# Blossom Solar, LLC

**Blossom Solar** 

**Exhibit B** 

**Representative Component Models** 

Case No. 22-0151-EL-BGN

# Hi-MO5

# LR5-72HBD 520~545M

- Based on M10-182mm wafer, best choice for ultra-large power plants
- Advanced module technology delivers superior module efficiency
  - M10 Gallium-doped Wafer Smart Soldering 9-busbar Half-cut Cell
- Globally validated bifacial energy yield
- High module quality ensures long-term reliability



12-year Warranty for Materials and Processing



30-year Warranty for Extra Linear Power Output

#### Complete System and **Product Certifications**

IEC 61215, IEC 61730, UL 61730

ISO 9001:2008: ISO Quality Management System

ISO 14001: 2004: ISO Environment Management System

TS62941: Guideline for module design qualification and type approval

OHSAS 18001: 2007 Occupational Health and Safety











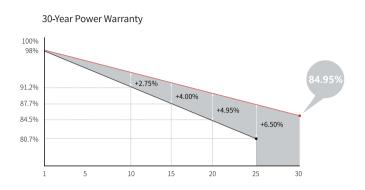
## LR5-72HBD 520~545M

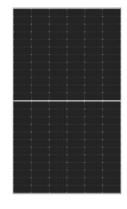
21.3% MAX MODULE EFFICIENCY 0~+5W
POWER
TOLERANCE

<2% FIRST YEAR POWER DEGRADATION 0.45% YEAR 2-30 POWER DEGRADATION

**HALF-CELL**Lower operating temperature

#### **Additional Value**

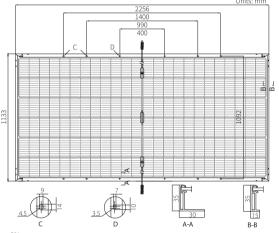






#### **Mechanical Parameters**

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Cell Orientation	144 (6×24)		
Junction Box	IP68, three diodes		
Output Cable	4mm², positive 400 / negative 200mm length can be customized		
Glass	Dual glass, 2.0mm coated tempered glass		
Frame	Anodized aluminum alloy frame		
Weight	32.3kg		
Dimension	2256×1133×35mm		
Packaging	31 pcs per pallet / 155 pcs per 20' GP / 620 pcs per 40' HC		



Electrical Characteristics	STC: AM1.5 1000V	V/m <sup>2</sup> 25°C Tes	t uncertainty for Pmax: ±3%			
Power Class	520	525	530	535	540	545
Maximum Power (Pmax/W)	520	525	530	535	540	545
Open Circuit Voltage (Voc/V)	48.90	49.05	49.20	49.35	49.50	49.65
Short Circuit Current (Isc/A)	13.57	13.65	13.71	13.78	13.85	13.92
Voltage at Maximum Power (Vmp/V)	41.05	41.20	41.35	41.50	41.65	41.80
Current at Maximum Power (Imp/A)	12.67	12.75	12.82	12.90	12.97	13.04
Module Efficiency(%)	20.3	20.5	20.7	20.9	21.1	21.3

**Operating Parameters** 

operating rarameters		
Operational Temperature	-40°C ~ +85°C	
Power Output Tolerance	0 ~ +5 W	
Voc and Isc Tolerance	±3%	
Maximum System Voltage	DC1500V (IEC/UL)	
Maximum Series Fuse Rating	30A	
Nominal Operating Cell Temperature	45±2°C	
Protection Class	Class II	
Fire Rating	UL type 29	
Bifaciality	70±5%	

**Mechanical Loading** 

Front Side Maximum Static Loading	5400Pa
Rear Side Maximum Static Loading	2400Pa
Hailstone Test	25mm Hailstone at the speed of 23m/s

#### **Temperature Ratings (STC)**

Temperature Coefficient of Isc	+0.050%/°C
Temperature Coefficient of Voc	-0.284%/°C
Temperature Coefficient of Pmax	-0.350%/°C



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Specifications included in this datasheet are subject to change without notice. LONGi reserves the right of final interpretation. (20201231V12)





The NX Gemini™ two-in-portrait (2P) solar tracker optimizes lifetime value and performance, helping project developers and asset owners get the most from their power plant. Ideally suited for sites with challenging soils, high winds, and irregular boundaries, the ruggedized 2P tracker features a patent-pending distributed drive system for maximum stability in extreme weather, eliminating the need for dampers and producing virtually zero energy losses associated with stowing.

