

# Calculadora de consumo de energia

## Energy Demand

### General Data

Country	<input type="text" value="-- select --"/>
Temperature	<input type="text"/> °C
Altitude	<input type="text"/> m
Solar daily irradiance	<input type="text"/> kWh/m <sup>2</sup> /day

### Calculation Settings

Local rated voltage	n/a Vca
Local frequency	n/a Hz
There is any 3-phase Consumer in the installation?	<input type="checkbox"/>
The installation provides power to a hospital (very sensitive structure)?	<input type="checkbox"/>

Appliance/Device	Quantity	P (W)	S Max (VA)	S Avg (VA)	Working Hours					E
					Morning	Midday	Afternoon	Evening	Night	
<input type="button" value="Add row"/>	<input type="button" value="Remove last"/>	<input type="button" value="Reset"/>								

- General
- Generator
- Battery
- Solar

## Estimation of Needs

### Energy Consumption per Day

Total	n/a W a day
Low consumption devices (Class 1)	n/a W a day
High consumption devices (Class 2)	n/a W a day
Usefull energy / day	n/a Wh
Usefull energy / night	n/a Wh

### Power Needed

Total	n/a VA
Low consumption devices (Class 1)	n/a VA

### Power Needed

High consumption devices (Class 2)	n/a VA
Average power necessary	n/a VA

### Generator

#### Additional Information

Voltage specification (single-P / 3-P)	Automatic selection
Cable length between:	
the generator and switchgear	10 m
the grid and switchgear	10 m
the switchgear and the main electrical dashboard	10 m
Wire Gauge recommendation:	
between generator and switchgear	n/a mm <sup>2</sup>
between grid and switchgear	n/a mm <sup>2</sup>
between switchgear to dashboard	n/a mm <sup>2</sup>

#### Size Recommendations

Size recommended (PRP)	n/a KVA
Power (ESP)	n/a VA
Voltage type	n/a
Rated voltage	n/a V
Rated frequency	n/a Hz
Output circuit-breaker size	n/a A
Estimated fuel consumption	n/a l/h
Estimated oil consumption	n/a l/h
(1 oil change every 250h)	n/a l/250h

### Battery System

#### Additional Information

Unit voltage	12	V
Unit capacity	1000	Ah
Authorized discharge ratio (no less than 40%)	50	%
Charge available time (minimum 4hours)	4	h
Days of autonomy needed if no charge	1	

### Recommendation

Energy to accumulate	n/a Wh
Voltage recommended	n/a V
Number of batteries needed with the specifications provided	n/a units
Type of connection	n/a
Circuit breaker ideal size	n/a A
Charger size at least	n/a A

### Solar System

#### Additional Information

Solar daily irradiance	n/a kWh/m <sup>2</sup> /day
Usefull max power per day	n/a Wc
Regulator size	n/a A
Solar panels unit voltage (recommendation: n/aV)	12 V <input type="button" value="v"/>
Solar panels unit max power	<input type="text"/> Wc

#### Recommendation

Minimum number of solar panels	n/a
Recommended number of solar panels	n/a
Solar charge controller: type of regulator	n/a
Solar charge controller: rated voltage	n/a V
Solar charge controller: unit max current	n/a A
Solar charge controller: quantity	n/a

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