

SolarEdge DC Optimized Inverters: Robust for Tough Environments

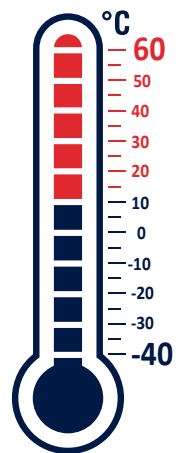
SolarEdge's DC optimized inverters are designed to withstand a variety of environmental conditions. From the winters of Canada to the hot, dusty summers of the Mojave Desert and from agricultural lands in the Netherlands to the salty air of Australia's coastlines, SolarEdge's DC optimized inverters have more than 10 billion hours of field operation.

SolarEdge DC optimized inverters have a 12-year warranty, extendable to 20 years.



/ Wide Temperature Range

SolarEdge inverters have a wide ambient temperature range from as low as -40°C to as high as $+60^{\circ}\text{C}$. As part of SolarEdge's reliability design, inverters undergo thermal cycling tests of 1,500 cycles in temperatures ranging from -40°C to $+80^{\circ}\text{C}$ which is equivalent to 41 years in the field. In addition, SolarEdge conducts HTOL (High Temperature Operating Life) tests for an equivalent of 36 years in a moderate climate scenario on its inverters at 125°C to verify product lifetime is within expectations. These tests accelerate the product lifetime to verify that the products meet life expectancy and performance goals.



/ Humidity Resistant

Designed to operate in humid environmental conditions, SolarEdge inverters can operate at humidity levels of up to 95% (non-condensing). As part of the testing process, inverters undergo damp heat tests at $85^{\circ}\text{C}/85\% \text{RH}$ for 1,200 hours, which is equivalent to nearly 28 years in the field.

/ Dust and Water Tight

By meeting the IP65 rating, SolarEdge inverters are protected from fine particles such as dust (as defined in the IP rating for IP65 protection level). This is particularly important in areas that are likely to suffer from sand and dust storms.

The second part of the IP65 rating indicates that SolarEdge inverters offer protection against water penetration, such as irrigation and rain.



/ Suitable for Saline Environments

SolarEdge inverters can be installed at a minimum distance of 50m from the shoreline of an ocean or other saline environments as long as there are no direct salt water splashes on the inverter.



/ Ammonia Resistant

Most inverter manufacturers recommend not to install their inverters in ammonia rich environments, such as agricultural areas. SolarEdge inverters and power optimizers have been tested in harsh ammonia exposure conditions and were proven to be resistant to corrosion from ammonia gases, both in terms of mechanical resistance and ingress protection. Performed according to the specification "2 Pfg 1911/03.2001 clause 6.3.1" from TÜV Rheinland, the test consisted of storing the products in a harsh ammonia atmosphere for 480 hours (20 cycles of 24h each) and then performing an analysis of typical failure mechanisms.



Power Optimizers

SolarEdge power optimizers have an operating temperature range of -40°C to $+85^{\circ}\text{C}$, are potted and meet the IP68 standard (rated as "dust tight" and protected against complete, continuous submersion in water), and have a 25-year warranty. Power optimizers are also put through HTOL, Thermal Cycling, and Damp Heat tests under the same conditions of inverters.

