 Cathedy GmbH		REVISION	A0
		DATE	2023.06.08
PART NUMBER	CAR CHARGER C140-140W USB C	CUSTOMER NAME AND MODEL	

SPECIFICATION FOR APPROVAL

SUK: C140-454-DC-PD140W

CUSTOMER MODEL NO.: _____

SAMPLE NO.: _____

SERIES PRODUCTS: _____

PRODUCT NAME: CAR CHARGER

OUR MODEL NO.: C140-140W USB C

Color: Black


DATE: 2023-06-08

CUSTOMER APPROVED SIGNATURE		

Designed by	Checked by	Approved by

Please to sign back after you confirm!


Rev. List			
Rev.	Date	Description	Design
A0	2023.06.08	New Rev.	

 Cathedy GmbH		REVISION	A0
		DATE	2023.06.08
PART NUMBER	CAR CHARGER C140-140W USB C	CUSTOMER NAME AND MODEL	

Content

1. Scope	4
2. Quote Criterion	4
3. Input Characteristics	4
3.1. Rated Input Voltage	4
3.2. Rated Input Current	4
4. Output Characteristics	4
4.1. Rated Output Voltage	4
4.2. Rated Power	5
4.3. Output Ripple and Noise	5
4.4. Protection	5
4.4.1. Over Current Protection	5
4.4.2. Short Circuit Protection	5
4.4.3. Thermal protection	5
4.5. Temperature Rise	6
5. Environmental Requirement	6
5.1. Operating Temperature	6
5.2. Storage Temperature	6
5.3. Operating Humidity	6
5.4. Storage Humidity	6
6. Mechanical Requirement	6
6.1. Drop Test	6
6.2. Salty Fog Test for Metal Part	6
6.3. Plug and pull experiment	7
7. Mechanical Characteristics	7
7.1. Appearance	7
7.2. Case Resin Materials	7
8. Environmental Performances	7
8.1. Operating at the Lower temperature	7
8.2. Operating at the High Temperature	7
8.3. Storage at the Lower Temperature	7
8.4. Storage at the Higher Temperature	8
8.5. Storage at High Temperature and High Humidity	8
8.6. Storage at low Temperature and Low Humidity	8
9. Photograph of the Product	8

1. Scope

 Cathedy GmbH		REVISION	A0
		DATE	2023.06.08
PART NUMBER	CAR CHARGER C140-140W USB C	CUSTOMER NAME AND MODEL	

The specification shall be applied to the field of car charger

2. Quote Criterion

2.1 EMI STANDARD EMI

Fcc part15Class-B, EN50498: 2010 FCC 47 CFR Part 15 Subpart B,ANSI C63.4-2014
UL2089

3 Input Characteristics

3.1 Rated Input Voltage

It is normal for 12Vdc to 24Vdc input DC voltage.

3.2 Rated Input Current

It is normal for 15A Max input Current

4 Output Characteristics

4.1 Rated Output Voltage Current


Model	4.1 Output Voltage	4.1 Min Load	4.1 Output Current	4.1 Load Regulation	4.1 Line Regulation	4.1 Output Voltage Range	4.2 Rated Power	4.3 RippleNoise (p-p)	4.4.1 Over Current Protection
C140-140W USB C	5V	0A	3A	±5%	±1%	4.75V-5.25V	15W	100mV Max	4A Max
	9V	0A	3A	±5%	±1%	8.55V-9.45V	27W	100mV Max	4A Max
	12V	0A	3A	±5%	±1%	11.4V-12.6V	36W	100mV Max	4A Max
	15V	0A	3A	±5%	±1%	14.25V-15.75V	45W	100mV Max	4A Max
	20V	0A	5A	±5%	±1%	19.0V-21.0V	100W	100mV Max	6.5A Max
	28V	0A	5A	±5%	±1%	26.6V-29.4V	140W	100mV Max	6.5A Max

4.2 Rated Power

The rated power is 100Watts.continuously at all specified conditions. Note: the test shall be made under the following conditions, unless otherwise specified: Ambient Temperature 25°C, Relative Humidity 35~85%RH Air Pressure 86~106kPa

4.3 Output Ripple and Noise

DC Input 12V. 24V Output ripple voltage is less Measured methods:Performed by 20MHz bandwidth in

 Cathedy GmbH		REVISION	A0
		DATE	2023.06.08
PART NUMBER	CAR CHARGER C140-140W USB C	CUSTOMER NAME AND MODEL	

oscilloscope. Applied 0.1uF ceramic capacitor and 10uF electrolytic capacitor across output connector terminals Measured at the end of DC cable.

4.4 Protection

4.4.1 Over Current Protection

Over current protection current output (5V3A) (9V3A) (12V3A) (15V3A) 4A Max (20V5A) (28V5A) 6.5A Max

After the over current is eliminated, it needs to be restarted (unplugged and reinserted) to resume normal operation.

(5V3A) (9V3A)(12V3A) (15V3A)4A (20V5A) (28V5A) 6.5A

4.4.2 Short Circuit Protection

When the output short circuit occurs, the input power of the product decreases without damage. When the short circuit is eliminated, it needs to be restarted (re-inserted after pulling out) to resume normal work.

4.4.3 Thermal protection

Output over load,the main components of temperature more than 125°C protection (shell temperature was 95°C)
Circuit protection,the main components of the temperature dropped to 50°C below normal output

4.5 Temperature Rise

The input voltage of 12-24 Vdc is applied at 25°C, and the shell temperature is less than 77°C at the maximum output load.

5 Environmental Requirement

5.1 Operating Temperature

-10°C TO 40°C Full load, Normal operation.,.

