Voorbereid door: Rocco Loven
+31651284764
rocco@limsolar.nl

Voor: Glenn
38 Buys Ballotstraat, Leiden

Quote #: 2014707
Geldig tot: 29 april 2023

Offerte voor zonne-energiesysteem

Beste Glenn,

Dank u voor de gelegenheid om uw offerte voor een zonne-energiesysteem te presenteren.

Met vriendelijke groet,
Rocco Loven
Limsolar B.V.

Hallo,

Wij zijn de energyfixers

Al +1500 bedrijven & particulieren hebben ons hun vertrouwen gegeven!

- Topkwaliteit zonnepanelen
- Premium omvormers & thuisbatterijen
- 24/7 Monitoring
- 5 jaar storingsservice

Aanbevolen systeemoptie

2.58 kW	1.171 €	5.390 €	5.390 €
Systeemgrootte	Geschatte jaarlijkse besparing op elektriciteitsfactuur	Totale systeemprijs	Nettosysteemprijs

Systeemhardware

Zonnepanelen

SOLAR HERO GmbH
2,580 kW Totale zonnestroom
6 x 430 Watt Panelen (HERO FULL-BLACK PRO 430W)
2.579 kWh per jaar

Omvormer

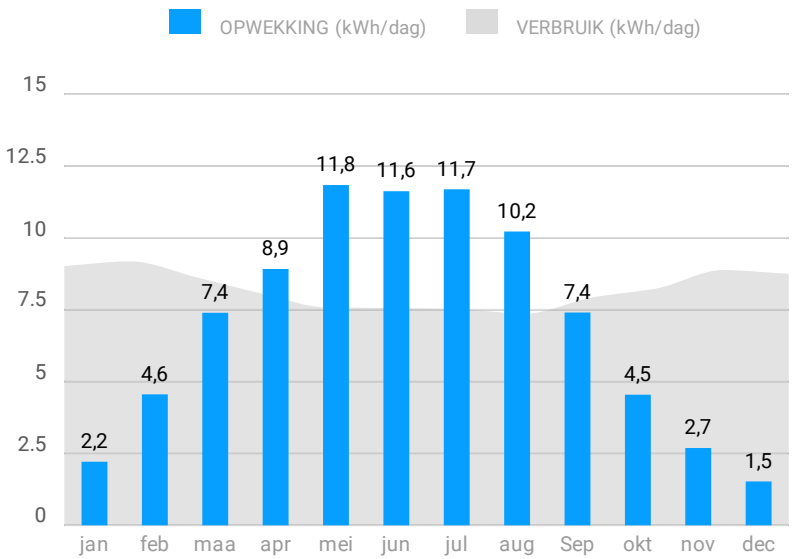
Enphase Energy Inc.
1,950 kW Totale omvormerclassificatie
6 x IQ8M-72-2-US

Garanties: 30 jaar productgarantie op panelen, 30 jaar garantie op paneelrendement, 25 jaar productgarantie omvormer

Systeem Prestatie

86%

Stroom uit zonne-energie



Systeemprestatie Aannames: Totale systeemverliezen: 14,2%, Omvormerverliezen: 2,5 %, Optimizer-verliezen: 0%, Schaduwverliezen: 0 %, Rendementsaanpassing: 0%, Opbrengstcalculator: System Advisor Model 2020.02.29.r2. Paneeloriëntaties: 6 panelen met Azimuth 173 en dakhelling 20.

Voordelen voor het milieu

Zonne-energie geeft geen uitstoot. Het genereert gewoon in stilte pure, schone energie.

