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# R1000 RTK

焕然一新，行业级应用无人机

A new look, industry - level application of unmanned aerial vehicles

全向避障 | 网络RTK | 便携折叠设计 | 54分钟续航 | 6km图传

All Obstacle Avoidance | Network RTK | Foldable Design | 54-mins Flight Duration | 6km Video Transmission

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## R1000 RTK

采用全新模块化快拆结构，四轴折叠机臂设计；支持双磁罗盘互为备份，保障飞行安全。GNSS+网格RTK双冗余系统，带来厘米级定位精度的同时支持全向避障，让作业安全更进一步。R1000 RTK拥有54分钟长续航飞行时间，最大载重可负载8kg。

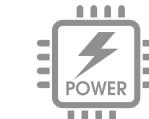
It adopts a new modular quick-release structure and a four-axis folding arm design; supports dual magnetic compasses for mutual backup to ensure flight safety. The GNSS+grid RTK dual redundancy system brings centimeter-level positioning accuracy and supports all directional obstacle avoidance, which further improves operational safety. 54minutes flight time and 8kgs payloads for R1000 RTK version .



全向避障



网络RTK



智能电源管理



54分钟续航  
54-min Max Flight Time



12公里图传  
12 km Max Transmission



IP54防护等级  
IP54 Rating



4K 30帧视频  
4K 30Fps Video



最大负载8kg  
8kg Max Load



## 功能介绍

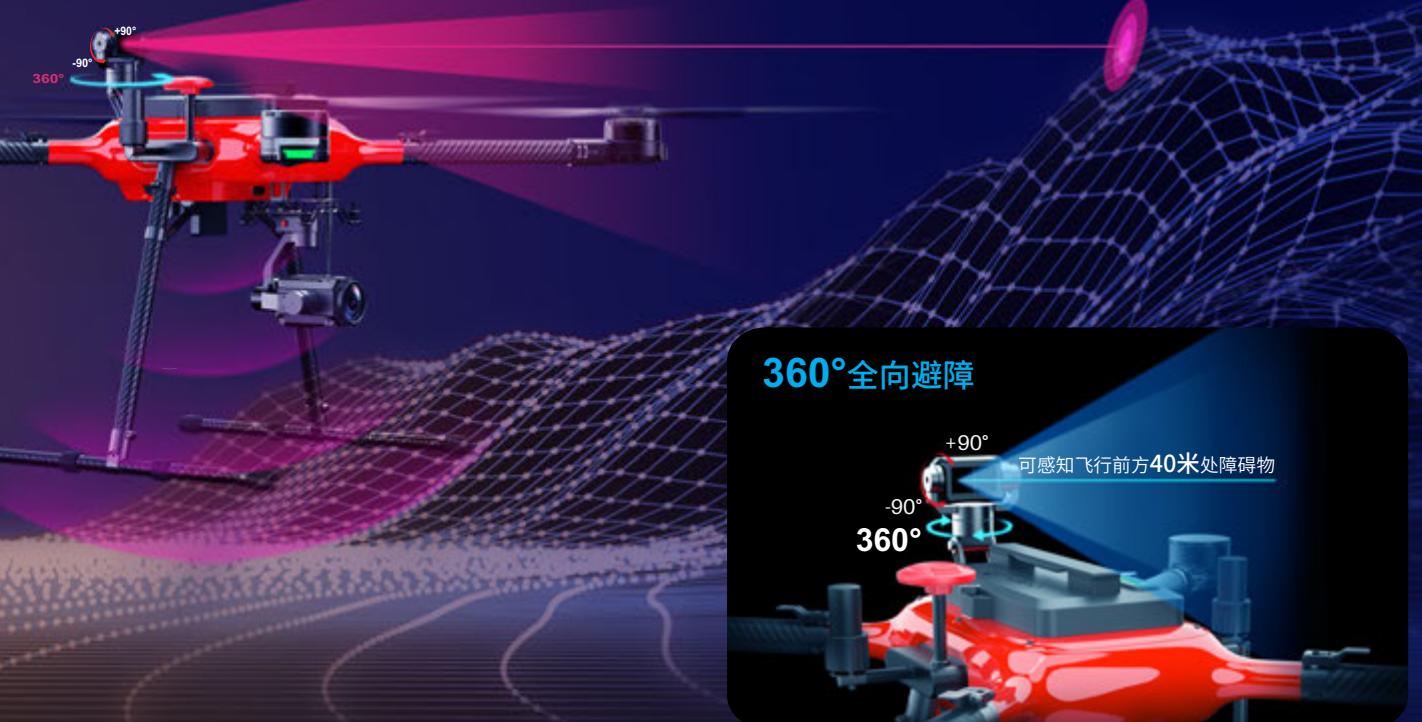
Function Introduce

### 360°全向避障

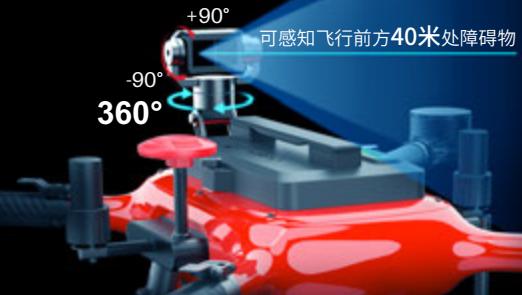
R1000可感知飞行前方40米处障碍物，日常作业时可有效降低常见障碍物带来的安全风险。主动感知避障功能可全天候工作。

### All Directional Obstacle Avoidance

R1000 can sense obstacles 40 meters in front of the flight, and can effectively reduce the safety risks caused by common obstacles during daily operations. Active sensing obstacle avoidance function can work around the clock.



### 360°全向避障



### 搭载网络RTK模块, 实现厘米级定位

集成全新RTK模块，  
拥有强大的抗磁干扰能力与精准定位能力，  
提供实时厘米级定位数据。

Equipped with a networked RTK module,  
so that it can achieve a centimeter-scale positioning.

