



# Benchmark II SPP390-415D72H

## 390-415W MWT Module

### Cast-Mono 72 Cells

# 20.36%

Module efficiency up to 20.36%

### Benchmark MWT PV Module

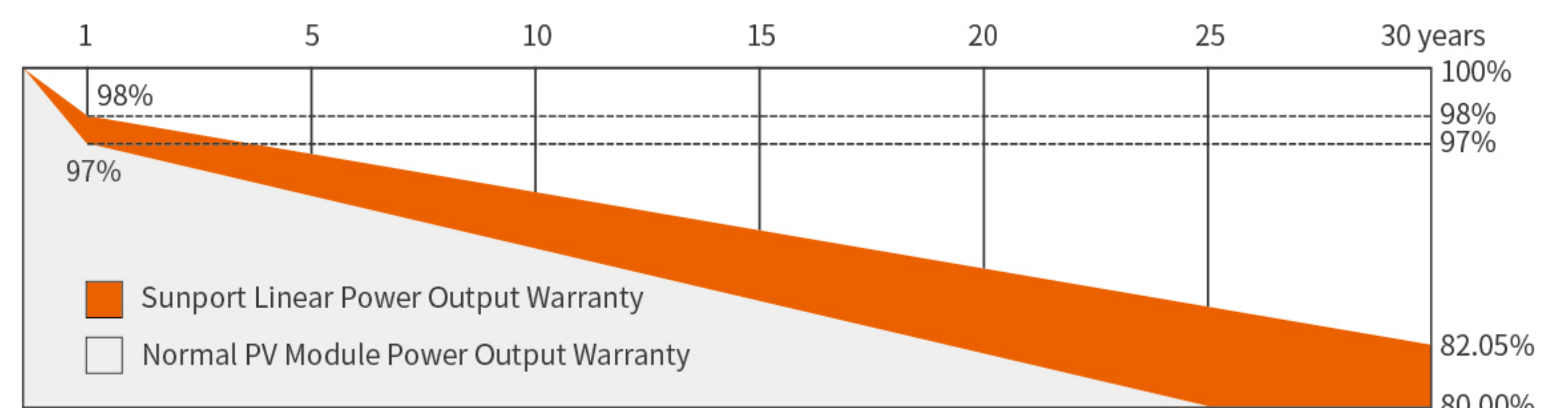
- Higher Efficiency**  
 The highest efficiency of the series is up to 20.36%.
- Higher Yield**  
 Higher power generation on the same installation.
- Anti-PID**  
 Certified for Anti-PID under 85°C/85%RH, for 288hrs.
- Lower Degradation**  
 At least 98% of the initial effective output in the 1st year and 82% in the 30th year.
- Corrosion-Resistant**  
 Certified for Ammonia Resistance and Salt Mist Corrosion.
- Heat-Resistant**  
 Improved temperature coefficient as low as  $-0.36\%/^{\circ}\text{C}$ .

### Reinsurance Coverage for 30 Years



Insured by PICC and LLOYD'S

# PICC LLOYD'S



※1st year degradation less than 2%, 30 years linear power output 82% guaranteed.

### Comprehensive Qualifications & Certifications

- ★IEC 61215, IEC 61730, IEC 61701, IEC 62716, IEC 60068-2-68.
- ★ISO 9001:2015 Quality Management System
- ★OHSAS 18001:2007 Occupation Health Safety Management System
- ★CQC&CGC Top Runner Advanced Technology Certification (4A class)
- ★ISO 14001:2015 Environment Management System
- ★ TUV NORD and UK NQA Quality System Certification





## Electrical Characteristics at Standard Test Conditions(STC)

Spec/Model	Unit	SPP390D72H	SPP395D72H	SPP400D72H	SPP405D72H	SPP410D72H	SPP415D72H
Max-Power(Pm)	W	390	395	400	405	410	415
Power Tolerance	%	0~+3%					
Max-Power Voltage(Vm)	V	39.3	39.5	39.7	39.9	40.1	40.3
Max-Power Current(Im)	A	9.92	10.00	10.08	10.15	10.22	10.30
Open-Circuit Voltage(Voc)	V	47.7	47.9	48.1	48.3	48.5	48.7
Short-Circuit Current(Isc)	A	10.50	10.55	10.60	10.65	10.69	10.74
Module Efficiency(ηm)	%	19.14	19.38	19.63	19.87	20.12	20.36
STC:AM=1.5, Irradiation1000W/m <sup>2</sup> , Module Temperature25°C							

