

Hi-MO 6

Explorer

LR5-54HTH 415~435M

- Suitable for Distribution Market
- Simple design embodies modern style
- Better energy generation performance
- High-quality module guarantees long-term reliability



15-year Warranty for
Materials and Processing



25-year Warranty for Extra
Linear Power Output

Complete System and Product Certifications

IEC 61215, IEC 61730, UL 61730

ISO9001:2015: ISO Quality Management System

ISO14001: 2015: ISO Environment Management System

ISO45001: 2018: Occupational Health and Safety

IEC62941: Guideline for module design qualification and type approval

LONGI



22.3%
MAX MODULE
EFFICIENCY

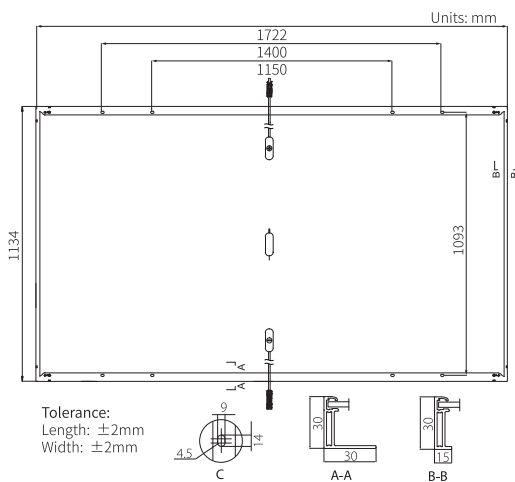
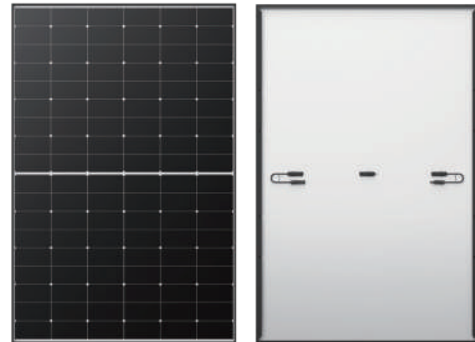
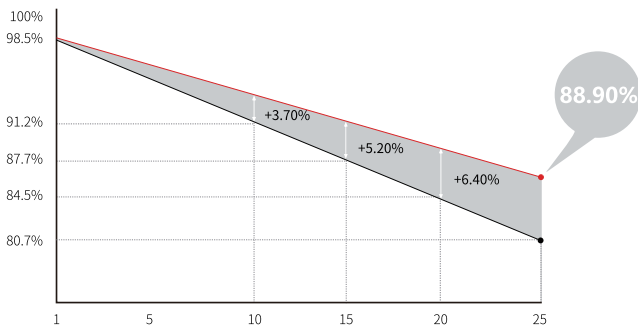
0~3%
POWER
TOLERANCE

<1.5%
FIRST YEAR
POWER DEGRADATION

0.40%
YEAR 2-25
POWER DEGRADATION

Additional Value

25-Year Power Warranty



Mechanical Parameters

Cell Orientation	108 (6×18)
Junction Box	IP68, three diodes
Output Cable	4mm ² , ±1200mm length can be customized
Glass	Single glass, 3.2mm coated tempered glass
Frame	Anodized aluminum alloy frame
Weight	20.8kg
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	LR5-54HTH-415M		LR5-54HTH-420M		LR5-54HTH-425M		LR5-54HTH-430M		LR5-54HTH-435M	
	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT
Maximum Power (Pmax/W)	415	310	420	314	425	318	430	321	435	325
Open Circuit Voltage (Voc/V)	38.53	36.18	38.73	36.36	38.93	36.55	39.13	36.74	39.33	36.93
Short Circuit Current (Isc/A)	13.92	11.24	14.00	11.31	14.07	11.36	14.15	11.43	14.22	11.49
Voltage at Maximum Power (Vmp/V)	32.24	29.42	32.44	29.60	32.64	29.78	32.84	29.97	33.04	30.15
Current at Maximum Power (Imp/A)	12.88	10.54	12.95	10.60	13.03	10.67	13.10	10.72	13.17	10.78
Module Efficiency(%)	21.3		21.5		21.8		22.0		22.3	

