

SPECIFICATION

NAME	Waterproof Battery Charger
MODEL	LYYX1200F 48V20A



1. General

This product adopts digital programming technology, the output voltage/current has high precision, good stability and high efficiency, which ensures the long-term stable and reliable load operation of the machine. The charging process is automatically controlled by the charging program, which meets the requirements of temperature resistance and vibration resistance.

2. Electrical Specification

2.1 Main Product Specification

No.	Model	Technical specification	Remark
1	For battery type	<input type="checkbox"/> Li-ion <input type="checkbox"/> LiFePO4 <input checked="" type="checkbox"/> Lead acid	
2	Max output voltage	58.8V	
3	Output current	20A	
4	Input voltage	220Vac	

2.2 Input Characteristic

No.	Item	Technical specification	Remark
1	Rated input voltage	220Vac	
2	Input voltage range	200-240Vac	
3	Input voltage frequency	50-60 Hz	






2.3 Output Characteristic or Charge Stages

No.	Item	Technical specification	Remark
1	CC(constant current)	20A	
2	CV(constant voltage)	58.8V	
3	Floating charge voltage	55.2V	
4	Transition Current	4A	
5	Power efficiency	≥91%	









2.4 Protection Characteristics

No.	Item	Technical specification	Remark
1	Over voltage protection	When the voltage exceeds the predetermined maximum value, the output voltage is disconnected to protect the machine	
2	Over voltage protection	The maximum output voltage set by the charger will not exceed the maximum charging voltage of the battery	
3	Thermal protection	When the working temperature is higher than 85 °C, the power will be reduced by 50% ~ 80%. The charger can recover automatically until the temperature drops below 60 °C.	
4	Current limiting protection	The current is set in a safe range to prevent damage to the machine or battery due to overload.	At CC mode
5	Short circuit protection	Short circuit protection should be automatically recovery after remove the condition and restart the charger.	
6	Reverse polarity protection	When the output is reversed, the charger will not work until the user connects it correctly and plugs in the power again. "Non-zero volt start charging"	

2.5 Charging Indicator

No.	Item	Status	Remark
1	Standby(with output)	  Green Yellow slow flashing	
2	Charging < 80%	 Red on	
3	Charging > 80%	 Yellow on	
4	Fully Charged	 Green on	
5	Charging Voltage Display	NO	
6	Charging Current Display	NO	

2.6 Protection Indicator

No.	Item	Status	Remark
1	Over voltage/current protection	  Green Yellow fast flashing	
2	Abnormal output	  Green Yellow fast flashing	
3	Output short circuit protection	  Green Yellow fast flashing	
4	Battery voltage below 30%	  Green Yellow fast flashing	

3. Environmental Condition

No.	Item	Technical specification	Remark
1	Operation temperature	-10 ~ +45°C	
2	Humidity	5~95%	
3	Storage temperature	-40 ~ +70°C	
4	Altitude	0 ~ 3000m	
5	Cooling	External Fan	

