

Prepared by: Sureserve**For:** 231 Philip Lane, London, N15
4HL**Quote #:**
Valid until:

Solar Energy System Proposal

Thank you for the opportunity to present your Solar Energy System Proposal.

Best Regards,
Hatice Celik

Sureserve Energy Services UK Limited

Recommended System Option

3.64_{kw}

System Size

£639

Estimated Annual
Electricity Bill Savings

£0

Total System Price

£0

Net System Price



Your Solution

JAM54D41 LB

3.640kW of Solar Power

8 x JAM54D41-455/LB

455 Watt panels

25 Year Product Warranty & **30 Year** Linear Performance Warranty

2,814kWh per year



JA SOLAR

Solis S5 Hybrid Inverter 1PH K-L (3-6kW)

3.6kW of Inverter Power

SOLIS

1 x S5-EH1P3.6K-L

5.0 -year Standard Warranty



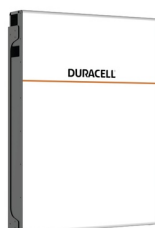
Dura5

4.6 kWh of Usable Capacity

Duracell

1 x PD-5KWH-50V-2G

10.0 Year Warranty



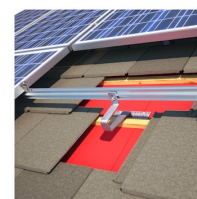
DURACELL
ENERGY

VarioSole+ Mounting rail 50 x 37 x 3600 mm black

VarioSole+ Mounting rail 50 x 37 x 3600 mm black
6 x 400570-B

Renusol VS+

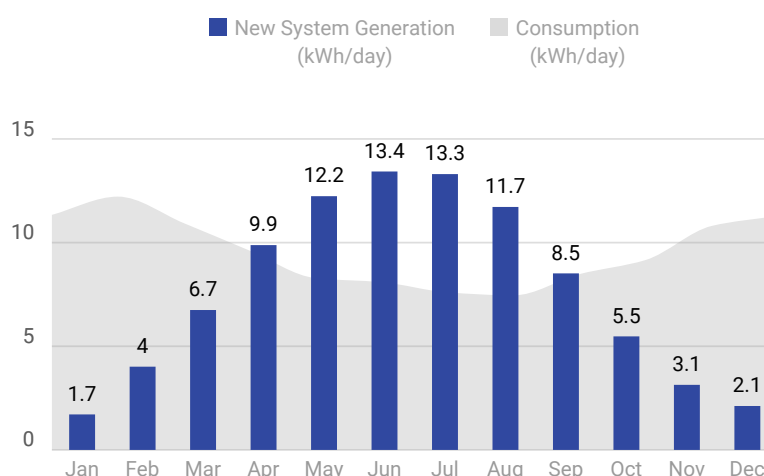
Universal pitched roof system for PV mounting on all roofs



Warranties: 25 Year Panel Product Warranty, 30 Year Panel Performance Warranty, 5 Year Inverter Product Warranty, 10 Year Battery Product Warranty

System Performance

80%
Energy From Solar



System Performance Assumptions: System Total losses: 0%, Inverter losses: 0%, Optimizer losses: 0%, Shading losses: 15.7%, Performance Adjustment: 0%, Output Calculator: MCS. Panel Orientations: 4 panels with Azimuth 234 and Slope 21, 4 panels with Azimuth 144 and Slope 28.

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 guidance only. It should not be considered as a guarantee of performance. The solar PV self-consumption has been calculated in accordance with the most relevant methodology for your system. There are a number of external factors that can have a significant effect on the amount of energy that will be self-consumed.

Shading will be present on your system that will reduce its output to the factor stated. This factor was NOT calculated using the MCS shading methodology, but we can confirm that the system as quoted, taking into account the shading present, will deliver at least 90% of the energy (in kWh) as set out in this performance estimate.

This system performance calculation has been undertaken using estimated values for array orientation, inclination, or shading. Actual performance may be significantly lower or higher if the characteristics of the installed system vary from the estimated values.

Important Note: The energy performance and benefits of EESS is impossible to predict with certainty due to the numerous functions a system can be programmed to perform. This estimate is based upon the standard MCS procedure and is given as guidance only. It should not be considered as a guarantee of performance.