Elk jaar

86%
Van CO_2, SO_x & NO_x

1 ton
Vermeden CO_2 per jaar

Over systeem-levensduur

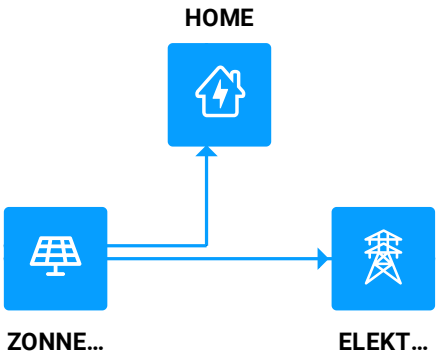
34.852
Auto km vermeden

224
Bomen geplant

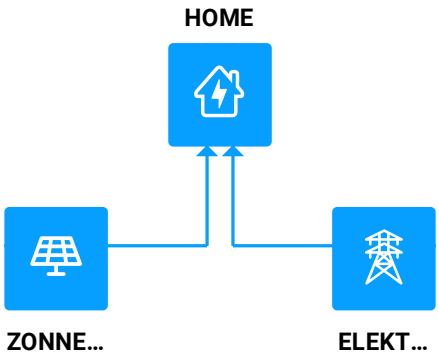
25
Langeafstandsvluchten vermeden

Hoe uw systeem werkt

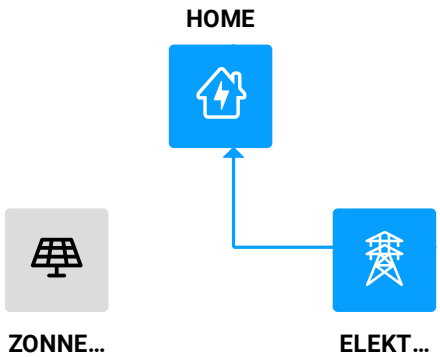
Overmatige zonne-energie opwekken



Gedeeltelijk gecompenseerd verbruik

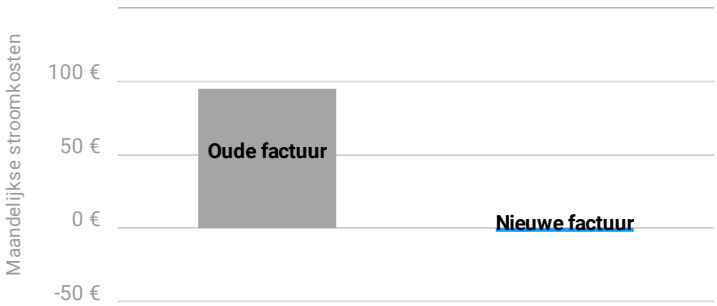


Nacht

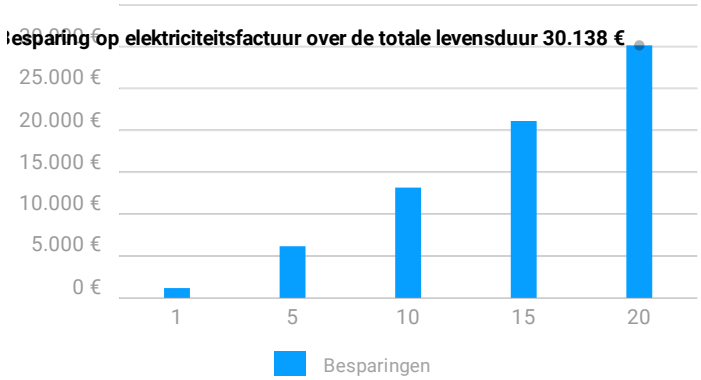


Besparingen op uw elektriciteit rekening

Maandelijkse besparingen in het eerste jaar



Besparing op elektriciteitsfactuur over de totale levensduur



Maand	Zonne-energieopwekking (kWh)	Stroomverbruik vóór zonne-energie (kWh)	Stroomverbruik na zonne-energie (kWh)	Elektriciteitsfactuur vóór zonne-energie (€)	Elektriciteitsfactuur na zonne-energie (€)	Cumulatief energiekrediet (€)	Geschatte besparing (€)
jan	69	280	211	108	77	0	31
feb	128	257	130	98	40	0	58
maa	229	268	38	103	-1	0	104
apr	268	242	(26)	91	-18	12	110
mei	367	235	(132)	88	-18	72	107
jun	349	227	(122)	85	-18	127	103
jul	362	233	(129)	87	-18	186	106
aug	317	228	(89)	85	-18	226	104
Sep	222	238	16	89	-18	219	108
okt	141	256	115	98	-18	167	116
nov	81	266	186	102	-18	82	121
dec	47	271	224	105	1	0	104

Uw verwachte energiekosten worden berekend door rekening te houden met een 3,0% jaarlijkse stijging van de energiekosten als gevolg van trends in de stijgende energiekosten. Deze schatting is gebaseerd op uw geselecteerde voorkeuren, huidige energiekosten en de positie en oriëntatie van uw dak om het rendement van het systeem te berekenen. Berekeningen zijn gebaseerd op geschat verbruik van 3000 kWh per jaar, uitgaande van Custom Tariff Elektriciteitstarief.

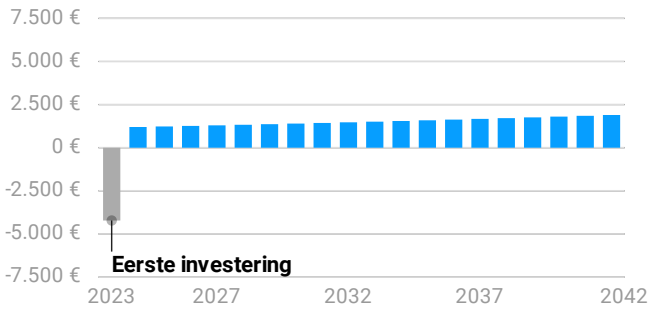
Na oplevering van u zonnepanelen systeem dient u deze aan te melden bij energieleveren.nl

Netto Financiële Impact Bankoverschrijving

30.138 €	-	5.390 €	=	24.748 €
Besparing op elektriciteitsfactuur		Nettosysteemkosten		Geschatte nettobesparingen

Cumulatieve besparing met zonne-energie

Jaarlijkse besparing door zonne-energie



Dit voorstel betreft een compleet zonnepanelen systeem inclusief toebehoren, montage en installatie. Samengevat worden de volgende werkzaamheden voor u verricht:

- Plaatsing draagconstructie
- Bekabeling van PV installatie (dubbelwandig UV-bestendig CAC)
- Plaatsing zonnepanelen
- Plaatsing omvormer(s)
- Aansluiting omvormer(s)
- Bekabeling van elektrische kast
- In bedrijfstelling PV-Installatie
- Installatie en uitleg van de monitoring app

Behalve de eerder genoemde product- en rendementsgarantie krijgt u op de installatie 5 jaar storingsdienst.

