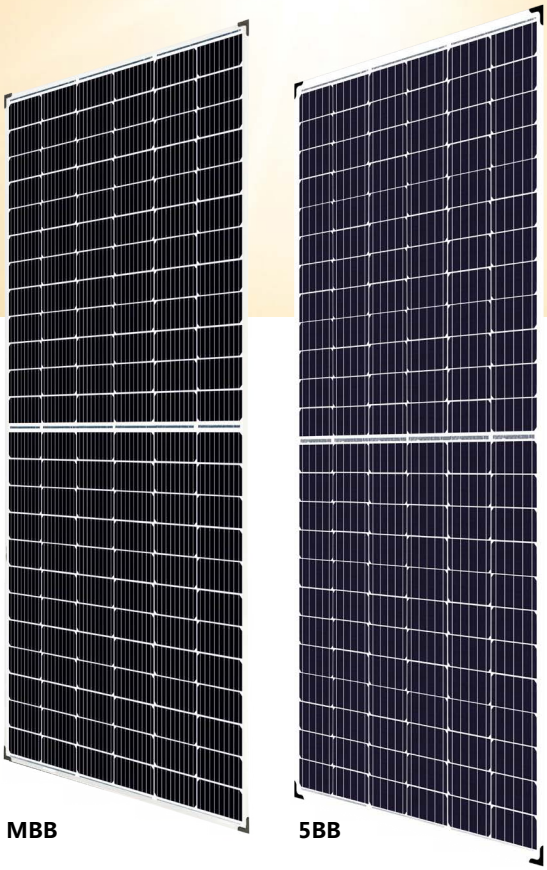
NEW

CanadianSolar

KuDymond

HIGH EFFICIENCY MONO PERC MODULE

CS3U-370|375|380|385MS-FG



MBB 5BB

*Transparent doubleglass module can be provided upon request.

MORE POWER

- Low power loss in cell connection
- Low NMOT: 41 ± 3 °C
  Low temperature coefficient (Pmax): -0.37 % / °C
- Better shading tolerance

MORE RELIABLE

- Lower hot spot temperature
- Minimizes micro-cracks
- Heavy snow load up to 5400 Pa,
  wind load up to 2400 Pa
- Fire Class A and Type 3 / Type 13 certified
  according to IEC 61730-2 / MST 23 and UL 1703

30 years linear power output warranty

10 years product warranty on materials and workmanship

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 / CEC AU
UL 1703: CSA / IEC61701 ED2: VDE / IEC62716: VDE
Take-e-way

*We can provide this product with special BOM specifically certified with salt mist, ammonia and sand blowing tests. Please talk to our local technical sales representatives to get your customized solutions.

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 30 GW deployed around the world since 2001.

CANADIAN SOLAR INC.
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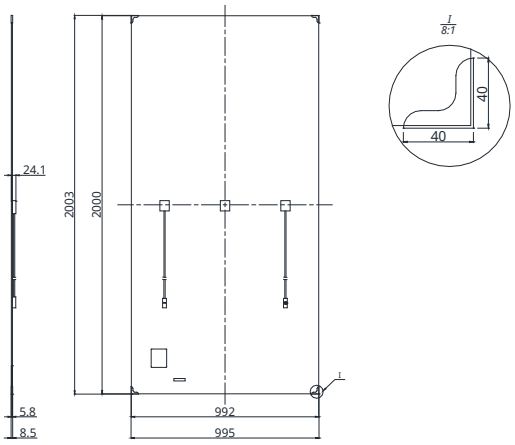
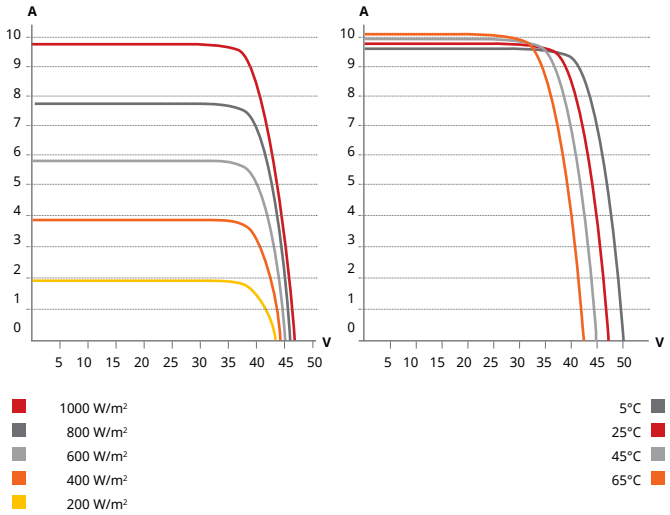
ENGINEERING DRAWING (mm)

