

Hi-MO 5m

LR5-54HIB 395~415M

- Geeignet für dezentrale Energieversorgung
- Überlegene Moduleffizienz durch fortschrittliche Technologie
 - M10 Gallium-dotierter Wafer
 - Integriertes Segmentiertes Band
 - Half-Cut-Zelle mit 9 Busbars
- Hervorragende Leistungsfähigkeit bei der Stromerzeugung
- Ästhetisches Erscheinungsbild mit All-Black-Moduldesign

12

12 Jahre Produktgarantie auf
Materialien und Verarbeitung

25

25 Jahre zusätzlich lineare
Leistungsgarantie

Vollständige Produktzertifizierung

IEC 61215, IEC 61730, UL 61730

ISO9001:2015: ISO Qualitätsmanagementsystem

ISO14001: 2015: ISO Umweltmanagementsystem

ISO45001: 2018: Gesundheit und Sicherheit am Arbeitsplatz

TS62941: Erhöhte Zuverlässigkeit der Bauarteignung

LONGi



21.3%

MAXIMALE
MODULEFFIZIENZ

0~3%

LEISTUNGSTOLERANZ

<2%

LEISTUNGSDEGRADATION
IM ERST JAHR

0.55%

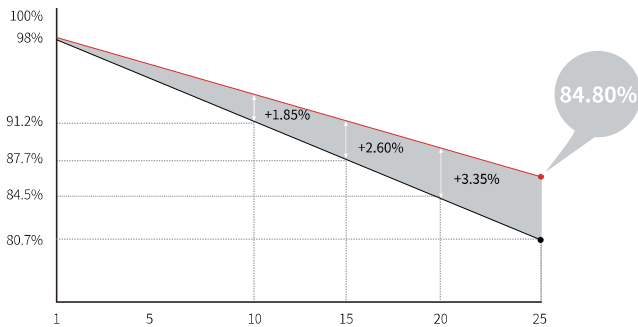
LEISTUNGSDEGRADATION
IN DEN JAHREN 2-25

HALF-CELL

Niedrigere Betriebstemperatur

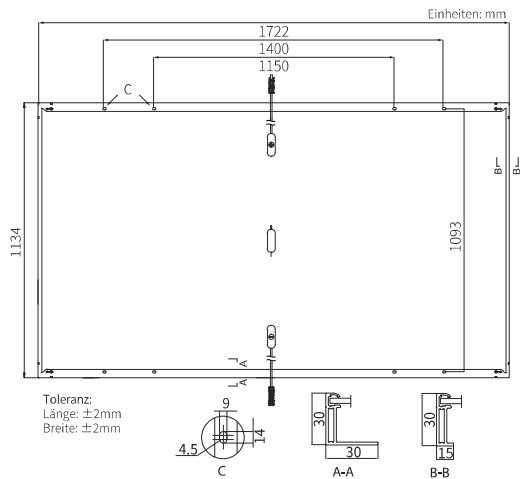
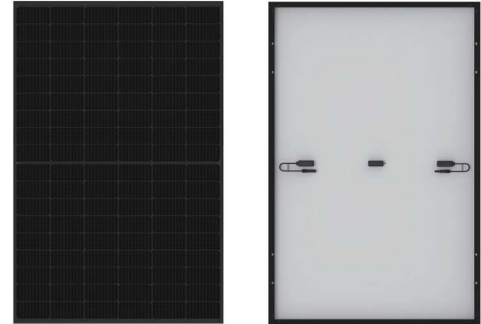
Weitere Daten

25 Jahre Stromversorgungsgarantie



Mechanische Parameter

Zellenanordnung	108 (6×18)
Anschlussdose	IP68, drei Dioden
Kabel	4mm², 1200mm
Steckverbinder	MC4 EVO2
Glas	Einseitiges Glas, 3,2mm beschichtetes gehärtetes Glas
Rahmen	Rahmen aus eloxierter Aluminiumlegierung
Gewicht	20.8kg
Abmessungen	1722×1134×30mm
Verpackungen	36 Stück pro Palette / 216 Stück pro 20'GP / 936 Stück pro 40'HC



