



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

## SHED

Your electrical devices

Led (6W)

Fan



lamp post with energy saving bulb (25W)

Incandescent lamp (70W)

Refrigerator (100 | - 120 kW/year)

Halogen lamp (300W)

Mobile phone

Radio/CD player

Hedge trimmer

Drilling machine

Calculation explanation –

\*Recommended self-discharge battery ratio

Microcomputer on standby

Active microcomputer

Lcd TV (55cm) turned on

Lcd TV (55 cm) on standby 1A

Camera

Voltage (V)

230

230

230

230

230

230

230

230

12

230

230

230

230

230

230

Average

current (A)

0,02

0,1

0,3

1,3

0,05

70

0.1

0,1

1

0,02

0,3

0,2

0,003

2.1

2,1

 $----(V) --- \times --(A) --- \div --(\%) ---- = -(W)$ 

Efficiency

0,8

0,8

0,8

0.8

0,8

0,8

0.8

0,8

0,8

0,8

1

0,8

0,8

Power

(Watt)

6

30

85

375

14

40

30

30

12

5

90

45

600

600

#### **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.

Time of use

(h/day)

4

4

4

4

24

4

1

4

23

1

2

22

1

1

Daily consumption

(Wh/day)

25

120

340

1500

335

160

30

30

48

115

90

90

22

600

600

× ---(h/d) ---- = ---- (Wh/d) ÷ 12 V ÷ 50%\* = (Ah)

Battery capacity

(Ah/day)

4

19

58

249

55

27

5

5

8

20

15

15

4

100

100



SOLAR KITS FOR SHEDS

#### **PANELS**

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





BACK CONTACT

#### MOUNTING BRACKET

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







MOUNTING

FLOOR, WALL AND/OR POLE MOUNTING

#### **CONTROLLER**

MPPT technology to optimize panel production and battery charging.





MPPT WITH LCD DISPLAY

мррт

**CONNECTICS** 





PANEL > CONTROLLER

CONTROLLER > BATTERY

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.



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## SET UP YOUR SHED KIT





(north-south of France)									
January/February	15-25	40-60	65-95	80-120		80-120	120-180	160-240	240-360
March/October	60-80	150-200	180-320	300-400		300-400	450-600	600-800	900-1200
July/August	500-700	750-1050	1000-1400	1500-2100		500-700	750-1050	1000-1400	1500-2100
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
March/October	5-7	12-17	18	25-33		25-33	38-50	50-65	76-100
July/August	8-12	20-29	30	40-58		40-58	62-87	80-155	124-174
	(north-south of France) January/February March/October July/August Injected capacity Ah/d (north-south of France) January/February March/October July/August	January/February15-25March/October60-80July/August500-700Injected capacity Ah/d (north-south of France)12January/February1-2March/October5-7July/August8-12	January/February  15-25  40-60    March/October  60-80  150-200    July/August  500-700  750-1050    Injected capacity Ah/d (north-south of France)	Inorth-south of France)    January/February  15-25  40-60  65-95    March/October  60-80  150-200  180-320    July/August  500-700  750-1050  1000-1400    Injected capacity Ah/d (north-south of France)  Indext and the second	Injected capacity Ah/d (north-south of France)  15-25  40-60  65-95  80-120    Injected capacity Ah/d (north-south of France)  500-700  750-1050  1000-1400  1500-2100    January/February  1-2  3-5  5  6-10    March/October  5-7  12-17  18  25-33    July/August  8-12  20-29  30  40-58	Inorth-south of France)  January/February  15-25  40-60  65-95  80-120    March/October  60-80  150-200  180-320  300-400    July/August  500-700  750-1050  1000-1400  1500-2100    Injected capacity Ah/d (north-south of France)  1  1  1    January/February  1-2  3-5  5  6-10    March/October  5-7  12-17  18  25-33    July/August  8-12  20-29  30  40-58	Injected capacity Ah/d (north-south of France)    15-25    40-60    65-95    80-120    80-120      July/August    60-80    150-200    180-320    300-400    300-400      July/August    500-700    750-1050    1000-1400    1500-2100    500-700      Injected capacity Ah/d (north-south of France)    1    1    1    1    1      January/February    1-2    3-5    5    6-10    6-10      March/October    5-7    12-17    18    25-33    25-33      July/August    8-12    20-29    30    40-58    40-58	Injected capacity Ah/d (north-south of France)    1-2    3-5    5    6-10    80-120    120-180      January/February    15-25    40-60    65-95    80-120    300-400    450-600      March/October    60-80    150-200    180-320    300-400    300-400    450-600      July/August    500-700    750-1050    1000-1400    1500-2100    500-700    750-1050      Injected capacity Ah/d (north-south of France)    Image: Capacity Ah/d    Image:	Instruction    Instruction

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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),

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• frequency of use (7/7 or week-end)

i 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).



**CALCULATE YOUR CONSUMPTION/J** В Indicate your daily consumption in watts hour per day (Wh/d)  $\mathbf{\hat{\mathbf{x}}}$ LIGHTS i led Power (W) X Duration (h) X Quantity Power (W) X Duration (h) X Quantity TV SCREEN i LED ≈ 50W Power (W) X Duration of use (h) TABLET i ≈ 10W Power (W) X Duration of use (h) FRIDGE A++ \* Winter Aut./Spring Summer 50 L 100 L 300 W 400 W 500 W 400 W 500 W 560 W 750 W 700 W 150 L 1000 W MICROWAVE i max 900W **≋**₿ Power (W) X Duration of use (h)

	PHC	PHONE / SMARTPHONE i ≈ 5₩										
	Powe	er (W)		x	Duration of use (h)							
	COM	MPUTER	i LAPTOP ≈ 6	ow d	DESKTOP <b>≍ 150W</b>							
	Powe	er (W)		×	Duration of use (h)							
	DIVI	ERSE										
	Powe	er (W)		x	Duration of use (h)							
	Powe	er (W)		x	Duration of use (h)							
	Powe	er (W)		×	Duration of use (h)							
	Powe	er (W)		×	Duration of use (h)							
F	Calculation reminder :		Read	d an ider	ntification plate : example							
	Current Amperes Power Watts Voltage Volts	A W V	Mode 230V	a drill I : XP 67	0 50Hz 2,8A 600W	,						

Voltage (in volts) , Current

(in amperes)

(in watts)

Watts = Volts x Amperes

SUBTOTAL SUBTOTAL TOTAL Wh/d TOTAL B

Wh/d



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# UNIMAGIC **CALCULATION OF YOUR INSTALLATION**



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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	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.

### CHOOSE YOUR SAFETY COEFFICIENT D

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.

		Spring							mn			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	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.











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