Operating Parameters

Operational Temperature	-40°C ~ +85°C
Power Output Tolerance	0 ~ 3%
Voc and Isc Tolerance	±3%
Maximum System Voltage	DC1500V (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	-0.230%/°C
Temperature Coefficient of Pmax	-0.290%/°C

SOLAR MPPT CHARGE CONTROLLER



-  **2 independent MPPT PV inputs**
-  **Max module power:**
 - 450 W for 12 V battery
 - 900 W for 24 V battery
 - 1800 W for 48 V battery
-  **20 programs to manage the load**
-  **12 V / 24 V / 48 V battery auto-detect voltage**
-  **LCD graphic display user interface**
-  **Remote monitoring with WRD**
-  **Pb-lead acid, Pb-AGM, Pb-gel batteries and Lithium batteries**
-  **IP20 metal box**
-  **Protections:**
 - Low battery load-disconnect
 - Over-temperature
 - Battery polarity inversion
 - Output overload protection

Il **WRM30+** è un regolatore per la carica di batterie da modulo fotovoltaico da impiegare in grandi impianti ad isola. E' adatto per sistemi a 12V/24V/48V e può gestire una potenza fotovoltaica fino a 1,8kW. Il WRM30+ è specificatamente progettato per applicazioni industriali quali alimentazioni di ponti radio/TV, segnaletica stradale, o alimentazione di intere abitazione completamente stand-alone. Questo modello di regolatore di carica implementa un circuito di ricerca della massima potenza di modulo PV (**MPPT**), che massimizza l'energia estratta dal modulo e caricata in batteria.

Particolarità di questo prodotto è la presenza di due canali distinti di ricarica e quindi un doppio ingresso per i moduli PV. Ciò permette la gestione di due stringhe indipendenti.

Il WRM30 rileva lo stato giorno/notte in base alla tensione di pannello, quindi non è necessario collegare ulteriori sensori al regolatore.

Il WRM30+ è compatibile con il **WESTERN WRD SYSTEM** che è un avanzato sistema di controllo e visualizzazione di impianti MPPT a elevata potenza.

WRM30+ is a charge controller designed for big stand-alone systems. It's designed for 12V/24V/48V batteries and up to 1,8kW PV module power.

WRM30+ is specifically designed for industrial applications, such as radio/TV link controllers, troad signs or to supply medium stand-alone power systems.

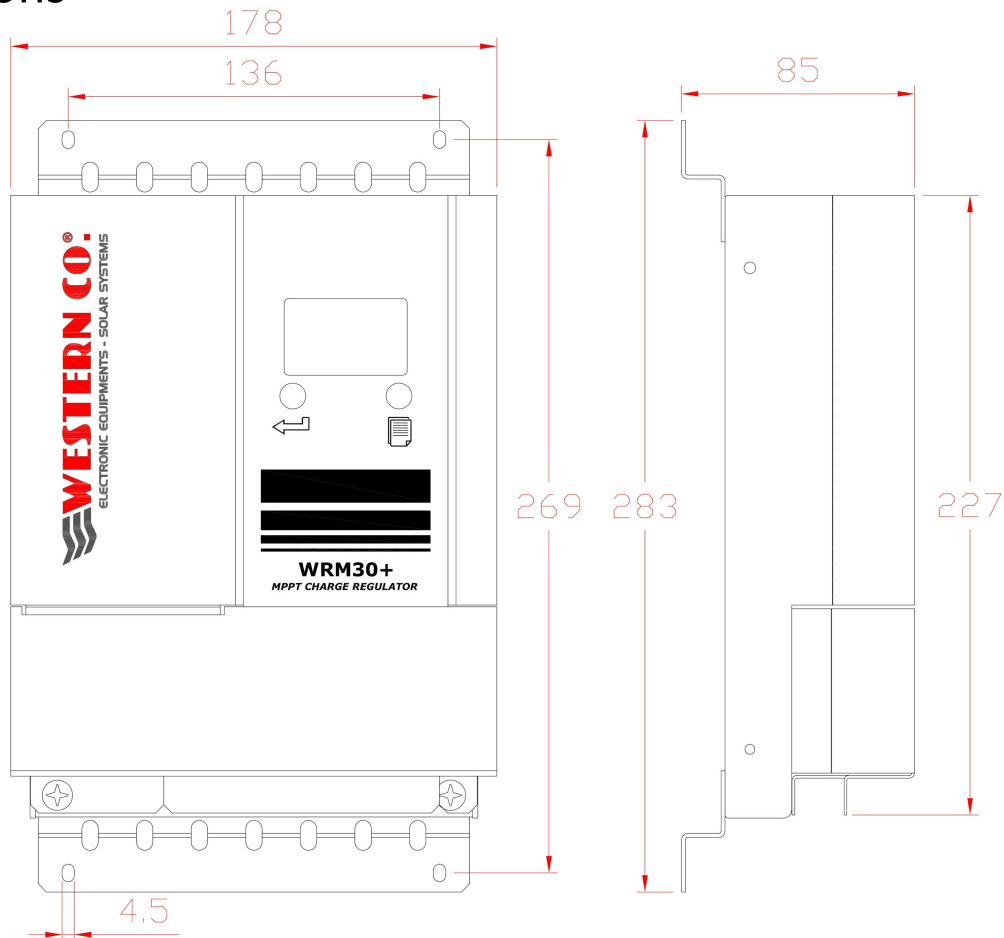
*This type of charge controller implements a Maximum Power Point Tracker (**MPPT**) circuit to exploit the maximum PV power available to charge the battery.*

