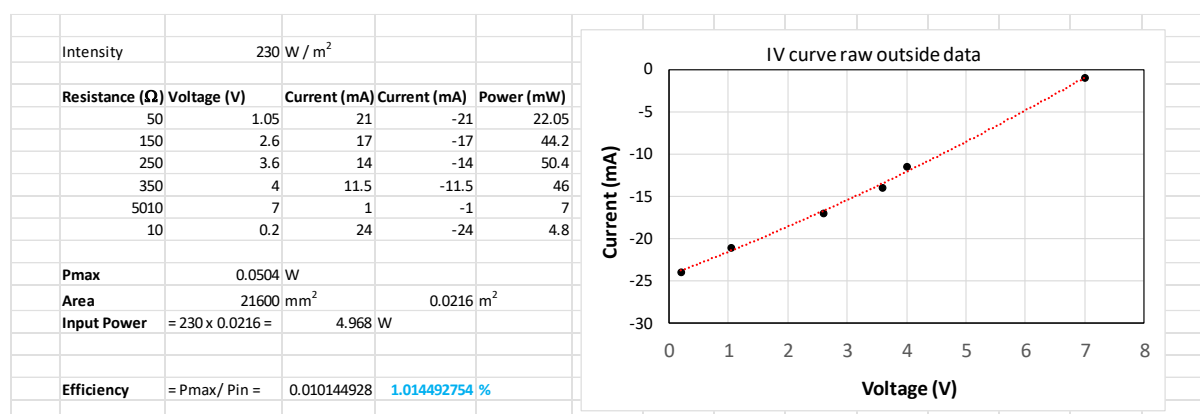


Analysing the Solar cell data

To go along with the sheets and videos we have created two data files, outside.xls and inside.txt.

The outside.xls file contains the data measured in the measurement video and is shown below. You can click in the cells to see the formulas used to calculate the maximum power, and efficiency.

The raw data has positive values for current based on measured values with the decade resistance box. The values are made negative so that they now form in the lower right quadrant of the IV curve shown in the videos.



The inside data was performed using the in-house LED array. There are two data sets are from different areas on the sheet which show slightly different responses as can be seen in the table below. Use the data to create IV curves (bottom right quadrant shows the difference more clearly) and generate efficiency and fill factor values. Discuss with your teachers or one of our staff on why these two areas might be different. Below are the computer calculated values for the two datasets.

Area = 1350 mm²

Efficiency (%)	Voc (V)	Isc (A)	Jsc (A/m ²)	FF	Output Power (W)	Input Power (W)
2.31	0.579	-0.0982	-7.27	0.548	0.0312	1.35
2.02	0.577	-0.0871	-6.45	0.543	0.0273	1.35