[EESS capacity not used for self consumption] Storage capacity of the battery - assumed usable capacity of battery [Total energy discharged per annum] Assumed usable capacity of battery x 730 [Additional self consumption] Estimated annual output (Section B) x self consumption rate with battery as a % (no higher than 95%) - Expected solar PV self-consumption (with EESS) (Section D)

A. Installation data

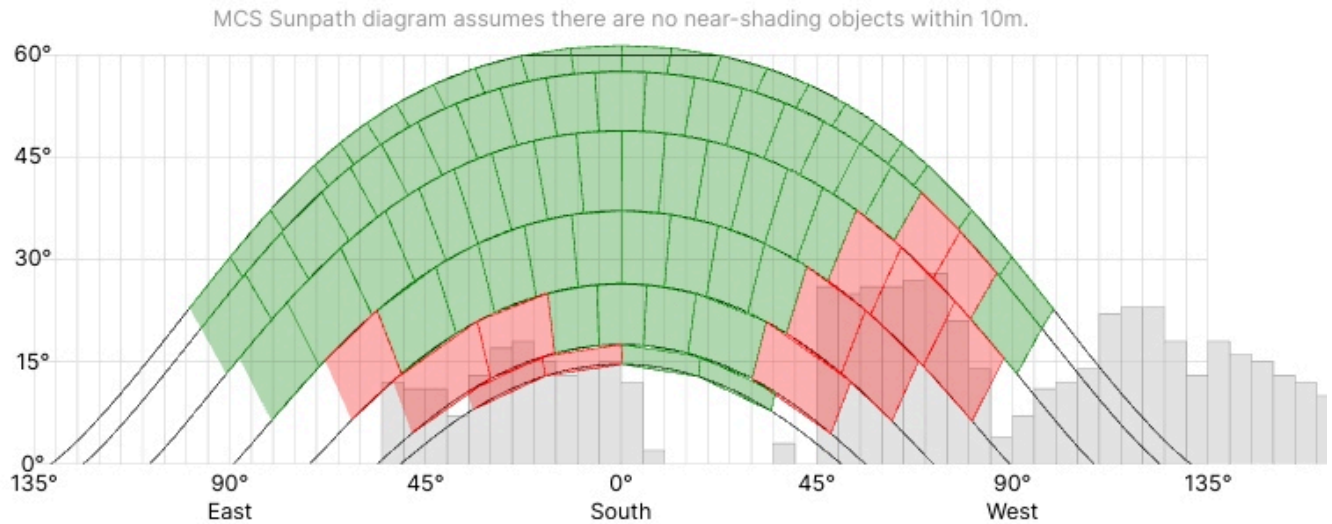
Installed capacity of PV system - kWp (stc)	3.640	kWp
Orientation of the PV system - degrees from South	Group 1: 4 panels with Orientation: 55 ° Group 2: 4 panels with Orientation: 35 °	°
Inclination of system - degrees from horizontal	Group 1: 4 panels with Tilt: 21° Group 2: 4 panels with Tilt: 28°	°
Postcode region	1	

B. Performance calculations

kWh/kWp (Kk) from table	Group 1: 893 Group 2: 942	kWh/kWp
Shade Factor (SF)	0.843	
Estimated annual output (kWp x Kk x SF)	2,814	kWh
C. Estimated PV self-consumption - PV Only		
Assumed occupancy archetype	In Half Day	
Assumed annual electricity consumption, kWh	3,500.00	kWh
Assumed annual electricity generation from solar PV system, kWh	2,814	kWh
Expected solar PV self-consumption (PV Only)	816.15	kWh
Grid electricity independence / Self-sufficiency (PV Only)	23.32	%
D. Estimated PV self-consumption - with EESS		
Assumed usable capacity of electricity energy storage device, which is used for self-consumption, kWh	4.60	kWh
Expected solar PV self-consumption (with EESS)	2,026.50	kWh
Grid electricity independence / Self-sufficiency (with EESS)	58.0%	%
E. Additional benefits from PV and EESS		
EESS capacity not used for self-consumption	0.52	kWh
Total energy discharged per annum	3358.00	kWh
Additional self-consumption for EV, heat pumps, diverters (only when present)	0.00	kWh