The main feature of this product is the presence of two distinct charge channels and, consequently, two PV inputs. This means you can connect and manage two separated PV strings. The WRM30+ detects day/night status according to the voltage of the PV module, making unnecessary the use of sensors connected to the controller.

*WRM30+ supports the **WESTERN WRD SYSTEM** that is an advanced system made to control and monitor middle and high power MPPT plants.*

		12 V battery nominal voltage			24 V battery nominal voltage			48 V battery nominal voltage			UM
		Min.	Tip.	Max.	Min.	Tip.	Max.	Min.	Tip.	Max.	
Battery voltage	V _{batt}	10,0	12,0	16,0	20,0	24,0	32,0	40,0	48,0	64,0	(V)
Open circuit panel voltage	V _{pan}	-	-	180	-	-	180	-	-	180	(V)
Panel current	I _{pan}	-	-	13	-	-	13	-	-	13	(A)
Maximum panel power	P _{chMax}	-	-	225	-	-	450	-	-	900	(W)
Load output voltage	V _{LOAD}	-	V _{batt}	-	-	V _{batt}	-	-	V _{batt}	-	(V)
Load current	I _{LOAD}	-	-	15	-	-	15	-	-	15	(A)
Charge voltage at 25°C –SEAL program (default)	V _{EoC}	-	14,4	-	-	28,8	-	-	57,6	-	(V)
Charge voltage at 25°C –FLOOD program	V _{EoC}	-	14,8	-	-	29,6	-	-	59,2V	-	(V)
Charge voltage for Li program	V _{EoC}	14,0	-	14,7	28,0	-	29,4	56,0	-	58,8	(V)
Compensation of VEoC function of battery temperature (T _{batt})	V _{tadj}	-	-0,024	-	-	-0,048	-	-	-0,096	-	(V/°C)
Float voltage	V _{ft}	-	VEoC-0,6	-	-	VEoC-1,2	-	-	VEoC-2,4	-	(V)
Absorption time (settable)	T _{abs}	1	4	8	1	4	8	1	4	8	(h)
Low battery voltage (settable)	V _{lb}	10,80	11,60 (default)	12,56	21,60	23,20	25,12	43,20	46,40 (default)	50,24	(V)
Exit low battery voltage at 25°C	V _{elb}	12,72	VEoC-0,2 (default)	13,68	25,44	VEoC-0,4 (default)	27,36	50,88	VEoC-0,2 (default)	54,72	(V)
Night voltage detection (settable)	V _{night}	2,00	4,56 (default)	5,84	2,00	4,56 (default)	5,84	2,00	4,56 (default)	5,84	(V)
Day voltage detection	V _{day}	-	8,40	-	-	8,40	-	-	8,40	-	(V)
Self consumption	I _q	-	34	-	-	21	-	-	12	-	(mA)
Working temperature	T _{amb}	-10	-	+40	-10	-	+40	-10	-	40	(°C)
Dissipated power	P _{loss}	-	-	40	-	-	56	-	-	66	(W)
Efficiency @30A	n	90	-	92	93,5	-	95,2	96,0	-	97,2	(%)
Battery wire gauge		35									(mm ²)
PV module wire gauge		10									(mm ²)
Load wire gauge		4									(mm ²)
Weight		2000									(g)
Protection degree		IP20									

Dimensions



WESTERN CO.