### Capitalize with Highest Power Density Solar Tracker

NX Gemini's flexible 2P module configuration allows for the maximum number of modules per foundation, requiring only 60 meters and seven foundation posts to provide support for up to 120 modules on four 1500-volt strings. With the lowest number of foundations per megawatts on the solar tracker market today, NX Gemini helps reduce tracker installation costs on difficult sites.

# Pair with TrueCapture and Bifacial for Maximum Performance

The 2P tracker can be equipped with either monofacial or bifacial PV modules and integrated with the entire Nextracker software ecosystem, including the TrueCapture™ advanced smart control and energy yield enhancement platform. Incorporated into the NX Gemini design is the field-proven innovations found in NX Horizon™, such as independent-row architecture, intelligent control systems and wireless communications.



The Nextracker team has always collaborated with us during their product development process, resulting in trackers that are faster to build, compatible for more sites and easier to maintain. NX Gemini is a strong tracker option for sites with challenging topography and geotechnical conditions.

- George Hershman, President, Swinerton Renewable Energy

# Features and Benefits

### **Industry-leading**

2P design with 7 foundations points per 120 module row

#### Ideal

for challenging soils

## **Bifacial**-optimized

for maximum performance

## **Patent-pending**

distributed drive system for maximum stability in high winds

# **TrueCapture** ready gain up to **6%** more energy

## **Special rotation**

feature for high velocity module installation

lextracker NX Gemini



GENERAL AND MECHANICAL			
Tracking type	Horizontal single-axis, independent row		
String voltage	1,500 V <sub>DC</sub>		
Typical row size	112 - 120 modules, depending on module string length		
Drive type	NX patent-pending self-locking, distributed drive		
Motor type	48 V brushless DC motor		
Array height	Rotation axis elevation 1.9 to 2.5 m / 6'2" to 8'2"		
Ground coverage ratio (GCR)	Typical range 28-50%		
Modules supported	Mounting options available for most utility-scale crystalline modules		
Bifacial features	Available with optimized central torque tube gap		
Tracking range of motion	±50°		
Operating temperature range	Array powered: -20°C to 55°C (-4°F to 131°F)  AC powered: -40°C to 55°C (-40°F to 131°F)		
Module configuration	2 in portrait. 4 x 1,500 strings per standard tracker. Partial length trackers available.		
Module attachment	Self-grounding, electric tool-actuated fasteners standard. Clamping system optional.		
Materials	Galvanized steel		
Allowable wind speed	Configurable up to 235 kph (145 mph) 3-second gust		
Wind protection	Intelligent wind stowing with self-locking, distributed drive system for maximum array stability in all wind conditions		
Foundations	Standard W8 section foundation posts. Typically ~160 piers / MW.		

ELECTRONICS AND CONTROLS		
Solar tracking method	Astronomical algorithm with backtracking. TrueCapture™ upgrades available for terrain adaptive backtracking and diffuse tracking mode	
Control electronics	NX tracker controller with inbuilt inclinometer and backup battery	
Communications	Zigbee wireless communications to all tracker rows and weather stations via network control units (NCUs)	
Nighttime stow	Yes	
Power supply	ARRAY POWERED: NX Integrated DC pre-combiner & power supply AC POWERED: Customer-provided AC circuit	

