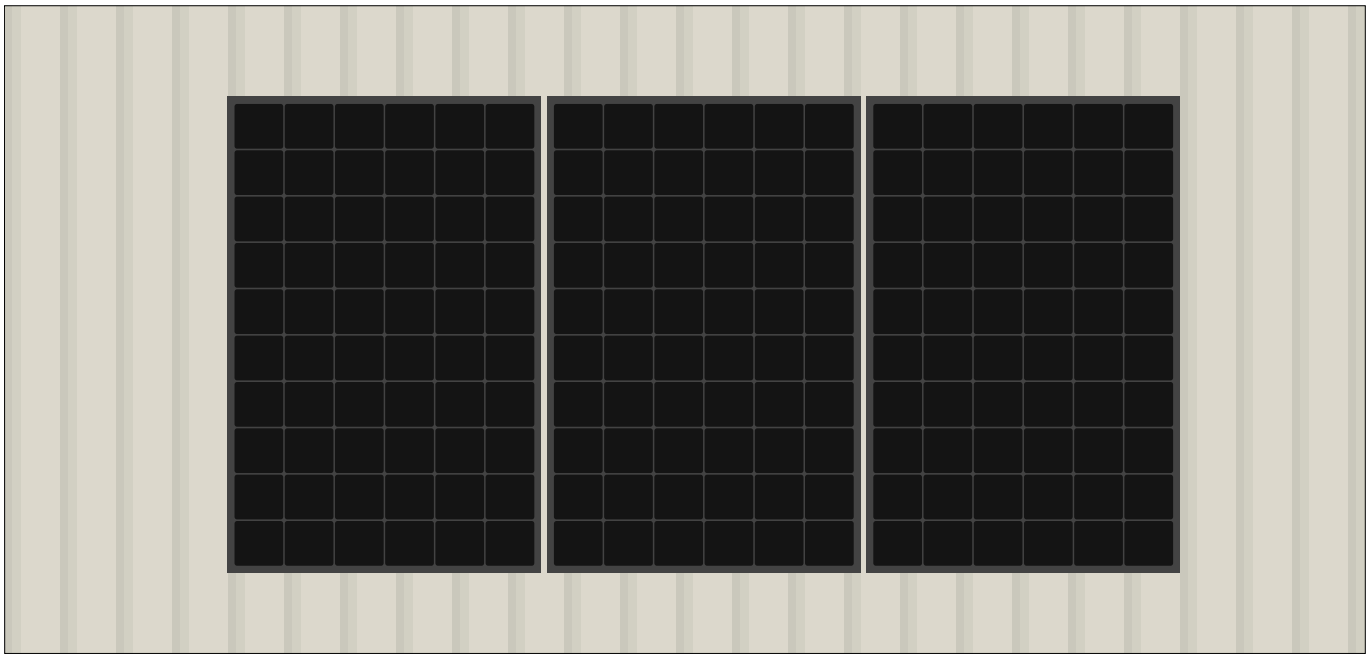
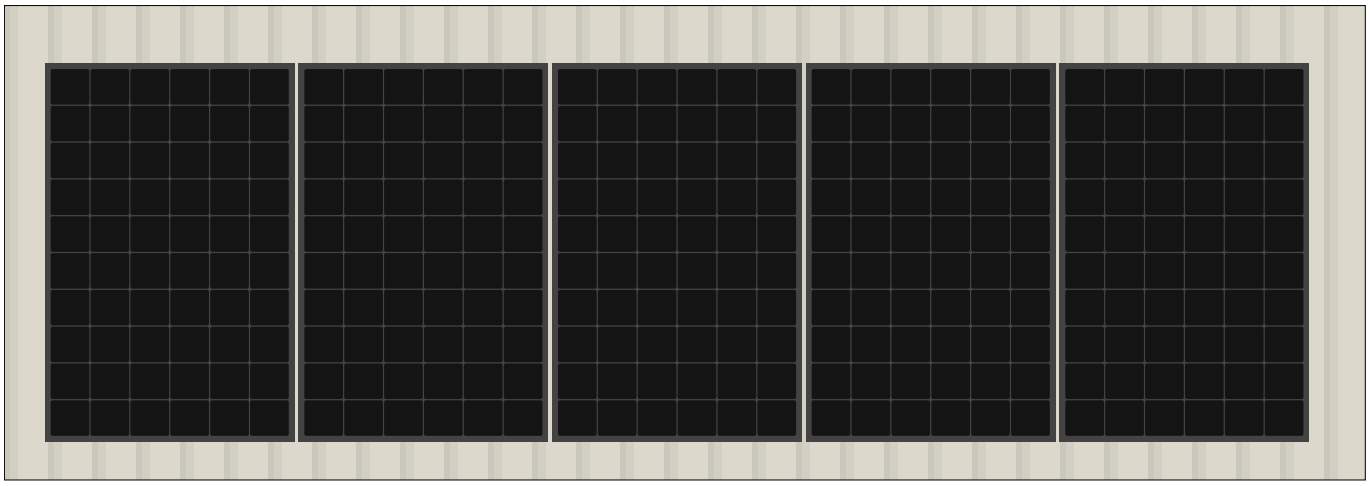


