIFIX 800 EGF can receive up to 400W panels with the following dimensions:

- width from 808 to 1200 mm
- length from 1200 to 2300 mm



BALLAST BOX OPTION

Ballast box for 2 panels with a capacity of 130 litres or 0,13m<sup>3</sup>. Can thus contain dry sand with a 1800Kg/m<sup>3</sup> density, for a total weight of 240kg for an optimal ballasting.



CONCRETE SLABS BRACKETS OPTION

Concrete slabs brackets are made to carry up to 24 standard 40x40 cm concrete slabs of 12,5kg, for a total weight of 300kg for an optimal ballasting.



ADJUSTABLE INCLINATION

Multi-position tilting system for an optimization of your electrical performances according to the season and to your geographical area.



MULTI-PANEL

Infinite assembly with an even or odd number of panels (for odd numbers, add a single panel extension)



Mounting Brackets - UNIFIX 800 EGF

## **FLOOR**

#### I MULTI-PANEL BRACKETS

Evolutive multi solar panels mounting brackets for flat surfaces.

Easy to install, UNIFIX 800 EGF is made to be used in horizontal position on a flat and rigid surface (eg: grass, sand, concrete floor, wood frame).

UNIFIX 800 EGF can be:

- fixed to a concrete floor thanks to M8 dowels (not included)
- weighted using a ballast box (option)
- weighted using the brackets for concrete slabs (option)

With its galvanized steel structure and corrosion resistant stainless-steel screws, it is perfectly suited for outdoor use.

Equipped with a multi-position tilting system, UNIFIX 800 EGF bracket enables an optimization of your panel's performance by modifying the angle inclination according to your geographical position and the season:

- only Unifix 800 EGF : from 10 to 60 degrees.
- with ballast box option : from 30 to 60 degrees
- with brackets for concrete slabs option : from 20 to 60 degrees

**⊕** UNITECK



galvanised steel
+ stainless steel screws

G



Easy to install



Reclinable from 10 to 60°



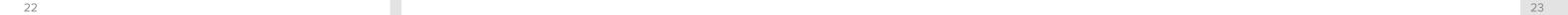
Optimal ballasting (via its ballast box or via its "concrete slabs" bracket)



Scalable multi-panel









**UNIFIX 20** For Unisun 10.12M/ 10.24M/ 20.12M/ 20.24M Landscape orientation Ref 0262



**UNIFIX 50** For Unisun 30.12M/ 50.12M/ 50.24M/ 55.12BC Landscape orientation Ref 0279



**UNIFIX 100** 

For Unisun 80.12M/ 100.12M/ 100.24M/ 120.12BC Landscape orientation

Ref 0316



#### **UNIFIX 200**

Ref 0361

For Unisun 80.12M (x2)/ 100.12M (x2)/ 100.24M (x2)/ 120.12BC (x2)/ 150.12M/ 150.24M/ 150.12BC/ 200.12BC 200.24M



1 panel or 2 panels

#### **SOLAR PANELS DIMENSION** COMPATIBILITY

	Pan	els num	ber		Panel hole spacing (mm)		nsion max. n)
	x 1	x 2	x 3	Lenght	Height	Lenght	Height
UNIFIX 20	✓			80 - 505	100 - 300	No max.	400
UNIFIX 50	✓			80 - 510	180 - 510	No max.	550
UNIFIX 100	✓			340 - 885	180 - 510	No max.	550
UNIFIX 200	<b>√</b>			340 - 885	400 - 1050	No max.	1100
ONII IX 200		✓		340 - 885	150 - 500	No max.	550
	✓			150 - 1600	400 - 1030	No max.	1200
UNIFIX 300		✓		150 - 750	400 - 1030	No max.	880
			✓	150 - 500	400 - 1030	No max.	550



Mounting Brackets - UNIFIX U

## FLOOR, WALL & **MAST**

#### **■ MULTI-USE BRACKETS**

Robust and easy to use, the universal UNIFIX is the ideal support to fix your panels on all flat surfaces (ground, concrete, wood frame, wall) or on round mast (diam. 40 to 60 mm).

Its multi-position tilting system allows you to optimize your electrical performance.

Universal, with its innovative design, the UNIFIX accepts some panels of different brands and sizes.

#### **UNITECK**



G



from 0 to 90°



Easy to install



Fixation on round masts Ø 40 to 60 mm (flanges included)



Wall mounting



Floor mounting



Designed, made in France



#### **UNIFIX 300**

For Unisun 80.12M (x3)/ 100.12M (x3)/ 120.12BC (x3)/ 100.24M (x3)/ 150.24M (x2)/ 150.12BC (x2)/ 200.12BC (x2)/ 200.24M/ 300.12M

Ref 0378



1 panel or 2 panels or 3 panels



Tilting system enables an optimized angle fixation on round for the best electrical production.

Robust and strong fixation on round masts by means of production.

Attaches to all signage supports (fighages to be bought separately)



#### **UNIFIX 5SF**

For Unisun 5.12 M Portrait orientation Masthead and middle of the mast Mounting flanges in option Ref 2693



#### **UNIFIX 20SF**

For Unisun 10.12M/ 10.24M/ 20.12M/ 20.24M Portrait orientation Masthead and middle of the mast Mounting flanges in option Ref 1139



#### **UNIFIX 50SF**

Ref 0064

For Unisun 30.12M/ 50.12M/ 50.24M/ 55.12BC Portrait orientation Masthead and middle of the mast Mounting flanges in option



#### **UNIFIX 100SF**

For Unisun 80.12M/ 100.12M/ 100.24M/ 120.12BC Portrait orientation Masthead Mounting flanges in option Ref 1146



#### Mounting Brackets - Fixed UNIFIX SF

## **POLE & MAST**

#### **FIXED BRACKETS FOR** UNIVERSAL PANELS

Thanks to its universal fastening system, UNIFIX SF mounting bracket adapts to all signal masts.

Simply, slide your flanges with the M8 or M10 screws onto the rear rail and then

It has a fixed 35° panel inclination, optimum for an all year round use.





Diam 40-60 mm Ref 2631

Diam 60-90 mm Ref 2648

Diam 90-130 mm Ref 2655

Diam 130-190 mm Ref 2662

#### UNITECK



Adaptable on all signal

G



aluminium + A4 stainless



Easy to install





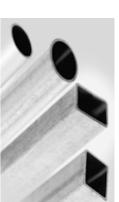
With flanges or U clamps (flanges and M8 or M10 screws in option)



Designed, made in France



Can be fixed on the masthead or the middle of the mast (except UNIFIX 100SF, masthead only)



Can be fixed on any signal mast (flanges not included)





#### **UNIFIX 20S**

For Unisun 10.12M/ 10.24M/ 20.12M/ 20.24M Landscape orientation Masthead or middle of the mast Mounting flanges in option Ref 0286



#### **UNIFIX 100S**

For Unisun 80.12M/ 100.12M/ 100.24M/ 120.12BC Landscape or portrait orientation Masthead or middle of the mast Mounting flanges in option Ref 0323



For Unisun 200.24M Landscape or portrait orientation Masthead or middle of the mast Mounting flanges in option Ref 0941



#### **UNIFIX 50S**

For Unisun 30.12M/ 50.12M/ 50.24M/ 55.12BC Landscape orientation Masthead or middle of the mast Mounting flanges in option Ref 0293



#### **UNIFIX 150S**

For Unisun 150.12M/ 150.24M/ 150.12BC/ 200.12BC Landscape or portrait orientation Masthead or middle of the mast Mounting flanges in option Ref 0866



UNIFIX 300S
For Unisun 300.12M
Landscape or portrait orientation
Masthead or middle of the mast
Mounting flanges in option
Ref 2082



#### Mounting Brackets - Reclinable UNIFIX SF

## **POLE & MAST**

## RECLINABLE BRACKETS FOR UNIVERSAL PANELS

Thanks to their universal fastening system, UNIFIX S mounting bracket adapts to all signal masts.

Simply, slide your flanges with the M8 or M10 screws onto the rear rail and then tighten.

UNIFIX S offers the possibility to choose the inclination. The tilting system enables you to optimize the electrical production according to the area and the period of use.

With its Easy Install system and their light aluminium structure, its mounting can easily be done alone, without extra assistance.





## OPTION UNIFIX S or SF POST FLANGES STAINLESS STEEL FASTENERS (x2)

Diam 40-60 mm Ref 2631

Diam 60-90 mm Ref 2648

Diam 90-130 mm Ref 2655

Diam 130-190 mm Ref 2662

#### **UNITECK**



Adaptable on all signal

G



Corrosion resistant aluminium + A4 stainless steel screws



Easy to install



Reclinable from 30 to 60°



Can be fixed on any support



With flanges or U clamps (flanges and M8 or M10 screws in option)



Designed, made in France



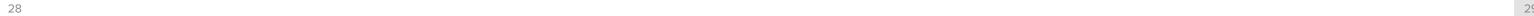


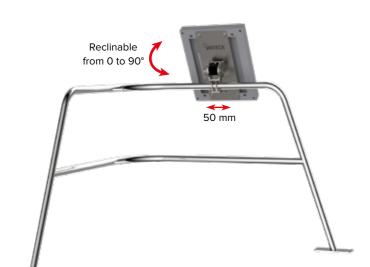
system to optimize your electrical performances

#### Easy installation system



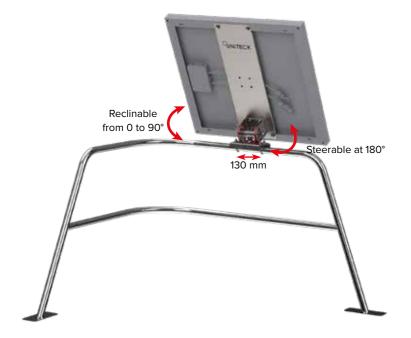
Its upper cap relieves the weight of the installation so that their mounting can easily be done alone, without extra assistance. This cap can be removed afterwards for a fixation on the middle of the mast. It is used on pole with a maximum of 130mm diameter.
For UNIFIX 100S /150S /200S.







UNIFIX 20.1 WB for Unisun 10.12M/ 10.24M/ 20.12M/ 20.24M Ref 1009





**UNIFIX 50.2 WB** for Unisun 30.12M/ 50.12M/ 55.12BC Ref 1016





UNIFIX 100.1 WB for Unisun 80.12M/ 100.12M/ 100.24M/ 120.12BC Ref 1153

## <u>↑</u>

Mounting Brackets - UNIFIX WB

## **BOATING**

## RECLINABLE AND STEERABLE BRACKETS FOR A PUSHPIT FIXATION

The UNIFIX WB mounting brackets range is ideal to fix your rigid solar panels on your pushpit.

Made of 316L polished stainless steel, UNIFIX WB is robust and entirely protected against corrosion.

Thanks to its universal fixation system, it can be fixed on all pushpits.

With an adjustable tilt for the 20.1WB and the 100.1WB, with adjustable tilt and steerable for the 50.2WB, the UNIFIX WB optimizes your electrical performance and thus increases your production up to 50% compared to an identical fixed installation.

Developed for the fixation of Uniteck panels, it is not nessecary to drill the panel frame (operation cancelling the product warranty with many brands).





Adaptable on all pushpits from Ø 20 to 45 mm

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Corrosion resistant marine stainless steel



Easy to install

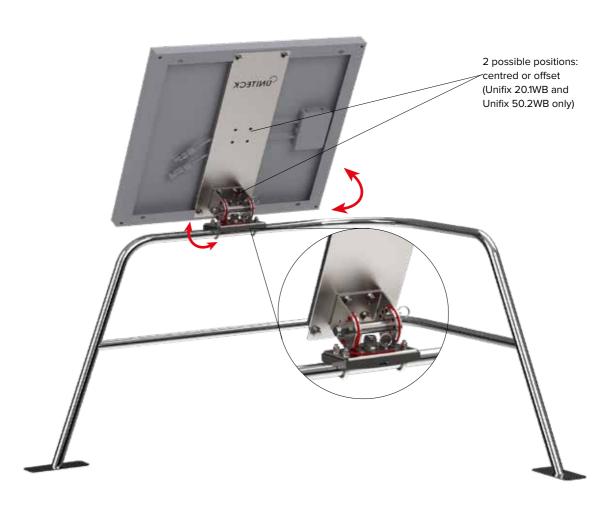


Reclinable from 0 to 90°



Steerable at 180





#### Mounting Brackets - UNIFIX WP

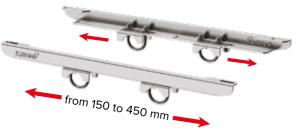
## **BOATING**

#### **■ FIXED BRACKETS FOR ARCH**

The UNIFIX WP range of brackets is ideal to fix your rigid solar panels on your arch.

Made of polished 316L stainless steel, UNIFIX WP is robust and totally protected against corrosion.







Adaptable on all arches

from Ø 20 to 45 mm

marine stainless steel

**UNITECK** 

(

#### **UNIFIX 100 WP**

for Unisun 50.12M/ 50.24M/ 80.12M/ 100.12M/ 100.24M/ 120.12BC

Ref 0859

#### UNIFIX 150 WP

for Unisun 150.12M/ 150.24M/ 150.12BC/ 200.12BC

Ref 0514

#### **UNIFIX 200 WP**

for Unisun 200.24M Ref 1450

#### **UNIFIX 300 WP**

for Unisun 300.12M Ref 2136



nable arch mounting are equipped with a mono-bar assembly.



#### **MULTI-POSITION**

According to your arch configuration or your wishes, your panels can be positionned either centered or off-centered.



#### INCLINATION

Easy inclination system thanks to adjusting rings optimize your electrical performances depending on the season and the geographical area.



#### **MULTI-PANEL**

In double-panel, with UNIFIX 200.1 WP and UNIFIX 300.1 WP offer a larger electrical production area for more self-suffiency.



#### Mounting Brackets - UNIFIX WPB

## **BOATING**

#### **TILTABLE BRACKETS FOR BALCONY AND ARCH MOUNTING**

The UNIFIX WP RECLINABLE mounting brackets are ideal to fix your rigid solar panels on your arch.

Made of SAE 316L polished stainless steel, UNIFIX WPB RECLINABLE is robust and entirely protected against corrosion. Its universal titling system allows it to be fixed on all arches: double or single bar, bimini arch...(diam 25 to 45 mm).

Thanks to the adjustable inclination of universal fixation system (-60°/+60°), UNIFIX WP RECLINABLE increases your production over 30% against a laying down installation.

The panel can be positioned either centered or off-centered according to your wishes or your arch configuration.





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Easy to install



Reclinable from 0 to 90°





#### **UNIFIX 100.1 WPB**

for Unisun 50.12M/ 50.24M/ 55.12BC/ 80.12M/ 100.12M/ 100.24M/ 120.12BC Ref 2792

#### **UNIFIX 150.1 WPB**

for Unisun 150.12M/ 150.24M/ 150.12BC/ 200.12BC Ref 2808



#### **UNIFIX 200.1 WPB**

for Unisun 50.12M (x2)/ 50.24M (x2)/ 55.12BC (x2)/ 80.12M (x2)/ 100.12M (x2)/ 100.24M (x2)/ 120.12BC (x2) Ref 2815

#### **UNIFIX 300.1 WPB**

for Unisun 150.12M (x2)/ 150.12BC (x2) Ref 2822

#### **Connection kits**

## **READY TO USE**

#### **COMPLETE SINGLE PANEL** CONNECTION KITS

They can be connected quickly and easily to the panels and the and controller via their quick solar connectors.

With a 6 or 4 mm<sup>2</sup> cross-section, they optimize your electrical performance.

They are equipped with a fuse kit (Uniconnect 1.6 and 1.4S) to protect your installation and your battery, supplied with a UV-resistant waterproof roof-pass (Uniconnect 1.6 and 1.4E) or cable glands (Uniconnect 1.4S) and battery terminals (diam.8).





