SUPERCONTROL

CATALOG

2026 SOLAR TESTING EQUIPEMENTS

As India's Only Manufacturer of Solar PV & PV Cell Testing Equipment, SCA equips module manufacturers and independent test labs with a complete, IEC-compliant testing line

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Reliable Solar Performance.





SCA is India's Only Manufacturer of **Solar PV Module Testing Equipment**

About Us

Super Control & Automation (SCA) is an engineering and manufacturing company specializing in Solar PV and PV Cell testing equipment, aluminium die-cast mold manufacturing and spares, auto-electrical testing equipment, and programmable DC power supplies. Driven by strong in-house capabilities and technical expertise, we deliver high-precision, dependable solutions tailored to industrial applications. Through engineering excellence and responsive support, SCA is committed to building lasting business partnerships based on quality and performance

SCA is India's Only Manufacturer of Solar PV Module & PV Cell Testing Equipment built to IEC standards — a position built on in-house design, in-house fabrication, and an **In-House Service Team of 40+ Engineers** that stands behind every machine SCA ships. Where most testing and automation equipment sold in India is imported, SCA is designed, engineered and supported entirely from within the country.



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of Engineering Excellence

20+
In-House Service Engineers

24 HRS
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OUR CERTIFICATION

SUPERCONTROL



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PLOT NO. 5, NANGLA GUJRAN, NEAR SHYAM DHARAM KANTA, SOHNA ROAD, FARIDABAD -121004, HARYANA, INDIA

has been independently assessed by QRO
and is compliant with the requirement of:

ISO 9001:2015

Quality Management System

For the following scope of activities:

DESIGN, MANUFACTURING, SUPPLY, INSTALLATION OF PROCESS AUTOMATION & MACHINE AUTOMATION SYSTEM, AS WELL AS SPECIAL PURPOSE TESTING EQUIPMENTS & MACHINES, SOLAR PV MODULE TESTING EQUIPMENTS, DIE AND MOULDS

Date of Certification: 8th September 2026
1st Surveillance Audit Due: 7th September 2027
2nd Surveillance Audit Due: 7th September 2028
Certificate Expiry: 7th September 2029

Certificate Number: 305026090861Q

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Environmental Management System

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Date of Certification: 8th September 2026
1st Surveillance Audit Due: 7th September 2027
2nd Surveillance Audit Due: 7th September 2028
Certificate Expiry: 7th September 2029

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Occupational Health and Safety Management System

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DESIGN, MANUFACTURING, SUPPLY, INSTALLATION OF PROCESS AUTOMATION & MACHINE AUTOMATION SYSTEM, AS WELL AS SPECIAL PURPOSE TESTING EQUIPMENTS & MACHINES, SOLAR PV MODULE TESTING EQUIPMENTS, DIE AND MOULDS

Date of Certification: 8th September 2026
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2nd Surveillance Audit Due: 7th September 2028
Certificate Expiry: 7th September 2029

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Our Clientele

Every product across all three verticals — Testing Equipment, Die Cast Mould Components, and Special Purpose Machinery — is designed, fabricated, assembled and calibrated within SCA's own Make-in-India Manufacturing Facility in Faridabad, Haryana. Nothing is outsourced to third-party job shops for critical build or service work.

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adani Solar

RPSG SOLVANTA

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EN-ICON Harvesting the sun

ACME Leading Through Innovation

Loom

GOLDI SOLAR

PIXON Redefining Solar

CME

SILVER PUMPS | MOTORS | AGRI

ReNew

AVAADA

LUMINOUS

RAYZON SOLAR

COSMIC Solar For A Better Future

OSWAL RENEWABLE ENERGY Greener | Cleaner | Smarter

KNACK

ADM Solar

IMA SOLAR TOGETHER WE SHINE

NOVA Every day is a SUN day

navitassolar conserve | sustain | flourish

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Visual Inspection Test

IEC 61215-2021, MQT-01 / IEC 61730 (Part-2):2023

Technical Specifications

Model No.	VI-A
Applicable Standard	IEC 61215-2021, MQT-01 / IEC 61730
Illumination	1000 Lux or greater
Magnifying glass	15X or greater
Luxmeter range	≤2000Lux
Luxmeter accuracy	±3% or greater
Tilt angle	180 °C
Frame Material	Aluminum extrusion framing 40x40mm



Designed for precise visual inspection of solar PV modules, this equipment helps identify surface defects, cracks, alignment issues, and other manufacturing irregularities. It ensures consistent quality, accurate inspection, and reliable module performance

Sun Simulator

IEC 61215-2, IEC 61730, MST -02, 03, MQT- 02 , MQT-05, MQT- 06

Technical Specifications



Technical Parameter		Specification
Equipment Name		Solar Module IV Tester
Product Model		YHMT- A+A+A+
Simulated Light Source	Special Match	Complies with IEC60904-9 spectral irradiance distribution requirements (AM1.5)
	Total Irradiance Intensity	1000W/m²
	Irradiance Adjustment Range	700W/m² to 1200W/m²
	Irradiance Unevenness	±1%
	Irradiance Instability	±1%
	Single Flash Pulse Time	10~100ms

The Sun Simulator Machine is designed to replicate standardized sunlight conditions for accurate testing and performance evaluation of solar PV modules. It provides controlled irradiance and uniform illumination to ensure precise, repeatable, and reliable test results.

Insulation Tester

IEC 61215-2, IEC -61730
MQT-03, MST 13,16,17



Technical Specifications

Function	Function Description
DC Withstand Voltage Test	Rated Output : 12KV DC
Input Characteristics	Voltage: 220VAC, ± 10%, single phase Frequence : 47-63Hz Fuse : 8A/250VAC
Leakage Current High Limit Setting	Range: 0.0-5.000mA Resolution 0.01uA Accuracy : ± (2%setting value+2dgts)
Leakage Current Low Limit Setting	Range : 0.00-5.000mA Resolution : 0.01uA Accuracy : ± (2% setting value+2dgts)
Voltage Setting	Range : 0.01-12KV DC Resolution: 1V Accuracy : ± (2% setting value +5V)

Function	Function Description
Voltage Stability	±(1% setting value +5V)
Insulation Resistance Test	Rated output : 6000V DC
Resistance Value	Range : 100kΩ to 99GΩ
Ground Resistance Testing Output Current	Range : 10.0~100.0A Accuracy: ± (2%+5) ± (2% display value +5dgts)
Testing Time	0.5 ~ 999.9 S (continuous testing)

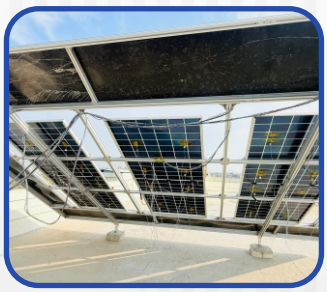
Designed to verify the electrical insulation integrity and continuity of equipotential bonding in solar PV modules, ensuring electrical safety, reliable grounding, and compliance with applicable testing standards.

