

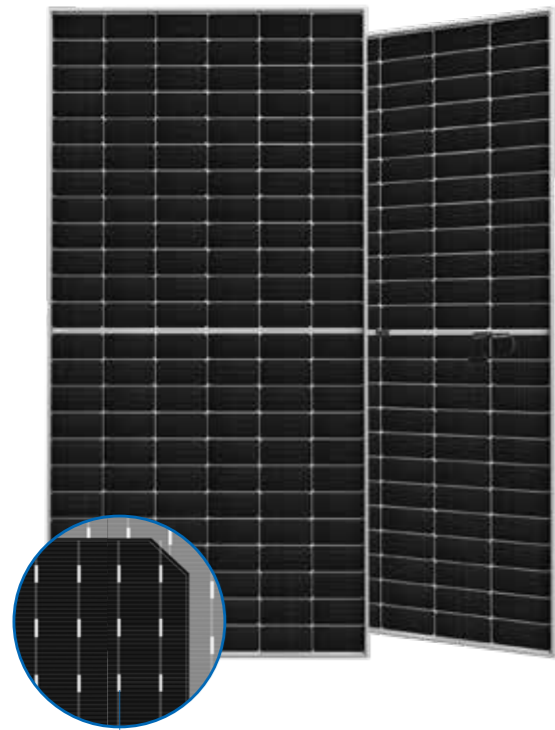
Remark: customized frame color and cable length available upon request

# TOPCon 199R2S

## 640-660W

STM-640-660/144-R2S

Higher power output **23.6%** up to



Double-sided cell technology

PID Resistance



Low-light Performance



Severe Weather Resilience



Durability Against Extreme Environmental Conditions



Double-sided power generation

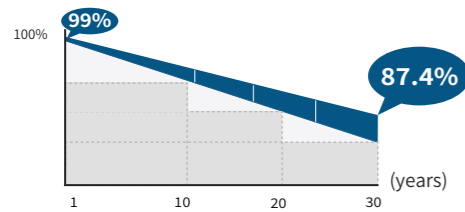


**12**  
YEARS

12-year Warranty for Materials and Processing

**30**  
YEARS

30-year Warranty for Extra Linear Power Output



ISO 9001:2015  
ISO 14001:2015  
ISO 45001:2018  
GB/T 29490-2013



Packaging(pcs/40HQ container)	13 meter semi hanging	Dimensions	Weight
31/496pcs 37/592pcs	31/620pcs 37/740pcs	2465x1134x35(30)mm	34kg±3%

MECHANICAL SPECIFICATION				OPERATING PARAMETERS			
Cell	N-type mono-crystalline			Maximum System Voltage	1500VDC		
No.of cells	144(6x24)			Operating Temperature	-40°C~+85°C		
Cable Length	300mm(+)/300mm(-)			Maximum Series Fuse	30A		
Cable Cross Section Size	4mm <sup>2</sup> (IEC)			Maximum StaticLoad,Front	5400Pa(112lb/ft <sup>2</sup> )		
Junction Box	IP68,3 diodes			Maximum StaticLoad,Back	2400Pa(50lb/ft <sup>2</sup> )		
Connector	MC4 Compatible			Safety Class	Class II		
STC:AM1.5 1000W/m <sup>2</sup> 25°C NOCT:AM1.5 800W/m <sup>2</sup> 20°C 1m/s				Test Uncertainty for Pmax ±3%			

Module Type	STM-640/144-R2S		STM-645/144-R2S		STM-650/144-R2S		STM-655/144-R2S		STM-660/144-R2S	
	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT
Maximum Power(Pmax/W)	640	485	645	489	650	493	655	496	660	500
Open Circuit Voltage(Voc/V)	56.18	53.37	56.35	53.53	56.52	53.69	56.69	53.86	56.86	54.02
Short Circuit Current(Isc/A)	14.48	11.69	14.54	11.74	14.6	11.79	14.66	11.83	14.72	11.88
Voltage at Maximum Power(Vmp/V)	46.59	44.49	46.76	44.65	46.93	44.81	47.1	44.97	47.27	45.13
Current at Maximum Power(Imp/A)	13.74	10.90	13.80	10.95	13.86	10.99	13.92	11.04	13.98	11.08
Module Efficiency(%)	22.90		23.10		23.30		23.40		23.60	

TEMPERATURE RATINGS		POWER OUTPUT OF THE FRONT AND REAR SIDE					
Normal Operating Cell Temperature(NOCT)	45±2°C	(REFERENCEDSPECIFICALLY TO 640WP FRONT)					
Temperature Coefficient of Isc	+0.045%/°C	Power Gain (%)	5%	10%	15%	20%	25%
Temperature Coefficient of Voc	-0.275%/°C	Maximum Power(Pmax/W)	672	704	736	768	800
Temperature Coefficient of Pmax	-0.350%/°C	Pmax Gain(%)	24.00%	25.20%	26.30%	27.50%	28.60%

