PVSYST
PHOTOVOLTAIC SOFTWARE

PVsyst - Simulation report

Grid-Connected System

Project: Vivek Lohar house

Variant: New simulation variant

No 3D scene defined, no shadings

System power: 2100 Wp

Vivek Lohar House - India

Author

PVsyst V8.0.7
VC0, Simulation date:
28/02/25 15:03
with V8.0.7

Project summary

Geographical Site
Vivek Lohar House
India

Situation
Latitude 20.71 °N
Longitude 76.56 °E
Altitude 296 m
Time zone UTC+5.5

Project settings
Albedo 0.20

Weather data
Vivek Lohar House
Meteonorm 8.2 (2001-2020), Sat=100% - Synthetic

System summary

Grid-Connected System

No 3D scene defined, no shadings

Orientation #1
Fixed plane
Tilt/Azimuth 22 / 0 °

Near Shadings
no Shadings

User's needs
Unlimited load (grid)

System information

PV Array		Inverters	
Nb. of modules	7 units	Nb. of units	1 unit
Pnom total	2100 Wp	Pnom total	2000 W
		Pnom ratio	1.050

Results summary

Produced Energy	3224.4 kWh/year	Specific production	1535 kWh/kWp/year	Perf. Ratio PR	78.97 %

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General parameters

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

Orientation #1
Fixed plane
Tilt/Azimuth 22 / 0 °

Sheds configuration
No 3D scene defined

Models used
Transposition Perez
Diffuse Perez, Meteonorm
Circumsolar separate

Horizon
Free Horizon

Near Shadings
no Shadings

User's needs
Unlimited load (grid)

PV Array Characteristics

PV module

Manufacturer	Generic
Model	Somera VSMBB.60.300.03.04
(Original PVsyst database)	
Unit Nom. Power	300 Wp
Number of PV modules	7 units
Nominal (STC)	2100 Wp
Modules	1 strings x 7 In series
At operating cond. (50°C)	
Pmpp	1896 Wp
U mpp	207 V
I mpp	9.2 A

Inverter

Manufacturer	Generic
Model	ISG1I-2000/1
(Original PVsyst database)	
Unit Nom. Power	2.00 kWac
Number of inverters	1 unit
Total power	2.0 kWac
Operating voltage	150-450 V
Pnom ratio (DC:AC)	1.05

Total PV power

Nominal (STC)	2.10 kWp
Total	7 modules
Module area	11.4 m²

Total inverter power

Total power	2 kWac
Number of inverters	1 unit
Pnom ratio	1.05

Array losses

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. 378 mΩ
Loss Fraction 1.5 % at STC

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

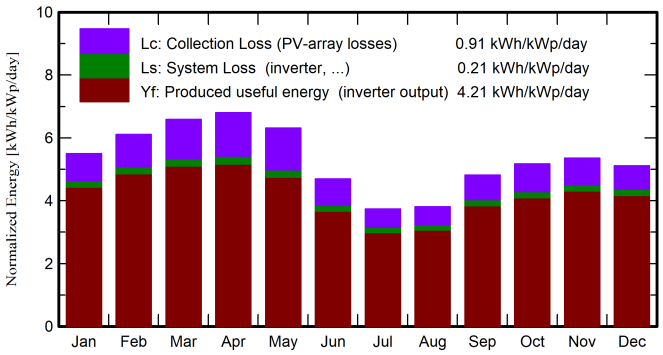
0°	30°	50°	60°	70°	75°	80°	85°	90°
1.000	0.998	0.981	0.948	0.862	0.776	0.636	0.402	0.000

Main results

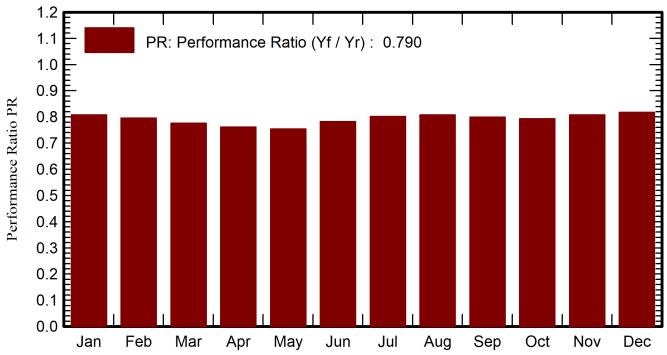
System Production

Produced Energy	3224.4 kWh/year	Specific production	1535 kWh/kWp/year
		Perf. Ratio PR	78.97 %