Quick and simple to install, fast solar connectors



(tinned copper wire + suitable



resistant cable (-40°C to 120°C)



UV resistant cable



Immersion AD7



no halogen type EI6





#### Included:

- Panel> regulator connection: 2 × 8 m cable, 6 mm<sup>2</sup> with solar connectors + waterproof roof-pass
- Regulator> Battery connection: 2 × 2 m cable + 6mm² battery terminals diam.8 + fuse protection kit Ref 0200



#### **UNICONNECT 1.4E**

#### Included:

- Panel> regulator connection: 2 × 5 m cable, 4 mm<sup>2</sup> with solar connectors + waterproof roof-pass
- Regulator> Battery connection: 2 × 2 m cable + 4mm<sup>2</sup> battery terminals diam.8

Ref 1955



#### **UNICONNECT 1.4S**

- $\bullet$  Panel> regulator connection: 2 × 3 m cable, 4 mm<sup>2</sup> with solar connectors + cable glands
- Regulator> battery connexion: 2 × 1 m cable, 4 mm<sup>2</sup>+ fuse protection kit

Ref 0811

#### UNICABLE solar cables

## **RESISTANCE & ADAPTABILITY**

#### **CONNECTION OUTPUT PANEL**



#### UNICABLE SP 2.5.0.2

Panel output cable, 2,5 mm<sup>2</sup> - 2 x 0,2 m, black + red Max panel 100W

Ref 3256



#### UNICABLE SP 2.5.0.5

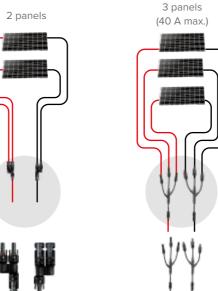
Panel output cable, 2,5 mm<sup>2</sup> - 2 x 0,5 m, black + red Max panel 100W

Ref 1740



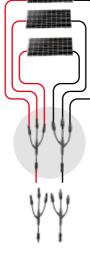
#### CONNECTION **MULTI-PANEL**

Parallel multi-panel option



Parallel connectors kit 2 panels

Ref 0231

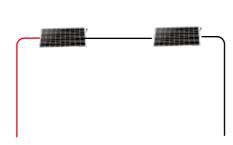


Parallel connectors kit 3 panels Ref 0163

O	Designation	Cross- section	Length	Color
Ref 2921	412 BR	4mm <sup>2</sup>	2 x 1 m	black + red
Ref 2938	452 BR	4mm <sup>2</sup>	2 x 5 m	black + red
Ref 2945	4102 BR	4mm²	2 x 10 m	black + red
Ref 0873	612 BR	6mm <sup>2</sup>	2 x 1 m	black + red
Ref 2143	632 BR	6mm <sup>2</sup>	2 x 3 m	black + red
Ref 2150	652 BR	6mm <sup>2</sup>	2 x 5 m	black + red
Ref 2952	6102 BR	6mm <sup>2</sup>	2 x 10 m	black + red
Ref 2969	6202 BR	6mm <sup>2</sup>	2 x 20 m	black + red

Section = copper resistivity (= 0.21) x back and forth length (in meters) x current / acceptable voltage drop (0.5% for optimum charge)

#### Multi-panel option as standard



O	Designation	Cross- section	Length	Color
Ref 2563	412 B	4mm²	1m	 black
Ref 2570	432 B	4mm <sup>2</sup>	3m	black
Ref 2587	452 B	4mm²	5m	black
Ref 2167	612 B	6mm <sup>2</sup>	1m	black
Ref 2174	632 B	6mm <sup>2</sup>	3m	black
Ref 2181	652 B	6mm <sup>2</sup>	5m	black

# +

#### CONNECTION PANEL > CHARGE CONTROLLER



	Designation	Cross- section	Length	Color
Parallel				
Ref 3041	411 BR	4mm <sup>2</sup>	2 x 1m	black + red
Ref 1917	451 BR	4mm <sup>2</sup>	2 x 5m	black + red
Ref 2709	481 BR	4mm <sup>2</sup>	2 x 8m	black + red
Ref 2716	4101 BR	4mm²	2 x 10m	black + red
Ref 1023	651 BR	6mm <sup>2</sup>	2 x 5m	black + red
Ref 0880	681 BR	6mm <sup>2</sup>	2 x 8m	black + red
Ref 0897	6101 BR	6mm <sup>2</sup>	2 x 10m	black + red
Ref 0903	6151 BR	6mm <sup>2</sup>	2 x 15m	black + red
Ref 3027	6201 BR	6mm <sup>2</sup>	2 x 20m	hlack + red

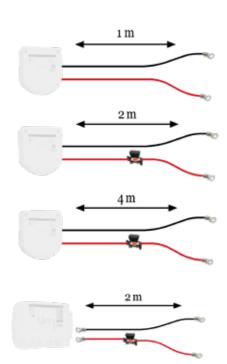
Designed,

made in France

Section = copper resistivity (= 0.21) x back and forth length (in meters) x current / acceptable voltage drop (0.5% for optimum charge). ex: 10m with 300W panel = 9,82A / 30,5V

= ( 0,021 x 2x10m x 9,82A) / 5% x 30,5V = 2,7mm<sup>2</sup>

#### CONNECTION **CHARGE CONTROLLER > BATTERY**





#### 6.1M Battery connection kit

- $2 \times 1 \, \text{m of 6 mm}^2 \, \text{cable}$
- + 2 round lugs diam.8
- Ref 3034

#### 6.2M Battery connection kit

- 2 × 2 m of 6 mm<sup>2</sup> cables
- + 2 round terminals diam.8
- + 1 fuse protection kit

Ref 0347

#### 6.4M Battery connection kit

- 2 × 4 m of 6 mm<sup>2</sup> cable
- + 2 round terminals diam.8
- + 1 fuse protection kit

Ref 0354

#### 16.2 M Battery connection kit

- $2 \times 2 \text{ m } 16 \text{ mm}^2 \text{ cable}$
- + 2 round terminals diam.8
- + 1 fuse protection kit

Ref 1535

#### **ACCESSORIES FOR** CUSTOMISED CABLES





6mm<sup>2</sup>

Designed,

made in France

100m

Section = copper resistivity (= 0.21) x back and forth length (in meters) x current / acceptable voltage drop (0.5% for optimum charge)

#### I CABLE ACCESSORIES



#### Waterproof Roof-pass UV resistant (for 4-6 mm<sup>2</sup> cable)

Ref 0248



#### Fast solar connectors kit

1 male + 1 female (for 4-6 mm<sup>2</sup> cable)

Ref 0712



## Caps for solar

connectors kit 1 male + 1 female

Ref 0170

#### Deck-pass/ bulkhead-pass UV resistant with the fast

6B100

solar connectors Ref 1481

Ref 0774

#### Reverse current protection

15 A anti-reverse current diode inside. Connects on the + connector of the panel

Ref 1702



#### Instant glue

Professional multi-material (aluminium, steel, plastic) high performance. Ideal for attaching camper supports, deck-pass /

black

G

roof-pass ... Ref 2099

#### Degreaser/ activator

To prepare the surface before the glue (metal, plastic, painted surfaces).

Ref 1184

#### **■ FUSE PROTECTIONS**

#### Fuse protection kit (fuse holder + fuse)









UNICABLE battery cables

## HIGH QUALITY AND FLEXIBILITY

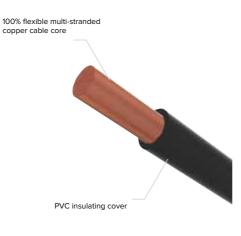
UNICABLE BAT is the reference cable to connect your batteries between them or to make your DC power connections (converters, battery switch...).

Its high quality design (100% flexible multi-stranded copper cable core + lugs with automated hexagonal crimping + thick thermo-glued sheath) guarantees an optimal energy transfer without any power loss, even at high current.

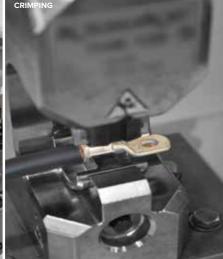


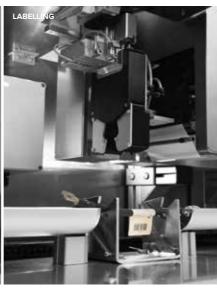












#### UNICABLE battery cables

#### ■ BATTERY(IES) > BATTERY

П

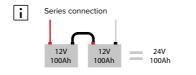
			0.0	12 V battery fleet Δ V < 0,5%	24 V battery fleet Δ V < 0,5%
	Cross section	Length	Terminals	Max. current	Max. current
In parallel			M8/M8		
Ref 2242	25 mm <sup>2</sup>	20 cm x 2	M8/M8	180 A	360 A
Ref 2259	35 mm²	20 cm x 2	M8/M8	250 A	500 A
Ref 2266	25 mm <sup>2</sup>	40 cm x 2	M8/M8	90 A	180 A
Ref 2273	35 mm <sup>2</sup>	40 cm x 2	M8/M8	125 A	250 A
Ref 2532	50 mm²	40 cm x 2	M8/M8	180 A	360 A
Ref 2976	16 mm <sup>2</sup>	100 cm x 2	M8/M8	20 A	40 A
Ref 2754	25 mm <sup>2</sup>	100 cm x 2	M8/M8	35 A	70 A
Ref 2761	35 mm <sup>2</sup>	100 cm x 2	M8/M8	50 A	100 A
Ref 2778	50 mm <sup>2</sup>	100 cm x 2	M8/M8	70 A	140 A
Ref 2785	70 mm²	100 cm x 2	M8/M8	100 A	200 A
Ref 2983	16 mm <sup>2</sup>	200 cm x 2	M8/M8	10 A	20 A
Ref 2990	25 mm <sup>2</sup>	200 cm x 2	M8/M8	17 A	35 A
Ref 3003	35 mm <sup>2</sup>	200 cm x 2	M8/M8	25 A	50 A
Ref 3010	50 mm <sup>2</sup>	200 cm x 2	M8/M8	35 A	70 A
In serie					
Ref 2280	25 mm <sup>2</sup>	20 cm	M8/M8	360 A	715 A
Ref 2297	35 mm²	20 cm	M8/M8	500 A	1000 A

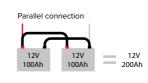
Section = copper resistivity (=0.021) x length (in meters) x current / permissible voltage drop in value (0,5% to avoid battery imbalance)

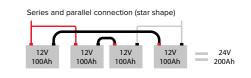
#### I M8/M8 POWER CABLES

			0.0	12 V battery fleet Δ V < 3%	24 V battery fleet Δ V < 3%
	Cross section	Length	Terminals	Max. current	Max. current
Multi-use	•		M8/M8		
Ref 2884	16 mm <sup>2</sup>	20 cm	M8/M8	650 A	1360 A
Ref 2907	25 mm <sup>2</sup>	20 cm	M8/M8	1070 A	2150 A
Ref 2914	35 mm <sup>2</sup>	20 cm	M8/M8	1500 A	3000 A
Ref 1825	25 mm <sup>2</sup>	25 cm	M8/M8	850 A	1700 A
Ref 2020	35 mm <sup>2</sup>	25 cm	M8/M8	1200 A	2400 A
Ref 2037	50 mm <sup>2</sup>	25 cm	M8/M8	1700 A	3400 A

Cross-section = copper resistivity (=0.021) x length (in meters) x current / permissible voltage drop in value (3% for an optimal supply)







42 V hattam, float 24 V hattam, float

38

NEW



### UNICABLE battery cables

■ M8/M8 POWER CABLES					
				12 V battery fleet Δ V < 3%	24 V battery fleet Δ V < 3%
	Cross section	Length	Terminals	Max. current	Max. current
Multi-use	ı	'	M8/M8	I	ı
Ref 2891	16 mm <sup>2</sup>	40 cm	M8/M8	340 A	680 A
Ref 1658	25 mm <sup>2</sup>	40 cm	M8/M8	530 A	1050 A
Ref 1665	35 mm <sup>2</sup>	40 cm	M8/M8	750 A	1500 A
Ref 1672	50 mm <sup>2</sup>	40 cm	M8/M8	1050 A	2100 A
Ref 1689	70 mm <sup>2</sup>	40 cm	M8/M8	1500 A	3000 A
Ref 1696	95 mm²	40 cm	M8/M8	2000 A	4000 A
Ref 3447	35 mm²	70 cm	M8/M8		 
Ref 2389	25 mm²	150 cm	M8/M8	140 A	280 A
Ref 1764	35 mm <sup>2</sup>	150 cm	M8/M8	200 A	400 A
Ref 1771	50 mm <sup>2</sup>	150 cm	M8/M8	285 A	570 A
Ref 1788	70 mm <sup>2</sup>	150 cm	M8/M8	400 A	A 008
Ref 1795	95 mm²	150 cm	M8/M8	540 A	1080 A
Ref 3539	25 mm²	200 cm	M8/M8	100 A	200 A
Ref 3553	35 mm <sup>2</sup>	200 cm	M8/M8	150 A	300 A
Ref 3577	50 mm <sup>2</sup>	200 cm	M8/M8	210 A	420 A
Ref 3591	70 mm²	200 cm	M8/M8	300 A	600 A
Ref 2976	16 mm <sup>2</sup>	100 cm x 2	M8/M8		
Ref 2754	25 mm <sup>2</sup>	100 cm x 2	M8/M8	210 A / 2,5 kW	420 A / 10 kW
Ref 2761	35 mm <sup>2</sup>	100 cm x 2	M8/M8	300 A / 3,6 kW	600 A / 14,4 kW
Ref 2778	50 mm <sup>2</sup>	100 cm x 2	M8/M8	430 A / 5,1 kW	860 A / 20,6 kW
Ref 2785	70 mm <sup>2</sup>	100 cm x 2	M8/M8	600 A / 7,2 kW	1200 A / 28,8 kW

Cross-section = copper resistivity (=0.021) x length (in meters) x current / permissible voltage drop in value (3% for an optimal supply)

M8/NU POWER CABLES			<b>V</b>		
				12 V battery fleet Δ V < 3%	24 V battery fleet Δ V < 3%
	Cross section	Length	Terminals	Max. current	Max. current
Multi-use	l	l	l M8/NU	I	l
Ref 1832	25 mm <sup>2</sup>	150 cm	M8/NU	140 A	280 A
Ref 2440	35 mm <sup>2</sup>	150 cm	M8/NU	200 A	400 A
Ref 2457	50 mm <sup>2</sup>	150 cm	M8/NU	285 A	570 A
Ref 2464	70 mm <sup>2</sup>	150 cm	M8/NU	400 A	800 A

#### I MO/MIN DOWED CARLES

M8/M1U	POWER CABL	.E5		12 V battery fleet Δ V < 3%	24 V battery fleet Δ V < 3%
	Cross section	Length	Terminals	Max. current	Max. current
Multi-use			M8/M10		
Ref 1801	25 mm <sup>2</sup>	40 cm	M8/M10	530 A	1050 A
Ref 2310	35 mm <sup>2</sup>	40 cm	M8/M10	750 A	1500 A
Ref 2327	50 mm <sup>2</sup>	40 cm	M8/M10	1050 A	2100 A
Ref 2334	70 mm <sup>2</sup>	40 cm	M8/M10	1500 A	3000 A
Ref 2341	95 mm²	40 cm	M8/M10	2000 A	4000 A
Ref 2433	25 mm <sup>2</sup>	150 cm	M8/M10	140 A	280 A
Ref 2396	35 mm <sup>2</sup>	150 cm	M8/M10	200 A	400 A
Ref 2402	50 mm <sup>2</sup>	150 cm	M8/M10	285 A	570 A
Ref 2419	70 mm <sup>2</sup>	150 cm	M8/M10	400 A	800 A
Ref 2426	95 mm <sup>2</sup>	150 cm	M8/M10	540 A	1080 A

M10/M10 POWER CABLES					
			12 V battery fleet Δ V < 3%	24 V battery fleet Δ V < 3%	
	Cross section	Length	Terminals	Max. current	Max. current
Multi-use	'	1	M10/M10	1	I
Ref 2358	50 mm <sup>2</sup>	40 cm	M10/M10	1050 A	2100 A
Ref 2365	70 mm <sup>2</sup>	40 cm	M10/M10	1500 A	3000 A
Ref 2372	95 mm²	40 cm	M10/M10	2000 A	4000 A

NEW

#### I M10/NU POWER CABLES

M T U / N U	POWER CABL	.E3	100		
				12 V battery fleet Δ V < 3%	24 V battery fleet Δ V < 3%
	Cross section	Length	Terminals	Max. current	Max. current
Multi-use	I	I	l M10/NU	l	l
Ref 2471	25 mm <sup>2</sup>	150 cm	M10/NU	140 A	280 A
Ref 2488	35 mm <sup>2</sup>	150 cm	M10/NU	200 A	400 A
Ref 2495	50 mm <sup>2</sup>	150 cm	M10/NU	285 A	570 A
Ref 2501	70 mm <sup>2</sup>	150 cm	M10/NU	400 A	800 A

UNIMPPT L

#### I INTUITIVE LCD SCREEN







Instantaneous production power in Watt, instantaneous production current (A), instantaneous voltage (V), and production history (kWh).





Instantaneous battery voltage (V), battery technology, instantaneous charge and discharge current (A).





Instantaneous DC current consumed (A), instantaneous power consumed (W), instantaneous DC output voltage, and consumption history (kWh).



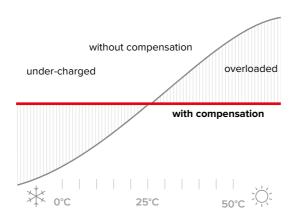
## PERFECT CHARGE ADAPTED TO BATTERY'S TECHNOLOGY

Voltage thresholds

Gel battery	AGM battery	Flooded battery	
	Boost		
14,2 V	14,4 V	14,5 V	
Absorption			
-	14,4 V	14,5 V	
Leveling			
-	-	14.8 V	
	Floating		
13,9 V	13,9 V	13,9 V	

Algoteck adjusts the levels according to the internal analysis of the battery and the ambient temperature.

## PERFECT CHARGE ADAPTED TO AMBIENT TEMPERATURE



The chemical characteristics of the battery vary according to the ambient temperature. Thanks to its temperature sensor, UNIMPTT regulates all its voltage thresholds, compared to a reference temperature of 25°C of +/-30mV per °C.

Without regulation, the battery is either under-charged, limiting the electric autonomy, or overloaded, irreversibly degrading its life.

#### **■ HIGH EFFICIENCY**

1st price	UNIMPPT
Output	at 20W
95%	98%
Output	at 50W
90-95%	98%
Output at ma	ax. capacity
< 90%	98%

UNIMPPT SOLAR Charge controller

## A CONCENTRATE OF TECHNOLOGY



The UNIMPPT range revolutionizes the market of charge controllers.

Its charging curve charges to 100% while taking into consideration the technology of your battery and the ambient temperature to adjust its voltage thresholds according to the recommendations of battery manufacturers

MPPT technology (converter/regulator), UNIMPPT also uses the entire panel voltage by converting the excess panel/battery voltage, not used by a standard regulator, into charging current for the battery.

The optimized MPPT program, coupled with one of the fastest microprocessors on the market, searches in real time (every 100 ms) for the maximum power point of the panel.