## Electrical Characteristics at Nominal Module Operating Temperature (NMOT)

Spec/Model	Unit	SPP390D72H	SPP395D72H	SPP400D72H	SPP405D72H	SPP410D72H	SPP415D72H
Max-Power(Pm)	W	291	295	299	303	307	311
Max-Power Voltage(Vm)	V	36.0	36.2	36.4	36.6	36.8	37.0
Max-Power Current(Im)	A	8.08	8.15	8.21	8.28	8.34	8.41
Open-Circuit Voltage(Voc)	V	43.3	43.5	43.7	43.9	44.1	44.3
Short-Circuit Current(Isc)	A	8.64	8.68	8.73	8.77	8.81	8.86
NMOT: Irradiation800W/m <sup>2</sup> , ambient temperature20°C,Wind Speed1m/s							

## Temperature Coefficient

Nominal Module Operating Temperature	43±2°C
Temperature coefficient of Pmax	-0.36%/°C
Temperature coefficient of Voc	-0.28%/°C
Temperature coefficient of Isc	0.06%/°C

## Package

Transportation	Container Size	Quantity(pcs)	Quantity(per pallet)
Container	40' HC	594/638	27

## Mechanical Property

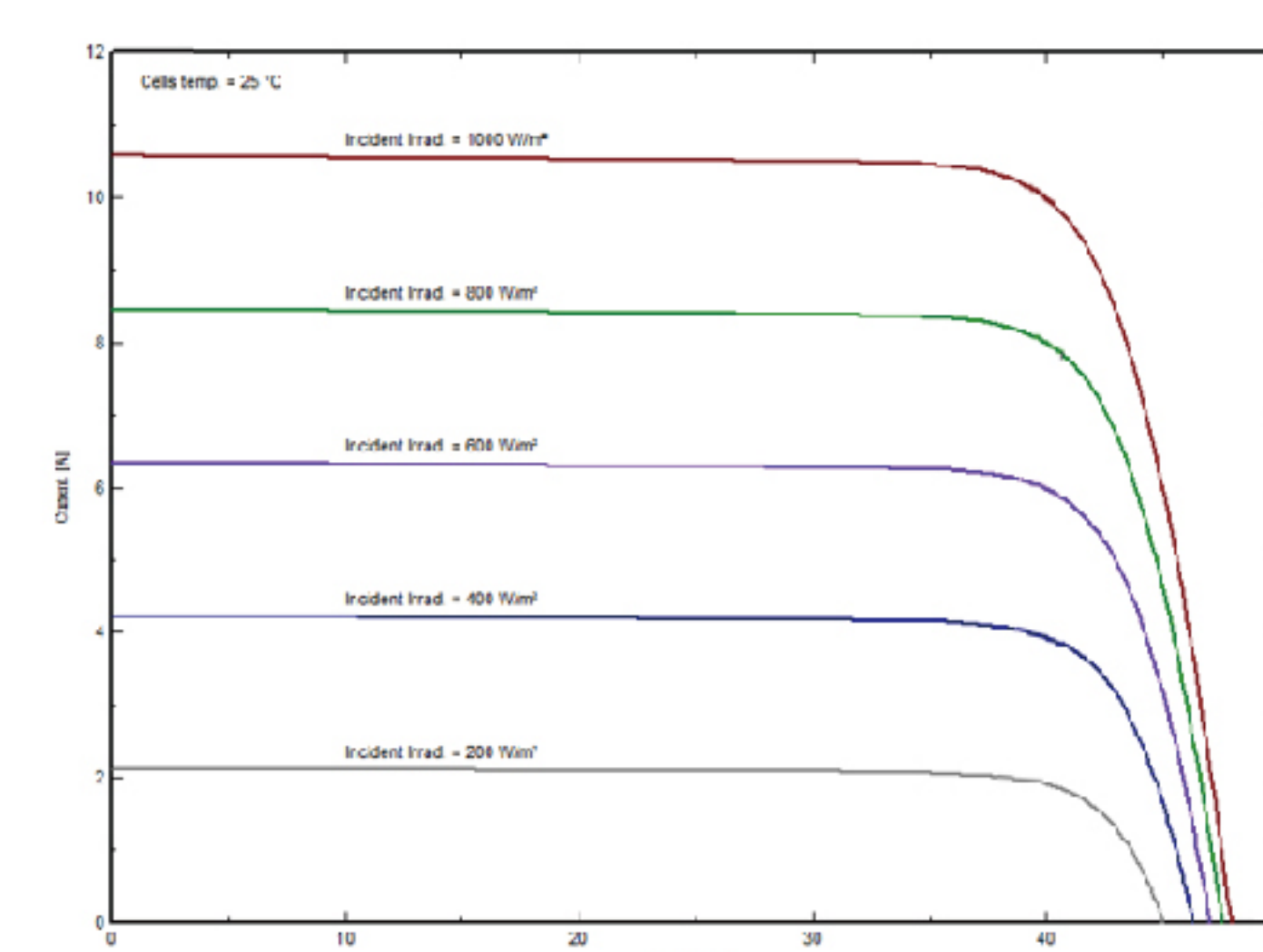
Dimension(L×W×H)	2006mmx1016mmx40mm
Weight	23.5kg
Glass Type	High Transmittance Anti-reflective Coated Tempered Glass /3.2mm
Solar Cell	72(12x6)/Cast-Mono/162.75mm
Encapsulant	EVA
Frame	Anodized Aluminum Alloy / Silver
Junction Box	IP67&IP68
Cable	1200mm / 4mm <sup>2</sup>
Connector	MC4 Compatible