Belangrijke informatie:

- Bij een hellend dak, gelieve van reservepannen voorzien

- Internetverbinding voorziening via Kabel (aangeraden) of goede WiFi voor Online monitoring van de omvormer en de opbrengst van zonnepanelen

- Er zal geen elektriciteit zijn tijdens de verbindingsfase van de elektrische kast en koppeling van de omvormer

- Tijdens de werkzaamheden zal u geen gebruik kunnen maken van het internet en elektrische apparaten.

- Let op: door weersomstandigheden kan de afgesproken datum en tijdstip afwijken

- Gelieve minimaal 3 meter ruimte vrij te houden aan de gevelzijde van de woning waar de werkzaamheden zullen zijn.

Offerte

Betaaloptie: Bankoverschrijving

6 x HERO FULL-BLACK PRO 430W 430 Watt Panels (SOLAR HERO GmbH) 6 x IQ8M-72-2-US (Enphase Energy Inc.)	
Standaard systeemprijs	5.590,00 €
Montage op 2 dakvlakken	100,00 €
Korting € 300	-300,00 €
Totale systeemprijs	5.390,00 €
Aankoopprijs	**5.390,00 €**
Te betalen aanbetaling	**1.347,50 €**

Deze offerte is geldig tot 29 april 2023.

Betalingsmijlpalen

Aanbetaling 1e Aanbetaling	1,347.50
Totaal	**5,390.00**

Offerte aanvaarden

Ik heb de algemene voorwaarden gelezen en aanvaard.

Handtekening _____

Naam Datum _ _

Betaalgegevens: Offline Betaling

Gelieve de eerste 25% aanbetaling over te maken naar:

NL21INGB0391459341 t.n.v. Limsolar B.V.

Vermeld bij uw betaling altijd Naam en Adres

Let op! Het resterende bedrag dient u binnen 7 dagen na oplevering van de installatie over te maken.

