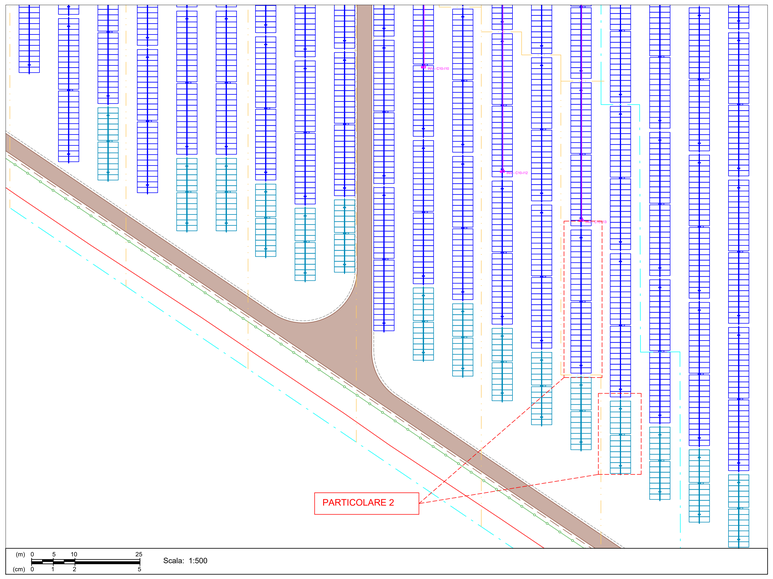
PARTICOLARE 1



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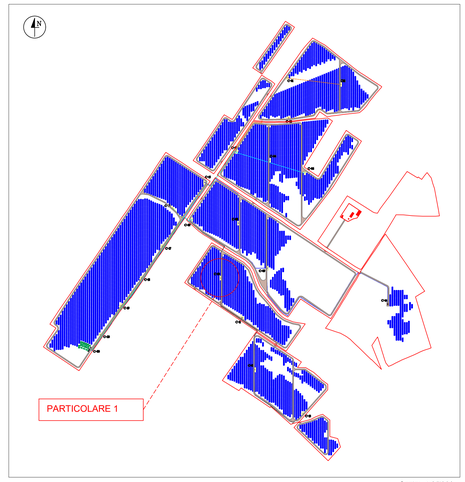
LAYOUT IMPIANTO FV



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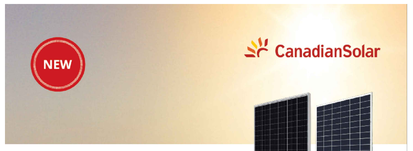


TOPBiHiKu7

N-type Bifacial TOPCon Technology

675 W ~ 695 W

CS7N-675|680|685|690|695TB-AG

FRONT BACK

MORE POWER

- 695 W — Module power up to 695 W; Module efficiency up to 22.4 %
- EXTRA POWER — 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*

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

- 12 Years — **Enhanced Product Warranty on Materials and Workmanship***
- 30 Years — **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
IECQ2641: 2019 / Photovoltaic module manufacturing quality system

PRODUCT CERTIFICATES*

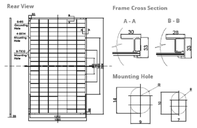
IEC 61215 / IEC 61730 / CE / INMETRO / MCS / UKCA
UL 61730 / IEC 61701 / IEC 62716 / IEC 60068-2-68
Tailor-made

* 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.

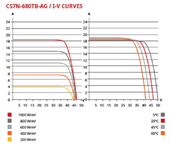
CSI Solar Co., Ltd. is committed to providing high quality solar photovoltaic modules, solar energy and battery storage solutions to customers. The company was recognized as the No. 1 module supplier for quality and performance/price ratio in the IHS Module Customer Insight Survey. Over the past 20 years, it has successfully delivered over 82 GW of premium-quality solar modules across the world.

CSI Solar Co., Ltd.
199 Lushan Road, SND, Suzhou, Jiangsu, China, 215129, www.csisolar.com, support@csisolar.com

ENGINEERING DRAWING (mm)



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-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	19.15 A	22.8%
	10%	743 W	39.0 V	19.04 A	46.9 V	20.06 A	23.9%
	20%	810 W	39.0 V	20.77 A	46.9 V	21.89 A	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	19.20 A	23.0%
	10%	748 W	39.2 V	19.09 A	47.1 V	20.12 A	24.1%
	20%	816 W	39.2 V	20.82 A	47.1 V	21.93 A	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	19.26 A	23.1%
	10%	754 W	39.4 V	19.14 A	47.3 V	20.17 A	24.3%
	20%	822 W	39.4 V	20.87 A	47.3 V	22.01 A	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	19.31 A	23.3%
	10%	759 W	39.6 V	19.17 A	47.5 V	20.23 A	24.4%
	20%	828 W	39.6 V	20.92 A	47.5 V	22.07 A	26.7%
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%