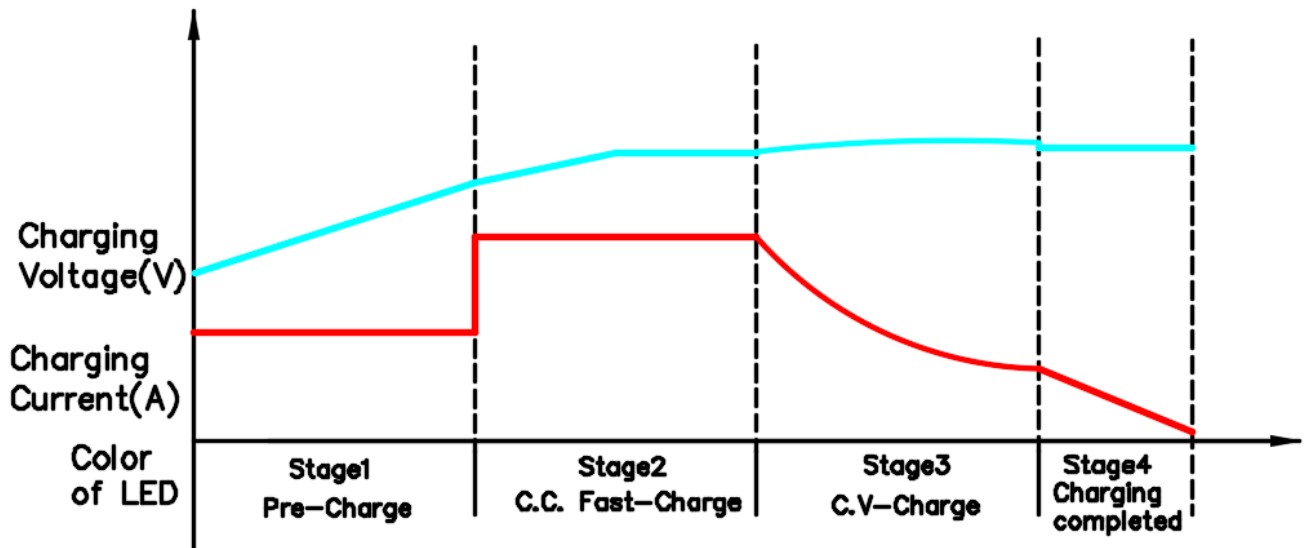
4. Safety & EMC

No.	Item	Standard (or test condition)	Remark	
1	Electric Strength test	Input-Output	1500Vdc/1min ≤2mA	Can withstand DC voltage 1500V, 1 minute, leakage current ≤ 2mA, no breakdown or arcing
		Input-Earth		
2	Isolation resistance	Output-Earth	≥10MΩ@500Vac	Input to output, input to case 500Vdc & normal air pressure, tested in relative humidity 90%
		Output-Shell		
3	EMI	Conduction	<input type="checkbox"/> EN55014 <input type="checkbox"/> EN55022	150k~30MHz
		Radiation	<input type="checkbox"/> EN55014 <input type="checkbox"/> EN55022	30M Hz~1GHz
		Power Clamp	<input type="checkbox"/> EN55014 <input type="checkbox"/> EN55022	30M Hz~1GHz
4	Safety	CE ROHS		

5. Environmental Testing Requirements

NO.	Item	Technical specification	Remark
1	Waterproof grade	IP67	Features OK
2	High temperature ambient operating	+45°C	Features OK
3	Low temperature ambient operating	-10°C	Features OK
4	High temperature storage	+70°C	Work normally after recovery under normal temperature for 2 hours
5	Low temperature storage	-40°C	Work normally after recovery under normal temperature for 2 hours
6	Random vibration	20Hz to 2000Hz 3Grms 20hours per axis	
7	Repetitive shock	40g peak 3 orthogonal axes, 3+ and 3- in each axis, 11ms pulse width	
8	Thermal shock	-35°C to 75°C, <3min transition, 2.5hours dwell, 200cycle	
9	Drop test	BS EN60068-2-32:1993 TEST ED: free fall appendix B	

