

CERTIFICATE

TÜV NORD CERT GmbH
herewith declares that

München Energieprodukte GmbH
Liebigstrasse 4a, 84051
Essenbach,
Deutschland

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: 2023-01-04

Valid until: 2027-10-19

Certification program: P12-VA-01 Rev. 17 09.20
Certification fundamental(s): IEC / EN 61215-1:2016;
IEC / EN 61215-1-1:2016;
IEC 61215-2:2016 / EN 61215-2:2017 + AC:2017 + AC:2018;
IEC 61730-1:2016 / EN IEC 61730-1:2018 + AC:2018;
IEC 61730-2:2016 / EN IEC 61730-2:2018 + AC:2018.
Registered No.: 44 780 23 406749 - 001
Manufacturer: see Annex 1
Test Report No.: 492012261.001
File No.: PVP12074/22P



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Essen, 2023-01-04

Please also pay attention to the information stated overleaf.

Anlage 1 zum Zertifikat Nr.: / Annex 1 to Certificate No.: 44 780 23 406749 - 001

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Aktenzeichen: / File reference: PVP12074/22P

2023-01-04

Manufacturer:

Manufacturer: Coded by debtor no. 55390908

Factory inspection report no.: 862010358.006

Remark:

Factory inspection is mandatory to be performed annually. Please refer to factory inspection report for detailed information.



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Description of product(s):

Module types:

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

432 cells: MSMDxxxM6-PM5-78S (xxx = 445-480, in increment of 5)
432 cells: MSMDxxxM6-PM5-78SA (xxx = 445-480, in increment of 5)
432 cells: MSMDxxxM6-PM5-78SAF (xxx = 445-480, in increment of 5)
432 cells: MSMDxxxM6-PM5-78SAS (xxx = 445-480, in increment of 5)
432 cells: MSMDxxxM6-PMB5-78S (xxx = 445-480, in increment of 5)
432 cells: MSMDxxxM6-PMB5-78SA (xxx = 445-480, in increment of 5)
432 cells: MSMDxxxM6-PMB5-78SAF (xxx = 445-480, in increment of 5)
432 cells: MSMDxxxM6-PMB5-78SAS (xxx = 445-480, in increment of 5)
408 cells: MSMDxxxM6-PM5-72S (xxx = 395-455, in increment of 5)
408 cells: MSMDxxxM6-PM5-72SA (xxx = 420-455, in increment of 5)
408 cells: MSMDxxxM6-PM5-72SAF (xxx = 420-455, in increment of 5)
408 cells: MSMDxxxM6-PM5-72SAS (xxx = 420-455, in increment of 5)
408 cells: MSMDxxxM6-PM5-72SB (xxx = 460-500, in increment of 5)
408 cells: MSMDxxxM6-PM5-72SBF (xxx = 460-500, in increment of 5)
408 cells: MSMDxxxM6-PM5-72SBS (xxx = 460-500, in increment of 5)
408 cells: MSMDxxxM6-PMB5-72SB (xxx = 460-505, in increment of 5)
408 cells: MSMDxxxM6-PMB5-72SBF (xxx = 460-500, in increment of 5)
408 cells: MSMDxxxM6-PMB5-72SBS (xxx = 460-505, in increment of 5)
408 cells: MSMDxxxM6-PM5-72SF (xxx = 395-435, in increment of 5)
408 cells: MSMDxxxM6-PM5-72SS (xxx = 395-435, in increment of 5)
408 cells: MSMDxxxM6-PMB5-72S (xxx = 395-455, in increment of 5)
408 cells: MSMDxxxM6-PMB5-72SA (xxx = 420-455, in increment of 5)
408 cells: MSMDxxxM6-PMB5-72SAF (xxx = 420-455, in increment of 5)
408 cells: MSMDxxxM6-PMB5-72SAS (xxx = 420-455, in increment of 5)
408 cells: MSMDxxxM6-PMB5-72SF (xxx = 395-435, in increment of 5)
408 cells: MSMDxxxM6-PMB5-72SS (xxx = 395-435, in increment of 5)
360 cells: MSMDxxxM6-PM5-66S (xxx = 370-400, in increment of 5)
360 cells: MSMDxxxM6-PM5-66SA (xxx = 370-400, in increment of 5)
360 cells: MSMDxxxM6-PM5-66SAF (xxx = 370-400, in increment of 5)
360 cells: MSMDxxxM6-PM5-66SAS (xxx = 370-400, in increment of 5)
360 cells: MSMDxxxM6-PMB5-66S (xxx = 370-400, in increment of 5)
360 cells: MSMDxxxM6-PMB5-66SA (xxx = 370-400, in increment of 5)
360 cells: MSMDxxxM6-PMB5-66SAF (xxx = 370-400, in increment of 5)
360 cells: MSMDxxxM6-PMB5-66SAS (xxx = 370-400, in increment of 5)
340 cells: MSMDxxxM6-PM5-60S (xxx = 325-380, in increment of 5)
340 cells: MSMDxxxM6-PM5-60SA (xxx = 350-380, in increment of 5)



