	TECH	NICAL SU	LI Wheeler						
PROJECT	NAME:	BE	LMONT STREET						
COMPLETED BY: ASHLE			HLEY TAYLOR		DATE ISSUED:		TSD NO:		
το.		VIS	TRY DESIGN TEAM		12.12.202	2	WHE-15-004		
10.		TEC							
		TEC	HNICAL			26.1	2 22		
X	Equipment	Specifying	Builders Work	X	Manufacturer		Assembly		
	Schedule		Requirements		Data		Installation Details		
Design Check Calculations			O & M Manuals		Certified Performance Data	Certified C Performance Data			
ADDITI Co -ordina	ONAL SUE	s with the SVPs a	TAILS:	laid by archite	ect				
Signed f	for and on I	Behalf of Wh	eeler Electrical Ltd	E.WHE	E.WHEELER 12.12.2022				
		Status A = N	o comment, can be inco	orporated	into the sche	eme			
	-	Status B = N	linor discrepancies foun	id as detai	led below. S	ubmission c	an be incorporated		
CONANA			ubmission unacceptable	as detaile	ed below, re	submission	required		
		SUBINISSIUN	1: -						
SIGN	ED		PRINT NAME			DATE			
POSIT	ION		REPRESENTING	3					





HiKu6 Mono PERC 395 W ~ 420 W CS6R-395 400 405 410 415 420MS

MORE POWER



technology, up to 50% lower degradation

Comprehensive LID / LeTID mitigation

Lower LCOE & system cost

Module power up to 420 W

Module efficiency up to 21.5%

Better shading tolerance

MORE RELIABLE



Minimizes micro-crack impacts

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

25 Years

Industry Leading Product Warranty on Materials and Workmanship*



Linear Power Performance Warranty*

1st year power degradation no more than 2% Subsequent annual power degradation no more than 0.55%

*Subject to the terms and conditions contained in the applicable Canadian Solar Limited Warranty Statement. Also this 25-year limited product warranty is available only for products installed and operating on residential rooftops in certain regions.

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*

IEC 61215 / IEC 61730 / CE / INMETRO UL 61730 / IEC 61701 / IEC 62716 Take-e-way



* 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 63 GW of premium-quality solar modules across the world.

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

ENGINEERING DRAWING (mm)

Rear View





CS6R-405MS / I-V CURVES



ELECTRICAL DATA | STC*

MECHANICAL DATA

CS6R	395MS	400MS	405MS	410MS	415MS	420MS	Specification	Data
Nominal Max. Power (Pmax)	395 W	400 W	405 W	410 W	415 W	420 W	Cell Type	Mono-crystalline
Opt. Operating Voltage (Vmp)30.6 V	30.8 V	31.0 V	31.2 V	31.4 V	31.6 V	Cell Arrangement	108 [2 X (9 X 6)]
Opt. Operating Current (Imp)	12.91 A	12.99 A	13.07 A	13.15 A	13.23 A	13.31 A	Dimensions	1722 × 1134 × 30 mm
Open Circuit Voltage (Voc)	36.6 V	36.8 V	37.0 V	37.2 V	37.4 V	37.6 V	Dimensions	(67.8 × 44.6 × 1.18 in)
Short Circuit Current (Isc)	13.77 A	13.85 A	13.93 A	14.01 A	14.09 A	14.17 A	Weight	21.3 kg (47.0 lbs)
Module Efficiency	20.2%	20.5%	20.7%	21.0%	21.3%	21.5%	Front Cover	3.2 mm tempered glass with anti- reflective coating
Operating Temperature	-40°C ~	+85°C					Frame	Anodized aluminium alloy,
Max. System Voltage	1500V (IEC/UL)	or 1000	V (IEC/U	L)		I-Box	IP68, 3 bypass diodes
Module Fire Performance	TYPE 1 1000V)	(UL 6173	30 1500 S C (IEC	V) or TYF 61730)	PE 2 (UL	61730	Cable	4 mm ² (IEC), 12 AWG (UL)
May Carico Fues Dating	25.4		5 C (IEC	01750)			Connector	MC4 or MC4-EVO2
Max. Series Fuse Rating	25 A						Cable Length	Portrait: 410 mm (16.1 in) (+) / 290
Application Classification	Class A						(Including Connector)	mm (11.4 in) (-); landscape: 1100
Power Tolerance	0~+10) W						mm (43.3 in)*
* Under Standard Test Conditions (STC) of irradia	aca of 1000	\\\/m2_ em		1 [and co	lltomano	Per Pallet	35 pieces

* Under Standard Test Conditions (STC) of irradiance of 1000 W/m², spectrum AM 1.5 and cell tempe rature of 25°C.