6. Charging Curve

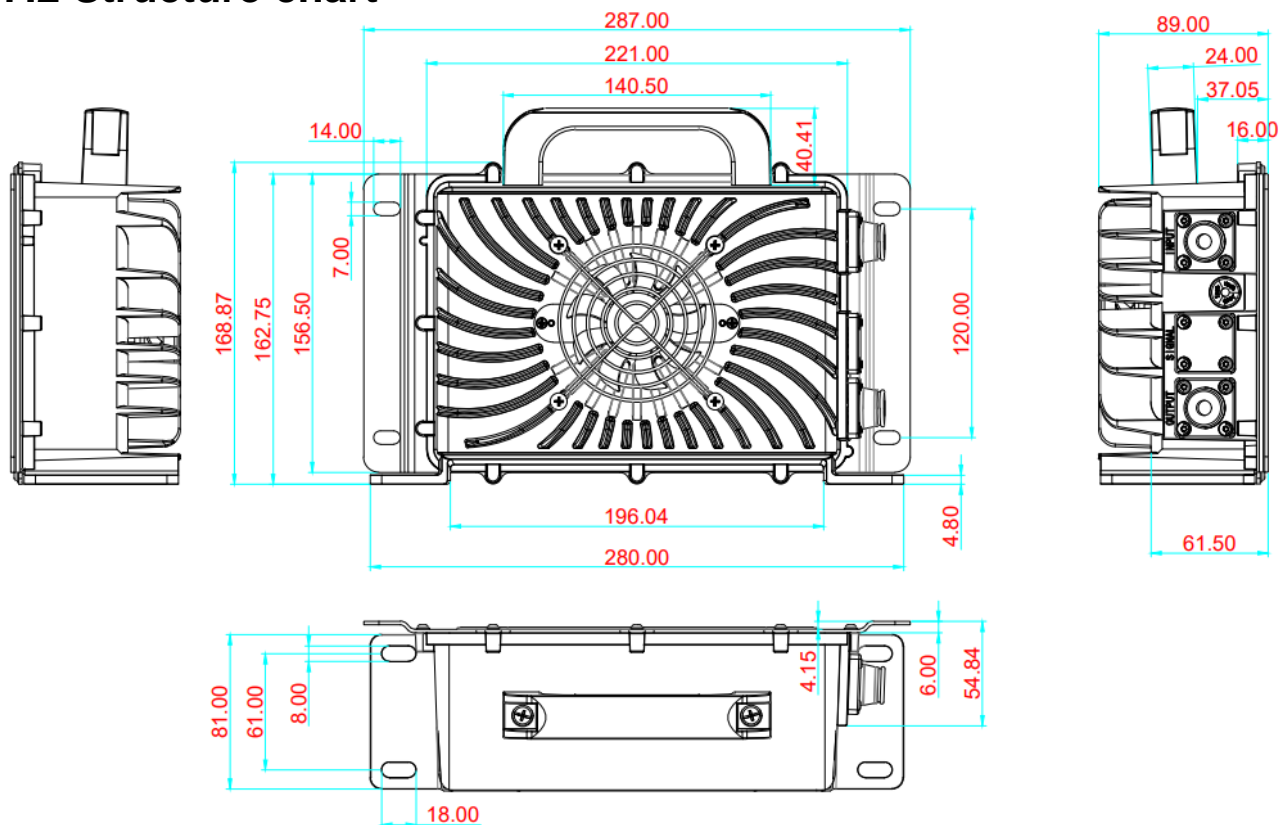


7. Mechanical characteristic

7.1 Main product specification

No.	Item	Technical specification	Remark
1	Shell material	Zinc Aluminum alloy	
2	Net Weight	4.5kg	
3	Size	287*169*89mm	
4	AC cable length	1.5m	
5	DC cable length	1.5m	
6	Input socket	EU plug	
7	Output socket	8mm O ring	

7.2 Structure chart



7.3 Product display



8. Package, transportation & storage

8.1 Package

There is product name, model, safety approval, serial number, User Manual and packing list in the package box.

8.2 Transportation

Suit for transportation by truck, the products should be shielded by tent from sunshine, and loaded and unloaded carefully.

8.3 Storage

Products should be stored in package box when it is not used. And warehouse temperature should be $-40\sim 70^{\circ}\text{C}$, and relative humidity is $5\sim 95\%$. In the warehouse, there should not be harmful gas, inflammable, explosive products, and corrosive chemical products, and strong mechanical vibration, shock and strong magnetic field affection. The package box should be above ground at least 20cm height, and 50cm away from wall, thermal source, and vent. Under this requirement, product has 2 years of storage period, and should be rechecked when over 2 years. The charger must be energized every three months for not less than 0.5 hours.

9. Reliability requirements

No.	Item	Technical specification	Remark
1	MTBF	MTBF no less than 20000 hours (25 degrees C, Full load and rated voltage input)	
2	Burn-in and Life test	Aging test for two hours, the shell surface temperature $\leq 55^{\circ}\text{C}$.	