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340 cells: MSMDxxxM6-PM5-60SAF (xxx = 350-380, in increment of 5)
340 cells: MSMDxxxM6-PM5-60SAS (xxx = 350-380, in increment of 5)
340 cells: MSMDxxxM6-PM5-60SB (xxx = 380-415, in increment of 5)
340 cells: MSMDxxxM6-PM5-60SBF (xxx = 380-415, in increment of 5)
340 cells: MSMDxxxM6-PM5-60SBS (xxx = 380-415, in increment of 5)
340 cells: MSMDxxxM6-PMB5-60SB (xxx = 380-420, in increment of 5)
340 cells: MSMDxxxM6-PMB5-60SBF (xxx = 380-415, in increment of 5)
~~340 cells: MSMDxxxM6-PMB5-60SBS (xxx = 380-420, in increment of 5)~~
340 cells: MSMDxxxM6-PM5-60SF (xxx = 325-360, in increment of 5)
340 cells: MSMDxxxM6-PM5-60SS (xxx = 325-360, in increment of 5)
340 cells: MSMDxxxM6-PMB5-60S (xxx = 325-380, in increment of 5)
340 cells: MSMDxxxM6-PMB5-60SA (xxx = 350-380, in increment of 5)
340 cells: MSMDxxxM6-PMB5-60SAF (xxx = 350-380, in increment of 5)
340 cells: MSMDxxxM6-PMB5-60SAS (xxx = 350-380, in increment of 5)
340 cells: MSMDxxxM6-PMB5-60SF (xxx = 325-360, in increment of 5)
340 cells: MSMDxxxM6-PMB5-60SS (xxx = 325-360, in increment of 5)

Maximum system voltage: 1500V
Fuse rating: 20A
Electrical protection class: Class II
Pollution degree: 1
Material group: III or II or I, refer to test report for details
Design load (positive / negative): 2400Pa / 2400Pa or 3600Pa / 1600Pa, refer to test report for details
Safety factors: 1.5
Fire safety class: Class C according to ANSI/UL 1703-2018 (as per ANSI/UL 790-2018)

Module types:

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

414 cells: MSMDxxxG12-PM6-69SC (xxx = 645-655, in increment of 5)
414 cells: MSMDxxxG12-PMB6-69SC (xxx = 645-670, in increment of 5)
408 cells: MSMDxxxG12-PM6-68SC (xxx = 635-655, in increment of 5)
408 cells: MSMDxxxG12-PMB6-68SC (xxx = 635-660, in increment of 5)
390 cells: MSMDxxxG12-PM6-65SC (xxx = 605-625, in increment of 5)
390 cells: MSMDxxxG12-PMB6-65SC (xxx = 605-630, in increment of 5)
345 cells: MSMDxxxG12-PM6-58SC (xxx = 535-550, in increment of 5)
345 cells: MSMDxxxG12-PMB6-58SC (xxx = 535-555, in increment of 5)
340 cells: MSMDxxxG12-PM6-57SC (xxx = 530-545, in increment of 5)
340 cells: MSMDxxxG12-PMB6-57SC (xxx = 530-550, in increment of 5)
325 cells: MSMDxxxG12-PM6-54SC (xxx = 505-520, in increment of 5)



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325 cells: MSMDxxxG12-PMB6-54SC (xxx = 505-525, in increment of 5)
320 cells: MSMDxxxG12-PMB7-46SC (xxx = 425-445, in increment of 5)
320 cells: MSMDxxxG12-PMB7-46SCS (xxx = 425-445, in increment of 5)
320 cells: MSMDxxxG12-PMB7-46SCF (xxx = 420-440, in increment of 5)
305 cells: MSMDxxxG12-PMB7-44SC (xxx = 405-425, in increment of 5)
305 cells: MSMDxxxG12-PMB7-44SCS (xxx = 405-425, in increment of 5)
305 cells: MSMDxxxG12-PMB7-44SCF (xxx = 400-420, in increment of 5)

Maximum system voltage: 1500V
Fuse rating: 30A or 25A, refer to CDF for details
Electrical protection class: Class II
Pollution degree: 1
Material group: III or II or I, refer to CDF for details
Design load (positive / negative): 3600Pa / 1600Pa, refer to CDF for details
Safety factors: 1.5
Fire safety class: Class C according to ANSI/UL 1703-2018 (as per ANSI/UL 790-2018)



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