Roof Layout

Roof 1



Roof 2



Inverter checks

Sunsynk 3.6kW Ecco Hybrid Inverter

Panels			
PV power	**3240**	Rated AC output	**3680**

Input 1: 8 *HIB* Longi HiMo5 405W All Black Mono solar panels in 1 strings

Panels		Inverter	
PV power	**3240 W**		
Open circuit voltage at -10° C	**324 V**	Max DC voltage	**500 V**
V_{mpp} at 40° C	**240 V**	V_{mpp} lower limit	**150 V**
V_{mpp} at -10° C	**274 V**	V_{mpp} upper limit	**425 V**
I_{mpp} at 40° C	**13 A**	Max DC input current	**13 A**

Max voltage

The open circuit voltage of the solar panels never exceeds the voltage limit of the inverter.

✓

Max power point range

The maximum power point voltage of the solar panels is always above the lower limit of the inverter MPPT tracker. The maximum power point voltage of the solar panels is always below the upper limit of the inverter MPPT tracker.

✓

Max Current

The maximum power point current of the solar panels is always below the maximum current for the inverter MPPT tracker.



Input 2: No panels

Electrical

Sunsynk 3.6kW Ecco Hybrid Inverter

AC Isolator

A AC isolator - IMO - 40A 4-pole has been specified for this input

Current

The rated isolator current (40A) is greater than the rated inverter current (18A)

Phases

The isolator is suitable for use on a single phase inverter.

Input 1

DC Isolator

A IMO DC isolator 16A 2p 1string has been specified for this input

Current

The isolator is rated for a current of 16A, which is more than the expected maximum current of 14A.

Voltage

At 16A the isolator is rated for a voltage of 600V, which is more than the expected maximum voltage of 324V.

