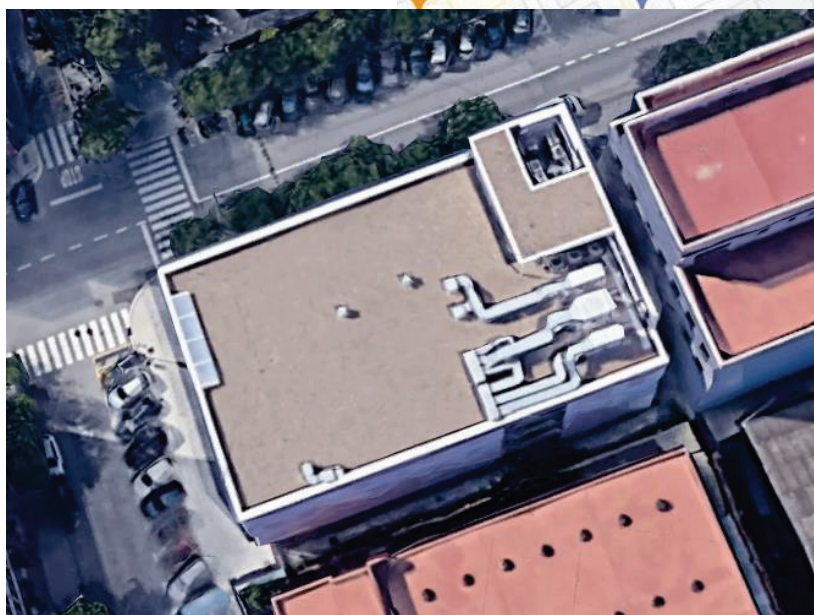
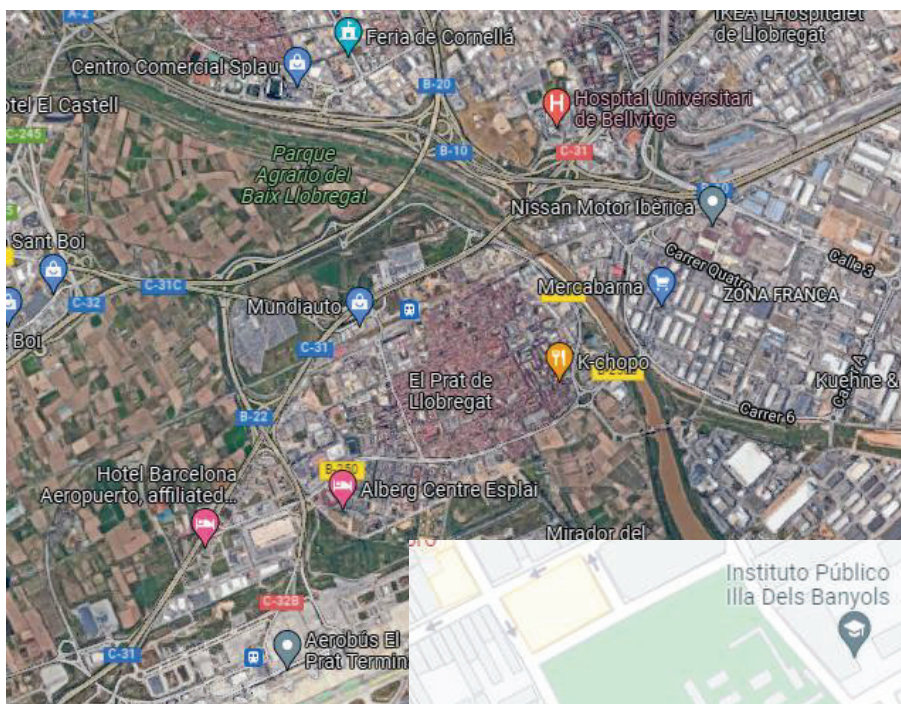
