



PROGETTO PER LA REALIZZAZIONE
DI UN IMPIANTO AGRIVOLTAICO DENOMINATO
" BELPASSO" CON POTENZA IMPEGNATA AI FINI DELLA
CONNESSIONE PARI A 33 MW, SITO
NEL COMUNE DI BELPASSO (CT)

Codice elaborato	Data	Livello progettazione	Emesso	Verificato	Approvato	REV.
25_PD.25	Febbraio 2024	Definitivo				00

ELABORATO:

DATASHEET MAIN EQUIPMENT

SOCIETA' PROPONENTE:



R. Power Italy Helios S.R.L.
Via Giuseppe Ripamonti, 44
CAP 20100 - Milano

TIMBRI E FIRME:

PROGETTAZIONE:



E-PRIMA

E-PRIMA S.R.L.
Via Manganelli 20/G
95030 Nicolosi (CT)
tel:095914116 - cell:3339533392
email:info@e-prima.eu

TIMBRI E FIRME:

ORIENTAMENTO



SCALA METRICA

1:2000



FRONT

BACK

TOPBiHiKu7

BIFACIAL TOPCON

650 W ~ 720 W

CS7N-650 | 655 | 660 | 665 | 670 | 675 | 680 | 685 | 690 | 695 | 700 | 705 | 710 | 715 | 720TB-AG (IEC1000 V)

CS7N-650 | 655 | 660 | 665 | 670 | 675 | 680 | 685 | 690 | 695 | 700 | 705 | 710 | 715 | 720TB-AG (IEC1500 V)

MORE POWER



Module power up to 720 W
Module efficiency up to 23.2 %



Up to 85% Power Bifaciality,
more power from the back side



Excellent anti-LeTID & anti-PID performance.
Low power degradation, high energy yield



Lower temperature coefficient (Pmax): -0.30%/°C,
increases energy yield in hot climate



Lower LCOE & system cost

MORE RELIABLE



Minimizes micro-crack impacts



Heavy snow load up to 5400 Pa,
wind load up to 2400 Pa*



Enhanced Product Warranty on Materials and Workmanship*



Linear Power Performance Warranty*

1st year power degradation no more than 1%
Subsequent annual power degradation no more than 0.4%

*According to the applicable Canadian Solar Limited Warranty Statement.

MANAGEMENT SYSTEM CERTIFICATES*

ISO 9001:2015 / Quality management system
ISO 14001:2015 / Standards for environmental management system
ISO 45001: 2018 / International standards for occupational health & safety

PRODUCT CERTIFICATES*

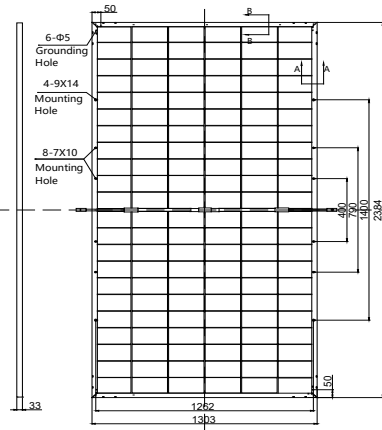
* The specific certificates applicable to different module types and markets will vary, and therefore not all of the certifications listed herein will simultaneously apply to the products you order or use. Please contact your local Canadian Solar sales representative to confirm the specific certificates available for your Product and applicable in the regions in which the products will be used.

CSI Solar Co., Ltd. is committed to providing high quality solar photovoltaic modules, solar energy and battery storage solutions to customers. The company was recognized as the No. 1 module supplier for quality and performance/price ratio in the IHS Module Customer Insight Survey. Over the past 20 years, it has successfully delivered over 70 GW of premium-quality solar modules across the world.

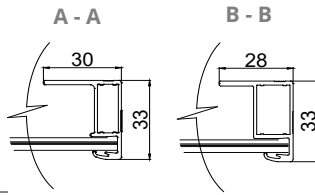
* For detailed information, please refer to the Installation Manual.

ENGINEERING DRAWING (mm)