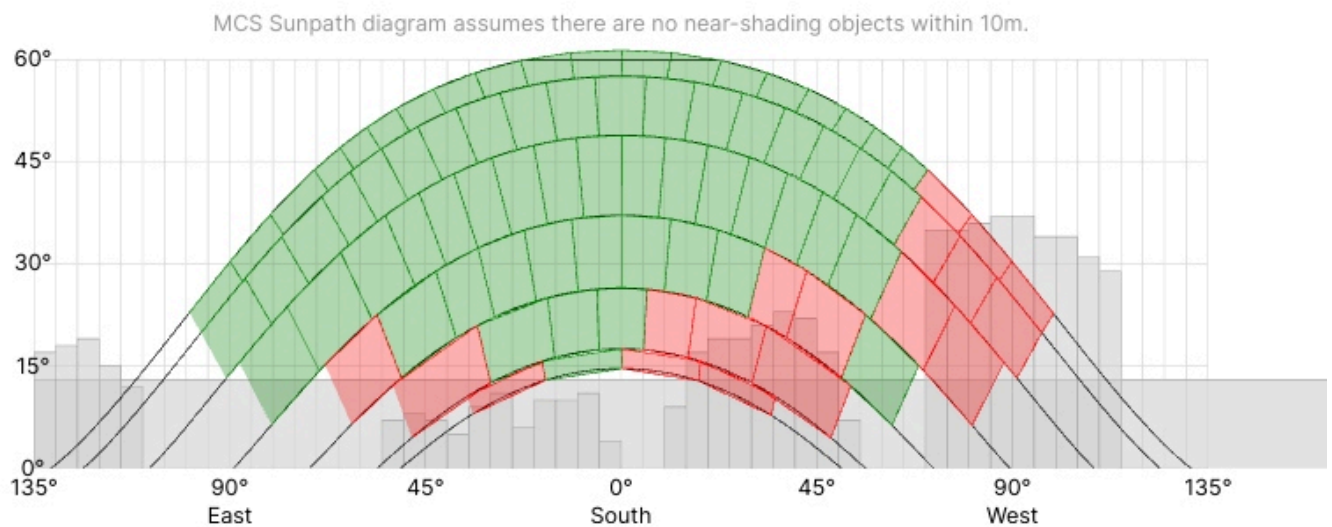
Sunpath Diagram

Disclaimer: The shade mask mapped onto the sunpath diagram is based off the field of view from a point in the center of the array. This means that the shade mask shown will only capture the shading experienced at the array center point, and will not reflect the shading casted onto other locations on the array.



Sunpath Diagram

Disclaimer: The shade mask mapped onto the sunpath diagram is based off the field of view from a point in the center of the array. This means that the shade mask shown will only capture the shading experienced at the array center point, and will not reflect the shading casted onto other locations on the array.



Environmental Benefits

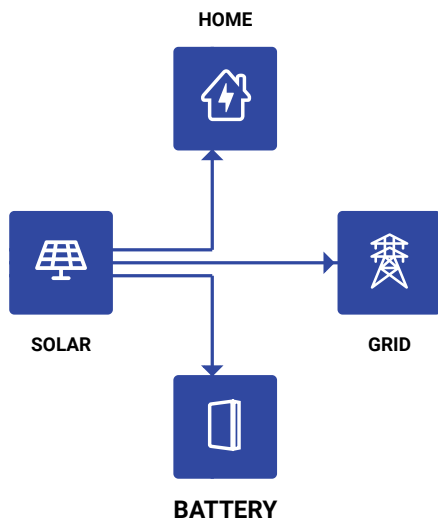
Solar has no emissions. It just silently generates pure, clean energy.



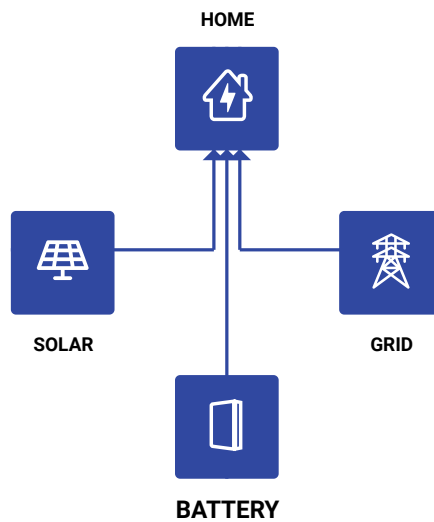
Each Year		Over System Lifetime		
80%	0.7 ^{tons}	21,304 ^{km}	137	15
Consumption Offset	of CO ₂ reduced per year	Car distance avoided (lifetime)	Trees planted	Long haul flights avoided