UNIMPPT guarantees up to 40% more energy in winter and 15% more in summer than a PWM regulator, even in poor weather conditions.

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UNITECK

Evolved MPPT Technology

Management and monitoring of production

PWM controller, even under the most changing even in the most changing climatic conditions.

Its unique and innovative design allows a perfect and discreet integration in your home or car interior.

The UNIMPPT L also features an intuitive LCD display for precise monitoring of panel production, battery charge and power consumption via its controlled 12/24V output.

## EASIER CABLING AND MOUNTING

#### Wall mounting



Wiring by partition



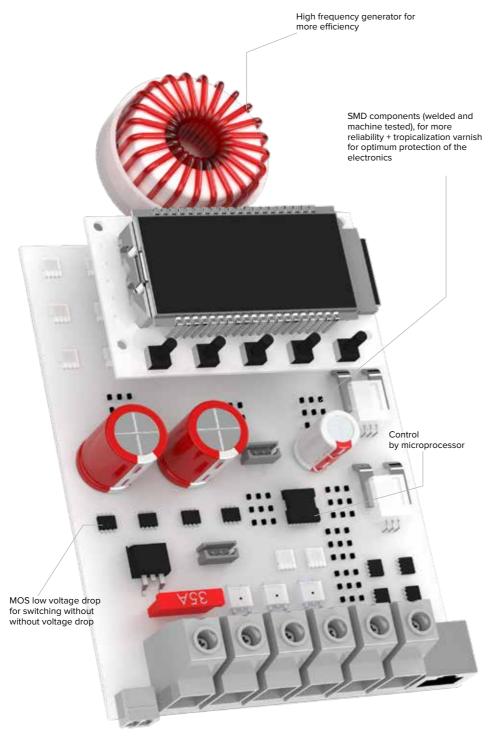
Normal wiring



UNIMPPT 100/50.24S, 100/60.24S



#### I ADVANCED CONCEPTION



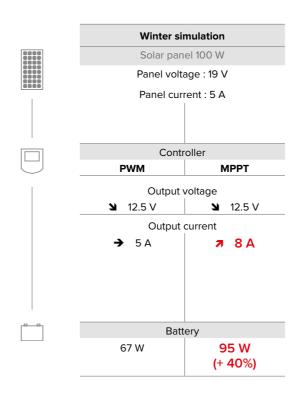
UNIMPPT 60/10.24L, 60/20.24L, 100/30.24L, 100/40.24L



Maximum Power Point Tracking

## MPPT VS PWM 20 TO 40% MORE ENERGY

Unlike a PWM regulator, that lowers the panel's voltage to the battery's voltage, an MPPT (inverter charge controller) uses all of the panel's voltage by reconverting the voltage surplus of panel/battery voltage not used by the battery into charging current (amperes).



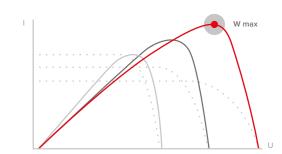
In summer, the panel voltage decreases with the ambient temperature (average V: 16-17 V), the average gain of a MPPT compared to a PWM is 20%.

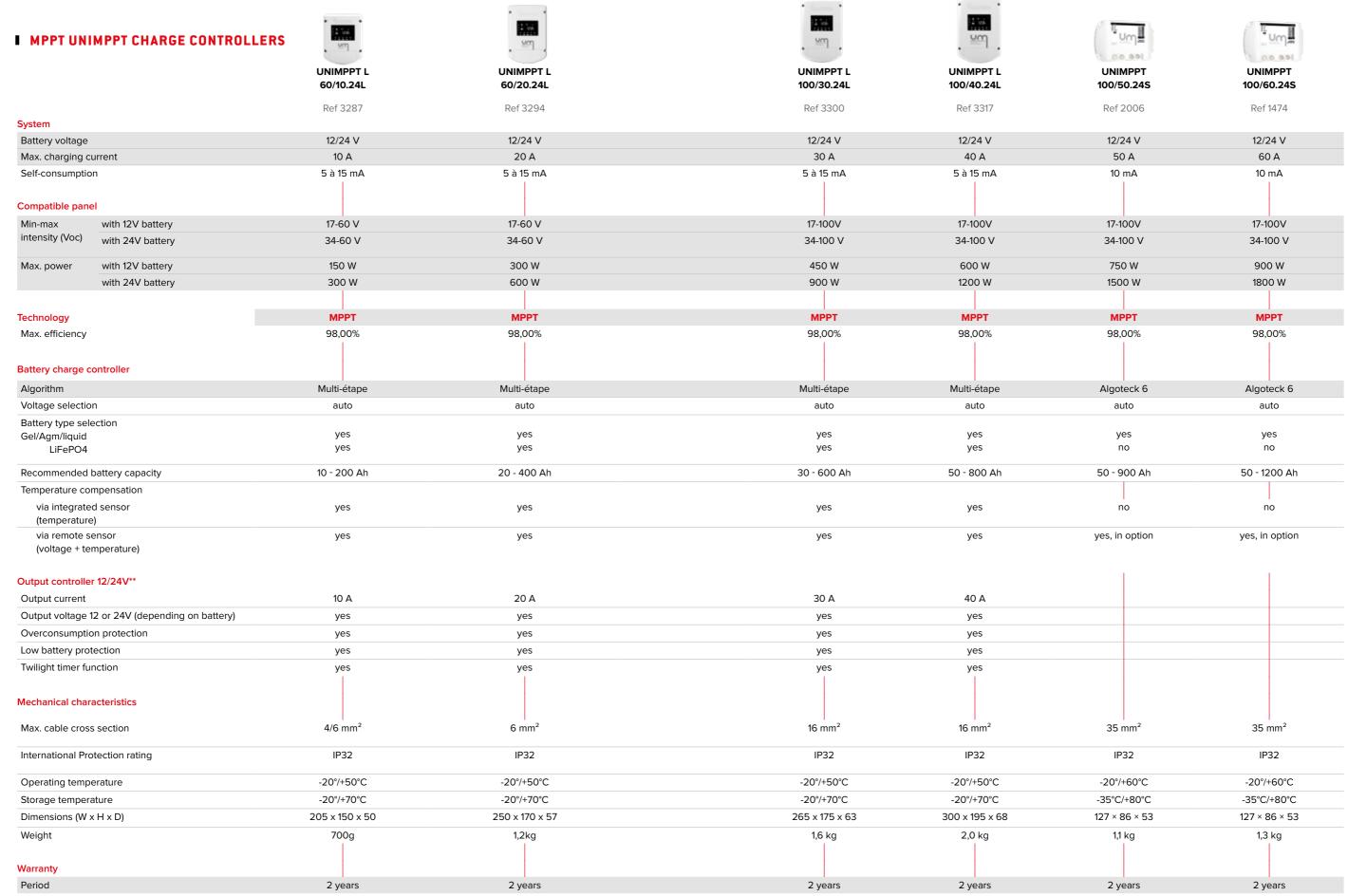


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#### ■ UNIMPPT FAST TRACK

Due to clouds and shadows, the light intensity changes rapidly. Thanks to its Fast Track MPPT program and its ultra fast microprocessor, UNIMPPT searches for the maximum power point of the solar panel and then modifies in real time its conversion parameters (input / output) for maximum power.





<sup>\*</sup> Equipped with an output controller, UNIMPPT directly supplies your 12 or 24 V electrical devices (depending on the connected battery).

UNIMPPT protects your battery against deep discharges of the battery thanks to a low battery voltage cut, with automatic recovery of the power supply when the battery charge level is sufficient.

Warning: this output is not adapted for an DC-AC inverter connection.



#### UNISENSOR

Ref 0408

Remote sensor:

measures voltage and

temperature directly at the battery's terminal for a more accurate charge. RJ45 cable (3m).

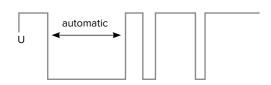
 $W \times H \times D = 55 \times 40 \times 30 \text{ mm. } 30g.$ 

For UNIMPPT 100/50.24S, 100/60.24S.

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#### **I PMW CHARGING TECHNOLOGY**

\* Pulse Width Modulation



- Charges by modulating current pulses.
- Recharges faster (than an ON/OFF charge controller).
- Reduces internal battery heating.
- Lowers the panel voltage to the charging voltage of the battery

#### I EASIER CABLING AND MOUNTING



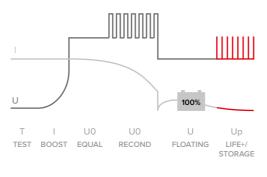
Wall and/or DIN rail mount



Normal wiring or through a partition wall



#### **CHARGING CURVE UNIQUE** ON THE MARKET



Test

Analysis of the battery's status.

Boost charge



Fast charge at maximum power

Equalisation

Equalization of the charge to 100% on all the elements of the battery.



Recondition



Battery stirring to prevent stratification. Electrolyte mixing of the battery to avoid all sulfation and stratification





Maintaining the charge at 100% (floating).



Life+/Storage



Compensation of the natural self-discharge of the battery, with pulsed charge for more battery life.

The chemical properties of the battery change according to the ambient temperature.

With its external incorporated temperature sensor, UNISOLAR regulates its end of-charge voltage, related to a reference temperature of 25°C, with +/-30mV per °C.

Without any regulation, the battery is either under loaded, limiting the electrical autonomy, or overloaded, irreversibly damaging its lifespan.

## UNITECK



Tests, charges at 100%, avoids sulfation and stratification, maintains the charge and improves the battery life.



Charges all lead-acid batteries thanks to its regulation admin thanks to its regulation adapted to every type of battery.



Regulates the voltage according to the ambient temperature, to avoid over- or under-charging.



Protects against surges, overconsumption, short circuits, polarity reversals, low battery



#### UNISOLAR PWM Solar Charge controllers

## **EVOLVED ELECTRONICS**

The Unisolar range revolutionizes the charge controller market.

UNISOLAR controllers incorporate an unique 6-step charging algorithm, Algoteck 6, which tests your battery, charges it at 100%, desulfates it, delaminates it, maintains its charge and improves its lifetime while taking into account the ambient temperature to adjust its voltage thresholds according to the recommendations of the battery manufacturers (integrated temperature sensor).

With its unique and innovative design, and its possible wiring through walls, UNISOLAR perfectly integrates into the passenger compartment of your vehicle or in your residence.

Its intuitive interface enables an easy access to necessary information in order to optimize the charge and your power consumption.

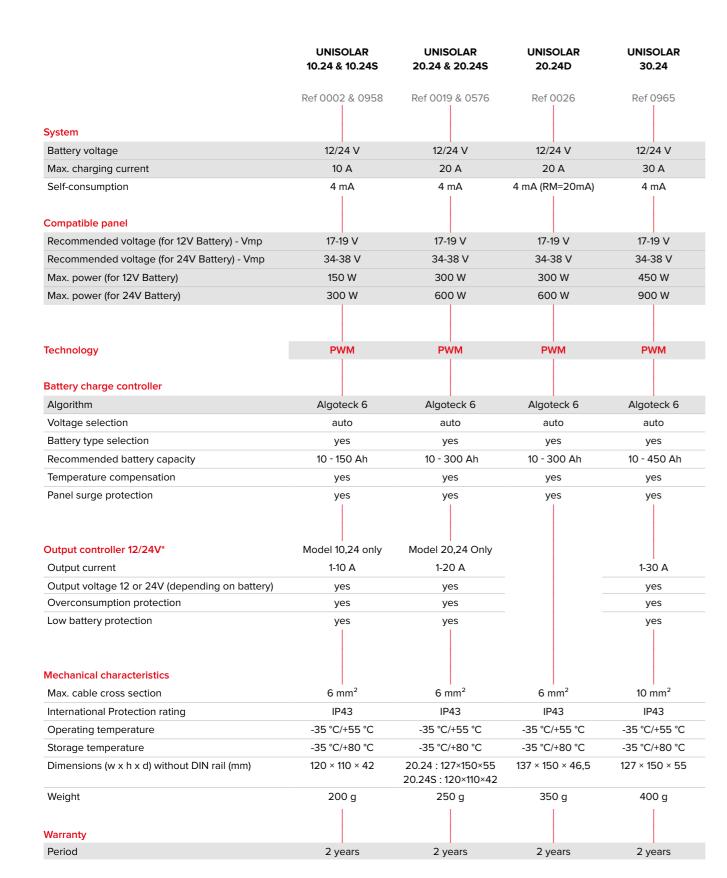
Its mechanical conception provides a high level of protection, preserving the electronics against dust.







European standard EN 60335-2-29



<sup>\*</sup> Equipped with an output controller, UNISOLAR directly supplies your 12 or 24 V electrical devices (depending on the connected battery). UNISOLAR protects your battery against deep discharges of the battery thanks to a low battery voltage cut, with automatic recovery of the power supply when the battery charge level is sufficient.

Warning: this output is not adapted for an DC-AC inverter connection.

#### UNISOLAR PWM Charge controllers

#### I ONE BATTERY



#### UNISOLAR 10.24



10 A - 12/24 V 12/24 V output controller Max Panel power: 150 W ( □ 12 V) 300 W ( □ 24 V) Ref 0002



#### **UNISOLAR 10.24S**



One battery 10 A - 12/24 V Max Panel power: 150 W ( 

12 V) 300 W ( 

24 V) Ref 0958



#### **UNISOLAR 20.24**



One battery
20 A - 12/24 V
12/24 V output controller
Max Panel power:
300 W ( 12 V)
600 W ( 24 V)
Ref 0019



#### **UNISOLAR 20.24S**

One battery 20 A - 12/24 V Max Panel power: 300 W ( 12 V) 600 W ( 24 V) Ref 0576



#### **UNISOLAR 30.24**

One battony

One battery
30 A - 12/24 V
12/24 V output controller
Max Panel power:
450 W ( \(\sigma\) 12 V)
900 W ( \(\sigma\) 24 V)
Ref 0965

#### I TWO BATTERIES



#### UNISOLAR 20.24 D



Two batteries
20 A - 12/24 V
12/24 V output controller
Max Panel power:
300 W ( 12 V)
600 W ( 24 V)
Ref 0026



**→ A** • **Q** TEST min max %

#### **UNISOLAR RM**

Remote display for Unisolar 20.24D

Wall mounted or embedded into wall

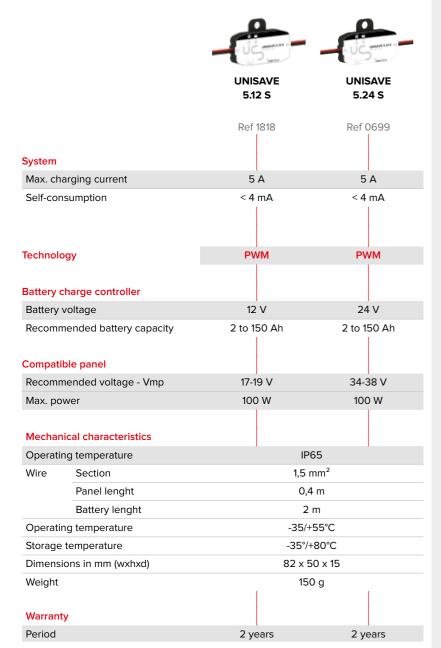
Enables complete control and configuration:

- Batteries 1 and 2 : current voltage, min., max., injected capacity
- Panel: voltage, instant current, max. current, injected capacity in Ah, frequency, priority (battery 1, battery 2)
- Temperature/time

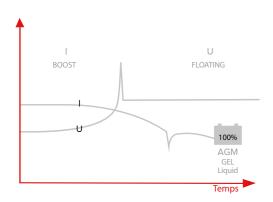
 $W \times H \times D =$ 110 × 120 × 53 mm 300g RJ45 - 8 m cable Ref 0033

UNISOLAR 20.24D + RM = UNISOLAR 20.24 DR

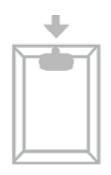
Ref 0040



## ADVANCED CHARGING CURVE



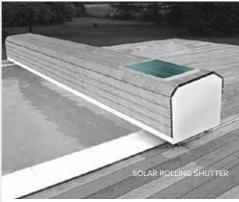
#### I EASY MOUNTING



Waterproof, UNISAVE can be fixed directly on the back of your panel.

#### I POTENTIAL INSTALLATIONS







UNISAVE PWM Charge limiter

## COMPACT AND WATERPROOF



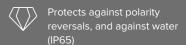


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NEW















UNISAVE 5.12 - 5.24 S is an evolved charge limiter for autonomous photovoltaic system, with PWM 5A 12 or 24V technology.

UNISAVE converts the electrical energy of your solar panel in charging voltage for your battery.

Thanks to its evolved electronic, Unisave regulates the charging voltage in two steps (Boost and Floating) and thus perfectly save all your lead batteries:

- -liquid electrolyte
- -jellified electrolyte (GEL)
- -AGM

With PWM technology, it ensures an optimal charge quality of your batteries 12-24V for a longer lifecycle.

Its mounting system and its integrated cable enable to fix it easily on the back of your panel without wrong connection risk.

Waterproof (IP65), UNISAVE is ideal for all outdoor applications (electrical fence, pool,...)



