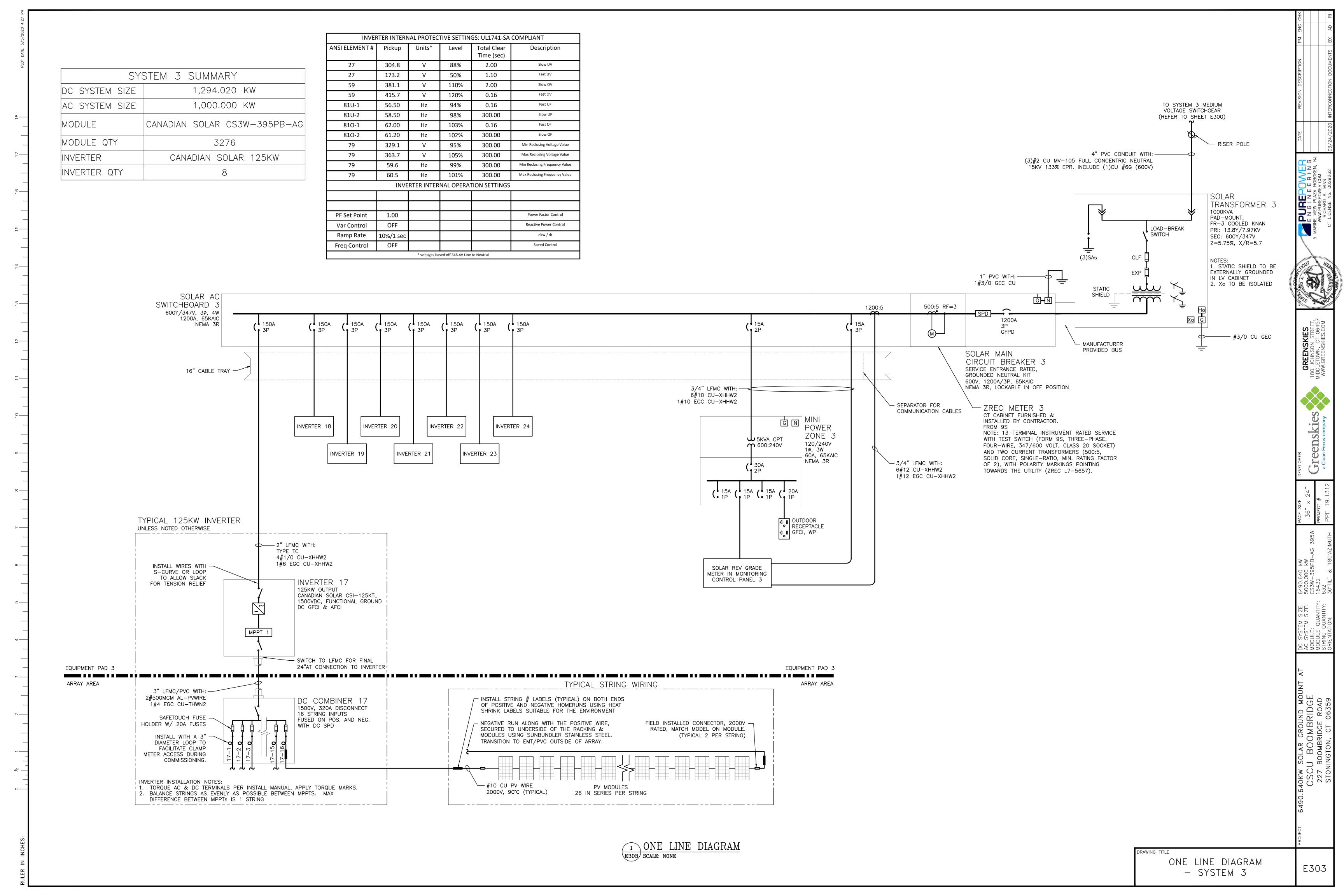
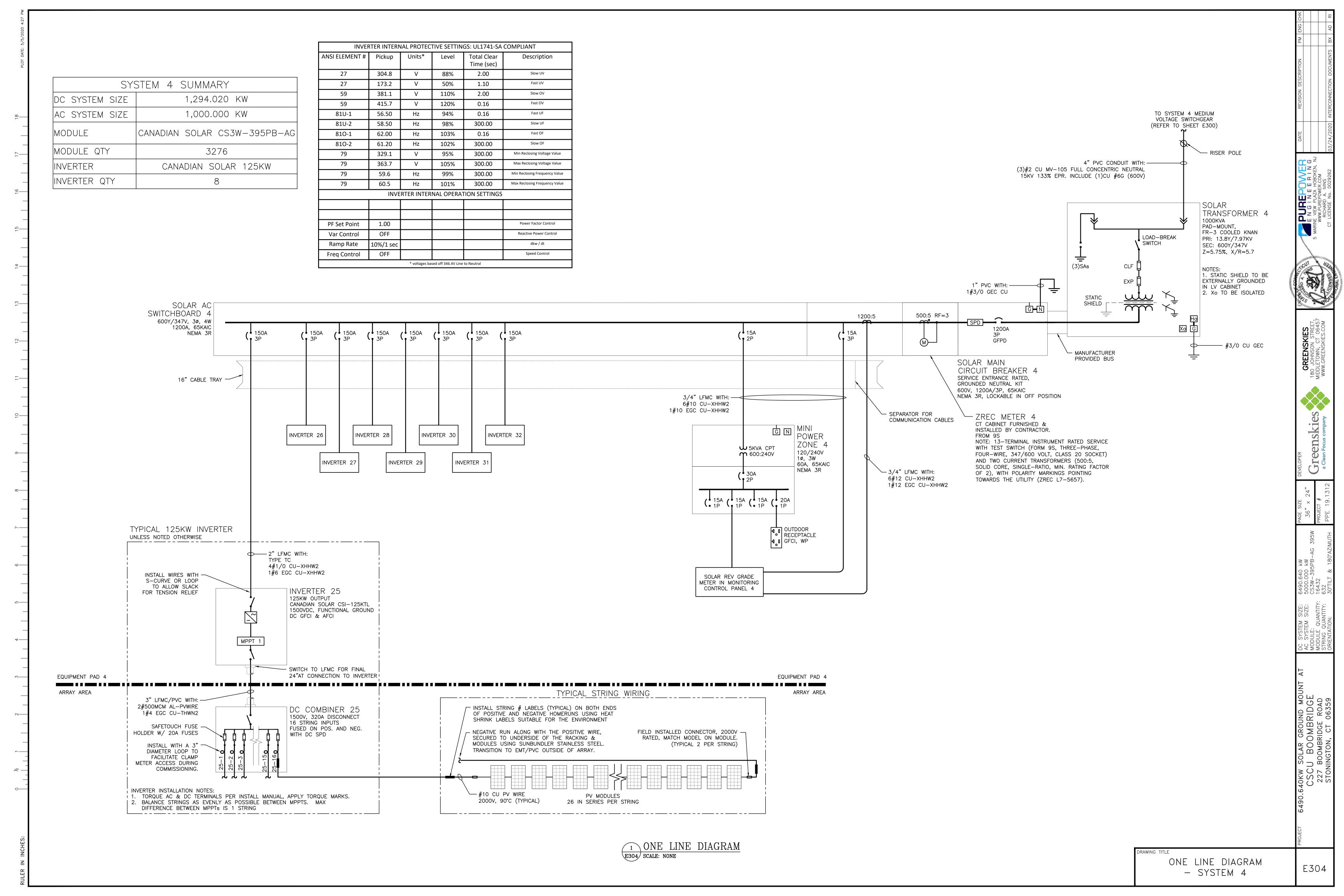
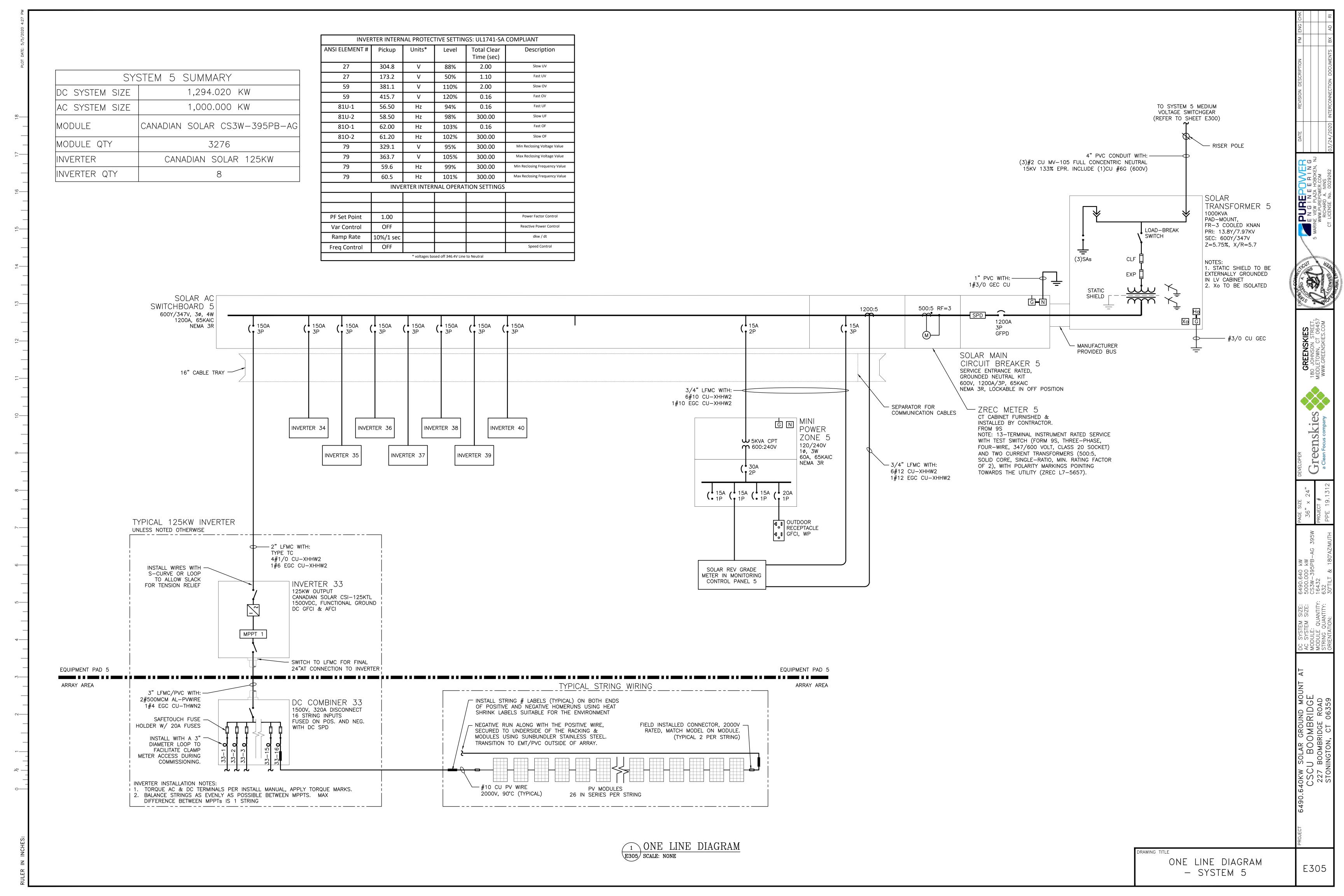