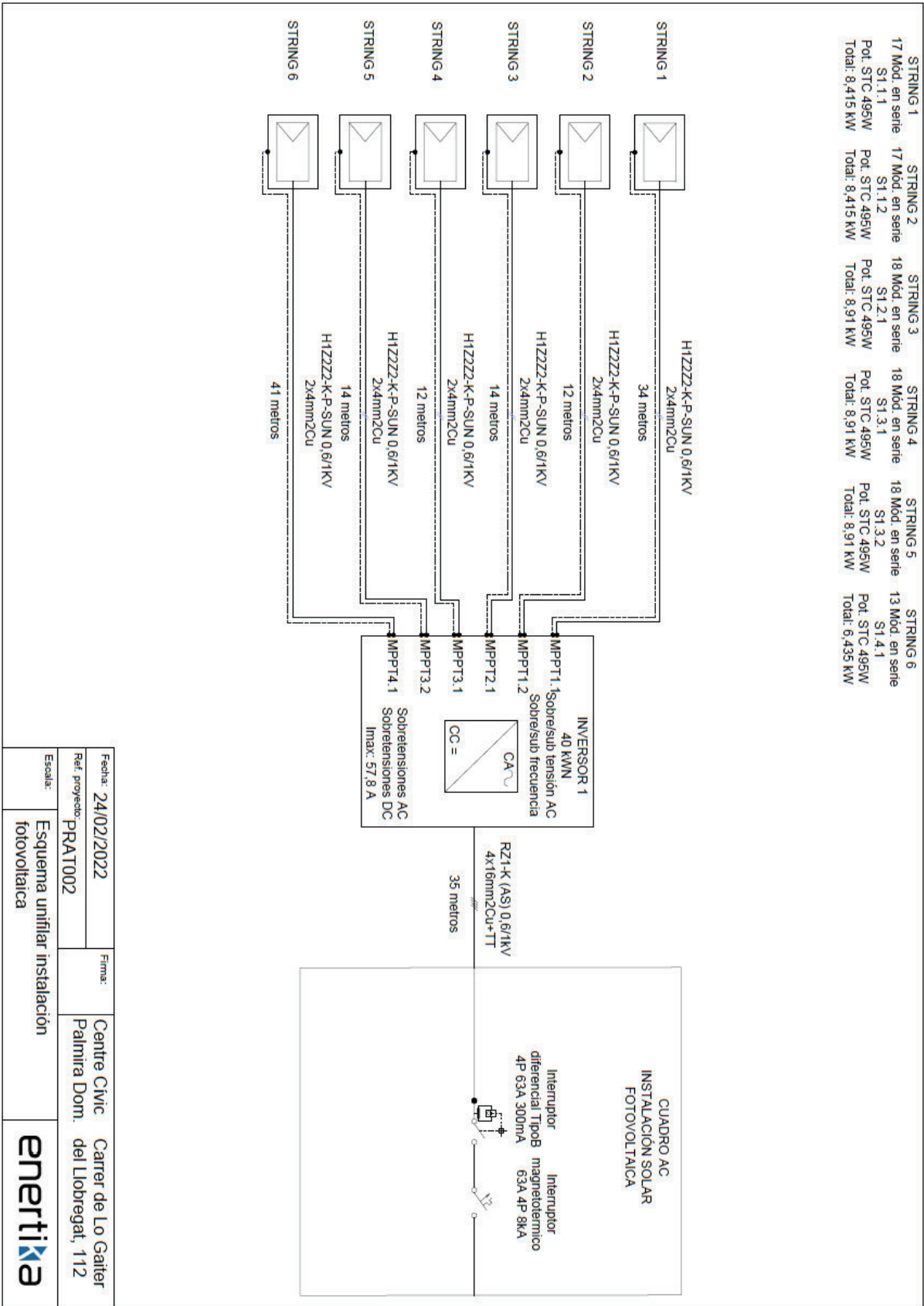