Technical Specifications

Parameters	Specification
Equipment Name	NMOT, Temperature, Stabilization & Exposure Outdoor Test Setup
Purpose	Monitoring of Impact of Weather
Model No.	ODTS-PV3-25A-T08
Test Module Size Max.	3.0x1.8 Mtr.
Rack Dimensions	3.2x4.4x2.8 Mtr. (WxLxH)
Floor Area Required	6.3x4.5M (WxD)
Frame Material	Aluminum Extrusion Framing 40X80 MM
Mounted No. Of PV Module	3 Nos.
Black Wide Area Around the PV Module	700 mm
Wide area covering sheet	Mat black colour GI sheet
Temperature Accuracy	±2°C or greater
Temperature Repeatability	±0.5°C
Irradiance Range	600 - 1500W/M^2
Irradiance Accuracy	±5% or greater
I-V Traking Accuracy	≥99%
I-V Scan Time	≤1s
Voltage Measurement Range	100V or above
Voltage Measurement Accuracy	1%
Current Measurement Range	25A or above
Current Measurement Resolution	0.01A

Outdoor Test Setup

IEC 61215-2021, MQT-08, MQT-05,MQT-19, IEC 61730 (Part-2):2023, MST-21









Designed for NMOT evaluation and outdoor performance testing of solar PV modules, this setup enables controlled measurement of module temperature, stabilization, and exposure under real environmental conditions for reliable and accurate performance assessment.

Steady State Simulator

IEC61215 : 2021 MQT09 MQT19.1 IEC 61215 MQT 9 IEC 61730 MST 22



Parameter	Descrption
Equipment Name	Steady-State Simulator
Equipment Model	SCA BBA Simulator 1M or 2M
Meets Testing Standards	IEC 61215:2021 MQT09, MQT19.1, MQT19.2
Light Source Driver	EPS (50%-100% continuously adjustable)
Single Lamp Power	4 kW
Lamp Lifespan	>2500 hours
Lamp Warranty	1500 hours
Light Intensity Range	800~1300 W/m²
Spectral Range	300~1200 nm
Spectral Grade	Grade B (IEC 60904-9)
Non-Uniformity	Grade B (IEC 60904-9)
Instability	Grade B (IEC 60904-9)

Steady-State Solar Simulator is designed for reliable photovoltaic module testing as per requirements. It provides adjustable irradiances, a 300–1200 NM spectral range, and Grade B performance for spectral match, non-uniformity, and instability, making it suitable for accurate and consistent PV module performance evaluation.

Technical Thermal Cycling

IEC 61215-2021 MQT-11, MQT-12, / IEC 61730 (Part-2):2023, MST-51,MST-52 MST-55,MST-56

Technical Specifications

Parameters	Description
Test space volume	As per requirement
Test space dimensions	As per requirement (in mm)(W X D X H)
Temperature range	- 50°C to +125°C
PV module Panel Dimension	1600 X 50 X 2600 mm (W X D X H)
Number of Module	06,08,10,12,16 Nos.
Temperature Variation	±0.5°C
Temperature Uniformity	±2°C
Humidity Range	40% to 95% RH
Temp. range for Humidity Test	30°C to +85°C
Humidity Variation	± 2 %
Humidity Uniformity	± 3 %
Temperature ramp rate (increase rate)	4°C/min. with load (modules + fixture weight) (-40°C to 125°C)
Temperature ramp rate (decrease rate)	4°C/min. with Load (modules + fixture weight) (125°C to -40°C)



Designed for thermal cycling and humidity-freeze testing, this walk-in chamber simulates controlled temperature and humidity conditions to evaluate the durability, reliability, and performance of solar PV modules under demanding environmental conditions.



Current Monitoring TCHF Power Supply Rack

IEC 61215-2021, MQT-11, MQT-12 / IEC 61730 (Part-2):2023, MST-51,MST-52

Technical Specifications

Parameters	Specifications	
Applicable Standard	IEC 61215-2021, MQT-11, MQT-12 / IEC 61730	
Equipment Name	DC Power Supply for Thermal	
Model No.	RPS-100-06-32A, RPS-100-08-32A, RPS-100-10-32A, RPS-100-12-	
Used for	Thermo cycle and Humidity-freeze test	
Category	Automatic	
No of Output	06, 08, 10, 12 Nos.	
Output Voltage	0~100V DC	
Output Ampear	0~32Amp DC	
Screen Display	PC Based	
Others	Module Current will be change w.r.t Temperature as	
Data Logging	Voltage, Current and Temp of Each Module / Ouput	
Protection	Short Circuit Protection	
	Current Flow during Test	
Power Demand	415 V AC , 50Hz	
Output Regulation	50Hz/60Hz ± 0.1%, User Selection	
Size	As per Output channels	
Power Supply	Voltage Range	0-100V
	Voltage Accuracy	±1%
	Current Range	0-32A
	Current Resolution	0.01A
	Current Accuracy	±1%
Thermocouple	Temperature Range	-50°C - +150°C
	Temperature Accuracy	±2°C
	Temperature Repeatability	±0.5°C

Designed for TCHF testing, this rack provides stable power supply and precise current monitoring for reliable and consistent solar PV module testing.

PID Damp Heat Test Chamber

IEC 61215-2021 , MQT-21, MQT-13 / IEC 61730 (Part-2):2023 , MST-53



Technical Specifications

Parameters	Description
Test space volume	As per requirement
Test space dimensions	As per requirement (in mm) (W X D X H)
Temperature range	25°C to +125°C
PV module Panel Dimension	1600 X 50 X 2600 mm (W X D X H)
Number of Module	06,08,10,12,16 Nos.
Temperature Variation	±0.5°C
Temperature Uniformity	±2°C
Humidity Range	40% to 95% RH
Temp. range for Humidity Test	30°C to +85°C
Humidity Variation	± 2 %
Humidity Uniformity	± 3 %
Temperature ramp rate (increase rate)	1°C/min. with load (modules + fixture weight) [25°C (Room Temp.) to 125°C]
Temperature ramp rate (decrease rate)	1°C/min. with Load (modules + fixture weight) [125°C to 25°C (Room Temp.)]

Designed to evaluate Potential Induced Degradation (PID) in solar PV modules under controlled high-temperature and high-humidity conditions, ensuring reliable assessment of module performance, durability, and long-term stability.

