Version 7.4.8

PVsyst - Simulation report

Grid-Connected System

Project: Nuevo Proyecto

Variant: Nueva variante de simulación

No 3D scene defined, no shadings

System power: 1250 Wp

Lavapiés - España

Author

PVsyst V7.4.8
VC0, Simulation date:
08/09/24 23:12
with V7.4.8

Project summary

Geographical Site
Lavapiés
España

Situation

Latitude	40.40 °N
Longitude	-3.70 °W
Altitude	626 m
Time zone	UTC+1

Project settings
Albedo 0.20

Weather data
Lavapiés
PVGIS api TMY

System summary

Grid-Connected System
No 3D scene defined, no shadings

PV Field Orientation
Fixed plane
Tilt/Azimuth 30 / -19 °

Near Shadings
No Shadings

User's needs
Unlimited load (grid)

System information

PV Array

Nb. of modules	5 units
Pnom total	1250 Wp

Inverters

Nb. of units	1 unit
Pnom total	1200 W
Pnom ratio	1.042

Results summary

Produced Energy	1704.18 kWh/year	Specific production	1363 kWh/kWp/year	Perf. Ratio PR	66.87 %

Table of contents

General parameters

Grid-Connected System — **No 3D scene defined, no shadings**

PV Field Orientation

Orientation		Sheds configuration	Models used	
Fixed plane		No 3D scene defined	Transposition	Perez
Tilt/Azimuth	30 / -19 °		Diffuse	Imported
			Circumsolar	separate

Horizon
Free Horizon

Near Shadings
No Shadings

User's needs
Unlimited load (grid)

PV Array Characteristics

PV module

Manufacturer	Generic
Model	Mono 250 Wp 60 cells
(Custom parameters definition)	
Unit Nom. Power	250 Wp
Number of PV modules	5 units
Nominal (STC)	1250 Wp
Modules	1 strings x 5 In series
At operating cond. (50°C)	
Pmpp	1129 Wp
U mpp	138 V
I mpp	8.2 A

Inverter

Manufacturer	Generic
Model	Sunny Boy 1200
(Original PVsyst database)	
Unit Nom. Power	1.20 kWac
Number of inverters	1 unit
Total power	1.2 kWac
Operating voltage	100-320 V
Pnom ratio (DC:AC)	1.04

Total PV power

Nominal (STC)	1.25 kWp
Total	5 modules
Module area	8.1 m²

Total inverter power

Total power	1.2 kWac
Number of inverters	1 unit
Pnom ratio	1.04

Array losses

Array Soiling Losses
Loss Fraction 15.0 %

Thermal Loss factor
Module temperature according to irradiance
Uc (const) 20.0 W/m²K
Uv (wind) 0.0 W/m²K/m/s

DC wiring losses
Global array res. 275 mΩ
Loss Fraction 1.5 % at STC

LID - Light Induced Degradation
Loss Fraction 2.0 %

Module Quality Loss
Loss Fraction -0.8 %

Module mismatch losses
Loss Fraction 2.0 % at MPP

IAM loss factor
Incidence effect (IAM): Fresnel smooth glass, n = 1.526

0°	30°	50°	60°	70°	75°	80°	85°	90°
1.000	0.998	0.981	0.948	0.862	0.776	0.636	0.403	0.000

Spectral correction
FirstSolar model
Precipitable water estimated from relative humidity

Coefficient Set	C0	C1	C2	C3	C4	C5
Monocrystalline Si	0,85914	-0,02088	-0,0058853	0,12029	0,026814	-0,001781

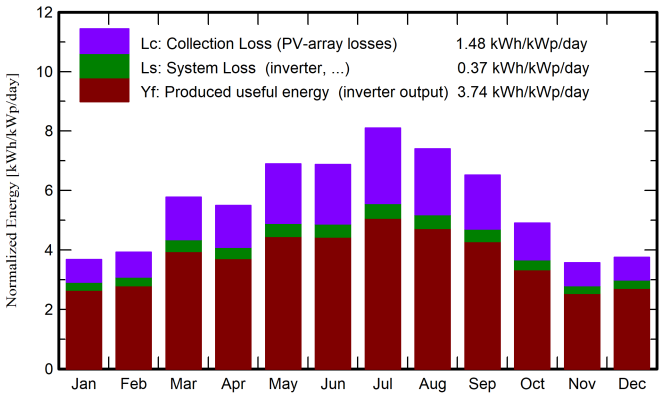
PVsyst V7.4.8
VC0, Simulation date:
08/09/24 23:12
with V7.4.8

Main results

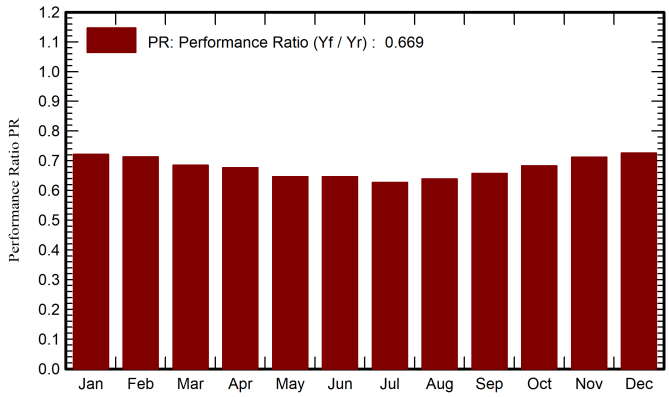
System Production

Produced Energy	1704.18 kWh/year	Specific production	1363 kWh/kWp/year
		Perf. Ratio PR	66.87 %

Normalized productions (per installed kWp)



Performance Ratio PR



Balances and main results

	GlobHor kWh/m²	DiffHor kWh/m²	T_Amb °C	GlobInc kWh/m²	GlobEff kWh/m²	EArray kWh	E_Grid kWh	PR ratio
January	68.9	25.74	4.98	113.8	94.2	113.2	102.7	0.722
February	77.5	33.33	4.90	109.9	90.9	108.2	98.0	0.714
March	140.9	46.68	8.96	179.0	148.5	168.6	153.4	0.686
April	152.6	68.59	11.29	164.9	136.2	153.7	139.4	0.676
May	213.7	62.33	18.81	213.7	176.7	190.0	172.8	0.647
June	214.5	72.33	19.92	206.1	170.2	183.2	166.6	0.647
July	256.7	53.09	25.54	251.0	207.6	215.8	196.7	0.627
August	215.6	52.29	23.11	229.5	190.1	201.1	183.2	0.639
September	162.8	50.01	19.37	195.6	162.4	176.5	160.8	0.658
October	111.9	39.22	13.81	152.0	126.0	142.6	129.7	0.683
November	70.3	30.99	9.05	107.1	88.8	105.2	95.4	0.712
December	65.1	23.05	5.02	116.2	95.9	116.0	105.4	0.726
Year	1750.7	557.66	13.79	2038.8	1687.3	1874.2	1704.2	0.669

Legends

GlobHor	Global horizontal irradiation
DiffHor	Horizontal diffuse irradiation
T_Amb	Ambient Temperature
GlobInc	Global incident in coll. plane
GlobEff	Effective Global, corr. for IAM and shadings
EArray	Effective energy at the output of the array
E_Grid	Energy injected into grid
PR	Performance Ratio