INSTALLATION, OPERATIONS AND SERVICE			
PE stamped structural calculations and drawings	Includedå		
Onsite training and system commissioning	Included		
Installation requirements	Simple assembly using swaged fasteners and bolted connections. No field cutting, drilling or welding.		
Monitoring	NX Data Hub™ centralized data aggregation and monitoring		
Module cleaning compatibility	Compatible with virtually all standard cleaning systems		
DC string monitoring	Available with array-powered option		
Warranty	10-year structural, 5-year drive and control components		
Codes and standards	UL 3703 / UL 2703 / IEC 62817		

## SUNNY CENTRAL 4000 UP-US / 4200 UP-US / 4400 UP-US / 4600 UP-US





#### **Efficient**

- Up to 4 inverters can be transported in one standard shipping container
- Overdimensioning up to 150% is possible
- Full power at ambient temperatures of up to 35°C

#### **Robust**

- Intelligent air cooling system OptiCool for efficient cooling
- Suitable for outdoor use in all climatic ambient conditions worldwide

#### **Flexible**

- Conforms to all known grid requirements worldwide
- Q on demand
- Available as a single device or turnkey solution, including medium-voltage block

#### Easy to Use

- Improved DC connection area
- Connection area for customer equipment
- Integrated voltage support for internal and external loads

# **SUNNY CENTRAL 4000 UP-US / 4200 UP-US / 4400 UP-US / 4600 UP-US**

The new Sunny Central: more power per cubic meter

With an output of up to 4600 kVA and system voltages of 1500 V DC, the SMA central inverter allows for more efficient system design and a reduction in specific costs for PV power plants. A separate voltage supply and additional space are available for the installation of customer equipment. True 1500 V technology and the intelligent cooling system OptiCool ensure smooth operation even in extreme ambient temperature as well as a long service life of 25 years.