Technical Specifications

Parameters		Description
Model No.		SCA-PID-06, SCA-PID-08, SCA-PID-10, SCA-PID-12,SCA-PID-16
Output voltage range		± 2000V or ± 2500V
No. of Output Channel		06,08,10,12,16 Nos.
Voltage Resolution		Line ≤ 0.1% for ±10% variation in input voltage
		Load ≤ 0.1% for 0 to 100% load variation
Current Resolution		Line ≤ 0.1% for ±10% variation in input voltage
		Load ≤ 0.1% for 0 to 100% load variation
Stability		< 0.01%/hour after 1 hour warm up
Temperature Coefficient		< 0.01%/°C
Regulation Mode*		Constant voltage – Constant current
Voltage & Current Control #		Local : By 10-turn potentiometers on the front panel Remote : 0 to 10V DC signals for voltage & current control; OR Control through HMI interface
Protections		Against over current, over voltage, short-circuit and arc
Dimensions		700x700x1750 MM (WxDxH)
Power Supply	Voltage range	0 - ±2000V
	Voltage accuracy	±3%
	Current range	0 - ±1A
Current Sensor	Current range	0 - ±1mA
	Current Resolution	1uA
	Current accuracy	±3%
Voltage Sensor	Voltage range	0 - ±2000V
	Voltage Resolution	1V
	Voltage accuracy	±2%
Temperature & Humidity	Temperature range	50°C - + 150°C
	Temperature accuracy	±1°C
	Humidity range	0 - 98% RH
	Humidity accuracy	3%RH

PID Power Supply

IEC 61215-2021, MQT-21



Precision power supply designed for PID testing of solar PV modules as per IEC 61215:2021 (MQT-21), offering controlled high-voltage output, stable performance, and multiple output channels.

Wet Leakage Tester

IEC 61215-2021, MQT-15 / IEC 61730 (Part-2): 2023 , MST-17

Technical Specifications

General Specification	
Model No.	WL-15 KV-A+
Outer Dimensions of Test Stand	2.8 x 1.8 x 1.0 Mtr. : WxDxH
Temperature Contol range	22°C ±2°C
Temperature accuracy	±1°C
Voltage range	0 - 15000V (15KV)
Insulation Resistance Voltage Range	0 - 6000V
Current range	0.01mA -5.00mA
Resistance range	100KΩ - 99GΩ
Ground Resistance Range	0 - 100 Amps
Frame Material	Aluminum Extrusion framing 40x80mm
Water Tub In side Area	2.7 x 1.7 x 0.25 Mtr. : WxDxH
Maintain Water Temperature	By Automatic Chilling Control Unit
Water Temperature Measurement	By Digital Temp controller with Alarm
Electrical Power Supply Capacity	220-240 VAC/ 3 KW /50 HZ
Digital Temp. indicator PT100	Reputed



Designed to evaluate the electrical leakage performance and insulation integrity of solar PV modules under wet conditions, helping ensure electrical safety, reliability, and compliance with applicable testing requirements.

Robustness Test of Termination

IEC 61215-2021, MQT-14 IEC 61730 (Part-2):2023 , MST-42

Technical Specifications



Parameters	Specifications
Equipment Name	Robustness of Terminations Test
Model Number	RT-PV-20NM
Purpose	Retention of junction box on mounting surface, cord anchorage pull testing, cord anchorage torque testing
Test Module Size	2.6x1.6 Mtr.
Outer Dimensions Test Stand	1600x2600x1000 MM | WxDxH
Outer Dimensions Control System	400x600x950 MM | WxDxH
Frame Material	Aluminium Extrusion Framing 40x80 MM
Total Load Capacity	20 N Centre of the Test Object
Number of Weight :	3 Nos.
Weight Capacity	30N, 42N & 55N
Weight Accuracy	±3%FS
Accuracy	±5%FS
Twist Angle	0-360°
Measurement Method	By Standard Weight
Utility Plug Socket	15 Amps Plug Socket
Control System	HMI Based
Input Power Supply	380-415 V AC & 2 KW

Designed to evaluate the mechanical strength and durability of module terminations, ensuring secure connections and reliable performance under operational conditions.

Dynamic Static Mechanical Load Tester Single Pusher 4 cup

IEC 61215-2021, MQT-16, / IEC 61730 (Part-2):2023 , MST-34



Technical Specifications

General Specification / Single Piston Four Suction Cup	
Model No.	ML-10K-A+
Outer Dimension of Equipment LxWxH	3.2x2.5x2.2 Mtr.
Maximum Static Force Capacity PUSH	8000Pa
Maximum Static Force Capacity PULL	6000Pa
Dynamic Force PUSH	1000Pa
Dynamic Force PULL	1000Pa
Pressure uniformity	±5% or Less Only Static Mode
Dynamic Test Cycle frequency	3-7/min
Test Module Size Maximum	2.6x1.8 Mtr.
Test Module Size Minimum	0.3X0.3 Mtr.
No. of Pneumatic Pushers	24 Nos.
Max. Stroke of Pneumatic Pushers	300 mm
Distance Adjustment of Pusher	X, Adjustment and Y, Adjustment
Vacuum gripper of each pusher	4 Nos.
Vacuum gripper Adjustment Maximum	200 MM
Vacuum gripper Adjustment Minimum	130 MM
Total Vacuum Gripper	96 Nos.
Vacuum griper Diameter	100 MM
No. of Load cells for Equal Force test	24 Nos.
Module Temperature Sensor	PT-100

Designed to evaluate the mechanical strength and durability of module During Heavy Winds, ensuring secure connections and reliable performance under operational conditions.

Technical Specifications

General Specification / Single Piston Single Suction Cup	
Model No.	ML-100K-A+
Outer Dimension of Equipment LxWxH	3.31x2.5x2.2 Mtr.
Maximum Static Force Capacity PUSH	8000Pa
Maximum Static Force Capacity PULL	6000Pa
Dynamic Force PUSH	1000Pa
Dynamic Force PULL	1000Pa
Pressure uniformity	±5% or Less Only Static Mode
Dynamic Test Cycle frequency	3-7/min
Test Module Size Maximum	2.6x1.8 Mtr.
Test Module Size Minimum	0.3X0.3 Mtr.
No. of Pneumatic Pushers	72 Nos.
Max. Stroke of Pneumatic Pushers	300 mm
Distance Adjustment of Pusher	X, Adjustment and Y,
Vacuum gripper of each pusher	1Nos.
Vacuum gripper Adjustment	200 MM
Vacuum gripper Adjustment	130 MM
Total Vacuum Gripper	72 Nos.
Vacuum griper Diameter	100 MM
No. of Load cells for Equal Force test	72 Nos.
Module Temperature Sensor	PT-100

Dynamic Static Mechanical Load Tester Single Pusher 1 Cup

IEC 61215-2021, MQT-16, / IEC 61730(Part-2):2023 , MST-34



Designed to evaluate the mechanical strength and durability of module During Heavy Winds, ensuring secure connections and reliable performance under operational conditions.