## 6.1 Ubicación de la instalación solar fotovoltaica



6.2 Esquema unifilar de la instalación eléctrica





### 6.3 Ficha técnica módulos solares

## Harvest the Sunshine

# DEEP BLUE 3.0

**Mono**

**505W MBB Half-cell Module**

JAM66S30 480-505/MR Series

**Introduction**

Assembled with 11BS PERC cells, the half-cell configuration of the modules offers the advantages of higher power output, better temperature-dependent performance, reduced shading effect on the energy generation, lower risk of hot spot, as well as enhanced tolerance for mechanical loading.



Higher output power



Lower LCOE



Less shading and lower resistive loss



Better mechanical loading tolerance

**Superior Warranty**

- 12-year product warranty
- 25-year linear power output warranty

0.55% Annual Degradation Over 25 years



■ New linear power warranty ■ Standard module linear power warranty

**Comprehensive Certificates**

- IEC 61215, IEC 61730, UL 61215, UL 61730
- ISO 9001: 2015 Quality management systems
- ISO 14001: 2015 Environmental management systems
- ISO 45001: 2018 Occupational health and safety management systems
- IEC TS 62941: 2016 Terrestrial photovoltaic (PV) modules – Guidelines for increased confidence in PV module design qualification and type approval

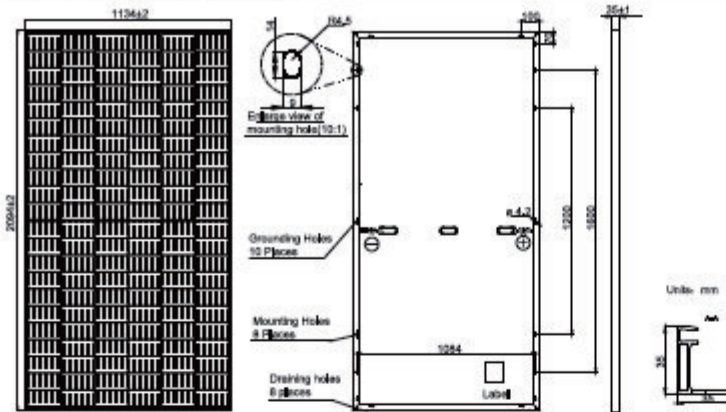




**JA SOLAR**

**JAM66S30 480-505/MR** Series

**MECHANICAL DIAGRAMS**



Remark: customized frame color and cable length available upon request

**SPECIFICATIONS**

Cell	Mono
Weight	26.3kg±3%
Dimensions	2094±2mm×1134±2mm×35±1mm
Cable Cross Section Size	4mm <sup>2</sup> (IEC) , 12 AWG(UL)
No. of cells	132(6×22)
Junction Box	IP68, 3 diodes
Connector	QC 4.10(1000V) QC 4.10-35(1500V)
Cable Length (Including Connector)	Portrait: 300mm(+)/400mm(+); Landscape: 1200mm(+)/1200mm(+)
Packaging Configuration	31pcs/Pallet, 682pcs/40ft Container

**ELECTRICAL PARAMETERS AT STC**

TYPE	JAM66S30 -480/MR	JAM66S30 -485/MR	JAM66S30 -490/MR	JAM66S30 -495/MR	JAM66S30 -500/MR	JAM66S30 -505/MR
Rated Maximum Power(P <sub>max</sub> ) [W]	480	485	490	495	500	505
Open Circuit Voltage(V <sub>oc</sub> ) [V]	45.07	45.20	45.33	45.46	45.59	45.72
Maximum Power Voltage(V <sub>mp</sub> ) [V]	37.62	37.81	37.99	38.17	38.35	38.53
Short Circuit Current(I <sub>sc</sub> ) [A]	13.65	13.72	13.79	13.86	13.93	14.00
Maximum Power Current(I <sub>mp</sub> ) [A]	12.76	12.83	12.90	12.97	13.04	13.11
Module Efficiency [%]	20.2	20.4	20.6	20.8	21.1	21.3
Power Tolerance	0~+5W					
Temperature Coefficient of I <sub>sc</sub> (α <sub>Isc</sub> )	+0.045%/°C					
Temperature Coefficient of V <sub>oc</sub> (β <sub>Voc</sub> )	-0.275%/°C					
Temperature Coefficient of P <sub>max</sub> (γ <sub>Pmp</sub> )	-0.350%/°C					
STC	Irradiance 1000W/m <sup>2</sup> , cell temperature 25°C, AM1.5G					

Remark: Electrical data in this catalog do not refer to a single module and they are not part of the offer. They only serve for comparison among different module types.

