

**BIFACIAL
TOPCON MONOCRYSTALLINE
108TNB10**

- ◆ TT450-108TNB10 450 Wp
- ◆ TT445-108TNB10 445 Wp
- ◆ TT440-108TNB10 440 Wp
- ◆ TT435-108TNB10 435 Wp
- ◆ TT430-108TNB10 430 Wp
- ◆ TT425-108TNB10 425 Wp
- ◆ TT420-108TNB10 420 Wp
- ◆ TT415-108TNB10 415 Wp



High Conversion Efficiency

High panel efficiency to guarantee high power output



Self-Cleaning And Anti-Reflection Glass

Coating glass for self-cleaning reduces surface dust



Outstanding Low Irradiation Glass

Outstanding panel performance even in weak light conditions



Excellent Durability

Wind load up to 2400 Pa, Snow load up to 5400 Pa



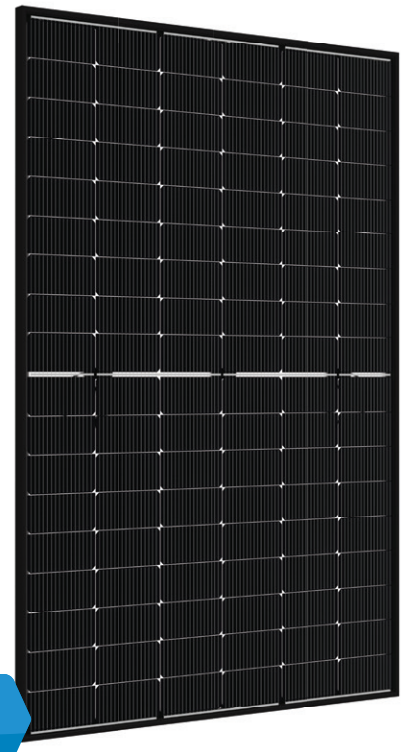
0~ +5W Positive Power Tolerance



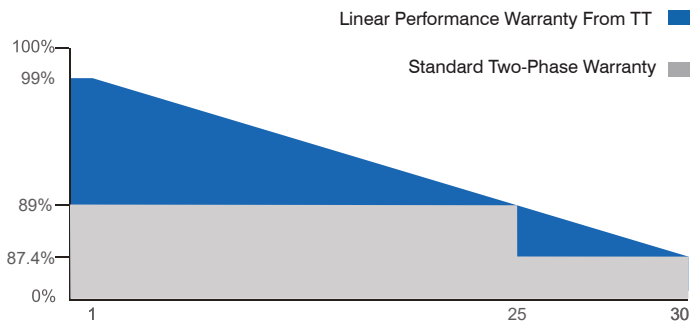
Easy Installation



Twice EVA Laminated Double Glass



**16BB
n-Type**



- ✓ 30 Years Performance Warranty
- ✓ 25 Years Product Warranty

Half-Cut

DOUBLE GLASS



IEC 61215, IEC 61730-1, IEC 61730-2
IEC 62804 PID (POTENTIAL INDUCED DEGRADATION)
ISO 9001:2015, ISO 14001:2015, ISO 45001:2018