Elektrische Eigenschaften

STC : AM1.5 1000W/m² 25°C

NOCT : AM1.5 800W/m² 20°C 1m/s

Testunsicherheit für Pmax: ±3%

Modultyp	LR5-54HIB-395M		LR5-54HIB-400M		LR5-54HIB-405M		LR5-54HIB-410M		LR5-54HIB-415M	
Testbedingungen	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT
Maximale Leistung (Pmax/W)	395	295.2	400	299.0	405	302.7	410	306.5	415	310.2
Leerlaufspannung (Voc/V)	36.65	34.46	36.90	34.70	37.15	34.93	37.40	35.17	37.65	35.40
Kurzschlussstrom (Isc/A)	13.66	11.04	13.72	11.09	13.78	11.14	13.84	11.19	13.91	11.24
Spannung bei maximaler Leistung (Vmp/V)	30.70	28.52	30.94	28.74	31.18	28.96	31.42	29.19	31.66	29.41
Strom bei maximaler Leistung (Imp/A)	12.87	10.35	12.93	10.40	12.99	10.45	13.05	10.50	13.11	10.55
Modulwirkungsgrad (%)	20.2		20.5		20.7		21.0		21.3	

Betriebsparameter

Betriebstemperatur	-40°C ~ +85°C
Ausgangsleistungs-Toleranz	0 ~ 3%
Voc- und Isc-Toleranz	±3%
Maximale Anlagenspannung	1500V Gleichstrom (IEC/UL)
Maximaler Sicherungs-Nennstrom in Reihe	25A
Nennbetriebstemperatur (NOCT)	45±2°C
Sicherheitsklasse	Klasse II
Brandschutzklasse	UL Typ 1 oder 2 IEC klasse C

Last

Maximale statische Last vorne	5400Pa
Maximale statische Last hinten	2400Pa
Besteht den Hageltest	25 mm große Hagelkörner bei einer Geschwindigkeit von 23 m/s

Temp. Koeffizient (STC)

Temperaturkoeffizient von Isc	+0.050%/°C
Temperaturkoeffizient von Voc	-0.265%/°C
Temperaturkoeffizient von Pmax	-0.340%/°C



RUNNER — RS series

- * 99.5% MPPT efficiency, 97% conversion efficiency.
- * Exclusively designed heat dissipation channel, quieter and more stable operation.
- * OLED blue display status information.
- * Built-in lithium battery activation function.
- * Support lead-acid, lithium iron phosphate and ternary lithium batteries charging.
- * Support user-defined, lead-acid and li-ion battery charging.
- * Complete protection functions to ensure stable operation for battery system.
- * Support PC, wired instrument, and remote App monitoring.
- * RJ45 Dual interfaces, support parallel function, integrated management and secondary development.
- * CE, FCC, RoHS certification.



Focus on the MPPT Solar Controller
More Professional, More Reliable

Application scene



Home photovoltaic system



Energy storage system



Solar monitoring



Communication base station, etc.

Runner -RS Technical data

Runner -RS Series		RS48L40	RS48L50	RS48L60	RS48L80	RS48L100
Product Category						
MPPT efficiency		≥99.5%				
Standby power		1W~1.8W				
Heat-Dissipating method		Built-in fan for cooling				
Lead-acid battery system		12V System : 9VDC~15VDC		24V System : 18VDC~30VDC		
Lithium-ion battery system		36V System : 32VDC~40VDC		48V System : 42VDC~60VDC		
		8VDC~60VDC				
Input Characteristics						
Max.PV input voltage(Voc)		150VDC				
Min.Vmpp Voltage		Battery voltage + 2V				
Start-up charging voltage		Battery voltage + 3V				
Low input voltage protection		Battery voltage + 2V				
Over voltage protection / Recovery		150VDC/145VDC				
Reted PV Power	12V system	560W	700W	840W	1120W	1400W
	24V system	1120W	1400W	1680W	2240W	2800W
	36V system	1680W	2100W	2520W	3360W	4200W
	48V system	2240W	2800W	3360W	4480W	5600W
Charge Characteristics						
Activation for lithium battery		Optional				
Battery type (default setting gel-sealed lead-acid battery)		Sealed(SEL),Gel(GEL),Flooded(FLD),User-defined(USER),Li-ion(LIT)				
Rated charge current		40A	50A	60A	80A	100A
Temperature compensation		-3mV/°C/2V				
Charge method		3 stages: CC (Constant current) - CV (Constant voltage) - CF (Floating charge)				
Output voltage stability accuracy		≤±0.2V				
LOAD Characteristics						
Load voltage		Same as battery voltage				
Rated load current		30A			50A	
Load control mode		On/Off , PV voltage control mode, Dual-time control mode, PV + Time control mode				
Low voltage protection		Can be set				
Setting method		PC software / APP / Controller				
Display & Communication						
Display		Blue OLED display				
Communication		Dual RJ45 port / RS485 / support PC software monitoring / support WiFi module for APP cloud monitoring / support centralized parallel monitoring				
Other Parameters						
Protections		Input & output over-volt / low-voltage protection, reverse polarity protection, over-heating protection, battery shedding protection etc.				
Operating ambient temperature		-20°C~+50°C				
Storage temperature		-40°C~+75°C				
IP(Ingress protection)		IP21				
Altitude		0~3000m				
Max. connection size		28mm ²				
Recommended breaker		≥63A	≥ 63A	≥ 100A	≥ 120A	≥ 150A
Net weight/Gross weight (kg)		2 /2.6			5 / 6.2	
Product size /Packing size (mm)		305x185x90/370x218x98			380x210x80/490x350x195	