# SUNNY CENTRAL 4000 UP-US / 4200 UP-US

Technical data	SC 4000 UP-US	SC 4200 UP-US	
Input (DC)			
MPP voltage range V <sub>DC</sub> (at 25 °C / at 50 °C)	880 to 1325 V / 1050 V	921 to 1325 V / 1050 V	
Min. input voltage V <sub>DC. min</sub> / Start voltage V <sub>DC. Start</sub>	849 V / 1030 V	891 V / 1071 V	
Max. input voltage V <sub>DC. max</sub>	1500 V	1500 V	
Max. input current I <sub>DC, max</sub>	4750 A	4750 A	
	6400 A	6400 A	
Max. short-circuit current I <sub>DC, sc</sub>			
Number of DC inputs	24 double pole fused		
Number of DC inputs with optional DC coupling of battery	18 double pole fused (36 single pole fuse	•	
Max. number of DC cables per DC input (for each polarity)		, 2 x 400 mm <sup>2</sup>	
Integrated zone monitoring		)	
Available PV fuse sizes (per input)		0 A, 400 A, 450 A, 500 A	
Available battery fuse size (per input)	75	0 A	
Output (AC)			
Nominal AC power at $\cos \varphi = 1$ (at $35^{\circ}$ C / at $50^{\circ}$ C)	4000 kVA <sup>11)</sup> / 3600 kVA	4200 kVA <sup>11)</sup> / 3780 kVA	
Nominal AC power at cos φ =0.8 (at 35°C / at 50°C)	3200 kW <sup>11)</sup> / 2880 kW	3360 kW <sup>11)</sup> / 3024 kW	
Nominal AC current I <sub>AC. nom</sub> (at 35°C / at 50°C)	3850 A / 3465 A	3850 A / 3465 A	
Max. total harmonic distortion	< 3% at nominal power	< 3% at nominal power	
Nominal AC voltage / nominal AC voltage range <sup>1] 8]</sup>	600 V / 480 V to 720 V	630 V / 504 V to 756 V	
AC power frequency / range	50 Hz / 47	Hz to 53 Hz	
Adia ali and signaturation at the AC terminal (9)		Hz to 63 Hz 2	
Min. short-circuit ratio at the AC terminals <sup>9)</sup> Power factor at rated power / displacement power factor adjustable <sup>8) 10)</sup>		to 0.8 underexcited	
Efficiency	1 / 0.0 Overexcited	10 0.0 dilacioxellea	
Max. efficiency <sup>2</sup> / European efficiency <sup>2</sup> / CEC efficiency <sup>3</sup>	98.7% / 98.6% / 98.5%	98.7% / 98.6% / 98.5%	
Protective Devices			
nput-side disconnection point	DC load b	reak switch	
Output-side disconnection point		it breaker	
DC overvoltage protection		ester, type I	
AC overvoltage protection (optional)	-	ster, class I	
	-		
Lightning protection (according to IEC 62305-1)	, ,	ection Level III	
Ground-fault monitoring / remote ground-fault monitoring		/ 0	
Insulation monitoring	O NEMA 3R		
Degree of protection	NEW	IA 3K	
General Data			
Dimensions (W / H / D)	2780 / 2318 / 1588 mm		
Weight	<3700 kg ,		
Self-consumption (max.4) / partial load <sup>5)</sup> / average <sup>6)</sup> )	< 8100 W / < 18	00 W / < 2000 W	
Self-consumption (standby)	< 37	'0 W	
nternal auxiliary power supply	O Integrated 8.4	kVA transformer	
Operating temperature range <sup>8)</sup>	-25°C to 60°C	/ -13°F to 140°F	
Noise emission <sup>7]</sup>	67.0 c	JB(A)*	
Temperature range (standby)	-40°C to 60°C	/ -40°F to 140°F	
Temperature range (storage)		/ -40°F to 158°F	
Max. permissible value for relative humidity (condensing / non-condensing)	95% to 100% (2 mon		
Maximum operating altitude above MSL <sup>8</sup> 1000 m / 2000 m	·	ure-dependent derating)	
Fresh air consumption		m <sup>3</sup> /h	
Features		,	
DC connection	Terminal lua on eac	n input (without fuse)	
AC connection	With busbar system (three bu		
Communication		aster, Modbus Slave	
Communication with SMA string monitor (transmission medium)		rnet (FO MM, Cat-5)	
· · · · · · · · · · · · · · · · · · ·	RAL 9016		
Enclosure / roof color			
Supply transformer for external loads Standards and directives complied with	UL 62109-1, UL 1741 (Chapter 3	○ (2.5 kVA) UL 62109-1, UL 1741 (Chapter 31, CDR 61), UL 1741-SA, UL 1998	
EMC standards		AIL-STD-810G 15 Class A	
Quality standards and directives complied with	VDI/VDE 2862 page		
•	,		

- 1) At nominal AC voltage, nominal AC power decreases in the same proportion
  2) Efficiency measured without internal power supply
  3) Efficiency measured with internal power supply
  4) Self-consumption at rated operation
  5) Self-consumption at < 75% Pn at 25°C
  6) Self-consumption averaged out from 5% to 100% Pn at 25°C

- 7) Sound pressure level at a distance of 10 m

  8) Values apply only to inverters. Permissible values for SMA MV solutions from SMA can be found in the corresponding data sheets.

