



B.M.S. College of Engineering, Bengaluru -560019
Autonomous Institute, affiliated to VTU

1. Name of the lab: **Centre of Excellence in Photovoltaic Systems**
2. Department: **Electrical & Electronics Engineering**
3. Location of the lab: **Ground Floor, PG Block**
4. Faculty in charge: **Dr. C Lakshminarayana, Dr. R. S. Geetha, Dr. Prema V.**
5. Associated with industry, if any: **Cares Renewable Pvt. Ltd**
6. List of Equipments/facilities along with specifications and photographs + software with versions:
 - **Micro inverters total 1.0kW grid connected to solar panels of total 1.0kW capacity with monitoring facility.**
 - **Raw solar power tapped of 500W, 1kW and 2kW ratings.**
7. Major Achievements till date:
 1. Internships for PG and UG students
 2. One week STTP on “Solar Photovoltaic” during 12/03/2018 to 16/03/2018
 3. Two day workshop on Grid Tied Solar Plant Design and Advances during 9/10/2018 to 10/10/2018
8. Photographs
 - Front view / Overall view of the lab



Demonstrating the activities inside the lab



Achievements, receiving awards, workshops, demo of the prototyping, etc

9. Any other info about the lab

Four different PV modules, Monocrystalline, Polycrystalline, Half-Cut Poly PERC and IGBT Back contact are installed in the campus of BMSCE by Cares Renewable private limited company, Bengaluru. These PV panels are moulded on fixed structure, which is fixed on the rooftop of the Electrical and Electronics Engineering block. Table 1 shows the technical specification of the photovoltaic modules for Monocrystalline, Polycrystalline and IGBT back contact module types measured at nominal operating cell temperature (NOCT). With the help of the ENPHASE ENLIGHTEN software, the reports of various kinds such as, monthly energy production report, yearly energy production report, multiple energy report etc can be obtained.

Table 1. Technical specifications of photovoltaic modules

Type	Monocrystalline	Polycrystalline	Half-cut Poly PERC	IGBT Back Contact
Module dimensions(mm \times mm)	1956*991*40mm	1960*992*40mm	1675*997*38mm	1559*798*46mm
Maximum power	340W	330W	290W	245W
Voltage at Maximum Power(V _{mp})	37.9V	45.8V	32.1V	48.8V
Current at Maximum Power(I _{mp})	8.97A	9.28A	.05A	6.43A
Open circuit voltage(V _{oc})	46.5V	37.4V	38.8V	40.5V
Short circuit current(I _{sc})	9.49A	8.83A	9.71A	6.05A
Panel efficiency	17.5%	17.0%	17.4%	19.7%

