

# CERTIFICATE

**TÜV NORD CERT GmbH**  
herewith declares that

**TommaTech GmbH**  
Zeppelinstrasse 14 – 85748  
Garching b.München,  
GERMANY

is authorized to provide the product mentioned below with the mark as illustrated:

**Description of product (details see Annex 2):**

**Crystalline Silicon Terrestrial Photovoltaic (PV) Modules**



Valid from: 2024-12-27  
Valid until: 2029-05-26

Certification program:	P12-VA-01 Rev. 17 09.20
Certification fundamental(s):	P12.4-AA-02 Rev. 00 (IEC TS 62804-1:2015 modified)
Remark:	Test temperature: 85°C; Relative humidity: 85%; Test duration: 192 hours.
Registered No.:	44 780 24 406749 - 507
Manufacturer and factory(-ies):	See Annex 1
Test Report No.:	492013555.001
File No.:	PVP11181/24P-04



Essen, 2024-12-27

**TÜV NORD CERT GmbH**  
**Certification Body**  
**Consumer Products**

Please also pay attention to the information stated overleaf.

**Description of product(s):**

Module types:

**PV Modules with Half-cut 7" PERC Mono-crystalline Silicon Solar Cells:**

156 cells: TTxxx-156PM10 (xxx = 570-620, in increment of 5)  
156 cells: TTxxx-156PMFB10 (xxx = 570-620, in increment of 5)  
144 cells: TTxxx-144PM10 (xxx = 525-570, in increment of 5)  
144 cells: TTxxx-144PMFB10 (xxx = 525-570, in increment of 5)  
132 cells: TTxxx-132PM10 (xxx = 480-525, in increment of 5)  
132 cells: TTxxx-132PMFB10 (xxx = 480-525, in increment of 5)  
120 cells: TTxxx-120PM10 (xxx = 440-475, in increment of 5)  
120 cells: TTxxx-120PMFB10 (xxx = 440-475, in increment of 5)  
108 cells: TTxxx-108PM10 (xxx = 395-430, in increment of 5)  
108 cells: TTxxx-108PMFB10 (xxx = 395-430, in increment of 5)  
144 cells: TTxxx-144PM10R (xxx = 565-590, in increment of 5)  
144 cells: TTxxx-144PMFB10R (xxx = 565-590, in increment of 5)  
108 cells: TTxxx-108PM10R (xxx = 420-440, in increment of 5)  
108 cells: TTxxx-108PMFB10R (xxx = 420-440, in increment of 5)  
132 cells: TTxxx-132PM12R (xxx = 565-585, in increment of 5)  
132 cells: TTxxx-132PMFB12R (xxx = 565-585, in increment of 5)  
120 cells: TTxxx-120PM12R (xxx = 515-530, in increment of 5)  
120 cells: TTxxx-120PMFB12R (xxx = 515-530, in increment of 5)  
96 cells: TTxxx-96PM12R (xxx = 410-425, in increment of 5)  
96 cells: TTxxx-96PMFB12R (xxx = 410-425, in increment of 5)

Maximum system voltage:

1500V

Maximum overcurrent protection rating:

25A

Electrical protection class:

Class II

Module types:

**PV Modules with Half-cut 7" Topcon Mono-crystalline Silicon Solar Cells:**

156 cells: TTxxx-156TN10 (xxx = 570-655, in increment of 5)  
156 cells: TTxxx-156TNFB10 (xxx = 570-655, in increment of 5)  
144 cells: TTxxx-144TN10 (xxx = 525-605, in increment of 5)  
144 cells: TTxxx-144TNFB10 (xxx = 525-605, in increment of 5)  
132 cells: TTxxx-132TN10 (xxx = 485-555, in increment of 5)  
132 cells: TTxxx-132TNFB10 (xxx = 485-555, in increment of 5)  
120 cells: TTxxx-120TN10 (xxx = 440-500, in increment of 5)  
120 cells: TTxxx-120TNFB10 (xxx = 440-500, in increment of 5)  
108 cells: TTxxx-108TN10 (xxx = 395-450, in increment of 5)