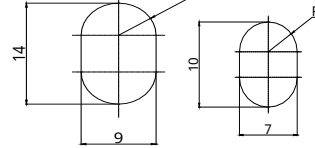
Rear View



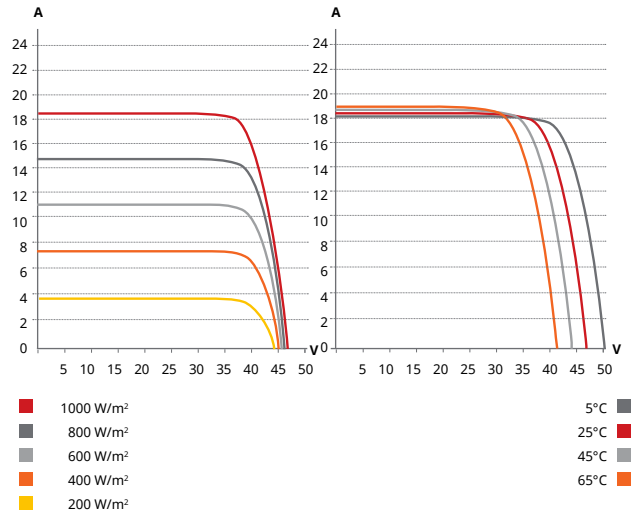
Frame Cross Section



Mounting Hole



CS7N-680TB-AG / I-V CURVES



ELECTRICAL DATA | STC*

	Nominal Max. Power (Pmax)	Opt. Operating Voltage (Vmp)	Opt. Operating Current (Imp)	Open Circuit Voltage (Voc)	Short Circuit Current (Isc)	Module Efficiency	
CS7N-650TB-AG	650 W	38.0 V	17.11 A	45.9 V	17.99 A	20.9%	
Bifacial Gain**	5%	683 W	38.0 V	17.97 A	45.9 V	18.89 A	22.0%
	10%	715 W	38.0 V	19.76 A	45.9 V	19.79 A	23.0%
	20%	780 W	38.0 V	20.53 A	45.9 V	21.59 A	25.1%
CS7N-655TB-AG	655 W	38.2 V	17.15 A	46.1 V	18.04 A	21.1%	
Bifacial Gain**	5%	688 W	38.2 V	18.01 A	46.1 V	18.94 A	22.1%
	10%	721 W	38.2 V	19.81 A	46.1 V	19.84 A	23.2%
	20%	786 W	38.2 V	20.58 A	46.1 V	21.65 A	25.3%
CS7N-660TB-AG	660 W	38.4 V	17.19 A	46.3 V	18.09 A	21.2%	
Bifacial Gain**	5%	693 W	38.4 V	18.05 A	46.3 V	18.99 A	22.3%
	10%	726 W	38.4 V	19.85 A	46.3 V	19.90 A	23.4%
	20%	792 W	38.4 V	20.63 A	46.3 V	21.71 A	25.5%

* Under Standard Test Conditions (STC) of irradiance of 1000 W/m², spectrum AM 1.5 and cell temperature of 25°C. Measurement uncertainty: ±3% (Pmax).

** Bifacial Gain: The additional gain from the back side compared to the power of the front side at the standard test condition. It depends on mounting (structure, height, tilt angle etc.) and albedo of the ground.

ELECTRICAL DATA

Operating Temperature	-40°C ~ +85°C
Max. System Voltage	1500 V (IEC/UL) or 1000 V (IEC/UL)
Module Fire Performance	TYPE 29 (UL 61730) or CLASS C (IEC61730)
Max. Series Fuse Rating	35 A
Application Classification	Class A
Power Tolerance	0 ~ + 5 W
Power Bifaciality*	80 %

* Power Bifaciality = $P_{max_{rear}} / P_{max_{front}}$, both $P_{max_{rear}}$ and $P_{max_{front}}$ are tested under STC, Bifaciality Tolerance: ± 5 %

ELECTRICAL DATA | NMOT*

	Nominal Max. Power (Pmax)	Opt. Operating Voltage (Vmp)	Opt. Operating Current (Imp)	Open Circuit Voltage (Voc)	Short Circuit Current (Isc)
CS7N-650TB-AG	491 W	35.9 V	13.68 A	43.4 V	14.51 A
CS7N-655TB-AG	494 W	36.1 V	13.72 A	43.6 V	14.55 A
CS7N-660TB-AG	498 W	36.2 V	13.75 A	43.8 V	14.59 A

* Under Nominal Module Operating Temperature (NMOT), irradiance of 800 W/m², spectrum AM 1.5, ambient temperature 20°C, wind speed 1 m/s.

MECHANICAL DATA

Specification	Data
Cell Type	TOPCon cells
Cell Arrangement	132 [2 x (11 x 6)]
Dimensions	2384 x 1303 x 33 mm (93.9 x 51.3 x 1.30 in)
Weight	37.8 kg (83.3 lbs)
Front Glass	2.0 mm heat strengthened glass with anti-reflective coating
Back Glass	2.0 mm heat strengthened glass
Frame	Anodized aluminium alloy
J-Box	IP68, 3 bypass diodes
Cable	4.0 mm ² (IEC), 10 AWG (UL)
Cable Length (Including Connector)	460 mm (18.1 in) (+) / 340 mm (13.4 in) (-) or customized length*
Connector	T6 (IEC 1500V) or PV-KST4-EVO2/XY, PV-KBT4-EVO2/XY (IEC 1500V) or PV-KST4-EVO2A/xy, PV-KBT4-EVO2A/xy (IEC 1500V)
Per Pallet	33 pieces
Per Container (40' HQ)	561 pieces

* For detailed information, please contact your local Canadian Solar sales and technical representatives.

TEMPERATURE CHARACTERISTICS

Specification	Data
Temperature Coefficient (Pmax)	-0.30 % / °C
Temperature Coefficient (Voc)	-0.26 % / °C
Temperature Coefficient (Isc)	0.05 % / °C
Nominal Module Operating Temperature	41 ± 3°C

PARTNER SECTION

* The specifications and key features contained in this datasheet may deviate slightly from our actual products due to the on-going innovation and product enhancement. CSI Solar Co., Ltd. reserves the right to make necessary adjustment to the information described herein at any time without further notice.

Please be kindly advised that PV modules should be handled and installed by qualified people who have professional skills and please carefully read the safety and installation instructions before using our PV modules.

Canadian Solar MSS (Australia) Pty Ltd.

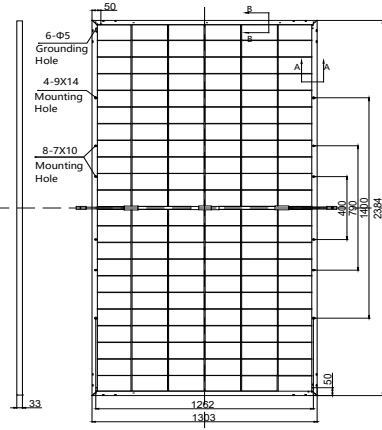
333 Drummond Street, Carlton VIC 3053, Australia, sales.au@csisolar.com, www.csisolar.com/au

October 2022. All rights reserved, PV Module Product Datasheet V1.1C1_AU

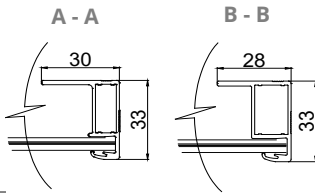
* Manufactured and assembled in China, Thailand and Vietnam.

