471 kW Carport and Shade Structures COA ABQ CITY TRANSIT, 8001 Daytona Rd NE, Albuquerque NM

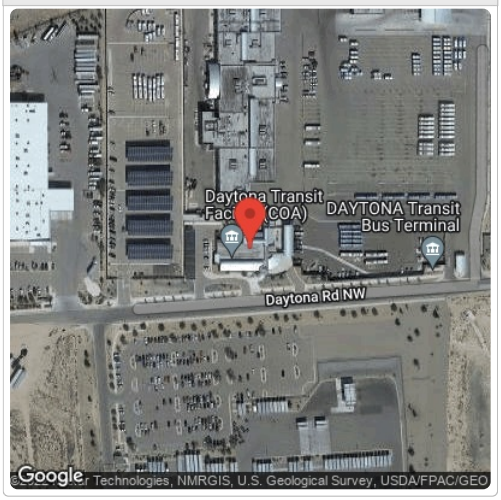
Report

Project Name	COA ABQ CITY TRANSIT
Project Address	8001 Daytona Rd NE, Albuquerque NM
Prepared By	Zach Johnson zach@sollunasolar.com

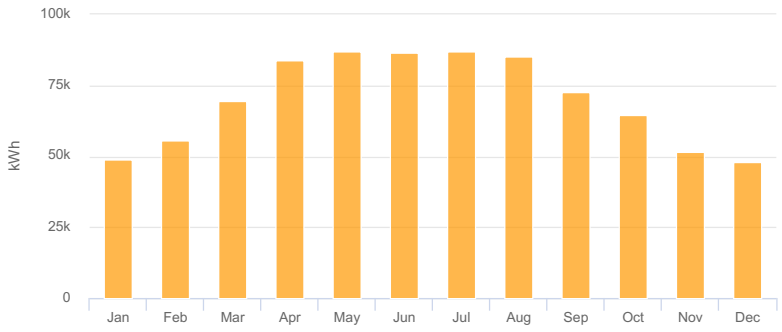
System Metrics

Design	471 kW Carport and Shade Structures
Module DC Nameplate	471.2 kW
Inverter AC Nameplate	399.6 kW Load Ratio: 1.18
Annual Production	840.7 MWh
Performance Ratio	84.2%
kWh/kWp	1,784.3
Weather Dataset	TMY, ALBUQUERQUE INTL ARPT [ISIS], NSRDB (tmy3, I)
Simulator Version	7360b54764-fb86b8fc1e-b3fa9ed0c1-966979ea93

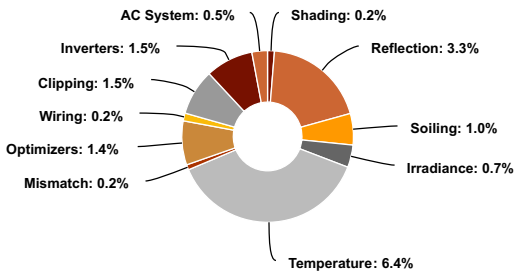
Project Location



Monthly Production



Sources of System Loss



Annual Production

	Description	Output	% Delta
Irradiance (kWh/m²)	Annual Global Horizontal Irradiance	1,980.4	
	POA Irradiance	2,119.5	7.0%
	Shaded Irradiance	2,114.9	-0.2%
	Irradiance after Reflection	2,045.5	-3.3%
	Irradiance after Soiling	2,025.0	-1.0%
	Total Collector Irradiance	**2,025.0**	**0.0%**
Energy (kWh)	Nameplate	954,221.2	
	Output at Irradiance Levels	947,420.7	-0.7%
	Output at Cell Temperature Derate	886,778.2	-6.4%
	Output After Mismatch	885,326.9	-0.2%
	Optimizer Output	872,924.9	-1.4%
	Optimal DC Output	870,751.4	-0.2%
	Constrained DC Output	857,990.9	-1.5%
	Inverter Output	844,969.7	-1.5%
	Energy to Grid	**840,744.8**	**-0.5%**
Temperature Metrics			
	Avg. Operating Ambient Temp		17.3 °C
	Avg. Operating Cell Temp		30.7 °C
Simulation Metrics			
	Operating Hours		4566
	Solved Hours		4566

Condition Set

Description	Condition Set 1
Weather Dataset	TMY, ALBUQUERQUE INTL ARPT [ISIS], NSRDB (tmy3, I)
Solar Angle Location	Meteo Lat/Lng
Transposition Model	Perez Model
Temperature Model	Diffusion Model

Temperature Model Parameters

Rack Type	U_{const}	U_{wind}
Fixed Tilt	29	0
Flush Mount	15	0
East-West	29	0
Carport	24	0

Soiling (%)

J	F	M	A	M	J	J	A	S	O	N	D
1	1	1	1	1	1	1	1	1	1	1	1

Irradiation Variance	5%
Cell Temperature Spread	4° C
Module Binning Range	-2.5% to 2.5%
AC System Derate	0.50%

Module Characterizations

Module	Uploaded By	Characterization
CS3U-380MS 1500V (Canadian Solar Inc.)	HelioScope	CS3U-380MS_MIX_CSI_EXT_V6_64_1500V_2017Q4.PAN, PAN

Component Characterizations

Device	Uploaded By	Characterization

Components

Component	Name	Count
Inverters	SE66.6KUS (SolarEdge)	6 (399.6 kW)
Strings	10 AWG (Copper)	31 (3,184.2 ft)
Optimizers	P800S (SolarEdge)	620 (496.0 kW)
Module	Canadian Solar Inc., CS3U-380MS 1500V (380W)	1,240 (471.2 kW)

Wiring Zones

Description	Combiner Poles	String Size	Stringing Strategy
Wiring Zone	-	13-40	Along Racking
Wiring Zone 2	-	13-40	Along Racking

Field Segments

Description	Racking	Orientation	Tilt	Azimuth	Intrarow Spacing	Frame Size	Frames	Modules	Power
Field Segment 1 (copy 10)	Carport	Landscape (Horizontal)	10°	180°	0.1 ft	1x1	216	216	82.1 kW
Field Segment 1 (copy 12)	Carport	Landscape (Horizontal)	10°	180°	0.1 ft	1x1	216	216	82.1 kW
Field Segment 1 (copy 11)	Carport	Landscape (Horizontal)	10°	180°	0.1 ft	1x1	216	216	82.1 kW
Field Segment 1 (copy 13)	Carport	Landscape (Horizontal)	10°	180°	0.1 ft	1x1	216	216	82.1 kW
Field Segment 1 (copy 14)	Carport	Landscape (Horizontal)	10°	180°	0.1 ft	1x1	216	216	82.1 kW
Field Segment 6	Carport	Landscape (Horizontal)	10°	90°	0.1 ft	1x1	160	160	60.8 kW

Detailed Layout