**ELECTRICAL PARAMETERS AT NOCT**

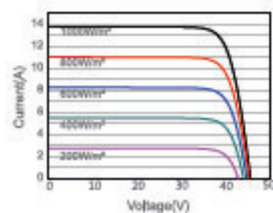
TYPE	JAM66S30 -480/MR	JAM66S30 -485/MR	JAM66S30 -490/MR	JAM66S30 -495/MR	JAM66S30 -500/MR	JAM66S30 -505/MR
Rated Max Power(P <sub>max</sub> ) [W]	363	367	370	374	378	382
Open Circuit Voltage(V <sub>oc</sub> ) [V]	42.15	42.30	42.43	42.58	42.72	42.86
Max Power Voltage(V <sub>mp</sub> ) [V]	35.54	35.67	35.76	35.84	35.93	36.02
Short Circuit Current(I <sub>sc</sub> ) [A]	10.99	11.06	11.13	11.20	11.27	11.34
Max Power Current(I <sub>mp</sub> ) [A]	10.21	10.28	10.36	10.44	10.52	10.60
NOCT	Irradiance 800W/m <sup>2</sup> , ambient temperature 20°C, wind speed 1m/s, AM1.5G					

**OPERATING CONDITIONS**

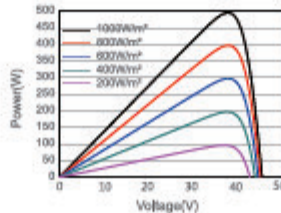
Maximum System Voltage	1000V/1500V DC
Operating Temperature	-40°C ~ +85°C
Maximum Series Fuse Rating	25A
Maximum Static Load, Front*	5400Pa(112lb/ft <sup>2</sup> )
Maximum Static Load, Back*	2400Pa(50lb/ft <sup>2</sup> )
NOCT	45±2°C
Safety Class	Class II
Fire Performance	UL Type 1

**CHARACTERISTICS**

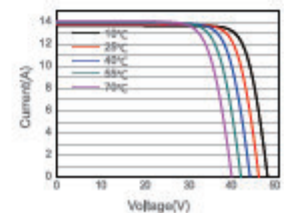
Current-Voltage Curve JAM66S30-495/MR



Power-Voltage Curve JAM66S30-495/MR



Current-Voltage Curve JAM66S30-495/MR



Premium Cells, Premium Modules

Version No.: Global\_EN\_20200923A

#### 6.4 Ficha técnica inversor

SUN2000-30/36/40KTL-M3  
**Smart PV Controller**



##### Smart

8 strings intelligent  
monitoring



##### Efficient

Max. efficiency 98.7%



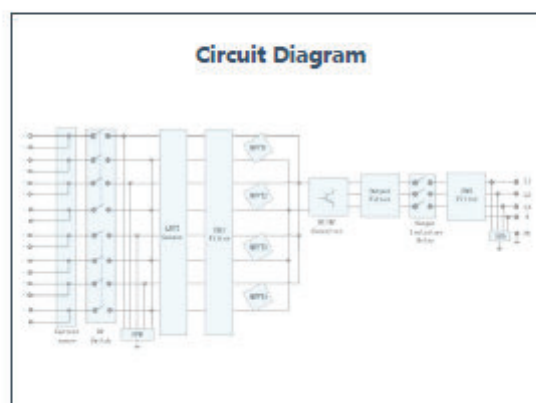
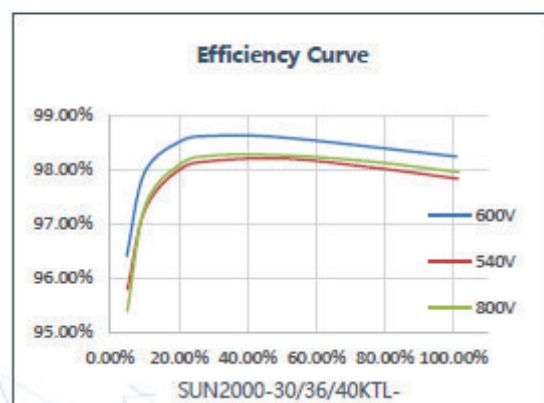
##### Safe

