

CERTIFICATE

TÜV NORD CERT GmbH
herewith declares that

CW ENERJİ MÜHENDİSLİK TİCARET VE SANAYİ A.Ş.
Antalya OSB 1. Kısım Atatürk Blv.
No:20 Döşemealtı
ANTALYA / TÜRKİYE.

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: 2023-06-27

Valid until: 2029-01-24

Certification program: P12-VA-01 Rev. 17 09.20
Certification fundamental(s): P12.4-AA-04 Rev. 00
(IEC 60068-2-68:1994 modified)
Remark: Test Method Lc2;
Dust concentration: $5 \pm 1.5 \text{g/m}^3$;
Wind velocity: $20 \pm 2 \text{m/s}$;
Test duration: 4 hours each side.
Registered No.: 44 780 23 406749 - 184
Manufacturer: see Annex 1
Test Report No.: 492012515.001
File No.: PVP05131/23P-03



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Essen, 2023-06-27

Please also pay attention to the information stated overleaf.

Description of product(s):

Module types:

PV Modules with Segmented 6" PERC Mono-crystalline Silicon Solar Cells:

408 cells: CWTxxx-72PMSH (xxx=460-505, in increment of 5)

408 cells: CWTxxx-72PMSHFB (xxx=460-500, in increment of 5)

408 cells: CWTxxx-72PMSHF (xxx=460-505, in increment of 5)

340 cells: CWTxxx-60PMSH (xxx=380-420, in increment of 5)

340 cells: CWTxxx-60PMSHFB (xxx=380-415, in increment of 5)

340 cells: CWTxxx-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:

PV Modules with Segmented 8" PERC Mono-crystalline Silicon Solar Cells:

408 cells: CWTxxx-68PMSH (xxx=635-660, in increment of 5)

414 cells: CWTxxx-69PMSH (xxx=645-670, in increment of 5)

390 cells: CWTxxx-65PMSH (xxx=605-630, in increment of 5)

340 cells: CWTxxx-57PMSH (xxx=530-550, in increment of 5)

345 cells: CWTxxx-58PMSH (xxx=535-555, in increment of 5)

325 cells: CWTxxx-54PMSH (xxx=505-525, in increment of 5)

320 cells: CWTxxx-46PMSH (xxx=405-425, in increment of 5)

320 cells: CWTxxx-46PMSHF (xxx=425-445, in increment of 5)

320 cells: CWTxxx-46PMSHFB (xxx=420-440, in increment of 5)

305 cells: CWTxxx-44PMSHF (xxx=405-425, in increment of 5)

305 cells: CWTxxx-44PMSH (xxx=405-425, in increment of 5)

305 cells: CWTxxx-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: CWTxxx-156PM10 (xxx = 570-620, in increment of 5)
156 cells: CWTxxx-156PMFB10 (xxx = 570-620, in increment of 5)
144 cells: CWTxxx-144PM10 (xxx = 525-570, in increment of 5)
144 cells: CWTxxx-144PMFB10 (xxx = 525-570, in increment of 5)
132 cells: CWTxxx-132PM10 (xxx = 480-525, in increment of 5)
132 cells: CWTxxx-132PMFB10 (xxx = 480-525, in increment of 5)
120 cells: CWTxxx-120PM10 (xxx = 440-475, in increment of 5)
120 cells: CWTxxx-120PMFB10 (xxx = 440-475, in increment of 5)
108 cells: CWTxxx-108PM10 (xxx = 395-430, in increment of 5)
108 cells: CWTxxx-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: CWTxxx-156TN10 (xxx = 570-640, in increment of 5)
156 cells: CWTxxx-156TNFB10 (xxx = 570-640, in increment of 5)
144 cells: CWTxxx-144TN10 (xxx = 525-590, in increment of 5)
144 cells: CWTxxx-144TNFB10 (xxx = 525-590, in increment of 5)
132 cells: CWTxxx-132TN10 (xxx = 485-540, in increment of 5)
132 cells: CWTxxx-132TNFB10 (xxx = 485-540, in increment of 5)
120 cells: CWTxxx-120TN10 (xxx = 440-490, in increment of 5)
120 cells: CWTxxx-120TNFB10 (xxx = 440-490, in increment of 5)
108 cells: CWTxxx-108TN10 (xxx = 395-440, in increment of 5)
108 cells: CWTxxx-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: CWTxxx-132PM12 (xxx = 640-695, in increment of 5)

132 cells: CWTxxx-132PMFB12 (xxx = 640-695, in increment of 5)

120 cells: CWTxxx-120PM12 (xxx = 580-630, in increment of 5)

120 cells: CWTxxx-120PMFB12 (xxx = 580-630, in increment of 5)

108 cells: CWTxxx-108PM12 (xxx = 525-565, in increment of 5)

108 cells: CWTxxx-108PMFB12 (xxx = 525-565, in increment of 5)

110 cells: CWTxxx-110PM12 (xxx = 535-580, in increment of 5)

110 cells: CWTxxx-110PMFB12 (xxx = 535-580, in increment of 5)

100 cells: CWTxxx-100PM12 (xxx = 485-525, in increment of 5)

100 cells: CWTxxx-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: CWTxxx-132TN12 (xxx = 650-700, in increment of 5)

132 cells: CWTxxx-132TNFB12 (xxx = 650-700, in increment of 5)

120 cells: CWTxxx-120TN12 (xxx = 590-635, in increment of 5)

120 cells: CWTxxx-120TNFB12 (xxx = 590-635, in increment of 5)

108 cells: CWTxxx-108TN12 (xxx = 530-570, in increment of 5)

108 cells: CWTxxx-108TNFB12 (xxx = 530-570, in increment of 5)

110 cells: CWTxxx-110TN12 (xxx = 540-580, in increment of 5)

110 cells: CWTxxx-110TNFB12 (xxx = 540-580, in increment of 5)

100 cells: CWTxxx-100TN12 (xxx = 490-530, in increment of 5)

100 cells: CWTxxx-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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