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

Per Container (40' HQ) 910 pieces

ELECTRICAL DATA | NMOT*

CS6R	395MS	400MS	405MS	410MS	415MS	420MS	TEMPERATURE CHARACTERISTICS	
Nominal Max. Power (Pmax)	296 W	300 W	304 W	307 W	311 W	315 W	Specification	Data
Opt. Operating Voltage (Vmp)28.7 V	28.9 V	29.1 V	29.2 V	29.4 V	29.6 V	Temperature Coefficient (Pmax)	-0.34 % / °C
Opt. Operating Current (Imp)) 10.33 A	10.39 A	10.45 A	10.52 A	10.58 A	10.65 A	Temperature Coefficient (Voc)	-0.26 % / °C
Open Circuit Voltage (Voc)	34.6 V	34.8 V	35.0 V	35.1 V	35.3 V	35.5 V	Temperature Coefficient (Isc)	0.05 % / °C
Short Circuit Current (Isc)	11.09 A	11.15 A	11.21 A	11.28 A	11.34 A	11.41 A	Nominal Module Operating Temperature	41 ± 3°C
					-			

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

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.





Solis Three Phase Inverters

» S5-GR3P(3-20)K





Efficient

- Max. efficiency 98.7%
- String current up to 16A
- Wide voltage range and low startup voltage

∀̈́Ç⁻ Smart

- Supports export power control
- ▶ Supports RS485, WiFi, GPRS
- Scan to register on SolisCloud, supports remote upgrade and control

🔒 Safe

- ▶ IP66
- ► AFCI protection, proactively reduces fire risk
- Automatic voltage stabilization technology in weak grid conditions

Seconomic 🚱

- ▶ Compact design, simple installation and maintenance
- ▶ > 150% DC/AC ratio
- Supports high power modules for lower installation costs

Model:

S5-GR3P3K	S5-GR3P4K	S5-GR3P5K	S5-GR3P6K	S5-GR3P8K	S5-GR3P9K	S5-GR3P10K
S5-GR3P12K	S5-GR3P13K	S5-GR3P15K	S5-GR3P17K	S5-GR3P20K		



Datasheet												
Model Name	S5-GR3P3K	S5-GR3P4K	S5-GR3P5K	S5-GR3P6K	S5-GR3P8K	S5-GR3P9K	S5-GR3P10K	S5-GR3P12K	S5-GR3P13K	S5-GR3P15K	S5-GR3P17K	S5-GR3P20K
Input DC												
Recommended max. PV power	4.5 kW	6 kW	7.5 kW	9 kW	12 kW	13.5 kW	15 kW	18 kW	19.5 kW	22.5 kW	25.5 kW	30 kW
Max. input voltage						110	0 V					
Rated voltage						600) V					
Start-up voltage						180) V					
MPPT voltage range		160-1000 V										
Max. input current				16 A / 16 A						32 A / 32 A	L.	
Max. short circuit current		20 A / 20 A 40 ,							40 A / 40 A			
MPPT number/Max. input strings number				2/2						2/4		
Output AC												
Rated output power	3 kW	4 kW	5 kW	6 kW	8 kW	9 kW	10 kW	12 kW	13 kW	15 kW	17 kW	20 kW
Max. apparent output power	3.3 kVA	4.4 kVA	5.5 kVA	6.6 kVA	8.8 kVA	9.9 kVA	11 kVA	13.2 kVA	14.3 kVA	16.5 kVA	18.7 kVA	22 kVA
Max. output power	3.3 kW	4.4 kW	5.5 kW	6.6 kW	8.8 kW	9.9 kW	11 kW	13.2 kW	14.3 kW	16.5 kW	18.7 kW	22 kW
Rated grid voltage					3/N/PE	E, 220 V / 38	80 V, 230 V	/ 400 V				
Rated grid frequency						50 Hz /	60 Hz					
Rated grid output current	4.6 A / 4.3 A	6.1 A / 5.8 A	7.6 A / 7.2 A	9.1 A / 8.7 A	12.2 A / 11.5 A	13.7 A / 13.0 A	15.2 A / 14.4 A	18.2 A / 17.3 A	19.8 A / 18.8 A	22.8 A / 21.7 A	25.8 A / 24.6 A	30.4 A / 28.9 A
Max. output current	4.7 A	6.4 A	7.9 A	9.5 A	12.7 A	14.3 A	15.9 A	19.1 A	20.7 A	23.8 A	27 A	31.8 A
Power Factor					>0.99) (0.8 leadir	ng - 0.8 lag	gging)				
THDi						<2	%					
Efficiency												
Max. efficiency		98.	3%			98.5%			98.6%		98.	7%
EU efficiency		97.	7%			97.9%		98.0%			98.	1%
Protection												
DC reverse-polarity protection						Ye	S					
Short circuit protection						Ye	s					
Output over current protection						Ye	s					
Surge protection						Ye	s					
Grid monitoring						Ye	s					
Anti-islanding protection						Ye	S					
Temperature protection						Ye	S					
Integrated AFCI (DC arc-fault circuit protection)						Ye	es (1)					
Integrated DC switch						Opti	onal					
General Data												
Dimensions (W*H*D)						310*563*	219 mm					
Weight				17.	3 kg				18.8	8 kg	20	kg
Topology	Transformerless											
Self consumption (night)	<1 W											
Operating ambient temperature range						-25 ~ -	+60°C					
Relative humidity						0-10	0%					
Ingress protection						IP	66					
Cooling concept			Nati	ural conve	tion			Ir	ntelligent r	redundant	fan-coolin	g
Max. operation altitude						400	0 m					
Grid connection standard	G98 or UNE 20	G99, VDE-A 06007-1, C	AR-N 4105 El 0-21, C1	/ VDE V 012 0/11, NRS (24, EN 5054 097-2-1, T(49-1, VDE 0 OR, EIFS 20	126 / UTE 18.2, IEC (C 15 / VFR: 52116, IEC (2019, RD 1 61727, IEC	L699 / RD 2 60068, IEC	244 / UNE 2 261683, EN	06006 / 50530
Safety/EMC standard	IEC/EN 62109-1/-2. IEC/EN 6100-6-1/-2/-3/-4											
Features												
DC connection						MC4 cor	nnector					
AC connection					(Quick conn	ection plu	g				
Display	LCD											
Communication	RS485, Optional: Wi-Fi, GPRS											

