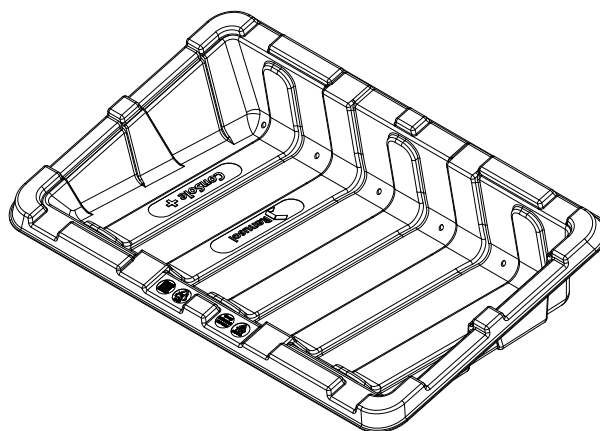


Technische fiche CS+



Algemeen

Systeem	Vrijstaand geballast PV-montagesysteem
Leveringsomvang	CS+ Tray, montageprofielen en bevestigingsmateriaal
Productgarantie	10 jaar
Toepassingsgebied	Plat dak, stortplaats, open ruimtes, groenvoorzieningen (behalve blootstelling aan waterstofsulfide)
Afmetingen	breedte: 1.730mm, diepte: 1.100mm, hoogte: 390mm
Dakafschot	max. 5° zonder aanvullende maatregelen
Omgevingstemperatuurbereik	-30°C tot +50°C

Systeemeigenschappen

Uitlijning	Oost-West, Zuid
Materiaal	HDPE, aluminium en roestvrij staal
Modulehelling	15°
Systeemgewicht ca.	≈ 7,9 kg
Wrijvingscoëfficiënt	$\mu = 0,5$ van het hoogtegebied moet ter plaatse worden verzekerd.
Minimale Randabstand	1,5 m

Modulecompatibiliteit

Type	Ingelaste PV-modules met montagegat
Modullänge	1550 mm - 1730 mm
Module-oriëntatie	Horizontaal/Landschapsformaat
Afstand montagegaten	lange Seite 690 - 1.180 mm, kurze Seite: 895 - 1.014

Certificeringen

TÜV (DE)	ID1111212485
Windbelasting	Bepaald door de windtunneltests van Ruscheweyh Consult GmbH
Brandwerendheid	MPA Dresden
UV-bestendigheid	KIMW Kunststoff Institut Lüdenscheid

Diensten

Interpretatie	Levering door Renusol
Ballastplan	Levering door Renusol

CS+ 01 2020

NL | Renusol Technische fiche

Technische wijzigingen, fouten en drukfouten voorbehouden.

Multi-MPPT String Inverter for 1000 Vdc System



HIGH YIELD

- 9 MPPTs with max. efficiency 98.7%
- Compatible with bifacial module
- Built-in PID recovery function optional



EASY O&M

- Touch free commissioning and remote firmware upgrade
- Online IV curve scan and diagnosis
- Fuse free design with smart string current monitoring



LOW COST

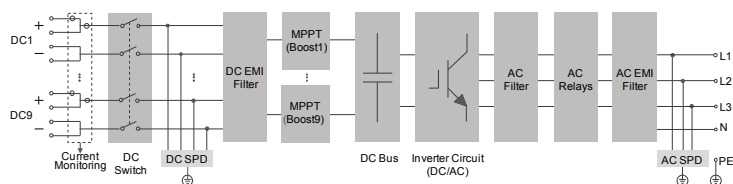
- Compatible with Al and Cu AC cables
- DC 2 in 1 connection enabled
- Q at night function



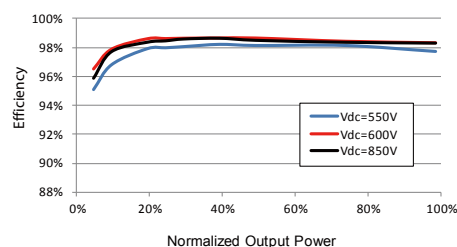
PROVEN SAFETY

- IP66 and C5 protection
- Type II SPD for both DC and AC
- Compliant with global safety and grid code