Rear View



CS3U-370MS-FG / I-V CURVES



ELECTRICAL DATA | STC*

CS3U	370MS-FG	375MS-FG	380MS-FG	385MS-FG
Nominal Max. Power (Pmax)	370 W	375 W	380 W	385 W
Opt. Operating Voltage (Vmp)	39.6 V	39.8 V	40.0 V	40.2 V
Opt. Operating Current (Imp)	9.35 A	9.43 A	9.50 A	9.58 V
Open Circuit Voltage (Voc)	47.4 V	47.6 V	47.8 V	48.0 V
Short Circuit Current (Isc)	9.85 A	9.93 A	10.01 A	10.09 A
Module Efficiency	18.65%	18.90%	19.15%	19.41%
Operating Temperature	-40°C ~ +85°C			
Max. System Voltage	1500V (IEC) or 1000V (IEC/UL)			
Module Fire Performance	TYPE 3 / Type 13 (UL 1703) or CLASS A (IEC61730)			
Max. Series Fuse Rating	30 A			
Application Classification	Class A			
Power Tolerance	0 ~ + 5 W			

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

ELECTRICAL DATA | NMOT*

CS3U	370MS-FG	375MS-FG	380MS-FG	385MS-FG
Nominal Max. Power (Pmax)	276 W	280 W	284 W	287 W
Opt. Operating Voltage (Vmp)	36.7 V	36.9 V	37.1 V	37.3 V
Opt. Operating Current (Imp)	7.51 A	7.58 A	7.64 A	7.70 A
Open Circuit Voltage (Voc)	44.6 V	44.8 V	45.0 V	45.1 V
Short Circuit Current (Isc)	7.94 A	8.01 A	8.07 A	8.14 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	Mono-crystalline
Cell Arrangement	144 [2 x (12 x 6)]
Dimensions	2000 X 992 X 5.8 mm (78.7 X 39.1 X 0.23 in) without J-Box and corner protector
(Incl. corner protector)	2003 X 995 X 8.5 mm (78.9 X 39.2 X 0.33 in) without J-Box
Weight	29 kg (63.9 lbs)
Front / Back Glass	2.5 mm heat strengthened glass
Frame	Frameless
J-Box	IP68, 3 bypass diodes
Cable	4 mm² (IEC), 12 AWG (UL)
Cable Length (Including Connector)	Portrait: 400 mm (15.7 in) (+) / 280 mm (11.0 in) (-); landscape: 1250 mm (49.2 in);leap-frog connection: 1670 mm (65.7 in)*
Connector	T4 series
Per Pallet	30 pieces
Per Container (40' HQ)	660 pieces

* 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

* 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 adjustments 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 INC.
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SG250HX-US New

Multi-MPPT String Inverter for 1500 Vdc System

SUNGROW
Clean power for all

HIGH YIELD

- 12 MPPTs with max. efficiency 99%
- Compatible with bifacial module
- Built-in Anti-PID and PID recovery function

SMART O&M

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

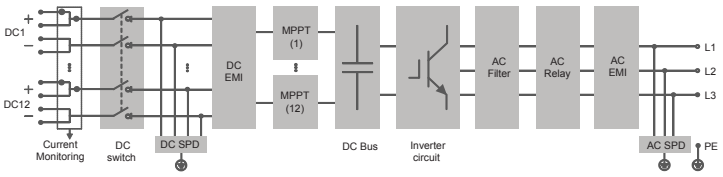
LOW COST

- Compatible with Al and Cu AC cables
- DC 2 in 1 connection enabled
- Power line communication (PLC)
- Reactive power at night function

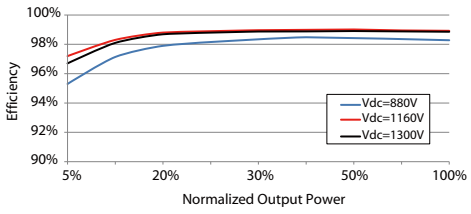
PROVEN SAFETY

- Integrated Arc fault circuit protection
- NEMA 4X protection and C5 anti-corrosion grade
- Type II SPD for both DC and AC