By Pass Diode Test

IEC 61215 - 2 : 2021 MQT-18 / IEC 61730 (Part-2):2023 , MST-25

Technical Specifications

Technical Specifications of By Pass Diode Thermal Test Setup		
Model No.	BPT-100-30-PL	
Pulse Power Supply	Plus Current Range	<100 Amps.
	Current accuracy	1%
	Pulse Width	1mS
	DC Voltage	30 Volt Max.
	DC Voltage Regulation	0.1 Volt
Constant Power Supply	Current Range	<100 Amps.
	Current accuracy	1%
	DC Voltage	30 Volt Max.
	DC Voltage Regulation	0.1 Volt
Plus Voltage Read	Throughout oscilloscope	
Drop Voltage Range	1 Volt	
Drop Voltage resolution	0.001 Volt	
Drop Voltage Accuracy	0.50%	
Drop Voltage Channel	6 Nos.	
Temperature range	0-150℃	
Temperature accuracy	0.50%	
Temperature Resolution	0.1℃	
Temperature Channel	8 Nos.	
Temperature Sensor Qty.	8 Nos.	
Spare Temperature Channel	8 Channel Spare Internal	
Temperature Sensor Type	PT-100	
Data Logger Channel	16 Analog Input	
Data Logger Type	PC Based	
Heating Chamber Input Power Supply	380 -415 Volt AC 50 HZ | Three Phase	
Control Rack Power Consumption	2.00 kW	
Heating Chamber Power Consumption	14.00 kW	
Control Rack Dimension	700x700x1750 | WxHxD	
Heating Oven Dimension	550x1600x2600 MM | WxDxH	



Bypass Diode Thermal Test Setup is designed for reliable thermal and electrical testing of solar PV bypass diodes. It provides precise current, voltage, and temperature measurement with multi-channel data logging, enabling accurate evaluation of diode performance under controlled test conditions.

Hail Impact Tester

IEC 61215-2021, MQT-17

Technical Specifications

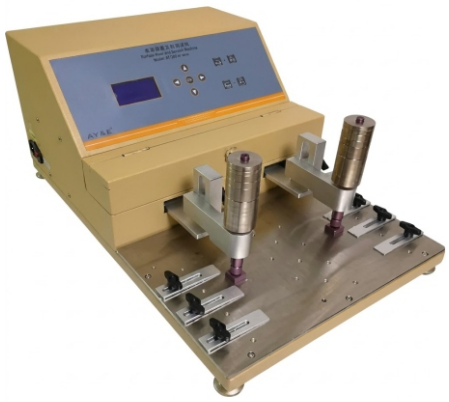


General Specification	
Model No.	HT-25-A+
Outer Dimension of Equipment LxWxH	3.3x2.4x2.5 Mtr.
Launcher verticality	<1°
Ice ball diameter	25,35,45,55,65,75,mm
Distance between Launcher and module	<1m
Launcher velocity	≤40m/s
Velocity accuracy	±2% or greater
Infrared positioning line	2mm diameter in 10m distance
Distance between hit point and specified point	±5% or greater
Electronic balance range	100g or better
Electronic balance accuracy	1%
Storage container temperature range	5 -0
Temperature control accuracy	±1°C
Temperature uniformity	±2°C
Freeze temperature range	-15°C
Temperature uniformity	±5°C
Test Area	2800 x 1800mm
Max. Launcher Moving Distance X	2600 MM
Max. Launcher Moving Distance Y	1600 MM
Target Setting	Through Laser pointer

Designed to evaluate the impact resistance of solar PV modules against simulated hailstones, ensuring structural durability, surface integrity, and reliable performance under harsh weather conditions.

Durability of Markings

Manufactured According To Taiwan's "ASTM1966 * 2058 Friction Testing Regulations #

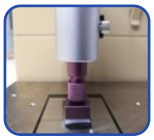




Rubber Abrasion Resistance Test



Alcohol Abrasion Resistance Test



Wear Resistance Test Of Steel Wool

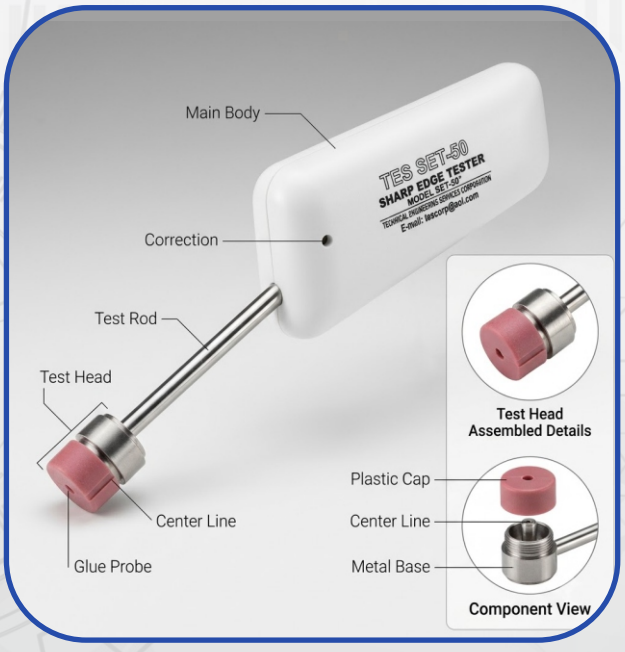
Technical Specifications

Parameter	Specification
Machine Type	Friction / Rub Testing Machine
Host Construction	High-quality steel with spray coating
Friction Frequency	Adjustable, stepless
Friction Counter	Up to 999,999 cycles
Round Trip Travel	10–100 mm, adjustable
Testing Speed	1–120 cycles/min, adjustable
Test Rod Height	Adjustable
Host Size (L×W×H)	620 × 400 × 325 mm
Test Platform	400 × 260 mm
Machine Weight	25 kg
Power Supply	220 V, 50 Hz

Designed to evaluate the wear resistance of solar PV module surfaces, helping assess the durability of glass, coatings, films, and printed surfaces under repeated abrasion.

