

CROSS STARS III

PRODUCT DESCRIPTION



Shanghai Cross Stars Cultural Technology LLC., Co.

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试用水印

1. Product Introduction

CROSS STARS III is the drone specially designed for drone performance. Supported with the world's leading self-developed core swarm control technology, hundreds of drones fly in the night sky form the constantly changing pictures through the color change of drone RGB LED lights and the dynamic transformation of 3D space, which like a magician plays his show lighting the sky with wisdom.

2. Product Main Characteristics

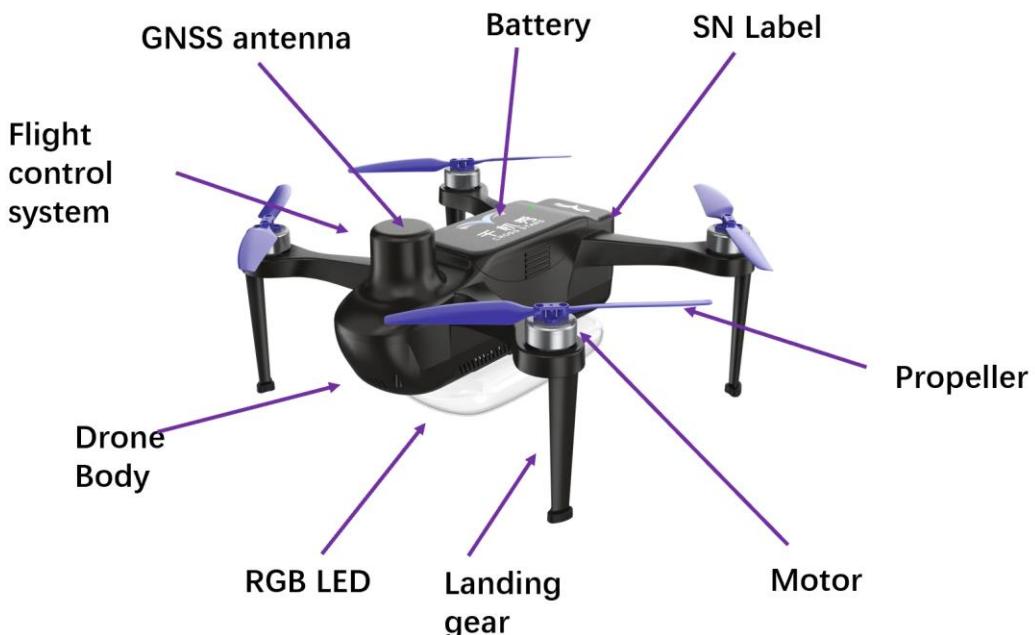
- The drones carry with 16.77 million color (256*256*256) RGB lights. The drones can show different colors and different lighting modes according to the change of drone dance steps in the night sky creating the starry visual feast.
- Flying operation is simplified. According to the dance step documents prepared in advance, the drones realize the automatic flight in the whole performance process and unmanned operation in the flight process.
- The drone performance support two communication modes including Lora radio and WI-FI. The signal is stable throughout the flight ensuring the safety of communication. TOF, barometer integrate slow

descent technology and optional propeller protective cover physical protection can realize the dual safety protection of the drones.

- High precision GNSS positioning technology ensures the reliable and accurate position of drones flying in the sky.
- The drone meets the standard requirements of different countries and reach the whole world.

3. Product Description

CROSS STARS III drone adopts an integrated structural shape following design. The whole drone consists of following parts: battery weight 527g, wheelbase 240mm, The protective cover is optional as an accessory. The whole drone can be roughly divided into the following components as the following figure:



1. **Drone body:** Drone body is streamlined designed with scientific and technological aesthetics. All components are designed in an integrated way, giving consideration to heat dissipation, dust prevention and water proof. The integrated design structure ensures the flight performance, greatly reduces the weight of the airframe structure, and effectively balances the ultimate weight and structural strength. The integrated design ensures the effective flight time and reliability of the system.
2. **RGB LED:** With high brightness and low power LED light, the drone can realize the $256 * 256 * 256$ color combinations; With highly customized design light-shade ensuring the color penetrability, brightness and high fidelity of the lamp beads; RGB can support different customized colors and flashing modes, meet the switching of different working modes such as constant light and flashing. Professional customized design creates the ultimate lighting performance system.
3. **Landing gear:** The supporting part of the drone which is integrated with the drone body.
4. **Motor:** The custom developed brushless power motor which is specially developed for swarm flying scenes. The waterproof and sand resistance motor can overcome weight and provide efficient power output for the drone.