N-TYPE

SOLARHERO

HERO®

FULL-BLACK PRO

430W BIFACIAL DOUBLE GLASS MODULE

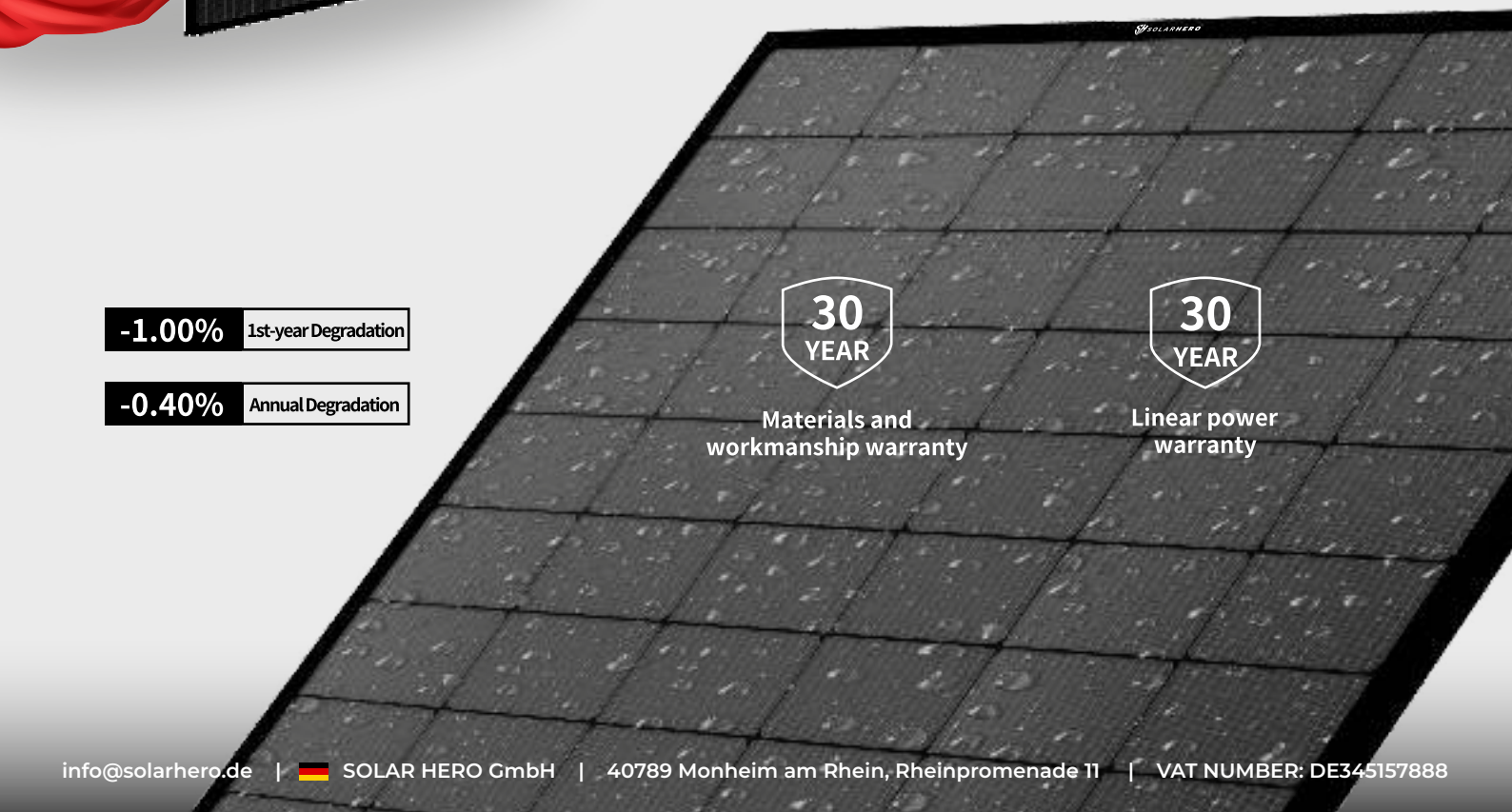
WWW.HEROPV.COM

HERO® FULL-BLACK PRO 430W BIFACIAL DOUBLE GLASS MODULE

MODULE TYPE: **M10 16BB N-TYPE 430W**

MODULE POWER: **430W**

430W	22.0%	0~+5W
Maximum Power Output	Maximum Module Efficiency	Power Output Tolerance



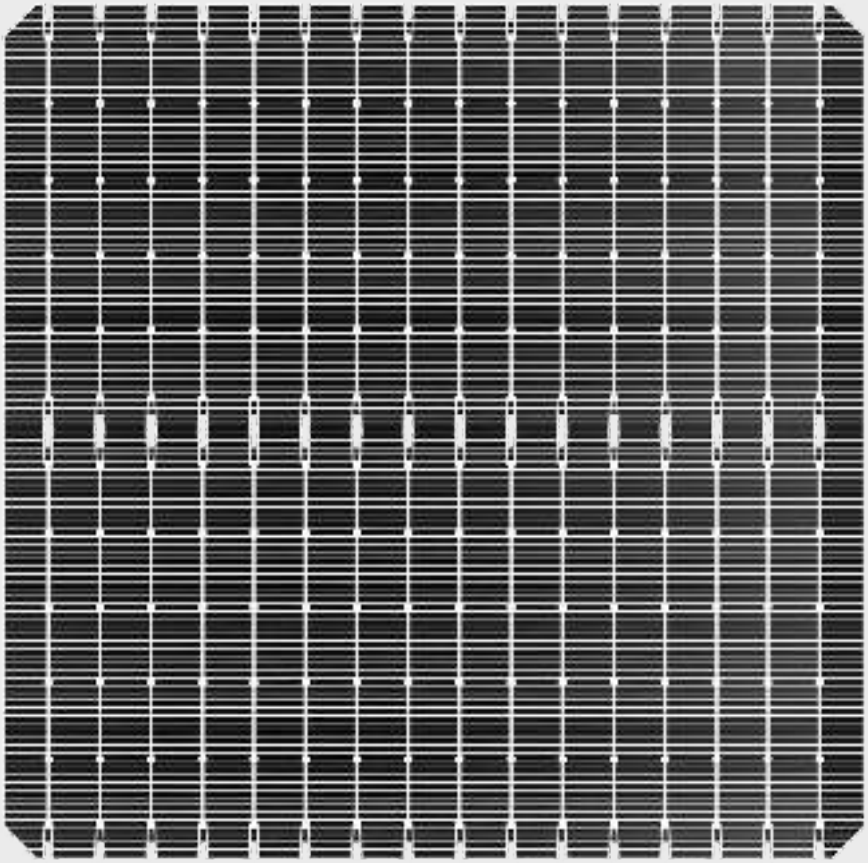
-1.00%	1st-year Degradation
-0.40%	Annual Degradation

30 YEAR
Materials and workmanship warranty

30 YEAR
Linear power warranty

info@solarhero.de | SOLAR HERO GmbH | 40789 Monheim am Rhein, Rheinpromenade 11 | VAT NUMBER: DE345157888

