



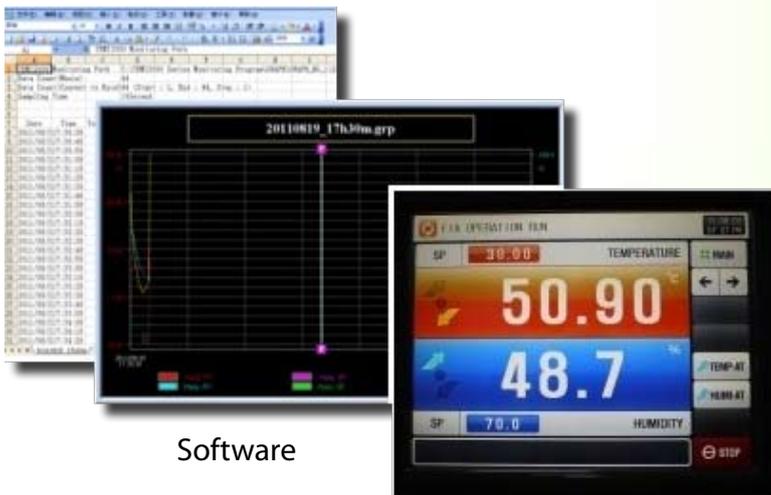
Solar Panel Testing Chamber JTH Series

Welltech's solar panel testing chamber is designed for various size of photovoltaic modules and solar panels. With different combination of temperature and humidity condition, temperature cycling, damp heat and humidity freeze test can be achieved.

Solar Chamber for Photovoltaic Module Testing - meets IEC61215/61646 , IEC62108, IEC61730-2, UL1703, JIS C-8917, JIS C-8938, JIS C-8990 & JIS C-8991 standards.

- Temperature range: -70 to 150C (180C as option)
- Humidity range: 10-99%RH

With user friendly LCD touch screen controller, you can set the program easily. Data can be download to PC through RS232 interface or directly store in USB flash card.



Software

LCD Touch Screen Controller



Solar Lamps

- Solar lamps with UV radiation source range from 280 to 385nm at max 250W/m2
- Solar simulator with 800 to 1000W/m2 (Light Treatment Under IEC61646)

Importance of testing PV modules

- All PV panel manufacturer need to guarantee their panel is working fine for long time. With 80% efficiency after 20 years. So, different extreme environmental testing is designed for PV panel testing like
- extreme ambient temperature conditions
- extreme humidity conditions
- high UV radiation conditions



Trolley with adjustable height and width for different size of solar panel.



IEC Standard

Thermal Cycling Test	Low Temperature Test	Damp Heat Test	Temperature/Humidity Cycling Test	Temperature Test
IEC61215 IEC61614	IEC60068-2-38	IEC60068-2-78 IEC61215 IEC61646	UL1703	IEC60068-2-2

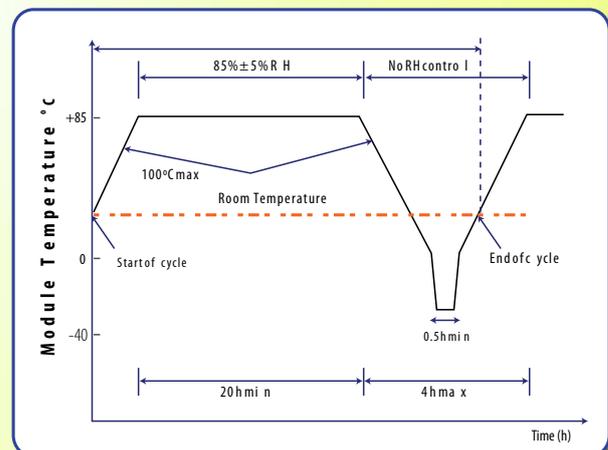
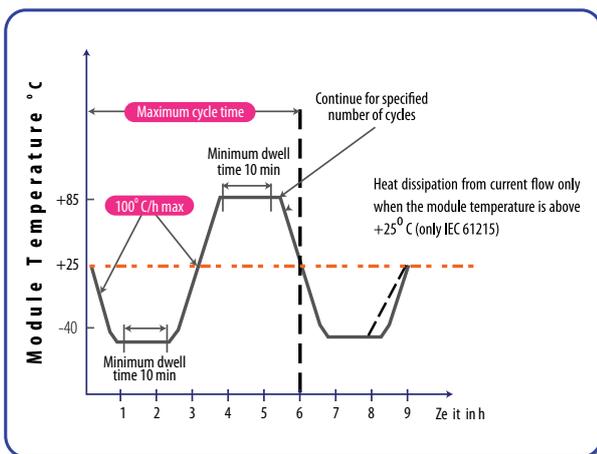
ASTM Standard

