

# Tiger Neo N-Typ 54HL4-(V) 410-430 Watt MONOFAZIALES MODUL

## N-Typ

Positive Leistungstoleranz von 0~+3 %

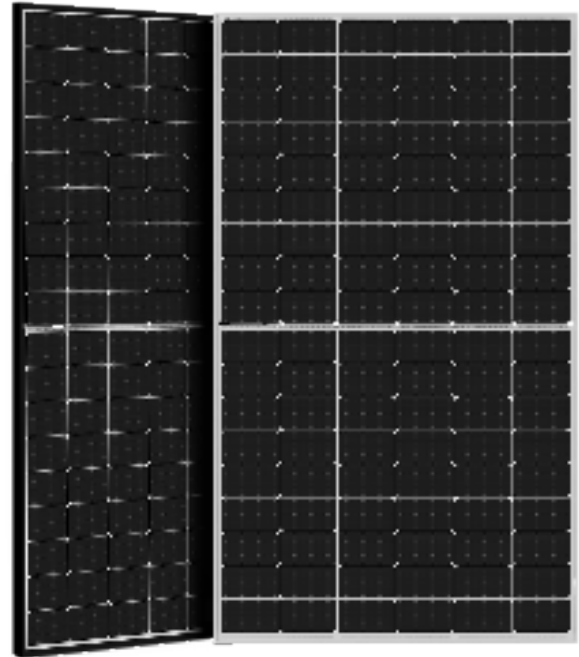
IEC 61215 (2016), IEC 61730 (2016)

ISO9001:2015: Qualitätsmanagementsystem

ISO14001:2015: Umweltmanagementsystem

ISO 45001:2018

Managementsysteme für Sicherheit und Gesundheit bei der Arbeit



## WICHTIGE MERKMALE



### SMBB-Technologie

Mehr Modulleistung und Zuverlässigkeit dank verbesserter Lichtabsorption und verbessertem Stromtransport



### PID-Widerstand

Exzellente Anti-PID-Leistungsgarantie dank optimiertem Massenproduktionsprozess und Materialkontrolle.



### Maximale Lebensdauer auch unter extremen Umweltbedingungen

Hohe Salznebel- und Ammoniakbeständigkeit.



### Hot 2.0-Technologie

Das N-Typ-Modul mit Hot 2.0-Technologie ist zuverlässiger und reduziert LID/LETID-Effekte.

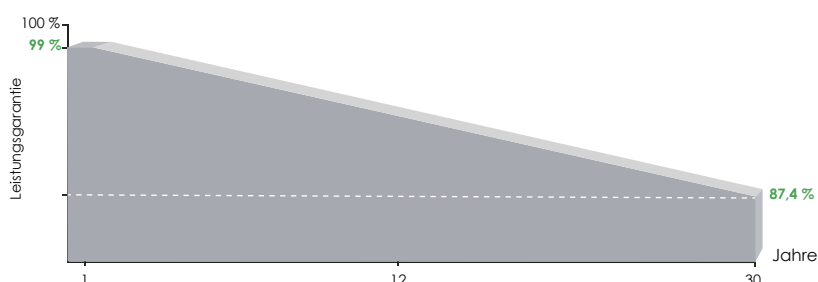


### Verbesserte mechanische Widerstandskraft

Zertifiziert für Windlasten bis 2400 Pa und Schneelasten bis 5400 Pa.



## LINEARE LEISTUNGSGARANTIE

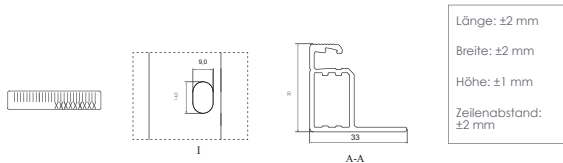
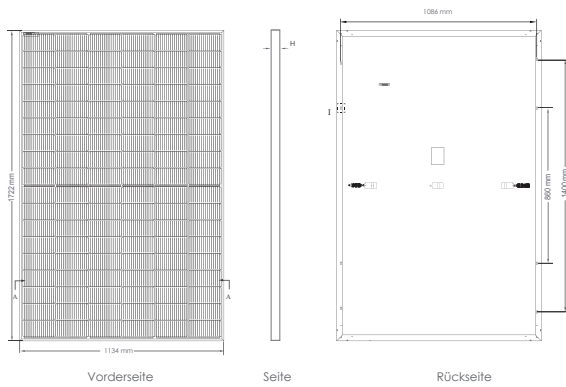


