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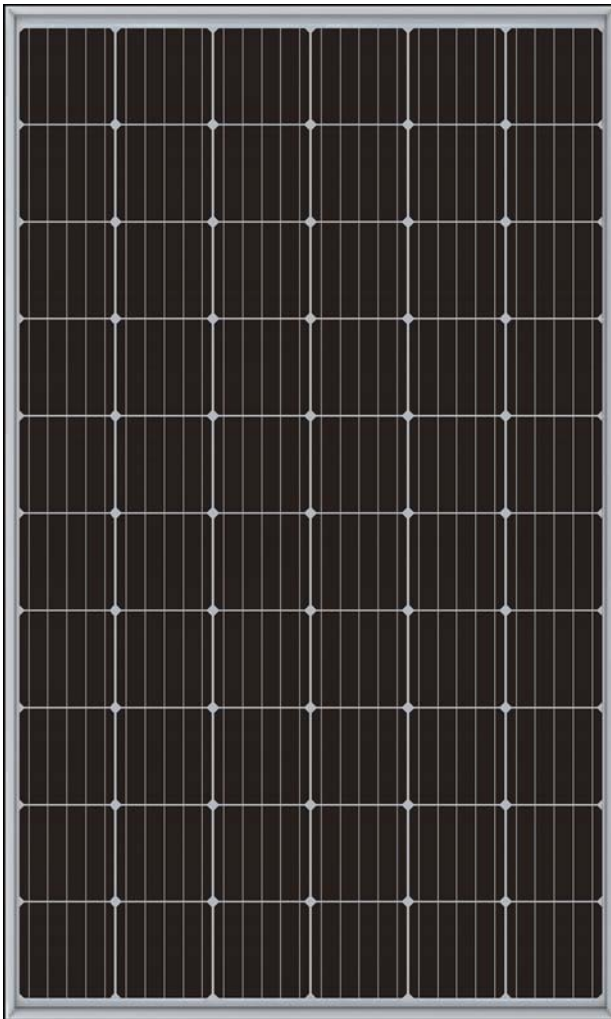
EnergyPal

Solar Panel Guide Specification Data Sheet

**Tratek GmbH
TKM60 275-290
TKM60 280**

Also available on the web at
EnergyPal.com/tratek-gmbh-solar-panels/tkm60-280

TKM60 275W/280W/285W/290W



Solar Module

Tratek focuses precise production and provide customer with best cost-effective products. Excellent Solar products provided by Tratek bring clean and reliable energy to residential, commercial and industrial facilities around the world.



Power tolerance (0~+3%) to ensure the high reliability of power output;



Modules certified by TUV to with stand high level of wind loads (2400Pa) and snow loads (5400Pa);



Junction box and bypass diodes guarantee the modules free of overheating and "hot spot effect".

Warranty

10 years product workmanship warranty

12 years 90% output

25 years 80% output

*Please refer to Tratek product warranty for detail.

Certifications and standards:

IEC 61215, IEC 61730, conformity to CE



Tratek GmbH

Add: Sebastian-Kneipp-Str. 41, 60439 Frankfurt am Main, Germany

Tel: 49(0) 69 505064-246

Fax: 49(0) 69 505064-221

Email: sales@tratek.eu

Website: www.tratek.eu

TKM60 275W/280W/285W/290W

Electrical Characteristics

Maximum Power (Pmax)	275	280	285	290
Maximum Power Voltage (Vmp)	31.9	32.1	32.2	32.4
Maximum Power Current (Imp)	8.63	8.72	8.85	8.95
Open Circuit Voltage (Voc)	38.0	38.2	38.7	39.2
Short Circuit Current (Isc)	9.21	9.35	9.48	9.58
Module Efficiency (%)	16.94	17.25	17.55	17.86
Power Tolerance (%)	0~+3			
Maximum Series Fuse Rating (A)	15			
Maximum System Voltage (TUV)	DC 1000V			
Normal Operating Cell Temperature (°C)	45±2			

Electrical characteristics tested at Standard Test Conditions (STC), defined as: Irradiance of 1000W/m², Spectrum AM1.5, and temperature of 25°C.