(1) Activation required.







Datasheet ValkPro+ | ValkPro+ East-West

The concept	 Mounting system for PV-panels on flat roofs (commercial and domestic). For south and east-west configurations. Fixed tilt angle of 10° (Landscape or Portrait) and 15° (Landscape). Low ballast, shielded system with wind deflectors (south). 								
ValkPro+ vs. competitive systems	 Most cost effective solution. All metal connections, no plastic. This ensures high strength and reliability and makes the system easy to ground and for equalization of potential. Also suitable for roofs higher than 25 mtrs. Can be placed with ballast only on flat roofs with a maximum slope up to 5°. On roofs with a bigger slope, the system needs to be fixed to the roof. Universal integrated panel clamps (28-50 mm frame height). Suitable to be placed on roofs with gravel, "green roofs" or fixed on steel structures above the roof. Elevated mounting on roof for guaranteed drainage. 								
Additional features	 Designed and calculated according to latest building regulations. Low ballast and roof load, thanks to the use of wind deflectors and coupled rows. Easy and fast installation, thanks to limited number of parts and screw joints. Maximum logistical advantage, thanks to limited number of different parts and dimensions. Smart solutions to hold cables and cable baskets. Easy to disassemble. 								
Panel formats	 ValkPro+ (sou dimensions: 	uth & east-wes	st) is standard	applicable for p	anels with the	following			
	Mounting	Panel length min [mm]	Panel length max [mm]	Panel width min [mm]	Panel width max [mm]	Pitch [mm]			
	L10° South	1520	2320	977	1200	1500			
	L10° East-West	1520	2320	977	1070	2300			
	L15° South	1520	2320	977	1200	1500			
	L15° East-West	1520	2320	977	1090	2300			

* Non standard pitch configurations can be supplied on project basis. Please contact Van der Valk Solar Systems for the possibilities.

1700

1680

1730

2030

CONTACT DETAILS | DEVELOPER AND PRODUCER OF SOLAR MOUNTING SYSTEMS

P10° South

P10° East-West

Van der Valk Solar Systems + International Zwartendijk 73 - 2681 LP Monster, The Netherlands +31 174 25 49 99 sales@valksolarsystems.com

Valk Solar Systems UK + IE +44 1304 89 76 58 sales@valksolarsystems.co.uk

1560

1560 1680

1730

Valk Solar Systems Ibérica +34 699 326 544 ventas@valksolarsystems.es

900

900

900

900

1500

1500

1500

1500

Valk Solar Systems Nordics +46 7 24 41 60 82 sales@valksolarsystems.se

2300

3500

3600

4200



60NO. CANADIAN SOLAR 410W MODULES MOUNTED ON FLAT ROOF USING VDV SOUTH FACING SYSTEM. MODULES TO BE GRID CONNECTED VIA SOLIS 20KW INVERTER.

Building C 5 stories



5896

10728

66NO. CANADIAN SOLAR 410W MODULES MOUNTED ON FLAT RC USING VDV SOUTH FACING SYSTEM. MODULES TO BE GRID CONNECTED VIA SOLIS 20KW INVERTER.

	LEGEND
	COLOCTIV
	SOUICIX
	Renewables
	BELMONT STREET,
	PV DESIGN PROPOSAL
DOF	DRAWING REF:
	PV001 - PV LAYOUT
	DRAWN BY:
	DATE DRAWN: REVISION:
	17/11/2022 P2



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