HM-1000/1200/1500

The Best in Its Class! The Microinverter
with reactive power control for 4 solar panels

Highlights

- Easy installation, just plug and play
- External antenna for stronger communication with DTU
- Power factor (adjustable) 0.8 leading.....0.8 lagging
- The highest power density microinverter on the market
- Compliant with VDE-AR-N 4105: 2018 & EN50549-1: 2019
- High reliability; NEMA (IP67) enclosure; 6000V surge protection



Safer



Smarter



More Powerful



More Reliable

Model	HM-1000			HM-1200			HM-1500		
Input Data (DC)									
Commonly used module power (W)	200~310			240~380			300~470		
Module compatibility	60-cell or 72-cell PV modules			60-cell or 72-cell PV modules			60-cell or 72-cell PV modules		
Peak power MPPT voltage range (V)	27~48			29-48			36~48		
Start-up voltage (V)	22			22			22		
Operating voltage range (V)	16~60			16-60			16~60		
Maximum input voltage (V)	60			60			60		
Maximum input current (A)	4*10.5			4*11.5			4*11.5		
Output Data (AC)									
Rated output power (VA)	1000			1200			1500		
Rated output current(A)	4.55	4.35	4.17	5.45	5.22	5	6.82	6.52	6.25
Nominal output voltage/range (V)	220/180-275 ¹	230/180-275 ¹	240/180-275 ¹	220/180-275 ¹	230/180-275 ¹	240/180-275 ¹	220/180-275 ¹	230/180-275 ¹	240/180-275 ¹
Nominal frequency/range (V)	50/45-55 ¹ or 60/55-65 ¹			50/45-55 ¹ or 60/55-65 ¹			50/45-55 ¹ or 60/55-65 ¹		
Power factor (adjustable)	>0.99 default 0.8 leading...0.8 lagging			>0.99 default 0.8 leading...0.8 lagging			>0.99 default 0.8 leading...0.8 lagging		
Total harmonic distortion	<3%			<3%			<3%		
Maximum units per branch ²	5	5	5	4	4	4	3	3	3
Efficiency									
CEC peak efficiency	96.70%			96.70%			96.70%		
CEC weighted efficiency	96.50%			96.50%			96.50%		
Nominal MPPT efficiency	99.80%			99.80%			99.80%		
Nighttime power consumption (mW)	<50			<50			<50		
Mechanical Data									
Ambient temperature range (°C)	-40~+65								
Dimensions (W×H×D mm)	280 x 176 x 33								
Weight (kG)	3.75								
Enclosure rating	Outdoor-NEMA (IP67)								
Cooling	Natural convection – No fans								
Features									
Communication	2.4GHz Proprietary RF(Nordic)								
Monitoring	Hoymiles Monitoring System								
Compliance	VDE-R-N 4105: 2018, EN 50549-1: 2019, VFR 2019, IEC/EN 62109-1/-2, IEC/EN 61000-6-1/-2/-3/-4, IEC/EN 61000-3-2/-3								

*1 Nominal voltage/frequency range can be changed due to the requirements of local power department.

*2 Refer to local requirements for exact number of microinverters per branch.