CIRCUIT DIAGRAM



EFFICIENCY CURVE



Type designation	SG110CX
Input (DC)	
Max. PV input voltage	1100 V
Min. PV input voltage / Startup input voltage	200 V / 250 V
Nominal PV input voltage	585 V
MPP voltage range	200 – 1000 V
MPP voltage range for nominal power	550V – 850 V
No. of independent MPP inputs	9
Max. number of PV strings per MPPT	2
Max. PV input current	26 A * 9
Max. current for input connector	30 A
Max. DC short-circuit current	40 A * 9
Output (AC)	
AC output power	110 kVA @ 45 °C / 100 kVA @ 50 °C
Max. AC output current	158.8 A
Nominal AC voltage	3 / N / PE, 400 V
AC voltage range	320 – 460 V
Nominal grid frequency / Grid frequency range	50 Hz / 45 – 55 Hz, 60 Hz / 55 – 65 Hz
THD	< 3 % (at nominal power)
DC current injection	< 0.5 % In
Power factor at nominal power / Adjustable power factor	> 0.99 / 0.8 leading – 0.8 lagging
Feed-in phases / connection phases	3 / 3
Efficiency	
Max. efficiency	98.7 %
Euro. efficiency	98.5 %
Protection	
DC reverse connection protection	Yes
AC short circuit protection	Yes
Leakage current protection	Yes
Grid monitoring	Yes
Ground fault monitoring	Yes
DC switch / AC switch	Yes / No
PV String current monitoring	Yes
Q at night function	Yes
PID recovery function	Optional
Overvoltage protection	DC Type II / AC Type II
General Data	
Dimensions (W*H*D)	1051*660*362.5 mm
Weight	85 kg
Isolation method	Transformerless
Ingress protection rating	IP66
Night power consumption	< 2W
Operating ambient temperature range	-30 to 60 °C (> 50 °C derating)
Allowable relative humidity range (non-condensing)	0 – 100 %
Cooling method	Smart forced air cooling
Max. operating altitude	4000 m (> 3000 m derating)
Display	LED, Bluetooth+APP
Communication	RS485 / Optional: Wi-Fi, Ethernet
DC connection type	MC4 (Max. 6 mm ²)
AC connection type	OT terminal (Max. 240 mm ²)
Compliance	IEC 62109, IEC 61727, IEC 62116, IEC 60068, IEC 61683, VDE-AR-N 4110:2018, VDE-AR-N 4120:2018, IEC 61000-6-3, EN 50438, AS/NZS 4777.2:2015, CEI 0-21, VDE 0126-1-1/A1 VFR 2014, UTE C15-712-1:2013, DEWA
Grid Support	Q at night function, LVRT, HVRT, active & reactive power control and power ramp rate control



Specyfikacja techniczna

Materiał	2059484
Parametr	Wartość
Trafo Model	MDT
Typ	TNOSCTN 2000/10 PNS
Pole transformator	Nein
Techn. Dokumentation	02.05.2C-24-24644/M
ECO-design Produkt	Ja-2015
NBM	Ja
Nach techn. Dokumentation	02.05.2C-24-24644
Maßbild Nr	24644_M1
Standard	DIN EN 50464
Standard	1LPL100102-GW NBM DE
Bemessungsfrequenz [Hz]	50 HZ
Phasen	3
Bemessungsleistung OS [kVA]	2000 KVA
Bemessungsleistung US 1 [kVA]	2000 KVA
Bemessungsoberspannung 1 [V]	10000 V
Anzapfung	+2x2.5/-2x2.5
Spannungsreihe OS	LI75AC28
Bemessungsunterspannung 1 [V]	400 V
Spannungsreihe US	AC3
Schaltgruppe	Dyn5
Kurzschlußspannung [%]	6
Kurzschlußspannungstoleranz	+/-10
Leerlaufverluste [W]	1450 W
NLL nach EN 50464	Ao
Leerlaufverlustetoleranz	0
Kurzschlußverluste (75°C) [W]	18000 W
LL nach EN 50464	BK
Kurzschlusverlustetoleranz [%]	0
Toleranz für gesamte Verl.[%]	0
Leerlaufstrom [%]	0,37
Geräusche	LWA
Schalldruckpegel [dB(A)]	60
Geräuschetoleranz	0
Umgebungstemperatur [C]	40
Übertemperatur Öl [C]	60
Übertemperatur Wicklung [C]	65
Kühlungsart	ONAN
Gewicht [kg]	3914 KG

