

voltec 385 toiture inclinée CENTRE TECHNIQUE VOIRIE-Atelier, Rue de la Prairie, Charleville-Mézières

Report

Project Name	CENTRE TECHNIQUE VOIRIE-Atelier
Project Address	Rue de la Prairie, Charleville-Mézières
Prepared By	kh hk tomleyerzi@vusra.com

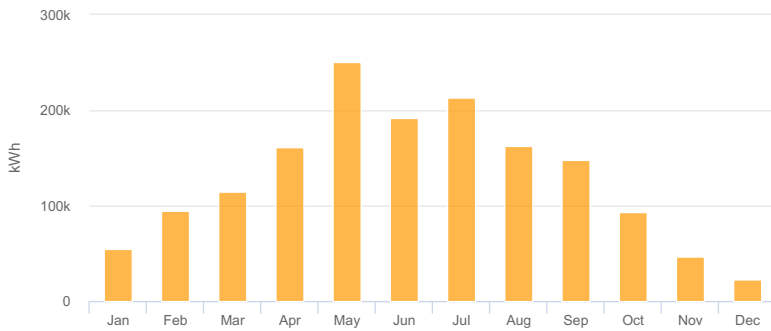
System Metrics

Design	voltec 385 toiture inclinée
Module DC Nameplate	1.72 MW
Inverter AC Nameplate	1.50 MW Load Ratio: 1.14
Annual Production	1.555 GWh
Performance Ratio	77.2%
kWh/kWp	906.3
Weather Dataset	TMY, unknown, ECMWF/ERA (custom)
Simulator Version	1c4970a1bc-3a5ddec254-65a9530ee5-2b61bd9f97

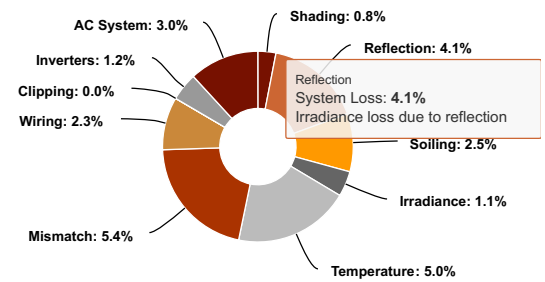
Project Location



Monthly Production



Sources of System Loss



Annual Production

	Description	Output	% Delta
Irradiance (kWh/m ²)	Annual Global Horizontal Irradiance	1,130.8	
	POA Irradiance	1,173.6	3.8%
	Shaded Irradiance	1,164.6	-0.8%
	Irradiance after Reflection	1,116.3	-4.1%
	Irradiance after Soiling	1,088.3	-2.5%
	Total Collector Irradiance	1,088.3	0.0%
Energy (kWh)	Nameplate	1,867,588.2	
	Output at Irradiance Levels	1,847,163.6	-1.1%
	Output at Cell Temperature Derate	1,754,947.6	-5.0%
	Output After Mismatch	1,660,438.6	-5.4%
	Optimal DC Output	1,622,688.3	-2.3%
	Constrained DC Output	1,622,687.9	0.0%
	Inverter Output	1,603,215.6	-1.2%
	Energy to Grid	1,555,119.1	-3.0%
Temperature Metrics			
	Avg. Operating Ambient Temp		12.0 °C
	Avg. Operating Cell Temp		25.1 °C
Simulation Metrics			
	Operating Hours	4240	
	Solved Hours	4240	

Condition Set

Description	Condition Set 1											
Weather Dataset	TMY, unknown, ECMWF/ERA (custom)											
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								
Soiling (%)	J	F	M	A	M	J	J	A	S	O	N	D
	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Irradiation Variance	5%											
Cell Temperature Spread	4° C											
Module Binning Range	-2.5% to 2.5%											
AC System Derate	3.00%											
Module Characterizations	Module							Uploaded By		Characterization		
	TARKA 126 VSBD 385 (Voltec Solar)							HelioScope		Spec Sheet Characterization, PAN		
Component Characterizations	Device							Uploaded By		Characterization		
	SPI250K-B-H (Kehua Tech)							HelioScope		Spec Sheet		

Components		
Component	Name	Count
Inverters	SPI250K-B-H (Kehua Tech)	6 (1.50 MW)
Home Runs	12 AWG (Copper)	12 (840.9 m)
Combiners	6 input Combiner	1
Combiners	7 input Combiner	5
Combiners	9 input Combiner	5
Combiners	10 input Combiner	1
Strings	10 AWG (Copper)	96 (6,943.3 m)
Module	Voltec Solar, TARKA 126 VSBD 385 (385W)	4,457 (1.72 MW)

Wiring Zones			
Description	Combiner Poles	String Size	Stringing Strategy
Wiring Zone	12	21-47	Along Racking