How your system works

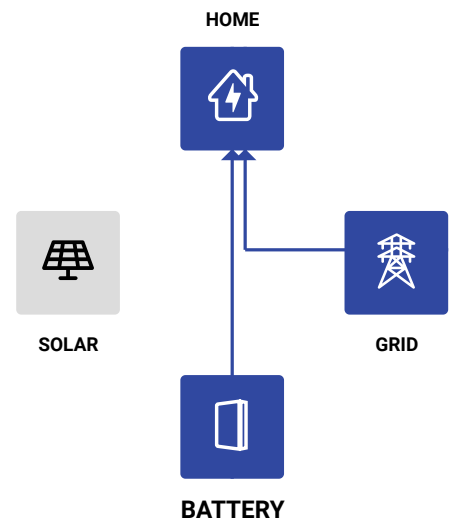
Generating Excess Solar



Partially Offset Usage

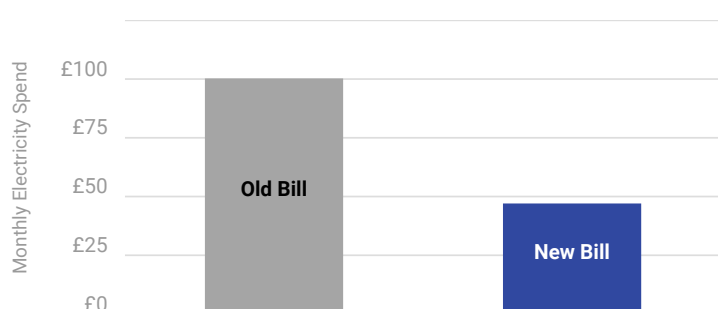


Night

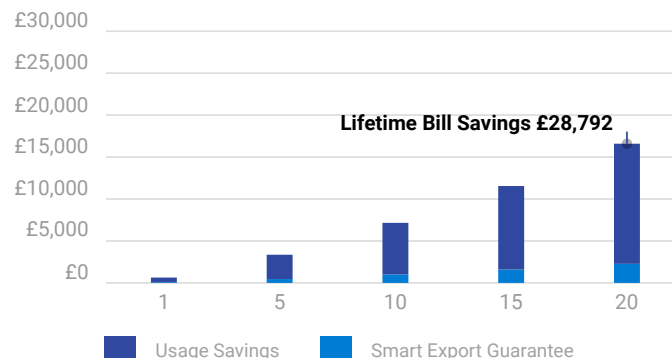


Electricity Bill Savings

First Year Monthly Bill Savings



Cumulative Bill Savings



Month	Solar Generation (kWh)	Net Grid Consumption before new system (kWh)	Electricity Imported after new system (kWh)	Electricity Exported after new system (kWh)	Export Credit (£)	Utility Bill before new system (£)	Utility Bill after new system (£)	Estimated Savings (£)
Jan	53	350	301	2	0	117	103	13
Feb	112	341	243	9	1	113	83	30
Mar	209	339	159	18	2	114	57	57
Apr	296	289	68	61	6	99	28	71
May	379	257	26	133	14	91	12	79
Jun	403	244	23	170	19	87	5	82
Jul	412	236	22	187	21	85	3	82
Aug	363	232	22	142	16	84	9	75
Sep	255	255	52	40	4	90	27	63
Oct	170	284	138	15	1	99	53	46
Nov	94	324	241	8	1	109	86	24
Dec	66	349	289	3	0	117	100	17

Rate not specified specified, using Octopus Flux N Scotland - Oct 25 based on location.

Your projected energy cost is calculated by considering a 2.7% increase in energy cost each year, due to trends in the raising cost of energy. This estimate is based on your selected preferences, current energy costs and the position and orientation of your roof to calculate the efficiency of the system. Projections are based on estimated usage of 3500 kWh per year, assuming Octopus Flux N Scotland - Oct 25 Electricity Tariff.

Your electricity tariff rates may change as a result of installing the system. You should contact your electricity retailer for further information.

Proposed Tariff Details - Octopus Energy Octopus Flux N Scotland - Oct 25

Energy Charges

Peak Import

4pm-7pm\Mon-Sun

£0.38 / kWh

Standard Import

5am-4pm\s&\s7pm-2am\Mon-Sun

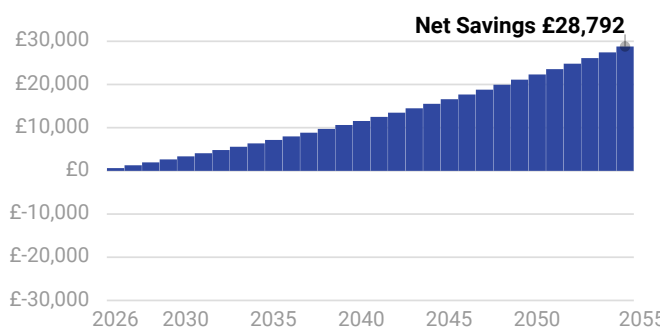
£0.27 / kWh

Flux Import <i>2am-5am\Mon-Sun</i>	£0.16 / kWh
Smart Export Guarantee	
Peak Export <i>4pm-7pm\Mon-Sun</i>	£0.29 / kWh
Standard Export <i>5am-4pm\Mon-Sun & 7pm-2am\Mon-Sun</i>	£0.10 / kWh
Flux Export <i>2am-5am\Mon-Sun</i>	£0.05 / kWh
Fixed Charges	
Standing Charge	£0.61 / day

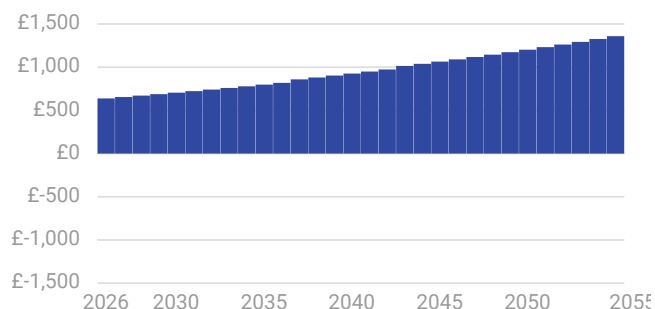
Net Financial Impact Cash

$$\begin{array}{rcl}
 \text{£28,792} & - & \text{£0} \\
 \text{Utility Bill Savings} & & \text{Net System Cost} \\
 & = & \text{£28,792} \\
 & & \text{Estimated Net Savings}
 \end{array}$$