Specyfikacja techniczna

Materiał	2059484
Parametr	Wartość
Kupfergewicht [kg]	0,0 KG
Aluminiumgewicht [kg]	571,5 KG
Ölgewicht [kg]	685 KG
Kernmasse [kg]	1515,0 KG
Aushebegewicht [kg]	2370 KG
Länge [mm]	1791 MM
Breite [mm]	1180 MM
Höhe [mm]	1952 MM
Deckelhöhe [mm]	1610 MM
Wicklungsmaterial OS	AI
Wicklungsmaterial US	AI
Kern-Typ	STACKED
Kernmaterials	RGO
Kesseltyp	Wellen
Aufstellungshöhe	1000 M
Fahrrollenabstand [mm]	1070 MM
Fahrrollenabstand [mm]	1070 MM
Fahrrollenmaterial	METAL
Fahrrollendurchmesser [mm]	200 MM
Anstrichaufbau	02-32-017
Farbe	7033
Öl	Mineral Nytro Taurus
Durchführung OS	PLUG-IN EN 50180 Interface A.
Durchführung US1	1/3150 EN 50386
Klemmen an den US-Seite	1/3150 (DIN 42530)
Hermetikschutz	RIS
Lage des Hermetikschutzes	Gemas Kundenspezifikation I
Hermetikschutztasche	Ja
Thermometertasche [STK]	2
Tank Corner Coolers	X
Vorlaeufiges massbild	T

HyPro STP430S - B72/Vnhy STP425S - B72/Vnhy STP420S - B72/Vnhy



430 Watt

MONOCRYSTALLINE SOLAR MODULE



Features



High power output

Compared to normal module, the power output can increase 5W-10W



High PID resistant

Advanced cell technology and qualified materials lead to high resistance to PID



Positive tolerance

Positive tolerance of up to 5W delivers higher output reliability



Suntech current sorting process

System output maximized by reducing mismatch losses up to 2% with modules sorted & packaged by amperage



Extended load tests

Module certified to withstand front side maximum static test load (5400 Pascal) and rear side maximum static test loads (3800 Pascal) *



Withstanding harsh environment

Reliable quality leads to a better sustainability even in harsh environment like desert, farm and coastline

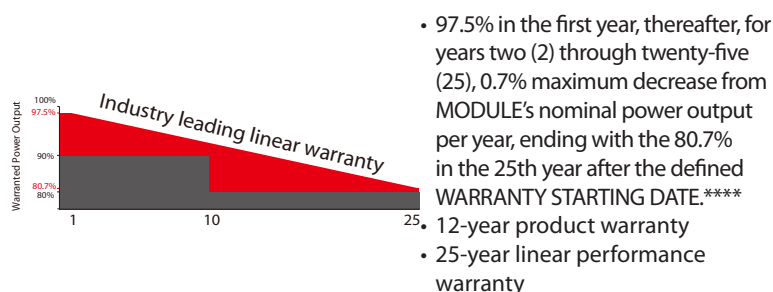
Certifications and standards:
IEC 61215, IEC 61730, conformity to CE



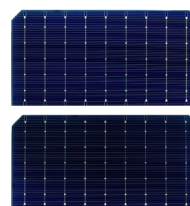
Trust Suntech to Deliver Reliable Performance Over Time

- World-class manufacturer of crystalline silicon photovoltaic modules
- Unrivaled manufacturing capacity and world-class technology
- Rigorous quality control meeting the highest international standards: ISO 9001: 2008, ISO 14001: 2004 and ISO17025: 2005
- Regular independently checked production process from international accredited institute/company
- Tested for harsh environments (salt mist, ammonia corrosion and sand blowing testing: IEC 61701, IEC 62716, DIN EN 60068-2-68)***
- Long-term reliability tests
- 2 x 100% EL inspection ensuring defect-free

Industry-leading Warranty based on nominal power



Special Cell Design



The unique cell design leads to reduced electrodes resistance and smaller current, thus enables higher fill factor. Meanwhile, it can reduce losses of mismatch and cell wear, and increase total reflection.