4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 PLOT DATE: 5/5/2020 4:2	ANSILLEMENT #  SYSTEM 2 SUMMARY  DC SYSTEM SIZE 1,304,290 KW  AC SYSTEM SIZE 1,000,000 KW  MODULE CANADIAN SOLAR CS3W—395PB—AG  MODULE QTY 3302  NVERTER CANADIAN SOLAR 125KW  NVERTER QTY 8  SOLAR AC  SWITCHBOARD 2  SOLOR, 55KM, NAM 3R  TYPICAL 125KW INVERTER  LILESS NOTED OTHERWSE  TYPICAL 125KW INVERTER  LILESS NOTED OTHERWSE  TYPICAL 125KW INVERTER  INVERTER 10  NVERTER 11  NVERTER 10  NVERTER 11  NVERTER 11  NVERTER 11  NVERTER 12  NVERTER 10  NVERTER 19  JSSK 0,00PL 2  JSSK 0,0	Time   Sec	4" PVC CONDUIT WITH: - (3)#2 CU MV-105 FULL CONCENTRIC NEUTRAL 15KV 133% EPR. INCLUDE (1)CU #6G (600V)	TO SYSTEM 2 MEDIUM VOLTAGE SWITCHGEAR (REFER TO SHEET E300)  RISER POLE  SOLAR TRANSFORMER 2 1000KVA PAD-MOUNT, FR-3 COOLED KNAN PRI: 13.8Y/7.97KV SEC: 600Y/347V Z=5.75%, X/R=5.7  NOTES: 1. STATIC SHIELD TO BE EXTERNALLY GROUNDED IN LV CABINET 2. Xo TO BE ISOLATED	SYSTEM SIZE: 6490.640 kW 36" x 24" SYSTEM SIZE: 5000.000 kW 36" x 24" PROJECT # PROJEC
£—————————————————————————————————————	SWITCH TO LFMC FOR FINAL 24"AT CONNECTION TO INVERTE	EQUIPMENT PAD 2			AT DC SY AC SY MODUL MODUL STRING STRING ORIENT
1ES: 0 % 1 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	ARRAY AREA  3" LFMC/PVC WITH: 2#500MCM AL-PVWIRE 1#4 EGC CU-THWN2  SAFETOUCH FUSE HOLDER W/ 20A FUSES  INSTALL WITH A 3" DIAMETER LOOP TO FACILITATE CLAMP METER ACCESS DURING COMMISSIONING.  INVERTER INSTALLATION NOTES: 1. TORQUE AC & DC TERMINALS PER INSTALL MANUAL, APPLY TORQUE MARKS. 2. BALANCE STRINGS AS EVENLY AS POSSIBLE BETWEEN MPPTS. MAX DIFFERENCE BETWEEN MPPTS IS 1 STRING	TYPICAL STRING WIRING  INSTALL STRING # LABELS (TYPICAL) ON BOTH ENDS OF POSITIVE AND NEGATIVE HOMERUNS USING HEAT SHRINK LABELS SUITABLE FOR THE ENVIRONMENT  NEGATIVE RUN ALONG WITH THE POSITIVE WIRE, SECURED TO UNDERSIDE OF THE RACKING & MODULES USING SUNBUNDLER STAINLESS STEEL. TRANSITION TO EMT/PVC OUTSIDE OF ARRAY.  #10 CU PV WIRE 2000V, 90°C (TYPICAL)  1 ONE LINE DIAGRAM			PROJECT 6490.640KW SOLAR GROUND MOUNT CSCU BOOMBRIDGE ROAD STONINGTON, CT 06359
RULER IN INCH		E302 SCALE: NONE	DF	ONE LINE DIAGRAM  — SYSTEM 2	E302