## Operating Conditions

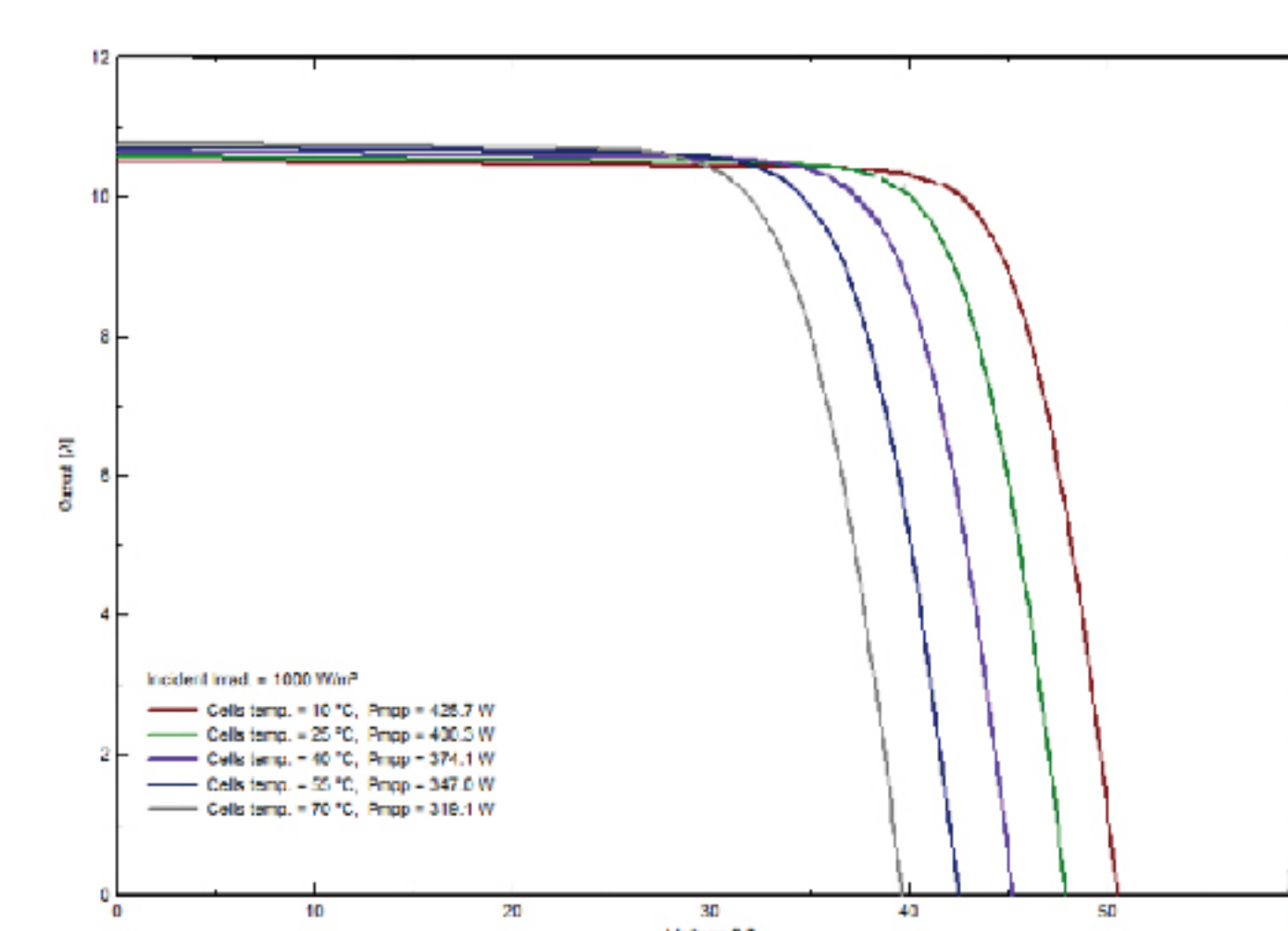
Max System Voltage	1500V(TUV)
Max Fuse Rated Current	20A
Operating Temperature Range	-40°C~+85°C
Mechanical Load	5400Pa (front) /2400Pa (rear)
Max Allowable Hail Load	φ25mm hail, from 1m of distance at 23 m/s
Application Class	Class A

## I-V Curve

I-V Curve at different irradiation (SPP400D72H)



I-V Curve at different temperature (SPP400D72H)



## Module Size