Via Pasubio, 1/3 – San Benedetto del Tronto (AP)

TEL.: +39 0735 .751248 Fax: +39 0735 .751254



LONG LIFE BATTERIES HIGH CAPACITY

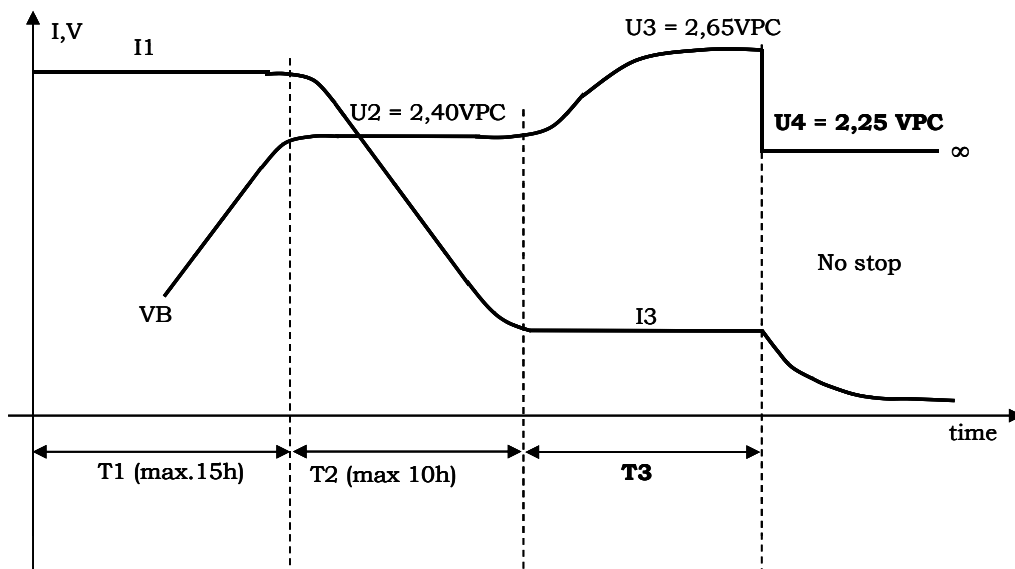
SPECIFICHE DELLA BATTERIA TIPO

Performance specification for battery type

7 TG 12 N



Voltaggio <i>Nominal Voltage</i>	.....	12 V		
Capacità <i>Nominal Capacity</i>	.....	20 h	200 Ah	
		5 h	150 Ah	
		2 h	117 Ah	
		1 h		
Resistenza interna <i>Internal Resistance</i>	.....	milliohms		
Dimensioni (mm) <i>Dimensions (mm)</i>	.....	Lunghezza 510 mm; <i>Lenght 510 mm</i>	Larghezza 222 mm; <i>Width 222 mm</i>	Altezza 225 mm <i>Height 225 mm</i>
Poli <i>Terminals</i>	.....	+ \ -	
Elettrolito <i>Electrolyte</i>	.....	Acido Solforico <i>Sulphuric acid</i>	1,29 gr/lt 30°C	
Contenitore <i>Recipient</i>	.....	Polipropilene (PP) <i>Polypropylene (PP)</i>		
Peso con elettrolito <i>Weight with electrolyte</i>	.....	51,4 Kg.		
Corrente di carica suggerita <i>Suggested Charging current</i>	.....	25 A WA 20 IUIA		
Temperatura di lavoro <i>Operating Temperature</i>	.....	-20°C / 45°C		
Temperatura d'immagazzinaggio <i>Storage Temperature</i>	.....	-20°C / 40°C		
Numero Cicli <i>Cycle nr.</i>	.....	1200		



➤ **Durata: T1 + T2:** la durata delle due fasi iniziali può essere al massimo 14h

➤ **Durata: T3**

La durata di T3 è uguale alla durata della carica principale, cioè $T3 = T1 + T2$, ma con un minimo di 1h e

T1+T2 [h]
T3 [h]

< 1	2	3	4	> 4
1	2	3	4	4

massimo di 4h: