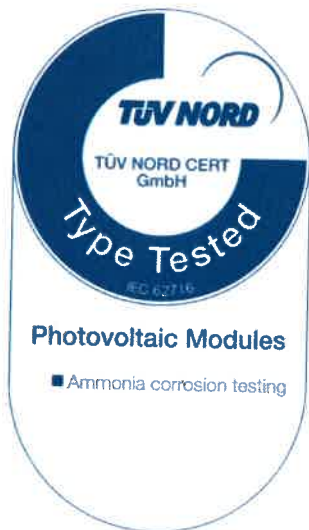


# CERTIFICATE

**TÜV NORD CERT GmbH**  
herewith declares that

**TommaTech GmbH**  
Angerlweg 14 85748 Garching b. Munich,  
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**

Certification program:	P12-VA-01 Rev. 17 09.20
Certification fundamental(s):	IEC 62716:2013 / EN 62716:2013 + AC:2014.
Registered No.:	44 780 23 406749 - 179
Manufacturer:	see Annex 1
Test Report No.:	492012518.001
File No.:	PVP05132/23P-02

Valid until: 2029-01-24



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



Essen, 2023-06-27

Please also pay attention to the information stated overleaf.

**Description of product(s):**

Module types:	<b>PV Modules with Segmented 6" PERC Mono-crystalline Silicon Solar Cells:</b> 408 cells: TTxxx-72PMSH (xxx=460-505, in increment of 5) 408 cells: TTxxx-72PMSHFB (xxx=460-500, in increment of 5) 408 cells: TTxxx-72PMSHF (xxx=460-505, in increment of 5) 340 cells: TTxxx-60PMSH (xxx=380-420, in increment of 5) 340 cells: TTxxx-60PMSHFB (xxx=380-415, in increment of 5) 340 cells: TTxxx-60PMSHF (xxx=380-420, in increment of 5)
Maximum system voltage:	1500V
Fuse rating:	20A
Application class:	Class A
Electrical protection class:	Class II

Module types:	<b>PV Modules with Segmented 8" PERC Mono-crystalline Silicon Solar Cells:</b> 408 cells: TTxxx-68PMSH (xxx=635-660, in increment of 5) 414 cells: TTxxx-69PMSH (xxx=645-670, in increment of 5) 390 cells: TTxxx-65PMSH (xxx=605-630, in increment of 5) 340 cells: TTxxx-57PMSH (xxx=530-550, in increment of 5) 345 cells: TTxxx-58PMSH (xxx=535-555, in increment of 5) 325 cells: TTxxx-54PMSH (xxx=505-525, in increment of 5) 320 cells: TTxxx-46PMSH (xxx=405-425, in increment of 5) 320 cells: TTxxx-46PMSHF (xxx=425-445, in increment of 5) 320 cells: TTxxx-46PMSHFB (xxx=420-440, in increment of 5) 305 cells: TTxxx-44PMSHF (xxx=405-425, in increment of 5) 305 cells: TTxxx-44PMSH (xxx=405-425, in increment of 5) 305 cells: TTxxx-44PMSHFB (xxx=400-420, in increment of 5)
Maximum system voltage:	1500V
Fuse rating:	30A or 25A
Application class:	Class A
Electrical protection class:	Class II



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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)

Maximum system voltage:

1500V

Fuse rating:

25A or 20A

Application class:

Class A

Electrical protection class:

Class II

Module types:

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

156 cells: TTxxx-156TN10 (xxx = 570-640, in increment of 5)  
156 cells: TTxxx-156TNFB10 (xxx = 570-640, in increment of 5)  
144 cells: TTxxx-144TN10 (xxx = 525-590, in increment of 5)  
144 cells: TTxxx-144TNFB10 (xxx = 525-590, in increment of 5)  
132 cells: TTxxx-132TN10 (xxx = 485-540, in increment of 5)  
132 cells: TTxxx-132TNFB10 (xxx = 485-540, in increment of 5)  
120 cells: TTxxx-120TN10 (xxx = 440-490, in increment of 5)  
120 cells: TTxxx-120TNFB10 (xxx = 440-490, in increment of 5)  
108 cells: TTxxx-108TN10 (xxx = 395-440, in increment of 5)  
108 cells: TTxxx-108TNFB10 (xxx = 395-440, in increment of 5)

Maximum system voltage:

1500V

Fuse rating:

25A or 20A

Application class:

Class A

Electrical protection class:

Class II



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**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)  
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

Fuse rating: 30A or 25A

Application class: Class A

Electrical protection class: Class II

**Module types: PV Modules with Half-cut 8" TOPCon Mono-crystalline Silicon Solar Cells:**

132 cells: TTxxx-132TN12 (xxx = 650-700, in increment of 5)  
132 cells: TTxxx-132TNFB12 (xxx = 650-700, in increment of 5)  
120 cells: TTxxx-120TN12 (xxx = 590-635, in increment of 5)  
120 cells: TTxxx-120TNFB12 (xxx = 590-635, in increment of 5)  
108 cells: TTxxx-108TN12 (xxx = 530-570, in increment of 5)  
108 cells: TTxxx-108TNFB12 (xxx = 530-570, 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

Fuse rating: 30A or 25A

Application class: Class A

Electrical protection class: Class II

## Remark:

For detailed product information, please refer to test report.



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