- ASTM E1171

Detail Description of the standard

IEC 61215 Crystalline Silicon Terrestrial Photovoltaic (PV) & IEC 61646 Thin-Film Terrestrial Photovoltaic (PV) Modules

Section	Title	Description
10.11	Thermal Cycling	Ramp down from 25C to 40C at 100C/h (max),, soak for 10minutes Ramp up to 85C at 100C/hr or less. Soak a minimum of 10minutes. Then return to 25C, 6hour maximum cycle time. Repeat for specified number of cycles per figure 1 of IEC61215 test specification (50 and/or 200 cycles). Current test profile chart is based upon module temperature
10.12	Humidity Freeze	Ramp from room temperature with 85%RH to 85C/85% at 100C/h max. Soak for 20 hours minimum. Ramp down to ambient with 85%RH at 100C/h max. Ramp down to 0C at 100C/h max then to -40C at 200C/h max. Soak for 30minutes minimum. Ramp from -40C to 0C at 200C/h max and from 0C to 25C at 100C/h max. For IEC61215, Humidity must be maintained at 85%+/-5% whenever temperature is 25C or higher. For IEC61646, no humidity control during temperature transition.
10.13	Damp Heat	85C, +/-2C, 85%, +/-5%RH No. of Cycles / Time: 1,000hours



ASTM E1171

Test Methods for photovoltaic Modules in Cyclic Temperature and Humidity Environment

Section	Title	Description
6.5	Thermal Cycling	Ramp down from 25C to 40C at a change rate of between 100C/h max and 52C/h soak for a minimum of 30minutes. Ramp from -40C to 85C at a change rate of between 100C/h max and 52C/h minimum. The cycle time is not to exceed 6 hours. Repeat for 50 cycles. Perform visual and electrical retests. Re-run 150 cycles
6.6	Humidity Freeze	Ramp from room temperature with 85%RH to 85C/85% at 100C/h max. Soak for 20 hours minimum. Ramp down to 0C at 100C/h max then to -40C at 200C/h max. Soak for 30minutes minimum. Ramp from -40C to 0C at 200C/h max and from 0C to 25C at 100C/h max. No of cycles: 10 cycles
6.7	Damp Heat	85C, +/-2C, 85%, +/-5%RH No. of Cycles / Time: 1,000hours

Model

Model Number	Capacity	LCD Touch Screen	Programmable	Programmable (Temperature)	Temperature Range (Humidity)	Humidity Range	Internal Dimension HxWxD (cm)
JTH-408	408L	yes	yes	yes	0 to 150 degC	20 to 98% RH	85x60x80
JTH-408J	408L	yes	yes	yes	-20 to 150 degC	20 to 98% RH	85x60x80
JTH-408R	408L	yes	yes	yes	-40 to 150 degC	20 to 98% RH	85x60x80
JTH-408Z	408L	yes	yes	yes	-70 to 150 degC	20 to 98% RH	85x60x80
JTH-1000	1000L	yes	yes	yes	0 to 150 degC	20 to 98% RH	100x100x100
JTH-1000J	1000L	yes	yes	yes	-20 to 150 degC	20 to 98% RH	100x100x100
JTH-1000R	1000L	yes	yes	yes	-40 to 150 degC	20 to 98% RH	100x100x100
JTH-1000Z	1000L	yes	yes	yes	-70 to 150 degC	20 to 98% RH	100x100x100
JTH-1125	1125L	yes	yes	yes	0 to 150 degC	20 to 98% RH	150x50x150
JTH-1125J	1125L	yes	yes	yes	-20 to 150 degC	20 to 98% RH	150x50x150
JTH-1125R	1125L	yes	yes	yes	-40 to 150 degC	20 to 98% RH	150x50x150
JTH-1125Z	1125L	yes	yes	yes	-70 to 150 degC	20 to 98% RH	150x50x150
JTH-2250	2250L	yes	yes	yes	0 to 150 degC	20 to 98% RH	150x100x150
JTH-2250J	2250L	yes	yes	yes	-20 to 150 degC	20 to 98% RH	150x100x150
JTH-2250R	2250L	yes	yes	yes	-40 to 150 degC	20 to 98% RH	150x100x150
JTH-2250Z	2250L	yes	yes	yes	-70 to 150 degC	20 to 98% RH	150x100x150
JTH-3750	3750L	yes	yes	yes	0 to 150 degC	20 to 98% RH	150x100x250
JTH-3750J	3750L	yes	yes	yes	-20 to 150 degC	20 to 98% RH	150x100x250
JTH-3750R	3750L	yes	yes	yes	-40 to 150 degC	20 to 98% RH	150x100x250
JTH-3750Z	3750L	yes	yes	yes	-70 to 150 degC	20 to 98% RH	150x100x250