SOLARHERO



M10

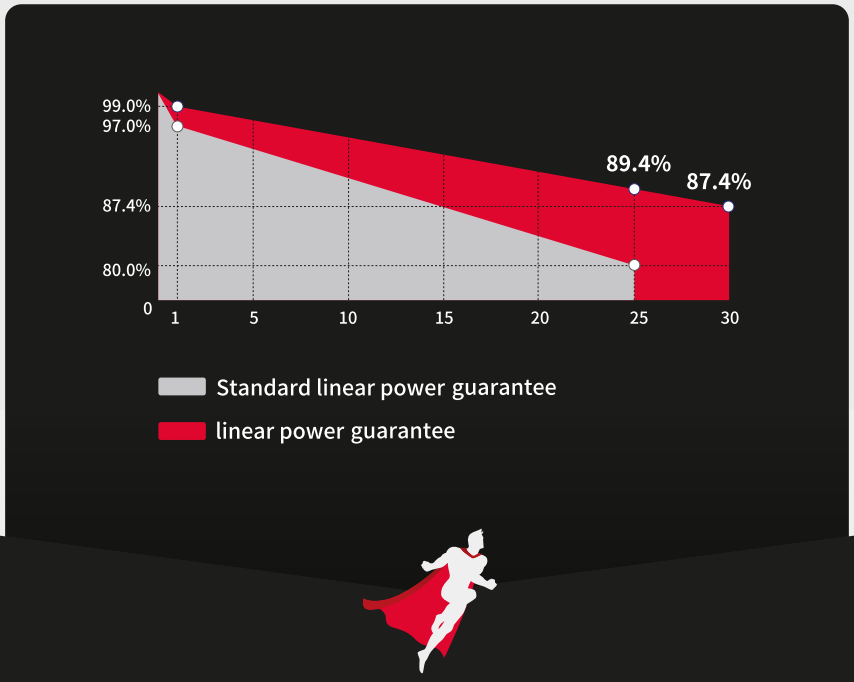
Area: 2432 mm²	**Area: 25199 mm²**	**Area: 27416 mm²**	**Area: 33011 mm²**
M2	**G1**	**M6**	**M10**
BASELINE	**AREA 3.14% ↑**	**AREA 12.21% ↑**	**AREA 35.11% ↑**
156.75 * 156.75 210 mm	**158.75 * 158.75** 223 mm	**166 * 166** 223 mm	**182 * 182** 247 mm

N-type cells have many advantages, they are resistant to light induced degradation due to the presence of phosphorus instead of boron within the silicon. This immunity leads to a longer carrier lifetime of the cell and a more efficient, powerful system.

SOLARHERO

Product and Quality Certifictaions

- **IEC 61215, IEC 61730**
- **ISO 9001:2015** Quality Management System
- **ISO 14001:2015** Environment Management System
- **IEC 62716, IEC 61701:** Ammonia, Salt mist corrosion test **IEC TS 62804-1, IEC**
- **60068-2-68:PID** test, Dust and Sand test



Key Features

High Efficiency
Module efficiency leading in industry, up to 22.0%

Double Sided Power Generation
Bifaciality is up to 80%, up to 30% more energy yield than conventional modules

Excellent Appearance and Performance
Both side cell, symmetrical design, low risk of micro-crack

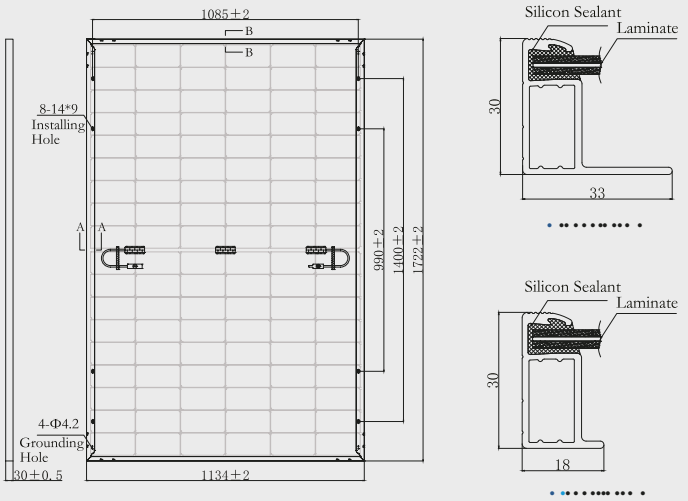
Better Temperature Coefficient
Higher power output even under low-light environments like on cloudy or foggy days

High Reliability
30 years warranty

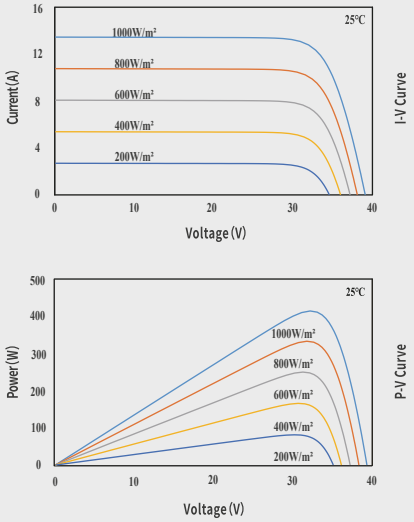
Extensive Application Scenes
More extensive application scenes, such as BIPV, snow field, vertical installation, high humidity, strong wind and desert region

info@solarhero.de | SOLAR HERO GmbH | 40789 Monheim am Rhein, Rheinpromenade 11 | VAT NUMBER: DE345157888