**15** Jahre Produktgarantie

**30** Jahre lineare Leistungsgarantie

**0,40 %** jährliche Degradation über 30 Jahre

## Technische Zeichnungen

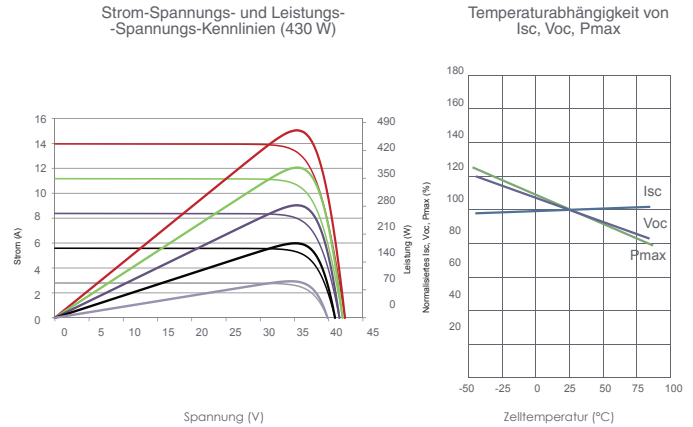


## Versandeinheiten

(Zwei Paletten = ein Stapel)

36 Stück/Palette, 72 Stück/Stapel, 936 Stück/40-Fuss-Container

## Elektrische Leistung und Temperaturabhängigkeit



## Mechanische Eigenschaften

|                 |  |
|-----------------|--|
| Zellentyp       | N-Typ monokristallin   |
| Anz. der Zellen | 108 (6×18)   |
| Maße            | 1722×1134×30 mm (67,79×44,65×1,18 inch)  |
| Gewicht         | 22 kg (48,5 lb)  |
| Glas            | 3,2 mm, getempertes Glas mit hoher Lichtdurchlässigkeit und niedrigem Eisengehalt, Antireflex-Beschichtung |
| Rahmen          | Eloxierte Aluminiumlegierung   |
| Anschlusskasten | Schutzklasse IP68  |
| Anschlusskabel  | TÜV 1×4,0 mm <sup>2</sup><br>(+): 400 mm, (-): 200 mm oder maßgeschneiderte Länge                          |

## Spezifikationen

| Modultyp                                | JKM410N-54HL4       |                 | JKM415N-54HL4 |                 | JKM420N-54HL4 |                 | JKM425N-54HL4 |                 | JKM430N-54HL4 |                 |
|---|---------------------|-----------------|---------------|-----------------|---------------|-----------------|---------------|-----------------|---------------|-----------------|
|   | JKM410N-54HL4       | JKM410N-54HL4-V | JKM415N-54HL4 | JKM415N-54HL4-V | JKM420N-54HL4 | JKM420N-54HL4-V | JKM425N-54HL4 | JKM425N-54HL4-V | JKM430N-54HL4 | JKM430N-54HL4-V |
|   | STC                 | NOCT            | STC           | NOCT            | STC           | NOCT            | STC           | NOCT            | STC           | NOCT            |
| Maximale Leistung (Pmax)                | 410Wp               | 308Wp           | 415Wp         | 312Wp           | 420Wp         | 316Wp           | 425Wp         | 320Wp           | 430Wp         | 323Wp           |
| Max. Spannung (Vmp)                     | 31,13 V             | 29,06 V         | 31,32 V       | 29,21 V         | 31,51 V       | 29,34 V         | 31,70 V       | 29,50 V         | 31,88 V       | 29,63 V         |
| Max. Strom (Imp)                        | 13,17 A             | 10,61 A         | 13,25 A       | 10,68 A         | 13,33 A       | 10,76 A         | 13,41 A       | 10,83 A         | 13,49 A       | 10,91 A         |
| Leerlaufspannung (Voc)                  | 37,73 V             | 35,84 V         | 37,92 V       | 36,02 V         | 38,11 V       | 36,20 V         | 38,30 V       | 36,38 V         | 38,49 V       | 36,56 V         |
| Kurzschlussstrom (Isc)                  | 13,91 A             | 11,23 A         | 13,99 A       | 11,29 A         | 14,07 A       | 11,36 A         | 14,15 A       | 11,42 A         | 14,23 A       | 11,49 A         |
| Modulwirkungsgrad STC (%)               | 21,00 %             |                 | 21,25 %       |                 | 21,51 %       |                 | 21,76 %       |                 | 22,02 %       |                 |
| Betriebstemperatur (°C)                 | -40 °C~+85 °C       |                 |               |                 |               |                 |               |                 |               |                 |
| Maximale Systemspannung                 | 1000/1500 VDC (IEC) |                 |               |                 |               |                 |               |                 |               |                 |
| Maximale Vorschaltleistungsleistung     | 25 A                |                 |               |                 |               |                 |               |                 |               |                 |
| Leistungstoleranz                       | 0~+3 %              |                 |               |                 |               |                 |               |                 |               |                 |
| Temperaturkoeffizienten Pmax            | -0,30 %/°C          |                 |               |                 |               |                 |               |                 |               |                 |
| Temperaturkoeffizienten Voc             | -0,25 %/°C          |                 |               |                 |               |                 |               |                 |               |                 |
| Temperaturkoeffizienten Isc             | 0,046 %/°C          |                 |               |                 |               |                 |               |                 |               |                 |
| Nennbetriebstemperatur der Zelle (NOCT) | 45±2 °C             |                 |               |                 |               |                 |               |                 |               |                 |