Cable

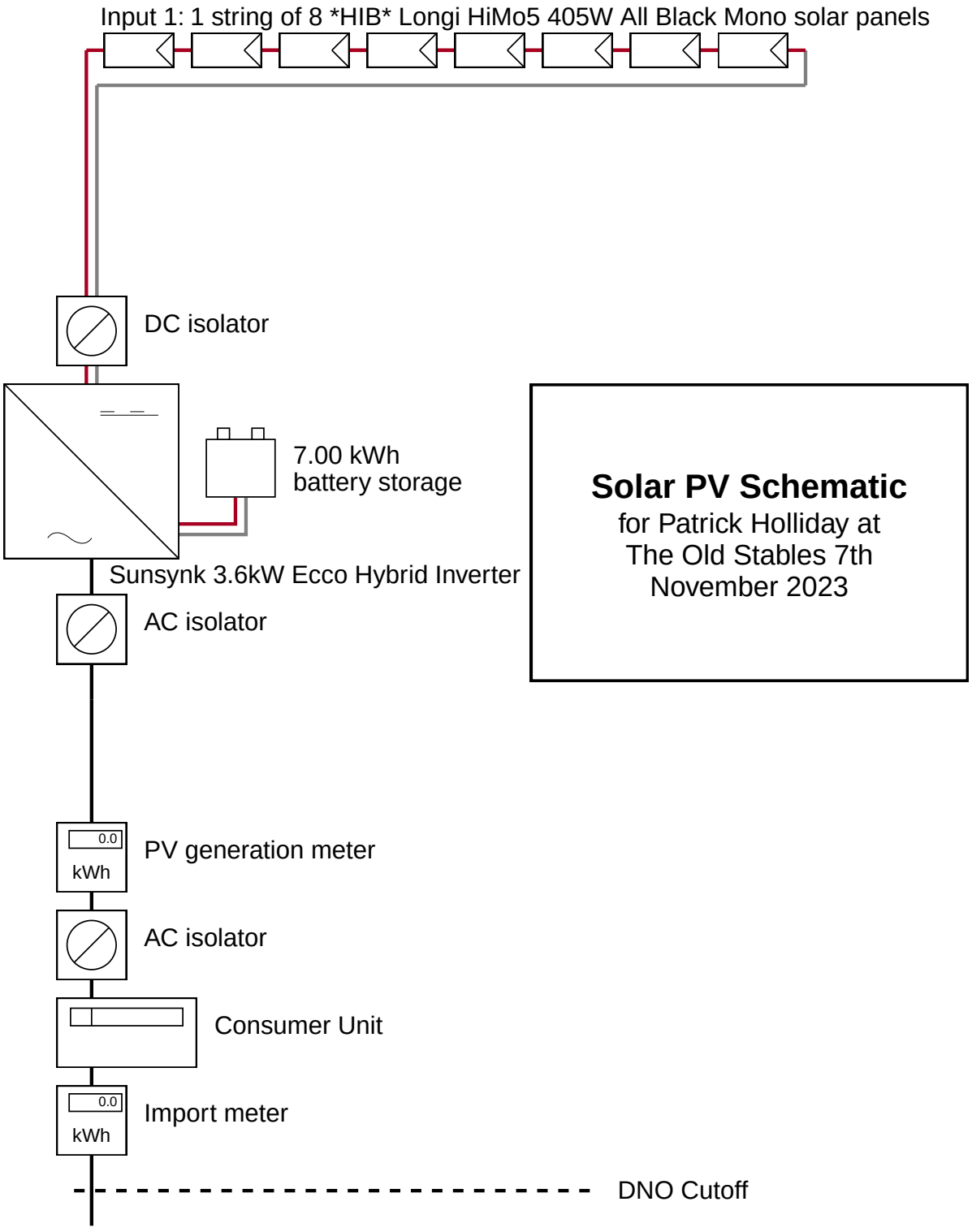
15m of 6mm2 solar cable has been specified

Voltage drop

Voltage drop at maximum power point at 40°C will be around **1.13 V (0.47 percent)**

Input 2: No panels

Schematic diagram



Performance Estimate

Site details

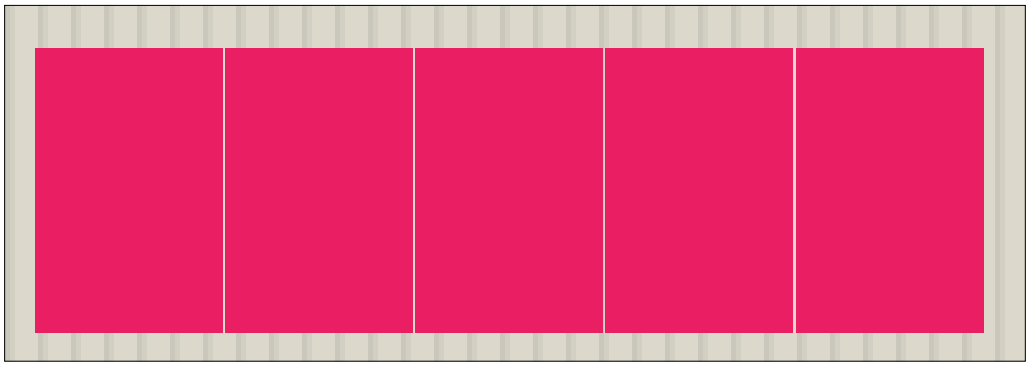
Client	Patrick Holliday
Address	The Old Stables

