



# RESULTS

# 5,654 kWh/Year\*

System output may range from 5,395 to 5,844 kWh per year near this location.

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.

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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.

Month	Solar Radiation ( kWh / m <sup>2</sup> / day )	AC Energy ( kWh )	Value ( \$ )
January	1.66	211	22
February	2.64	305	32
March	3.41	424	44
April	4.98	588	61
May	5.36	644	67
June	5.75	664	69
July	6.53	760	79
August	5.94	692	72
September	4.77	551	57
October	2.83	346	36
November	1.97	243	25
December	1.78	228	24
<b>Annual</b>	<b>3.97</b>	<b>5,656</b>	<b>\$ 588</b>

## Location and Station Identification

Requested Location	7920 SE 72nd PL Mercer Island, Wa 98040
Weather Data Source	Lat, Lon: 47.53, -122.22 1.0 mi
Latitude	47.53° N
Longitude	122.22° W

## PV System Specifications (Residential)

DC System Size	5.04 kW
Module Type	Premium
Array Type	Fixed (open rack)
Array Tilt	30°
Array Azimuth	182°
System Losses	14%
Inverter Efficiency	96%
DC to AC Size Ratio	1.2

## Economics

Average Retail Electricity Rate	0.104 \$/kWh
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## Performance Metrics

Capacity Factor	12.8%
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# Tesla

## Photovoltaic Module

T420S, T425S, and T430S

### Maximum Power

The Tesla module is one of the most powerful residential photovoltaic modules available. Our system requires up to 20 percent fewer modules to achieve the same power as a standard system. The module boasts a high conversion efficiency and a half-cell architecture that improves shade tolerance.

### Beautiful Solar

Featuring our proprietary Zep Groove design, the all-black module connects easily with Tesla ZS components to keep panels close to your roof and close to each other for a blended aesthetic with simple drop-in and precision quarter-turn connections.

### Reliability

Tesla modules are subject to automotive-grade engineering scrutiny and quality assurance, far exceeding industry standards. Modules are certified to IEC / UL 61730 - 1, IEC / UL 61730 - 2 and IEC / UL 61215.

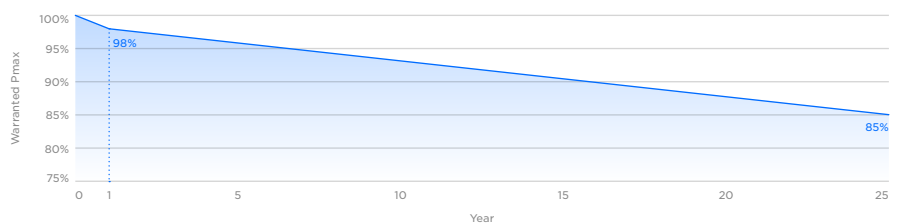


### Limited Warranty

Materials and Processing	25 years
Extra Linear Power Output	25 years

The maximum Pmax degradation is 2% in the 1st year and 0.54% annually from the 2nd to 25th year.

### Linear Power Warranty



# Module Specifications

## Electrical Characteristics

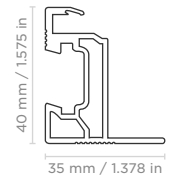
Power Class	T420S		T425S		T430S	
	STC	NOCT	STC	NOCT	STC	NOCT
Test Method	STC	NOCT	STC	NOCT	STC	NOCT
Max Power, $P_{MAX}$ (W)	420	313.7	425	317.4	430	321.1
Open Circuit Voltage, $V_{OC}$ (V)	48.5	45.47	48.65	45.61	48.8	45.75
Short Circuit Current, $I_{SC}$ (A)	11.16	9.02	11.24	9.09	11.32	9.15
Max Power Voltage, $V_{MP}$ (V)	40.90	38.08	41.05	38.22	41.20	38.36
Max Power Current, $I_{MP}$ (A)	10.27	8.24	10.36	8.3	10.44	8.37
Module Efficiency (%)	19.3		19.6		19.8	
STC	1000 W/m <sup>2</sup> , 25°C, AM1.5					
NOCT	800 W/m <sup>2</sup> , 20°C, AM1.5, wind speed 1m/s					

## Temperature Rating (STC)

Temperature Coefficient of $I_{sc}$	+0.040% / °C
Temperature Coefficient of $V_{oc}$	-0.260% / °C
Temperature Coefficient of $P_{MAX}$ (W)	-0.331% / °C

## Mechanical Loading

Front Side Design Load	3600 Pa   75 lb/ft <sup>2</sup>
Rear Side Design Load	1600 Pa   33 lb/ft <sup>2</sup>
Hailstone Test	25 mm Hailstone at 23 m/s



## Mechanical Parameters

Cell Orientation	144 (6 x 24)
Junction Box	IP68, 3 diodes
Cable	4 mm <sup>2</sup>   12 AWG, 1400 mm   55.1 in. Length
Connector	Staubli MC4 or EVO2
Glass	3.2 mm ARC Glass
Frame	Black Anodized Aluminum Alloy
Weight	25.3 kg   55.8 lb
Dimension	2094 mm x 1038 mm x 40 mm 82.4 in x 40.9 in x 1.57 in

## Operation Parameters

Operational Temperature	-40°C - +85°C
Power Output Tolerance	-0 / +5 W
$V_{oc}$ & $I_{sc}$ Tolerance	+/- 3%
Max System Voltage	DC 1000 V (IEC/UL)
Max Series Fuse Rating	20 A
NOCT	45.7 +/- 2°C
Safety Class	Class II
Fire Rating	UL Type 1 or 2