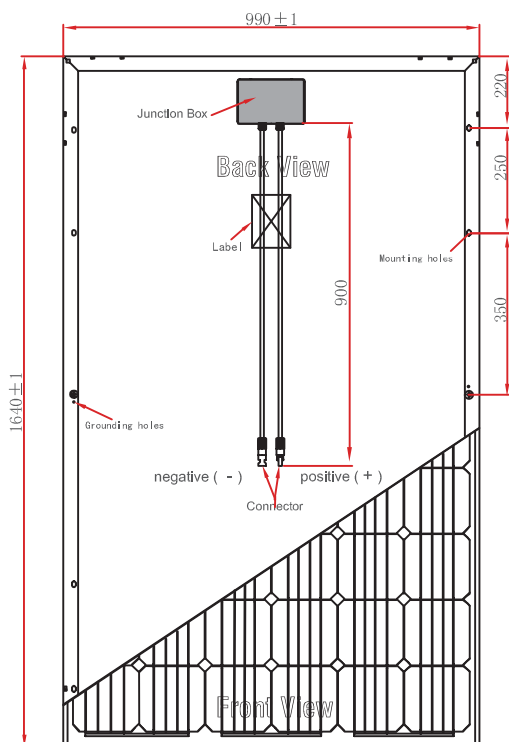
Mechanical Specifications

Dimensions	1640x990x35mm
Weight	19kg
Max. static load, front(snow & wind)	5400Pa
Max. static load, back(wind)	2400Pa
Max. hailstone impact(diameter/velocity)	25mm / 23m/s

Construction Materials

Front cover (material/type/thickness)	High Transmission, Low Iron, Tempered Glass 3.2mm
Cell (quantity/material/type/dimensions)	60pcs(6x10)/Monocrystalline/156mm x 156mm
Frame(material/color/anodization color)	Anodized aluminum alloy/silver or black/clear
Junction box(Protection degree)	IP67, with bypass diodes
Cable (length/cross-section area)	900mm / 4mm ²

Dimensions



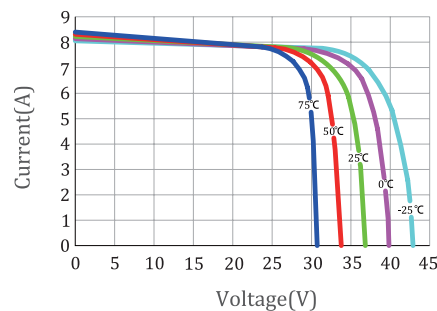
Temperature Characteristics

Temperature Coeff. of Isc (TK Isc)	0.06%/°C
Temperature Coeff. of Voc (TK Voc)	-0.33%/°C
Temperature Coeff. of Pmax (TK Pmax)	-0.41%/°C
Operating Temperature(°C)	-40°C to +85°C
Storage Temperature(°C)	-20°C to +40°C

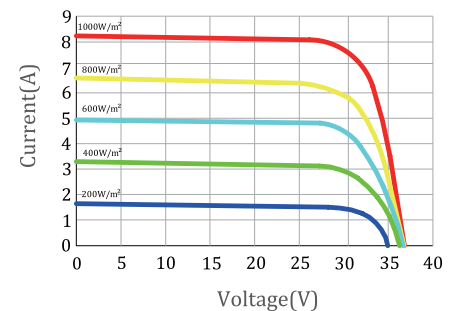
Packaging

Container	20'GP	40'GP
Modules/pallet	30 pcs	30 pcs
Pallets/container	14 pallets	28 pallets
Modules/container	400 pcs	840 pcs

Various Temperatures



Various Irradiance



Distributor information

Please contact sales@tratek.eu for more details.