Fuse free design



##### Reliable

Type II surge arresters for DC &  
AC





SUN2000-30/36/40KTL-M3  
**Technical Specification**

Technical Specification	SUN2000-30KTL-M3	SUN2000-36KTL-M3	SUN2000-40KTL-M3
<b>Efficiency</b>			
Max. Efficiency		98.7%	
European Efficiency		98.4%	
<b>Input</b>			
Max. Input Voltage <sup>1</sup>		1,100 V	
Max. Current per MPPT		26 A	
Max. Short Circuit Current per MPPT		40 A	
Start Voltage		200 V	
MPPT Operating Voltage Range <sup>2</sup>		200 V ~ 1000 V	
Rated Input Voltage		600 V	
Number of Inputs		8	
Number of MPP Trackers		4	
<b>Output</b>			
Rated AC Active Power	30,000 W	36,000 W	40,000 W
Max. AC Apparent Power	33,000 VA	40,000 VA	44,000 VA
Rated Output Voltage		230 Vac / 400 Vac, 3W/N+PE	
Rated AC Grid Frequency		50 Hz / 60 Hz	
Rated Output Current	43.3 A	52.0 A	57.8 A
Max. Output Current	47.9 A	58.0 A	63.8 A
Adjustable Power Factor Range		0.8 LG ~ 0.8 LD	
Max. Total Harmonic Distortion		< 3%	
<b>Protection</b>			
Input-side Disconnection Device		Yes	
Anti-islanding Protection		Yes	
AC Overcurrent Protection		Yes	
DC Reverse-polarity Protection		Yes	
PV-array String Fault Monitoring		Yes	
DC Surge Arrester		Yes	
AC Surge Arrester		Yes	
DC Insulation Resistance Detection		Yes	
Residual Current Monitoring Unit		Yes	
Arc Fault Protection		Yes	
Ripple Receiver Control		Yes	
Integrated PID Recovery <sup>4</sup>		Yes	
<b>Communication</b>			
Display		LED Indicators, Integrated WLAN + FusionSolar APP	
RS485		Yes	
Smart Dongle		WLAN/Ethernet via Smart Dongle-WLAN-FE (Optional)	
Monitoring BUS (MBUS)		4G / 3G / 2G via Smart Dongle-4G (Optional)	
		Yes (Isolation Transformer required)	
<b>General Data</b>			
Dimensions (W x H x D)		640 x 530 x 270 mm (25.2 x 20.9 x 10.6 inch)	
Weight (with mounting plate)		43 kg (94.8 lb)	
Noise Level		< 46 dB	
Operating Temperature Range		-25 ~ + 60 °C (-13 ~ 140 °F)	
Cooling Method		Natural Convection	
Max. Operating Altitude		0 - 4,000 m (13,123 ft.)	
Relative Humidity		0% RH ~ 100% RH	
DC Connector		Staubli MC4	
AC Connector		Waterproof Connector + OT/DT Terminal	
Protection Degree		IP 66	
Topology		Transformerless	
Nighttime Power Consumption		≤ 5.5W	
<b>Optimizer Compatibility</b>			
DC MBUS Compatible Optimizer		SUN2000-450W-P	
<b>Standard Compliance (more available upon request)</b>			
Safety		EN 62109-1/-2, IEC 62109-1/-2, EN 50530, IEC 62116, IEC 60068, IEC 61683	
Grid Connection Standards		IEC 61727, VDE-AR-N4105, VDE 0126-1-1, BDEW, G59/3, UTE C 15-712-1, CEI 0-16, CEI 0-21, RD 661, RD 1699, PO. 12.3, RD 413, EN-50438-Turkey, EN-50438-Ireland, C10/11, MEA, Resolution No.7, NRS 097-2-1, AS/NZS 4777.2, DEWA	

<sup>1</sup> The maximum input voltage is the upper limit of the DC voltage. Any higher input DC voltage would probably damage inverter.

<sup>2</sup> Any DC input voltage beyond the operating voltage range may result in inverter improper operating.