Anti-Glaring glass



Using high quality and low reflective glass, reduce the typical direct light reflection of about 10% on conventional glass down to less than 3%. Especially in sensitive utility project locations like airports, highways along railways or for noise reductions walls. Avoids costs for counter measurements of blending solar modules.

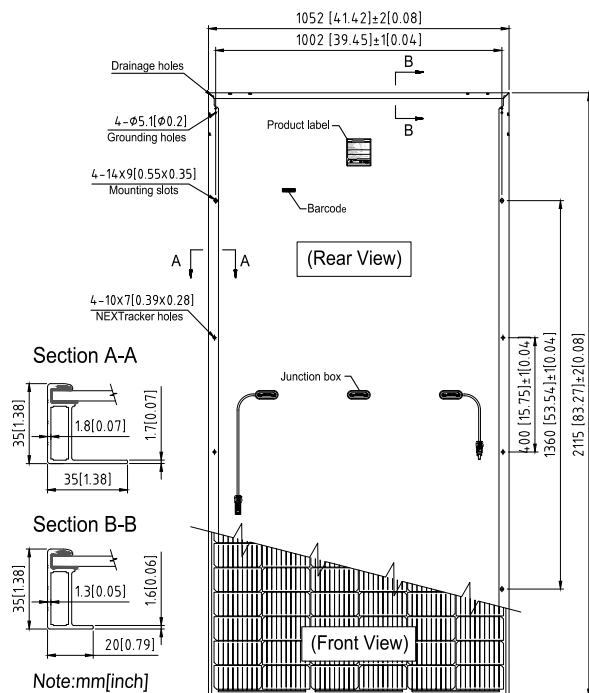
* Please refer to Suntech Standard Module Installation Manual for details. **WEEE only for EU market.

*** Please refer to Suntech Product Near-coast Installation Manual for details. **** Please refer to Suntech Product Warranty for details.

HyPro STP430S - B72/Vnhy

STP425S - B72/Vnhy

STP420S - B72/Vnhy



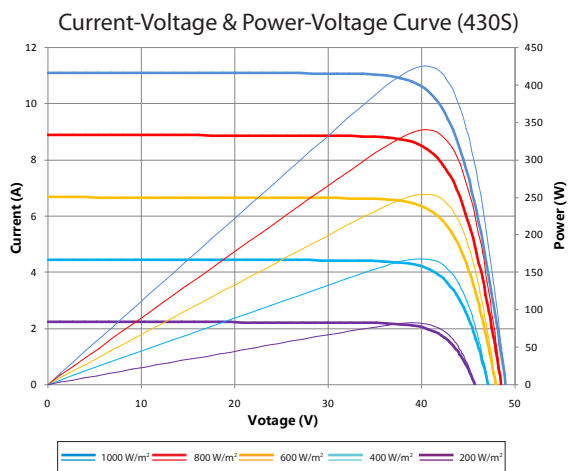
Electrical Characteristics

STC	STP430S-B72/Vnhy	STP425S-B72/Vnhy	STP420S-B72/Vnhy
Maximum Power at STC (Pmax)	430 W	425 W	420 W
Optimum Operating Voltage (Vmp)	40.6 V	40.4 V	40.2 V
Optimum Operating Current (Imp)	10.60 A	10.52 A	11.45 A
Open Circuit Voltage (Voc)	49.2 V	49 V	48.8 V
Short Circuit Current (Isc)	11.19 A	11.11 A	11.04 A
Module Efficiency	19.3%	19.1%	18.9%
Operating Module Temperature	-40 °C to +85 °C		
Maximum System Voltage	1500 V DC (IEC)		
Maximum Series Fuse Rating	20 A		
Power Tolerance	0/+5W		

STC: Irradiance 1000 W/m², module temperature 25 °C, AM=1.5;
Tolerance of Pmax is within +/- 3% and tolerances of Voc and Isc are within +/- 5%.

NMOT	STP430S-B72/Vnhy	STP425S-B72/Vnhy	STP420S-B72/Vnhy
Maximum Power at NMOT (Pmax)	323.0 W	318.9 W	315.1 W
Optimum Operating Voltage (Vmp)	38.0 V	37.8 V	37.6 V
Optimum Operating Current (Imp)	8.51 A	8.44 A	8.39 A
Open Circuit Voltage (Voc)	46.2 V	46.0 V	45.8 V
Short Circuit Current (Isc)	9.03 A	8.96 A	8.91 A

NMOT: Irradiance 800 W/m², ambient temperature 20 °C, AM=1.5, wind speed 1 m/s.