Integrated new RTK module, with strong  
anti-magnetic interference capability and precise  
positioning capability, providing real-time  
centimeter-level positioning data.

## 功能介绍

### Function Introduce

#### 便携折叠机身

机臂采用四轴垂直型结构设计，结构紧凑牢固。折叠之后整机呈现桶状，迅速启动作业，为工作人员减少装箱的难度节省组装的时间，对运输工具的要求也大大的降低。

#### Foldable Design

The arm adopts a four-axis vertical structure design, which is compact and firm. After folding, the whole machine is in a barrel shape, and reducing the difficulty of packing and saving assembly time for the staff, and greatly reducing the requirements for transportation.



#### IP54防护等级

机身采用封闭式防水设计，拥用IP54三防能力，具备工业级防水、防尘、防腐蚀能力。



防水/industrial-grade Waterproof

#### IP54 Protection Level

The body adopts a closed waterproof design, with IP54 three-proof capability, with industrial-grade waterproof, dustproof, and corrosion-proof capabilities.



防尘/Dustproof



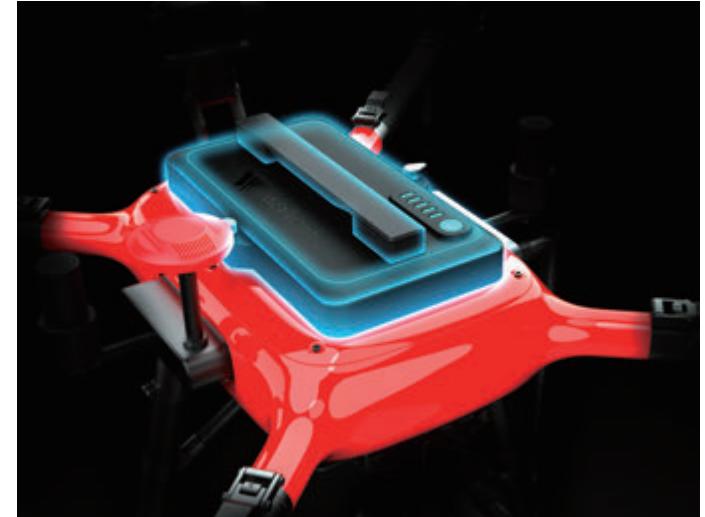
防腐蚀能力/ Corrosion-proof Capabilities

#### 智能飞行电池

智能电池的容量达14000mAh，进一步提升和保障飞行作业的流畅性，支持低电压自动返航。最大连续飞行时间长达54分钟（空载状态，海平面无风状态下悬停飞行）。

#### Intelligent Flight Battery

The smart battery has a capacity of 14000mAh, which further enhances and guarantees the fluency of flight operations, and supports low-voltage automatic return. The maximum continuous flight time is up to 54 minutes (no-load state, hovering flight under no wind at sea level).



#### 12公里图传

采用2.4G远距离传输系统最大图传距离可达12KM。采用先进的SDR技术和超级协议栈，让图像更加清晰，延迟更低，距离更远，抗干扰能力强传输稳定可靠。



#### 12km Image Transmission

Adopts 2.4G long-distance transmission system, which can transmit the maximum map distance up to 12KM. advanced SDR technology and super protocol stack, the image is clearer, the delay is lower, Strong anti-interference ability, stable and reliable transmission.