\*STC: Einstrahlung 1000W/m<sup>2</sup> Zelltemperatur 25 °C

AM = 1,5

NOCT: Einstrahlung 800W/m<sup>2</sup> Umgebungstemperatur 20 °C

AM = 1,5

Windgeschwindigkeit 1 m/s

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JKM410-430N-54HL4-(V)-F1.1-GE EU(IEC 2016)

# TigerNeo N-type 54HL4-(V) 410-430 Watt MONO-FACIAL MODULE

## N-Type

Positive power tolerance of 0~+3%

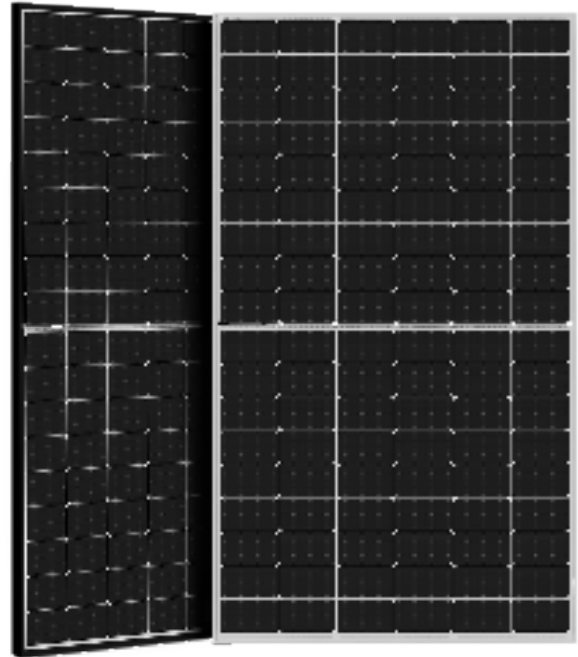
IEC 61215(2016), IEC 61730(2016)

ISO 9001:2015: Quality Management System

ISO 14001:2015: Environment Management System

ISO 45001:2018

Occupational health and safety management systems



## Key Features



### SMBB Technology

Better light trapping and current collection to improve module power output and reliability.



### PID Resistance

Excellent Anti-PID performance guaranteed via optimized mass-production process and materials control.



### Durability Against Extreme Environmental Conditions

High salt mist and ammonia resistance.



### Hot 2.0 Technology

The N-type module with Hot 2.0 technology has better reliability and lower LID/LETD.

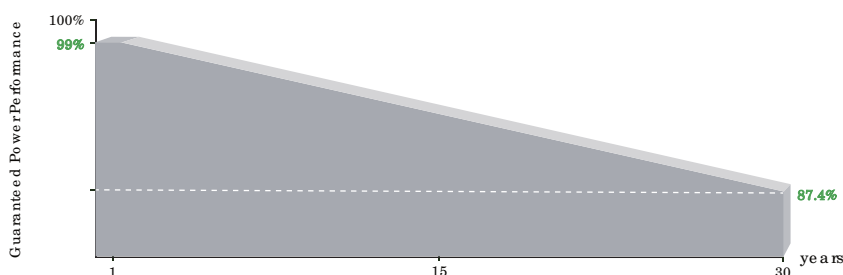


### Enhanced Mechanical Load

Certified to withstand: wind load (2400 Pascal) and snow load (5400 Pascal).



## LINEAR PERFORMANCE WARRANTY

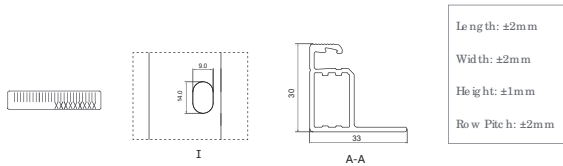
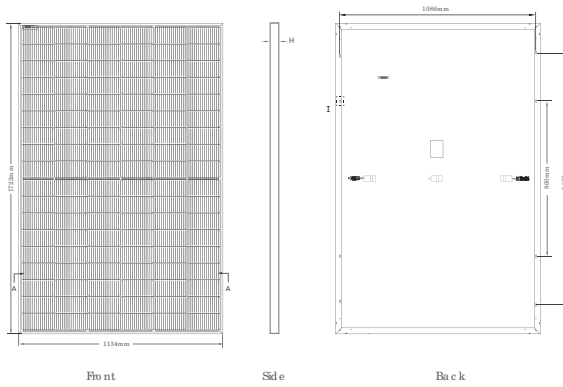