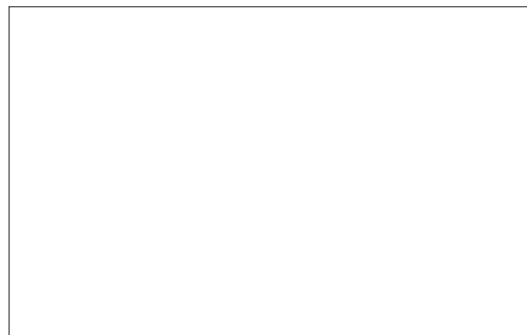
Temperature Characteristics

Nominal Module Operating Temperature (NMOT)	42±2°C
Temperature Coefficient of Pmax	-0.37 %/°C
Temperature Coefficient of Voc	-0.304 %/°C
Temperature Coefficient of Isc	0.050 %/°C

Mechanical Characteristics

Solar Cell	Monocrystalline silicon 166 mm
No. of Cells	144 (6 × 24)
Dimensions	2115 × 1052 × 35 mm (83.3 × 41.4 × 1.4 inches)
Weight	24.0 kgs (52.9 lbs.)
Front Glass	3.2 mm (0.13 inches) tempered glass
Frame	Anodized aluminium alloy
Junction Box	IP68 rated (3 bypass diodes)
Output Cables	4.0 mm ² (0.006 inches ²), symmetrical lengths (-) 1400 mm (55.1 inches) and (+) 1400 mm (55.1 inches)
Connectors	MC4 EVO2, Cable 015