# THREE-PHASE STRING INVERTER 125 KW CSI-125KTL-GS-E

Canadian Solar's grid-tied, transformer-less string inverters help accelerate the use of three-phase string architecture for commercial rooftop and small ground-mount applications. An NRTL approved, cost-effective alternative to central inverters, these inverters are modular design building blocks that provide high yield and enable significant BoS cost savings. They provide up to 99.1% conversion efficiency, and a wide operating range for maximum energy harvest.





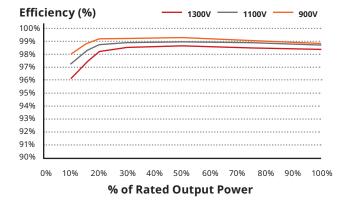
Standard warranty, extension up to 20 years

#### **KEY FEATURES**

- Maximum efficiency of 99.1%, CEC efficiency of 98.6%
- Single MPPT for higher conversion efficiency
- · Transformerless design
- PID mitigation capability

# **EFFICIENCY CURVE**

CSI-125KTL-GS-E @ 900 V



 $<sup>\</sup>hbox{\tt *For detailed information, please refer to the Installation Manual}.$ 

# **HIGH RELIABILITY**

- Advanced thermal design with variable speed fans
- · Ground-fault detection and interruption circuit

# **BROAD ADAPTIBILITY**

- NEMA 4X (IP65), outdoor application
- Utility interactive controls: active power derating, reactive power control and over frequency derating
- Integrated wiring box design
- Integrated DC and AC load rated disconnects
- Wide MPPT range for flexible string sizing
- AC terminals compatible with copper and aluminum conductors
- Supports up to 20 DC string inputs

**CANADIAN SOLAR (USA), INC.** is committed to providing high quality solar products, solar system solutions and services to customers around the world. As a leading PV project developer and manufacturer of solar modules with over 36 GW deployed around the world since 2001, Canadian Solar Inc. (NASDAQ: CSIQ) is one of the most bankable solar companies worldwide.