15 Year Product Warranty

30 Year Linear Power Warranty

0.40% Annual Degradation Over 30 years

## Engineering Drawings



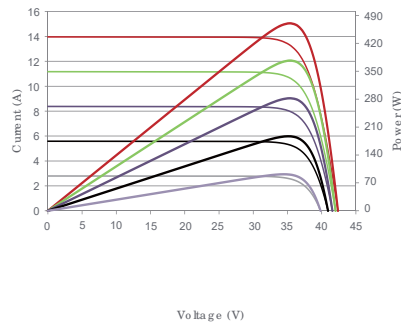
## Packaging Configuration

(Two pallets = One stack)

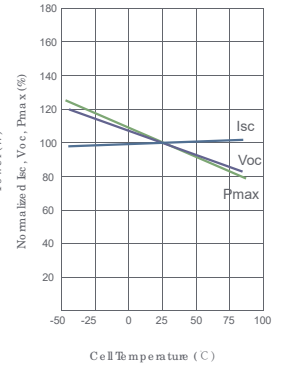
36pcs/pallets, 72pcs/stack, 936pcs/40'HQ Container

## Electric Performance & Temperature Dependence

Current-Voltage & Power-Voltage Curves (430W)



Temperature Dependence of Isc, Voc, Pmax



## Mechanical Characteristics

|               |  |
|---------------|--|
| Cell Type     | N type Mono-crystalline  |
| No. of cells  | 108 (6x18)   |
| Dimensions    | 1722x1134x30mm (67.79x44.65x1.18 inch)                                       |
| Weight        | 22 kg (48.50 lbs)  |
| Front Glass   | 3.2mm, Anti-Reflection Coating, High Transmittance, Low Iron, Tempered Glass |
| Frame         | Anodized Aluminum Alloy  |
| Junction Box  | IP68 Rated   |
| Output Cables | TUV 1x4.0mm <sup>2</sup><br>(+): 400mm, (-): 200mm or Customized Length      |

## SPECIFICATIONS

| Module Type                               | JKM410N-54HL4      |        | JKM415N-54HL4 |        | JKM420N-54HL4 |        | JKM425N-54HL4 |        | JKM430N-54HL4 |        |
|---|--------------------|--------|---------------|--------|---------------|--------|---------------|--------|---------------|--------|
|   | SIC                | NOCT   | SIC           | NOCT   | SIC           | NOCT   | SIC           | NOCT   | SIC           | NOCT   |
| Maximum Power (Pmax)                      | 410Wp              | 308Wp  | 415Wp         | 312Wp  | 420Wp         | 316Wp  | 425Wp         | 320Wp  | 430Wp         | 323Wp  |
| Maximum Power Voltage (Vmp)               | 31.13V             | 29.06V | 31.32V        | 29.21V | 31.51V        | 29.34V | 31.70V        | 29.50V | 31.88V        | 29.63V |
| Maximum Power Current (Imp)               | 13.17A             | 10.61A | 13.25A        | 10.68A | 13.33A        | 10.76A | 13.41A        | 10.83A | 13.49A        | 10.91A |
| Open-circuit Voltage (Voc)                | 37.73V             | 35.84V | 37.92V        | 36.02V | 38.11V        | 36.20V | 38.30V        | 36.38V | 38.49V        | 36.56V |
| Short-circuit Current (Isc)               | 13.91A             | 11.23A | 13.99A        | 11.29A | 14.07A        | 11.36A | 14.15A        | 11.42A | 14.23A        | 11.49A |
| Module Efficiency SIC (%)                 | 21.00%             |        | 21.25%        |        | 21.51%        |        | 21.76%        |        | 22.02%        |        |
| Operating Temperature (°C)                | -40°C~+85°C        |        |               |        |               |        |               |        |               |        |
| Maximum system voltage                    | 1000/1500VDC (IEC) |        |               |        |               |        |               |        |               |        |
| Maximum series fuse rating                | 25A                |        |               |        |               |        |               |        |               |        |
| Power tolerance                           | 0~+3%              |        |               |        |               |        |               |        |               |        |
| Temperature coefficients of Pmax          | -0.30%/°C          |        |               |        |               |        |               |        |               |        |
| Temperature coefficients of Voc           | -0.25%/°C          |        |               |        |               |        |               |        |               |        |
| Temperature coefficients of Isc           | 0.046%/°C          |        |               |        |               |        |               |        |               |        |
| Nominal operating cell temperature (NOCT) | 45±2°C             |        |               |        |               |        |               |        |               |        |

\*SIC: Irradiance 1000W/m<sup>2</sup> Cell Temperature 25°C AM=1.5  
 NOCT: Irradiance 800W/m<sup>2</sup> Ambient Temperature 20°C AM=1.5 Wind Speed 1m/s