CIRCUIT DIAGRAM



EFFICIENCY CURVE



Type designation	SG250HX-US
Input (DC)	
Max. PV input voltage	1500 V
Min. PV input voltage / Startup input voltage	600 V / 600 V
Nominal PV input voltage	1080 V
MPP voltage range	600 V – 1500 V
MPP voltage range for nominal power	860 V – 1300 V
No. of independent MPP inputs	12
Max. PV input current	26 A * 12
Max. current for input connector	30 A
Max. DC short-circuit current	50 A * 12
Output (AC)	
AC output power	250 kVA @ 30 ℃ / 225 kVA @ 40 ℃ / 200 KVA @ 50 ℃
Max. AC output current	180.5 A
Nominal AC voltage	3 / PE, 800 V
AC voltage range	680 – 880V
Nominal grid frequency / Grid frequency range	50 Hz / 45 – 55 Hz, 60 Hz / 57 – 63 Hz
THD	< 3 % (at nominal power)
DC current injection	< 0.5 % In
Power factor at nominal power / Adjustable power factor	> 0.99 / 0.8 leading – 0.8 lagging
Feed-in phases / connection phases	3 / 3
Efficiency	
Max. efficiency	99.0 %
CEC efficiency	98.5 %
Protection	
DC reverse connection protection	Yes
AC short circuit protection	Yes
Leakage current protection	Yes
Grid monitoring	Yes
Ground fault monitoring	Yes
DC switch	Yes
AC switch	No
Arc fault circuit interrupter (AFCI)	Yes
PV String current monitoring	Yes
Reactive powe at night function	Yes
PID protection	An-ti PID or PID recovery
Overvoltage protection	DC Type II and AC Type II
General Data	
Dimensions (W*H*D)	1051 * 660 * 363 mm (41.4'' * 26'' * 14.3'')
Weight	99 kg (218.25 lbs)
Isolation method	Transformerless
Ingress protection rating	NEMA 4X
Night power consumption	< 2 W
Operating ambient temperature range	-30 to 60 ℃ ('-22 to 140 ℉)
Allowable relative humidity range (non-condensing)	0 – 100 %
Cooling method	Smart forced air cooling
Max. operating altitude	4000 m (> 3000 m der ating) 13123 ft (> 9843 ft derating)
Display	LED, Bluetooth+APP
Communication	RS485 / PLC
DC connection type	Amphenol UTX (Max. 6 mm² 10AWG)
AC connection type	OT / DT terminal (Max. 300 mm² 600 Kcmil)
Compliance	UL1741, UL1741SA, IEEE1547, IEEE1547.1, CSA C22.2 107.1-01-2001, FCC Part15 Sub-part B Class A Limits, California Rule 21,UL 1699B
Grid Support	Reactive power at night function, LVRT, HVRT,active & reactive power control and power ramp rate control, Volt/Watt, Frequency/Watt