Edge Sharpness Tester

IEC61730-2 :2023 10.7 Sharp edge test MST 06
Ul1439, IEC TR 62854



Technical Specifications

Parameter	Specification
Tester Structure	Body with calibration hole, test rod, test head and rubber cap
Test Head	Steel head with detachable sleeve
Test Head Diameter	12.7 mm
Detachable Sleeve Diameter	15.9 mm
Rubber Cap	3-layer tape construction
Indicator Tape – Inner Layer	≥ 19.1 ± 0.2 mm wide, black vinyl foam tape, single-sided adhesive
Sensing Tape No. 2 – Middle Layer	≥ 19.1 ± 0.2 mm wide, white vinyl foam tape, double-sided adhesive
Sensing Tape No. 1 – Outer Layer	19.1 ± 0.2 mm wide, natural-color PTFE tape, single-sided adhesive
Tape Arrangement	Three layers: 1 indicator tape + 2 sensing tapes
Tape Application	Each tape layer positioned approximately 180° apart around the test head
Tape Installation	Tapes must not be stretched during application
Standard Requirement	Tape characteristics as specified in the applicable Table 7

The Edge Sharpness Tester is designed to accurately evaluate the sharpness of product edges using a standardized test head and three-layer sensing tape system, ensuring reliable and consistent safety testing.

Accessibility Tester

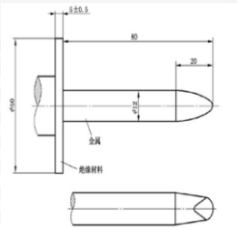
IEC 61730-2:2023-09 MST11

Technical Specifications

Parameter	Specification
Test Objective	Detect accidental human finger contact with dangerous components
Test Reference	IEC 61032:1997, Test No. 11
Test Finger Diameter	12 mm
Test Finger Length	80 mm
Barrier Diameter	50 mm
Thrust Force	10–50 N
Mechanical Scale	10 N, 20 N, 30 N, 40 N & 50 N
Model	SCA-1150



TECHNICAL DRAWING



Accessibility Tester Probe is designed to detect accidental finger contact with hazardous components and verify protection against electric shock hazards. It complies with IEC 61730-2:2023 MST11 Contactability Test and features a standardized test finger with adjustable thrust force for accurate safety testing.

Cut Accessibility Test

IEC 61730 MST 12



Technical Specifications

Parameter	Specification
Dimensions of bearing table surface	2600*1500mm
The maximum size of the mounting plane that can be mounted	2600*1600mm
Number of experimental components	One tablet at a time
Car running speed	100-300mm/s (adjustable)
Weight of weights	7.5 N
Component bearing platform height	800mm
From axis to center of gravity (size a, above)	150mm
From axis to test point (size b above)	170mm
Cutting blade thickness (size c above)	0.64 + / - 0.05 mm
The Angle between the horizontal plane and the edge of the steel strip (size d above)	140 °
Total force applied at the test point (the force at point q above)	8.9 + / - 0.5 N
Force tip rounded (size r above)	0.115 + / - 0.025 mm
Cutting blade top Angle (size t above)	90 °

This Test evaluates the ability of polymeric front and rear surfaces to withstand routine handling during installation and maintenance while ensuring protection against electric shock hazards.

Impulse Voltage Tester

IEC 60060-1/2 up to 35 kV, IEC 61730-1/2 / EN 61730-1 MST -14



Technical Specifications

TECHNICAL SPECIFICATIONS	
Mainframe:	
Microprocessor controlled touch panel	10", 800X600
Interface for saving reports	USB
Optical-interface for remote control of external CDN´s	Built-in
External Trigger input / output	10 V an 1 k
Connector for external safety interlock loop	24 V =
and external red and green warning lamps acc. to VDE 0104	230 V, 60W
Mains power	230 V , 50/60 Hz
Dimensions: desk top case W * H * D	600*800*1800 mm
Weight	180 kg
High- Voltage Pulse Generator:	
Impulse output voltage, adjustable ± 5%	2.0 -35 KV
Waveform of Impulse output voltage	
rise time	1.2 µs ± 30%
back time	50 µs ± 20%
Polarity, selectable	pos./neg.
Maximum stored energy Cs	120J
Charging time for max. charging voltage	approx. 10sec
Interior load capacitance Cp	10 nF ± 10%
Pulse forming networks to test solar modules:	Cp = 10 - 183nF, selectable

Designed to evaluate the electrical insulation strength of solar PV modules against high-voltage impulse surges, ensuring reliable protection and compliance with applicable safety standards.

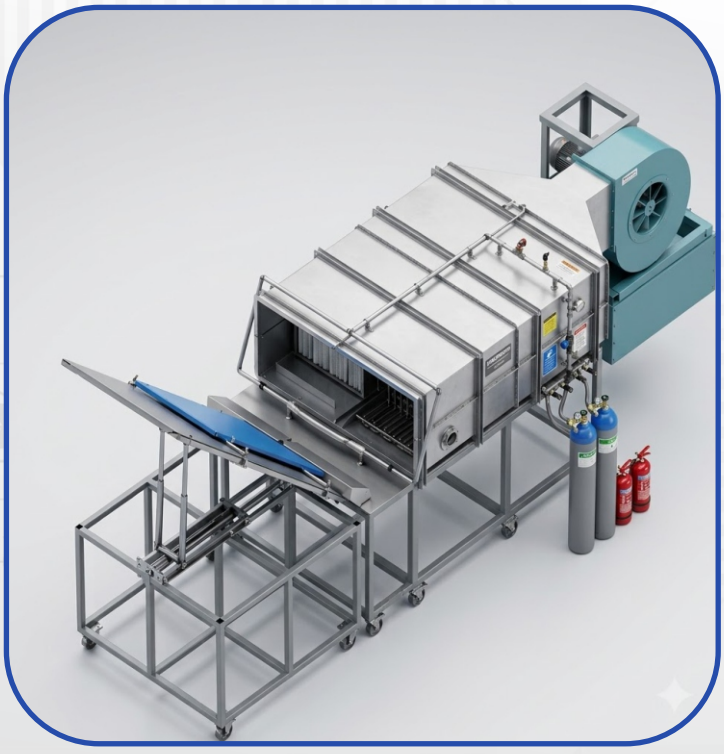
Technical Specifications

Parameter	Specification
Structure Material	Mild Steel
Wall Insulation	Glass Wool
Wall Thickness	150 MM
Dimension LxWxH	15.25x6.71x6.12 Mtr.
Entry Door Both Side Dimension WxH	2.13x2.44 Mtr.
Air Ventilation Window	8 Nos.
Exhaust Fan 14"	8 Nos.
Internal Wall Fire Protection Material	Magnesium Sheet
Heat Resistance	900 Dig.

Device Name	Technical Specifications	Qty.
Gas Burner For Fire	L 1120, OD 60.3, ID 50.9 MM, Gas Slot wide 12.7 mm Length 910 mm	1 Nos.
Oven Burner Container	Size L500 x W500x H500 MM Range 1200 Degree Centigrade	1 Nos.
Oven Burner	Size L400 x W400 MM	1 Nos.
Oven for Conditioning	Size L600 x W600x H600, Range 300 Degree Centigrade	1 Nos.
Wind Tunnel	Size L3000 x W762 x H2133 mm	1 Nos.
Wind Speed Sensor	Output 4-20 Ma	3 Nos.
Air Velocity Sensor	Output 4-20 Ma	3 Nos.
Pressure Transmitter for Wind Pressure	Output 4-20 Ma	2 Nos.
Air Duct Temperature Sensor	Output 4-20 Ma	1 Nos.
Room Temperature Sensor	Output 4-20 Ma	2 Nos.
Fuel Supply Pipe Line	25 MM Id Steels Steel	1 Set.

