SHEDS KITS
2023

UNITECK

BÉZIERS - FRANCE

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

SHED

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 6mm² 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.

	Your electrical devices	Voltage (V)	Average current (A)	Efficiency	Power (Watt)	Time of use (h/day)	Daily consumption (Wh/day)	Battery capacity (Ah/day)
Lighting	Led (6W)	230	0,02	0,8	6	4	25	4
	lamp post with energy saving bulb (25W)	230	0,1	0,8	30	4	120	19
	Incandescent lamp (70W)	230	0,3	0,8	85	4	340	58
	Halogen lamp (300W)	230	1,3	0,8	375	4	1500	249
Comfort	Refrigerator (100 l - 120 kW/year)	230	0,05	0,8	14	24	335	55
	Fan	230	70	0,8	40	4	160	27
Electronics	Mobile phone	230	0,1	0,8	30	1	30	5
	Camera	230	0,1	0,8	30	1	30	5
	Radio/CD player	12	1	1	12	4	48	8
	Microcomputer on standby	230	0,02	0,8	5	23	115	20
	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
handiwork	Hedge trimmer	230	2,1	0,8	600	1	600	100
	Drilling machine	230	2,1	0,8	600	1	600	100

Calculation explanation ––––––––––––––––(V) –– × ––(A)–– ÷ ––(%)––– = –(W) × ––(h/d)––– = ––– (Wh/d) ÷ 12 V ÷ 50%* = (Ah)

*Recommended self-discharge battery ratio

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. Total : 565€

SOLAR KITS FOR SHEDS

PANELS

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

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

CONTROLLER

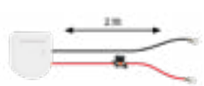
MPPT technology to optimize panel production and battery charging.

MPPT WITH LCD DISPLAY

MPPT

CONNECTICS

PANEL > CONTROLLER



CONTROLLER > BATTERY

UNITECK

- 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
- Exceptional output even under weak light

- Tiltable stand to optimize electrical performance
- Corrosion resistant Galvanized steel and screws
- Easy to install and flexible mounting (floor, wall and post)

- Advanced MPPT technology (Additional energy: 40% in winter and 15 in summer)
- Tests, charges to 100%, desulphates, 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 section)
- Cable and accessories resistant to UV and extreme conditions (-40 °C to 120 °C)

SET UP YOUR SHED KIT

		20 W	50 W	100 W	150 W	200 W	300 W	450 W	600 W	900 W	1200 W	1800 W
Solar panel												
UNISUN 20.12M	ref. 0071	×1										
UNISUN 50.12M	ref. 0088		×1									
UNISUN 100.12M	ref. 0446			×1								
UNISUN 150.12M	ref. 0453				×1			×3				
UNISUN 200.12M	ref. 1337					×1						
UNISUN 300.12M	ref. 2013						×1		×2	×3	×4	×6
Mounting bracket												
UNIFIX 20	ref. 0262	×1										
UNIFIX 50	ref. 0279		×1									
UNIFIX 100B	ref. 0644			×1								
UNIFIX 150B	ref. 0545				×1			×3				
UNIFIX 300B	ref. 1092					×1	×1		×2	×3		
UNIFIX 800 EGF	ref. 2105										×2	×3
Concrete slabs mounting brackets	ref. 2679										×2	×3
Ballast box	ref. 2112										or ×2	or ×3
Wiring												
UNICONNECT 1.6	ref. 0200	×1	×1	×1	×1	×1	×1	×1	×1			
Parallel connectors kit	ref. 0231								×1		×1	
	ref. 0163							×1		×1		×1
16.2M Battery connection kit	ref. 1535								×1	×1	×1	×1
UNICABLE 651BR	ref. 1023									×1	×1	×1
Waterproof roof-pass	ref. 0248									×1	×1	×1
UNICABLE 612BR	ref. 0873									×3	×2	
UNICABLE 632BR	ref. 2143											×3
Charge controller												
UNIMPPT 60/10.24L	ref. 3287	×1	×1	×1	×1							
UNIMPPT 60/20.24L	ref. 3294					×1	×1					
UNIMPPT 100/30.24L	ref. 3300							×1				
UNIMPPT 100/40.24L	ref. 3317								×1			
UNIMPPT 100/60.24S	ref. 1474									×1	×1	×1
Produced power Wh/d (north-south of France)												
January/February		15-25	40-60	65-95	80-120	80-120	120-180	160-240	240-360	360-540	480-720	720-1080
March/October		60-80	150-200	180-320	300-400	300-400	450-600	600-800	900-1200	1350-1800	1800-2400	2700-3600
July/August		500-700	750-1050	1000-1400	1500-2100	500-700	750-1050	1000-1400	1500-2100	2250-3150	3000-4200	4500-6300
Injected capacity Ah/d (north-south of France)												
January/February		1-2	3-5	5	6-10	6-10	10-15	13-20	20-30	30-45	40-60	60-90
March/October		5-7	12-17	18	25-33	25-33	38-50	50-65	76-100	110-150	150-200	220-300
July/August		8-12	20-29	30	40-58	40-58	62-87	80-155	124-174	180-260	250-350	360-520