* Under Standard Test Conditions (STC) of irradiance of 1000 W/m², spectrum AM 1.5 and cell temperature 25°C.
** Bifacial Gain: The additional gain from the back side compared to the power of the front side under 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-675TB-AG	510 W	36.8 V	13.86 A	44.4 V	14.71 A
CS7N-680TB-AG	513 W	37.0 V	13.88 A	44.6 V	14.75 A
CS7N-685TB-AG	517 W	37.2 V	13.91 A	44.8 V	14.79 A
CS7N-690TB-AG	521 W	37.4 V	13.94 A	45.0 V	14.83 A
CS7N-695TB-AG	525 W	37.6 V	13.97 A	45.2 V	14.87 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.

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 ~ + 10 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 %

MECHANICAL DATA

Specification	Data
Cell Type	TOPCon cells
Cell Arrangement	132 [2 x (11 x 6)]
Dimensions	2384 × 1303 × 33 mm (93.9 × 51.3 × 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 mm² (IEC), 10 AWG (UL)
Cable Length (Including Connector)	410 mm (16.1 in) (+) / 250 mm (9.8 in) (-) or customized length*
Connector	T6 or MC4 EVO2 or MC4 EVO2A
Per Pallet	33 pieces
Per Container (40' HQ)	594 pieces or 495 pieces (only for US & Canada)

* 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)	-0.25 % / °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.

CSI Solar Co., Ltd.
199 Lushan Road, SND, Suzhou, Jiangsu, China, 215129, www.csisolar.com, support@csisolar.com

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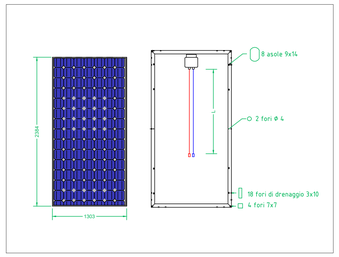
PANNELLO FOTOVOLTAICO UTILIZZATO



CODIFICA ELEMENTI DELL'IMPIANTO FOTOVOLTAICO
(NOMENCLATURA CABLAGGIO STRINGHE)

Cxx-Iyy-Szz

> Cxx : CABINA: xx (xx = 1...20)
> Iyy : INVERTER: yy (yy = 1...17)
> Sww : STRINGA: ww (yy = 1...11 / 12 / 14)

ESEMPIO PER CABINA C-18
Inverter 02, Stringhe 09 e 10 su Struttura 2x26 — C18-I02-S09, C18-I02-S10
Inverter 02, Stringa 11 su Struttura 2x13 — C18-I02-S11