High Reliability Based on World's Top Supplier Partners

VISHAY

MICROCHIP

CREE

EPCOS

Infineon

TEXAS
INSTRUMENTS

muRata

NIPPON
CHEMI-CON



DTU-Pro

**A Whole New Look
On a Whole New Level**

Highlights

- ✓ Module-level monitoring and data storage
- ✓ Built-in WIFI for local installation assistant
- ✓ Stronger communication with microinverter and monitoring server
- ✓ More accurate PV generation and loads consumption monitoring
- ✓ Supports power export limiting and zero-export applications
- ✓ Applicable with Modbus RTU/TCP protocol, thus easy to see power and generation on your monitoring platform
- ✓ Alternative ports (RJ-45&USB&RS485), thus easy to access control devices to manage the solar output
- ✓ Four LEDs, therefore easier to see the status of the microinverter system

Modell	DTU-Pro (WIFI Version)	DTU-Pro (GPRS Version)
Communication to Cloud		
Signal	WIFI (802.11b/g/n) ¹ / Ethernet	GSM (850/900/1800/1900MHz) ¹ / Ethernet
Sample rate	Per 15 minutes	
Communication to Microinverter ¹		
Signal	2.4GHz Proprietary RF(Nordic)	
Maximum distance (open space)	200m	
Monitoring data limit from solar panels	99 ² panels	
Communication to Meter		
Signal	RS485	
Maximum distance (RS485 cable)	500m	
Interaction		
LED	LED Indicator * 4 – RUN, Cloud, MI, ALM	
APP	Local APP	
Power Supply (Adapter)		
Type	External adapter	
Adapter input voltage/frequency	100~240V AC / 50 or 60Hz	
Adapter output voltage/current	5V / 2A	
Power consumption	2.5W (typical), 5W (maximum)	
Mechanical Data		
Ambient temperature range (°C)	-20°C~55°C	
Dimensions (W×H×D)	200mm×101mm×29mm (without antennas)	
Weight	0.28kg	
Installation options	Wall mounting / Desktop mounting	
Features		
Compliance	FCC 15B, FCC 15C, EN62368-1, EN61000-3-2, EN61000-3-3, EN301489, EN300328, EN300440, RCM	

*1 If the DTU installation location is inside the metal box or under the metal/concrete roof, extended antennas will be suggested.

*2 Depending on the installation environment, please refer to user manual for more details.





51.2V50Ah LiFePO4 Battery Pack Specification

DOC NO. : HD/PK--13

REV : A.0

PAGE: 1 of 7

DATE: 2022-06-06

LiFePO4 Battery Pack Specification

Model No: 51.2V50Ah

Designed	Checked	Approved
Yu	Han	Anson Zhao



51.2V50Ah LiFePO4 Battery Pack Specification

DOC NO. : HD/PK--13

REV : A.0

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1. Preface

This specification describes the type and size, performance, technical characteristics, warning and caution of the 51.2V50Ah rechargeable battery pack. The specification only applies to 51.2V50Ah rechargeable battery pack supplied by Haidi Energy Technology Co.,Ltd.

2. Product and Model

2.1 Product: 51.2V50Ah LiFePO4 Battery Pack

2.2 System Configuration:

Standard pack: 15S1P



Number	Name	Description
1	LED	SOC
2	ALARM	State
3	RUN	State
4	DIAL	Site
5	RESET	
6	CAN1	
7	CAN2	
8	RS485-2	
9	RS485A	
10	RS485B	
11	DRY CONTACT	

Charge/Discharge	Positive	M8
	Negative	



51.2V50Ah LiFePO4 Battery Pack Specification

DOC NO. :HD/PK--13

REV : _____A.0

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3. Battery Pack Specifications

Items	Standard	Comments
Nominal voltage	51.2V	
Typical capacity	50Ah	At 0.2C discharge rate
Max continuous discharge current	50A	
Discharge cut-off voltage	About 37.5V	
Charge input voltage	54.75±0.05V	Charge mode: CC/CV , Use a constant current, constant voltage(CC/CV)
Charge current	≤50A	
Operation temperature range	Charge/ Discharge	0°C ~ +45°C/-20°C ~ +60°C
	Discharge	When the environment temperature is higher than 45°C , please pay attention to ventilation and heat rejection.
Storage temperature range	0°C ~ 40°C (Capacity 80%)	Recommended long-term storage temperature is 15~25°C
Humidity	5%≤RH≤85%	
Cabinet Material	Iron shell	
Total Weight	About 25kg	
Size (L*W*H)	(482*410*89)mm±2mm	
Protection function	Over charge protection、Over discharge protection、Over current protection、Short circuit protection , Temperature protection.	