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CALCULATION OF YOUR INSTALLATION

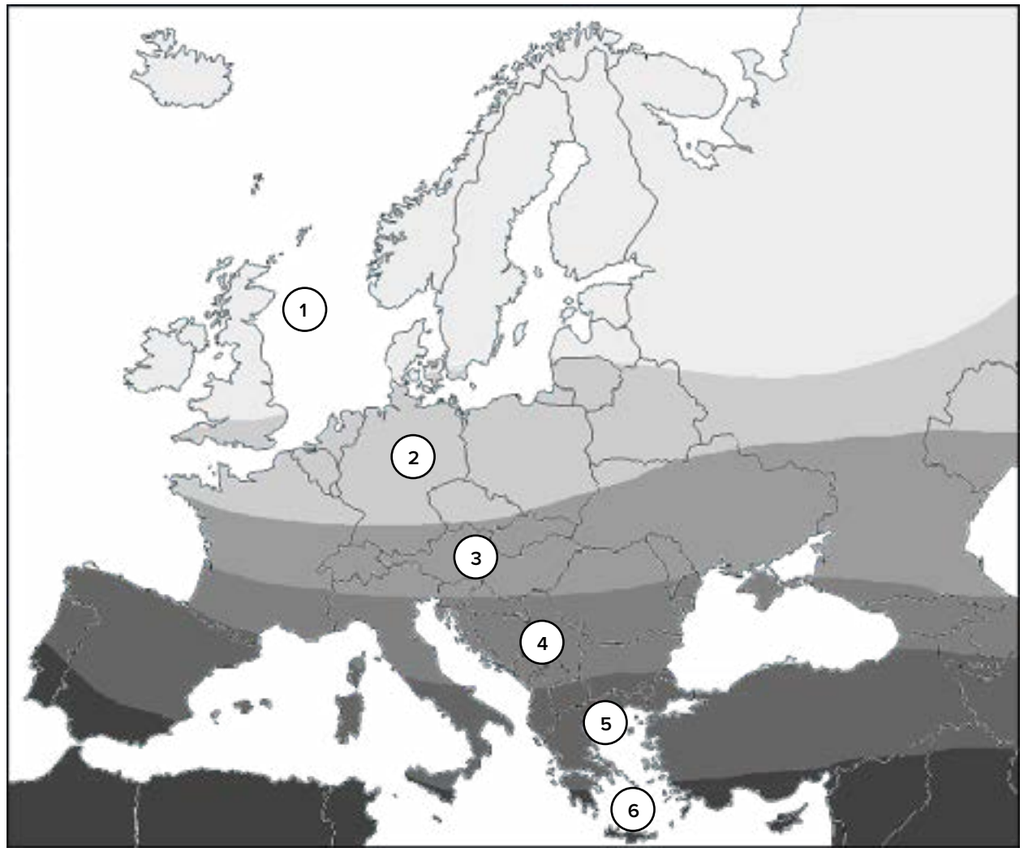
To help you in the sizing of your solar installation, 4 factors should be considered :

- 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.