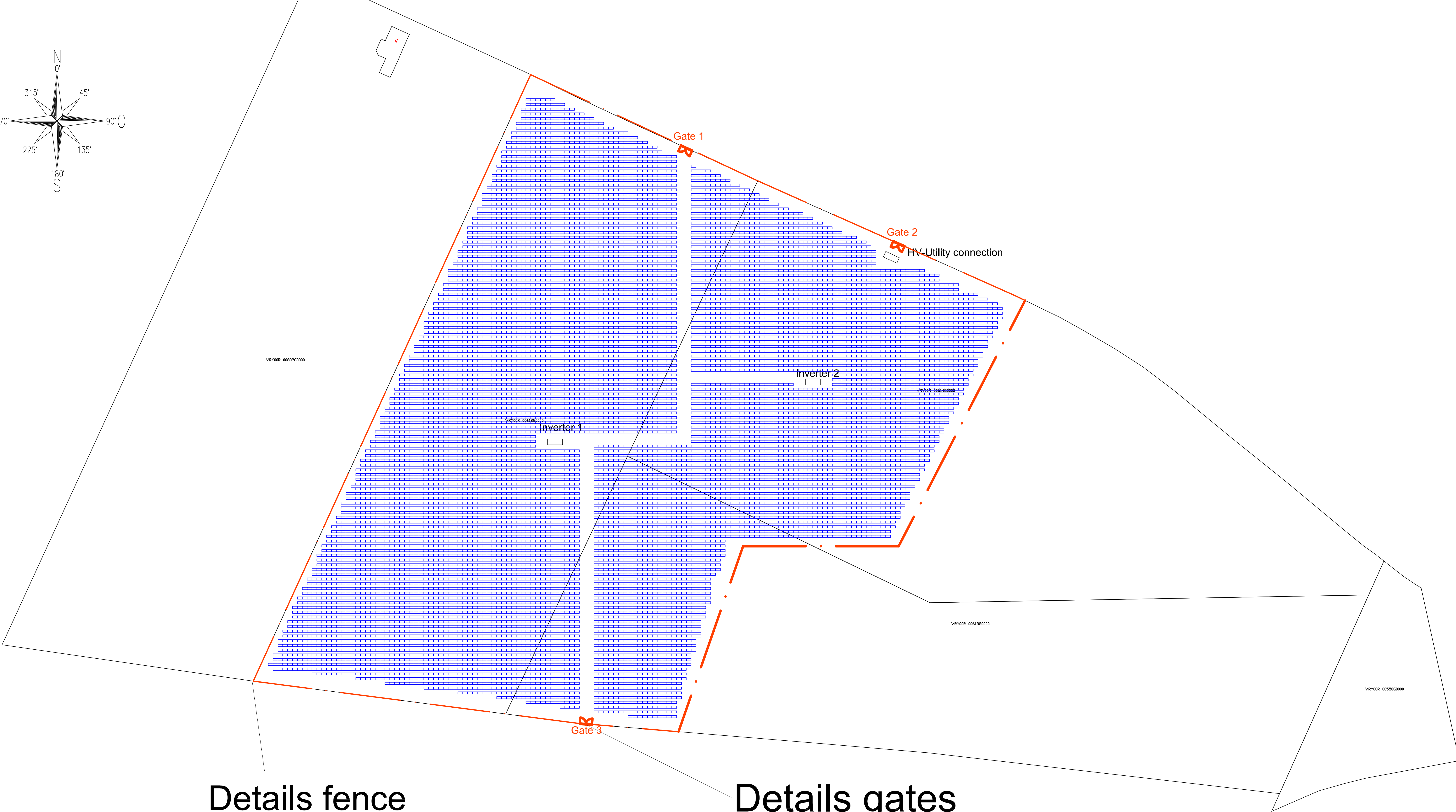
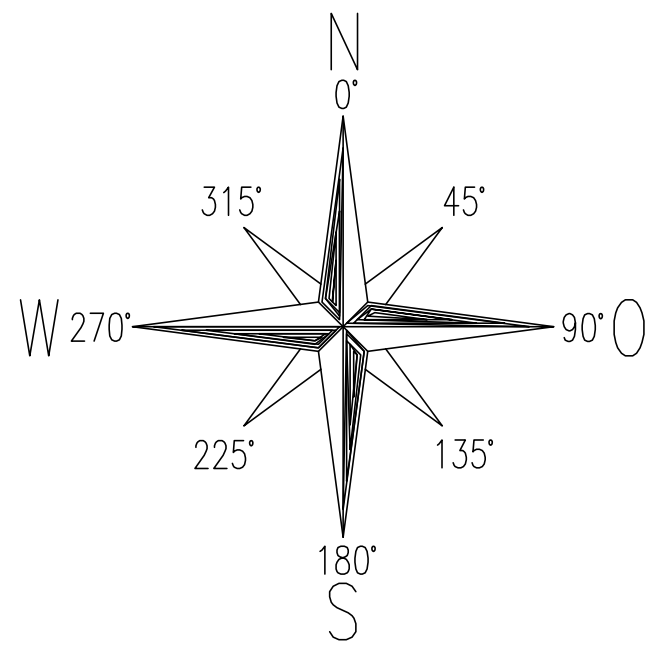
Dealer information