	80.12 AGM	100.12 AGM	150.12 AGM	220.12 AGM
System	Ref 1573	Ref 1580	Ref 1597	Ref 1603
Battery voltage	12 V	12 V	12 V	12 V
Nominal capacity 20 h (C20)	80 Ah	100 Ah	150 Ah	220 Ah
Power at 80% discharge (Wh)	0,75 Wh	0,95 Wh	1,43 Wh	2,10 Wh
Temperature characteristics		25°C 10°C	: 105% : 103% : 95% : 78%	
Self-discharge (25°)		3 mont	th : 3% hs : 8% ns : 15 %	
Internal resistance (25°C)	< 5,8 mΩ	< 5 mΩ	< 3,1 mΩ	< 2,5 mΩ

#### Performances

Nominal	20 h (C20)	80 Ah	100 Ah	150 Ah	220 Ah	
capacity	10 h (C10)	74 Ah	95 Ah	143 Ah	205 Ah	
	5 h (C5)	67 Ah	87 Ah	131 Ah	194 Ah	
	1 h (C1)	43 Ah	64 Ah	98 Ah	144 Ah	
Cycles (% of	20%		2000	2500		
discharge)	50%		900 >	1000		
80%		600 > 650				
	100%		350	400		
Maximum charging current		32 A	40 A	57 A	82 A	
Maximum	0,1 s	1600 A	1900 A	2860 A	4100 A	
discharge	5 s	640 A	760 A	1144 A	1640 A	
current	continuous	240 A	285 A	430 A	615 A	
Cold start cha (CCA-EN)	arging current	630A	650A	880A	1120A	
Permanent 25°C		10-11 years				
load performance	30°C		7 ye	ears		
(floating life)	35°C		4 ye	ears		

3 years

#### Mechanical characteristics

40°C

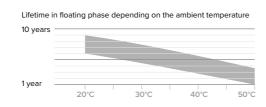
Characteristics				
Connector technology	М8 сорг	oer nickel-silv	er plated bra	ss insert
Shape of plates	flat			
Plate material	pure lead at 99,9%			
Separator	A	AGM (Absorpt	tive Glass Ma	t)
Electrolyte	absorbed			
Case material	high-strength polypropylene			
Operating temperature		-15/+	40°C	
Dimensions (w x h x d)	368 × 219 × 172 mm	368 × 219 × 172 mm	522 × 221 × 240 mm	522 × 221 × 240 mm
Weight	27 kg	29,5 kg	43,5 kg	58,5 kg
Warranty				
Period	2 years	2 years	2 years	2 years



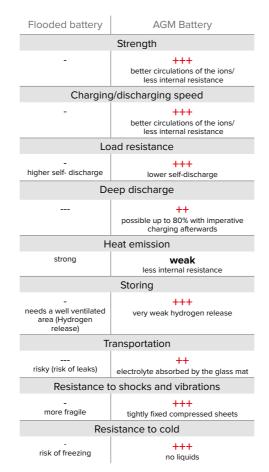
#### I 1,5 TO 2 X MORE CYCLES\*



#### ■ UP TO 2 X LONGER LIFETIME\*



#### STANDARD FLOODED BATTERY VS AGM



<sup>\*</sup> compared to most AGM batteries on the market

## UNITECK





Higher charge/ discharge cycling capacity compared to other AGM x 2 batteries on the market



High discharge rates (imperative recharging afterwards)



Longer lifespan than other AGM batteries



self-discharge



Advanced technological design (pure lead, carbon additive, machine pressed high density grid)



Possible inclination (until 30°)

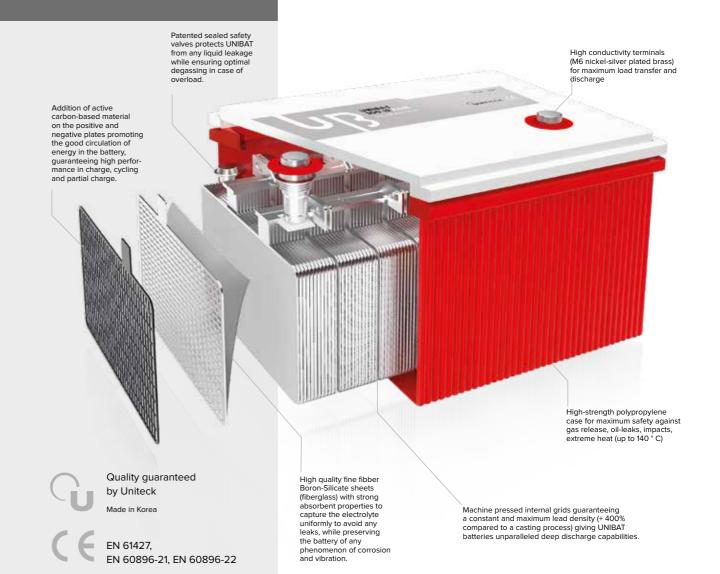
#### UNIBAT AGM Batteries

## HIGH **EFFICIENCY**

Equipped with an advanced technological design (compressed high density pure lead grid, highly absorbent glass mat, carbon additive ...) UNIBAT AGM batteries perform up to 2 times better in cycling and lifespan than most batteries of the same category on the market.

Thanks to their unique internal design, UNIBAT AGM batteries can accept discharge rates up to 80% to make the most of the available energy. Their weak self-discharge guarantees a good stability over time.

Its AGM technology guarantees safe use without leaks or gas release.





	UNIBAI	UNIBAI	UNIBAI	UNIBAI
	80.12 GEL	100.12 GEL	150.12 GEL	220.12 GEL
System	Ref 1610	Ref 1627	Ref 1634	Ref 1641
Battery voltage	12 V	12 V	12 V	12 V
Nominal capacity 20 h (C20)	80 Ah	100 Ah	150 Ah	220 Ah
Power at 90% discharge (Wh)	0,85 Wh	1,08 Wh	1,61 Wh	2,36 Wh
Temperature characteristics		25°C 10°C	: 105% : 103% : 95% :: 78%	
Self-discharge (25°)		3 mon	th : 3% ths : 8% ths : 15%	
Internal resistance (25°C)	< 5,8 mΩ	< 5 mΩ	$<$ 3,1 m $\Omega$	$<$ 2,5 m $\Omega$

Performances						
Nominal	20 h (C20)	80 Ah	100 Ah	150 Ah	220 Ah	
capacity	10 h (C10)	74 Ah	95 Ah	143 Ah	200 Ah	
	5 h (C5)	70 Ah	87 Ah	131 Ah	191 Ah	
	1 h (C1)	56 Ah	64 Ah	99 Ah	135 Ah	
Cycles (% of	20%		3000	3500		
discharge)	50%	1500 > 1750				
	80%	800 > 900				
	100%		350	400		
Maximum charging current		20 A	25 A	37,5 A	55 A	
Maximum	0,1 s	1600 A	1900 A	2860 A	4000 A	
discharge	5 s	640 A	760 A	1140 A	1600 A	
current	continuous	240 A	285 A	430 A	600 A	
Cold start cha CCA-EN	rging current	630 A	650 A	880 A	1120 A	
Permanent	25°C		13 - 15	years		
load	30°C	C 9 - 10 years				
performance (floating life)	35°C		6 ye	ears		
, , , , , , , , , , , , , , , , , , , ,	40°C		4 ye	ears		

### Mechanical

characteristics				
Connector technology	М8 сор	M8 copper nickel-silver plated brass insert		
Shape of plates		flat		
Case material	high	ı-strength pol	ypropylene p	lastic
Electrolyte		jellified		
Material of plates		pure lead at 99,9%		
Operating temperature		-20/-	+50°C	
Dimensions (w x h x d)	368 × 219 × 172 mm	368 × 219 × 172 mm	522 × 221 × 240 mm	522 × 221 × 240 mm
Weight	27,5 kg	30 kg	45 kg	59 kg
Warranty				
Period	2 years	2 years	2 years	2 years



#### ■ 1,5 TO 2 X MORE CYCLES\*

100%	100%	100%	100% <u>100%</u>
<b>↓↑</b> 100%	<b>↓</b> ↑80%	<b>↓</b> ↑50%	↓ <b>↑</b> 20%
× <b>350-400</b>	× <b>800-900</b>	× <b>1500-1750</b>	× <b>3000-3500</b>

#### ■ UP TO 2 X LONGER LIFETIME\*

15 years —	
1 year —	

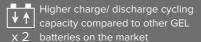
#### STANDARD FLOODED BATTERY VS GEL

Flooded battery	UNIBAT GEL Battery		
St	rength		
-	++ better circulations of the ions/ less internal resistance		
Charging/ di	scharging speed		
-	++ better circulations of the ions/ less internal resistance		
Load	resistance		
- higher self- discharge	+++ weak self-discharge		
Deep	Discharge		
	+++ can handle very deep discharges 90% with imperative charging afterwards		
Maintenance			
- water level to be checked and refilled regularly	+++ recombining gas technology that avoids any loss of water		
Heat emission			
Strong	Weak less internal resistance		
S	toring		
needs a well ventilated area (Hydrogen release)	+++ very weak hydrogen release		
Gas	release		
high	weak in case of overload.		
Trans	sportation		
risky (risk of leaks)	+++ jellified Electrolyte		
resistance to sh	ocks and vibrations		
- more fragile	+++ tightly fixed compressed sheets		
Resista	ince to cold		
risk of freezing	+++ no liquids		

\* compared to most GEL batteries on the market

## UNITECK











self-discharge



Advanced technological design (pure lead, carbon additive, machine pressed high density grid)



until 90° (on its length or width)

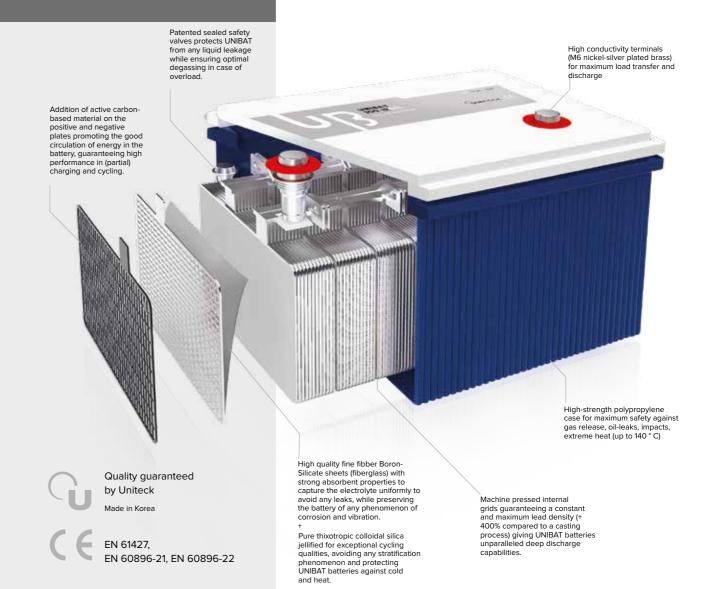
#### UNIBAT GEL Batteries

## HIGH **EFFICIENCY**

Equipped with an advanced technological design (compressed high density pure lead grid, pure silica jellified, carbon additive ...) UNIBAT GEL batteries perform up to 2 times better in cycling and lifespan than most batteries of the same category on the market.

Thanks to their unique internal design, UNIBAT GEL batteries can accept discharge rates up to 100% to make the most of the available energy. Their weak self-discharge guarantees a stability over time.

Its GEL technology guarantees safe use without leaks or gas release.





## ADVANCED ELECTRONIC ARCHITECTURE

- + efficency
- selfconsumption
- = more energy

ex: of a quasi sinus	Other (entry level price range)	UNIPOWER
conversion rate	80-85%	87%
self-consumption/ hour	0,4-0,5 Ah	0,25 Ah

Simulation of a 100 Ah battery

converted energy	85 Ah	87 Ah
self-consumption over 24h	10 Ah	5 Ah
restored energy	75 Ah	82 Ah

#### 10% to 20%\*

more energy

\*If maximum discharge is set at 50%



Advanced electronic architecture



Robust mechanics



Powerful USB Socket



Remote display and control

#### THE 12 V>230 V/24 V>230 V RANGE



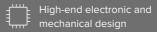
To supply your 230V electrical devices with your 12V or 24V battery.

#### I THE DC>DC RANGE



To supply your 12V electrical devices with your 24V battery. Ideal for lighting applications or for supplying 12V electrical devices.

## UNITECK









Protected against overloads, overconsumption, short circuits, reverse polarity, low battery

UNIPOWER inverters

# TRANSFORMS YOUR BATTERY INTO A POWER SUPPLY



Quality guaranteed by Uniteck



Emission EMC : EN 55022 class B Susceptibility EMC : EN 55024, EN 61000-4-2, EN 61000-4-3, EN 61000-4-8 LVD : EN 60950-1 With an advanced electronic architecture coupled with robust mechanics (fans, connectors, wiring...), UNIPOWER has been developed for all uses, even the most intensive.

•

Thanks to their high conversion rate and their low self-consumption, the UNIPOWER range convert up to 20% more energy than a standard inverter.

Their broad range of operating temperature (- $10^{\circ}$ C to  $45^{\circ}$ C) guarantees an optimum functioning in any situation (hold of a boat, under vehicle seats...).

#### I QUASISINUS



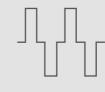
#### **WHICH DIFFERENCES BETWEEN QUASISINE AND PURE SINE WAVE?**

To supply your 230V electrical devices with your 12V or 24V battery.



The Pur Sinus models deliver a perfectly stable voltage, of the same quality as the electrical network.

They supply all appliances, even the most sensitive ones (espresso machine, fridge, etc...)



Quasi Sinus models generate a modified alternating wave. They are suitable for charging most electrical and electronic devices such as phones, cameras, laptops, lighting (excluding neon)...(1)

 $^{ ext{(1)}}$   $\underline{\Lambda}$  Technology not suitable for powering inductive loads: fridge, motor...

#### I HELP FOR CHOOSING YOUR INVERTER

Start-up peak (1 s.) 100 W 150W 200 W 350W 500 W 600 W 20 W 20 W 50 W 100 W 150 W 150 W 350 W 50 W 200 W Continuous power Quasi Sinus / Pure Sinus Q/P Q/P Q/P Q/P Q/P Q/P Q/P Q/P Q/P UNIPOWER 150.12 Q UNIPOWER 350.12 Q

1000 W 1200 W 1200 W 1000 W 600 W 800W Q/P

1200 W 1500 W 1200 W Q/P

1500W

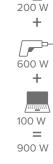
Q/P

1500 W 1500 W 1500 W

Q/P

1800 W 600 W





N.B.: Powers and inrush ratios are given on an indicative basis.

UNIPOWER 600.12 Q **UNIPOWER 1000.12 Q** 

**UNIPOWER 2000.12 Q** 

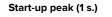
For more information, refer to the values indicated on the identification plate or in the user manual of the device that needs to be supplied.

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#### I HELP FOR CHOOSING YOUR INVERTER



Continuous power Quasi Sinus / Pure Sinus

10 W 5 W 20 W

20 W 20 W 20 W 50 W 100 W

20 W 20 W 20 W 50 W 100 W



Q/P

Q/P



Q/P



150 W

Q/P

150 W

Q/P



350 W

Q/P



Q/P



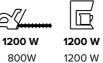








Q/P



Q/P



Q/P



Q/P



Q/P



Q/P



24 V > 12 V DC



900 W

24 V > 230 V

**UNIPOWER 150.24 Q UNIPOWER 350.24 Q** UNIPOWER 600.24 Q

**UNIPOWER 1000.24 Q UNIPOWER 2000.24 Q** 

24 V > 12 V DC UNIPOWER 200.12 DC

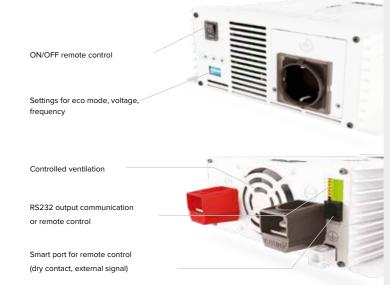
N.B.: Powers and inrush ratios are given on an indicative basis. For more information, refer to the values indicated on the identification plate or in the user manual of the device that needs to be supplied. •

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#### **ADVANCED ELECTRONIC** ARCHITECTURE



#### **START/STOP CONTROL &** SMART SELF-CONSUMPTION





#### **■ PURE SINE**

UNIPOWER PRO MODELS provides a perfectly stable voltage (THD<2,5%), even on high current

It powers thus all the devices, even the most sensitive ones with a current similar to the electric grid

#### **HIC TECHONLOGY** HIGH INRUSH CAPACITY



UNIPOWER PRO is equipped with "HIC-High Inrush Capacity" Technology, unique on the market, which provides the maximum power on a period of time twice longer than most of the inverters (peak power = 3sec.).

This Technology is adapted to use inductive charges (fridge, motor, etc...) without oversizing the

#### **I ADAPTABILITY**





UNIPOWER PRO is supplied with 2 connections: EU outlet and direct connection (except for 3600W, direct connection only, EU outlet unsuitable for these powers)

## UNITECK



Perfectly stable voltage thanks to its Pure Sine wave (<2,5% THD)



Constant & high



High quality electronic and mechanical design



Compact and



"High Inrush Capacity" Technology to supply





Device "Safe Connect" Protection against polarity reversal



ON Advanced On/Off



Wide operating temperature range



Remote control in option - 5M. ref.0637



Quality guarantee by Uniteck Made in Taiwan, Developed in France

UNIPOWER PRO power inverters

## **PURE SINE WAVE HIGH PERFORMANCE**



UNIPOWER PRO is the range of high performance 12-24V > 230V pure sine wave power inverters.

Thanks to its integrated microprocessor, UNIPOWER PRO provides a perfectly stable voltage with the same quality as the electric grid (pure sine wave), ideal to safely power all your electrical devices.

UNIPOWER PRO can thus supply all inductive charges (fridges, motors), without having to use an oversized inverter.