MODE IL NAME         CSL-125KTL-GS-E           DECENDUT         1975 NW           Nam. PC Proper         1975 NW           Overaring DC Input Workge Range         808-1550 Vg           Overaring DC Input Workge Range         808-1550 Vg           Oberande Of DC Input Workge Range         858-1500 Vg           Oberande Of MDP ST Workge Range         858-1500 Vg           Oberande Of DC Input State         900-000 Occorded October December Of DC Input State           OC OCCORDED TO DC Input State         900-000 October DC Input State           AC OUTPUT         1000 October DC Input State           AC OUTPUT State         153-150 October Dc Input State <th>SYSTEM/TECHNICAL DATA</th> <th></th>	SYSTEM/TECHNICAL DATA	
Max. DC Input Voltage         1501 V.           Overeiting DC Input Voltage Range         880-1450 V.           Start-up DC Input Voltage Range         900 V.           Start-up DC Input Voltage Range         900 V.           CPI PROVER MET Voltage Range         800-1500 V.           Operating DC Input Voltage Range         800-1000 V.           Operating DC Input Voltage Range         800-1000 V.           Operating DC Input Voltage Range         800-1000 V.           Number of DC Inputs         100 A           OB Control DC Inputs         100 A           AC CUTPUT         VILLE AND COLUMN CO	MODEL NAME	CSI-125KTL-GS-E
Moze DC Explosit Violage Range         80.0 450 Vg.           Ciperating DC Imput Violage Range         6900 Vg.           Number of APP Trackers         1           Full Process MPT Violage Range         800-1500 Vg.           Operating Current (Irog)         100 Au           Max. Input Current (Irog)         300 A           Number of DC Imputs         20           DE December Unity         100 A           AC OUTU         125 kW           Rated AC Output Prover         125 kW           Rated AC Output Prover         125 kW           Rated AC Output Violage         600 Vg.           Old Connection Type         3 00°E           Old Connection Type         55 -65 tg           Output Frequency Range*         55 -65 tg           Output Frequency Range*         55 -65 tg           Output Frequency Range         55 -65 tg           Output Frequency Range         55 -65 tg           Output Frequency Range         55 -65 tg           Nac Encleance         25 tg           Nac Encleance	DC INPUT	
Operating DC Enjout Voltage Rapey         804-550 V <sub>c</sub> State up DC Enjout Voltage Rapey         900 V <sub>c</sub> Fall Power MPFT Voltage Range         606-1500 V <sub>c</sub> Operating Current (Its)         150 A           Number of MPFT Voltage Range         150 A           Operating Current (Its)         300 A           Number of Dc Impuits         100 A           Ober State (Its)         300 A           Number of Dc Impuits         100 A           Ober State (Its)         100 A           Number of Dc Impuits         100 A           ACUTET         100 A           ACUTET         125 AW           ACUTET         125 AW           Rated AC Datipat Power         100 A           Rated AC Datipat Power         100 A           Correcting Vision         100 A           Correcting Vision         100 A           Correcting Vision         100 A           Correcting Power         100 A           Correcting Rate Rape         100 A           Na Stiffenery         100 A           Na Stiffener	Max. PV Power	187.5 kW
Namier of NPT Tackers         1           Lip Hower MPPT Younge Renge         869-1300 Vp           Operating Current (Imp)         150 A           Name of DC Impus         20           Name of DC Impus         155 MW           Name of DC Impus         155 MW           Name of Output Prover         155 MW           Name of Output Prover         150 MW           Seed Output Virus of Good Vg         30 PC           Operating Voltage Range*         528 -600 Vg           Operating Voltage Range*         100 A           Operating Voltage Range         100 Nr           Oppose Factor         100 Nr           Oppose Factor         100 Nr           Oppose Factor         100 Nr           Oppose Factor         100 Nr           Name of Good Vg         100 Nr           STSTEM         100 Nr           Name of Go	Max. DC Input Voltage	1500 V <sub>pc</sub>
Number of APPP Trackers         16 Hall Power MPPT Voltage Range         86 Hall 2004 (A)           Pall Power MPPT Voltage Range         150 A           Own Dereiting Current (Itst)         300 A           Number of DC Imputs         200 A           Ober Deciment on Type         100 and rated DC wintch           AC USTATE         ************************************	Operating DC Input Voltage Range	860-1450 V <sub>DC</sub>
Number of APPP Trackers         16 Hall Power MPPT Voltage Range         86 Hall 2004 (A)           Pall Power MPPT Voltage Range         150 A           Own Dereiting Current (Itst)         300 A           Number of DC Imputs         200 A           Ober Deciment on Type         100 and rated DC wintch           AC USTATE         ************************************	Start-up DC Input Voltage/Power	900 V <sub>DC</sub>
Operating Current (Irip)         300A           Max. Input Current (Irip)         20           Number of D City         20           CD City Controlled         Load rated D Ciswitch           AC City City           AC CUTPUT         Taked A City D Fower           Max. A City D Fower         125 kW           Rated A City D Word (Irip)         600 Ng.           Operating Visiting Range*         30-60 Ng.           Ord Controlled Type         30-09E           Nomical AC Output Current 6600 Vac         10-00 Hard           Actific County Current 6600 Vac         10-00 Hard           Output Frequency Range*         60-19           Output Frequency Range*         10-00 Hard           AC December 10 Value         10-00 Hard           Current Tild         10-00 Hard           AC December 10 Value         10-00 Hard           AC December 10 Value         10-00 Hard           AC December 10 Value         10-00 Hard           AC State Output Frequency Range         10-00 Hard           AC December 10 Value         10-00 Hard           AC December 10 Value         10-00 Hard           AC State Output Frequency Range         10-00 Hard           AC State Output Frequency Range         10-00 Hard	Number of MPP Trackers	
Max. Toput Current (18c)         300 A           Number OF Cimputs         20           CO Usconnectod type         Load rated Drawtch           AC CUTPUT         Text A Courput Power           Rated A Cupput Power         155 kW           Rated Output Voltage         600 V <sub>w</sub> Rated Output Voltage         600 V <sub>w</sub> Operating Voltage Range*         300 PE           Nominal AC Cutput Current (860 Vac         300 PE           Naminal AC Cutput Current (860 Vac         1200 A           Naminal AC Cutput Current (860 Vac         300 PE           Naminal AC Cutput Current (860 Vac         1200 A           Naminal AC Cutput Current (860 Vac         1200 A           Naminal AC Cutput Current (860 Vac         300 PE           Note of Connection (190 pe         600 Pt           Output Frequency (300 per (190 per	Full Power MPPT Voltage Range	860-1300 V <sub>DC</sub>
Number of DC Impurs         20           DC Disconnection Type         Examinated DC switch           AC COUTPUT           Race of AC Dutiput Power         125 kW           Max. AC Dutiput Power         125 kW           Max. AC Dutiput Power         125 kW           Max. AC Dutiput Power         125 kW           Marced Output Vireign         600 Vg           Operating Voltage Range*         3 dvPE           Orificion Connection Type         120 April 200	Operating Current (Imp)	150 A
DC Discennertion Type         Echanter           AC OUTPUT           Stead AC Output Power         € 125 kW           Max. AC Output Power         125 kW           Bated ALO Upput Violage         € 600 V <sub>A</sub> Operating Voltage-Range*         € 500 V <sub>A</sub> Off Connection Type         3 o/PE           Normian AC Output Current ⊗600 V <sub>A</sub> 60 Hz           Operating Voltage-Range*         € 55-55 Hz           Owner Factor         60 Hz           Output Frequency         € 60 Hz           Output Frequency         € 55-55 Hz           Power Factor         1 default (0.8 adjustable)           Current THO         4 3%           CD Sconger THO         4 3%           CD Sconger THO         4 38           CD Sconger THO         4 38           Max. Efficiency         9.0 ± 8           RC Efficiency         9.0 ± 8           Nght Consumption         2 The Market Market           ECE Efficiency         9.0 ± 8           Nght Consumption         1 See Act (1.8 ± 1.8	Max. Input Current (Isc)	300 A