Fire Test Setup

IEC 61730-2 , UL 790



Designed to evaluate the fire performance of PV modules and mounting systems by assessing flame spread, heat generation, and heat flux under representative installation conditions, helping ensure safer rooftop PV installations.

Reverse Current Overload Test

IEC 61730 (Part-2):2023 , MST-26

Technical Specifications

Technical Specifications of Reverse Current Test Setup	
Model No.	SCA-RC-100-100
DC Current Range	<100 Amps.
DC Current Regulation	0.1 Amps.
Current accuracy	1%
DC Voltage	100 Volt Max.
DC Voltage Regulation	0.1 Volt
DC Voltage accuracy	1%
DC Voltage Channel	2 Nos.
DC Current Channel	2 Nos.
Temperature range	0-300 C
Temperature accuracy	0.50%
Temperature Resolution	0.1 C
Temperature Channel	4 Nos.
Temperature Sensor Qty.	4 Nos.
Temperature Sensor Type	PT-100
Data Logger Channel	12 Analog Input
Data Logger Type	PC Based
Cabinet	Aluminium Extrusion
Input Power Supply	220-240 Volt AC 50 HZ
Power Consumption	3 Kw
Rack Dimension	700 x 700 x 1750
PV Module Size	2600 x 1600 MM
Reverse Current Test Stand Dimension	1600x2700x2000



Reverse Current Overload Test evaluates the ability of PV modules to withstand excessive reverse current conditions, ensuring the module and its components can safely operate without damage or hazardous failure.

Module Breakage Test

IEC 61730 (Part-2):2023 , MST-32



Technical Specifications

Parameter	Specification
Model No.	MBT-A+
Outer Dimensions of test stand	2X1.5x3M (WxLxH)
Test Setup Cabin Area	3X3x5M (WxLxH)
Test Module Size Maximum	2.6x1.6 Mtr.
Test Module Size Minimum	0.3X0.3 Mtr.
Frame Material	Mild Steel
Impactor Bag Weight	45.50kg ± 0.5 kg
Impactor Bag Dia	150 MM
Impactor Bag Pull and drop	Automatic
Impact Force	Recording in Screen
Distance between the module surface and the bag	≤13mm
Distance between the module center and the bag	≤50mm
Impact height	300, 450, 600, 750, 900, 1200mm or more
Support size	100 x 200mm
Remote control distance	≤10m
Kinetic energy	Minimum 500J at 1.2m vertical drop
Material in the impactor	Lead pellet
Electrical Power Supply Capacity	220-240 VAC/ 3 KW /50 HZ
Touch Screen Monitor	10" HMI

Designed to evaluate the mechanical strength and breakage resistance of solar PV modules, helping assess structural integrity, durability, and safe performance under specified mechanical stress conditions.

Screw Connection Test

IEC 61730 MST-33

Technical Specifications

Parameter	Specification
Torque Range	0.2–4.0 Nm
Torque Resolution	0.01 Nm
Torque Accuracy	±3%
Cross Bit	1 No.
Straight Bit	1 No.
Socket	1 No.
Measurement Report	Included
Accessories	Cross, Straight & Socket



Designed to evaluate the strength, durability, and reliability of screw connections in solar PV modules, ensuring secure fastening and long-term structural integrity.

Static Mechanical Load Tester (Sandbag)

IEC 61730, MST-34



Technical Specifications

Parameter	Specification
Machine Dimensions (L×W×H)	2700 × 1900 × 700 mm
Compatible Module Size	Up to 2600 × 1800 mm
Maximum Test Load	≤ 12,500 Pa
Pressure Control Accuracy	±5%
Main Structure	Aluminum extrusion structure
Surface Treatment	Electrophoretic coating
Test Platform & Bracket	Non-deforming under test load
Testing Platform Fixtures	Adjustable/customizable according to installation method
Installation Compatibility	Long-frame, short-side width & mounting-hole installation
Deformation Monitoring	Real-time monitoring at one point
Monitoring Point	Position adjustable as required
Circuit Continuity System	Real-time internal component continuity monitoring
DC Power Supply	DC 100 V / 5 A

Designed to evaluate the pressure resistance and mechanical strength of solar PV modules under simulated wind, snow, and ice loads, ensuring structural durability and reliable performance.

Salt Mist Test

IEC 61701: 2020,ISO 9227 & IEC 60068-2-52



Technical Specifications

Parameter	Specification
Inside working Volume	4875 Liters
Internal Dimension	850 X 1850 X 3000 mm (W X D X H)
PV module Panel Dimension	1600 X 50 X 2600 mm (W X D X H)
Number of Module	02 No.
Temperature range	Ambient to 60°C
Humidity range	Up to 95% RH
Humidity Accuracy	± 2 % RH
Air Saturator Temperature	Ambient to 50°C
Temperature Accuracy	± 1.0°C
Temperature Gradient	± 2°C
Exterior & Interior	Internal and external surfaces are made of non-corrosive, corrosion-resistant materials, with rugged chamber walls, floor, and ceiling. All components in contact with salt soluation are designed not to affect i corrosivity.DUT mounting angle15°–30° adjustable From vertical at a time during testing.
Door	There will be a single door with 2 Nos heavy duty hinge on the left side of the door. The door also has a transparent viewing window.
Programmable Control Mechanism for Salt Spray,	There will be a provision to program the salt spray duration at a specific temperature. Also there will be a
Sample racks	As per Test Standard and Sample
Roof of the chamber	An inclined V-shaped roof prevents condensation fron dripping onto specimens, directing water runoff towar the chambe's lateral walls
Sensors for the chamber	Two pH meters are providedone for the salt solution tank and one separate sensor for measuring the collected spray solution.
	Temperature sensor: One RTD sensor at salt solution tank and three sensor in the chamber will be provided.
	Humidity Sensor: One humidity sensor in the chamber will be provided.

Designed to evaluate the corrosion resistance and durability of solar PV modules under controlled salt-laden conditions, helping assess long-term performance in coastal and high-salinity environments.