ENGINEERING DRAWING (MM)



CHARACTERISTIC CURVES



ELECTRICAL PROPERTIES (STC*)

Testing Condition	Front Side
Nominal Max. Power(Pmax/W)	430
Open Circuit Voltage(Voc/V)	38.49
Short Circuit Current(Isc/A)	14.23
Operating Voltage(Vmp/V)	31.88
Operating Current(Imp/A)	13.49
Efficiency(%)	22.0

STC * : Irradiance = 1000 W/m², Cell Temperature = 25°C, AM = 1.5

MECHANICAL PARAMETERS

Cell size	N Type 182mm*91mm
Module size	1722×1134×30mm
Glass Thickness	2.0mm
Module Weight	24.3Kg
Output Cable	4mm², cable length 1200mm (can be customized)
Connector	MC4 compatible
Junction Box	IP68, 3 bypass diodes
Frame	Anodized aluminium alloy

ELECTRICAL PROPERTIES (NMOT*)

Testing Condition	Front Side
Nominal Max. Power(Pmax/W)	326.5
Open Circuit Voltage(Voc/V)	36.40
Short Circuit Current(Isc/A)	11.47
Operating Voltage(Vmp/V)	30.10
Operating Current(Imp/A)	10.87

NMOT *: Irradiance = 800 W/m², Ambient Temperature = 20°C, AM = 1.5,
Wind Speed = 1 m/s

TEMPERATURE COEFFICIENTS

Short Circuit Current(Isc)	+0.045%/°C
Open Circuit Voltage(Voc)	-0.250%/°C
Nominal Max. Power(Pmax)	-0.300%/°C
NMOT	42±2°C

BACK POWER GAIN

Power Gain	10%	15%	20%	25%	30%
Nominal Max. Power(Pmax/W)	473.0	494.5	516.0	537.5	554.0
Open Circuit Voltage(Voc/V)	38.60	38.70	38.80	38.80	38.90
Short Circuit Current(Isc/A))	15.70	16.44	17.18	17.93	18.50
Operating Voltage(Vmp/V)	31.70	31.60	31.60	31.60	31.50
Operating Current(Imp/A)	14.94	15.64	16.33	17.04	17.58

OPERATING PARAMETERS

Max. System Voltage	DC1500V
Power Tolerance	0 ~ +5 W
Operating Temperatue	-40°C ~ +85°C
Max. Fuse Rated Current	30A
Front Static Load	Snow load 5400Pa, Wind load 2400Pa
Packing Specification	36 pcs/Pallet; 216(20GP); 936(40HQ)

ZERTIFIKAT ◆ CERTIFICATE ◆ 認證證書 ◆ СЕРТИФИКАТ ◆ CERTIFICADO ◆ CERTIFICAT

C E R T I F I C A T E

No. Z2 118630 0001 Rev. 00

Holder of Certificate: **SOLAR HERO GmbH**
Beckhauser Str. 6
40699 Erkrath
GERMANY

Certification Mark:

Product: **Crystalline Silicon Terrestrial Photovoltaic (PV) Modules**

Mono-crystalline Silicon Photovoltaic Module

The product was tested on a voluntary basis and complies with the essential requirements. The certification mark shown above can be affixed on the product. It is not permitted to alter the certification mark in any way. In addition, the certification holder must not transfer the certificate to third parties. This certificate is valid until the listed date, unless it is cancelled earlier. All applicable requirements of the testing and certification regulations of TÜV SÜD Group have to be complied. For details see: www.tuvsud.com/ps-cert

Test report no.: 701262219901-00

Valid until: 2027-10-12

Date, 2022-11-03

(Zhulin Zhang)

TÜV SÜD Product Service GmbH • Certification Body • Ridlerstraße 65 • 80339 Munich • Germany

C E R T I F I C A T E

No. Z2 118630 0001 Rev. 00

Model(s):

All electrical data is shown as relative to this test conditions: front side irradiance 1000 W/m², 25 °C, AM 1.5
SOLARHERO xxx-S1 (xxx=385-415, in steps of 5)
SOLARHERO xxx-S1 PRO1 (xxx=385-415, in steps of 5)
SOLARHERO xxx-S1 PRO2 (xxx=385-415, in steps of 5)
SOLARHERO xxx-S1-B (xxx=410-465, in steps of 5)
SOLARHERO xxx-S1-B PRO (xxx=410-465, in steps of 5)
SOLARHERO xxx-S2 (xxx=400-430, in steps of 5)
SOLARHERO xxx-S2 PRO1 (xxx=400-430, in steps of 5)
SOLARHERO xxx-S2 PRO2 (xxx=400-430, in steps of 5)
SOLARHERO xxx-S2-B (xxx=530-575, in steps of 5)
SOLARHERO xxx-S2-B PRO (xxx=530-575, in steps of 5)
xxx is standing for rated output power at STC.