Field Segments									
Description	Racking	Orientation	Tilt	Azimuth	Intrarow Spacing	Frame Size	Frames	Modules	Power
Field Segment 1	Flush Mount	Portrait (Vertical)	15°	216.85648°	0.0 m	1x1	70	70	27.0 kW
Field Segment 1 (copy)	Flush Mount	Portrait (Vertical)	15°	216.85648°	0.0 m	1x1	71	71	27.3 kW
Field Segment 1 (copy 1)	Flush Mount	Portrait (Vertical)	15°	216.85648°	0.0 m	1x1	70	70	27.0 kW
Field Segment 1 (copy 2)	Flush Mount	Portrait (Vertical)	15°	216.85648°	0.0 m	1x1	70	70	27.0 kW
Field Segment 1 (copy 3)	Flush Mount	Portrait (Vertical)	15°	216.85648°	0.0 m	1x1	70	70	27.0 kW
Field Segment 1 (copy 4)	Flush Mount	Portrait (Vertical)	15°	216.85648°	0.0 m	1x1	71	71	27.3 kW
Field Segment 1 (copy 5)	Flush Mount	Portrait (Vertical)	15°	216.85648°	0.0 m	1x1	70	70	27.0 kW
Field Segment 1 (copy 6)	Flush Mount	Portrait (Vertical)	15°	216.85648°	0.0 m	1x1	71	71	27.3 kW
Field Segment 1 (copy 8)	Flush Mount	Portrait (Vertical)	15°	216.85648°	0.0 m	1x1	23	23	8.86 kW
Field Segment 1 (copy 7)	Flush Mount	Portrait (Vertical)	15°	216.85648°	0.0 m	1x1	43	43	16.6 kW
Field Segment 11	Flush Mount	Portrait (Vertical)	15°	216.85648°	0.0 m	1x1	2	2	770.0 W
Field Segment 1 (copy 9)	Flush Mount	Portrait (Vertical)	15°	216.85648°	0.0 m	1x1	37	37	14.2 kW
Field Segment 1 (copy 10)	Flush Mount	Portrait (Vertical)	15°	216.85648°	0.0 m	1x1	37	37	14.2 kW
Field Segment 1 (copy 11)	Flush Mount	Portrait (Vertical)	15°	216.85648°	0.0 m	1x1	37	37	14.2 kW
Field Segment 1 (copy 12)	Flush Mount	Portrait (Vertical)	15°	216.85648°	0.0 m	1x1	37	37	14.2 kW
Field Segment 1 (copy 13)	Flush Mount	Portrait (Vertical)	15°	216.85648°	0.0 m	1x1	37	37	14.2 kW
Field Segment 1 (copy 14)	Flush Mount	Portrait (Vertical)	15°	216.85648°	0.0 m	1x1	37	37	14.2 kW
Field Segment 1 (copy 15)	Flush Mount	Portrait (Vertical)	15°	216.85648°	0.0 m	1x1	37	37	14.2 kW
Field Segment 1 (copy 16)	Flush Mount	Portrait (Vertical)	15°	216.85648°	0.0 m	1x1	37	37	14.2 kW
Field Segment 1 (copy 17)	Flush Mount	Portrait (Vertical)	15°	216.85648°	0.0 m	1x1	37	37	14.2 kW
Field Segment 1 (copy 18)	Flush Mount	Portrait (Vertical)	15°	216.85648°	0.0 m	1x1	37	37	14.2 kW
Field Segment 1 (copy 19)	Flush Mount	Portrait (Vertical)	15°	216.85648°	0.0 m	1x1	37	37	14.2 kW
Field Segment 1 (copy 20)	Flush Mount	Portrait (Vertical)	15°	216.85648°	0.0 m	1x1	37	37	14.2 kW
Field Segment 24	Flush Mount	Portrait (Vertical)	15°	216.85648°	0.0 m	1x1	19	19	7.32 kW
Field Segment 25	Flush Mount	Portrait (Vertical)	15°	126.7222°	0.0 m	1x1	66	66	25.4 kW
Field Segment 25 (copy)	Flush Mount	Portrait (Vertical)	15°	126.7222°	0.0 m	1x1	66	66	25.4 kW
Field Segment 25 (copy 1)	Flush Mount	Portrait (Vertical)	15°	126.7222°	0.0 m	1x1	66	66	25.4 kW
Field Segment 25 (copy	Flush	Portrait	15°	126.7222°	0.0 m	1x1	66	66	25.4