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	135.4	46.28	21.76	170.4	167.0	303.0	289.1	0.808
February	145.1	57.15	25.47	171.2	167.5	299.3	285.9	0.795
March	188.2	71.95	29.60	204.4	199.7	348.1	332.8	0.775
April	204.4	75.51	32.62	203.9	198.9	341.7	326.2	0.762
May	210.3	85.12	36.05	195.6	189.9	324.7	309.8	0.754
June	154.7	85.93	31.63	140.8	136.2	243.4	231.4	0.782
July	125.0	82.51	28.41	116.0	112.1	206.1	195.2	0.801
August	122.1	86.26	27.26	118.0	114.3	210.8	200.1	0.807
September	140.5	75.70	27.39	144.6	140.4	254.7	242.6	0.799
October	143.4	68.39	27.23	160.3	156.6	279.9	266.9	0.793
November	131.0	55.00	24.28	160.6	157.0	285.0	272.3	0.808
December	124.3	51.98	21.77	158.5	154.9	284.8	272.0	0.817
Year	1824.4	841.79	27.80	1944.2	1894.5	3381.6	3224.4	0.790

Legends

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

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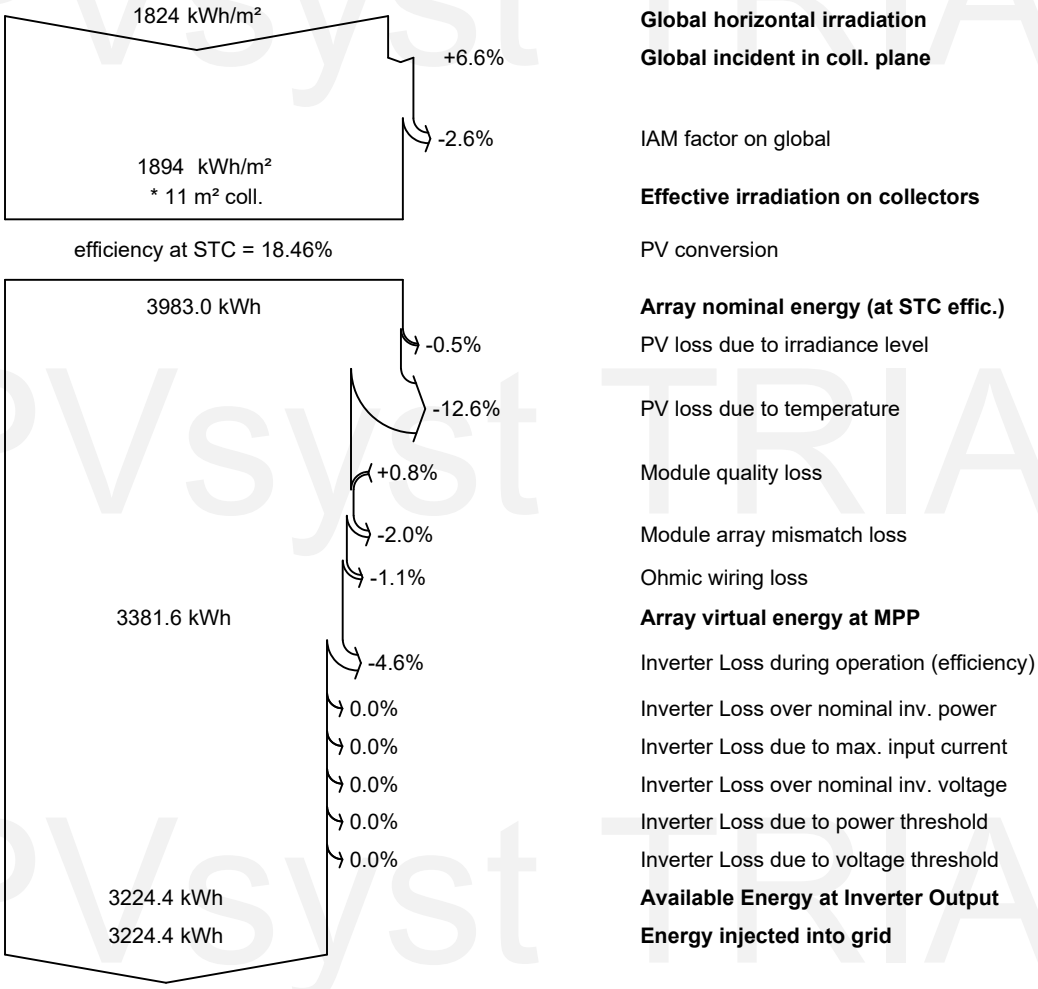
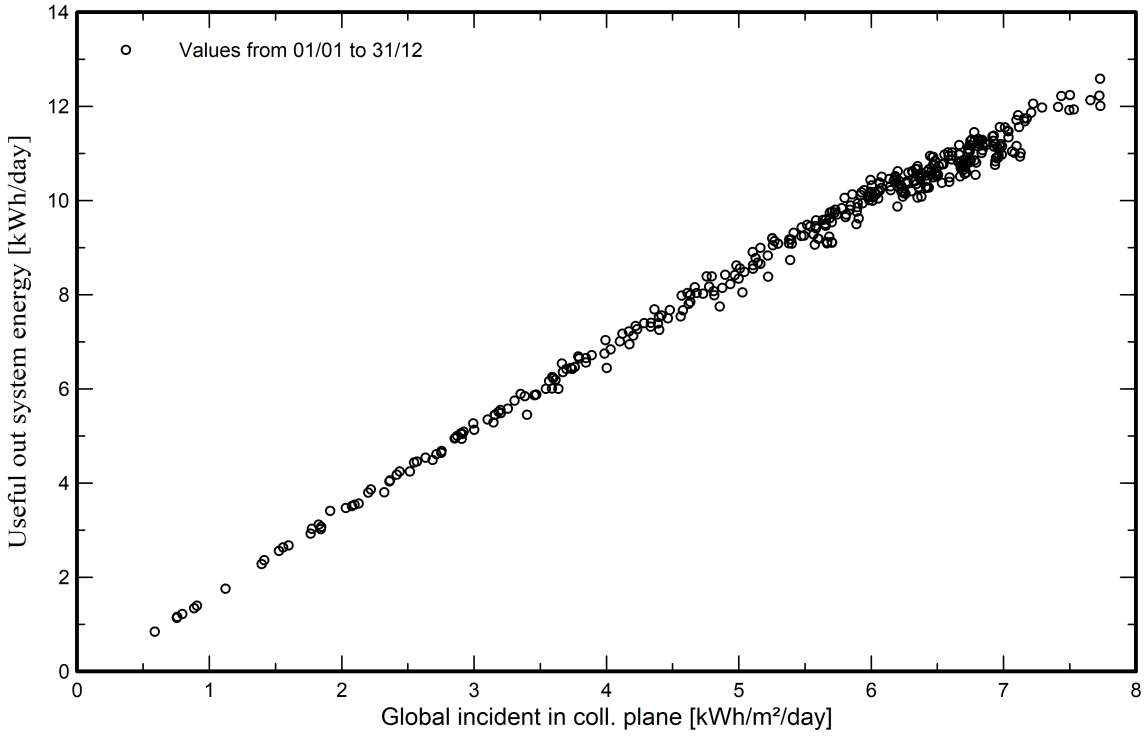
Loss diagram