ENGINEERING DRAWING (mm)

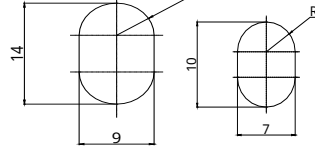
Rear View



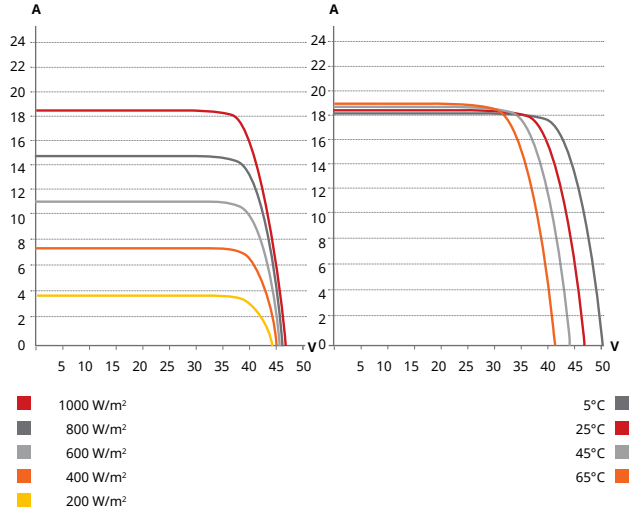
Frame Cross Section



Mounting Hole



CS7N-680TB-AG / I-V CURVES



ELECTRICAL DATA | STC*

	Nominal Max. Power (Pmax)	Opt. Operating Voltage (Vmp)	Opt. Operating Current (Imp)	Open Circuit Voltage (Voc)	Short Circuit Current (Isc)	Module Efficiency
CS7N-665TB-AG	665 W	38.6 V	17.23 A	46.5 V	18.14 A	21.4%
Bifacial Gain**	5%	698 W	38.6 V	18.09 A	46.5 V	22.5%
	10%	732 W	38.6 V	18.97 A	46.5 V	23.6%
	20%	798 W	38.6 V	20.68 A	46.5 V	25.7%
CS7N-670TB-AG	670 W	38.8 V	17.27 A	46.7 V	18.19 A	21.6%
Bifacial Gain**	5%	704 W	38.8 V	18.15 A	46.7 V	22.7%
	10%	737 W	38.8 V	19.00 A	46.7 V	23.7%
	20%	804 W	38.8 V	20.72 A	46.7 V	25.9%
CS7N-675TB-AG	675 W	39.0 V	17.31 A	46.9 V	18.24 A	21.7%
Bifacial Gain**	5%	709 W	39.0 V	18.19 A	46.9 V	22.8%
	10%	743 W	39.0 V	19.04 A	46.9 V	23.9%
	20%	810 W	39.0 V	20.77 A	46.9 V	26.1%
CS7N-680TB-AG	680 W	39.2 V	17.35 A	47.1 V	18.29 A	21.9%
Bifacial Gain**	5%	714 W	39.2 V	18.22 A	47.1 V	23.0%
	10%	748 W	39.2 V	19.09 A	47.1 V	24.1%
	20%	816 W	39.2 V	20.82 A	47.1 V	26.3%
CS7N-685TB-AG	685 W	39.4 V	17.39 A	47.3 V	18.34 A	22.1%
Bifacial Gain**	5%	719 W	39.4 V	18.26 A	47.3 V	23.1%
	10%	754 W	39.4 V	19.14 A	47.3 V	24.3%
	20%	822 W	39.4 V	20.87 A	47.3 V	26.5%
CS7N-690TB-AG	690 W	39.6 V	17.43 A	47.5 V	18.39 A	22.2%
Bifacial Gain**	5%	725 W	39.6 V	18.31 A	47.5 V	23.3%
	10%	759 W	39.6 V	19.17 A	47.5 V	24.4%
	20%	828 W	39.6 V	20.92 A	47.5 V	26.7%

* Under Standard Test Conditions (STC) of irradiance of 1000 W/m², spectrum AM 1.5 and cell temperature of 25°C. Measurement uncertainty: ±3 % (Pmax).
 ** Bifacial Gain: The additional gain from the back side compared to the power of the front side at the standard test condition. It depends on mounting (structure, height, tilt angle etc.) and albedo of the ground.

ELECTRICAL DATA | NMOT*

	Nominal Max. Power (Pmax)	Opt. Operating Voltage (Vmp)	Opt. Operating Current (Imp)	Open Circuit Voltage (Voc)	Short Circuit Current (Isc)
CS7N-665TB-AG	502 W	36.4 V	13.78 A	44.0 V	14.63 A
CS7N-670TB-AG	506 W	36.6 V	13.81 A	44.1 V	14.67 A
CS7N-675TB-AG	510 W	36.8 V	13.84 A	44.3 V	14.71 A
CS7N-680TB-AG	513 W	37.0 V	13.88 A	44.5 V	14.75 A
CS7N-685TB-AG	517 W	37.2 V	13.91 A	44.7 V	14.79 A
CS7N-690TB-AG	521 W	37.4 V	13.94 A	44.9 V	14.83 A

* Under Nominal Module Operating Temperature (NMOT), irradiance of 800 W/m² spectrum AM 1.5, ambient temperature 20°C, wind speed 1 m/s.

MECHANICAL DATA

Specification	Data
Cell Type	TOPCon cells
Cell Arrangement	132 [2 x (11 x 6)]
Dimensions	2384 x 1303 x 33 mm (93.9 x 51.3 x 1.30 in)
Weight	37.8 kg (83.3 lbs)
Front Glass	2.0 mm heat strengthened glass with anti-reflective coating
Back Glass	2.0 mm heat strengthened glass
Frame	Anodized aluminium alloy
J-Box	IP68, 3 bypass diodes
Cable	4.0 mm ² (IEC), 10 AWG (UL)
Cable Length (Including Connector)	460 mm (18.1 in) (+) / 340 mm (13.4 in) (-) or customized length*
Connector	T6 (IEC 1500V) or PV-KST4-EVO2/XY, PV-KBT4-EVO2/XY (IEC 1500V) or PV-KST4-EVO2A/xy, PV-KBT4-EVO2A/xy (IEC 1500V)
Per Pallet	33 pieces
Per Container (40' HQ)	561 pieces

* For detailed information, please contact your local Canadian Solar sales and technical representatives.

ELECTRICAL DATA

Operating Temperature	-40°C ~ +85°C
Max. System Voltage	1500 V (IEC/UL) or 1000 V (IEC/UL)
Module Fire Performance	TYPE 29 (UL 61730) or CLASS C (IEC61730)
Max. Series Fuse Rating	35 A
Application Classification	Class A
Power Tolerance	0 ~ + 5 W
Power Bifaciality*	80 %

* Power Bifaciality = Pmax_{rear} / Pmax_{front}, both Pmax_{rear} and Pmax_{front} are tested under STC, Bifaciality Tolerance: ± 5 %

TEMPERATURE CHARACTERISTICS

Specification	Data
Temperature Coefficient (Pmax)	-0.30 % / °C
Temperature Coefficient (Voc)	-0.26 % / °C
Temperature Coefficient (Isc)	0.05 % / °C
Nominal Module Operating Temperature	41 ± 3°C

PARTNER SECTION

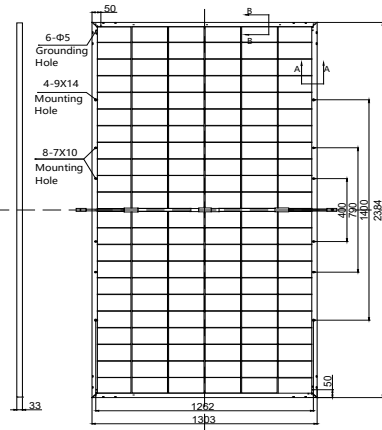


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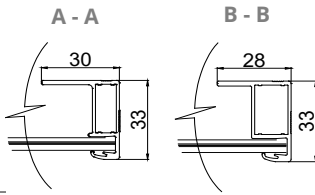
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ENGINEERING DRAWING (mm)

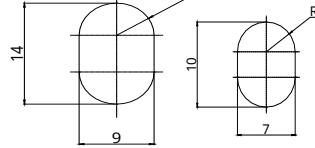
Rear View



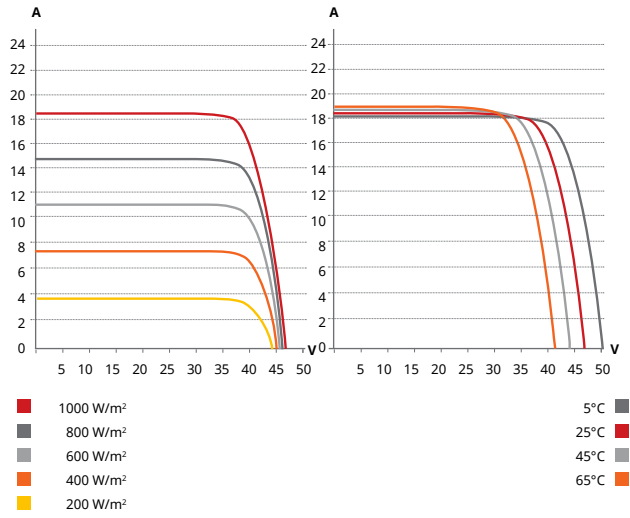
Frame Cross Section



Mounting Hole



CS7N-680TB-AG / I-V CURVES



ELECTRICAL DATA | STC*

	Nominal Max. Power (Pmax)	Opt. Operating Voltage (Vmp)	Opt. Operating Current (Imp)	Open Circuit Voltage (Voc)	Short Circuit Current (Isc)	Module Efficiency	
CS7N-695TB-AG	695 W	39.8 V	17.47 A	47.7 V	18.44 A	22.4%	
Bifacial Gain**	5%	730 W	39.8 V	18.34 A	47.7 V	19.36 A	23.5%
	10%	765 W	39.8 V	20.18 A	47.7 V	20.28 A	24.6%
	20%	834 W	39.8 V	20.96 A	47.7 V	22.13 A	26.8%
CS7N-700TB-AG	700 W	40.0 V	17.51 A	47.9 V	18.49 A	22.5%	
Bifacial Gain**	5%	735 W	40.0 V	18.39 A	47.9 V	19.41 A	23.7%
	10%	770 W	40.0 V	20.22 A	47.9 V	20.34 A	24.8%
	20%	840 W	40.0 V	21.01 A	47.9 V	22.19 A	27.0%
CS7N-705TB-AG	705 W	40.2 V	17.55 A	48.1 V	18.54 A	22.7%	
Bifacial Gain**	5%	740 W	40.2 V	18.43 A	48.1 V	19.47 A	23.8%
	10%	776 W	40.2 V	20.27 A	48.1 V	20.39 A	25.0%
	20%	846 W	40.2 V	21.06 A	48.1 V	22.25 A	27.2%
CS7N-710TB-AG	710 W	40.4 V	17.59 A	48.3 V	18.59 A	22.9%	
Bifacial Gain**	5%	746 W	40.4 V	18.47 A	48.3 V	19.52 A	24.0%
	10%	781 W	40.4 V	20.32 A	48.3 V	20.45 A	25.1%
	20%	852 W	40.4 V	21.11 A	48.3 V	22.31 A	27.4%
CS7N-715TB-AG	715 W	40.6 V	17.63 A	48.5 V	18.64 A	23.0%	
Bifacial Gain**	5%	751 W	40.6 V	18.51 A	48.5 V	19.57 A	24.2%
	10%	787 W	40.6 V	20.36 A	48.5 V	20.50 A	25.3%
	20%	858 W	40.6 V	21.16 A	48.5 V	22.37 A	27.6%
CS7N-720TB-AG	720 W	40.8 V	17.67 A	48.7 V	18.69 A	23.2%	
Bifacial Gain**	5%	756 W	40.8 V	18.55 A	48.7 V	19.62 A	24.3%
	10%	792 W	40.8 V	20.41 A	48.7 V	20.56 A	25.5%
	20%	864 W	40.8 V	21.20 A	48.7 V	22.43 A	27.8%

* Under Standard Test Conditions (STC) of irradiance of 1000 W/m², spectrum AM 1.5 and cell temperature of 25°C. Measurement uncertainty: ±3% (Pmax).