Packing Configuration

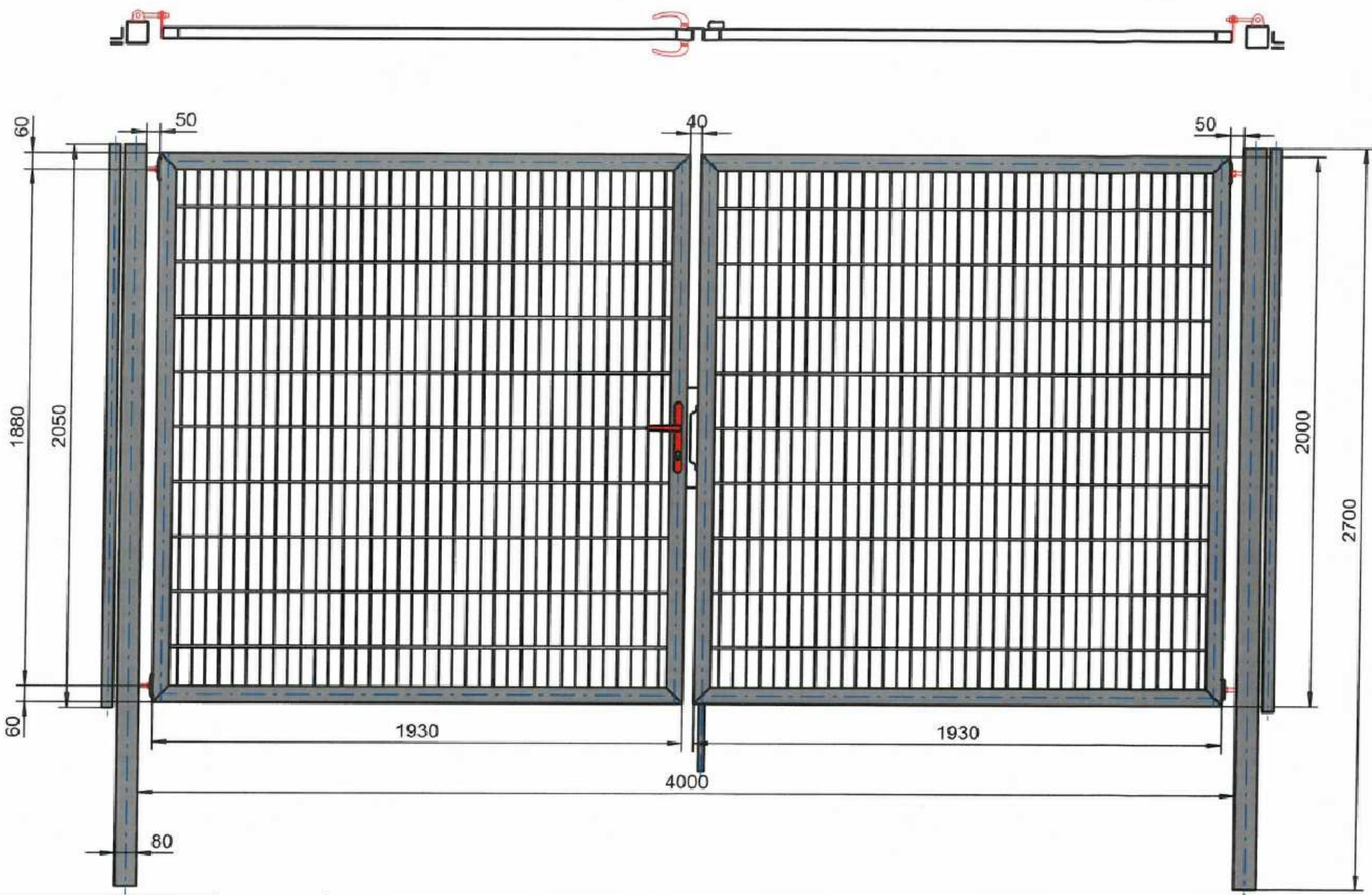
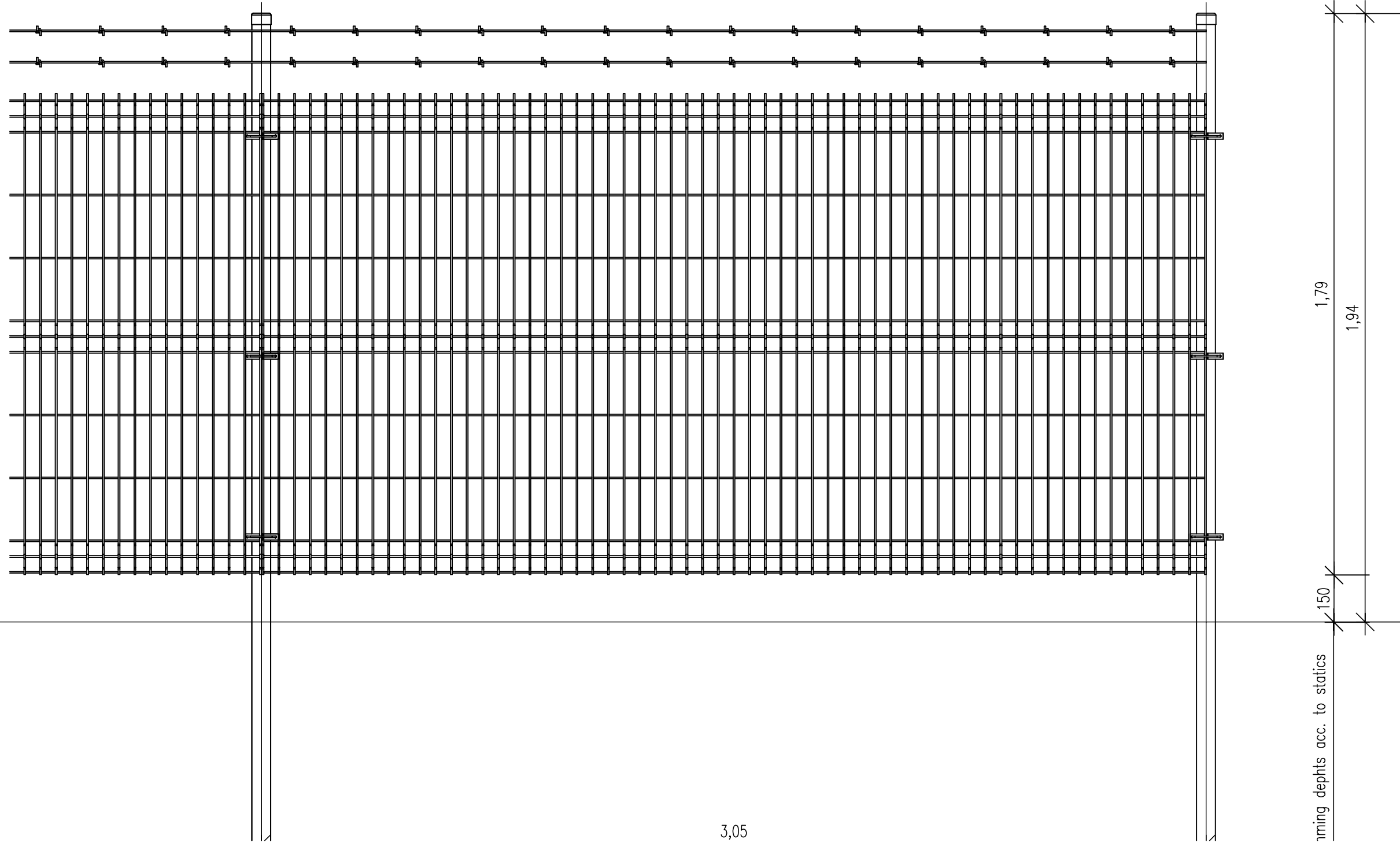
Container	20' GP	40' HC
Pieces per pallet	31	31
Pallets per container	5	22
Pieces per container	155	682