<sup>3</sup> For Austria, German, Belgium & Ukraine the Max. AC Apparent Power will not exceed 30,000 VA (with regard to grid code: VDE-AR-N4105, C10/11 & Austria)

<sup>4</sup> SUN2000-30~40KTL-M3 raises potential between PV- and ground to above zero through Integrated PID recovery function to recover module degradation from PID. Supported module types include: P-type (mono, poly), N-type (nPERC, HIT)

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Vista general del proyecto



Figura: Vista general, Planificación 3D

Instalación FV

3D, Sistema FV conectado a la red con consumidores eléctricos

Datos climáticos	el Prat de Llobregat, ESP (1991 - 2010)
Fuente de los valores	Meteonorm 7.2(i)c3
Potencia generador FV	50 kWp
Superficie generador FV	239,8 m <sup>2</sup>
Número de módulos FV	101
Número de inversores	1

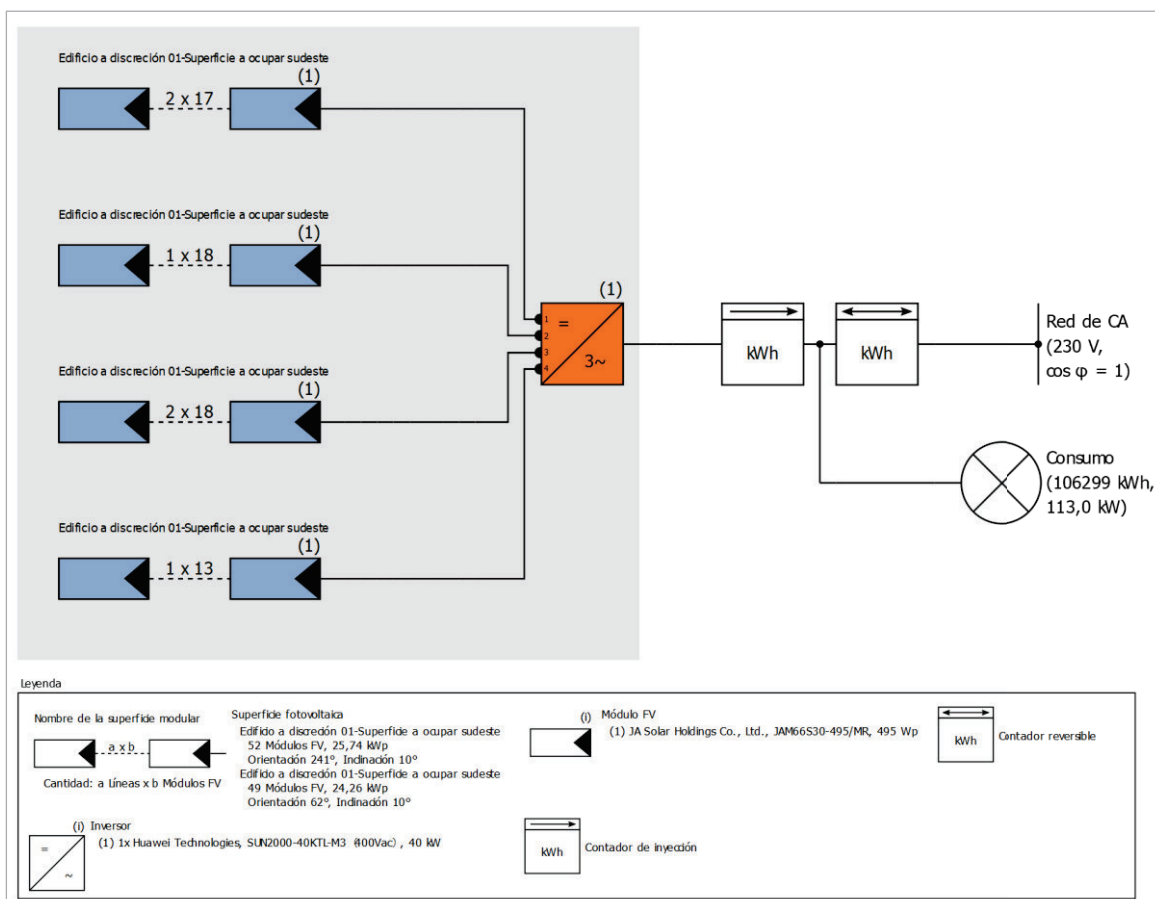


Figura: Diagrama esquemático