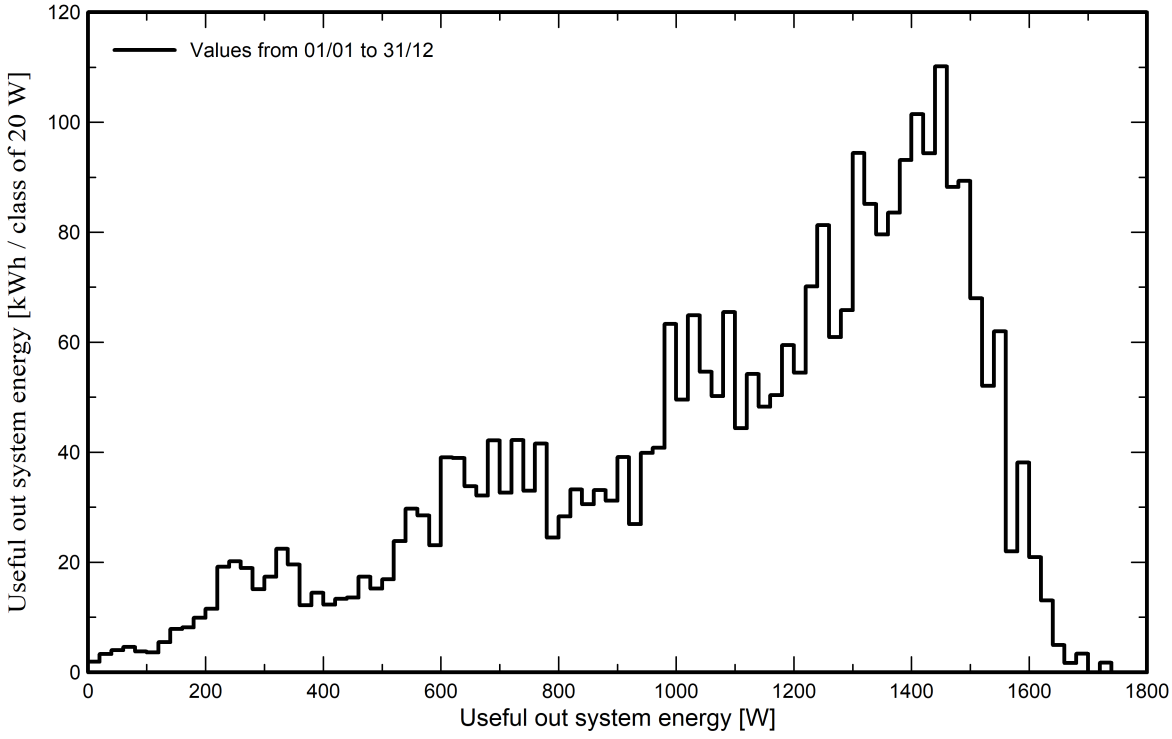


Predef. graphs

Daily Input/Output diagram



System Output Power Distribution



Single-line diagram

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PV module	Somera VSMBB.60.300.03.04
Inverter	ISG1I-2000/1
String	7 x Somera VSMBB.60.300.03.04

	Vivek Lohar house	
	VC0 : New simulation variant	28/02/25