

# PV SYSTEM DOCTOR

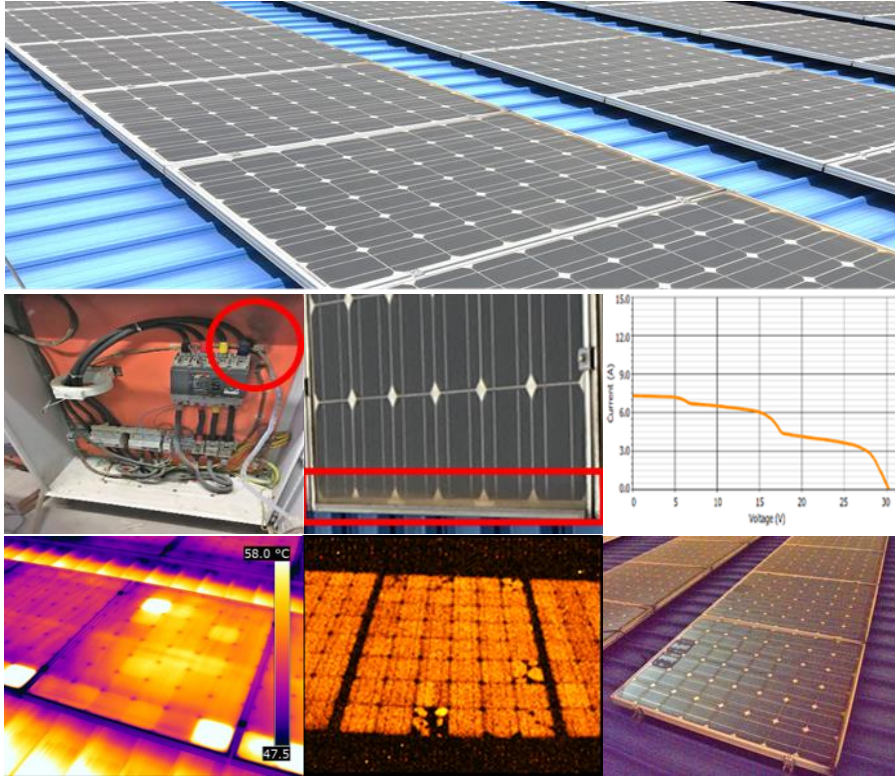
PV SYSTEM INSPECTION & FAULT DIAGNOSIS SPECIALIST

500 kWp – 1 MWp

SINGAPORE



Solar Energy Research  
Institute of Singapore



## SYSTEM INFORMATION

System type:	Industrial rooftop Grid-connected
Module technology:	Mono-crystalline silicon
Inverters:	Central inverters
Age of the system:	5 to 8 years

## KEY FINDINGS

Module defects:	Hotspots, Shunts, Moisture ingress ion
BOS faults:	Inverter issue, Burn marks in AC distribution board

## KEY BENEFITS

Key benefit	80% of the PV system under-performance could be restored.
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## BACKGROUND

The SERIS PV System Doctor team was engaged by a Singapore-based O&M company to inspect an underperforming industrial rooftop PV system.

## ON-SITE DIAGNOSIS AND FINDING

Monitoring data and initial on-site-inspections revealed that 20% of the installed capacity was not functional. The System Doctor team conducted an extensive on-site investigation using SERIS' state-of-the-art measurement tools and imaging techniques such as IV measurement, Infrared imaging, Luminescence imaging and Fluorescence imaging.

The team uncovered a range of module defects such as hotspots, soiling, glass breakage, delamination, shunts, and moisture ingress ion. Inverters were also found to be non-functional causing major loss of power export. Electrical issues in BOS components were also observed.

## KEY BENEFITS AND FINANCIAL IMPACT

SERIS demonstrated that more than 80% of the PV system underperformance could be restored by implementing a list of recommendations. This list of recommendations were presented and an independent financial evaluation showing the financial impact were shared to the system owner.