

## Inspection of High Voltage Networks

VarioCAM® High Definition – precise, reliable, efficient

*Based on programs for energy conservation and for promotion of renewable energies, until 2009 in the European Union photovoltaic facilities for more than 15 GWp were installed, which approximately corresponds to the surface of Milan. Like for all electrical devices, solar cells and modules need to be maintained especially as they are located outdoors. Infrared thermo-graphy offers the possibility to localize and classify problems fast and also with a high accuracy.*

HaWe Engineering GmbH,  
Munich

[www.hawe-eng.com](http://www.hawe-eng.com)

InfraTec-Solution:  
VarioCAM® hr inspect 780

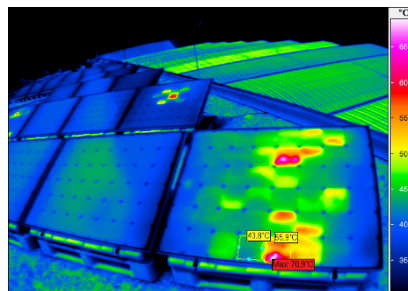


Bernhard Weinreich

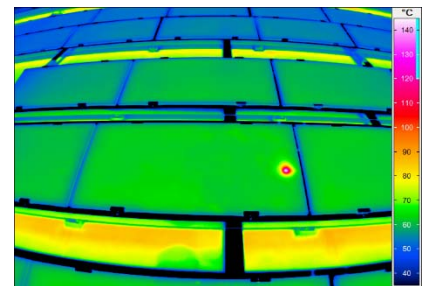
The company HaWe Engineering GmbH, formerly Solarschmiede GmbH, successfully uses the camera VarioCAM® hr inspect 780 camera for inspecting photovoltaic installations of all types. Mr. Bernhard Weinreich, CEO & Head of Thermography, emphasizes primarily the high geometrical resolution of the camera of (1,280 x 960) pixels, which provides a good first overview of possible problems even of large installation areas. Based on this, only faulty modules and cells have to be checked in detail which considerably increases the efficiency of HaWe Engineering GmbH.



The precise inspection of primarily localized problems, visualizes a multitude of different failures. Cell line defects and disruptions can be detected as well as faults on busbars or sockets hidden behind the cells.

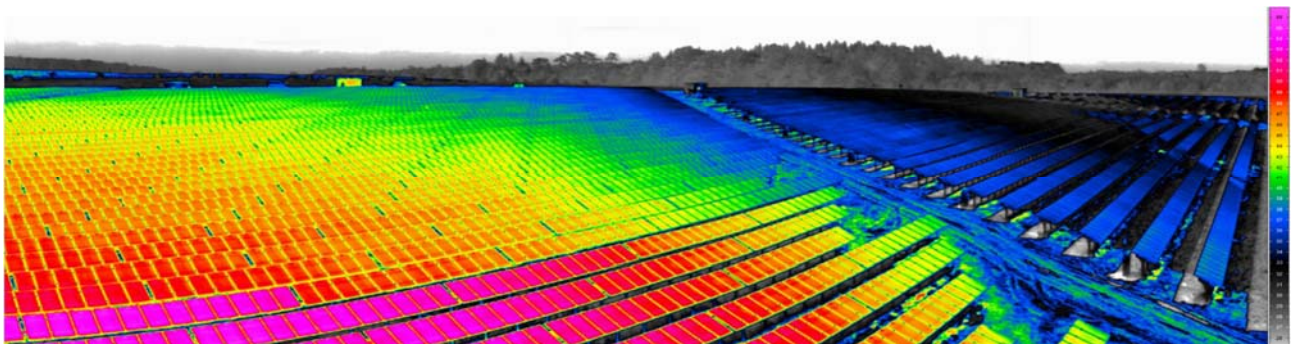


Cell defects and disruptions



High transfer resistance on socket of a thin-film module

HaWe Engineering GmbH can provide detailed reports for the operators of photovoltaic facilities, which are generated with the professional thermographic software IRBIS® 3 from InfraTec. These analyses offer a very good basis to increase the performance of photovoltaic installations but also to overcome possible faults in time before they could lead to fires or even more serious damages.



Overview on a photovoltaic plant