Thanks to its automatic standby mode, UNIPOWER PRO has one of the lowest self-consumption rates on the market.

Besides, UNIPOWER PRO offers a smart ON/OFF management controlled by:

- •the switch situated on the device,
- •the remote control (option),
- •an external signal from the battery positive terminal,
- •an external signal by dry contact.



#### UNIPOWER PRO 12V - 24 V > 230 V inverters 1200 **■ PURE SINE** 1000 1200 14 11 11 477 27" UNIPOWER 800.12 PRO 1200.12 PRO 1800.12 PRO 2400.12 PRO 3600.12 PRO 800.24 PRO 1200.24 PRO 1800.24 PRO 2400.24 PRO 3600.24 PRO Ref 2594 Ref 2600 Ref 1306 Ref 0910 Ref 0521 Ref 2853 Ref 2860 Ref 2877 Ref 2617 Ref 2624 System 24 VDC > 230 VAC Conversion 12 VDC > 230 VAC Power 1400W 2000W 4000W 6000W 1400W 2000W 3000W 4000W 6000W Peak power - 3 seconds 3000W 2400W Continuous power at 30°C 840W 1200W 1800W 3600W 840W 1200W 1800W 2400W 3600W Continuous power at 40°C 700W 1000W 1500W 2000W 3000W 700W 1000W 1500W 2000W 3000W Continuous power at 50°C 560W 800W 1200W 1600W 2400W 560W 800W 1200W 1600W 2400W 600W 1800W 420W 600W 900W 420W 900W 1200W 1200W 1800W Pure Sine (THD <2,5%) Pure Sine (THD <2,5%) Technology Self-consumption <1,85A <0,65A <0,8A <0,95A <1,1A Normal mode <1,3A <1,6A <1,8A <2,8A <1,5A <0.01A <0.01A Eco mode 92% 93% Maximum efficiency 91% 92% 92% 93% 92% 93% 93% 93% Input 10,5V - 16,5V 20V - 33V Input voltage range Overvoltage battery protection yes yes Low voltage battery protection yes yes Polarity reversal protection yes (electronics) yes (electronics) Output **⊗** • (Included: EU outlet and direct connection) (Direct connection only) (Included: EU outlet and direct connection) (Direct connection only) Output AC voltage 230V +/-3% (adjustable 200,220,240V) - 50 Hz (adjustable 60Hz) 230V +/-3% (adjustable 200,220,240V) - 50 Hz (adjustable 60Hz) Short-circuit protection yes yes

Overconsumption protection			yes					yes		
Command - Communication										
Remote control			option (ref. 0637)					option (ref. 0637)		
Command by dry contact			yes					yes		
(N.O./COM/N.C./GND/RSB-/RSB+)										
RS232 - Communication			yes					yes		
Mechanical characteristics										
International Protection rating			IP10					IP10		
Operating temperature			-20/+60 °C					-20/+60 °C		
Storage temperature			-30/+70 °C					-30/+70 °C		
Non-condensing humidity			95% max					95% max		
DC wire (no included)	Ref. 2754	Ref. 2754	Ref. 2761	Ref. 2778	Ref. 2785	Ref. 2754	Ref. 2754	Ref. 2754	Ref. 2761	Ref. 2761
	25 mm <sup>2</sup> - 1 m	25 mm <sup>2</sup> - 1 m	35 mm <sup>2</sup> - 1 m	50 mm <sup>2</sup> - 1 m	50 mm <sup>2</sup> - 1 m					
Dimensions (mm)	192x210x88,9	192x250x88,9	192x300x88,9	192x375x88,9	192 × 455 × 88,9	192x210x88,9	192x250x88,9	192x300x88,9	192x375x88,9	192 × 455 × 88,9
Weight without accessories	2,5kg	3,3kg	3,9kg	5,3kg	6,2kg	2,5kg	3,3kg	3,9kg	5,3kg	6,2kg
Warranty										
Period	2 years	2 years	2 years	2 years	2 years	2 years				

#### I HELP FOR CHOOSING YOUR INVERTER

		7/ \\	) (	•	0		/ <u></u>	(ئوموز)	E.	LCD	₩ 50L	<b></b>		<u></u>				禁 <sup>I</sup> 100L	$\mathcal{T}^{z}$	<b>≋</b> °	The state of the s	Nespresso		↓ +150L
Start up peak (3 s.)	10 W	30 W	20 W	20 W	20 W	50 W	100 W	150W	200 W	350W	500 W	600 W	750 W	1000 W	1200 W	1200 W	1200 W	1500 W	1500W	1500 W	1800 W	2250 W	2700 W	V 3000 W
Continuous power	5 W	20 W	20 W	20 W	20 W	50 W	100 W	150 W	150 W	350 W	50 W	200 W	500 W	1000 W	600 W	800W	1200 W	150 W	1500 W	1500 W	600 W	1500 W	450 W	300 W
<b>UNIPOWER PRO 800</b>	.12 - 800	0.24																						
LINIDOWED DDO 1200	012 - 12	00.24																						

UNIPOWER PRO 1800.12 - 1800.24

UNIPOWER PRO 2400.12 - 2400.24 UNIPOWER PRO 3600.12 - 3600.24

N.B.: Powers and inrush ratios are given on an indicative basis.

For more information, refer to the values indicated on the identification plate or in the user manual of the device that needs to be supplied.



/:::<u>:::</u>::::\ 100 W =

900 W

• NEW

G





UNICHARGE

8.12

UNICHARGE

412

	Rei II91	Rei IZU/	Rei 1214
System			
AC input voltage	230 V AC ±10% 50Hz	230 V AC ±10% 50Hz	230 V AC ±10% 50Hz
		~ ~	~ ~
DC output voltage	6 V-12 V	6 V-12 V	12 V
Maximum power	28 W	75 W	150 W
Charging technology	automatic, multi-stage	automatic, multi-stage	automatic, multi-stage

UNICHARGE

1,5.12

Battery			
Battery types	lead-acid liquid, AGM, gel	lead-acid liquid, AGM, gel	lead-acid liquid, AGM, gel
Accepted battery voltage	6 V-12 V	6 V-12 V	12 V
Battery capacity	8-40 Ah	2-120 Ah	10-250 Ah

ronago			
Battery capacity	8-40 Ah	2-120 Ah	10-250 Ah
Charge			
Charging intensity	1,5 A	1/4 A	2/8 A
Charging stages	4	8	9
Minimum battery	3,5 V	OV (manual)	OV (manual)
voltage		5 V (automatic)	5 V (automatic)
Connections			
Clamps	yes	yes	yes
Eyelets	yes	yes, with Charge	yes, with Charge
		control	control
Mechanical			

Evelets	yes	yes, with Charge	vas with Charge	
Lycicio	yes	control	control	
Mechanical				
characteristics				
Protection rating	IP65	IP65	IP65	
Operating temperature	-10°/+50°C	-10°/+50°C	-10°/+50°C	
Storage temperature	-20°/+70°C	-20°/+70°C	-20°/+70°C	
Dimensions in mm (wxhxd)	109×47×85	176,6×72,4×48,9	202,6×92,5×59,1	
Weight Warranty	250 g	530 g	740 g	
Period	2 years	2 years	2 years	
	•	•	•	

Standard eyelet connection

(for Unicharge 1.5.12 only - included with charger) Ref 0583



(for Unicharge 4.12/8.12 only -included with charger) Ref 0590



#### **PROLONGED** BATTERY LIFESPAN

Test Analysis of the battery's condition.

Repair sulfated battery\* Recovery of sulfated batteries (extended deep discharge).

Repair low battery\* Recovery of deeply discharged batteries.

Boost charge Fast charge at maximum power.

Equalisation

Equalisation of the charge at 100% on all battery elements.

Recondition Mixing of the battery in order to avoid all stratification phenomenon.

Charge Diagnostic Verification of the battery's ability to

hold the charge.

Keeping the battery's charge at 100% (floating).

Life+/Storage

Compensation of the natural selfdischarge of the battery, with pulse charge for more battery lifespan.

\*UNICHARGE 4.12 and 8.12 only \*\*UNICHARGE 8.12 only





#### UNICHARGE battery chargers

## REPAIRS, RECHARGES **AND PRESERVES** YOUR BATTERIES

With a last generation multi-stage charging algorithm, UNICHARGE perfectly recharges all the way to 100% and without supervisison all lead-acid batteries: liquid electrolyte, flooded and AGM (maintenance-free).

Designed and developed for all uses, UNICHARGE is the ideal charger to recharge solar batteries, vehicle batteries (car, motorcycle, scooter, snow scooter, tractor, agricultural machines), boat batteries, alarm batteries, fence

UNICHARGE 4.12 and 8.12 are much more than simple standard chargers, they:

• repair and recharge deeply discharged batteries (>0V),

• repair batteries which could have started a stratification process,

• preserve batteries from all stratification phenomenon (recondition mode, 8.12 model),

 avoid self-discharge of the batteries during long winters or storage periods while improving their lifespan.

UNICHARGE is fitted as standard with a clamp connection kit, but also with an eyelet connection kit, ideal for regular charges or for hard to access batteries.

Moreover, the 4.12 and 8.12 models are equipped with charge control technology on their eyelet connection, which allows to visually and simply check the level of charge of your battery.

#### UNICHARGE

	1,5.12	4.12	8.12
150-200 Ah	80-107 h	30-40 h	15-20 h
60-150 Ah	32-80 h	12-30 h	8-15 h
80-150 Ah	43-80 h	16-30 h	8-15 h
45-120 Ah	24-64 h	9-24 h	4.5-12 h
0-≦0 10-30 Ah	5-16 h	2-6 h	1-3 h
5-5 10-30 Ah	5-16 h	2-6 h	1-3 h
5-20 Ah	3-11 h	1-4 h	0.5-2 h

Indicative duration for a 80% charge

x-x h recommended

X-X h adapted but the charge may be longer or too fast compared to a recommended charger

## UNITECK



Tests, charges at 100%, avoids sulphation and stratification, maintains the charge and improves the battery's lifespan.



Automatically memorizes and restarts with the last mode in use in case of power failure Polarity reversals, short circuits, thermal, sparks



Protected against dust and water projections (IP65)









120.24/2

160.24/3

200.24/3

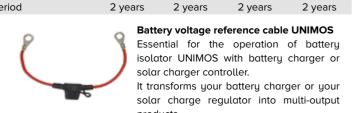
	Ref 1399	Ref 1511	Ref 1405	Ref 1412
System				
ystem				
echnology	MOS	MOS	MOS	MOS
Operating voltage	12/24 V	12/24 V	12/24 V	12/24 V
Max. intensity	80 A	120 A	160 A	200 A
Battery				
Accepted battery roltage	12/24 V	12/24 V	12/24 V	12/24 V
· · · · · · · · · · · · · · · · · · ·				

80.24/2

Charge Max. current		80 A	120 A	160 A	200 A
voltage drop	10 A	0 V	0 V	0 V	0 V
at end of	20 A	0,01 V	0,01 V	0,01 V	0,01 V
charging cycle	50 A	0,05 V	0,05 V	0,05 V	0,05 V

yes	yes	yes	yes
yes	yes	yes	yes
80 A	120 A	160 A	200 A
	yes	yes yes	yes yes yes

Mechanical characteristics				
Operating temperature	-20°/+60°C	-20°/+60°C	-20°/+60°C	-20°/+60°C
Storage temperature	-30°/+80°C	-30°/+80°C	-30°/+80°C	-30°/+80°C
Dimensions in mm (wxhxd)	110×70×35	110×70×35	145×85×35	145×85×35
Weight	125 g	135 g	300 g	300 g
Warranty				



Period

Number of outputs

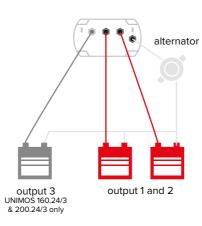
#### Battery voltage reference cable UNIMOS

Essential for the operation of battery isolator UNIMOS with battery charger or solar charger controller.

It transforms your battery charger or your solar charge regulator into multi-output products.

Ref 2303

#### CENTRALISED CHARGING MANAGEMENT



#### **■ OPTIMISED RESTITUTION**

Load distributor					
with a diode	with a standard MOS system	UNIMOS			
	compactnes	S			
	+	+++			
rest	ituted charging	power			
- loss 3 > 6%	+ loss 0,5 > 4%	+++ loss 0,01 > 0,5%			
resti	tuted charging	voltage			
- loss 0,7 V	+ loss 0,1 > 0,2 V	+++ loss 0,01 V			

#### **■ PERFECT CHARGE**

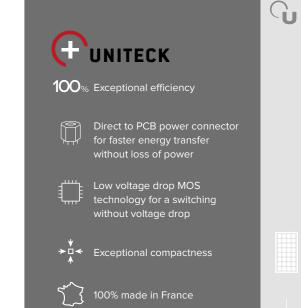
UNIMOS guarantees a 100% charge of your battery

#### Load distributor

with a diode	with a standard MOS system	UNIMOS
alte	nator charging	power
14,2 V	14,2 V	14,2 V
voltag	e drop due to d	cable (2%)
-0,3 V	-0,3 V	-0,3 V
voltag	e drop due to	distributor
-0,7 V	-0,2 V	-0,01 V
output	voltage from o	distributor
13,2 V	13,7 V	13,9 V
	tery's charging and of charge 13,9V f	
80%	90%	100%
-07 V	-0 2 V	0.17

UNIMOS battery isolators

## **COMPACTNESS & PERFORMANCE**





#### MOS LOW VOLTAGE DROP TECHNOLOGY



The UNIMOS range is revolutionizing the market of battery isolators. UNIMOS distributes the charge of your alternator, battery charger or solar charge controller on each of your batteries without power loss while isolating each battery to prevent them from unloading each other.

Thanks to its latest generation electronics (Low Voltage Drop MOSFET) combined with its power connectors directly soldered on the electronic board, UNIMOS offers:

- exceptional compactness
- (up to ×5 smaller),
- up to ×10 less power loss compared to other MOSFET battery Isolators on the market,
- a faster charge,
- a gain in energy and / or fuel.

#### I COMBINER/SPLITTER



12V DC

9-15V DC

#### System

Battery voltage

Operating voltage

5 5				
Technology	3 '	Single microprocessor controlled high power relay		
Relay self consumption open/closed	10 mA / 600 mA	0 mA / 580 mA		
Disconnection voltage	12,8V	12,8V		
Connection / reconnection	13,4V	+APC/86 terminal active		
Connection delay	10 s. +/- 5%	10 s. +/- 5%		
Nominal current	160A	160A		
Peak current	500A during 1s at 23°C	500A during 1s at 23°C		
Performance	100 000 contacts	100 000 contacts		

### Connection on the vehicle or charger

Recommended cable section

1 m	6 mm <sup>2</sup>	6 mm <sup>2</sup>
2 m	10 mm <sup>2</sup>	10 mm <sup>2</sup>
3 m	16 mm²	16 mm <sup>2</sup>
4 m	25 mm <sup>2</sup>	25 mm <sup>2</sup>
5 m	35 mm <sup>2</sup>	35 mm <sup>2</sup>
6 m	50 mm²	50 mm <sup>2</sup>

#### Mechanical characteristics

Period

International protection rating	IP53	IP53
Plastic material	PA66 - GF30	PA66 - GF30
Battery connectors	M6 copper connector	M6 copper connector
Other terminals	Faston 6,3 x 0,8	Faston 6,3 x 0,8
Operating temperature	-40°C - + 85°C	-40°C - + 85°C
Dimensions in mm (wxhxd)	77x46x16 mm	77x46x16 mm
Weight	300 g	300 g
Warranty		

2 years

# Designation of the last of the

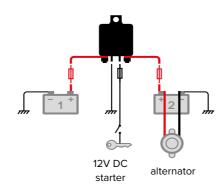
#### Isolator/ combiner fuse protection kit

Protects your installation and your battery against malfunctions (short circuit, battery fault, overcurrent ...).

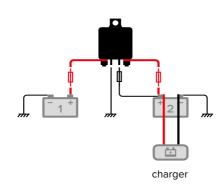
2 years

Included: fuse and fuse holder (150A x2 + 5A x1)
Ref 1313

## USE WITH VEHICLE WITH ALTERNATOR



#### I OFF-GRID USE



## MONO-BLOCK RELAY OF HIGH POWER



Unlike low cost combiner which integrates 2 low power relays in parallel, UNISPLIT has a high power mono-block relay thus avoiding all synchronization risks, for more reliability.

UNISPLIT combiner/splitter

# PERFORMANCE & ROBUSTNESS

UNISPLIT is the ideal combiner/separator for your applications on vehicles, boats or isolated sites.

Equipped with a high power monobloc relay (160A), UNISPLIT 160.12 has been developed to guarantee optimum operation on most alternators, even those of the most recent vehicles with a charging current greater than 120A.

#### UNISPLIT thus allows:

- to charge an entire battery bank as soon as a load (alternator, charger...) is detected on the main battery by coupling the batteries together,
- to avoid self-discharge by disconnecting them as soon as the charge is stopped

For applications on vehicles, thanks to its

(technology not adapted for this use).

Save Batt. UNISPLIT couples the batteries only after the starting phase.