TÜV NORD CERT GmbH  
Certification Body  
Consumer Products



108 cells: TTxxx-108TNFB10 (xxx = 395-450, in increment of 5)  
144 cells: TTxxx-144TN10R (xxx = 585-625, in increments of 5)  
144 cells: TTxxx-144TNFB10R (xxx = 585-625, in increments of 5)  
120 cells: TTxxx-120TN10R (xxx = 490-520, in increments of 5)  
120 cells: TTxxx-120TNFB10R (xxx = 490-520, in increments of 5)  
108 cells: TTxxx-108TN10R (xxx = 435-465, in increments of 5)  
108 cells: TTxxx-108TNFB10R (xxx = 435-465, in increments of 5)  
132 cells: TTxxx-132TN12R (xxx = 585-635, in increments of 5)  
132 cells: TTxxx-132TNFB12R (xxx = 585-635, in increments of 5)  
120 cells: TTxxx-120TN12R (xxx = 530-575, in increments of 5)  
120 cells: TTxxx-120TNFB12R (xxx = 530-575, in increments of 5)  
108 cells: TTxxx-108TN12R (xxx = 480-520, in increments of 5)  
108 cells: TTxxx-108TNFB12R (xxx = 480-520, in increments of 5)  
96 cells: TTxxx-96TN12R (xx = x425-460, in increments of 5)  
96 cells: TTxxx-96TNFB12R (xxx = 425-460, in increments of 5)

Maximum system voltage: 1500V

Maximum overcurrent protection rating: 25A

Electrical protection class: Class II

Module types:

**PV Modules with Half-cut 7" TBC Mono-crystalline Silicon Solar Cells:**

132 cells: TTxxx-132TBC12R (xxx = 625-660, in increments of 5)  
120 cells: TTxxx-120TBC12R (xxx = 570-600, in increments of 5)  
108 cells: TTxxx-108TBC12R (xxx = 515-540, in increments of 5)  
96 cells: TTxxx-96TBC12R (xxx = 455-480, in increments of 5)

Maximum system voltage: 1500V

Maximum overcurrent protection rating: 25A

Electrical protection class: Class II

Module types:

**PV Modules with Half-cut 8" PERC Mono-crystalline Silicon Solar Cells:**

132 cells: TTxxx-132PM12 (xxx = 640-695, in increment of 5)  
132 cells: TTxxx-132PMFB12 (xxx = 640-695, in increment of 5)  
120 cells: TTxxx-120PM12 (xxx = 580-630, in increment of 5)  
120 cells: TTxxx-120PMFB12 (xxx = 580-630, in increment of 5)  
108 cells: TTxxx-108PM12 (xxx = 525-565, in increment of 5)  
108 cells: TTxxx-108PMFB12 (xxx = 525-565, in increment of 5)



TÜV NORD CERT GmbH  
Certification Body  
Consumer Products

	110 cells: TTxxx-110PM12 (xxx = 535-580, in increment of 5)
	110 cells: TTxxx-110PMFB12 (xxx = 535-580, in increment of 5)
	100 cells: TTxxx-100PM12 (xxx = 485-525, in increment of 5)
	100 cells: TTxxx-100PMFB12 (xxx = 485-525, in increment of 5)
Maximum system voltage:	1500V
Maximum overcurrent protection rating:	30A
Electrical protection class:	Class II
Module types:	<b>PV Modules with Half-cut 8" Topcon Mono-crystalline Silicon Solar Cells:</b>
	132 cells: TTxxx-132TN12 (xxx = 650-730, in increment of 5)
	132 cells: TTxxx-132TNFB12 (xxx = 650-730, in increment of 5)
	120 cells: TTxxx-120TN12 (xxx = 590-660, in increment of 5)
	120 cells: TTxxx-120TNFB12 (xxx = 590-660, in increment of 5)
	108 cells: TTxxx-108TN12 (xxx = 530-595, in increment of 5)
	108 cells: TTxxx-108TNFB12 (xxx = 530-595, in increment of 5)
	110 cells: TTxxx-110TN12 (xxx = 540-580, in increment of 5)
	110 cells: TTxxx-110TNFB12 (xxx = 540-580, in increment of 5)
	100 cells: TTxxx-100TN12 (xxx = 490-530, in increment of 5)
	100 cells: TTxxx-100TNFB12 (xxx = 490-530, in increment of 5)
Maximum system voltage:	1500V
Maximum overcurrent protection rating:	30A
Electrical protection class:	Class II

## Remark:

For detailed product information, please refer to test report.



TÜV NORD CERT GmbH  
Certification Body  
Consumer Products