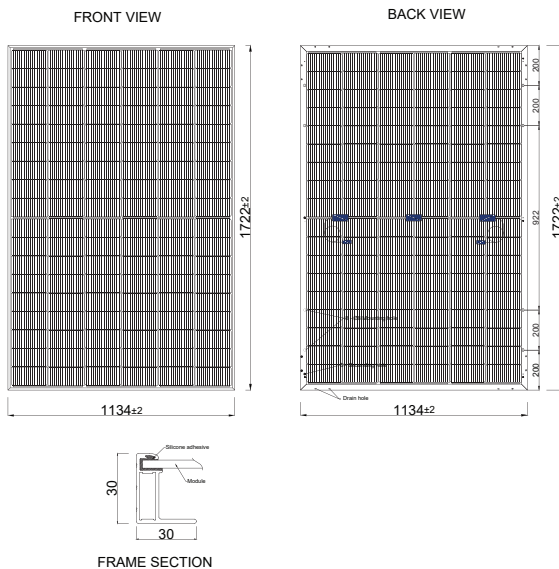


Model Type	TT415 108TNB10	TT420 108TNB10	TT425 108TNB10	TT430 108TNB10	TT435 108TNB10	TT440 108TNB10	TT445 108TNB10	TT450 108TNB10
Peak Power (P _{max})	415 Wp	420 Wp	425 Wp	430 Wp	435 Wp	440 Wp	445 Wp	450 Wp
Module Efficiency	21.25	21.51	21.76	22.02	22.28	22.53	22.79	23.04
Maximum Power Voltage (V _{mp})	31.74	31.94	32.14	32.34	32.54	32.74	32.94	33.14
Maximum Power Current (I _{mp})	13.08	13.15	13.23	13.30	13.37	13.44	13.51	13.58
Open Circuit Voltage (V _{oc})	37.71	37.91	38.11	38.31	38.51	38.71	38.91	39.11
Short Circuit Current (I _{sc})	13.88	13.95	14.03	14.10	14.17	14.24	14.31	14.38
Power Tolerance	0~+5W							
Maximum System Voltage	1500V DC							
Operating Temperature	-40 ~ +85°C							
Protection Class	Class II							
Maximum Series Fuse Rating	25A							

MECHANICAL SPECIFICATIONS

Cell Dimensions(mm)	182 x 91
Cells per Module(pcs)	108 (6x18)
Weight(kg)	24.0
Panel Dimensions(mm)	1722x1134x30
Max. Wind/Snow Load(Pa)	2400/5400
Junction Box	IP68
Junction Box Cable Length(mm)	350-1600
Glass Thickness (mm)	2.0 / 2.0

PHYSICAL CHARACTERISTICS



REAR SIDE POWER GAIN

(450W Front Power Referenced)

Leistungsgewinn Rückseite	5%	10%	15%	20%	25%
Maximale Leistung (P _{max})	472.50	495.00	517.50	540.00	562.50
Kurzschlussstrom (I _{sc})	15.10	15.82	16.54	17.26	17.98
Leerlaufspannung (V _{oc})	39.11	39.11	39.11	39.11	39.11
Nennstrom (I _{mp})	14.26	14.94	15.62	16.30	16.98
Nennspannung (V _{mp})	33.14	33.14	33.14	33.14	33.14

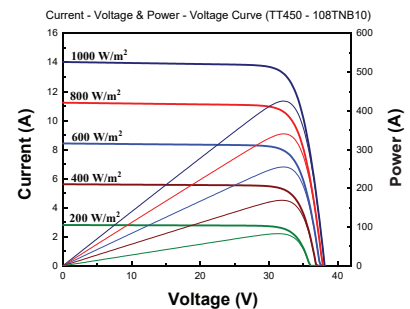
TEMPERATURE CHARACTERISTICS

Temp. Coeff. of (I _{sc})	0.040%/°C
Temp. Coeff. of (V _{oc})	-0.260%/°C
Temp. Coeff. of (P _{max})	-0.30%/°C

PACKING CONFIGURATION

Container	40' GP
Pieces per Pallet	35
Pieces per Container	910
Pallet Per Container	26

ELECTRICAL CHARACTERISTICS



* The specifications are obtained under the standard test conditions: 1000W/m² solar irradiance, 1.5 Air Mass and cell temperature of 25°C. Measurement uncertainty for all panels is 6%. The actual transactions will be subject to the contracts. These parameters are for reference only and it is not a part of the contracts. The technical specifications in this document may vary. For more information, refer to the "Installation Manual".

* For roof, facades and installations on similar surfaces, solar panels should be mounted over a fire-resistant covering suitable for this application, with adequate ventilation between the back of the solar panels and the mounting surface. Improper installations are hazardous and may spark a fire. Solar panels must not be mounted on structures and roofs which are made of not fire-resistant materials such as plastic layer, transparent plastic, PVC or similar materials without any fire-protection layer. Usage and installation not in accordance with the guidelines as outlined in the installation manual will terminate the warranty. Please refer to the installation manual and the warranty documents for further details.

* TommaTech® GmbH reserves the right to change the specification of products without prior notice.

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