#### 行业应用专用软件

针对行业应用的特殊需求，我们开发专用R1000专用的APP，简化操作，轻松作业。(打点定位、智能伴飞、精准复拍、航点飞行)

#### Industry-specific Software

In response to the special needs of industry applications, we developed a dedicated R1000 dedicated APP to simplify operations and ease operations. (Dot positioning, intelligent flight accompaniment, accurate re-shooting, waypoint flight)



## 可挂载配件

Mountable Parts



## 多光谱相机(定制版)

广泛应用于农业、林业、种植业等等，通过后期技术合成处理，为农业灾害评估提供准确信息。

### Multispectral Camera (Customized Version)

It is widely used in agriculture, forestry, plantation,etc., through post-synthesis of technology to provide accurate information for agricultural disaster assessment.



农业 Agriculture



林业 Forestry



种植业 Plantation

## 30倍补光相机

WK-TLN30是一款高精度专业三轴增稳云台激光补光夜视相机，采用30倍光学变焦激光夜视成像，具有稳定性高、聚焦准、速度快、图像效果佳、功耗低特点，能在漆黑环境下快速、精准识别目标，提升巡检和搜救的工作效率。  
该相机可应用于警用侦察、交通执法、海事渔政、应急救灾、电力巡线、边防、自然保护区、水库、桥隧、矿区、河道巡检等应用领域。



### 30X Fill-up Camera

WK-TLN30 camera is a high-precision professional three-axis stabilized PTZ laser night vision camera with 30x optical zoom laser nightvision imaging technology and also with high stability, accurate focusing, high speed, good image effect and low power consumption etc. characteristics. It can identify targets in dark environment quickly and accurately. It can improve the efficiency of patrol inspection, search and rescue etc. fields.  
WK-TLN30 camera can be used in police reconnaissance, traffic law enforcement, maritime and fishery administration, emergency disaster relief, power line patrol, border defense, nature reserves, reservoirs, bridges and tunnels, mining areas, river patrol etc. application fields.

## 30倍双光相机

集成高清可见光和红外热成像模块，红外线热成像相机具有穿透能力强、探测距离远、可识别隐藏目标、温度检测及昼夜可视等优势。基于图像与温度算法，能在不利气候环境下，识别目标。



### 30X Dual-lens Camera

Integrating high-definition visible light and infrared thermal imaging modules, infrared thermal imaging cameras have the advantages of strong penetration, long detection distance, identification of hidden targets, temperature detection and day and night visibility. Based on image and temperature algorithms, it can identify targets in unfavorable climate environments.



30倍补光相机/30X Fill-up Camera



夜晚搜救 /Night rescue



红外线热成像 /Infrared Thermal Imaging

## ■ 行业应用可搭载平台

Industry Applications Can Be Equipped With Platforms



### 多功能气体分析仪(定制版)

应用环境检测

Multi-purpose Gas Analyzer  
(Custom Edition)

Application Environment  
Detection.



环境检测/ Environment Detection



### 抛投器

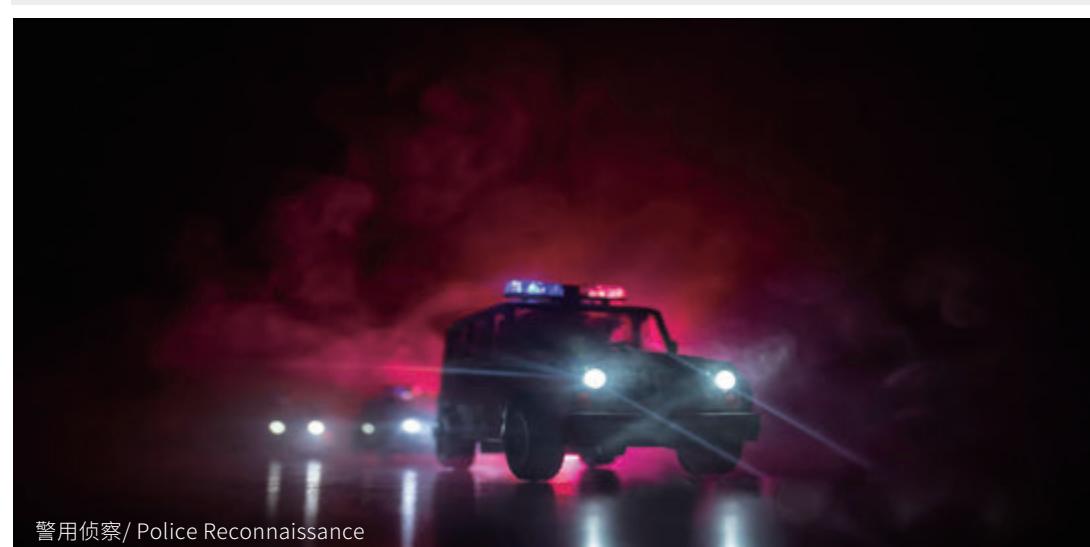
应用物资投送

Thrower

Applied delivery of aiding  
materials.