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VC0, Simulation date:
08/09/24 23:12
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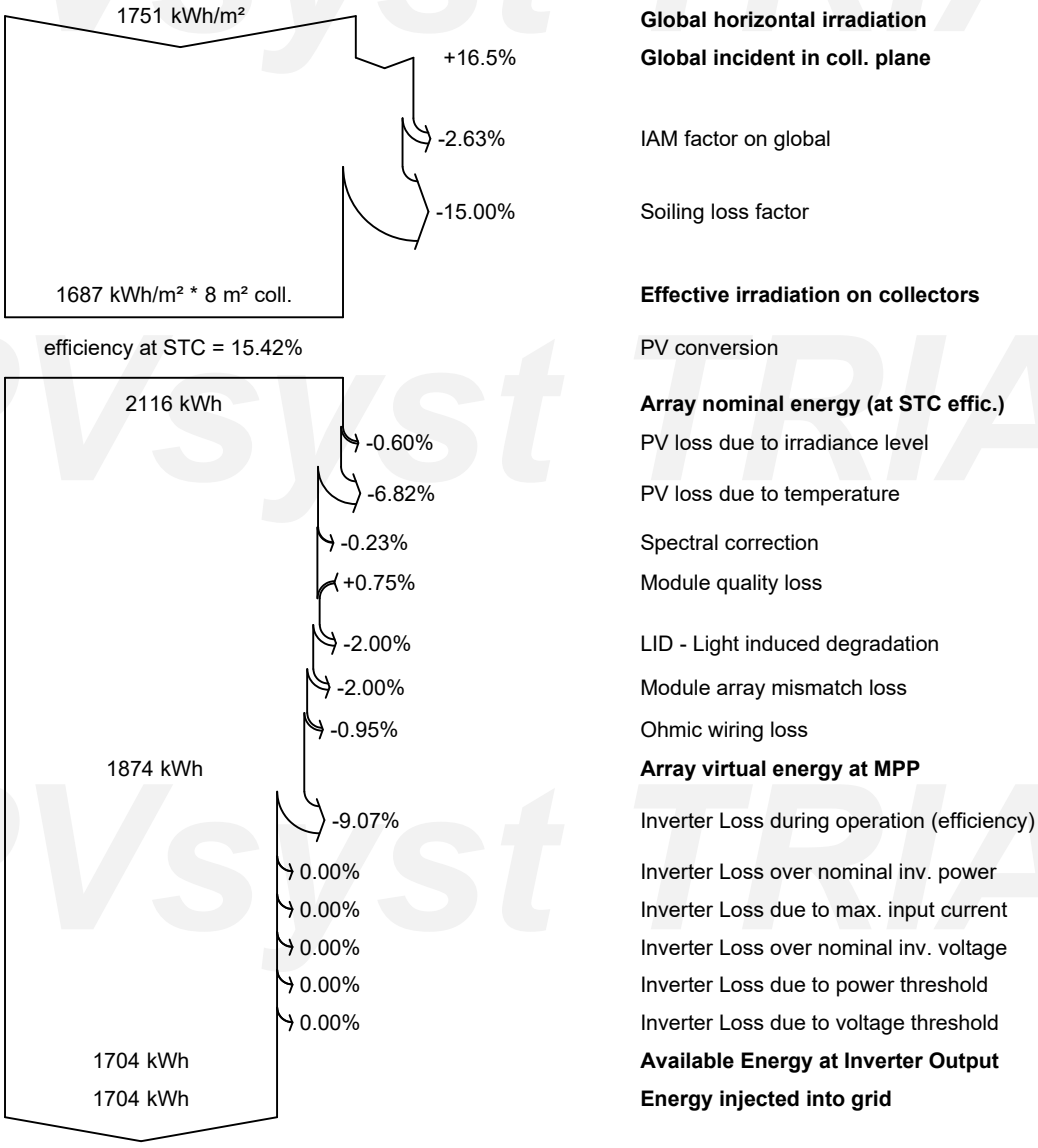
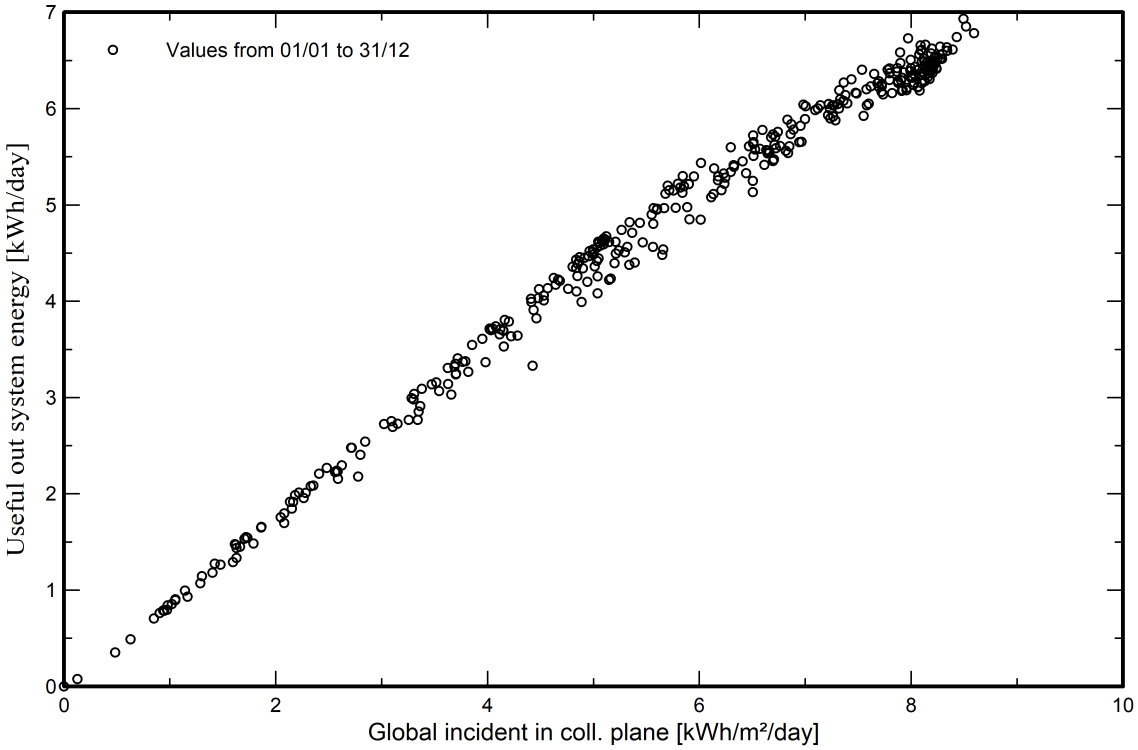
Loss diagram