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Max. Series Fuse Rating	35 A
Application Classification	Class A
Power Tolerance	0 ~ + 5 W
Power Bifaciality*	80 %

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ELECTRICAL DATA | NMOT*

	Nominal Max. Power (Pmax)	Opt. Operating Voltage (Vmp)	Opt. Operating Current (Imp)	Open Circuit Voltage (Voc)	Short Circuit Current (Isc)
CS7N-695TB-AG	525 W	37.6 V	13.97 A	45.1 V	14.87 A
CS7N-700TB-AG	528 W	37.8 V	14.00 A	45.3 V	14.91 A
CS7N-705TB-AG	532 W	37.9 V	14.03 A	45.5 V	14.95 A
CS7N-710TB-AG	536 W	38.1 V	14.06 A	45.7 V	14.99 A
CS7N-715TB-AG	540 W	38.3 V	14.09 A	45.8 V	15.03 A
CS7N-720TB-AG	544 W	38.5 V	14.12 A	46.0 V	15.07 A

* Under Nominal Module Operating Temperature (NMOT), irradiance of 800 W/m² spectrum AM 1.5, ambient temperature 20°C, wind speed 1 m/s.

MECHANICAL DATA

Specification	Data
Cell Type	TOPCon cells
Cell Arrangement	132 [2 x (11 x 6)]
Dimensions	2384 x 1303 x 33 mm (93.9 x 51.3 x 1.30 in)
Weight	37.8 kg (83.3 lbs)
Front Glass	2.0 mm heat strengthened glass with anti-reflective coating
Back Glass	2.0 mm heat strengthened glass
Frame	Anodized aluminium alloy
J-Box	IP68, 3 bypass diodes
Cable	4.0 mm ² (IEC), 10 AWG (UL)
Cable Length (Including Connector)	460 mm (18.1 in) (+) / 340 mm (13.4 in) (-) or customized length*
Connector	T6 (IEC 1500V) or PV-KST4-EVO2/XY, PV-KBT4-EVO2/XY (IEC 1500V) or PV-KST4-EVO2A/xy, PV-KBT4-EVO2A/xy (IEC 1500V)
Per Pallet	33 pieces
Per Container (40' HQ)	561 pieces

* For detailed information, please contact your local Canadian Solar sales and technical representatives.

TEMPERATURE CHARACTERISTICS

Specification	Data
Temperature Coefficient (Pmax)	-0.30 % / °C
Temperature Coefficient (Voc)	-0.26 % / °C
Temperature Coefficient (Isc)	0.05 % / °C
Nominal Module Operating Temperature	41 ± 3°C

PARTNER SECTION



CONVERT-1P

SINGLE-AXIS SOLAR TRACKER | 1-IN-PORTRAIT



Easy to Install. Easy to Own.

The modular design and superior engineering of Valmont® Solar Convert-1P Trackers make them simple to install, easy to maintain and built for long-term performance.



Simple, Robust Table Structure Design | Short rows provide best-in-class terrain following and layout density while enabling a stiff structure that minimizes failures and decreases long-term costs.



Innovative, Hybrid Controller Architecture | The wireless controller utilizes existing DC infrastructure to enable backup capabilities instead of failure-prone batteries or the need for auxiliary modules.



Global Supply Chain, Highest Quality | With 85 manufacturing facilities on six continents, Valmont has the footprint and capability to ship the highest-quality product while offering unmatched price stability and availability.



International, Bankable Product Portfolio | The Convert-1P Single-Axis Solar Trackers have been deployed in 11 countries on four continents, generating nearly 3GW for leading customers, financiers and partners.



THE IDEAL SOLUTION FOR:
Distributed Generation Projects
Utility-Scale Projects

STRUCTURAL/MECHANIC FEATURES

Tracking Technology	Horizontal, balanced single-axis tracker with independently driven rows and backtracking
Maximum Tracking Error	± 2°
Rotation Angle	± 55 (Up to 60°)
Module Compatibility	Adaptable to all available PV modules types on market: Monofacial and Bifacial (thin film, framed and frameless)
Ground Cover Ratio	Fully configurable; typical range from 25% to 50%
Land Slope	Up to 7% N-S (extended options available); Unlimited E-W
Configurations	1 module in portrait

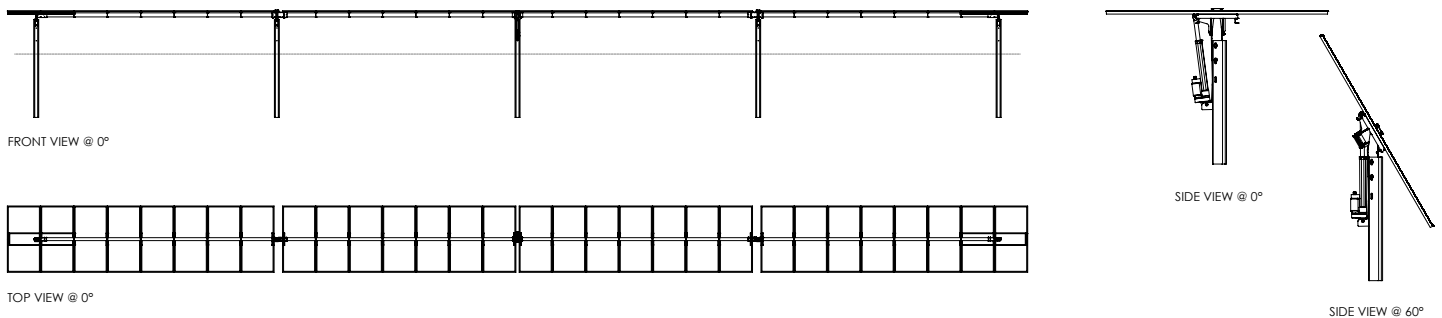
ELECTRONIC SPECIFICATIONS

Motor	Linear actuator with induction AC motor (lubrication free) with integrated encoder
System	Electronic control boards for multiple system architectures (two solutions 10 or 100 actuators in closed loop with encoder)
Power Supply	<ul style="list-style-type: none"> • AC power supply from auxiliary service • Self-powered from PV string (patented backup solution without batteries) • Smart power integration with string inverters
Operating Temperature Range	-20°/50° C (-4° F/122° F) extended range available
Solar Tracking Method	Astronomical clock with GPS input; self-configuring; no irradiation or tilt sensor required
Monitoring & Data Stream	Wireless or wired (RS485, Ethernet, Fiber)
Communication	Real-time local or remote communication data provided via Modbus

INSTALLATION

Foundation	Compatible with all foundation types (driven pile, ground screw, concrete)
Installation Method	Requires no specialized personnel or equipment; no in-field welding
Module Installation Method	Rivets, bolts or clamps
Grounding Method	Self-ground structure; no separate materials or labor
Warranty	10 years on structural components; 5 years on motors and electronic components (extended warranty available)

EXAMPLE OF: TYPICAL TRACKER TABLE WITH 56 MODULES



QUALIFICATIONS & CERTIFICATES:

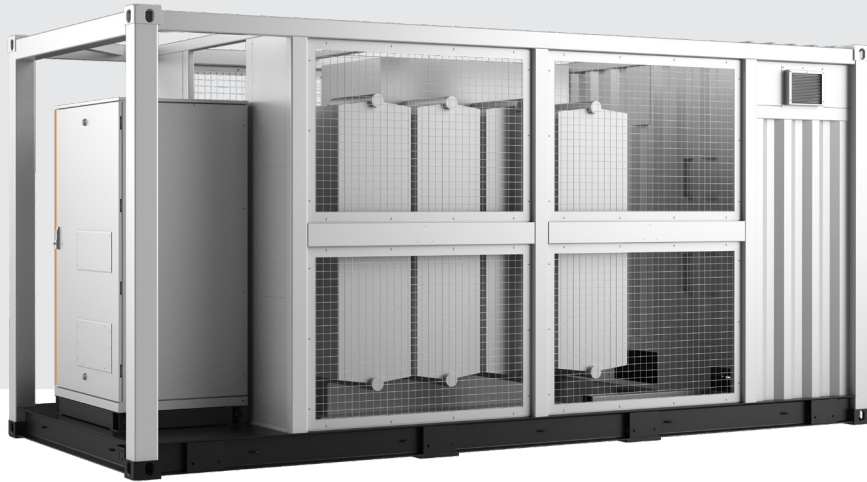
UL 2703
UL 3707
ISO 9001

ISO 14001
ISO 45001
ISO 50001



MVS3200/4480-LV

MV Turnkey Solution for 1500 Vdc String Inverter SG350HX



SAVED INVESTMENT

- Up to 4.48 MW block design
- Easy transportation due to standard container design
- All pre-assembled for easy set-up and commissioning



SAFETY

- MV and LV isolated, independent control room
- All key components front accessible, no need walk-in operation



EASY O&M

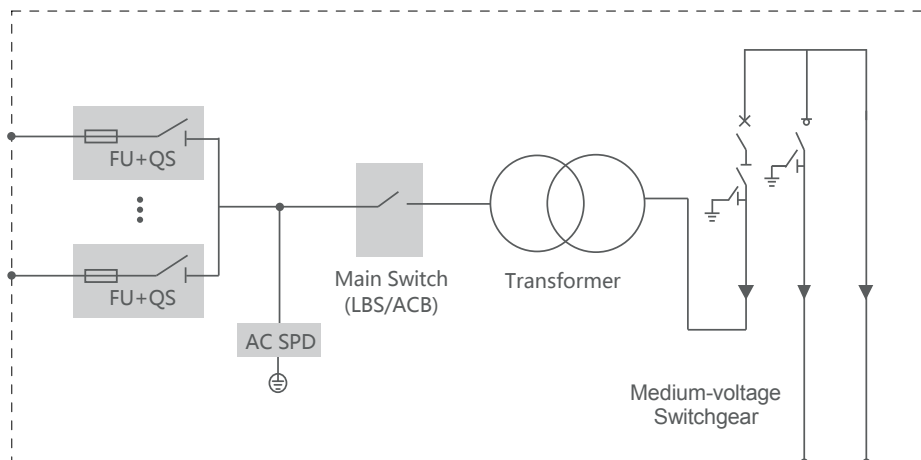
- Online analysis for fast trouble shooting
- Modular design, main device easy replacement



RELIABLE

- All components type-tested
- Compliance with standards: IEC 60076, IEC 62271, IEC 61439