Parameters:

Safety Class:	ClassII
Max. System Voltage:	1500V DC
Test Laboratory:	Yangzhou Opto-Electrical Product Testing Institute No.10 West Kaifa Road, Yangzhou, 225009 Jiangsu P.R.China
Construction:	Framed or Frameless, with Junction box, cable and connector.
Fire Safety Class:	Class C according to UL790

Tested according to:

IEC 61215-1:2016
IEC 61215-1-1:2016
IEC 61215-2:2016
IEC 61730-1:2016
IEC 61730-2:2016
EN 61215-1:2016
EN 61215-1-1:2016
EN 61215-2:2017
EN IEC 61730-1:2018
EN IEC 61730-1:2018/AC:2018-06
EN IEC 61730-2:2018
EN IEC 61730-2:2018/AC:2018-06

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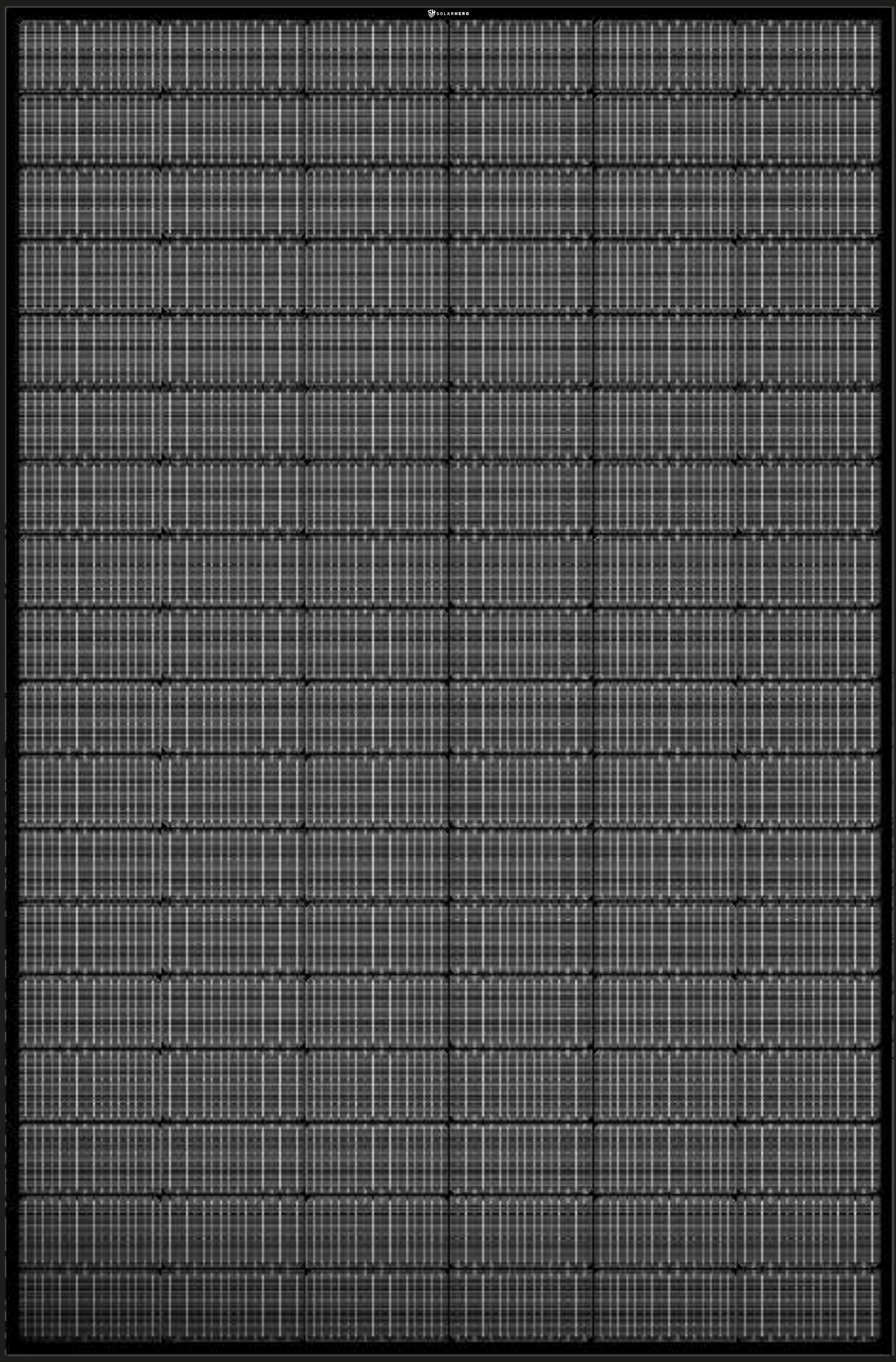
SOLARHERO

ENPHASE

DATA SHEET

IQ8M and IQ8A Microinverters

Our newest IQ8 Microinverters are the industry's first microgrid-forming, software defined microinverters with split-phase power conversion capability to convert DC power to AC power efficiently. The brain of the semiconductor-based microinverter is our proprietary application specific integrated circuit (ASIC) which enables the microinverter to operate in grid-tied or off-grid modes. This chip is built in advanced 55nm technology with high speed digital logic and has superfast response times to changing loads and grid events, alleviating constraints on battery sizing for home energy systems.

