

# Photovoltaic Calibration and Test Laboratory



- Accredited by A2LA to the ISO/IEC 17025 Standard
- Measurements made in accordance with ASTM E948 and E1021
- Characterization of IV, EQE and active area; traceable to NIST and NREL
- Rapid turnaround time; typically 3 business days from receipt
- Flexible scheduling and quick measurement to ensure viability of device

## PV EFFICIENCY CERTIFICATION AND REFERENCE CELL CALIBRATION IN AN ISO/IEC ACCREDITED ENVIRONMENT

We are proud to house and manage one of the few commercial photovoltaic and calibration test laboratories in the world. The Photovoltaic Calibration and Test Laboratory uses state of the art equipment, including the Oriel Class AAA 8" x 8" Sol3A solar simulator and Oriel quantum efficiency systems.

All measurements are performed under standard reporting conditions (SRC) with a temperature of 25°C, a total irradiance of 1 SUN (1000 W/m<sup>2</sup>), and spectral irradiance AM 1.5G (IEC 60904-3). Upon completion of testing, an ISO / IEC 17025 accredited calibration certificate is provided. The certificate includes:

- Measured total area of the device
- EQE and IV curves for the device
- Irradiance spectrum of the solar simulator used
- Spectral response of the reference detector used
- Expanded uncertainties
- Electrical performance parameters of the device
  - Short Circuit Current ( $I_{sc}$ )
  - Open Circuit Voltage ( $V_{oc}$ )
  - Current at Max Power ( $I_{max}$ )
  - Voltage at Max Power ( $V_{max}$ )
  - Max Power ( $P_{max}$ )
  - Spectral Correction (M)
  - Fill Factor (FF)
  - Efficiency ( $\eta$ )

The lab welcomes requests for prototype PV device performance measurement or PV reference cell calibrations.

For more information, contact Geoffrey Wicks, Application Scientist and PV Lab Manager at 406-556-2469 or [geoffrey.wicks@newport.com](mailto:geoffrey.wicks@newport.com).