Cumulative Savings From Going Solar



Annual Savings From Going Solar



Estimates do not include replacement costs of equipment not covered by a warranty. Components may need replacement after their warranty period. Financial discount rate assumed: 6.75%

Quotation

Payment Option: Cash

8 x JA Solar 455 Watt Panels (JAM54D41-455/LB) 1 x S5-EH1P3.6K-L (SOLIS) 1 x PD-5KWH-50V-2G (Duracell) 6 x 400570-B, 26 x 420172	
Total System Price	£0.00 Excluding £0.00 VAT
Purchase Price	£0.00 Including £0.00 VAT

Price excludes Retailer Smart Meter should you want us to install your Smart Meter it will be an additional cost.
This proposal is valid until 7th May 2026.

Quote Acceptance

I have read & accept the terms and conditions.

Signature _____

Name _____

Date _____



This proposal has been prepared by Sureserve Energy Services UK Limited using tools from OpenSolar. Please visit www.opensolar.com/proposal-disclaimer for additional disclosures from OpenSolar.

455W **LB**
Series Higher power generation better LCOE n-type with very Lower LID Better Temperature Coefficient Better low irradiance response 25-year product warranty 30-year linear power output warranty

n-type Bifacial Double Glass High Efficiency Mono Module JAM54D41 LB

430-455

Comprehensive Certificates

- IEC 61215, IEC 61730
- ISO 9001: 2015 Quality management systems
- ISO 14001: 2015 Environmental management systems
- ISO 45001: 2018 Occupational health and safety management systems
- IEC 62941: 2019 Terrestrial photovoltaic (PV) modules - Quality system for PV module manufacturing

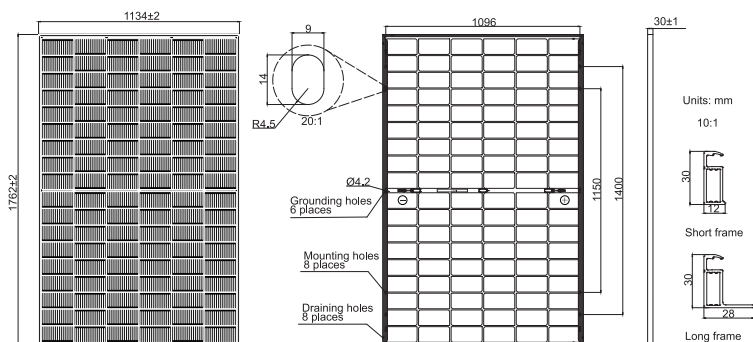




455W

430-455

JAM54D41

LB
Series

Remark: customized frame color and cable length available upon request

Cell	Mono-16BB
Weight	22kg
Dimensions	1762±2mm×1134±2mm×30±1mm
Cable Cross Section Size	4mm ² (IEC), 12 AWG (UL)
No. of cells	108(6×18)
Junction Box	IP68, 3 diodes
Connector	QC 4.10-351/ MC4-EVO2A
Cable Length (Including Connector)	Portrait: 300mm(+)/400mm(-); Landscape: 1200mm(+)/1200mm(-)
Front Glass/Back Glass	1.6mm/1.6mm
Packaging Configuration	36pcs/Pallet, 936pcs/40HQ Container

ELECTRICAL PARAMETERS AT STC

TYPE	JAM54D41 -430/LB	JAM54D41 -435/LB	JAM54D41 -440/LB	JAM54D41 -445/LB	JAM54D41 -450/LB	JAM54D41 -455/LB
Rated Maximum Power(P _{max}) [W]	430	435	440	445	450	455
Open Circuit Voltage(V _{oc}) [V]	38.50	38.70	38.90	39.10	39.30	39.50
Maximum Power Voltage(V _{mp}) [V]	32.12	32.29	32.47	32.65	32.82	33.00
Short Circuit Current(I _{sc}) [A]	14.14	14.23	14.31	14.40	14.48	14.56
Maximum Power Current(I _{mp}) [A]	13.39	13.47	13.55	13.63	13.71	13.79
Module Efficiency [%]	21.5	21.8	22.0	22.3	22.5	22.8
Power Tolerance	0~+5W					
Temperature Coefficient of I _{sc} (α _{Isc})	+0.046%/ °C					
Temperature Coefficient of V _{oc} (β _{Voc})	-0.260%/ °C					
Temperature Coefficient of P _{max} (γ _{Pmp})	-0.300%/ °C					
STC	Irradiance 1000W/m ² , cell temperature 25 °C, AM1.5G					