UNISPLIT thus avoids all the important current calls of the starter (>500A during several seconds) that are harmful to the separator-couplers and service batteries







Broad range of operating temperature
(-40/+85°C)

Operates with an alternator and/ or charger G

NEW



Quality guaranteed by Uniteck, Packaged in France



EN 61000-6-3 : 2007 EN 6100-6-1 : 2007 95/54/EC : 1995



#### Standards

	Euro 1 - 5	Euro 6 +
	(Vehicle < 15 sept 2015)	(Vehicle < 15 sept 2015)
		Intermittently if the engine is on:
Onovetion	Alwaya ON	-After starting up until partial charge
Operation Alternator	Always ON if engine on	(14.2 V - 14.6 V very punctually)
		-If battery 1 is about 50% discharged
		-During braking or deceleration phases
Alternator charging	14,2 - 14,6 V	Depending on the case 14,2 - 14,6 V very punctual ar
voltage alternator		not in the duration, otherwise 12,4 - 12,8 V
Uniteck combiner	UNISPLIT 160.12	UNISPLIT 160.12 EURO 6
compatibility		

#### **■ LED PROJECTORS**







UNILEDBAR 18.24	UNILEDBAR 36.24	UNILEDBAR 54.24
Ref 2051	Ref 2068	Ref 2075
(White)	(White	(White)
Ref 2723	Ref 2730	Ref 2747
(Black)	(Black)	(Black)

#### System

Technology	LED	LED	LED
Input Voltage	10-30V DC	10-30V DC	10-30V DC
Power	18 W	36 W	54 W

#### **Battery**

Voltage	12/24V

Light			
Leds		CREE leds - USA	
Number of leds	6 x 3W	12 X 3W	18 X 3W
Lumens	1260 lm	2520 lm	3780 lm
Beam		Large - 60°	
Scope (Lux - Diam)			
5 m	79 lx 176 cm	164 lx 184 cm	230 lx 183 cm
10 m	20 lx 351 cm	41 lx 368 cm	58 lx 367 cm
15 m	9 lx 527 cm	18 lx 551 cm	26 lx 545 cm
25 m	3 lx 878 cm	7 lx 919 cm	9 lx 916 cm
Color		Cold White	
Light		6000 K	
Lifespan		> 50 000 h	

#### Protections

Tiotections		
Radio and electromagnetic interferences protection	Yes	
Over and under-voltage protection	Yes	
Polarity reversal protection	Yes	

#### Mechanical characteristics

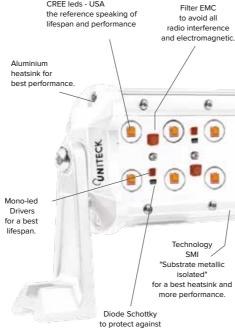
#### Materials

Materials			
Lentil		Polycarbonate	
Structure-Heatsink		Aluminium 6063	
Mounting bracket		Inox 316L	
Wiring			
Length		1.5 m	
Type		H05-RNF	
Section		2X0,75 mm <sup>2</sup>	
International Protection Ra	ating	IP67	
Dimensions in mm (wxhxd)	99×73×107	167X73X107	235X73X107
Weight	0,8 kg	1,1 kg	1,4 kg
Period	2 years	2 years	2 years
Tellou	Z years	Z years	2 years



CREE leds - USA

#### **ELECTRONIC AND HIGH-TECH CONSTRUCTION**







18.24 and 36.24)

#### **I QUALITY AND LONGEVITY**

Spotlight Led			
Low Cost	UNILEDBAR		
Quality of intern electronic			
	+++		
Materials quality			
-	+++		
Lifespan of led			
+	+++		
I< 30 000 hours	> 50 000 hours		
+	+++		
Short	1,5 m		



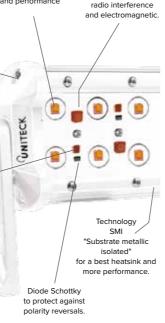
Quality guaranteed by Uniteck Made in P.R.C.



EN 61547: 2009 EN 61000-3-2 : 2006 + A1 : 2009 + A2 : 2009 EN 61000-3-3 : 2013

UNILEDBAR led spotlight

# **ROBUSTNESS &**



(model 54.24 only)

# **POWER**





UNILEDBAR is the last generation high performance 12/24V spotlight led range.

Made with the best led-technology of the market in reference to their lighting quality and their lifespan (CREE Led - USA).

UNILEDBAR generates a consistent luminous beam similar to the natural brightness.

The visual field is completely enlightened, which offers perfect visibility while avoiding ocular fatigue.

Waterproof (IP67) and corrosion-resistant (aluminium structure, inox mounting brackets, ...), UNILEDBAR is made for all outdoor uses even the most challenging (boating, campervan, truck, ...).

The UNILEDBAR range is certified by E-mark R10, which is a more restrictive norm than the standard EMC (Electromagnetic Compatibility), normally required by the automobile industry for the original equipment market and aftermarket.

Its commissioning is made easier thanks to its

UNITECK

for more lighting power and a longer lifespan.

G

Waterproof (IP67) and

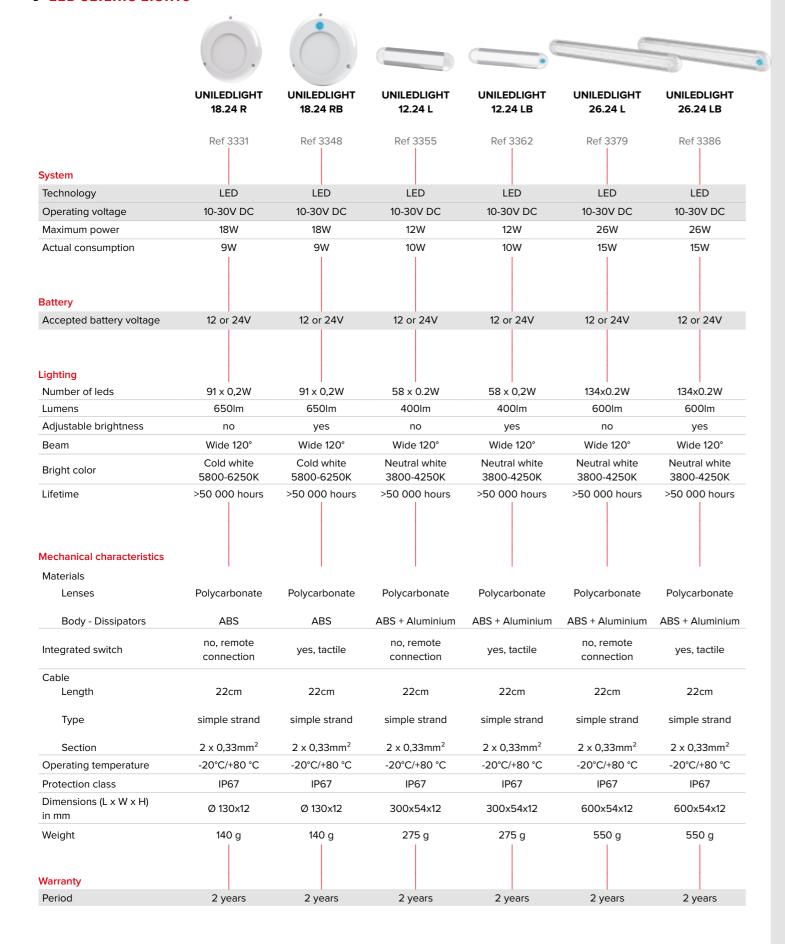
Protected against overvoltage, short circuits, polarity reversals.

E-mark certified CEM automobile conformity



1,5m cable.

#### I LED CEILING LIGHTS



Led ceiling lights UNILEDLIGHT

# **MODERN &**



UNILEDLIGHT is the latest generation of high performance 12/24V LED lighting.

Its advanced electronic design uses the best LED technology on the market

the best led technology on the market in terms of lighting quality and longevity (SMD technology).

UNILEDLIGHT generates a homogeneous light

homogeneous light beam very close to natural luminosity, which can be adjusted, either via a remote switch or with its integrated touch switch (depending on the model).

Its small size allows a perfect visibility even in the most restricted areas.

Thanks to its waterproof (IP67) and corrosionresistant electronics, UNILEDLIGHT is perfectly adapted for all the most demanding interior applications (boating, leisure and industrial vehicles...).

The UNILEDLIGHT range is certified E-mark R10, a more restrictive standard than the standard EMC (Electromagnetic Compatibility), required in particular by the automotive industry in first or second fitting.

**NEW** 

G

UNITECK

longevity

Easy to install

SMD technology, for a high

\_\_\_\_\_Lquality of light and a very good

#### UNILEDBULBS led bulbs

# POWER & LONGEVITY

UNILEDBULB is the last generation high performance 12V/24V bulb.

UNILEDBULB is perfectly made for all uses (campervan, boating....)

With its LED technology, UNILEDBULD only consumes 3 or 6W for an equivalent restored power to 30 or 60W (depending on UNLEDBULB 3.24 or 6.24 model).





Quality guaranteed by Uniteck,



# UNILEDBULB UNILE

3.24

UNILEDBULB 6.24

Ref 2549

Ref 2556

#### System

Technology	LED	
Operating voltage	12-	24V
Base	E	27
Power	3 W	6 W
Light		
Lumens	270 lm	550 lm
Calan	11-4	

Ligiti		
Lumens	270 lm	550 lm
Color	Hot	white
Angle	20	00°
Light	300	00 K
Lifetime	> 30	000 h

<b>Dimensions</b>	/ \
Dimensions	

Height	79 mm	112 mm
Diameter Warranty	44.5 mm	60 mm
Period	2 years	2 years



# WATERPROOF & ADJUSTABLE

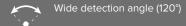
Ideal for use in combination with lights, alarms or video surveillance. The Passive infrared (PIR) technology automatically switches your 12V electrical device (eg alarm, spot ...) on, day and night, as soon as it detects a moving heat source within its range.

Protected against rain (IP44), UNIDETECT is suitable for indoor and outdoor use. It can be wall mounted or ceiling mounted. Its high-end sensor guarantees a wide area and detection range (120  $^{\circ}$  / up to 10 meters).

Adjustable for more precision:

- it operates either 24H / 24 or according to a predetermined brightness level,
- the switching on time is also adjustable.









G



Adjustable switching on time



Protected against rain

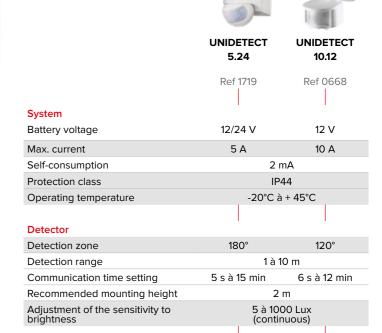


Broad range of operating temperature (-20/+45°C)









#### Mechanical characteristics

Dimensions (h x w x d)	65x55x80 mm	82x60x117 mm
Weight	120 g	150 g
Warranty		
Period	2 years	2 years

#### HIGH-TECH CONSTRUCTION



#### UNITIMER programmer

# PRECISION & MULTI-PURPOSE

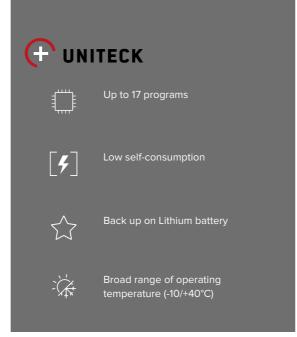
UNITIMER is the ideal electronic programmer for your network, or photovoltaic installations or 12 or 24 V network.

UNITIMER turns your 12V electrical devices automatically and accurately on and off. Its applications are many: lighting, watering, fountains, preheating, light display, alarm, video surveillance...

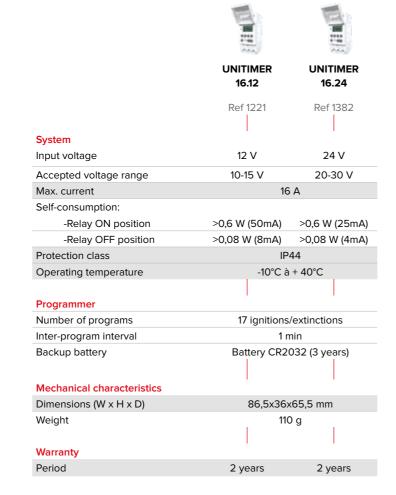
This way UNITIMER saves your energy for more amplitude of operation.

#### UNITIMER has many advantages:

- more than 17 different ignition and extinction programs available (weekend, everyday choice, multi-day ...),
- · LCD display with transparent protective cover,
- NO or NC connection (NO = normally opened, NC = normally closed) for more security depending on your uses,
- built-in lithium battery to preserve your programs in case of power failure.







## THE SOLAR KITS







■ VEHICLE KIT

I SHED KIT

**BOATING KIT** 

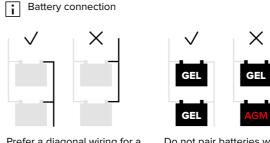
# UNITECK SIMPLIFIES YOUR CHOICE

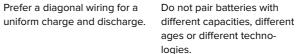


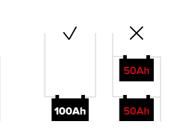


UNIMAGIC CALCULATION OF YOUR INSTALLATION

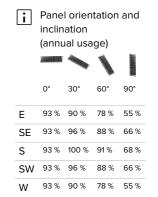
I RECYCLING







At equal capacity, prefer a big battery instead of two small ones connected in parallel.



## **VEHICLES**



#### I ENSURE YOUR ELECTRICAL AUTONOMY

The Uniteck vehicle kits guarantee the best electrical autonomy on the market while preserving the lifespan of your battery.

The latest-generation MPPT controllers, test your battery, recharge it to 100%, desulfate it, delaminate it, maintain its charge and improve its service life.

The optimized MPPT program, coupled with the fastest microprocessor on the market, checks in real time (every 100 ms), the maximum power point of the panel.

This guarantees up to 40% more energy in the winter and 15% more energy in the summer compared to a PWM controller, even in changing weather conditions.

Thanks to its Back Contact technology, the UNITECK BC solar panels have the best performance on the market.

Equipped with 4 or 6mm<sup>2</sup> cables with quick solar connectors fitted as standard, Uniteck kits are easily upgradable for more power.

You	electrical devices	Voltage (V)	Average current (A)	Efficiency	Power (Watt)	Time of use (h/ day)	Consumption/d (Wh/ day)	Battery capacity (Ah/day)
	Square	12	1	1	12	3	35	6
<u>B</u>	Bunk	12	1	1	12	3	35	6
Lighting	Bathroom	12	1	1	12	1	12	2
∺,	Kitchen	12	1	1	12	1	12	2
	Chart table	12	1	1	12	2	25	4
	Fan	12	5	1	60	1	60	10
	Air conditioning	230	3	0,8	830	3	2500	417
r.	Water pump (WC/freshwater)	12	6	1	70	0,25	20	3
Comfort	Kettle	230	6,5	0,8	1900	0,1	190	30
ၓ	Hairdryer	230	2,8	0,8	800	0,1	80	13
	Refrigerator (40W/60W with gas-electric timer)	12	3,4	1	40	8	320	55
	,							
	LCD Tv (55cm)/turned on	12	2,5	1	30	6	180	30
S	LCD Tv (55cm)/ on standby	12	1	1	12	18	215	36
oni	Mobile phone	230	0,1	0,8	30	1	30	5
Electronics	Radio/CD player	12	1	1	12	3	35	6
ă	Microcomputer turned on	230	0,3	0,8	90	3	270	45
	Microcomputer on standby	230	0,02	0,8	5	21	105	17

Calculation explanation ——————(V) — × ——(A) ——  $\div$  ———(%)—— = ———(W) — × ———(h/d) —— = ———(Wh/d)  $\div$  12 V  $\div$  50%\* = (Ah) \*Recommended self-discharge battery ratio

Cost of an electrical connection in a resting area or camping plot : 4€/day, or 120€ for 30 days per year.



#### **SOLAR KITS FOR VEHICLES**

#### I PANEL

Two technologies to be adapted to the space constraints and the desired design.



MONOCRYSTALLINE



BACK CONTACT

#### **■ MOUNTING BRACKET**

Several types of panel mounting brackets depending on the available space.





FIXED



GLUE AND DEGREASER

#### I CONTROLLER

MPPT technology to optimize panel production and battery charging.