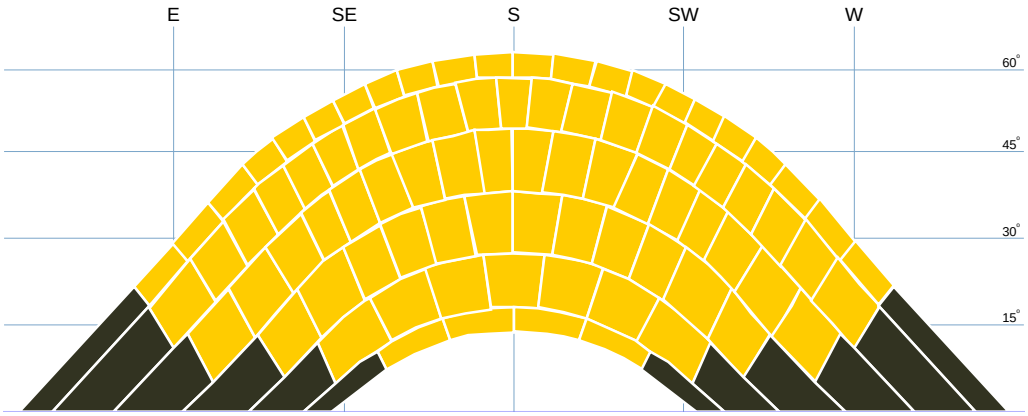
The sunpath diagram shows the arcs of the sky that the sun passes through at different times of the day and year as yellow blocks. The shaded area indicates the horizon as seen from the location of the solar array. Where objects on the horizon are within 10m of the array, an added semi-circle is drawn to represent the increased shading. Blocks of the sky that are shaded by objects on the horizon are coloured red, and a shading factor is calculated from the number of red blocks. The performance of the solar array is calculated by multiplying the size of the array (kWp) by the shading factor (sf) and a site correction factor (kk), taken from tables which take account of the geographical location, orientation and inclination of the array.

Inverter 1

Sunsynk 3.6kW Ecco Hybrid Inverter

Input 1





A. Installation data		
Installed capacity of PV system - kWp (stc)	**3.240**	kWp
Orientation of the PV system - degrees from South	**-6**	°
Inclination of system - degrees from horizontal	**30**	°
Postcode region	**5E**	

B. Performance calculations		
kWh/kWp (Kk)	**964**	kWh/kWp
Shade factor (SF)	**1.00**	
Estimated output (kWp x Kk x SF)	**3123**	kWh

Performance Summary

A. Installation data		
Installed capacity of PV system - kWp (stc)	**3.24**	kWp
Orientation of the PV system - degrees from South	**See individual inputs**	
Inclination of system - degrees from horizontal	**See individual inputs**	
Postcode region	**5E**	
B. Performance calculations		
kWh/kWp (Kk)	**See individual inputs**	
Shade factor (SF)	**See individual inputs**	
Estimated output (kWp x Kk x SF)	**3123**	kWh

Important Note: The performance of solar PV systems is impossible to predict with certainty due to the variability in the amount of solar radiation (sunlight) from location to location and from year to year. This estimate is based upon the standard MCS procedure is given as guidence only for the first year of generation. It should not be considered as a guarantee of performance.

Hi-MO 5m

LR5-54HIB

390~410M

- Suitable for distributed projects
- Advanced module technology delivers superior module efficiency
  - M10 Gallium-doped Wafer
  - Integrated segmented ribbons
  - 9-busbar Half-cut Cell
- Excellent outdoor power generation performance
- Aesthetic appearance with all black module design



12 12-year Warranty for Materials and Processing

25 25-year Warranty for Extra Linear Power Output

Complete System and Product Certifications

IEC 61215, IEC 61730, UL 61730
ISO 9001:2015: ISO Quality Management System
ISO 14001: 2015: ISO Environment Management System
TS62941: Guideline for module design qualification and type approval
ISO 45001: 2018: Occupational Health and Safety

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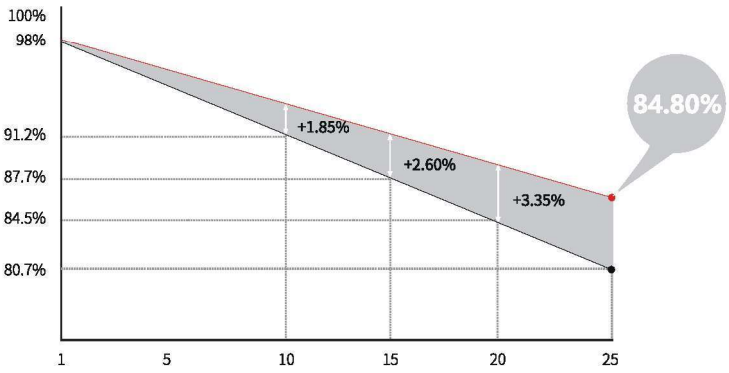
Hi-MO 5m

