TP-X1 Pocket Portable Tethered Lighting



1. Project Overview

The TP-X1 pocket-sized portable tethered lighting drone is designed for emergency rescue operations, nighttime construction sites, outdoor nighttime work, and vehicle-mounted follow-up lighting. The system consists of two components: an aerial platform and a ground-based tethered power station. The ground station supports multiple power supply options, including generators, 220 V mains power, and energy storage systems. Continuous power delivery via tethered cables enables extended flight endurance; equipped with high-power lighting modules, it achieves fixed-point hovering to provide wide-area high-altitude surface illumination. The system supports dual control via a dedicated mobile app and the ground station, offering fixed-point hovering and intelligent follow capabilities, along with low-noise operation, making it well-suited for complex nighttime working environments.

TP-X1 Pocket Portable Tethered Lighting System:

1. Extended hovering duration: Powered by tethering, it is not limited by onboard battery capacity, enabling prolonged continuous hovering operations.

2. Complete lighting kit: The system includes the TP-PX1 aircraft and TP-TX1 ground station.

Key Technical Parameters

TP-PX1 Aircraft



project	technical parameter
Diagonal wheelbase	258 mm
Expanded dimensions	202 × 202 × 65 mm
Folded dimensions	78 × 78 × 135 mm
weight	≤249g
Maximum luminous flux of the aircraft arm light	16000lm
Rated lighting power	≤130W
Maximum flight altitude	10m
Maximum illuminated area for a height of 10 meters	1000m²

Tel / Whatsapp: +86 17714312943

	Continuous flight duration	> 24h
TP-PX1	Available modes	Fixed-point mode / Intelligent following

TP-TX1 Ground Station

	project	technical parameter
	size	201mm × 169mm × 158mm (L × W × H)
	Ground station weight	< 2650g
	input voltage	AC110V-240V
	Input power draw	110V input: 250W; 220V input: 300W
	Cable length	12m
TP-TX1	Backup battery capacity	9600mAh

2. Installation and User Manual for the TP-X1 Pocket Portable Tethered Lighting System

2.1 Remove the TP-X1 pocket-type portable tethered lighting system device, the PX1 drone (<249 g), and the TX1 unit equipped with a built-in 9600 mAh emergency battery; this setup enables emergency flight lighting in outdoor environments where no power source such as a portable power bank is available.

		
Remove TP-X1	PX1 drone (<249 g)	The TX1 features a built-in emergency battery.

2.2 Equipment Assembly Procedure: The TX1 panel is equipped with several functional buttons—rapid cable retrieval, lighting adjustment, one-touch take-off/landing, and power button. Connect the ground station box's aviation plug to the drone end; align the red contact point of the plug, then complete the plug insertion and locking process. Fully extend the drone's arm to complete the mechanical preparation prior to takeoff.

		
Press the TX1 quick button	Plug-in connection	Unfold the aircraft arms

Keep the TP-PX1 physically tethered to the TP-TX1 throughout flight. With no external AC connected, the TX1's built-in battery powers the aircraft. The aircraft lands automatically when the TX1 battery falls below 10% charge.
2.3 By briefly pressing and then holding the power button, enable the TX1 voltage output; when the device screen displays "Ready," it indicates that the system has completed its initialization. Using the mobile app or the device panel buttons, you can control the takeoff and flight operations of the PX1 tethered drone. During flight, no cables need to be routed inside the ground equipment box, thereby preventing cable overheating and burnout.

		
Press and hold the power button to enable voltage output.	Display: Preparation complete	Control drone flight via mobile app or button

Multi-scenario functionality of the TP-X1 series fixed lighting system

		
Vehicle-based following	Night outdoor camping	Emergency rescue operations during nighttime construction

3. Precautions

1) For the TP-X1 series fixed lighting system, the ground-mounted equipment box must be fully charged before each use.

2) Before use, please level and properly position the equipment to achieve a relatively balanced state.

3) Operators shall wear insulating gloves to prevent accidental electric shock.

4) When operating a drone, carefully control its flight trajectory to ensure stable flight.

5) After the unmanned aerial vehicle has landed, press the cable reel button to retract the cable, secure the aviation plug in its limit position, and avoid dragging the device on the ground.

6) When using the tether cable, avoid dragging it on the ground to prevent fraying; also, check the ground for stones or other sharp objects to prevent the cable from being cut.

4. Product Maintenance, Warranty, and After-Sales Service

4.1 Storage and Transportation

When transporting the power supply box, vibration-damping protective measures must be implemented to prevent equipment damage caused by excessive vibration.

4.2 Maintenance

1) After every 30 take-offs and landings or every 20 hours of operation, conduct inspections and maintenance of the drone's blades and other components to ensure the proper functioning of the entire tethering system.
2) Inspect whether any components of the tether power supply have been subjected to severe impact, and verify that the moving parts of the tether power supply continue to operate smoothly.

4.3 Inspection:

1) Cable inspection: Carefully inspect the entire length of the routed cable for outer jacket damage, exposed armor layer, excessive bending, or bent/contaminated connector pins. This is the most critical step.
2) Interface cleaning: Disconnect all electrical connectors, inspect and clean the interfaces for dust and moisture, and ensure they are dry and clean.
3) Standardized storage: neatly coil cables, avoid bending them at small radii, and store them in a cool, dry place.