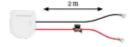




#### WIRING



PANEL > CONTROLLER





CABLE PASSAGE

CONTROLLER > BATTERY

T UNITECK

Design and performance, high efficiency cells with black back sheet

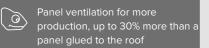




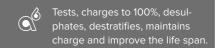


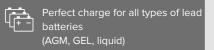






Advanced MPPT technology
(Additional energy: 40% in winter and 15 in summer)





Quick and easy to install, connectors already crimped, ready to use

No power loss (tinned copper cable + adapted section)



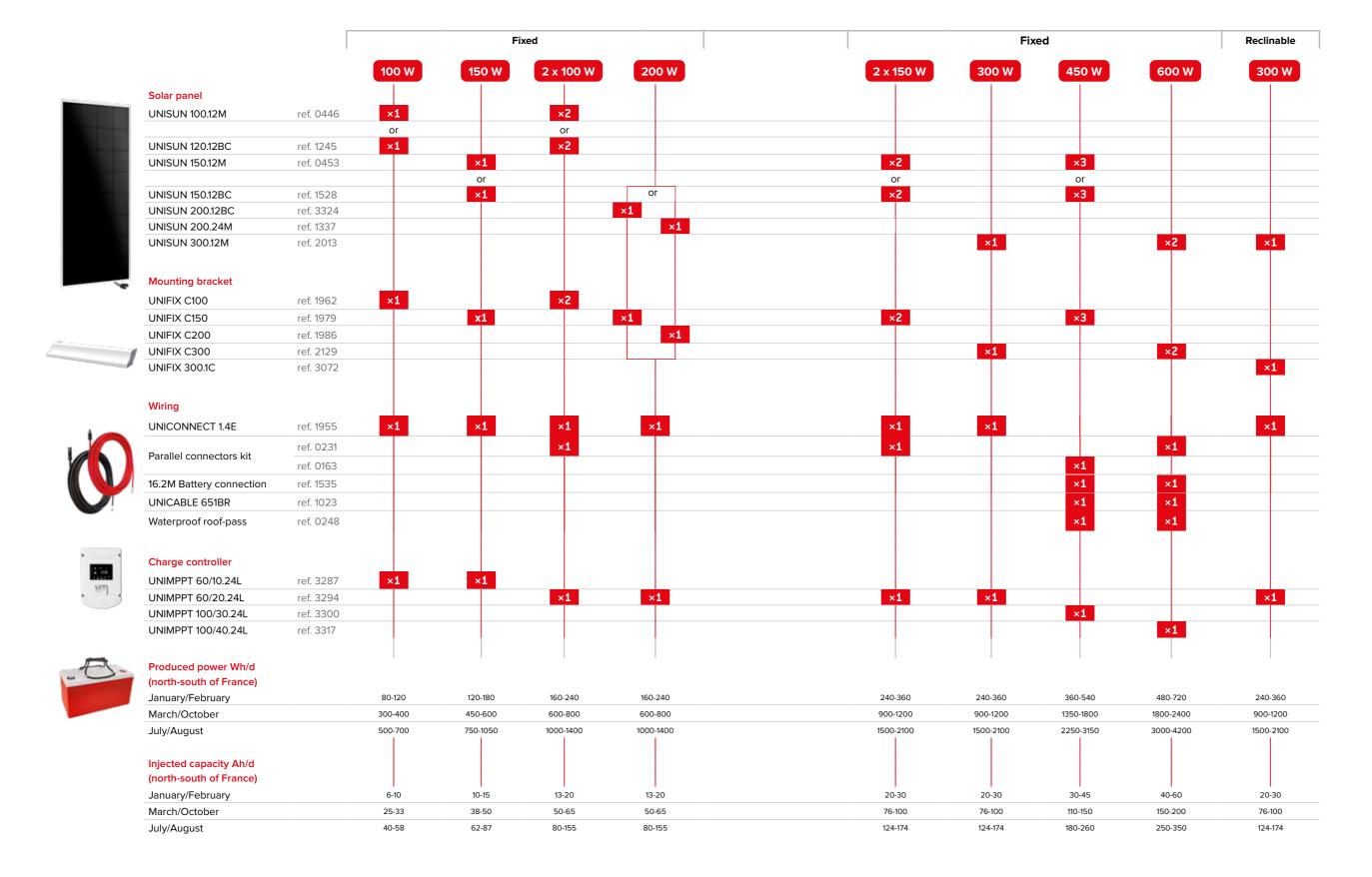
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#### I SET UP YOUR VEHICLE KIT



## SHED



#### I ENSURE YOUR AUTONOMY FOR LEISURE

The Uniteck shed kits guarantee the best electrical autonomy on the market while preserving the lifespan of your battery.

The latest-generation MPPT controllers test your battery, recharge it 100%, desulfate it, delaminate it, maintain its charge and improve its service life. The optimized MPPT program coupled with the fastest microprocessor on the market checks in real time (every 100 ms), the maximum power point of the panel. This way it guarantees up to 40% more energy in the winter and 15% more energy in the summer compared to a PWM controller, even in changing weather conditions.

The UNITECK solar panels guarantee exceptional efficiency, even in very low sun or extreme heat. Equipped with 6mm<sup>2</sup> cables with quick solar connectors fitted as standard, Uniteck kits are easily upgradable for more power.

The mounting brackets with a multi-position tilt system optimize the electrical performance of your installation.

You	r electrical devices	Voltage (V)	Average current (A)	Efficiency	Power (Watt)	Time of use (h/day)	Daily consumption (Wh/day)	Battery capacity (Ah/day)
_	Led (6W)	230	0,02	0,8	6	4	25	4
ij,	lamp post with energy saving bulb (25W)	230	0,1	0,8	30	4	120	19
Lighting	Incandescent lamp (70W)	230	0,3	0,8	85	4	340	58
_	Halogen lamp (300W)	230	1,3	0,8	375	4	1500	249
ort	Refrigerator (100 I - 120 kW/year)	230	0,05	0,8	14	24	335	55
Comfort	Fan	230	70	0,8	40	4	160	27
	Mobile phone	230	0,1	0,8	30	1	30	5
	Camera	230	0,1	0,8	30	1	30	5
nics	Radio/CD player	12	1	1	12	4	48	8
Electronics	Microcomputer on standby	230	0,02	0,8	5	23	115	20
<u> </u>	Active microcomputer	230	0,3	0,8	90	1	90	15
_	Lcd TV (55cm) turned on	230	0,2	1	45	2	90	15
	Lcd TV (55 cm) on standby 1A	230	0,003	1	1	22	22	4
Ť	Hedge trimmer	230	2,1	0,8	600	1	600	100
andiwork	Drilling machine	230	2,1	0,8	600	1	600	100

----(V) --- × ---(A) --- ÷ ---(%)---- = --(W) × ---(h/d) ---- = ---- (Wh/d) ÷ 12 V ÷ 50%\* = (Ah) Calculation explanation --\*Recommended self-discharge battery ratio



#### **SOLAR KITS FOR SHEDS**

#### I PANELS

Two technologies to be adapted to the space constraints and the desired





MONOCRYSTALLINE

BACK CONTACT

#### MOUNTING BRACKET

Several types of solar panel mounting depending on the space available.



FLOOR AND WALL MOUNTING



FLOOR, WALL AND/OR POLE MOUNTING



FLOOR FIXING BY BALLAST

#### I CONTROLLER

MPPT technology to optimize panel production and battery charging.





#### **I CONNECTICS**





PANEL > CONTROLLER

CONTROLLER > BATTERY

# UNITECK

Design and performance, Design and performance, high efficiency cells with black back sheet



Excellent impact and weight resistance (tempered glass 3.2 + aluminium frame)



TÜV certified waterproof junction box with hot-spot protection





iltable stand to optimize electrical

7111111

87



Corrosion resistant
Galvanized steel and screws



mounting (floor, wall and post)



(Additional energy: 40% in winter and 15 in summer)



Tests, charges to 100%, desul-phates, destratifies, maintains charge and improve the life span



Perfect charge for all types of lead batteries
(AGM, GEL, liquid)



Quick and easy to install, connectors already crimped, ready to use



No power loss (tinned copper cable + adapted

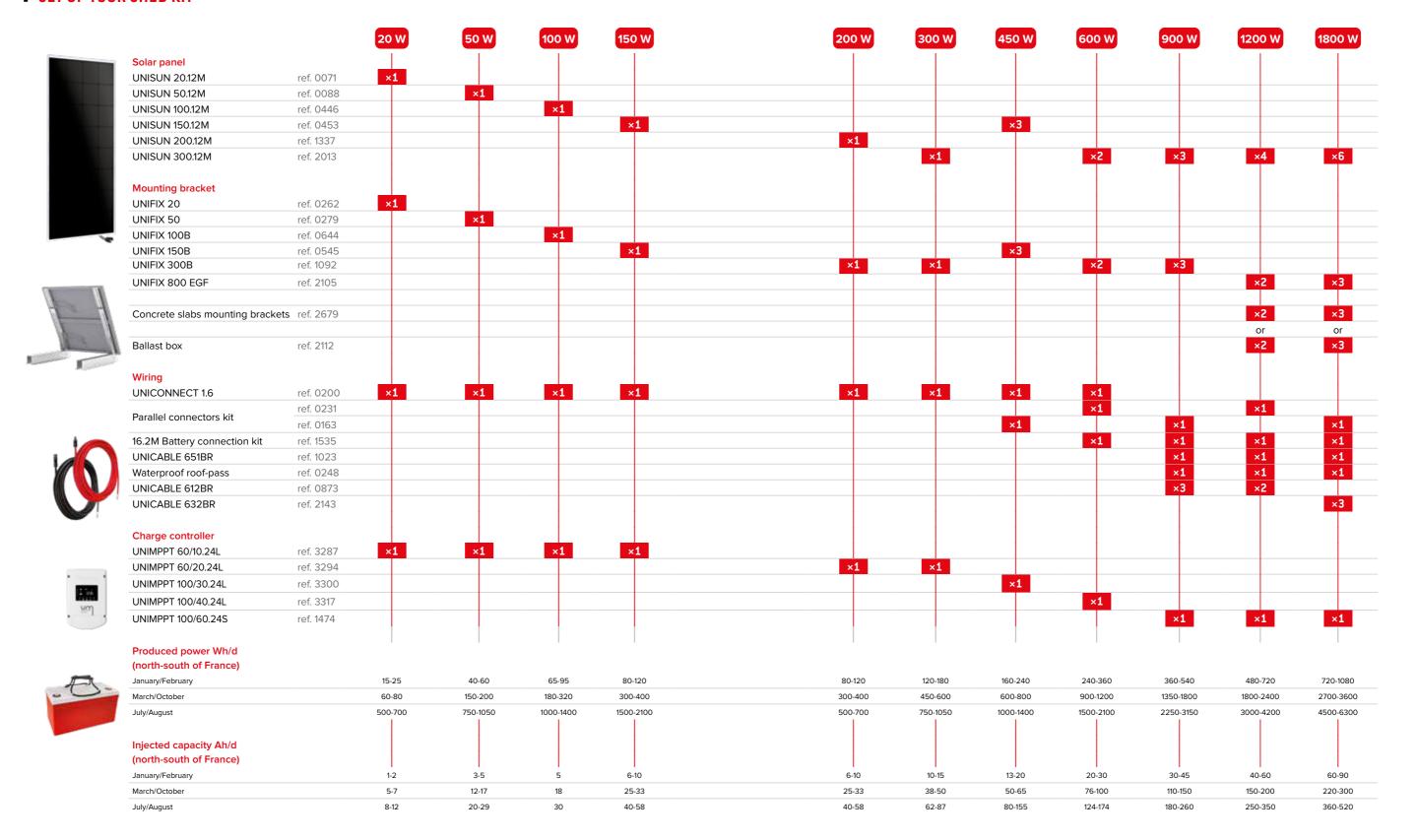


Cable and accessories resistant to UV and extreme conditions (-40 °C to 120 °C)



Cost of a traditional electrical connection (ex.: garden shed located at 30m of the house): circuit breaker 40€, cable 2,5€/m or 75€ total length, trench 15€/m or 450€ total length.

#### I SET UP YOUR SHED KIT



## **BOATING**



#### I ENSURE YOUR ELECTRICAL SECURITY

Uniteck boating kits guarantee the best electrical autonomy on the market while preserving the lifespan of your battery.

The latest-generation MPPT controllers test your battery, recharge it to 100%, desulfate it, delaminate it, maintain its charge and improve its service life.

The optimized MPPT program coupled with the fastest microprocessor on the market checks in real time (every 100 ms), the maximum power point of the panel.

This guarantees up to 40% more energy in the winter and 15% more energy in the summer compared to a PWM controller, even in changing weather conditions.

Thanks to their Back Contact technology, the UNITECK BC solar panels have the best performances on the market making it lighter and having less wind resisitance. Equipped with 6mm² cables with quick solar connectors fitted as standard, Uniteck kits are easily upgradable for more power.

The adjustable and tiltable pushpit mounting brackets optimize electrical performance with up to 50% more energy than an identical fixed installation.

You	r electrical devices	Voltage (V)	Average current (A)	Efficiency	Power (Watt)	Time of use (h/day)	Consumption/ day (Wh/day)	Battery capacity (Ah/ day)	Sailing boat <7,5m (<24 feet)	Sailing boat >8m (>26 feet)
	Square	12	1	1	12	6	72	12	•	_
ō	Bunk (consumption/bunk)	12	1	1	12	6	72	12	• X1/2	• X2/6
Lighting	Bathroom + Kitchen	12	2	1	24	1	24	4	-	•
ij	Deck searchlight (35W)	12	3	1	36	1	36	6	_	•
	Chart table	12	0,4	1	5	1	5	1	-	•
	Instruments (compass)	12	0,4	1	5	6	30	5	Ī	
	Navigation lights (25W)	12	2	1	24	10	240	40	•	
₹	Anchor lights (10W)	12	0,8	1	10	8	80	13	•	•
Security	Stern lights (10W)	12	0,8	1	10	10	100	17	•	•
Se	Bilge pump 40W	12	3,5	1	42	0,3	11	2	•	•
	VHF on standby/emitting	12	0,1/5	1	1,2/60	24/0,5	30/30	5/5	Ī	
	Mobile phone	230	0,1	0,8	30	1	30	5	•	•
	Pilot	12	0,5	1	60	6	360	1	_	•
	Navigation system	12	0,8	1	10	8	80	13	_	•
"	Radio/CD player	12	1	1	12	1	12	2	•	•
niç	Loch Speedo	12	0,1	1	1,2	8	10	2	-	•
Electronics	Radar	12	3	1	36	8	288	48	_	•
Elec	Simple GPS	12	0,3	1	3,7	8	30	5	•	
	card reader	12	2	1	24	8	190	32	_	•
	Sounder	12	0,2	1	2,4	8	20	3	_	•
	Microcomputer on standby/ turned on	230	0,8	0,02/0,3	5/90	23/1	115/90	20/15	•	•

Calculation explanation -----(V) -- × ---(A) ---  $\div$  -(%) -- = --(W) × ---(h/d) -- = - (Wh/d)  $\div$  12 V  $\div$  50%\* = (Ah) \*Recommended self-discharge battery ratio



#### **SOLAR KITS BOATING**

#### I PANELS

Two technologies to be adapted to the space constraints and the desired design.



MONOCRISTALLINE



BACK CONTACT

#### I MOUNTING BRACKET

Several types of solar panel mounting depending on the chosen location.





ARCH



FIXED FOR DOUBLE BAR TILTABLE F

TILTABLE FOR PUSHPIT AND ARCH MOUNTING

#### I CONTROLLER

FOR PUSHPIT FIXATION

MPPT technology to optimize panel production and battery charging



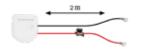


MPPT WITH LCD DISPLAY

I CONNECTICS



PANEL > CONTROLLER



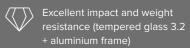
CONTROLLER > BATTERY

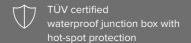


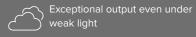
CABLE PASSAGE

**UNITECK** 

Design and performance, high efficiency cells with black back sheet







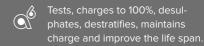
20 to 50% performance gain by tilting the panel

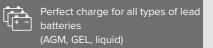


Adaptable to all balconies from Ø

-1111111





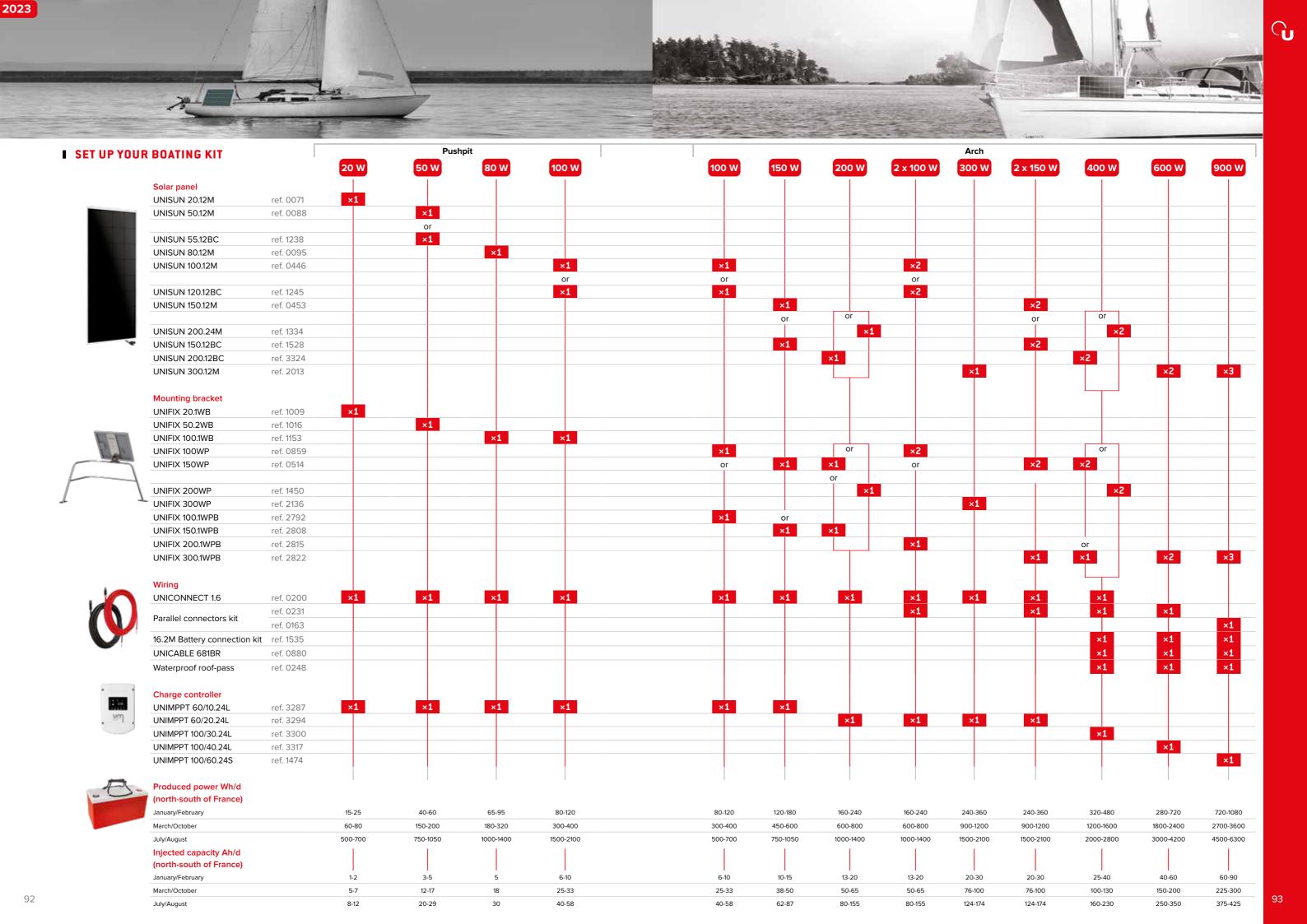


Quick and easy to install, connectors already crimped, ready to use

(tinned copper cable + adapted section)











