Design 1Flush Mount - Cartagena Irradiance PV_Makro_Cartagena_Optimization, Makro Cartagena

Report

Project Name	PV_Makro_Cartagena_Optimization
Project Address	Makro Cartagena
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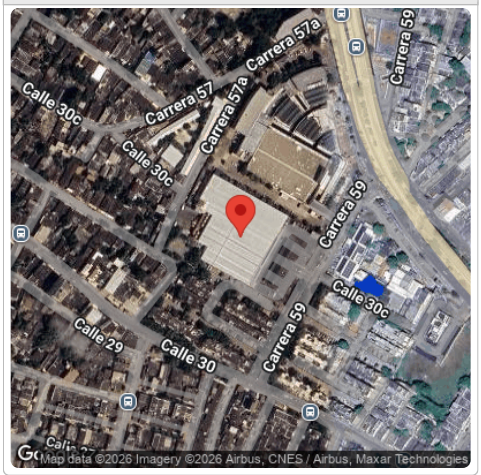
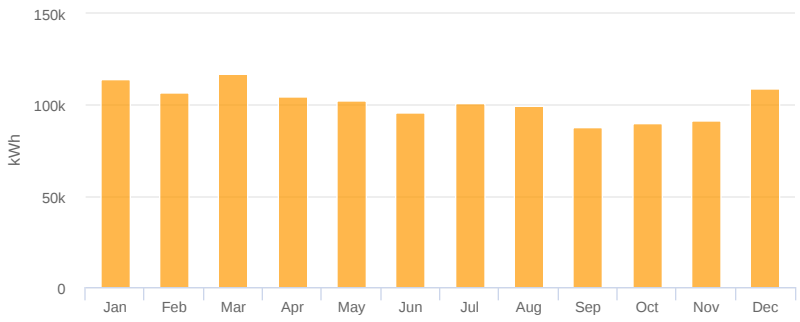
System Metrics

Design	Design 1Flush Mount - Cartagena Irradiance
Module DC Nameplate	792.13 kW
Inverter AC Nameplate	700.00 kW Load Ratio: 1.13
Annual Production	1.220 GWh
Performance Ratio	76.6%
kWh/kWp	1,539.9
Weather Dataset	TMY, 10km Grid, Meteonorm 8 (meteonorm_v8)
Simulator Version	63c6de5740-3da35fdb2a-0fd1194dc6-7e4f0e159f

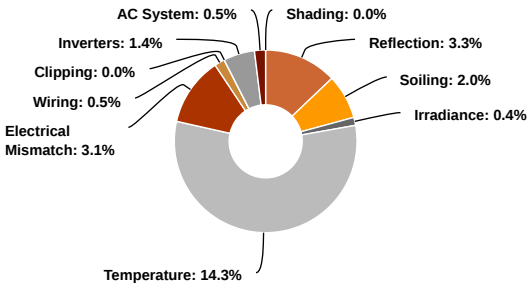
Project Location



Monthly Production



Sources of System Loss



Annual Production

	Description	Output	% Delta
Irradiance (kWh/m²)	Annual Global Horizontal Irradiance	1,972.8	
	POA Irradiance	2,010.0	1.9%
	Shaded Irradiance	2,010.0	0.0%
	Irradiance after Reflection	1,944.1	-3.3%
	Irradiance after Soiling	1,905.2	-2.0%
	Total Collector Irradiance	**1,905.2**	**0.0%**
Energy (kWh)	Nameplate	1,509,369.7	
	Output at Irradiance Levels	1,503,980.1	-0.4%
	Output at Cell Temperature Derate	1,288,937.4	-14.3%
	Output after Electrical Mismatch	1,249,185.2	-3.1%
	Optimal DC Output	1,243,371.4	-0.5%
	Constrained DC Output	1,243,368.6	0.0%
	Inverter Output	1,225,961.5	-1.4%
	Energy to Grid	**1,219,831.7**	**-0.5%**
Temperature Metrics			
	Avg. Operating Ambient Temp	29.0 °C	
	Avg. Operating Cell Temp	51.4 °C	
Simulation Metrics			
	Operating Hours	4633	
	Solved Hours	4633	

Condition Set

Description	Condition Set 1											
Weather Dataset	TMY, 10km Grid, Meteonorm 8 (meteonorm_v8)											
Solar Angle Location	Meteo Lat/Lng											
Transposition Model	Perez Model											
Temperature Model	Sandia Model											
Temperature Model Parameters	Rack Type	a	b	Temperature Delta								
	Fixed Tilt	-3.56	-0.075	3°C								
	Flush Mount	-2.81	-0.0455	0°C								
	East-West	-3.56	-0.075	3°C								
	Carport	-3.56	-0.075	3°C								
Soiling (%)	J	F	M	A	M	J	J	A	S	O	N	D
	2	2	2	2	2	2	2	2	2	2	2	2
Albedo	J	F	M	A	M	J	J	A	S	O	N	D
	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20
Rear Mismatch Loss	10%	Rear Shading Factor	5%									
Module Transparency	0%											
Irradiation Variance	5%											
Cell Temperature Spread	4° C											
Module Binning Range	-2.5% to 2.5%											
AC System Derate	0.50%											

Module & Component Characterizations	Type	Component	Characterization	Bifacial
	Module	BiHiKu CS6Y-565MB-AG (CanadianSolar)	Spec Sheet Characterization, PAN	False
	Inverter	SUN2000-100KTL-M1 (380/400) (Huawei)	Spec Sheet	N/A

Components

Component	Name	Count
Inverters	SUN2000-100KTL-M1 (380/400) (Huawei)	7 (700.00 kW)
Strings	10 AWG (Copper)	72 (2,799.6 m)
Module	CanadianSolar, BiHiKu CS6Y-565MB-AG (565W)	1,402 (792.13 kW)

Wiring Zones

Description	Combiner Poles	String Size	Stringing Strategy
Wiring Zone	-	5-20	Along Racking

Field Segments

Description	Racking	Orientation	Tilt	Azimuth	Intrarow Spacing	Frame Size	Frames	Modules	Power
Field Segment 1	Flush Mount	Landscape (Horizontal)	10°	160°	0.0 m	1x1	1,402	1,402	792.13 kW

Detailed Layout2