PARTICOLARE 2

RAGGRUPPAMENTO DEI PANNELLI FV IN STRUTTURE (Tracker) IN FORMAZIONE 2X13P E 2X26P

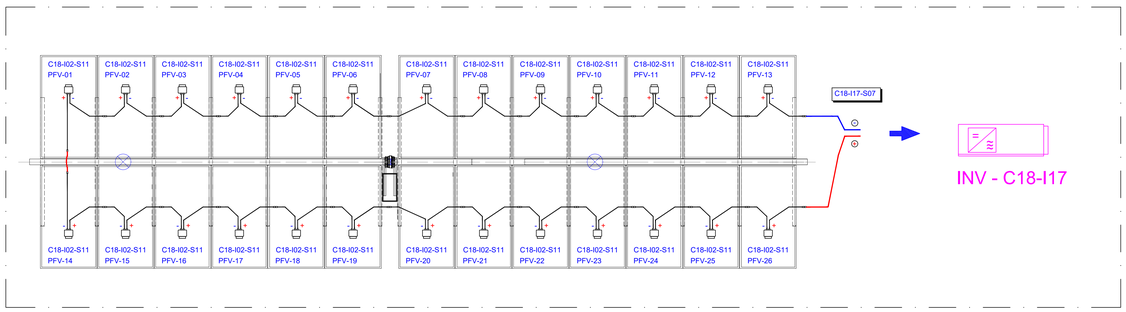
Modulo Tracker 2 x 26 P

Modulo Tracker 2 x 13 P

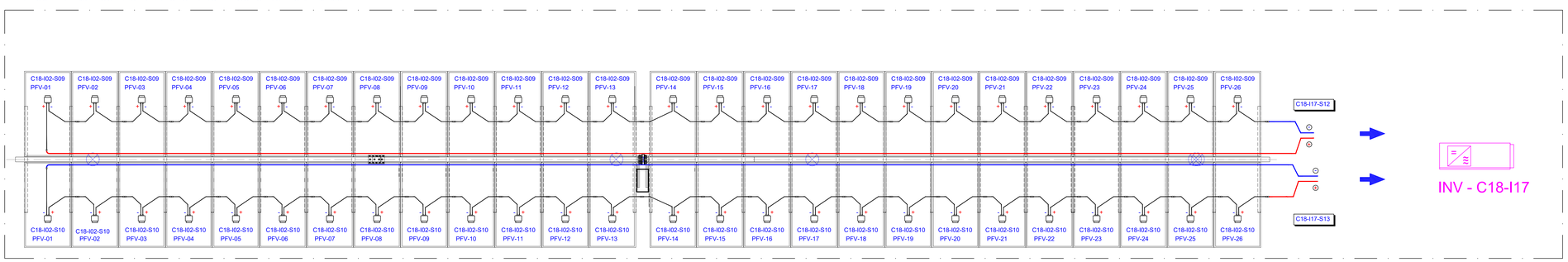
DATI ELETTRICI DEL PANNELLO E FORMAZIONE STRINGA

PANNELLO FV:	Canadian Solar	TOPBiHiKu 7	CS7N-680 W		
	Potenza Pannello FV;	Pp =	680	[Wp]	2384x1303 mm
	Tensione	Voc =	47.10	[V]	
	Corrente	Isc =	18.29	[A]	
	Tensione nominale :	Vmppt	39.20	[V]	
	Corrente nominale:	Imppt =	17.35	[A]	
STRINGA FV:					
	Numero pannelli per stringa:		26	[-]	
	Potenza Stringa FV;	P p s =	17'680	[Wp]	
	Tensione stringa :	V s =	1'019.20	[V]	<<<<
	Corrente stringa:	I s =	17.35	[A]	
	Tensione a circuito aperto:	V s oc =	1'224.60	[V]	
	Tensione a circuito aperto: per T= -10°C =		1'342.12	[V]	**

PARTICOLARE 2: COLLEGAMENTO STRINGA SU STRUTTURA 2X13P



PARTICOLARE 2: COLLEGAMENTO STRINGHE SU STRUTTURA 2X26P



REGIONE AUTONOMA DELLA SARDEGNA
COMUNE DI VILLASOR
Provincia del Sud Sardegna (SU)

PROGETTO DEFINITIVO PER LA REALIZZAZIONE DI UN IMPIANTO AGRO-FOTOVOLTAICO DENOMINATO VILLASOR

Loc. "Su Pranu", Villasor (SU) - 09034, Sardegna, Italia

Potenza Nominale 72'063 kWp + Sistema di accumulo Potenza Nominale 26'340 kW

Coordinamento Progettisti
INNOVA SERVICE S.r.l.
Via Santa Margherita n. 4 - 09124 Cagliari (CA)
P.IVA 03379940921, PEC: innovaservicesca@pec.it

Coordinamento gruppo di lavoro VIA
S.I.G.E.A. S.r.l.
Via Cavalcanti n. 1 - 09047 Selargius (CA)
P.IVA 02698620925, PEC: sigeamaccioni@pec.it

Committente - Sviluppo progetto FV:
ALFA ARIETE S.r.l
Via Mercato n. 3/5 - 20121 Milano (MI)
P.IVA 11850890960, PEC: alfarieteesri@iamiapec.it

Sviluppo progetto Agricolo:
Azienda Agricola Lotta Marco Michele
Via Ponti sa Murta n. 21 - 09097 San Nicolò D'Arcidano (OR)
P.IVA 01134970951, PEC: marcomichelelotta@pec.it

Gruppo di lavoro VIA (S.I.G.E.A. S.r.l.)
Dott. Geol. Luigi Maccioni - Coordinamento VIA
Ing. Manuela Maccioni - Paesaggio
Dr. Nat. Roberto Cogoni - Fauna Flora Vegetazione
Dott.ssa Cristiana Cilla - Archeologia
Dott. Geol. Stefano Demontis – Georisorse
Dott. Geol. Valentino Demurtas – Georisorse

Progettazione Agronomica
Agr. Stefano Atzeni – Agronomo

Progettazione Elettrica
Ing. Silvio Matta – Ing. Elettrico

Altri Progettisti
Ing. Luca Marmocchi – Ing. Civile - Strutturista
Arch.Giorgio Roberto Porqiglia – Progettista
Geom. Aurora Melis - Progettista

Rilievo Plano-altimetro - La SIA S.p.a.
Viale Luigi Schiavonetti n. 286 – Roma (RM)
P.IVA 08207411003, PEC: direzione.lasia@pec.it

Elaborato

PARTICOLARI COSTRUTTIVI PANNELLI FOTOVOLTAICI

Codice elaborato	Scala
TAV_PART_01-FVT	

Firmato digitalmente da: Silvio Matta
Data: 06/09/2023 11:18:28

REV.	DATA	ESEGUITO	VERIFICATO	APPROVATO
00	Luglio 2023	Ing. Silvio Matta		ALFA ARIETE S.r.l.

Note