A CHOOSE YOUR GEOGRAPHICAL AREA

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)

LIGHTS ⓘ LED

Power (W) ____ X Duration (h) ____ X Quantity ____ SUBTOTAL ____

Power (W) ____ X Duration (h) ____ X Quantity ____ SUBTOTAL ____

TOTAL ____ Wh/d

TV SCREEN ⓘ LED ≃ 50W

Power (W) ____ X Duration of use (h) ____ TOTAL ____ Wh/d

TABLET ⓘ ≃ 10W

Power (W) ____ X Duration of use (h) ____ TOTAL ____ Wh/d

FRIDGE ⓘ A++

	Winter	Aut./Spring	Summer
50 L	300 W	400 W	500 W
100 L	400 W	560 W	700 W
150 L	500 W	750 W	1000 W

TOTAL ____ Wh/d

MICROWAVE ⓘ max 900W

Power (W) ____ X Duration of use (h) ____ TOTAL ____ Wh/d

PHONE / SMARTPHONE ⓘ ≃ 5W

Power (W) ____ X Duration of use (h) ____ TOTAL ____ Wh/d

COMPUTER ⓘ LAPTOP ≃ 60W DESKTOP ≃ 150W

Power (W) ____ X Duration of use (h) ____ TOTAL ____ Wh/d

DIVERSE

Power (W) ____ X Duration of use (h) ____ TOTAL ____ Wh/d

Power (W) ____ X Duration of use (h) ____ TOTAL ____ Wh/d

Power (W) ____ X Duration of use (h) ____ TOTAL ____ Wh/d

Power (W) ____ X Duration of use (h) ____ TOTAL ____ Wh/d

ⓘ Calculation reminder :

Current	Amperes	A
Power	Watts	W
Voltage	Volts	V

Watts = Volts x Amperes

ⓘ Read an identification plate : example with a drill

Model : XP 670
230V ≃ 50Hz 2,8A 600W

Voltage (in volts) — Current (in amperes) — Power (in watts)

TOTAL B ____ **Wh/d**

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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).

	Summer						Spring						Automn						Winter					
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		5	4,5	4	2	3		4	4	4,5	1	2		3	3,5	4	0,5	0,7	1	1,5	1,8	2,5

On an annual use or several seasons, the sunshine coefficient to be taken into account in your calculations is always the lowest.

Eg : In Béziers, in South of France, a solar panel 100W produces 5 times more, so 500 W/day.

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.

	Summer						Spring						Automn						Winter					
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.**	2,5	2					3,5	2,5					5	3,5		3			8	5	4	3		
Days equi.	3	2					5	3					8	5		4			12	8	6	4		

On an annual use or several seasons, the battery security coefficient to be taken into account in your calculation is always the highest.

MEMO POINT

A = Geographical area

B = Consumption/day

C = Production coef.

D = Safety coef.

WEEK-END USE

Panel need

B (Total consum. / day) x 2 (2 days week-end) / 5 (5 days week) / C (Season coef.) = **Your need in W**

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

Battery need

B (Total consum. / day) / 12V (Battery voltage) x 2 (2 days week-end) x 2 (50% discharge) = **Your need in Ah**

7/7 USE

Panel need

B (Total Consum. / day) / C (Season coef.) = **Your need in Wc**

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

Battery need

B (Total consum. / day) / 12V (Battery voltage) x D (Season coef.) x 2 (50% discharge) = **Your need in Ah**

UNITECK

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