  9) A short-circuit ratio of < 2 requires a special approval from SMA

  10) Depending on the DC voltage

  11) Nominal power at 35°C max DC voltage of 1050 V

## SUNNY CENTRAL 4400 UP-US / 4600 UP-US

Technical data	SC 4400 UP-US	SC 4600 UP-US
Input (DC)		
MPP voltage range V <sub>DC</sub> (at 25 °C / at 50 °C)	962 to 1325 V / 1050 V	1003 to 1325 V / 1050 V
Min. input voltage V <sub>DC. min</sub> / Start voltage V <sub>DC. Start</sub>	934 V / 1112 V	976 V / 1153 V
Max. input voltage V <sub>DC. max</sub>	1500 V	1500 V
Max. input current I <sub>DC, max</sub>	4750 A	4750 A
Max. short-circuit current I <sub>DC sc</sub>	6400 A	6400 A
Number of DC inputs		(32 single pole fused)
Number of DC inputs with optional DC coupling of battery	18 double pole fused (36 single pole fuse	
		, 2 x 400 mm <sup>2</sup>
Max. number of DC cables per DC input (for each polarity)		, <b>2 x 400 mm</b> -
Integrated zone monitoring		
Available PV fuse sizes (per input)		0 A, 400 A, 450 A, 500 A
Available battery fuse size (per input)	/5	0 A
Output (AC)		
Nominal AC power at cos φ =1 (at 35°C / at 50°C)	4400 kVA <sup>11)</sup> / 3960 kVA	4600 kVA <sup>11)</sup> / 4140 kVA
Nominal AC power at cos φ =0.8 (at 35°C / at 50°C)	3520 kW <sup>11)</sup> / 3168 kW	3680 kW <sup>11)</sup> / 3312 kW
Nominal AC current I <sub>AC, nom</sub> (at 35°C / at 50°C)	3850 A / 3465 A	3850 A / 3465 A
Max. total harmonic distortion	< 3% at nominal power	< 3% at nominal power
Nominal AC voltage / nominal AC voltage range1181	660 V / 528 V to 759 V	690 V / 552 V to 759 V
AC power frequency / range	60 Hz / 57	Hz to 53 Hz Hz to 63 Hz
Min. short-circuit ratio at the AC terminals <sup>9</sup>		2
Power factor at rated power / displacement power factor adjustable <sup>8) 10)</sup>	1 / 0.8 overexcited	to 0.8 underexcited
Efficiency		
Max. efficiency <sup>2)</sup> / European efficiency <sup>2)</sup> / CEC efficiency <sup>3)</sup>	98.7% / 98.6% / 98.5%	98.7% / 98.6% / 98.5%
Protective Devices		
Input-side disconnection point	DC load b	reak switch
Output-side disconnection point	AC circuit	it breaker
DC overvoltage protection	Surge arre	ester, type I
AC overvoltage protection (optional)	Surge arre	ester, class I
Lightning protection (according to IEC 62305-1)	Lightning Protection Level III	
Ground-fault monitoring / remote ground-fault monitoring		
Insulation monitoring	0	
Degree of protection	NEMA 3R	
General Data	INEN	IA OK
	2700 / 2210 / 1500	(100 4 / 01 2 / 42 5 in al.)
Dimensions (W / H / D)		(109.4 / 91.3 / 62.5 inch)
Weight (1)		/ < 8158 lb
Self-consumption (max. <sup>4)</sup> / partial load <sup>5)</sup> / average <sup>6)</sup>	·	00 W / < 2000 W
Self-consumption (standby)		70 W
Internal auxiliary power supply		kVA transformer
Operating temperature range <sup>8)</sup>	−25°C to 60°C /	/ -13°F to 140°F
Noise emission <sup>7)</sup>		dB(A)*
Temperature range (standby)	-40°C to 60°C	/ -40°F to 140°F
Temperature range (storage)	-40°C to 70°C	/ −40°F to 158°F
Max. permissible value for relative humidity (condensing / non-condensing)	95% to 100% (2 mon	th/vear) / 0% to 95%
Maximum operating altitude above MSL <sup>8)</sup> 1000 m / 2000 m	● / ○ (earlier temperature-dependent derating)	
Fresh air consumption		m³/h
Features		,
DC connection	Terminal lug on eac	h input (without fuse)
	Terminal lug on each input (without fuse)	
AC connection	With busbar system (three busbars, one per line conductor)	
Communication	Ethernet, Modbus Master, Modbus Slave	
Communication with SMA string monitor (transmission medium)	Modbus TCP / Ethernet (FO MM, Cat-5)	
Enclosure / roof color	RAL 9016 / RAL 7004	
Supply transformer for external loads		5 kVA)
Standards and directives complied with	UL 62109-1, UL 1741 (Chapter 31, CDR 6I), UL 1741-SA, UL 1998 IEEE 1547, MIL-STD-810G	
EMC standards	FCC Part 15 Class A	
Quality standards and directives complied with	VDI/VDE 2862 page 2, DIN EN ISO 9001	

