

# Design 2.2 REC 255 BLK King's College, Kings College cambridge

## Report

Project Name	King's College
Project Address	Kings College cambridge
Prepared By	Edward James e.james@maxfordham.com

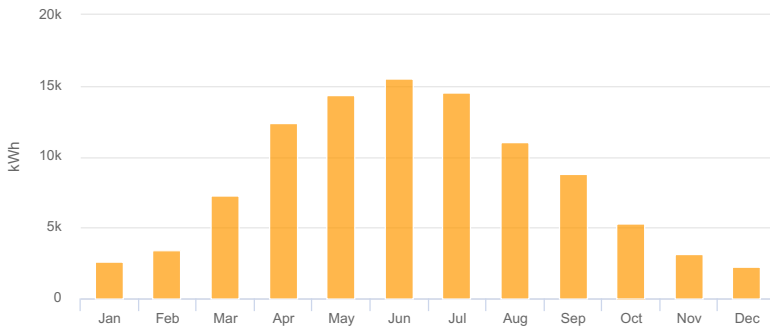
## System Metrics

Design	Design 2.2 REC 255 BLK
Module DC Nameplate	125.5 kW
Inverter AC Nameplate	120.3 kW Load Ratio: 1.04
Annual Production	100.4 MWh
Performance Ratio	80.5%
kWh/kWp	800.4
Weather Dataset	TMY, 10km Grid, meteonorm (meteonorm)
Simulator Version	e2238d69b7-7405e28364-14e4487edb-3db1ffd089

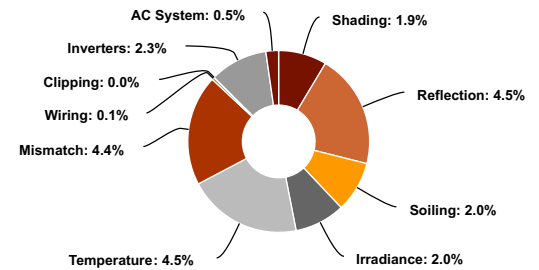
## Project Location



## Monthly Production



## Sources of System Loss



## Annual Production

	Description	Output	% Delta
Irradiance (kWh/m <sup>2</sup> )	Annual Global Horizontal Irradiance	1,027.2	
	POA Irradiance	994.4	-3.2%
	Shaded Irradiance	975.5	-1.9%
	Irradiance after Reflection	931.6	-4.5%
	Irradiance after Soiling	912.9	-2.0%
	<b>Total Collector Irradiance</b>	<b>912.6</b>	<b>0.0%</b>
Energy (kWh)	Nameplate	115,489.2	
	Output at Irradiance Levels	113,196.7	-2.0%
	Output at Cell Temperature Derate	108,102.8	-4.5%
	Output After Mismatch	103,388.8	-4.4%
	Optimal DC Output	103,279.8	-0.1%
	Constrained DC Output	103,279.4	0.0%
	Inverter Output	100,923.9	-2.3%
	<b>Energy to Grid</b>	<b>100,419.2</b>	<b>-0.5%</b>
Temperature Metrics			
	Avg. Operating Ambient Temp		13.5 °C
	Avg. Operating Cell Temp		23.6 °C
Simulation Metrics			
	Operating Hours	4563	
	Solved Hours	4563	

## Condition Set

Description	Condition Set 1											
Weather Dataset	TMY, 10km Grid, meteonorm (meteonorm)											
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	2	2	2	2	2	2	2	2	2	2	2
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								
	REC255PE (BLK) (REC Solar)	Folsom Labs		Spec Sheet Characterization, PAN								
Component Characterizations	Device	Uploaded By		Characterization								
	Sunny Tripower 24000TL-US (SMA)	Folsom Labs		Modified CEC								

Components		
Component	Name	Count
Inverters	Sunny Tripower 24000TL-US (SMA)	5 (120.3 kW)
Strings	10 AWG (Copper)	25 (505.0 m)
Module	REC Solar, REC255PE (BLK) (255W)	492 (125.5 kW)

Wiring Zones			
Description	Combiner Poles	String Size	Stringing Strategy
Wiring Zone	-	5-24	Along Racking

Field Segments									
Description	Racking	Orientation	Tilt	Azimuth	Intrarow Spacing	Frame Size	Frames	Modules	Power
South Side Pitched Roof	Flush Mount	Portrait (Vertical)	24°	174°	0.0 m	1x1	246	246	62.7 kW
North Side Pitched Roof	Flush Mount	Portrait (Vertical)	24°	354°	0.0 m	1x1	246	246	62.7 kW