2)	Mount	(Vertical)	15°	126.7222°	0.0 m	1x1	66	66	kW
Field Segment 25 (copy 3)	Flush Mount	Portrait (Vertical)	15°	126.7222°	0.0 m	1x1	66	66	25.4 kW
Field Segment 25 (copy 4)	Flush Mount	Portrait (Vertical)	15°	126.7222°	0.0 m	1x1	66	66	25.4 kW
Field Segment 25 (copy 6)	Flush Mount	Portrait (Vertical)	15°	126.7222°	0.0 m	1x1	72	72	27.7 kW
Field Segment 32	Flush Mount	Portrait (Vertical)	15°	126.7222°	0.0 m	1x1	76	76	29.3 kW
Field Segment 33	Flush Mount	Portrait (Vertical)	15°	217.99373°	0.0 m	1x1	66	66	25.4 kW
Field Segment 32 (copy)	Flush Mount	Portrait (Vertical)	15°	307.63046°	0.0 m	1x1	209	209	80.5 kW
Field Segment 35	Flush Mount	Portrait (Vertical)	15°	216.28377°	0.0 m	1x1	63	63	24.3 kW
Field Segment 35 (copy)	Flush Mount	Portrait (Vertical)	15°	216.28377°	0.0 m	1x1	46	46	17.7 kW
Field Segment 35 (copy 1)	Flush Mount	Portrait (Vertical)	15°	216.28377°	0.0 m	1x1	45	45	17.3 kW
Field Segment 35 (copy 2)	Flush Mount	Portrait (Vertical)	15°	216.28377°	0.0 m	1x1	52	52	20.0 kW
Field Segment 35 (copy 3)	Flush Mount	Portrait (Vertical)	15°	216.28377°	0.0 m	1x1	46	46	17.7 kW
Field Segment 35 (copy 4)	Flush Mount	Portrait (Vertical)	15°	216.28377°	0.0 m	1x1	46	46	17.7 kW
Field Segment 41	Flush Mount	Portrait (Vertical)	15°	216.94147°	0.0 m	1x1	217	197	75.8 kW
Field Segment 41 (copy)	Flush Mount	Portrait (Vertical)	15°	216.94147°	0.0 m	1x1	35	31	11.9 kW
Field Segment 41 (copy 1)	Flush Mount	Portrait (Vertical)	15°	216.94147°	0.0 m	1x1	46	46	17.7 kW
Field Segment 41 (copy 2)	Flush Mount	Portrait (Vertical)	15°	216.94147°	0.0 m	1x1	45	44	16.9 kW
Field Segment 41 (copy 3)	Flush Mount	Portrait (Vertical)	15°	216.94147°	0.0 m	1x1	82	80	30.8 kW
Field Segment 41 (copy 4)	Flush Mount	Portrait (Vertical)	15°	216.94147°	0.0 m	1x1	112	112	43.1 kW
Field Segment 41 (copy 5)	Flush Mount	Portrait (Vertical)	15°	216.94147°	0.0 m	1x1	85	85	32.7 kW
Field Segment 41 (copy 6)	Flush Mount	Portrait (Vertical)	15°	216.94147°	0.0 m	1x1	109	109	42.0 kW
Field Segment 41 (copy 7)	Flush Mount	Portrait (Vertical)	15°	216.94147°	0.0 m	1x1	112	112	43.1 kW
Field Segment 41 (copy 8)	Flush Mount	Portrait (Vertical)	15°	216.94147°	0.0 m	1x1	106	106	40.8 kW
Field Segment 41 (copy 9)	Flush Mount	Portrait (Vertical)	15°	216.94147°	0.0 m	1x1	95	95	36.6 kW
Field Segment 41 (copy 10)	Flush Mount	Portrait (Vertical)	15°	216.94147°	0.0 m	1x1	92	92	35.4 kW
Field Segment 41 (copy 11)	Flush Mount	Portrait (Vertical)	15°	216.94147°	0.0 m	1x1	134	134	51.6 kW
Field Segment 41 (copy 12)	Flush Mount	Portrait (Vertical)	15°	216.94147°	0.0 m	1x1	117	116	44.7 kW
Field Segment 41 (copy 13)	Flush Mount	Portrait (Vertical)	15°	216.94147°	0.0 m	1x1	126	126	48.5 kW
Field Segment 41 (copy 14)	Flush Mount	Portrait (Vertical)	15°	216.94147°	0.0 m	1x1	114	114	43.9 kW
Field Segment 41 (copy 15)	Flush Mount	Portrait (Vertical)	15°	216.94147°	0.0 m	1x1	112	112	43.1 kW
Field Segment 41 (copy 16)	Flush Mount	Portrait (Vertical)	15°	216.94147°	0.0 m	1x1	112	112	43.1 kW
Field Segment 59	Fixed Tilt	Portrait (Vertical)	15°	216.94147°	0.0 m	1x1	128	32	12.3 kW
Field Segment 60	Flush	Portrait	15°	126.962036°	0.0 m	1x1	139	139	53.5 kW

Field Segment 60	Mount	(Vertical)	15°	306.9627°	0.0 m	1x1	252	252	kW
Field Segment 60 (copy)	Flush Mount	Portrait (Vertical)	15°	306.9627°	0.0 m	1x1	252	252	97.0 kW

Detailed Layout