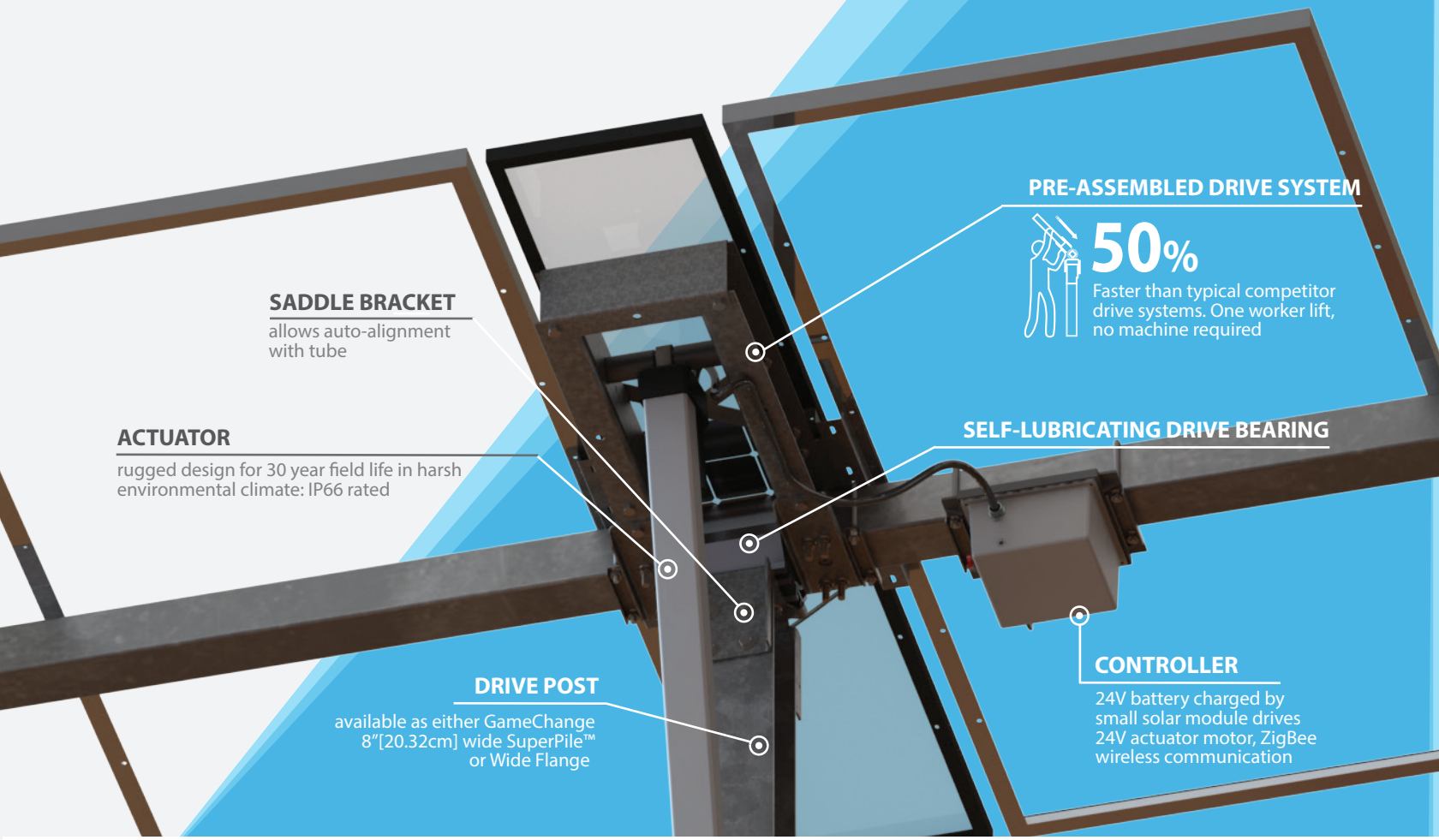
*: Only compatible with Sungrow logger and iSolarCloud

OVER 3.2 GW SOLD
Every System For Your Every Need

GAMECHANGE SOLAR
REPOWERING THE PLANET

GENIUS TRACKER™
WORLD'S HIGHEST POWER PRODUCING AND FASTEST INSTALLING SOLAR TRACKER

TECHNICAL DATASHEET



PRE-ASSEMBLED DRIVE SYSTEM

50%
Faster than typical competitor drive systems. One worker lift, no machine required

SADDLE BRACKET
allows auto-alignment with tube

ACTUATOR
rugged design for 30 year field life in harsh environmental climate: IP66 rated

SELF-LUBRICATING DRIVE BEARING

CONTROLLER
24V battery charged by small solar module drives 24V actuator motor, ZigBee wireless communication

DRIVE POST
available as either GameChange 8"[20.32cm] wide SuperPile™ or Wide Flange

OWNERS BENEFITS

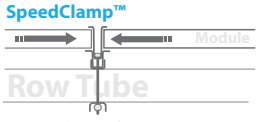
UP TO **6.75%** MORE POWER PRODUCTION

RESULTS IN HIGHER KWH OUTPUT & UP TO 40% HIGHER ROE
Varies based on project specifics

INSTALLERS BENEFITS

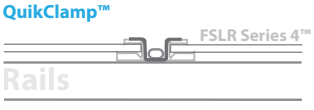
FASTEST INSTALLING SYSTEM
ADVANCED DESIGN INNOVATIONS AND PRE-ASSEMBLED COMPONENTS

SpeedClamp™



No Mounting Hardware Speeds Module Installation Up To:
40%

QuikClamp™



FSLR Series 4 Module Installation Speeds Up To:
30%

OVER 3.2 GW SOLD
Every System For Your Every Need

GAMECHANGE SOLAR
REPOWERING THE PLANET

GENIUS TRACKER™
OWNERS BENEFITS

UP TO 40% HIGHER ROE
Combine to increase owner cash flow of sample project to $17MM cash flow vs $13MM & $15MM for competitors

Higher Module Density - increased row spacing means more time facing the sun and less time running from the shade, adds up to 5% more power production than competitors