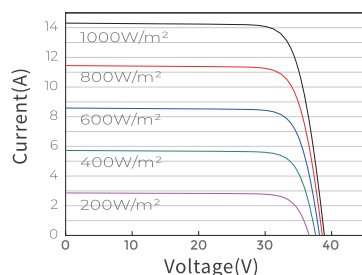
ELECTRICAL CHARACTERISTICS WITH 10% SOLAR IRRADIATION RATIO

TYPE	JAM54D41 -430/LB	JAM54D41 -435/LB	JAM54D41 -440/LB	JAM54D41 -445/LB	JAM54D41 -450/LB	JAM54D41 -455/LB
Rated Max Power(P _{max}) [W]	464	470	475	481	486	491
Open Circuit Voltage(V _{oc}) [V]	38.50	38.70	38.90	39.10	39.30	39.50
Max Power Voltage(V _{mp}) [V]	32.11	32.29	32.47	32.65	32.82	32.99
Short Circuit Current(I _{sc}) [A]	15.27	15.36	15.46	15.55	15.64	15.73
Max Power Current(I _{mp}) [A]	14.46	14.55	14.63	14.72	14.81	14.89
Irradiation Ratio (rear/front)	10%					

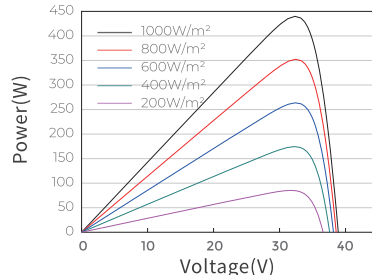
*Bifaciality=P_{max, rear}/Rated P_{max, front}

CHARACTERISTICS

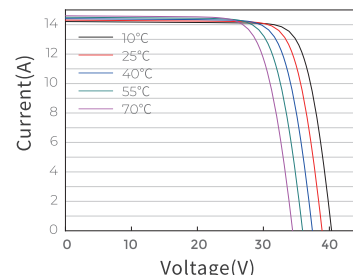
Current-Voltage Curve JAM54D41-440/LB



Power-Voltage Curve JAM54D41-440/LB

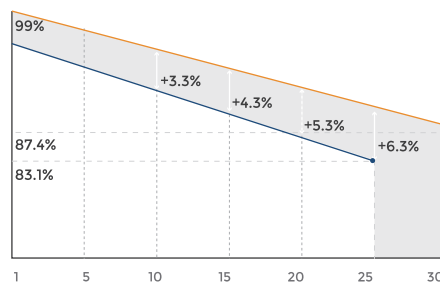


Current-Voltage Curve JAM54D41-440/LB



Superior Warranty

1% 1st-year Degradation
0.4% Annual Degradation Over 30 years



- n-type Bifacial Double Glass Module Linear Performance Warranty
- Standard Module Linear Performance Warranty

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

OPERATING CONDITIONS

Maximum System Voltage	1500V DC
Operating Temperature	-40 °C ~+85 °C
Maximum Series Fuse Rating	30A
Maximum Static Load, Front	5400Pa (112 lb/ft ²)
Maximum Static Load, Back	2400Pa (50 lb/ft ²)
NOCT	45±2 °C
Bifaciality*	80%±10%
Fire Performance	UL Type 38

S5-EH1P(3-6)K-L

Solis Single Phase Low Voltage Energy Storage Inverters

Features:

- Max. string input current 15A
- Uninterrupted power supply, 20ms reaction
- Multiple working modes to make maximize self-consumption, increase benefit
- Higher charge-discharge efficiency, improving the economic benefits
- AFCI protection, proactively reduces fire risk
- Fanless design, long lifespan
- Compatible with lithium & lead-acid batteries, increased more choice in different markets
- Intelligent EMS function, improving battery's reliability
- 24-hour fully intelligent energy management, Real-time grasp of PV plant status
- Remotely control & upgrade function, making digital power plant maintenance at your fingertips

Models:

S5-EH1P3K-L / S5-EH1P3.6K-L

S5-EH1P4.6K-L / S5-EH1P5K-L

S5-EH1P6K-L



360° View



DATASHEET

S5-EH1P(3-6)K-L

Models	3K	3.6K	4.6K	5K	6K
Input DC (PV side)					
Recommended max. PV array size	6 kW	7.2 kW	9.2 kW	10 kW	12 kW
Max. usable PV input power	4.8 kW	5.7 kW	8 kW	8 kW	8 kW
Max. input voltage	600 V				
Rated voltage	330 V				
Start-up voltage	120 V				
MPPT voltage range	90-520 V				
Max. input current	15 A / 15 A				
Max. short circuit current	22.5 A / 22.5 A				
MPPT number/Max. input strings number	2/2				
Battery					
Battery type	Li-ion / Lead-acid				
Battery voltage range	42 - 58 V				
Battery capacity	50 - 2000 Ah				
Max. charge / discharge power	3 kW		5 kW		
Max. charge / discharge current	62.5 A		100 A		
Communication	CAN				
Output AC (Back-up)					
Rated output power	3 kW		5 kW		
Max. apparent output power	4.5 kVA, 10 sec		7 kVA, 10 sec		
Back-up switch time	<20 ms				
Rated output voltage	1/N/PE, 220 V / 230 V				
Rated frequency	50 Hz / 60 Hz				
Rated output current	14 A / 13.5 A		23 A / 22 A		
THDv (@linear load)	<2%				
Input AC (Grid side)					
Input voltage range	187-265 V				
Max. input current	20.5 A / 20 A	25 A / 23.5 A	31.5 A / 30 A	34.5 A / 33 A	34.5 A / 33 A
Frequency range	45-55 Hz / 55-65 Hz				
Output AC (Grid side)					
Rated output power	3 kW	3.6 kW	4.6 kW	5 kW	6 kW
Max. apparent output power	3.3 kVA	4 kVA	4.6 kVA	5.5 kVA	6.6 kVA
Operation phase	1/N/PE				
Rated grid voltage	220 V / 230 V				
Rated grid frequency	50 Hz / 60 Hz				
Rated grid output current	13.7 A / 13.1 A	16.4 A / 15.7 A	20.9 A / 20 A	22.8 A / 21.7 A	27.3 A / 26.1 A
Max. output current	15 A	18.5 A	21 A	25 A	30 A
Power factor	>0.99 (0.8 leading - 0.8 lagging)				
THDi	<2%				
Efficiency					
Max. efficiency	>97.1%				
EU efficiency	>96.5%				
Protection					
DC reverse-polarity protection	Yes				
Short circuit protection	Yes				
Output over current protection	Yes				
Surge protection	DC Type II / AC Type II				
Ground fault monitoring	Yes				
Integrated AFCI	Yes ⁽¹⁾				
Protection class/Over voltage category	I/II				
General Data					
Dimensions (W*H*D)	333*505*249 mm				
Weight	17.9 kg		18.1 kg		
Topology	High frequency isolation (for battery)				
Operating ambient temperature range	-25 ~ +60°C				
Ingress protection	IP65				
Cooling concept	Natural convection				
Max. operation altitude	3000 m				
Grid connection standard	G98 or G99, VDE-AR-N 4105/VDE V 0124, EN 50549-1, VDE 0126/UTE C 15/VFR:2019, RD 1699/RD 244/UNE 206006/UNE 206007-1, CEI 0-21, C10/11, NRS 097-2-1, EIFS 2018.2, IEC 62116, IEC 61727, IEC 60068, IEC 61683, EN 50530, MEA, PEA				
Safety/EMC standard	IEC/EN 62109-1/-2, EN 61000-6-2/-3				
Features					
DC connection	MC4 connector				
AC connection	Quick connection plug				
Display	7.0"LCD color screen display				
Communication	RS485, Optional: Wi-Fi, GPRS				

(1) Activation required.

Dura5

Stack or Wall-Mount Battery



Dura5

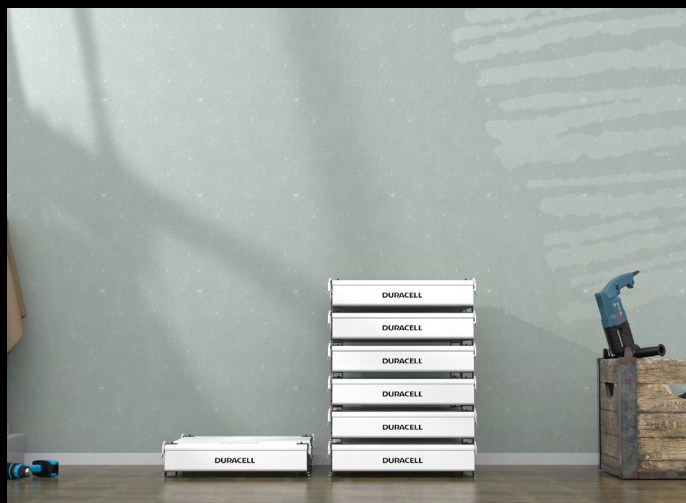
51.2V 100Ah LiFePO4

This 5.12kWh battery utilises the safest and highest performing chemistry; lithium iron phosphate.

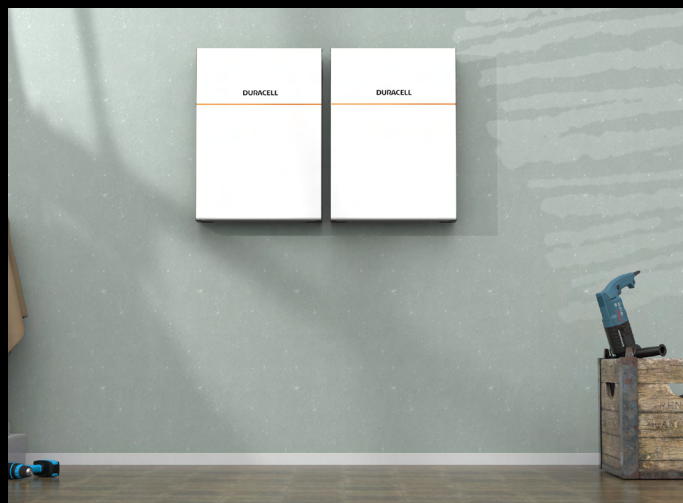
The Dura5 boasts a 10 year warranty and 1C operation allowing you to charge each battery by 100A.