CIRCUIT DIAGRAM



Type designation	MVS3200-LV	MVS4480-LV
Transformer		
Transformer type	Oil immersed	
Rated power	3200 kVA @ 40 °C	4480 kVA @ 40 °C
Max. power	3520 kVA @ 30 °C	4928 kVA @ 30 °C
Vector group	Dy11	
LV / MV voltage	0.8 kV / 20 – 35 kV	
Maximum input current at nominal voltage	2540 A	3557 A
Frequency	50 Hz / 60 Hz	
Tapping on HV	0, ±2×2.5%	
Efficiency	≥99%	
Cooling type	ONAN (Oil Natural Air Natural)	
Impedance	7% (±10%)	8% (±10%)
Oil type	Mineral oil (PCB free)	
Winding material	Al / Al	
Insulation class	A	
MV Switchgear		
Insulation type	SF6	
Rate voltage	24 – 36 kV	
Rate current	630 A	
Internal arcing fault	IAC AFL 20kA/1s	
Qty. of feeder	3 feeders	
LV Panel		
Main switch specification	4000 A / 800 Vac / 3P, 1 pcs	
Disconnecter specification	260 A / 800 Vac / 3P, 10 pcs	260 A / 800 Vac / 3P, 14 pcs
Fuse specification	400A / 800 Vac / 1P, 30 pcs	400 A / 800 Vac / 1P, 42 pcs
Protection		
AC input protection	FUSE+Disconnecter	
Transformer protection	Oil-temperature, oil-level, oil-pressure	
Relay protection	50/51,50N/51N	
LV overvoltage protection	AC Type II (optional: AC Type I + II)	
General Data		
Dimensions(W*H*D)	6058*2896*2438 mm	
Approximate weight	15 T	17 T
Operating ambient temperature range	-20 to 60 °C (optional: -30 to 60 °C)	
Auxiliary power supply	5 kVA / 400 V (optional: max. 40 kVA)	
Degree of protection	IP54	
Allowable relative humidity range (non-condensing)	0 – 95 %	
Operating altitude	1000 m (standard) / > 1000 m (optional)	
Communication	Standard: RS485, Ethernet; Optional: optical fiber	
Compliance	IEC 60076, IEC 62271-200, IEC 62271-202, IEC 61439-1, EN50588-1	

SG1100UD-MV

Soluzione "chiavi in mano" per sistemi a 1500 Vcc con trasformatore MT integrato

NOVITÀ



ALTO RENDIMENTO

- Tecnologia avanzata a tre livelli, efficienza massima dell'inverter 99%
- Raffreddamento efficace, funzionamento a piena potenza a 45 °C



SMART O&M

- Funzioni di "zone monitoring" e monitoraggio dei parametri MV integrate, per analisi on-line e risoluzione dei guasti
- Design modulare, manutenzione semplificata



RISPARMIO SULL'INVESTIMENTO

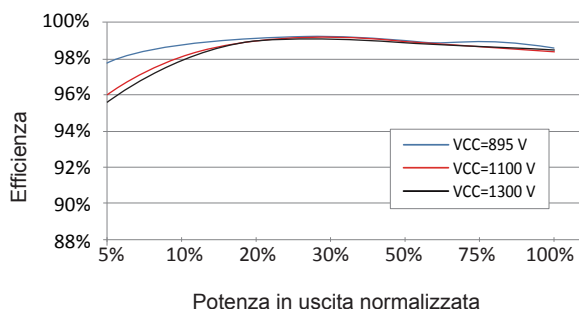
- Bassi costi di trasporto e installazione grazie al design del container da 20 piedi
- Impianto 1500 V CC, costi di sistema ridotti
- Trasformatore MT/BT, cella di media tensione e quadro di distribuzione ausiliaria integrati
- Funzione Q @ night opzionale



SUPPORTO ALLA RETE

- Conformità alle norme: IEC 61727, IEC 62116, IEC 62271-202, IEC 62271-200, IEC 60076
- Low/High voltage ride through (L/HVRT)
- Controllo della potenza attiva e reattiva e controllo della rampa di potenza

CURVA DI EFFICIENZA



Modello	SG1100UD-MV
Ingresso (CC)	
Tensione massima FV in ingresso	1500 V
Tensione minima FV in ingresso / Tensione di avviamento	895 V / 905 V
Intervallo di tensione MPP	895 – 1500 V
N. di ingressi MPP indipendenti	1
N. di ingressi CC	5 (in opzione: 6/7 ingressi con polo negativo a terra)
Corrente massima FV in ingresso	1435 A
Massima corrente di cortocircuito CC	3528 A
Configurazione del generatore FV	Polo negativo a terra / Floating
Uscita (CA)	
Potenza di uscita CA	1100 kVA a 45 °C, 1133 kVA a 40 °C, 1265 kVA a 22,5 °C
Corrente di uscita massima inverter	1160 A
Corrente massima in uscita CA	73 A
Intervallo di tensione CA	10 kV – 35 kV
Frequenza nominale di rete / Intervallo di frequenza di rete	50 Hz / 45 – 55 Hz, 60 Hz / 55 – 65 Hz
Distorsione armonica totale (THD)	< 3% (alla potenza nominale)
Fattore di potenza alla potenza nominale / Fattore di potenza regolabile	>0,99 / 0,8 in entrata – 0,8 in uscita
Fasi alimentazione / Connessione CA	3 / 3-PE
Efficienza	
Efficienza massima dell'inverter / Efficienza europea dell'inverter	99,0% / 98,8%
Trasformatore	
Potenza nominale del trasformatore	1100 kVA
Potenza massima del trasformatore	1265 kVA
Tensione LV / MT	0,63 kV / (10 – 35) kV
Impedenza di corto circuito	6,5% (0 – ±10%) a 1100 kVA
Gruppo vettoriale	Dy11
Tipo di raffreddamento del trasformatore	ONAN
Tipo di olio	Olio minerale (privo di PCB) o olio biodegradabile su richiesta
Protezioni e funzionalità	
Protezione ingressi CC	Sezionatore di carico + fusibile
Protezione uscita inverter	Interruttore automatico
Protezione uscita MT CA	Interruttore automatico
Protezione da sovracorrente	CC Tipo II / CA Tipo II
Monitoraggio rete / Monitoraggio delle dispersioni a terra	Sì / Sì
Monitoraggio isolamento	Sì
Protezione da surriscaldamento	Sì
Funzione Q @ night	In opzione
Dati generali	
Dimensioni (Larghezza x Altezza x Profondità)	6058x2896x2438 mm
Peso	≤ 8,5 T
Grado di protezione	Inverter: IP65 / Altri: IP54
Alimentazione ausiliaria	5 kVA (in opzione: max. 40 kVA)
Intervallo di temperatura ambiente di esercizio	Da -35 a 60 °C (depotenziamento > 45 °C)
Intervallo di umidità relativa consentito	0 – 100%
Metodo di raffreddamento	Raffreddamento ad aria forzata a temperatura controllata
Altitudine massima di esercizio	1000 m (standard) / > 1000 m (in opzione)
Display	Indicatori LED, WLAN+WebHMI
Comunicazione	Standard: RS485, Ethernet; in opzione: fibra ottica
Conformità	CE, IEC 62109, IEC 61727, IEC 62116, IEC 60068, IEC 61683, VDE-AR-N 4110:2018, VDE-AR-N 4120:2018, EN 50549-2, UNE 206007-1:2013, P.O.12.3, UTE C15-712-1:2013
Supporto rete	Funzione reattiva notturna (Q @ night; in opzione), L/HVRT, controllo potenza attiva e reattiva e controllo della rampa di potenza

SG3300/4400UD

Inverter modulare da esterno per sistemi a 1500 V_{CC}

NOVITÀ



ALTO RENDIMENTO

- Tecnologia avanzata a tre livelli, efficienza massima dell'inverter 99%
- Raffreddamento efficace, funzionamento a piena potenza a 45 °C



SMART O&M

- Funzioni di "zone monitoring" e monitoraggio dei parametri MV integrate, per analisi on-line e risoluzione dei guasti
- Design modulare, manutenzione semplificata



RISPARMIO SULL'INVESTIMENTO

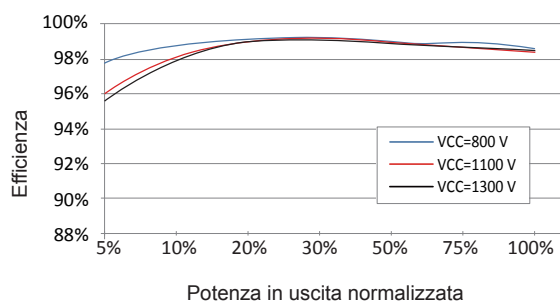
- Bassi costi di trasporto e installazione grazie al design per esterni
- Impianto 1500 V CC, costi di sistema ridotti
- Funzione Q @ night opzionale



SUPPORTO ALLA RETE

- Conformità alle norme: IEC 61727, IEC 62116
- Low/High voltage ride through (L/HVRT)
- Controllo della potenza attiva e reattiva e controllo della rampa di potenza

CURVA DI EFFICIENZA



Modello	SG3300UD	SG4400UD
Ingresso (CC)		
Tensione massima FV in ingresso	1500 V	
Tensione minima FV in ingresso / Tensione di avviamento	895 V / 905 V	
Intervallo di tensione MPP	895 – 1500 V	
N. di ingressi MPP indipendenti	3	4
N. di ingressi CC	15 (in opzione: 18/21 ingressi con polo negativo a terra)	20 (in opzione: 24/28 ingressi con polo negativo a terra)
Corrente massima FV in ingresso	3 * 1435 A	4 * 1435 A
Massima corrente di cortocircuito CC	3 * 3528 A	4 * 3528 A
Configurazione del generatore FV	Polo negativo a terra / Floating	
Uscita (CA)		
Potenza di uscita CA	3300 kVA a 45 °C 3399 kVA a 40 °C 3795 kVA a 22,5 °C	4400 kVA a 45 °C 4532 kVA a 40 °C 5060 kVA a 22,5 °C
Corrente massima in uscita CA	3 * 1160 A	4 * 1160 A
Tensione CA nominale	630 V	
Intervallo di tensione CA	536 – 693 V	
Frequenza nominale di rete / Intervallo di frequenza di rete	50 Hz / 45 – 55 Hz, 60 Hz / 55 – 65 Hz	
Distorsione armonica totale (THD)	< 3% (alla potenza nominale)	
Fattore di potenza alla potenza nominale / Fattore di potenza regolabile	> 0,99 / 0,8 in entrata – 0,8 in uscita	
Fasi alimentazione / Connessione CA	3 / 3-PE	
Efficienza		
Efficienza massima	99,0%	
Efficienza europea	98,8%	
Protezioni e funzionalità		
Protezione ingressi CC	Sezionatore di carico + fusibile	
Protezione uscita CA	Interruttore automatico	
Protezione da sovratensioni	CC Tipo II / CA Tipo II	
Monitoraggio rete / Monitoraggio delle dispersioni a terra	Sì / Sì	
Monitoraggio isolamento	Sì	
Protezione da sovracorrente	Sì	
Funzione Q @ night	In opzione	
Dati generali		
Dimensioni (LarghezzaxAltezzaxProfondità)	2340*2300*1550 mm	2900*2300*1550 mm
Peso	2,5 T	3,3 T
Topologia	Transformerless	
Grado di protezione	IP65	
Consumo notturno	< 200 W	
Intervallo di temperatura ambiente di esercizio	Da -35 a 60 °C (depotenziamento > 45 °C)	
Intervallo di umidità relativa consentito	0 – 100%	
Metodo di raffreddamento	Raffreddamento ad aria forzata a temperatura controllata	
Altitudine massima di esercizio	4000 m (depotenziamento > 3000 m)	
Display	Indicatori LED, WLAN+WebHMI	
Comunicazione	Standard: RS485, Ethernet; in opzione: fibra ottica	
Conformità	CE, IEC 62109, IEC 61727, IEC 62116, IEC 62109, IEC 61727, IEC 62116, IEC 60068, IEC 61683, VDE-AR-N 4110:2018, VDE-AR-N 4120:2018, EN 50549-1/2, UNE 206007-1:2013, P.O.12.3, UTE C15-712-1:2013	
Supporto rete	Funzione reattiva notturna (Q @ night, in opzione), L/HVRT, controllo potenza attiva e reattiva e controllo della rampa di potenza, controllo Q-U, controllo P-f	