Peel Test and Lap Shear Test

IEC 61730-2, MST 35, 36

Technical Specifications

Parameter	Specification
Dimensions of photovoltaic modules	≤2600*1600mm
The maximum size that can be installed on the installation plane	2600*1600mm
Test capacity	One piece each time
Peel test stroke	200mm
Test the maximum force value	1000N
Accuracy of pressure sensor	≤0.02%FS
Force value resolution	0.1N
Displacement value error	≤±0.1mm
Displacement value resolution	0.01mm
Measure the speed value	50±5mm/min
Peel Angle	90±10°



Evaluates the adhesive strength and durability of bonded PV module layers, particularly rigid-to-flexible and flexible-to-flexible constructions, as per ISO 813. Lap Shear Strength Test Evaluates the adhesive strength of rigid-to-rigid bonded assemblies, such as glass-to-glass PV modules, ensuring durable cemented joints

Automatic PV Module EL + AOI TESTER



Technical Specifications

Technical Data:	
Product model	YHEL-2400
Resolution	6016x4000 Megapixels
Shooting mode	Sing camera
Sensitivity	Can detect crack width less than 0.03mm
Effective test area	2600*1500mm
Image acquisition time	1~60s can be adjusted
Machine size	2900*1940*1155mm
Power	Single-phrase 220V 20A, max load voltage 100V, max load currency20A
Working environment temperature	-10~40℃ SNR
Humidity	20 ~70%
Test parameters	Target, Gain, Time, Gamma, Contrast, Data wide
Include	Cabinet(Include infrared camera)+Computer + Software

Uses electroluminescence technology to detect hidden defects in PV modules before lamination, after lamination, and after packaging. High-resolution imaging clearly identifies defects that may not be visible to the human eye, enabling accurate and efficient quality inspection.

Universal Testing Machine

Technical Specifications

Parameter	Specification
Test Force	10 kN
Accuracy Class	Better than Class 0.5
Load Measurement Range	0.2%–100% FS
Test Force Indication Error	±0.5% of indication
Test Force Resolution	1/500,000 of maximum test force
Deformation Measurement Range	0.2%–100% FS
Deformation Indication Error	±1% of indication
Deformation Resolution	0.001 mm
Displacement Indication Error	±1% of indication
Displacement Resolution	0.001 mm
Displacement Speed Range	1–500 mm/min
Displacement Rate Accuracy	±1.0% of set value
Effective Test Width	450 mm
Effective Stretching Space	1000 mm
Machine Dimensions (L×W×H)	850 × 650 × 1650 mm
Power Supply	Single-phase, 220 V, 50 Hz, 1 kW
Machine Weight	Approx. 220 kg



A Computerized Universal Material Testing Machine provides precise force and displacement control for mechanical & Tensile testing of polymeric and metallic materials, including tensile, compression, bending, shear, peel, tear, and welding strength tests, with support for GB, ISO, JIS, ASTM, and DIN standards.

UV Preconditioning Chamber

IEC 61215-2021, MQT-10 / IEC 61730 (Part-2):2023, MST-54

Parameters	Description
General Specification	UV Chamber have compartment with all accessories like UV Lamps, UV Sensors, Temperature Sensors Cooling System & UV sensors mounting plate.
Technical Specification	
Modul Temperature	60°C to 100°C
Chamber Outer Dimension	2000x3300x2600 MM. (WxDxH)
Test Area Dimension	1500x2700 MM (WxD)
Temperature Accuracy	± 3°C
Number of Module	01 Nos. (Maximum Size : 2600x1500 MM)
Total Irradiation Dose	15 kWh/m² & 60 kWh/m²
Total Irradiance Range	<250 W/m² on the module plane with 3-10% irradiation between 280 an 320nm (UV-B)
Total wave length range	280-400nm (UVA + UVB)
Panel Mounting Structure	Horizontal mounting structure will be designed in a way to be able to ca a module with a maximum dimension of 1.5 m width and 2.6 m height an
Lamp Unit	The lamps will provide continuous radiation with a uniformity of ±15% o the test plane of 1.5 m x 2.6 Mtr. At wavelengths of 280-400nm the irradian Max. 250 W/m² and Min. 150 W/m². 3-10 % of the irradiance between 280 an
Light Reflector	Light reflector panel fix on all side walls of the test space to focus the UV light on the Panel.
Type of Lamp	Metal halide lamps



UV Preconditioning Chamber is designed to simulate controlled ultraviolet exposure for solar PV modules before performance and durability testing. It provides uniform, stable UV radiation and controlled environmental conditions to evaluate module resistance to UV-induced degradation and ensure long-term reliability.

Technical Specifications

Parameters	Description
Test space dimensions	φ 400 mm XD 500 mm
Temperature range	100°C & 143°C (Free setting saturated steam temperature).
Temperature Variation	±0.5°C
Temperature Uniformity	±2.0°C
Temp. Ramp up Time	RT+10°C to 121°C within 40 mins
Pressure Range	0.5 to 2.0 Kg/cm2 Absolute pressure (2 bar)
Pressure Ramp up Time	Ambient to 2 Kg/cm2 within 40 mins
Humidity	100 % RH
Temperature heater	Low surface loading sealed (Flame proof) Inconel tube heaters conforming to IS
	415 will be provided to add heat in the chamber to maintain uniform temperature.
	The heat outputs controlled through solid state triac firing energy regulator.
	The heaters located in the conditioning space and there will not be any direct radiation of heat on the item under test.
Temp. Sensor	01 No. PT-100 Temperature Sensor for Controlling the Temperature of the Chamber.
Pressure Sensor	01 No. Pressure Sensor for sensing the Pressure of Test Space.
Operating voltage	415 Volt ±10%, 3 Phase, 50 Hz.

Pressure Cooker Test (PCT)



Designed for controlled testing under high-temperature, high-pressure, and 100% RH conditions. With precise temperature and pressure control, uniform heating, and PT-100 temperature sensing, it is suitable for reliable accelerated testing of solar modules and other industrial components.



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Cell Ribbon Peel Tester



Technical Specifications

Parameter	Specification
Test Force	5 kg × 16 / 20 / 22 / 24 pieces, selectable
Accuracy Class	Better than Class 0.5
Load Measurement Range	0.2%–100% FS
Deformation Resolution	0.0001 mm
Displacement Resolution	0.0005 mm
Displacement Speed	0.001–3000 mm/min
Effective Test Area	230 × 230 mm
Effective Stretching Space	560 mm
Test Fixture	Dedicated battery cell peeling fixture
Fixture Compatibility	Battery cells up to 230 × 230 mm
Machine Dimensions (L×W×H)	1100 × 430 × 410 mm
Power Supply	220 V, 50 Hz, 500 W
Machine Weight	Approx. 50 kg

A precision PV cell peeling testing machine designed to evaluate peel strength and mechanical performance of battery cells using high-accuracy force, deformation, and displacement control with a dedicated peeling fixture.