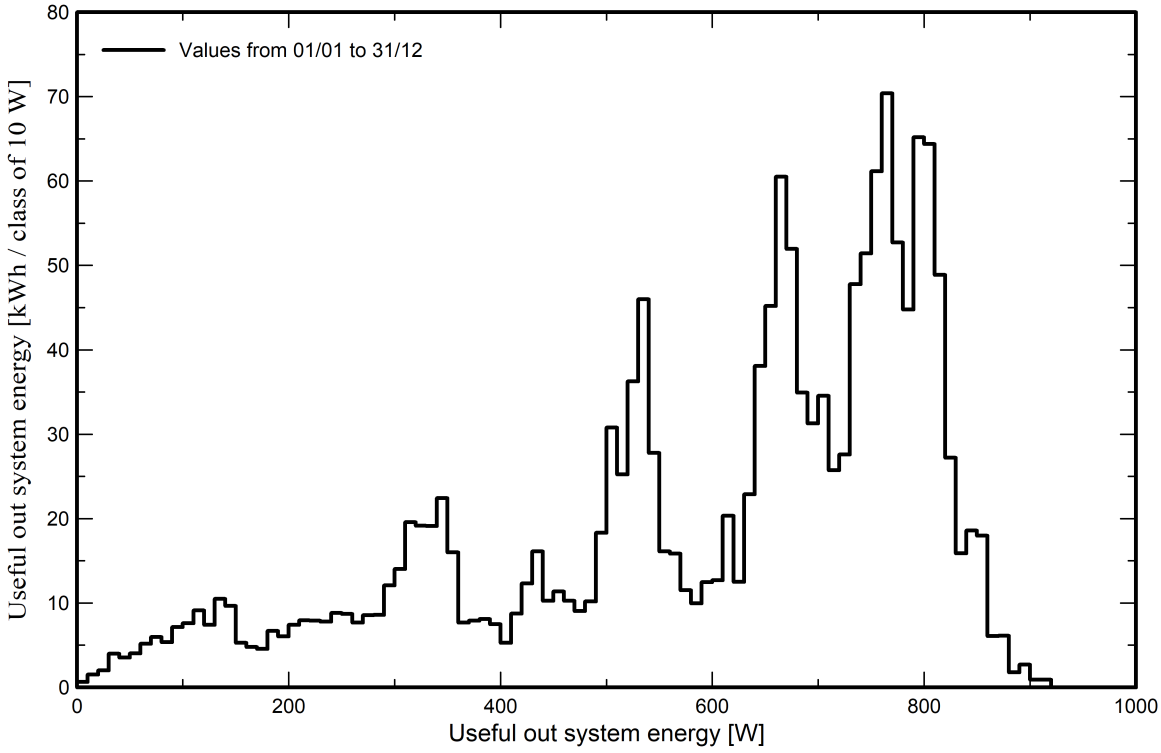


Predef. graphs

Diagrama entrada/salida diaria



Distribución de potencia de salida del sistema



Single-line diagram

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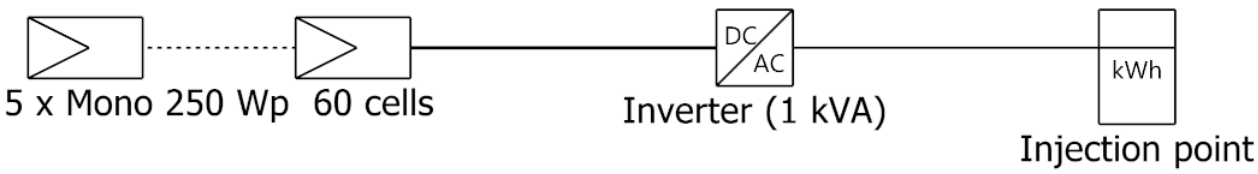

PV module	Mono 250 Wp 60 cells
Inverter	Sunny Boy 1200
String	5 x Mono 250 Wp 60 cells

	Nuevo Proyecto	
	VC0 : Nueva variante de simulación	08/09/24