

This specific computer program calculates the solar irradiance on a PV array at a particular date, time, location, and tilt. In order to display the correct output components, the program prompts the user to enter values in the command line chronologically as follows:

Location latitude, (positive: Norther hemisphere):

- Input as degree value by user

Location longitude, (positive: East of Prime Meridian):

- Input as degree value by user

PV array tilt:

- Input as degree value by user, if PV is horizontal, input as 0

Day of the year:

- User is asked if day of year is known, integer value between 1-365. If not, user will be prompted to enter month in lowercase form. Then prompted to enter day of the month. Program will calculate day of year from input provided.

Civil time of day, in hours:

- User inputs value based on civil time which is a 24-hour format.

Time zone in reference to UTC:

- Input as integer value referenced to Coordinated Universal Time

Clearness index:

- Input as decimal value by user

Albedo:

- Input as decimal value by user

Ambient temperature:

- Input as integer value by user

Module NOCT:

- Input value per specification sheet MLU PV-MLU255HC

Module power rating:

- Input value per specification sheet MLU PV-MLU255HC

Module open-circuit voltage:

- Input value per specification sheet MLU PV-MLU255HC

Module short-circuit current:

- Input value per specification sheet MLU PV-MLU255HC

Module power coefficient:

- Input value per specification sheet MLU PV-MLU255HC

Module voltage coefficient:

- Input value per specification sheet MLU PV-MLU255HC

Module current coefficient:

- Input value per specification sheet MLU PV-MLU255HC

Number of PV modules per string:

- Input integer value by user

Number of strings:

- Input integer value by user