Conveyor Cell Iv + El Tester

IEC 60904-9

Technical Specifications

Parameter	Specification
Light Source Type	Pulsed Xenon Lamp
Spectral Match	Complies with IEC 60904-9 spectral irradiance distribution requirements (AM1.5) (Class A+)
Spectral Range	300-1700nm
Irradiance Range	200-1000W/m²
Xenon Lamp Lifetime	300,000 cycles (10ms mode)
Irradiance Non-uniformity	≤±1% (Class A+)
Irradiance Instability	≤±0.5% (Class A+)
Single Pulse Irradiation Time	10-100ms
Effective Test Area	2600×1600mm
Measurement Consistency	≤±0.5%
Measurement Error	≤±1%
Measurement Interval	7s for 10ms pulse, 30s for 100ms pulse
Measurement Voltage	0mV–200V (Resolution: 1mV)
Measurement Current	0mA–20A (Resolution: 1mA)
Ambient Temperature	15℃–35
Test Condition Calibration	Automatic irradiance compensation, automatic temperature compensation
Measured Parameters	Isc, Voc, Pmax, Vm, Im, FF, EFF,Temp, Rs,



Automated Conveyor Cell IV + EL Tester designed for inline electrical performance and electroluminescence testing of PV cells, enabling fast IV characterization and clear detection of cell defects.

Manual Cell Iv Tester



Technical Specifications

Parameter	Specification
Model	YHCT-AAA
Lamp Spectrum	IEC60904-9 (A+)
	Meets IEC60904-9 requirements (A+ Class)
Light Intensity	20 ~ 120Mw/cm² (Adjustable)
Light Intensity Non-Uniformity	≤ ±2% A
Instability Degree of Irradiation	≤ ±1% A
Test Result Consistency	≤ ±0.5%
Test Error of Electrical Properties	≤ ±2%
Single Flash Time	10 ~ 150ms (Optional)
Effective Test Range	220*230mm/0~20BB
Power	220V & 50HZ
Machine Size	600x800x1750MM

Advanced solar simulator with adjustable 10–150 ms flash pulse, featuring an imported xenon lamp, digital control, and high-speed 16-bit data acquisition for accurate, stable, and efficient PV module performance testing.

Technical Specifications

Manual Cell EL + IV Tester

IEC60904-9:2020

Name		Solar BC cell EL+IV integrated machine
Product Model		YHCT-ELIV
Test Type		Solar BC cells
EL Test	Camera Type	Customized industrial camera
	Camera Pixel	2.3 million pixels
	Test Time	≤ 2S (excluding loading and unloading time)
	Test Area	230×230mm
	Regulated Power Supply	30V/10A
	Detect Defect Types	Hidden cracks, fragments, broken grids, virtual soldering, black spots and centers, scratches, low efficiency chips, etc.
	Test Software	EL image manual shooting function, manual defect classification, adjustable image parameters (gain, exposure time, gamma, etc.), image shooting and saving
IV Test	Spectral Matching Degree	Scope meets the spectral irradiance distribution requirements of IEC60904-9:2020
	Spectral Range	300～1200nm
	Irradiance	700W/m²~1200W/m² (adjustable)
	Flash Record	Equipped with flashing count prompt function (reset to zero after replacement)
	Xenon Lamp Service Life	＞100000 times
	Irradiation Direction	Vertical downward light emission
	Measurement Method	Pneumatic buffer contact, front transparent panel, back probe contact
Working Hours		The equipment can work continuously for more than 24 hours
Weight		400KG
Device Dimensions		1350×800×1750mm



This Machinen combines EL imaging and IV characteristic testing in one system for fast, accurate solar cell inspection. It detects defects such as hidden cracks, broken grids, black spots, and soldering issues.

AUTOMATIC CELL IV + EL TESTER LARGE PRODUCTION



Technical Specifications

Technical Parameters		
Equipment Name		Solar Cell Power Automatic Sorting Machine (Offline)
Production Method		Offline Solar Cell IV Testing
Equipment Function		After being tested by the machine, the solar cells are automatically classified and defective ones are sorted out.
Cells Applicable	Monocrystalline / Polycrystalline	Compatible
	Size	156×156 to 220×220
	Camera	Front 36 megapixels
	Thickness	0.16～0.22
Fixture Specifications	Feeding	Dual-feed with 4 material boxes (2 for normal use, 2 as spares)
	Discharge	24 discharge boxes
	Production Capacity	3000 cells per hour (1.2 seconds per cell)
Operating Capacity	Normal Operating Time (Uptime)	≥ 99% (Does not include downtime)
	Mean Time Between Failures (MTBF)	≥ 500 hours
	Mean Time To Repair (MTTR)	≤ 1 hour
Power Requirements	Power Supply	AC 220V;15A
	Power Consumption	3KW
	Compressed Air	0.6 – 0.8 MPa, 300L/min, external air tube diameter Φ 8mm
Environment	Operating Temperature/Humidity	20～40°C / ≤85% RH
	Cleanliness	Complies with Class 100,000 cleanroom standards
	Noise	≤20dB
Equipment Parameters	Total Weight(kg)	800
	Size	(for 24 discharge stations, standard machine): 2200mm (L) × 1200mm (W) × 2000mm (H)
	Installation	Based on site conditions
Software	Development	Independently developed software
	Upgrade	Free software upgrades
Components	PLC	Siemens
	Slider	Hiwin
	Cylinders	AIRTAC, SMC, XINJE
	Solenoid Valves	SMC
	Motors	Panasonic, Leadshine

Automated Conveyor Cell IV + EL Tester designed for inline electrical performance and electroluminescence testing of PV cells, enabling fast IV characterization and clear detection of cell defects.

Solar Pump Testing Set-up







Technical Specifications

Technical Specification of Solar Pump Testing Set Up as per MNRE Guidelines	
Applicable Standard	As Per MNRE Guideline
Pump Capacity	Up to 25HP (18.7KW)
Pump Type	Sumbersible & Surface
Line Size	DIN 25 to DIN 100mm
Water Flow Meter Type	Electromagnetic
Actuator Valve Type	Electric Operated
Pressure Transmitter	Electronic Type
Pressure Gauges	Analog Type
Pipe Material	Hot DIP Galvanized Iron (G.I)
Solar Pump Source	PV Arrey for Actual Test & Arrey Similutor for Indoor Test
Source Change Over	Throughout Electrical Control Switchgear
Motor Input Eelectric Data	Monitoring, Control & Data Log in Equation System
Motor Output Eelectric Data	Monitoring, Control & Data Log in Equation System
Monitoring & Control System	PC Based
Operating Software	Lab View
Data Logger	Advantech

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super.control@yahoo.co.in

ADDRESS
Plot No. 5, Nangla Gujran,
Near Shyam Dharam Kanta,
Sohna Road, Faridabad -121004, Haryana