

<b>Location of the infrastructure :</b>	<b>Catania, Italy</b>	<a href="http://www.enel.it">http://www.enel.it</a>
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**Objectives :** CPV Outdoor Characterization

**Main features :** Thanks to the optimal irradiation conditions of the site (DNI equal to 1803 kWh/m<sup>2</sup>/ year and DHI equal to 20% of the global horizontal solar radiation), it represents a suitable location to test different kind of CPV modules. The test station allows to take experimental data (e.g. the I-V curves) on CPV modules under real operating conditions in order to define their energy performance.

It consists of the following subsystems:

- ❖ Dual axis tracking benches (tracking accuracy: ± 0,3 ° and ± 0,1 °),
- ❖ I-V tracer unit with MPPT function,
- ❖ Reference cells and relevant temperature transducers,
- ❖ Dedicated small two axis tracking bench equipped for the measurement of Direct Normal Irradiance, Horizontal Global irradiance, horizontal diffuse irradiance, U-V irradiance (pyreliometer, pyranometers, U-V radiometers).

This infrastructure includes also a complete meteo-radiometric station in order to have all information about the environmental conditions during the testing period.



**Limitations or constraints :** The access will be allowed with technical and scientific assistance from ENEL.

**Typical services or results :** These test benches can be used for:

- ❖ CPV modules Power Rating under real outdoor operation conditions,
- ❖ Data acquisition for modelling the energy output of CPV modules.

**Examples of research projects :** Experimental procedure set up to measure I-V curve and energy efficiency of CPV modules in outdoor conditions has been developed on the basis of general outdoor procedure described in IEC 62108.