4. Standard Test Conditions

All test in this specification should be in standard atmospheric conditions: temperature:

25± 5°C, relative humidity: 65±20%.



51.2V50Ah LiFePO4 Battery Pack Specification

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5. Characteristics

5.1 Standard charge

Charge the battery with the Battery special test cabinet, supply 54.75 voltage, constant-current 0.2C(A) current until current down to 0.02C (A) .

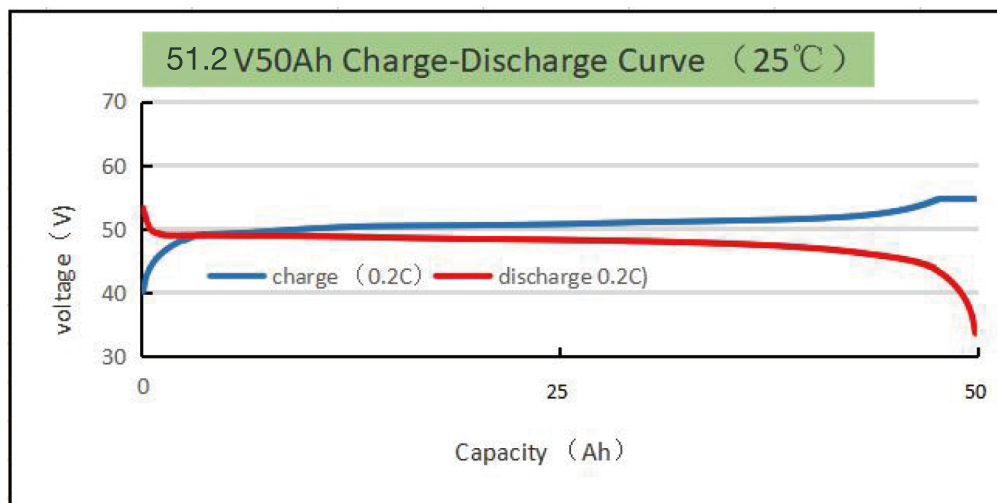
5.2 Standard discharge

Discharge the battery at 0.2C (A) to 37.5 V or battery cut off voltage.

5.3 Electrical Performance

Test Items	Test Methods	Test Standards
Capacity retention rate	After standard charge under 5.1 specified conditions, store the cells for 28 days, then discharge at 0.2C (A) to cut-off voltage.	Capacity retention rate $\geq$ 80%
Cycle Life	1) Standard charge at 0.2C (A) , 2) Rest 0.5~1 h 3) Discharge at 0.2C to cut off voltage 4) Capacity retention rate $\geq$ 80%	>2000cycles @ 100% DOD; >3000cycles @ 90% DOD; >4000cycles @ 80% DOD;

6.Characteristics Curve





51.2V50Ah LiFePO4 Battery Pack Specification

DOC NO. : HD/PK--13

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7. Cautions

- 7.1 Charging current should not be more than maximum charge current specified in the Product Specification , Charging current bigger than recommended current may damage the battery;
- 7.2 Discharging current should be no more than maximum discharge current specified in the Product Specification ; Discharging current bigger than recommended discharge current may damage the battery;
- 7.3 It should be noted that the cell would be possible to be at a over-discharged state by its self-discharge characteristics in case the cell is not used for long time. In order to prevent over-discharging, the cell shall be charged periodically to maintain between 49.5 V and 51 V (Recommended 3 months one cycle) .Over-discharging may causes loss of cell performance, characteristics, or battery functions;
- 7.4 Please charge the battery within 12 hours after use;
- 7.5 Battery storage environment follow the above conditions and in standard atmosphere, should be without strong magnet, no power, no static;
- 7.6 Do not reverse the polarity of the battery pack for any reason;
- 7.7 Do not short circuit the battery pack;
- 7.8 Do not reverse polarity charging;
- 7.9 Battery packs can be combined in series or in parallel according to the specification;
- 7.10 Do not immerse the battery pack in water or sea water, or get it wet;
- 7.11 Do not disassemble battery;
- 7.12 Do not expose the battery to extreme heat or flame;
- 7.13 Please use a compatible charger for charging;