



## CASE STUDY

### KUADROTEK - Cooling the cabinets of the inverter stations for the 35 MW Ashalim photovoltaic plant, in Israel.

The plant includes the world's tallest solar tower.

Quote:

„Our relationship with Kuadrotek is strengthened thanks to the reliability of the products already used in other large photovoltaic plants in the world. This is also why Kuadrotek continues to choose our products over our competitors.“

Xavier Pedescoll  
Sales Area Manager  
Pfannenbergl Iberia

#### The application

The Ashalim power station is located in the Negev desert near the kibbutz of Ashalim, in Israel. The station will provide 250 Megawatt of hybrid PV-solarthermal electricity (2.5% of the Israeli consumption), which makes it the largest of its kind in Israel and one of the largest in the world.

The station will combine 3 kinds of energy: solar thermal energy, photovoltaic energy, and natural gas. The PV plant has been connected to the grid in January 2018.

Pfannenbergl's cooling units have been mounted in Kuadrotek's cabinets for inverter stations.

## The customer

Kuadrotek SA, from Tarragona, is part of the Spanish Elektra Group. It specialises in the design, development and implementation of electric switchboards and control panels for the automation of installations and industrial processes in the automotive and energy industries.

Kuadrotek has delivered the electrical cabinets for the inverter stations of the 35 MW photovoltaic plant. Pfannenber's cooling units will ensure the perfect thermal management and operational safety for their components.

## The application

PV power plants are built across the globe, including areas of high altitude, extreme temperature, proximity to the sea, and desert areas impacted by sand and dust.

The inverter is the heart of every PV plant; it converts direct current of the PV modules into grid-compliant alternating current and feeds this into the public grid. At the same time, it controls and monitors the entire plant.

Controlling the temperature inside the electrical cabinets - and therefore guarantee the health of its components - it's a crucial task.

DTS 3161



## The solution

After taking into consideration different options of the competition, Kuadrotek chose Pfannenber's Outdoor Type 3R/4 side mount cooling units - model **DTS 3161 230 V** - because of the high protection level (comparable to IP 56) together with the reliability of working in extreme conditions.

It offers a cooling capacity of 1235 W in a very compact design - 395 x 748 x 237 mm only.

It is available in 3 models; DTS 3141 (NEMA Type 12) for indoor use, DTS 3161 (NEMA Type 3R/4) designed for outdoor use, and the stainless steel DTS 3181 (NEMA Type 4/4x) designed for washdown applications.

The full DTS 3000 series was designed utilizing high temperature compressors and larger condensers to best perform in outdoor applications which require a maximum ambient temperature of 55 °C – such as roadside, rooftop or desert locations.

NEMA rating can be compared with IP rating – although there is no direct correspondence – but the first one is more complete and also includes other factors such as the protection from corrosion.

NEMA Type 3R/4 is equivalent to IP 56.

Moreover, Pfannenber cooling units from NEMA series are UL listed.





The „Giro d’Italia“ kicked off in Israel on May 4, 2018 and crossed the Negev and Arava deserts from Beer Sheva to Eilat. Megalim Solar Power Ltd and its partners welcomed the Giro riders as they pass near the Ashalim CSP station.

## Facts at a glance

<b>Task</b>	Control cabinet cooling in the Negev desert, Israel.
<b>Application</b>	Ashalim power station, a PV-solarthermal plant
<b>Solution</b>	n.12 DTS 3161 230 V cooling units
<b>Success factors</b>	<ul style="list-style-type: none"> <li>• high quality products</li> <li>• highest level of protection for extreme outdoor conditions</li> <li>• long term agreement with Pfannenber regarding warranty and worldwide support.</li> </ul>