5.2 Storage Temperature

-25°C TO +70°C With package

5.3 Operating Humidity

5%(0°C)~90%(40°C),RH,72Hrs,Full load, Normal operating.


5.4 Storage Humidity

5% ~ 95% RH. Non-condensing

6 Mechanical Requirement

6.1 Drop Test

from 100cm height to the most likely to cause adverse results to the horizontal position of the surface drop test bed three times, the adapter in addition to surface scratches, it should be no dysfunction can cause the adapter and

 Cathedy GmbH		REVISION	A0
		DATE	2023.06.08
PART NUMBER	CAR CHARGER C140-140W USB C	CUSTOMER NAME AND MODEL	

other potentially the harm. (Horizontal surface of the test rig shall be composed of at least 13mm thick hardwood installed in two layers of plywood, each layer of plywood thickness 19-20mm, and then placed on a cement base or equivalent on the ground inelastic)

6.2 Salty Fog Test for Metal Part

Experiment condition, Salty water thickness: 5%, Equipment Temperature: 35 ~ 40 °C ,put the adapter(unpacking)in the test equipment for 24h, after 24h recovery at 25°C checking the appearance, the metal parts have no erode and rust.

6.3 Plug and pull experiment

Plug and connector after normal plug 10 times,plug each insert strength is not more than 30N,pull out in 10N to 50N after between continuous pull plug 3000 times Appearance is allowed to have mild damage, but conducting performance is good

7 Mechanical Characteristics

7.1 Appearance

Visual inspection the case have no visual abnormality, no obvious nick, burr and other mechanical damage, outer metal have no rust. Use limit sample to check for any failures.

7.2 CaseResin Materials

Flame resistance applies to UL94-V1

8 Environmental Performances

8.1 Operating at the Lower temperature

At $-10\pm 2^{\circ}\text{C}$, with the rated voltage 12-24Vdc charged to the primary and unloaded and full load on the secondary, no abnormality in electric and mechanical characteristic, after 2 hours recovery at the room temperature.

8.2 Operating at the High Temperature

At $40\pm 2^{\circ}\text{C}$, with the rated voltage12-24Vdc charged to the primary and unloaded and full load on the secondary. No abnormality in electric and mechanical characteristic after 2 hours recovery at the room temperature.


8.3 Storage at the Lower Temperature

At $-25\pm 2^{\circ}\text{C}$, test of non-operated, No abnormality in electric and mechanical characteristic after 2hours recovery at the room temperature.

8.4 Storage at the Higher Temperature

At $70\pm 2^{\circ}\text{C}$, test of non-operated, No abnormality in electric and mechanical characteristic after 2hours recovery at the room temperature.

8.5 Storage at High Temperature and High Humidity ()

 Cathedy GmbH		REVISION	A0
		DATE	2023.06.08
PART NUMBER	CAR CHARGER C140-140W USB C	CUSTOMER NAME AND MODEL	

At $40 \pm 2^{\circ}\text{C}$, 90~95%RH, test of operating 48hours, no abnormality in electric and mechanical characteristic, after 4hours recovery at the room temperature.

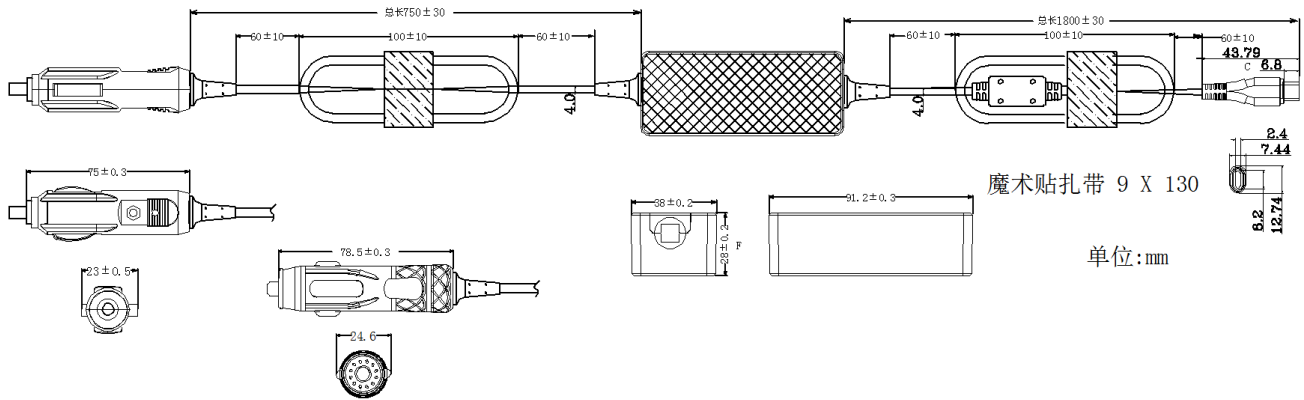
8.6 Storage at low Temperature and Low Humidity ()

At $-10^{\circ}\text{C} \pm 2^{\circ}\text{C}$, 10%~40%RH, test of operating 48hours, no abnormality in electric and mechanical characteristic, after 4hours recovery at the room temperature.

9 Photograph of the Product


11.1 Enclosure:

The power supply size: 91.2x38x28mm; : 91.2x38x28mm;



Hky Power your life	Cathedy GmbH	REVISION	A0
		DATE	2023.06.08
PART NUMBER	CAR CHARGER C140-140W USB C	CUSTOMER NAME AND MODEL	



 Cathedy GmbH		REVISION	A0
		DATE	2023.06.08
PART NUMBER	CAR CHARGER C140-140W USB C	CUSTOMER NAME AND MODEL	

