



Carlill Energy uses FLIR i7 thermal imaging cameras to detect problems with Solar Power Plants in Punjab, India

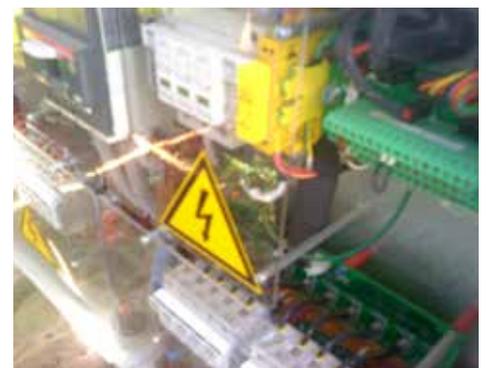
The FLIR i7 is a light and affordable handheld camera offering high-quality thermal images.

When solar energy panels threaten to fail, defects will usually generate heat. Luckily for Carlill Energy, because the company has successfully adopted the use of thermal imaging cameras to detect and identify problems with photovoltaic (PV) cells, junction boxes and grid network connections in a very early stage.

Punjab, India, is endowed with a vast potential of solar energy with over 300 days of sunshine in a year. Carlill Energy Private Limited is a frontrunner in the development of solar power plants in the state of Punjab, India. Across the state, the company has already installed a solar plant capacity of 1.5 MW. The latest plant has been commissioned in February 2012 in Muktsar (Eastern Punjab), in conformance with the Punjab Energy Development Agency (PEDA) directives. The plant has a very high PR value among the many different solar power plants in the state of Punjab.

Early detection and inspection of diode boxes

After having an issue with a failed diode box in the recent past, Carlill Energy started to look out for a solution that was able to provide an advance warning. Based on such a warning, the company was hoping to be able to take precautionary measures and prevent incidents with failed diode boxes from happening again. After thorough research of the marketplace and based on feedback from industry professionals, it was decided to go for a FLIR thermal imaging camera. FLIR's distributor M/s Industrial Agencies, based in Chandigarh, India, provided Carlill Energy with a FLIR i7 thermal camera.



Inspection of diode boxes with a FLIR i7 camera



M/s Industrial Agencies also took care of training of the Carlill Energy maintenance staff. During the training, three major hot spots in junction boxes were observed. According to the maintenance staff, the failure of these connections could have hampered the plant's power generation as well as the company's PR.

Strong performance, wide range of applications

The management team of M/s Carlill Energy was enthusiastic about the performance of the FLIR i7 camera: "We should have bought this equipment last year when we were actually commissioning this plant." Next to the identification of issues with diode boxes, Carlill Energy is also using the FLIR i7 thermal imaging camera for the identification of issues with PV cells and the grid network connections/terminations.

According to Mr. Satnam Singh, Maintenance Manager at Carlill Energy, the FLIR i7 thermal imager will help him identify problematic areas and, as a result, ensure flawless supply of electricity to the grid. "The company has been able to recover the cost of the camera completely. By locating problems in critical equipment, the thermal imager has enabled them to prevent costly breakdowns." In addition, this will increase the overall return on investment of the company for this plant.



Mr. Satnam Singh, Maintenance Manager of Carlill Energy: "The FLIR i7 thermal imager will help us identify problematic areas and as a result, ensure flawless supply of electricity to the grid." (Left to Right Mr. Navneet Singh (Industrial Agencies), Mr. Kaka Singh and Mr. Satnam Singh (Carlill Energy))

FLIR i7 thermal imaging camera

The FLIR i7 is the smallest, lightest and most affordable thermal imaging camera on the market. It is incredibly easy to use and requires no former experience. It really is a matter of "point-shoot-detect" to obtain high-quality thermal images that will immediately give the user the thermal information he needs. The camera is extremely easy to understand and operate,

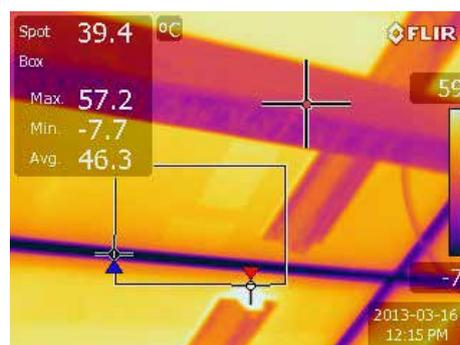
and has been designed for entry-level users.

The FLIR i7 produces instant, point-and-shoot JPEG thermal imagery that carries all required temperature data and can be stored internally or externally, sent and analyzed. The unit only weighs 365 g, and is easy to store in a belt pouch. FLIR i-Series thermal imaging cameras withstand a 2 meter drop. They are watersplash proof and IP43 rated.



Reporting and analysis software included

Carlill Energy also opted for the FLIR Tools software, which has been designed to quickly import, edit and analyze images, and turn them into convincing, professional PDF inspection reports, ready to print or email, so users can get a "yes for repairs" fast.



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For more information about thermal imaging cameras or about this application, please contact:

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