Key Features

-  1C/1C charge and discharge
-  Plug-and-play (all cables included)
-  Master BMS autoselect
-  Modular up to 32 units (stacks of 16)
-  Module-level auto-balancing.
Add additional batteries at any time
-  10 Year warranty



Stack (16 x 2)



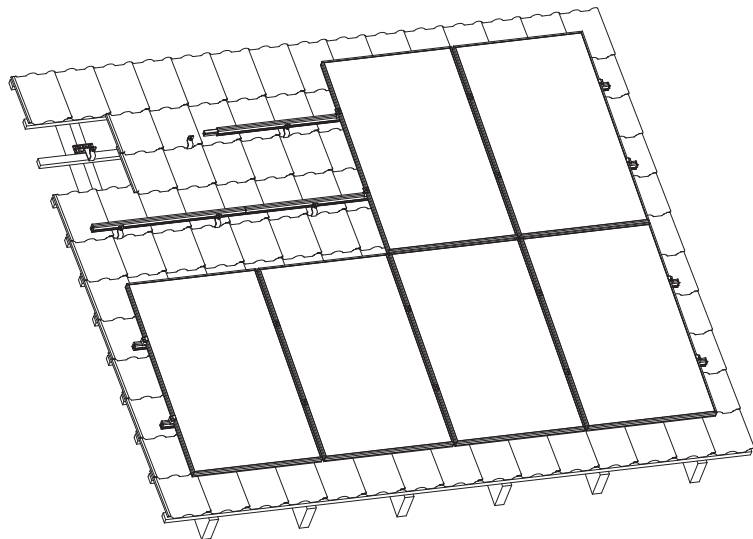
Wall-Mount

Dura5 5.12KWh LiFePO4 Technical Specification

Product	Dura5
Model No.	PD-5KWH-50V-2G
Battery module energy (kWh)	5.12kWh
Useable energy (kWh)	4.6kWh
Max output power (A)	100A
Peak output power (A)	110A
Nominal voltage (V)	51.2Vdc
Operating voltage range (single phase)	43.2V-56.8V
Dimensions (mm, W x D x H)	490 x 90 x 675mm
Weight (kg)	45±1kg
Installation	Stackable or Wall-mount
Operating temperature (°C)	-10°C~+55°C
Operating altitude	0-3000m (Derating above 2000m)
Environment	Indoor
Relative humidity	5%~95%
Cooling	Natural Convection
Display	LED Indicator
Cell technology	LiFePO4
Scalability	Max 32 Systems In Parallel Operation
Communication ports	CAN / RS485
Cycles	8000
Warranty	10 years



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 Manufactured under license and warranty supported by Puredrive Energy Limited in Toddington, UK.
 Duracell Energy reserves the right to modify the technical datasheet and appearance of the product in the catalogue without prior advice to users.
 NEITHER DURACELL BATTERIES BV, DURACELL U.S. OPERATIONS, INC., NOR ITS AFFILIATES ARE INVOLVED IN THE DESIGN, MANUFACTURE,
 MARKETING OR DISTRIBUTION OF THE PRODUCTS AND THEY DO NOT MAKE ANY (AND HEREBY DISCLAIM ALL) EXPRESS OR IMPLIED
 WARRANTIES RELATING TO THE PRODUCTS.



System Datasheet

VS+

General

System	Rooftop mounting system for pitched roofs
Content	Connection of roof substructure (wood, steel, concrete), fixing material, assembly profiles, module clamps
System warranty	10 years
Application area	Pitched roof on commercial, industrial, agricultural (except hydrogen sulfide exposition) and residential buildings
Roof covering	Tile, slate, sheet metal (trapezoidal/corrugated), sandwich, fibre-cement
Roof slope	min. 5°/max. 70° (please check the admissibility with the Renusol Configurator)

System properties

Module tilt	Roof parallel
Material	Stainless steel, aluminum

Modules

Type	PV-modules with frame height between 30-50 mm
Module size (max)	Length: unlimited; Width: unlimited
Module guidance	Portrait/Landscape

Certifications

TÜV	ID1111212485 according to 2PfG
Building authority approval	Roof hook Aluminum (Z-14-4-515) Fastening material (Solar fasteners, Hanger bolts, wood screws)
MCS012	IK0197/03, IK0197/04, IK0197/05

Services

PV layout	Provided by Renusol
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VS+ 07.2021

EN | Renusol System Datasheet

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