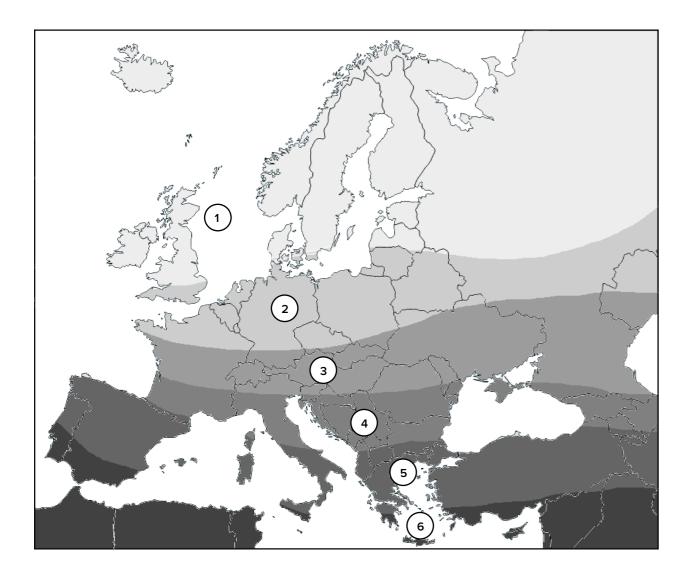
# UNIMAGIC CALCULATION OF YOUR INSTALLATION

To help you in the sizing of your solar installation, 4 factors should be considered :

- your consumption per day (B),
- · geographical area (A),
- season of use (C),
- frequency of use (7/7 or week-end)
- For heating system (oven, hot water, ...etc.), we recommend you to use gas.



The choice of the geographical area (A), will allow you to find your production coefficient (C) and safety coefficient (D) (p.96).



### B CALCULATE YOUR CONSUMPTION/J

Indicate your daily consumption in watts hour per day (Wh/d)

Watts = Volts x Amperes

) (	LIGHTS i	LED						
	Power (W)		X Duration (	h)	X Quantity	SUBTOTAL		
	Power (W)		X Duration (	h)	X Quantity	SUBTOTAL		
	TV SCREEN	. [] LED	- 5014			TO	OTAL	Wh/d
	Power (W)	⊡ LED ∽		Duration of us	e (h)			
_	i owei (w)		Ĵ	Duration of us	e (II)	ТС	OTAL	Wh/d
	TABLET i	≈10W						
•	Power (W)		х	Duration of us	e (h)		~~	<b></b> / .
	FRIDGE i	•				10	OTAL	Wh/d
*	PRIDGE III	Att						
		Winter	Aut./Sprir	ng Summe	r			
	50 L 100 L 150 L	300 W 400 W 500 W	400 W 560 W 750 W	700 W		TO	OTAL	Wh/d
<b>≈</b> ]º	MICROWAV	Έ i max						
<b>≋</b> ]∘	Power (W)		×	Duration of	use (h)			
						TO	OTAL	Wh/d
-	PHONE / SN	//ARTPHO	ONE	W				
	Power (W)		×	Duration of	use (h)	т	OTAL	Wh/d
	COMPUTER	lAPT	OP ≈ <b>60W</b>	DESKTOP ≈ 1	50W			
/ <del><u></u></del>	Power (W)		x	Duration of	use (h)			
						TO	OTAL	Wh/d
	DIVERSE							
	Power (W)		×	Duration of	use (h)	т	OTAL	Wh/d
	Power (W)		×	Duration of	use (h)	TO	OTAL	Wh/d
	Power (W)		×	Duration of	use (h)	T I	JIAL	zvii/u
						TO	OTAL	Wh/d
	Power (W)		×	Duration of	use (h)	т.	<b>OTA</b> !	Wh/d
						10	OTAL	







# UNIMAGIC CALCULATION OF YOUR INSTALLATION

## C CHOOSE YOUR PRODUCTION COEFFICIENT

For your solar panel choice, it is important to consider in the calculation: The season and the geographical area of use (A).

				Sum	ımer					Sp	ring					Auto	mn					Wi	nter		
A ->	Zone	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6
-	Coef.	3,5	4	4	5	4,5	4	2	3	3	4	4	4,5	1	2	2	3	3,5	4	0,5	0,7	1	1,5	1,8	2,5
		n an anı ı : In Bé														calcula	ations	is alwa	ys the	lowes	t.				

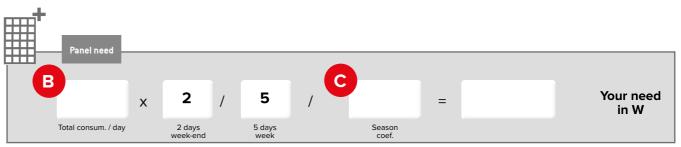
## D CHOOSE YOUR SAFETY COEFFICIENT

For your battery choice, it is important to consider in the calculation: the season and the geographical zone of use (A), which will make it possible to know the number of days of safety storage in case of no sunlight.

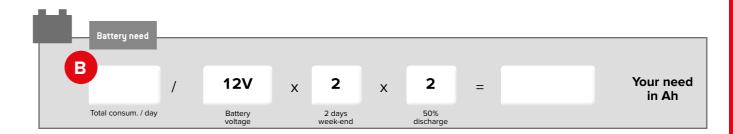
A > Zone 1 2 3 4 5 6 1 2 2 3 4 5 6 1 2 2 3 4 5 6 1 2 2 3 4 5 6 1 2 2 3 4 5 6 1 2 2 3 4 5 6 1 2 2 3 4 5 6 1 2 2 3 4 5 6 1 2 2 3 4 5 6 1 2 2 3 4 5 6 1 2 2 3 4 5 6 1 2 2 3 4 5 6 1 2 2 3 4 5 6 1 2 2 3 4 5 6 1 2 2 3 4 5 6 1 2 2 3 4 5 6 1 2 2 3 4 5 6 1 2 2 3 4 5 6 1 2 2 3 4 5 6 1 2 2 2 3 4 5 6 1 2 2 2 3 4 5 6 1	Winter				
→Coef. 2,5 2 3,5 2,5 5 3,5 3 8 5 4 3	6				
Days a cqui. S S S S S S S S S S S S S S S S S S S					

# MEMO POINT Geographical area C = Production coef. C = Safety coef. D =

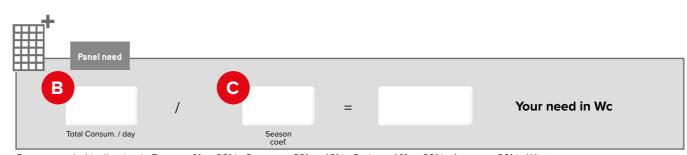
#### **■ WEEK-END USE**



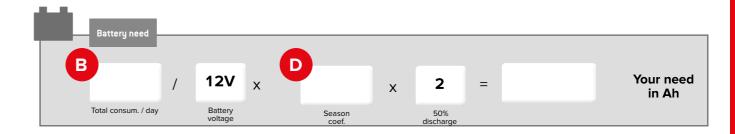
Recommended inclination in France: 0° to 30° in Summer - 30° to 40° in Spring - 40° to 50° in Automn - 60° in Winter



#### **■ 7/7 USE**



 $Recommended\ inclination\ in\ France: 0^{\circ}\ to\ 30^{\circ}\ in\ Summer\ -\ 30^{\circ}\ to\ 40^{\circ}\ in\ Spring\ -\ 40^{\circ}\ to\ 60^{\circ}\ in\ Autumn\ -\ 60^{\circ}\ in\ Winter\ -\ 40^{\circ}\ to\ 60^{\circ}\ in\ Autumn\ -\ 60^{\circ}\ in\ Winter\ -\ 40^{\circ}\ to\ 60^{\circ}\ in\ Autumn\ -\ 60^{\circ}\ in\ Winter\ -\ 40^{\circ}\ to\ 60^{\circ}\ in\ Autumn\ -\ 60^{\circ}\ in\ Winter\ -\ 40^{\circ}\ to\ 60^{\circ}\ in\ Autumn\ -\ 60^{\circ}\ in\ Winter\ -\ 40^{\circ}\ in\ 40^$ 



### IN A CSR APPROACH



#### Work & Disability, equal rights and opportunities

Since the creation of the company, UNITECK has been involved in helping, supporting and integrating people with disabilities through work.

In our desire to produce completely Made in France, even if this is impossible for the production of certain products such as solar panels, 60% of our products and also our components are manufactured and assembled in France.

For this we work in close collaboration with french setlement word and labour assistance service (ESAT) for the packaging of our products and for the maintenance of our premises. We mainly work with two ESATs: ESAT Via Europa in Vendres and ESAT Thierry Albouy in Béziers.

The ESAT welcomes adults with intellectual and/or psychological disabilities, aged between 18 and 60.

We are committed to this approach and beyond with the provision of staff from ESAT to work on site. We set up equipment and processes adapted to the safety and well-being of the workers.



#### **Environmental impact**

As a manufacturer of green energy equipment, the environmental impact of our production and products is particularly important to us.

Recycling is a key part of UNITECK's efforts to reduce our impact on the environment.

To do this, we are members of the French collection organization for all waste electrical and electronic equipment (WFFF):

- -SOREN for the recycling of solar panels.
- -ECOSYSTEM for electronic products,
- -ECOLOGIC for lighting products,







If this waste is the subject of such attention and has its own channel, it is because it is full of various recyclable materials (plastics, glass, ceramics, etc.), including ferrous metals or rare or precious metals (copper, gold, silver, palladium, platinum, etc.). They are also sometimes hazardous waste, composed of substances that are toxic for human health or harmful for the environment (various gases, arsenic, mercury, PCBs and brominated flame retardants, luminescent powders from screens...).

In France, a little more than half of WEEE is now collected, for a recovery rate that reaches 83% (Ademe).

The unique identifier FR007647\_05A7VM attesting to the registration in the register of producers of the WEEE sector, pursuant to Article L.541-10-13 of the Environmental Code has been assigned by ADEME to the company UNITECK (Siret 789 348 711 00027).

This identifier attests to its compliance with its obligation to register with the register of producers of Electrical and Electronic Equipment and to make its declarations of marketing to the eco-organizations.



# RECYCLING OF UNITECK PRODUCTS

 $G_{\mathbf{u}}$ 



The products, subject to the WEEE regulation, bear the appropriate logo.
These products will be recycled and should not be thrown away with the household waste.





#### I WHAT DO WE DO WITH THE USED PANELS?

In France, there is a non-profit eco-organization that collects all types of solar panels in order to recycle them: Soren, formerly PV Cycle.

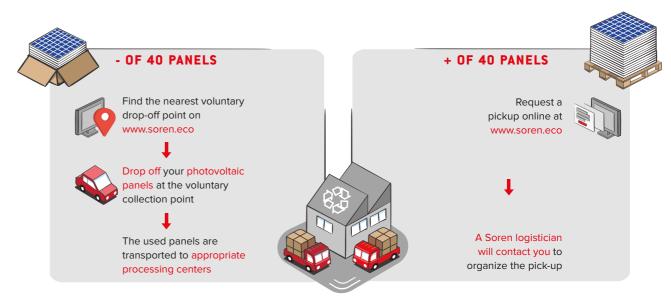
The fee linked to the ecoparticipation\* when purchasing solar panels allows to finance the recycling of the panel at the end of its life.

The return is carried out independently of the brand, the date of placing on the market or technology.

The holder must ensure that the conditions of return are fully respected.

These are available on the Soren website: www.soren.eco/collecte/conditions-de-reprise

For others countries, please check your country recycling drop-off point for solar panel.



<sup>\*</sup>The amount of the royalty, when purchasing the product, is decided by a dedicated state committee, which is in contact with the various industry players.



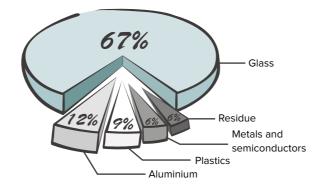


#### I RECYCLING SOLAR PANELS

Almost the entire panel is now recycled (about 94%).

Of these components, only 6% are not recyclable and come mainly from the grinding residues.

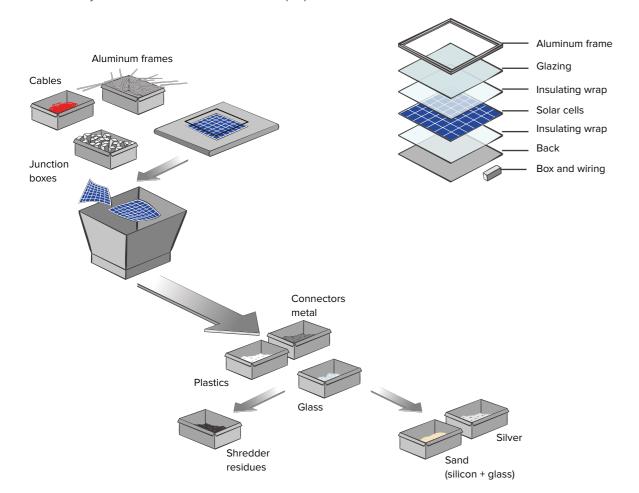
The glass is transformed into clean cullet and recovered in the glass industry. The frame is sent to an aluminum refinery and the plastic is used as a recovery fuel in cement plants. The silicon goes into the precious metals industry, while the cables and connectors are sold as copper shot.



The panels are separated from their aluminum frame, junction box and wiring, this is called the pre-disassembly.

They are then crushed to obtain fractions, which are then sorted using various methods (vibration, sieving, eddy current, optical sorting...).

The secondary raw materials can be used for new purposes.



#### Electronic products (controllers, converters,...)



## WHAT DO WE DO WITH USED ELECTRICAL APPLIANCES?

In France, there is a non-profit eco-organization that collects all types of electrical appliances in order to recycle them: **Ecologic**.

The fee linked to the eco-participation\* when purchasing electronic products helps finance the recycling of the product at the end of its life.

To find the nearest voluntary drop-off point, go to :

www.ecologic-france.com/citoyens/ou-deposer-mes-dechets.html

## RECYCLING ELECTRICAL EQUIPMENT

Electronic devices contain recyclable materials (glass, plastic, copper, aluminum, etc.), but also toxic products (lead, cadmium, etc.), hence the importance of depositing them properly at appropriate recycling points.

Lighting (bulbs, tubes, ...)



#### I WHAT DO WE DO WITH THE USED LIGHTING?

In France, there is a non-profit eco-organization that collects all types of of lighting in order to recycle them: **Ecosystem**.

The fee linked to the eco-participation\* when purchasing lighting allows to finance the recycling of the product at the end of its life.

To find the nearest voluntary drop-off point, go to : www.ecosystem.eco/fr/recherche-point-de-collecte

For others countries, please check your country recycling drop-off point for lighting.

#### **■ RECYCLING BULBS**

 $\label{lem:compact} \textbf{Compact fluorescent bulbs, fluorescent tubes, \textbf{LED bulbs and tubes must be recycled.}}$ 

The image of a crossed-out rubbish bin that can be seen on the lights and/or their packaging means that they should not be thrown away with the household waste.

Consisting mainly of glass, plastic and metal, the collected bulbs and tubes are now recovered at nearly 90%.









#### ■ WHAT DO WE DO WITH USED BATTERIES?

In France, to find the nearest voluntary collection point, go to :

www.jerecyclemespiles.com/collecter-cest-facile/ou-deposer-mes-piles-et-batteries-usagees/

The waste collection centers are also collection points for used batteries and have specially adapted locations.

For others countries, please check your country recycling drop-off point for batteries.

#### **■ RECYCLING BATTERIES**

Unlike lithium batteries, lead-acid batteries are recyclable and many players are part of this circular economy.

The recycling rate is between 60% and 90% depending on the type of lead batteries. The lead element is infinitely recyclable without any loss of quality. It is the best recycled metal in the world with one of the most controlled recycling processes in industrial and environmental terms. More than 60% of the world's production comes from recycling and this rate is growing every year.

The recycling of batteries is done in several stages: the lead materials, the oxidised materials and the metal parts are sent to a foundry.

These metals are then reused in the manufacture of everyday objects such as stainless steel cutlery, hardware, car plates, ship hulls, new batteries or compounds for photovoltaic panels

The electrolyte from the batteries is cleaned, reprocessed and reused, and the plastic from the casings is recycled by specialised plastic recovery units.







French manufacturer of solar and electrical equipment, specializing in on-board and off-grid energy

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Capital 290 000€



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