AC OUTPUT           Rated AC Output Power         125 kW           Max. AC Output Power         125 kW           Max. AC Output Power         125 kW           Rated Output Voitage         600 V <sub>c</sub> Operating Voitage Range*         528 -600 V <sub>sc</sub> Grid Connection Type         3 0PE           Nominal AC Output Current 9600 Vac         120 A           Rated Output Frequency         60 Hz           Output Frequency Range*         1 default (LO.8 adjustable)           Current ThD         3 3 4           AC Disconnection Type         1 default (LO.8 adjustable)           SYSTEM         1 Transformeriess           VSYSTEM         1 Control of Transformeriess           Max. Efficiency         9 1 Mg           Max. Efficiency         9 9.1 %           CEC Efficiency         9 8.6 %           May Efficiency         9 8.6 %           Operating Famerature Range         1 STATE ALL X (PCS)           Cooling         1 STATE ALL X (PCS)           Operating Numbrity         0 100 %           Operating Numbrity         1 STATE X (ADO CONTON) </td <td>Number of DC Imputs</td> <td>20</td>	Number of DC Imputs	20
Rated AC Output Power         125 kW           Max. AC Output Power         125 kW           Bated Output Votage         600 V <sub>c</sub> Operating Votage Range*         528-600 V <sub>c</sub> Circl Connection Type         100 cm 3 cm 25           Nominal AC Output Curent 6600 Vac         100 cm 3 cm 26           Auted Output Frequency         60 cm 120 A           Auted Output Frequency         60 cm 3 cm 25           Power Factor         1 default (cl8 adjustable)           Current THO         4 cm 24 cm 24           AC Disconnection Type         1 cm 24 c	DC Disconnection Type	Load rated DC switch
Max. AC Output Power         125 kW           Rated Output Voltage         600 V₂           Operating Voltage Range*         528 -660 V₂           Indid Connection Type         3 90 /FE           Nomal AC Output Current €600 Voc         120 A           Rated Output Frequency         60 Hz           Output Frequency Range*         55 -65 Hz           Power Factor         1 defabult (£0.8 adjustable)           Current THD         3 %           AC Disconnection Type         1 Seath (£0.8 adjustable)           SYSTEM         ************************************	AC OUTPUT	
Rated Output Voltage         660 V <sub>x</sub> Operating Voltage Range*         528 - 660 V <sub>x</sub> Grid Connection Type         3 Φ/PE           Nominal AC Output Current @600 Vac         120 A           Roted Output Frequency         60 Hz           Output Frequency Range*         55 - 65 Hz           Power Factor         1 default (s.0.8 adjustable)           Current ThD         3 %           AC Disconnection Type         1 San	Rated AC Output Power	125 kW
Rated Output Voltage         660 V <sub>x</sub> Operating Voltage Range*         528 - 660 V <sub>x</sub> Grid Connection Type         3 Φ/PE           Nominal AC Output Current @600 Vac         120 A           Roted Output Frequency         60 Hz           Output Frequency Range*         55 - 65 Hz           Power Factor         1 default (s.0.8 adjustable)           Current ThD         3 %           AC Disconnection Type         1 San	Max. AC Output Power	125 kW
Operating Voltage Range*         \$288-660 V <sub>x</sub> Grid Conection Type         3 40 PE           Nominal AC Output Current 6600 Vac         120 A           Bated Output Frequency         60 Hz           Output Frequency Range*         55-65 Hz           Output Frequency Range*         1 default €0.8 adjustable)           Current THD         3 3 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2		
Grid Connection Type         3 Φ/PE           Nominal AC Output Current 6600 Vac         120 A           Rated Output Frequency         60 Hz           Output Frequency Range*         55-65 Hz           Power Factor         1 default (e.0.8 adjustable)           Current THD         3 %           AC Disconnection Type         Load rated Act switch           SYSTEM           Topology         Transformerless           Max. Efficiency         99.1 %           CEC Efficiency         98.6 %           Night Consumption         2 W           ENVIRONMENT           ENVIRONMENT           Protection Degree         NEMA AX (IP65)           Cooling         Intelligent Recludant Cooling           Operating Temperature Range         -13*Ft to +140*Ft -25** Ct to +60** C           Storage Temperature Range         -13*Ft to +140*Ft -25** Ct to +60** C           Operating Humidity         0 -100 %           Operating Altitude         3 5.3 das 1 m           Molible Noise         5.5 dBac 1 m           DISSPLAY AND COMMUNICATION         LED           Communication         Standard: RS48S (Modbus RTU), AND either MODBUS over ETHERNET           MECHANICAL DATA         Immensions (W H I/ P)		
Rated Output Frequency         60 Hz           Output Frequency Range*         55-65 Hz           Power Factor         1 default (±0.8 adjustable)           Current THD         3 %           AC Disconnection Type         Load rated AC switch           SYSTEM           Topology         Transformeriess           Max. Efficiency         99.1 %           KCE Efficiency         99.6 %           Night Consumption         < 2 W		
Rated Output Frequency         60 Hz           Output Frequency Range*         55-65 Hz           Power Factor         1 default (±0.8 adjustable)           Current THD         3 %           AC Disconnection Type         Load rated AC switch           SYSTEM           Topology         Transformeriess           Max. Efficiency         99.1 %           KCE Efficiency         99.6 %           Night Consumption         < 2 W		120 A
Output Frequency Range*         55-65 Hz           Power Factor         1 default (±0.8 adjustable)           Current THD         3 %           AC Disconnection Type         Load rated AC switch           SYSTEM           Topology         Transformerless           Max. Efficiency         99.1 %           CEC Efficiency         96.6 %           Night Consumption         2 W           ENVIRONMENT           Frotection Degree           Cooling         Intelligent Redundant Cooling           Operating Temperature Range         13 ° F to + 140 ° F / -25 ° C to +60 ° C           Storage Temperature Range         40 ° F to + 158 ° F / -40 ° C to +70 ° C           Operating Humidity         0 + 100 %           Operating Humidity         0 + 100 %           Operating Humidity           Operating Altitude         13,123.4 ft / 400 m           Audible Noise           DISPLAY AND COMMUNICATION           Display         LED           Communication         Standard: RS485 (Modbus RTU), AND either MODBUS over ETHERNET           MECHANICAL DATA           Dimensions (W // I/)         46.3 x 28.1 x 12.4 in / 1176 x 713.5 x 315 mm <t< td=""><td></td><td>60 Hz</td></t<>		60 Hz
Power Factor         1 default (±0.8 adjustable)           Current THD         < 3 %		
Current THD         < 3 %		
AC Disconnection Type  SYSTEM  Topology  Transformeriess  Max. Efficiency  99.1 %  CEC Efficiency 98.6 %  Night Consumption  ENVIRONMENT  Protection Degree NEMA 4X (IP65)  Cooling Intelligent Redundant Cooling Operating Temperature Range 1:3 ° F to + 140 ° F /- 25 ° C to +60 ° C  Storage Temperature Range 1:3 ° F to + 140 ° F /- 25 ° C to +70 ° C  Operating Humidity Operating Altitude Operating Altitude Operating Altitude System Sys		
SYSTEM Topology Transformerless Max. Efficiency 99.1 % CEC Efficiency 98.6 % Night Consumption < 2 W  ENVIRONMENT Protection Degree NEMA 4X (IP65) Cooling Intelligent Redundant Cooling Operating Temperature Range 1-13 ° F to + 140 ° F / -25 ° C to +60 ° C Storage Temperature Range 4-40 ° F to + 158 ° F / -40 ° C to +70 ° C Operating Humidity 0-100 % Operating Altitude 13,123.4 fr / 4000 m Audible Noise 55 dBA @ 1 m  DISPLAY AND COMMUNICATION Display LED Communication Standard: R5485 (Modbus RTU), AND either MODBUS over ETHERNET  MECHANICAL DATA Dimensions (W / H / D) 46.3 x 28.1 x 12.4 in / 1176 x 713.5 x 315mm Weight 185 lbs (84kg) DC Fuse Rating 20 A standard  SAFETY Safety and EMC Standard UL1741 SA, UL1998, CSA-C22.2 No. 107.1-01, IEEE1547, FCC PART 15		
Topology Transformerless  Max. Efficiency 99.1 %  CEC Efficiency 98.6 %  Night Consumption <2 W  ENVIRONMENT  Protection Degree NEMA 4X (IP65)  Cooling Intelligent Redundant Cooling  Operating Temperature Range 1.3° Ft to +140° F/-25° C to +60° C  Storage Temperature Range 4.0° Ft to +158° F/-40° C to +70° C  Operating Humidity 0.100 %  Operating Altitude 13,123.4 ft/4000 m  Audible Noise 5 dBA @1 m  DISPLAY AND COMMUNICATION  Display LED  Communication Standard: RS485 (Modbus RTU), AND either MODBUS over ETHERNET  MECHANICAL DATA  Dimensions (W/H/D) 46.3 x 28.1 x 12.4 in/ 1176 x 713.5 x 315mm  Weight 185 lbs (84kg)  Installation Angle Back tilt up to 15 degrees  DC Fuse Rating 20 A standard  SAFETY  Safety and EMC Standard UL1741 SA, UL1998, CSA-C22.2 No. 107.1-01, IEEE1547, FCC PART 15	i	LOGI TUCCI AC SWICE