## Pronóstico rendim.

### Pronóstico rendim.

Potencia generador FV	50,00 kWp
Rendimiento anual espec.	1.190,46 kWh/kWp
Coefficiente de rendimiento de la instalación (PR)	76,36 %
Reducción de rendimiento por sombreado	0,6 %/Año
Energía de generador FV (Red CA)	59.541 kWh/Año
Consumo propio	35.246 kWh/Año
Limitación en el punto de inyección	0 kWh/Año
Inyección en la red	24.296 kWh/Año
Proporción de consumo propio	59,2 %
Emisiones de CO <sub>2</sub> evitadas	14.344 kg / año
Grado de autarquía	33,1 %

Los resultados han sido calculados mediante un modelo de cálculo matemático de la empresa Valentin Software GmbH (algoritmos PV\*SOL). Los resultados reales de la instalación fotovoltaica pueden mostrar variaciones debido a las variaciones meteorológicas, curvas de eficiencia de los módulos o de inversores así como a otras causas.



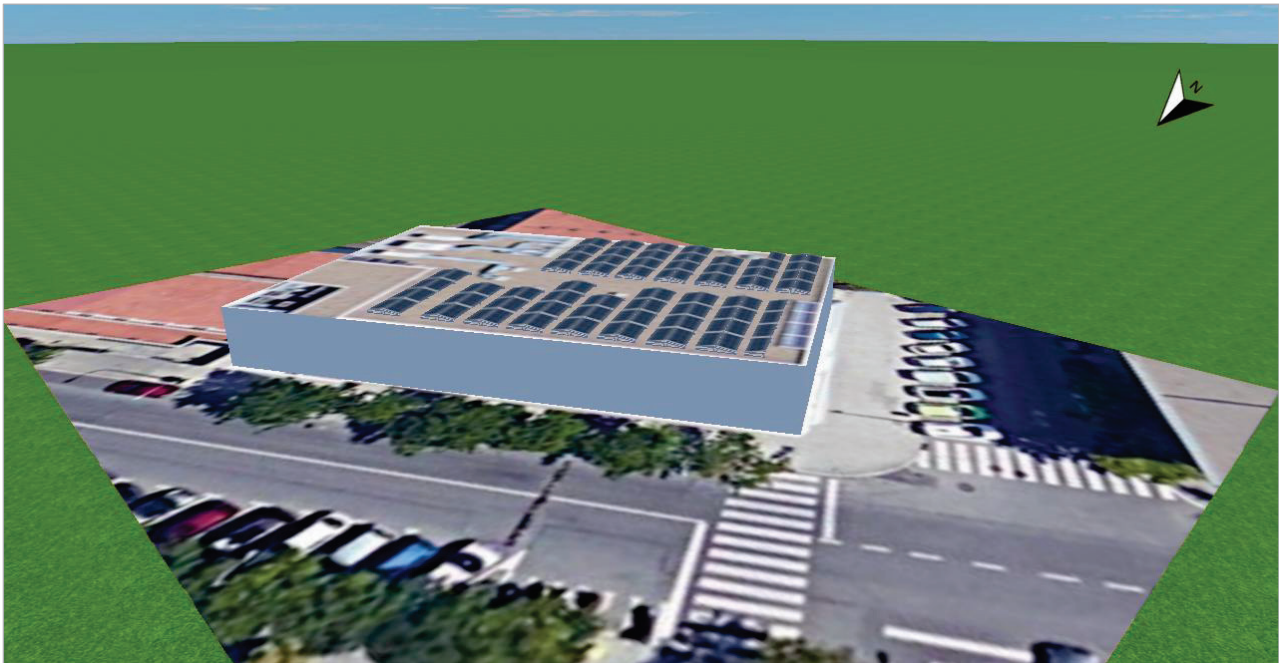


Figura: Vista noroeste

Conexión



Figura: Conexión de módulos

Sombreado