WeatherSmart™ - AI technology optimizes tilt angle based on weather data to maximize power production, adds up to 1.25% additional power production

PowerBoost™ - Smart optimization allows table rows to respond individually based on topography to prevent shading, adds up to 0.5% additional power production. Available in Q4 2018

LOWEST O & M COST
Lowest grass cutting & module washing cost

Zero maintenance drive system

INSTALLERS BENEFITS

FASTEST INSTALLING SYSTEM
Advanced design innovations & pre-assembled components

Pre-assembled Drive Arm - can be lifted by one worker, no machine required. 50% faster than typical competitors

SpeedClamp™ - Mounts modules with no mounting hardware, speeds module installation up to 40%

QuikClamp™ - Speeds install for FSLR Series 4 modules up to 30%

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Email: info@gamechangesolar.com

Modules	Supporting Type	Most commercially available, including frameless crystalline and thin film
Civil	Slope Tolerance (N-S)	7% standard, can go to 15% special order
	Slope Tolerance (E-W)	15% **Tracker follows slope (Y/N)** Yes
Structural	Drive Type	Robust linear actuator stainless steel & aluminum
	Piles per MW	450/MW typical
	Operating Wind Load	105mph(Std) / 130mph(Premium 1) / 150mph(Premium 2) / 175mph(Premium 3)
	Snow Load	5psf(Std) / 20psf(Premium 1) / 40psf(Premium 2) / 60 psf(Premium 3)
	Tracking Range (Std)	45°, 52° **Tracking Range (Premium)** 60°
	Pile Sections	G235 galvanized steel (or HDG option) roll formed standard posts, HDG wide flange option also available
	Pile Size (Interior) & (Exterior)	6" X 6" roll form shape or W6x7 or W6x9 or W6x15 wide flange
	Motor Foundation	6.5" x 8" roll form hat or W6x15 or larger wide flange
	Standard Embedment	5 - 7 ft **Flood Plain Allowance** Up to 6 feet
Design	Module Configuration	1 up in portrait for crystalline, FSLR Series 6, 2 up landscape for Bifacial, 3 to 4 up landscape FSLR Series 4
	Modules per Table	Up to 340 ft. (for example 102 72 cell crystalline)
	Module Attachment	SpeedClamp™ or Bolts available for bottom mount frame modules or clamps for glass on glass modules
	Ground Coverage Ratio	0.25 to 0.65
	Rows per Drive	1 drive per tracker(table), distributed drive system
	Powering System	Onboard solar module with battery or wireline power
	Compliance	UL 2703 / 3703
	Ground Clearance To Module	2 ft
	Min / Max Ground to Top of Pier	51" typical / ground clearance + 51" + 9" adjustment range
	Backtracking	Yes, although can be turned off as requested (i.e.for FSLR modules)
	Temperature Range	-20° C + 48° C
	FCC 3rd party design verified	Compliant with FCC guidelines
Self Perform	Specialty Tools Required	No
	Mechanical Installation	Available
	Max offload for deliveries	As per customer requirement
Electrical	Tracking Method	Time and location based algorithm
	String Design	Compatible with any string size
	Cable Supports	Free hole punching as per customer requirement
	Linear Actuator Motor	24 volt DC
	Controller Box	Zigbee® wireless communications, 24v solar panel and battery or wireline power
	Control System	Master to Node: Zigbee® wireless communications Master to SCADA/DAS: MODBUS communications
	# of Motors	28 to 52 / MW depending on panel wattage and loading conditions (35 for typical conditions)
	1000V System or 1500V System	Both
	Grounding Method	Tracker structure is part of grounding path per UL 2703
	UL Listed Assembly	UL 2703 / UL3703
	NEMA Ratings	IP66 stroke tube end /67 waterproof motor end (NEMA 3x/4 equivalent)
	# Weather Station	1 per 6 MW typical
	Monitoring System	Web portal interface available Compatible with all standard third party monitoring vendors
	Snow & Flood Sensors	Move panels to optimum location for weather events
	Backup Power	Solar module and battery providing integrated backup - 3 days
O & M	Warranty	5 year drive & control, 10 year structural standard, 10 /20 also available
Shipping	Max load	45,000 lbs. per truckload 5,000 lbs. maximum bundle size 2,900 lbs. or other maximum as requested by customers
	Shipping Containers or flatbeds	Flat beds for structure, dry vans for hardware
	# Trucks per MWdc	2.76 typical
Commissioning	Backfeed required?	No, Generator for power to master as alternative