Max. Efficiency         99.1 %           CEC Efficiency         98.6 %           Night Consumption         < 2 W		Transformorless
CEC Efficiency 98.6 % Night Consumption < 2 W  ENVIRONMENT  Protection Degree NEMA 4X (IP65)  Cooling Intelligent Redundant Cooling Operating Temperature Range 1.3° F to + 140° F / -25° C to +60° C  Storage Temperature Range -40° F to + 158° F / -40° C to +70° C  Operating Altitude 13,123.4 ft / 4000 m  Audible Noise 55 dBA @ 1 m  DISPLAY AND COMMUNICATION  Display LED  Communication Standard: RS485 (Modbus RTU), AND either MODBUS over ETHERNET  MECHANICAL DATA  Dimensions (W / H / D) 46.3 x 28.1 x 12.4 in / 1176 x 713.5 x 315 mm  Weight 185lbs (84kg)  Installation Angle Back tilt up to 15 degrees  DC Fuse Rating 20 A standard  SAFETY  Safety and EMC Standard UL1741 SA, UL1998, CSA-C22.2 No. 107.1-01, IEEE1547, FCC PART 15		
Night Consumption <2 W  ENVIRONMENT  Protection Degree NEMA 4X (IP65)  Cooling Intelligent Redundant Cooling Operating Temperature Range -13° Ft o + 140° Ft -25° C to +60° C  Storage Temperature Range -40° Ft o + 158° Ft -40° C to +70° C  Operating Humidity -100 % Operating Altitude -13,123.4 ft / 4000 m  Audible Noise -55 dBA @ 1 m  DISPLAY AND COMMUNICATION  Display LED  Communication Standard: RS485 (Modbus RTU), AND either MODBUS over ETHERNET  MECHANICAL DATA  Dimensions (W / H / D) 46.3 x 28.1 x 12.4 in / 1176 x 713.5 x 315mm  Weight 185lbs (84kg)  Installation Angle Back tilt up to 15 degrees  DC Fuse Rating 20 A standard  SAFETY  Safety and EMC Standard UL1741 SA, UL1998, CSA-C22.2 No. 107.1-01, IEEE1547, FCC PART 15		
ENVIRONMENT  Protection Degree NEMA 4X (IP65)  Cooling Intelligent Redundant Cooling  Operating Temperature Range -13° Ft to +140° F / -25° C to +60° C  Storage Temperature Range -40° Ft o +158° F / -40° C to +70° C  Operating Humidity 0 -100%  Operating Altitude 13,123.4 ft / 4000 m  Audible Noise <55 dBA @ 1 m  DISPLAY AND COMMUNICATION  Display LED  Communication Standard: RS485 (Modbus RTU), AND either MODBUS over ETHERNET  MECHANICAL DATA  Dimensions (W / H / D) 46.3 x 28.1 x 12.4 in / 1176 x 713.5 x 315mm  Weight 185lbs (84kg)  Installation Angle Back tilt up to 15 degrees  DC Fuse Rating 20 A standard  SAFETY  Safety and EMC Standard UL1741 SA, UL1998, CSA-C22.2 No. 107.1-01, IEEE1547, FCC PART 15		
Protection Degree NEMA 4X (IP65)  Cooling Intelligent Redundant Cooling  Operating Temperature Range -13 ° F to + 140 ° F / -25 ° C to +60 ° C  Storage Temperature Range -40 ° F to + 158 ° F / -40 ° C to +70 ° C  Operating Humidity 0 -100 %  Operating Altitude 13,123.4 ft / 4000 m  Audible Noise <55 dBA @ 1 m  DISPLAY AND COMMUNICATION  Display LED  Communication Standard: R5485 (Modbus RTU), AND either MODBUS over ETHERNET  MECHANICAL DATA  Dimensions (W / H / D) 46.3 × 28.1 × 12.4 in / 1176 × 713.5 × 315 mm  Weight 185 lbs (84kg)  Installation Angle Back tilt up to 15 degrees  DC Fuse Rating 20 A standard  SAFETY  Safety and EMC Standard UL1741 SA, UL1998, CSA-C22.2 No. 107.1-01, IEEE1547, FCC PART 15	<u> </u>	\ZW
Cooling Intelligent Redundant Cooling Operating Temperature Range -13°F to +140°F /-25°C to +60°C Storage Temperature Range -40°F to +158°F /-40°C to +70°C Operating Humidity -0-100% Operating Altitude -13,123.4 ft / 4000 m Audible Noise -55 dBA @ 1 m  DISPLAY AND COMMUNICATION Display LED Communication Standard: RS485 (Modbus RTU), AND either MODBUS over ETHERNET  MECHANICAL DATA Dimensions (W / H / D) 46.3 x 28.1 x 12.4 in / 1176 x 713.5 x 315 mm Weight -185lbs (84kg) Installation Angle -8ack tilt up to 15 degrees DC Fuse Rating -20 A standard  SAFETY Safety and EMC Standard -101.1 IEEE1547, FCC PART 15		NEMA AV (TRCE)
Operating Temperature Range -13 ° F to + 140 ° F / -25 ° C to +60 ° C  Storage Temperature Range -40 ° F to + 158 ° F / -40 ° C to +70 ° C  Operating Humidity -10 0 %  Operating Altitude -13,123.4 f / 4000 m  Audible Noise -55 dBA @ 1 m  DISPLAY AND COMMUNICATION  Display  LED  Communication Standard: RS485 (Modbus RTU), AND either MODBUS over ETHERNET  MECHANICAL DATA  Dimensions (W / H / D) -46.3 x 28.1 x 12.4 in / 1176 x 713.5 x 315 mm  Weight -185 lbs (84kg)  Installation Angle -180 CF use Rating -190 A standard  SAFETY  Safety and EMC Standard -100 %		
Storage Temperature Range  -40 ° F to + 158 ° F / -40 ° C to +70 ° C  Operating Humidity  0 - 100 %  Operating Altitude  Audible Noise  -55 dBA @ 1 m  DISPLAY AND COMMUNICATION  Display  LED  Communication  Standard: RS485 (Modbus RTU), AND either MODBUS over ETHERNET  MECHANICAL DATA  Dimensions (W / H / D)  46.3 × 28.1 × 12.4 in / 1176 × 713.5 × 315 mm  Weight  Installation Angle  Back tilt up to 15 degrees  DC Fuse Rating  SAFETY  Safety and EMC Standard  UL1741 SA, UL1998, CSA-C22.2 No. 107.1-01, IEEE1547, FCC PART 15		
Operating Humidity Operating Altitude 13,123.4 ft / 4000 m Audible Noise 15,123.4 ft / 4000 m Audible Noise  DISPLAY AND COMMUNICATION  Display LED Communication Standard: RS485 (Modbus RTU), AND either MODBUS over ETHERNET  MECHANICAL DATA Dimensions (W / H / D) 46.3 x 28.1 x 12.4 in / 1176 x 713.5 x 315 mm  Weight 185lbs (84kg) Installation Angle Back tilt up to 15 degrees  DC Fuse Rating SAFETY  Safety and EMC Standard UL1741 SA, UL1998, CSA-C22.2 No. 107.1-01, IEEE1547, FCC PART 15		
Operating Altitude 13,123.4 ft / 4000 m Audible Noise < 55 dBA @ 1 m  DISPLAY AND COMMUNICATION  Display LED Communication Standard: RS485 (Modbus RTU), AND either MODBUS over ETHERNET  MECHANICAL DATA Dimensions (W / H / D) 46.3 x 28.1 x 12.4 in / 1176 x 713.5 x 315 mm  Weight 185lbs (84kg) Installation Angle Back tilt up to 15 degrees  DC Fuse Rating 20 A standard  SAFETY  Safety and EMC Standard ULL741 SA, UL1998, CSA-C22.2 No. 107.1-01, IEEE1547, FCC PART 15		
Audible Noise < 55 dBA @ 1 m  DISPLAY AND COMMUNICATION  Display		
DISPLAY AND COMMUNICATION  Display  Communication  Standard: RS485 (Modbus RTU), AND either MODBUS over ETHERNET  MECHANICAL DATA  Dimensions (W / H / D)  Weight  Installation Angle  DC Fuse Rating  SAFETY  Safety and EMC Standard  UL1741 SA, UL1998, CSA-C22.2 No. 107.1-01, IEEE1547, FCC PART 15		
Display  Communication  Standard: RS485 (Modbus RTU), AND either MODBUS over ETHERNET  MECHANICAL DATA  Dimensions (W/H/D)  46.3 x 28.1 x 12.4in / 1176 x 713.5 x 315mm  Weight  185lbs (84kg)  Installation Angle  Back tilt up to 15 degrees  DC Fuse Rating  20 A standard  SAFETY  Safety and EMC Standard  UL1741 SA, UL1998, CSA-C22.2 No. 107.1-01, IEEE1547, FCC PART 15	<u>i</u>	<55 dBA @ 1 m
Communication Standard: RS485 (Modbus RTU), AND either MODBUS over ETHERNET  MECHANICAL DATA  Dimensions (W/H/D) 46.3 x 28.1 x 12.4 in / 1176 x 713.5 x 315 mm  Weight 185lbs (84kg)  Installation Angle Back tilt up to 15 degrees  DC Fuse Rating 20 A standard  SAFETY  Safety and EMC Standard UL1741 SA, UL1998, CSA-C22.2 No. 107.1-01, IEEE1547, FCC PART 15		
MECHANICAL DATADimensions (W/H/D) $46.3 \times 28.1 \times 12.4 in/1176 \times 713.5 \times 315 mm$ Weight $185lbs (84kg)$ Installation AngleBack tilt up to 15 degreesDC Fuse Rating $20 \text{ A standard}$ SAFETYSafety and EMC StandardSafety and EMC StandardUL1741 SA, UL1998, CSA-C22.2 No. 107.1-01, IEEE1547, FCC PART 15		
Dimensions (W/H/D)46.3 x 28.1 x 12.4in / 1176 x 713.5 x 315mmWeight185lbs (84kg)Installation AngleBack tilt up to 15 degreesDC Fuse Rating20 A standardSAFETYSafety and EMC StandardSafety and EMC StandardUL1741 SA, UL1998, CSA-C22.2 No. 107.1-01, IEEE1547, FCC PART 15		Standard: K5485 (Modbus KTU), AND either MODBUS over ETHERNET
Weight185lbs (84kg)Installation AngleBack tilt up to 15 degreesDC Fuse Rating20 A standardSAFETYSafety and EMC StandardUL1741 SA, UL1998, CSA-C22.2 No. 107.1-01, IEEE1547, FCC PART 15		AC 2 x 20.4 x 40.4 \( \frac{1}{2} \) \( \frac{1} \) \( \frac{1}{2} \) \( \frac{1}{2} \) \( \frac{1}{2}
Installation Angle Back tilt up to 15 degrees  DC Fuse Rating 20 A standard  SAFETY  Safety and EMC Standard UL1741 SA, UL1998, CSA-C22.2 No. 107.1-01, IEEE1547, FCC PART 15		
DC Fuse Rating 20 A standard  SAFETY Safety and EMC Standard UL1741 SA, UL1998, CSA-C22.2 No. 107.1-01, IEEE1547, FCC PART 15		
SAFETY Safety and EMC Standard UL1741 SA, UL1998, CSA-C22.2 No. 107.1-01, IEEE1547, FCC PART 15		
Safety and EMC Standard         UL1741 SA, UL1998, CSA-C22.2 No. 107.1-01, IEEE1547, FCC PART 15		20 A standard
Grid Standard IEEE154/, Rule 21, ISO-NE		
Smart-Grid Features Voltage-Ride Thru, Frequency-Ride Thru, Soft-Start, Volt-Var, Frequency-Watt, Volt-Watt		

