NREL
NATIONAL RENEWABLE ENERGY LABORATORY

Caution: Photovoltaic system performance predictions calculated by PVWatts® include many inherent assumptions and uncertainties and do not reflect variations between PV technologies nor site-specific characteristics except as represented by PVWatts® inputs. For example, PV modules with better performance are not differentiated within PVWatts® from lesser performing modules. Both NREL and private companies provide more sophisticated PV modeling tools (such as the System Advisor Model at https://sam.nrel.gov) that allow for more precise and complex modeling of PV systems.

The expected range is based on 30 years of actual weather data at the given location and is intended to provide an indication of the variation you might see. For more information, please refer to this NREL report: The Error Report.

The energy output range is based on analysis of 30 years of historical weather data for nearby , and is intended to provide an indication of the possible interannual variability in generation for a Fixed (open rack) PV system at this location.

RESULTS

3,650 kWh/Year*

Month	Solar Radiation (kWh / m^2 / day)	AC Energy (kWh)	Value ($)
January	5.77	268	10
February	6.99	291	11
March	8.65	385	15
April	8.66	365	14
May	7.97	345	13
June	7.11	303	12
July	5.72	262	10
August	6.09	279	11
September	7.09	315	12
October	6.86	312	12
November	6.02	269	10
December	5.43	257	10
Annual	**6.86**	**3,651**	**$ 140**

Location and Station Identification

Requested Location	Panki, Kanpur	
Weather Data Source	Lat, Lon: 26.45, 80.25	2.4 mi
Latitude	26.45° N	
Longitude	80.25° E	

PV System Specifications *(Residential)*

DC System Size	2 kW
Module Type	Premium
Array Type	2-Axis Tracking
Array Tilt	26.45°
Array Azimuth	170°
System Losses	14.08%
Inverter Efficiency	95%
DC to AC Size Ratio	1.2

Economics

Average Retail Electricity Rate	0.038 $/kWh

Performance Metrics

Capacity Factor	20.8%