Part of the Enphase Energy System, IQ8 Series Microinverters integrate with the IQ Battery, IQ Gateway, and the Enphase App monitoring and analysis software.

Enphase 25 year limited warranty

IQ8 Series Microinverters redefine reliability standards with more than one million cumulative hours of power-on testing, enabling an industry-leading limited warranty of up to 25 years.

Connect PV modules quickly and easily to IQ8 Series Microinverters using the included Q-DCC-2 adapter cable with plug-n-play MC4 connectors.

UL CERTIFIED SAFETY

IQ8 Series Microinverters are UL listed as PV Rapid Shutdown Equipment and conform with various regulations, when installed according to manufacturer's instructions.

Easy to install

- Lightweight and compact with plug-n-play connectors
- Power Line Communication (PLC) between components
- Faster installation with simple two-wire cabling

High productivity and reliability

- Produce power even when the grid is down*
- More than one million cumulative hours of testing
- Class II double-insulated enclosure
- Optimized for the latest high-powered PV modules

Microgrid-forming

- Complies with the latest advanced grid support**
- Remote automatic updates for the latest grid requirements
- Configurable to support a wide range of grid profiles
- Meets CA Rule 21 (UL 1741-SA) and IEEE 1547:2018 (UL 1741-SB)

Note:

IQ8 Microinverters cannot be mixed together with previous generations of Enphase microinverters (IQ7 Series, IQ6 Series, etc) in the same system.

*Only when installed with IQ System Controller 2, meets UL 1741.
**IQ8M and IQ8A support split-phase, 240V installations only.

IQ8M and IQ8A Microinverters

INPUT DATA (DC)		IQ8M-72-2-US	IQ8A-72-2-US
Commonly used module pairings[1]	W	260 – 460	295 – 500
Module compatibility		54-cell / 108 half-cell, 60-cell / 120 half-cell, 66-cell / 132 half-cell and 72-cell / 144 half-cell	
MPPT voltage range	V	30 – 45	32 – 45
Operating range	V	16 – 58	
Min. / Max. start voltage	V	22 / 58	
Max. input DC voltage	V	60	
Max. continuous input DC current	A	12	
Max. input DC short-circuit current	A	25	
Max. module I_{sc}	A	20	
Overvoltage class DC port		II	
DC port backfeed current	mA	0	
PV array configuration		1 x 1 Ungrounded array; No additional DC side protection required; AC side protection requires max 20A per branch circuit	

OUTPUT DATA (AC)		IQ8M-72-2-US	IQ8A-72-2-US
Peak output power	VA	330	366
Max. continuous output power	VA	325	349
Nominal (L-L) voltage / range[2]	V	240 / 211 – 264	
Max. continuous output current	A	1.35	1.45
Nominal frequency	Hz	60	
Extended frequency range	Hz	47 – 68	
AC short circuit fault current over 3 cycles	Arms	2	
Max. units per 20 A (L-L) branch circuit[3]		11	
Total harmonic distortion		<5%	
Overvoltage class AC port		III	
AC port backfeed current	mA	30	
Power factor setting		1.0	
Grid-tied power factor (adjustable)		0.85 leading – 0.85 lagging	
Peak efficiency	%	97.8	97.7
CEC weighted efficiency	%	97.5	97
Night-time power consumption	mW	60	

MECHANICAL DATA	
Ambient temperature range	-40°C to +60°C (-40°F to +140°F)
Relative humidity range	4% to 100% (condensing)
DC Connector type	MC4
Dimensions (H x W x D)	212 mm (8.3”) x 175 mm (6.9”) x 30.2 mm (1.2”)
Weight	1.08 kg (2.38 lbs)
Cooling	Natural convection – no fans
Approved for wet locations	Yes
Pollution degree	PD3
Enclosure	Class II double-insulated, corrosion resistant polymeric enclosure
Environ. category / UV exposure rating	NEMA Type 6 / outdoor

COMPLIANCE	
Certifications	CA Rule 21 (UL 1741-SA), UL 62109-1, IEEE 1547:2018 (UL 1741-SB), FCC Part 15 Class B, ICES-0003 Class B, CAN / CSA-C22.2 NO. 107.1-01 This product is UL Listed as PV Rapid Shutdown Equipment and conforms with NEC 2014, NEC 2017, and NEC 2020 section 690.12 and C22.1-2018 Rule 64-218 Rapid Shutdown of PV Systems, for AC and DC conductors, when installed according to manufacturer’s instructions.

(1) Pairing PV modules with wattage above the limit may result in additional clipping losses. See the compatibility calculator at https://link.enphase.com/module-compatibility. (2) Nominal voltage range can be extended beyond nominal if required by the utility. (3) Limits may vary. Refer to local requirements to define the number of microinverters per branch in your area.