

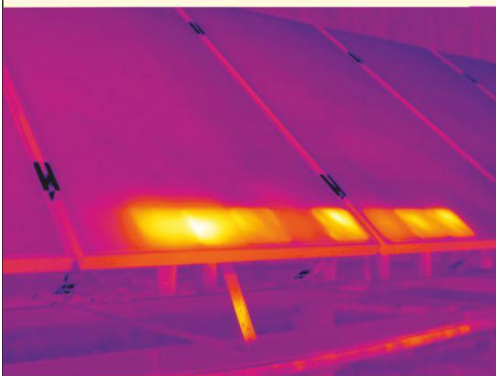


## INFRARED ASSESSMENT OF SOLAR PANELS USING DRONES



An infrared camera detects temperature differences in a photovoltaic module and visualizes them in a thermal image.

During normal operation, thermal images of a properly functioning photovoltaic module will show homogeneous temperature distribution in the module. If a module is faulty, significant temperature differences can be seen in individual cells or all of the module's cells. Therefore detection of errors with high definition thermal imaging cameras mounted on photovoltaic drones is an efficient and cost-effective way to ensure sustained profitability of a photovoltaic system.



**The thermal image illustrates common issues with defective cells and substrings.**

- Non-functioning panels due to incorrectly wired panels or worn & defective cables.
- Delamination due to external damage or substandard solar panel quality
- Short circuits in a cell string.
- Cell crack or other impediments
- Cell rupture.

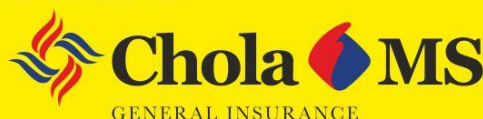
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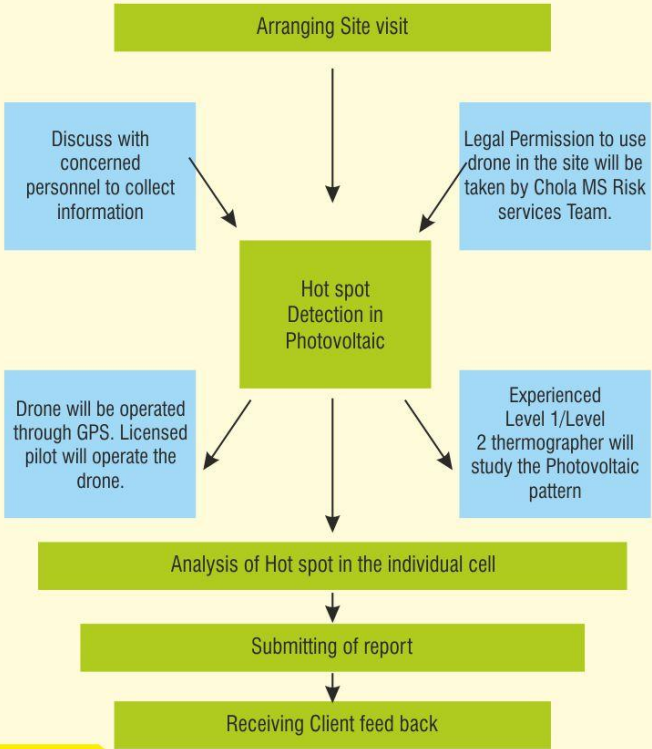
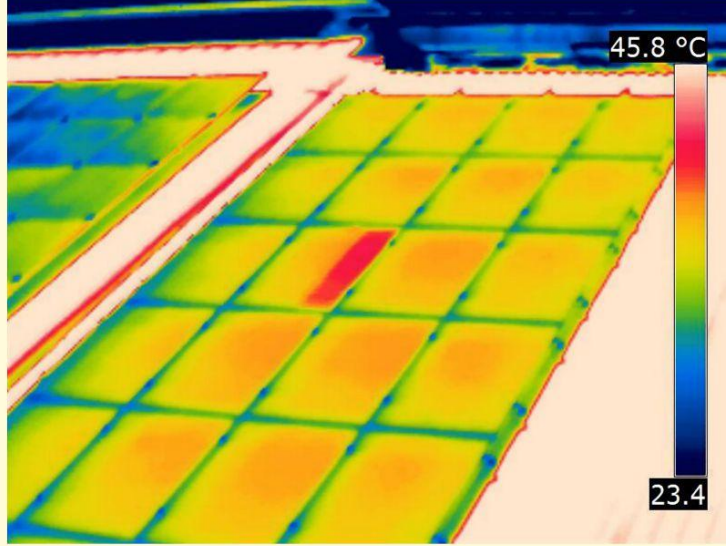
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**Solar Thermography to identify damages, detect faulty cells and improve efficiency**



**Reference Standard :** Infrared thermography is extremely **important** for the **proper maintenance** of photovoltaic as indicated in the standard **(IEC61215 and IEC61646)** as a tool to perform the inspection and maintenance of photovoltaic systems. And it is recommended once a year in conjunction with **routine maintenance**.

**INSTRUMENTS**

- » Drone with GPS system
- » FLIR T 360 Infrared camera.

**DELIVERABLES**

- » Report on the findings of the study and recommendations based on Analysis of hot spot

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