5. **Propeller:** The foldable plastic propeller can balance the power efficiency, appearance of the drone and cost. There is no need to dismantle the propeller for the overall operation, which simplifies the operation and reduces the storage space.
6. **SN Label:** the unique identification number of the drone, which is used for equipment management such as equipment warehousing, operation management, after-sales service, etc.
7. **Battery:** the battery specially matching for the drone. As an accessory of the drone supplies power to the drone. The battery adopts 18650 cells with a capacity of 3500mah.
8. **GNSS Antenna:** The drone has built-in GNSS module and customized GNSS antenna to realize the reliable, stable and high-precision positioning of the drone.
9. **Flight Control System:** The system includes swarm control system, IMU navigation system, wireless communication system, TOF altitude determination system, etc. to realize the automatic control, navigation and data communication of the drone. Among them, wireless communication includes Wi-Fi and Lora radio for redundant backup to ensure worry free communication.

4. Product Parameter Description

CROSS STARS III is specially designed for drone performance show, the whole body is small, light in weight and long in endurance. Using 4 strings of conventional 18650 cells can meet the energy supply demand and achieve the maximum endurance of 33 minutes.

Flight Power: 90W

Working voltage range of battery: 12v-16.8v.

Nominal voltage: 14.54v

During the operation of the drone, RGB lights are mixed with colors through R/G/B to realize the conversion of 256*256*256 groups of colors. The maximum power of the overall LED light is 25W. The light has 3 working states: 1. Extinguish; 2. Always on; 3. Breathing light / flashing.

CROSS STAR III Performance detailed parameter as below:

Num	Item Index	Detail Part	Parameter
1	Parameters of drones	Overall weight (including battery and protective cover)	527g
2		wheelbase	240mm
3		Overall dimension	Before propeller folding: 278×260×115 mm
4			After propeller folding: 215×197×115 mm
5		Maximum horizontal flight speed	10m/s
6		Maximum altitude	3000m
7		Maximum endurance time	33min
8		Maximum wind resistance grade	Level 5 (<10.7 m/s)
		Operating temperature range	-20°C~50°C

9	Flight performance parameter	Positioning mode	GPS-RTK-QIANXUN
10		Return index of electronic fence	Distance to takeoff point 600m
11		Control mode	ground station
12		Control link mode	Wi-Fi+Lora Radio
13		Communication protocol	Wi-Fi: Radio: Spread spectrum modulation technology
14		Wireless Power	Wi-Fi: 18 dBm LoraRadio: 27 dBm
15		Equipment life	≥2000h
16		Minimum placement spacing	1m
17	Battery parameter	Minimum flight distance	1.4m
18		Safe performance horizontal speed	6m/s
19		Safe performance climbing speed	3m/s
20		Descending speed of safe performance	3m/s
21		Maximum performance time	20min
22		Battery type	High performance lithium ion battery
23	Transport Case	Overall weight of battery	227g
24		Battery capacity	3500mAh
25		Nominal voltage	14.54V
26		Operating ambient temperature	-20°C~60°C
27		Storage ambient temperature	-20°C~40°C
28		Drone transport case	Size: 837*559*291mm Number of fully loaded drones: 20 drones Fully loaded drone weight: 12.9kg
29		Battery transport case	Size: 543*385*271mm Number of fully loaded batteries: 60 Full load battery weight: 17.2kg

5. Additional Information

1. The USB port on the drone side is only reserved for debug and is not open to customers.

2. This product contains high-speed rotating fan propellers. Keep away from the fan propellers.



This sign on the drone indicates that it contains high-speed rotating fan propellers, which should be kept away.

3. In actual operation, ensure that the battery is completely stuck in the battery slot and installed in the correct place. The right operation steps are as follows: insert the battery into the battery slot of the drone from top to bottom, hear the sound of clicking and observe that the upper shell of the battery is flush with the shell of the drone.
4. During the implementation of the drone performance, independent drone placement area, drone performance area and drone isolation area will be divided to ensure flight safety.

6. FCC Warning

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not

occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

FCC Radiation Exposure Statement

This equipment complies with FCC radiation exposure limits set forth for uncontrolled environment. This equipment should be installed and operated with minimum distance of 20 cm between the radiator and your body. This transmitter must not be co-located or operating in conjunction with any other antenna and transmitter.

Changes or modifications made to this equipment not expressly approved by Shanghai Cross Stars Cultural Technology LLC., Co. may void the FCC authorization to operate this equipment.