The specification and key features described in this datasheet may deviate slightly and are not guaranteed. Due to on-going innovation, research and product enhancement, Canadian Solar Inc. reserves the right to make any adjustment to the information described herein at any time without notice. Please always obtain the most recent version of the datasheet which shall be duly incorporated into the binding contract made by the parties governing all transactions related to the purchase and sale of the products described herein.

 $\hbox{$^*$The "Output Voltage Range" and "Output Frequency Range" may differ according to specific grid standard.}$ 

Caution: For professional use only. The installation and handling of PV equipment requires professional skills and should only be performed by qualified professionals. Please read the safety and installation instructions before using the product.





# **BiHiKu**

SUPER HIGH POWER BIFACIAL POLY PERC MODULE 390 W ~ 410 W

**UP TO 30% MORE POWER FROM THE BACK SIDE** CS3W-390 | 395 | 400 | 405 | 410 PB-AG

# **MORE POWER**



Up to 30% more power from the back side



24 % more front side power than conventional modules



Low NMOT: 41 ± 3 °C Low temperature coefficient (Pmax): -0.37 % / °C



Better shading tolerance

### **MORE RELIABLE**



Lower internal current, lower hot spot temperature



Minimizes micro-cracks and snail trails



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



Fire Class A and Type 3 / Type 13

**FRONT BACK** 



linear power output warranty\*



enhanced product warranty on materials and workmanship

\*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 OHSAS 18001:2007 / International standards for occupational health & safety

# **PRODUCT CERTIFICATES\***

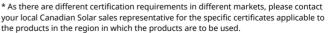
IEC 61215 / IEC 61730: VDE / CE / MCS / INMETRO UL 1703 / IEC 61215 performance: CEC listed (US) UL 1703: CSA / IEC 61701 ED2: VDE / IEC 62716: VDE / IEC 60068-2-68: SGS







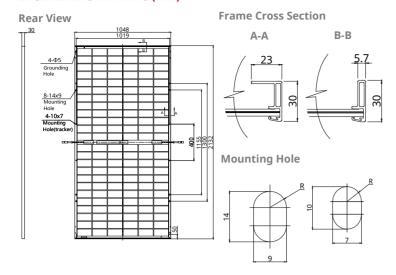




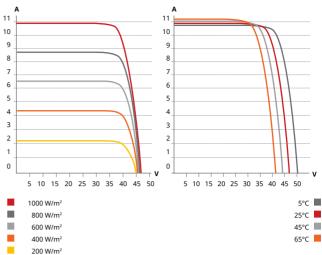
**CANADIAN SOLAR INC.** is committed to providing high quality solar products, solar system solutions and services to customers around the world. No. 1 module supplier for quality and performance/price ratio in IHS Module Customer Insight Survey. As a leading PV project developer and manufacturer of solar modules with over 36 GW deployed around the world since 2001.