Information on how to install and operate this product is available in the installation instruction. All values indicated in this data sheet are subject to change without prior announcement. The specifications may vary slightly. All specifications are in accordance with standard EN 50380. Color differences of the modules relative to the figures as well as discolorations of/in the modules which do not impair their proper functioning are possible and do not constitute a deviation from the specification.



Details fence
Material: Galvanized steel
Foundation: Ramming into ground

Details gates



DESIGN PLANNING

System data

Module layout:

	Terrain [m²]	Modules [pcs.]	Power [kWp]
Phase 1	44.000	10.675	3.522,75

Power density 0,080 kWp/m²

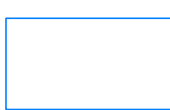
Inverter configuration:

1 x SMA MVPS 1800SC
1 x SMA MVPS 1000SC

Construction data

Height above sea level	23 m
Longitude/latitude	51°30'55"N, 06°00'55"E
Wind zone	Zone 3, q= 0,54 kN/m²
Snow zone	s= 0,56 kN/m²
Module type	STP 330-24/Vfw
Global irradiation hor.	991 kWh / m²
Irradiation module	1.084 kWh / m²
Performance Ratio	83,5 %
Specific energy yield	905 kWh/kWp
Shading angle	13°
Azimuth	180°
Row to row distance	1,93 m
Module inclination	15°
Mounting structure	Renusol Console
Basis for design	Google Earth

Explanation:

 PV-Module

 Fence

Project: Ground mounted PV-system Venray, Blakterweg, Netherlands
Module layout-Phase 1



Index	Date	Changes
-	22.03.18	Initial layout
d	16.08.18	Changed module power
e	07.02.19	Changed layout at east border

Projectnr.:	1801002C
File:	FA_Blg
Index:	e
Date:	07.02.2019
Scale:	-
Drawn by:	IR
Checked by:	XX