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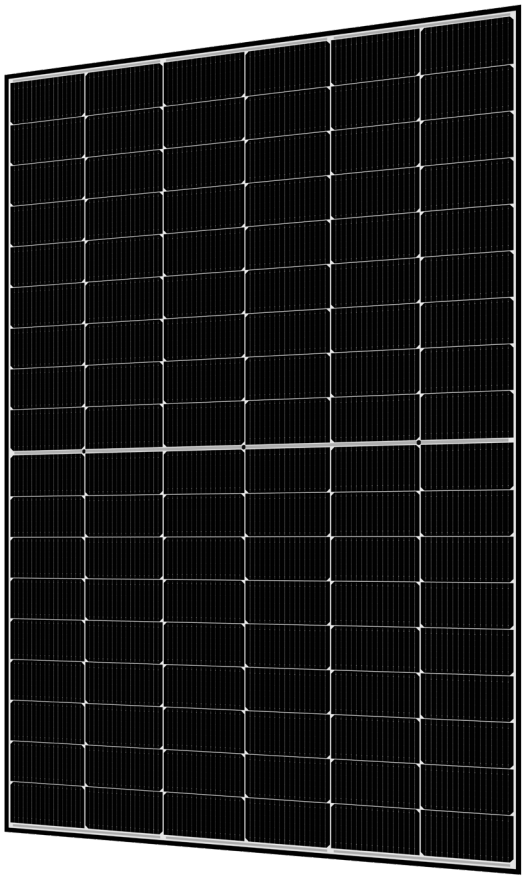
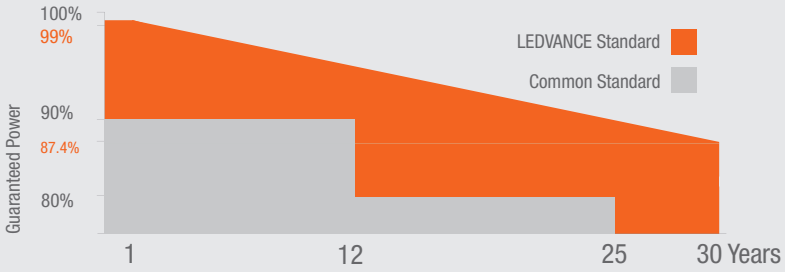


# M410~430N54LM-BF-F3

## 108CELLS HALF-CUT
## Mono N-TOPCon PV Module
## Black Frame




**15 YEARS** **Product** guarantee

**30 YEARS** **Output** guarantee

**410-430Wp** **Power** range

**22,02%** **Maximum** efficiency

**0,40%** **Yearly** degradation

**SMBB** **Excellent Cell Efficiency**
Super multi Bus Bar technology increases the efficiency of the modules

**PID** **Resistance to power degradation**
Resistance to power degradation caused by Potential-Induced Degradation PID effect, thanks to strict quality control in the module production process and other subassemblies

**Better Weak Illumination Response**
More power output in weak light conditions, such as haze, clouds and early morning

**Adapted to harsh outdoor environments**
Resistant to harsh environments such as salt, ammonia, sand, high temperatures and high humidity environments

**Highest production standards**
Guarantees of operational reliability and quality module implementations go far beyond requirements specified in certificates

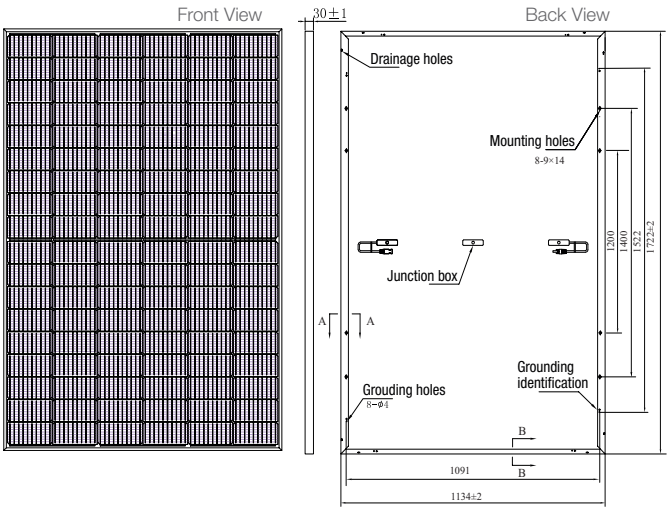
CE

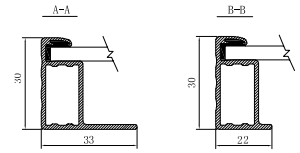
TÜVRheinland®

IEC 61215: Design suitability and type approval
IEC 61730: Safety qualification
IEC 61701: Salt mist corrosion testing
IEC 62716: Ammonia corrosion testing
IEC 60068: Environmental testing: Dust and sand

With subsidiaries in more than 50 countries and business activities in over 150 countries, LEDVANCE is committed to supplying reliable and durable PV products to customers to create together a greener planet.