<sup>\*</sup> For detail information, please refer to Installation Manual.

#### **ENGINEERING DRAWING (mm)**



# CS3W-400PB-AG / I-V CURVES



# **ELECTRICAL DATA | STC\***

		Nominal Max. Power (Pmax)		Opt. Operating Current (Imp)	Open Circuit Voltage (Voc)	Short Circuit Current (Isc)	Module Efficiency
CS3W-390F	B-AG	390 W	38.3 V	10.19 A	46.8 V	10.74 A	17.45%
	5%	410 W	38.3 V	10.71 A	46.8 V	11.28 A	18.35%
Bifacial	10%	429 W	38.3 V	11.21 A	46.8 V	11.81 A	19.20%
Gain**	20%	468 W	38.3 V	12.23 A	46.8 V	12.89 A	20.95%
	30%	507 W	38.3 V	13.25 A	46.8 V	13.96 A	22.69%
CS3W-395P	B-AG	395 W	38.5 V	10.26 A	47 V	10.82 A	17.68%
	5%	415 W	38.5 V	10.78 A	47 V	11.36 A	18.57%
Bifacial	10%	435 W	38.5 V	11.3 A	47 V	11.9 A	19.47%
Gain**	20%	474 W	38.5 V	12.31 A	47 V	12.98 A	21.21%
	30%	513 W	38.5 V	13.34 A	47 V	14.07 A	22.96%
CS3W-400F	B-AG	400 W	38.7 V	10.34 A	47.2 V	10.9 A	17.90%
	5%	420 W	38.7 V	10.86 A	47.2 V	11.45 A	18.80%
<b>Bifacial</b>	10%	440 W	38.7 V	11.37 A	47.2 V	11.99 A	19.69%
Gain**	20%	480 W	38.7 V	12.41 A	47.2 V	13.08 A	21.48%
	30%	520 W	38.7 V	13.44 A	47.2 V	14.17 A	23.27%
CS3W-405P	B-AG	405 W	38.9 V	10.42 A	47.4 V	10.98 A	18.13%
	5%	425 W	38.9 V	10.94 A	47.4 V	11.53 A	19.02%
Bifacial	10%	445 W	38.9 V	11.46 A	47.4 V	12.08 A	19.92%
Gain**	20%	486 W	38.9 V	12.5 A	47.4 V	13.18 A	21.75%
	30%	527 W	38.9 V	13.56 A	47.4 V	14.27 A	23.59%
CS3W-410F	B-AG	410 W	39.1 V	10.49 A	47.6 V	11.06 A	18.35%
	5%	431 W	39.1 V	11.03 A	47.6 V	11.61 A	19.29%
Bifacial	10%	451 W	39.1 V	11.54 A	47.6 V	12.17 A	20.18%
Gain**	20%	492 W	39.1 V	12.59 A	47.6 V	13.27 A	22.02%
	30%	533 W	39.1 V	13.64 A	47.6 V	14.38 A	23.85%

<sup>\*</sup> Under Standard Test Conditions (STC) of irradiance of 1000 W/m², spectrum AM 1.5 and cell temperature of 25°C.

\*\* Bifacial Gain: The additional gain from the back side compared to the power of the front side

# **ELECTRICAL DATA**

Operating Temperature	-40°C ~ +85°C
Max. System Voltage	1500 V (IEC/UL) or 1000 V (IEC/UL)
Module Fire Performance	TYPE 3 / Type 13 (UL 1703)
Module Fire Periormance	or CLASS A (IEC61730)
Max. Series Fuse Rating	25 A
<b>Application Classification</b>	Class A
Power Tolerance	0 ~ + 5 W
Power Bifaciality*	70 %
1.0 015 1.01 0 1.0	L II D L D L L L CTC DIS :

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

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  $% \left( 1\right) =\left( 1\right) \left( 1\right)$ before using our PV modules.

# **ELECTRICAL DATA | NMOT\***

	Nominal Max.		Opt. Operating	Open Circuit	Short Circuit
	Power (Pmax)	Voltage (Vmp)			Current (Isc)
CS3W-390PB-AG	291 W	35.7 V	8.15 A	44.0 V	8.66 A
CS3W-395PB-AG	295 W	35.9 V	8.21 A	44.2 V	8.72 A
CS3W-400PB-AG	299 W	36.1 V	8.27 A	44.4 V	8.79 A
CS3W-405PB-AG	302 W	36.3 V	8.33 A	44.6 V	8.85 A
CS3W-410PB-AG	306 W	36.5 V	8.39 A	44.8 V	8.92 A

<sup>\*</sup> Under Nominal Module Operating Temperature (NMOT), irradiance of 800 W/m<sup>2</sup>. spectrum AM 1.5, ambient temperature 20°C, wind speed 1 m/s.

### **MECHANICAL DATA**

Specification	Data
Cell Type	Poly-crystalline
Cell Arrangement	144 [2X (12 X6) ]
Dimensions	2132 × 1048 × 30 mm (83.9 × 41.3 × 1.2 in)
Weight	28.2 kg (62.2 lbs)
Front / Back Glass	2.0 mm heat strengthened glass
Frame	Anodized aluminium alloy
J-Box	IP68, 3 diodes
Cable	4.0 mm <sup>2</sup> (IEC), 12 AWG (UL)
Cable Length (Including Connector)	Portrait: 400 mm (15.7 in) (+) / 280 mm (11.0 in) (-); landscape: 1400 mm (55.1 in); leap-frog connection: 1850 mm (72.8 in)*
Connector	T4 series or H4 UTX or MC4-EVO2
Per Pallet	35 pieces
Per Container (40' HQ)	700 pieces or 560 pieces (only for US and Canada)

<sup>\*</sup> For detailed information, please contact your local Canadian Solar sales and technical representatives.

# **TEMPERATURE CHARACTERISTICS**

Specification	Data
Temperature Coefficient (Pmax)	-0.37 % / °C
Temperature Coefficient (Voc)	-0.29 % / °C
Temperature Coefficient (Isc)	0.05 % / °C
Nominal Module Operating Temperature	41 ± 3°C

# PARTNER SECTION

PARTINER SECTION		
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at the standard test condition. It depends on mounting (structure, height, tilt angle etc.) and albedo of the ground.

<sup>\*</sup> 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. Canadian Solar Inc. reserves the right to make necessary adjustment to the information described herein at any time without further notice.