- At nominal AC voltage, nominal AC power decreases in the same proportion
   Efficiency measured without internal power supply
   Efficiency measured with internal power supply
   Self-consumption at rated operation
   Self-consumption at < 75% Pn at 25°C
   Self-consumption averaged out from 5% to 100% Pn at 25°C

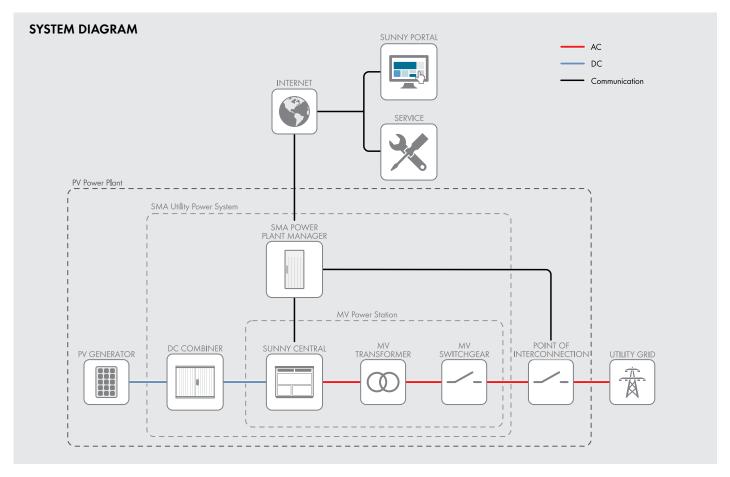
- 7) Sound pressure level at a distance of 10 m

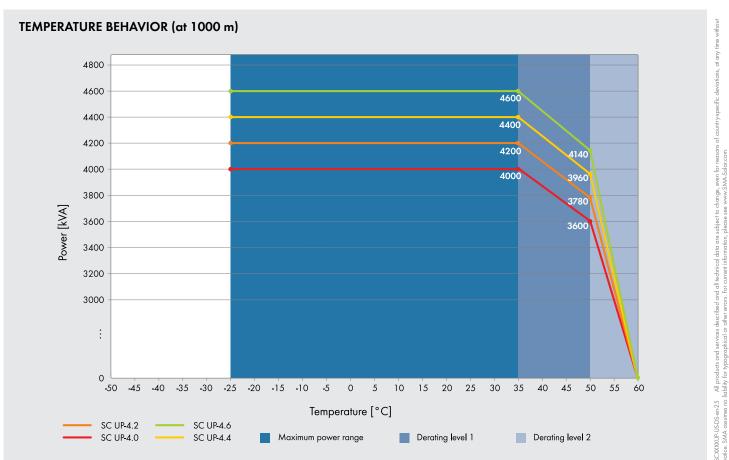
  8) Values apply only to inverters. Permissible values for SMA MV solutions from SMA can be found in the corresponding data sheets.

  9) A short-circuit ratio of < 2 requires a special approval from SMA

  10) Depending on the DC voltage

  11) Nominal power at 35°C max DC voltage of 1050 V





# This foregoing document was electronically filed with the Public Utilities Commission of Ohio Docketing Information System on

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in

Case No(s). 22-0151-EL-BGN

Summary: Application Application Exhibit B (Representative Component Models) electronically filed by Mr. Michael J. Settineri on behalf of Blossom Solar, LLC