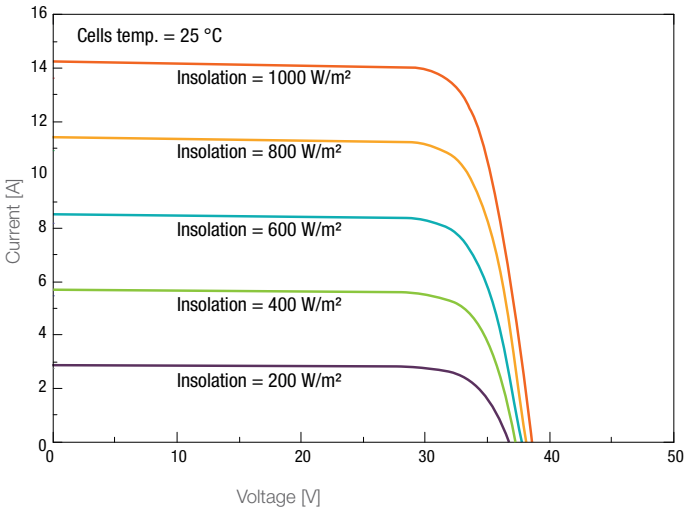
## Dimensions of PV module (mm)



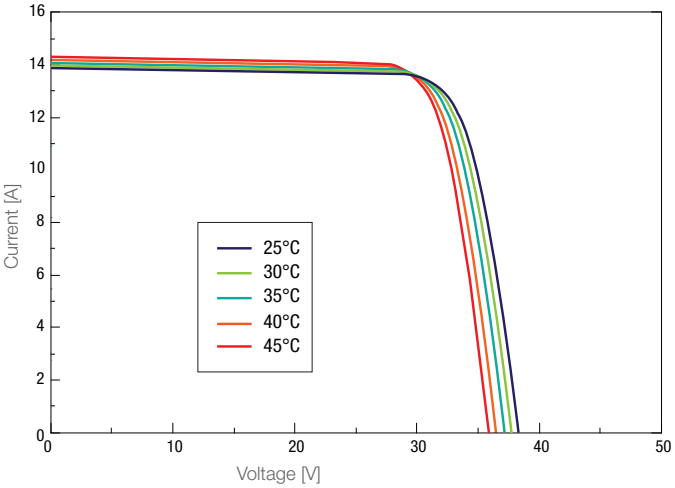




**NOTE:**
Frame color and cable length can be customized.

## Current-voltage curve of the module by different insolation




## Current-voltage curve of the PV module by temperature




| ELECTRICAL CHARACTERISTIC \| STC [1] | | | | | |
|---|---|---|---|---|---|
| Power Level | 410 | 415 | 420 | 425 | 430 |
| Nominal power Watt $P_{max}$ (Wp) | 410 | 415 | 420 | 425 | 430 |
| Maximum power voltage $V_{mpp}$ (V) | 31.14 | 31.33 | 31.51 | 31.70 | 31.88 |
| Maximum power current $I_{mpp}$ (A) | 13.17 | 13.25 | 13.33 | 13.41 | 13.49 |
| Open circuit voltage $V_{oc}$ (V) | 37.70 | 37.89 | 38.08 | 38.26 | 38.44 |
| Short circuit current $I_{sc}$ (A) | 13.92 | 14.00 | 14.08 | 14.16 | 14.24 |
| Module efficiency η(%) | 20.99 | 21.25 | 21.50 | 21.76 | 22.02 |

Measuring tolerance: ±3%

| ELECTRICAL CHARACTERISTIC \| NMOT [2] | | | | | |
|---|---|---|---|---|---|
| Power Level | 410 | 415 | 420 | 425 | 430 |
| Maximum power $P_{max}$ (Wp) | 308 | 312 | 316 | 320 | 323 |
| Maximum power voltage $V_{mpp}$ (V) | 29.03 | 29.22 | 29.37 | 29.55 | 29.61 |
| Maximum power current $I_{mpp}$ (A) | 10.61 | 10.68 | 10.76 | 10.83 | 10.91 |
| Open circuit voltage $V_{oc}$ (V) | 35.81 | 36.00 | 36.17 | 36.35 | 36.53 |
| Short circuit current $I_{sc}$ (A) | 11.24 | 11.30 | 11.37 | 11.43 | 11.50 |

Measuring tolerance: ±3%

| WORKING CONDITIONS | |
|---|---|
| Maximum system voltage | 1500 V DC |
| Operating temperature | -40°C~+85°C |
| Operating humidity | 5~85% |
| Maximum series fuse | 25 A |
| Front/Rear side load | 5400 Pa / 2400 Pa |

| MECHANICAL DATA | |
|---|---|
| Solar cells | Mono N-type |
| Number of cells | 108 (6x18) pcs |
| Size of cells | 182 x 91 mm |
| Module dimension | 1722 x 1134 x 30 mm |
| Color | BF – black frame |
| Weight | 20.2±1 kg |
| Glass | 3.2 mm tempered glass, anti-reflective coating |
| Type of frame | Anodized aluminum alloy |
| Junction box | IP68, 3 diodes |
| Cables | 4 mm², 300 mm or 1200 mm |
| Connectors | Stäubli MC4 EVO 2 |

| TEMPERATURE RATINGS | |
|---|---|
| NMOT | 44±2 °C |
| Temperature coefficient of $P_{max}$ | -0.30% / °C |
| Temperature coefficient of $V_{oc}$ | -0.25% / °C |
| Temperature coefficient of $I_{sc}$ | 0.046% / °C |

| PACKAGING CONFIGURATION | |
|---|---|
| Piece / Box | 36 |
| Size of packing | 1790 x 1140 x 1275 mm |
| Weight of packing | 772 kg |
| Piece / Container (40'HC) | 936 |

**FOOTNOTES:**
1) STC (Standard Test Conditions): 1000W/m² solar irradiance, cell temperature 25°C, AM 1.5G
2) NMOT (nominal cell operating temperature): insolation 800W/m², ambient temperature 20°C, AM 1.5G, wind speed 1m/s

**CAUTION:**
- Do not connect two or more strings of modules to one fuse.
- The electrical data in this product sheet does not refer to a single module and is not part of the offer, it is used to compare different types of modules only.
- Due to continuous technical innovation, development and product improvement, technical data contained in this product sheet is subject to change at any time without notice and may not be the basis for any damage claims.

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16.05.2023 | M410-430N54LM-BF-F3