

Redesign - 1.27.25 SED PPA - Ashfield Town Garage - 9578, 896 Cape St, Ashfield, MA 01330

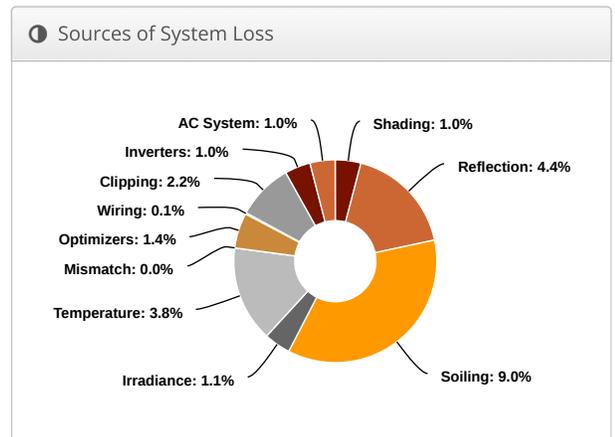
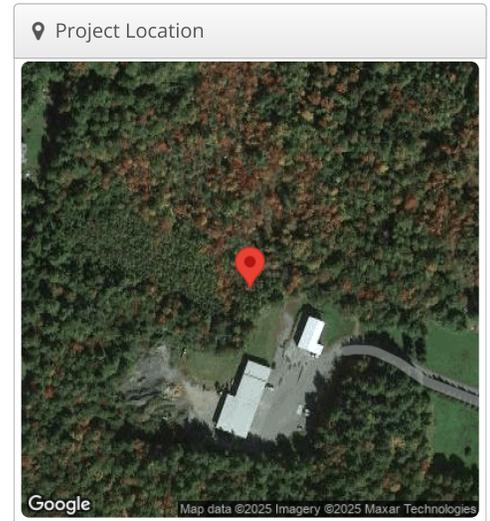
Report

Project Name	SED PPA - Ashfield Town Garage - 9578
Project Address	896 Cape St, Ashfield, MA 01330
Prepared By	Daniel Smith dsmith@solect.com



System Metrics

Design	Redesign - 1.27.25
Module DC Nameplate	74.9 kW
Inverter AC Nameplate	50.0 kW Load Ratio: 1.50
Annual Production	79.29 MWh
Performance Ratio	77.8%
kWh/kWp	1,058.9
Weather Dataset	TMY, 10km Grid (42.55,-72.85), NREL (prospector)
Simulator Version	cea3acb58c-9e88d4a32c-8a8b920d6e-9df46d7d8b



⚡ Annual Production			
	Description	Output	% Delta
Irradiance (kWh/m ²)	Annual Global Horizontal Irradiance	1,373.0	
	POA Irradiance	1,360.6	-0.9%
	Shaded Irradiance	1,346.8	-1.0%
	Irradiance after Reflection	1,287.7	-4.4%
	Irradiance after Soiling	1,172.3	-9.0%
	Total Collector Irradiance	1,172.3	0.0%
Energy (kWh)	Nameplate	88,244.2	
	Output at Irradiance Levels	87,312.9	-1.1%
	Output at Cell Temperature Derate	83,988.2	-3.8%
	Output After Mismatch	83,988.0	0.0%
	Optimizer Output	82,811.0	-1.4%
	Optimal DC Output	82,769.2	-0.1%
	Constrained DC Output	80,919.1	-2.2%
	Inverter Output	80,092.0	-1.0%
	Energy to Grid	79,291.1	-1.0%
Temperature Metrics			
	Avg. Operating Ambient Temp		9.2 °C
	Avg. Operating Cell Temp		21.2 °C
Simulation Metrics			
	Operating Hours	4688	
	Solved Hours	4688	

☁ Condition Set												
Description		Solect-2024										
Weather Dataset		TMY, 10km Grid (42.55,-72.85), NREL (prospector)										
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
	32	32	32	3	3	3	3	3	3	3	3	32
Irradiation Variance		5%										
Cell Temperature Spread		4° C										
Module Binning Range		0% to 1.04%										
AC System Derate		1.00%										
Trackers	Maximum Angle						Backtracking					
	60°						Disabled					
Module Characterizations	Module						Uploaded By			Characterization		
	Q.PEAK DUO XL-G10.3/BFG 480 (2021) (Hanwha)						HelioScope			Spec Sheet Characterization, PAN		
Component Characterizations	Device						Uploaded By			Characterization		
	P505 NA (SolarEdge)						HelioScope			Mfg Spec Sheet		
	SE10000H-US (240V) (SolarEdge)						HelioScope			Spec Sheet		

📦 Components		
Component	Name	Count
Inverters	SE10000H-US (240V) (SolarEdge)	5 (50.0 kW)
Strings	10 AWG (Copper)	16 (671.9 ft)
Optimizers	P505 NA (SolarEdge)	156 (78.8 kW)
Module	Hanwha, Q.PEAK DUO XL-G10.3/BFG 480 (2021) (480W)	156 (74.9 kW)

🔌 Wiring Zones			
Description	Combiner Poles	String Size	Stringing Strategy
Wiring Zone	-	9-10	Along Racking

🏠 Field Segments									
Description	Racking	Orientation	Tilt	Azimuth	Intrarow Spacing	Frame Size	Frames	Modules	Power
Field Segment 1	Flush Mount	Portrait (Vertical)	2.4°	289.15567°	0.0 ft	1x1			0
Field Segment 2	Flush Mount	Portrait (Vertical)	2.6°	290.28928°	0.0 ft	1x1	106	106	50.9 kW
Field Segment 3	Flush Mount	Portrait (Vertical)	2.5°	289.07098°	0.0 ft	1x1	50	50	24.0 kW

Detailed Layout2