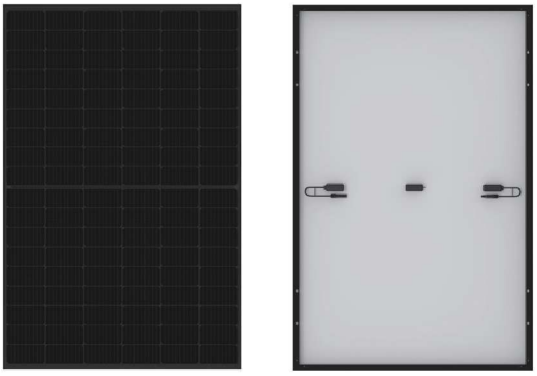
LR5-54HIB 390~410M

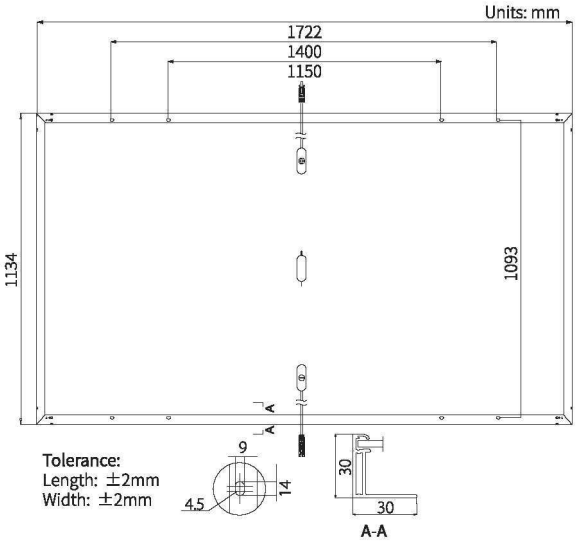
21.0%	0~3%	<2%	0.55%	HALF-CELL
MAX MODULE EFFICIENCY	POWER TOLERANCE	FIRST YEAR POWER DEGRADATION	YEAR 2-25 POWER DEGRADATION	Lower operating temperature

Additional Value

25-Year Power Warranty







Mechanical Parameters

Cell Orientation	108 (6×18)
Junction Box	IP68, three diodes
Output Cable	4mm², +400, -200mm length can be customized
Glass	Single glass, 3.2mm coated tempered glass
Frame	Anodized aluminum alloy frame
Weight	21.5kg
Dimension	1722×1134×30mm
Packaging	36pcs per pallet / 216pcs per 20' GP / 936pcs per 40' HC

Electrical Characteristics

STC : AM1.5 1000W/m² 25°C NOCT : AM1.5 800W/m² 20°C 1m/s Test uncertainty for Pmax: ±3%

Module Type	LR5-54HIB-390M		LR5-54HIB-395M		LR5-54HIB-400M		LR5-54HIB-405M		LR5-54HIB-410M	
Testing Condition	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT
Maximum Power (Pmax/W)	390	293.0	395	296.7	400	300.5	405	304.2	410	308.0
Open Circuit Voltage (Voc/V)	36.50	34.32	36.65	34.46	36.80	34.61	36.95	34.75	37.10	34.89
Short Circuit Current (Isc/A)	13.45	10.91	13.55	10.99	13.66	11.08	13.74	11.15	13.84	11.23
Voltage at Maximum Power (Vmp/V)	30.80	28.67	30.95	28.81	31.10	28.95	31.25	29.09	31.40	29.23
Current at Maximum Power (Imp/A)	12.67	10.22	12.77	10.30	12.87	10.39	12.96	10.46	13.06	10.54
Module Efficiency(%)	20.0		20.2		20.5		20.7		21.0	

Operating Parameters

Operational Temperature	-40°C ~ +85°C
Power Output Tolerance	0 ~ 3%
Voc and Isc Tolerance	±3%
Maximum System Voltage	DC1000V (IEC/UL)
Maximum Series Fuse Rating	25A
Nominal Operating Cell Temperature	45±2°C
Protection Class	Class II
Fire Rating	UL type 1 or 2 IEC Class C

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	-0.265%/°C
Temperature Coefficient of Pmax	-0.340%/°C

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Specifications included in this datasheet are subject to change without notice. LONGi reserves the right of final interpretation. (20211201DraftV01)