消防救援/ Fire Rescue



### 探照灯

应用消防救援

Searchlight

Application police reconnaissance.



# 技术参数

## Technical Parameter

### 飞行器

对称电机轴距:	1047mm
机身尺寸:	展开: 1140mm x 1140mm x 531mm 折叠: 514 mm x 439 mm x 469mm (折叠机臂、叶片、避障云台)
电机:	KV值: 180rpm/V
电调:	持续电流: 80A(散热条件良好)
桨叶规格:	直径*螺距: 24x7.9 inch
正常起飞重量:	7.8 kg (含电池)
最大起飞重量:	15.8 kg (海平面附近)
最大上升速度:	5 m/s
最大下降速度:	3 m/s
最大水平飞行速度:	GPS模式: 5m/s(无风环境) 巡航模式: 3-20m/s可调(无风环境) 姿态模式: 25m/s(无风环境)
最大可倾斜角度:	定位模式: 40° 巡航模式: 40° 姿态模式: 40°
最大旋转角速度:	100°/s
最大可承受风速:	17m/s
最大飞行时间:	54分钟(空载)
最大飞行海拔高度:	5000m
推荐工作环境温度:	0°C至+40°C
悬停精度:	启用RTK: 垂直: ±10cm 水平: ±5cm 未启用RTK: 垂直: ±0.5 m 水平: ±0.1 m

### 相机参数

影像传感器:	1/2.3英寸SONY IMX117 CMOS
镜头像素:	1200万
ISO范围:	100-3200(视频)/100-1600(照片)
录制分辨率:	4K 30fps
拍照分辨率:	3840x2160
焦距:	6.7-134.5mm
对焦时间:	2秒
变焦倍率:	30倍光学变焦
变倍速度:	大约2.0秒
水平视角:	59.8°-3.0°(广角-望远)
近摄距:	大于5000mm(广角-望远)
视频存储最大码流:	64Mbps
压缩标准:	H.264/H.265
支持文件存储格式:	JPG/MP4
支持存储卡类型:	Micro-SD卡, 最大支持128G, 传输速度为Class10及以上或达到UHS-1评级的Micro SD卡

### 云台参数

尺寸:	136*98*139mm
重量:	452g
输入电压:	12V
稳定系统:	3轴(俯仰, 滚转, 偏航)
角度控制精度:	静态: ±0.008°; 动态: ±0.02°; 防抖: ±0.008°
可控转动范围:	俯仰: -110°至+60°; 水平: ±150°; 滚转: ±10°
最大控制转速:	俯仰: 30°/s; 水平: 30°/s; 滚转: 直接控角度

### 航向跟随二轴云台激光雷达避障系统

障碍物感知范围:	0.5m-40m@90%反射率(100Klux) 0.5m-13.5m@10%反射率(100Klux)
FOV:	水平3°
测量频率:	50Hz
水平转动范围:	360°
俯仰转动范围:	±90°
测量距离:	≤ 40 m

### 下视定高

速度测量范围:	飞行速度<18km/h(高度2 m, 光照充足)
高度测量范围:	≤ 12 m
精确悬停范围:	±0.1m
测量频率:	100Hz

### 遥控器WKRC-H12

型号:	WKRC-H12
工作频率:	2400MHz至2483MHz
最大通信距离:	12Km(开阔无遮挡, 无电磁干扰)
显示设备:	5.5寸 1920*1080 1000NITS高亮显示屏
充电接口:	TYPE-C
电池:	3.7V 10000mAh LiPo 1S
工作环境温度:	-10°C至40°C
充电环境温度:	5°C至40°C
重量:	530g
尺寸:	190*152*94mm

### 智能飞行电池

容量:	14000mAh
电压:	45.6V
电池类型:	LiHV 12S
放电倍率:	10C

### Aircraft

Symmetrical motor wheelbase:	1047mm
Outline size:	1140mm x 1140mm x 531mm (Arm extended, blade folded)
	514 mm x 439 mm x 469mm Arm folding)
motor: KV value:	180rpm/V
Electric regulation:	continuous current: 80A (good heat dissipation condition)
Blade specification:	diameter * pitch: 24x7.9 inch
Standard takeoff weight:	7.8kg (Including battery)
Maximum takeoff weight:	15.8 kg (sea level)
Maximum rising speed:	5 m/s
Maximum descent speed:	3 m/s
Maximum horizontal flight speed:	GPS mode: 5m/s(windless environment) Cruise mode: 3-20m/s(windless environment) Attitude mode: 25m/s (windless environment)
Maximum pitch angle:	Positioning mode: 40° Cruise mode: 40° Attitude mode: 40°

Maximum rotation speed:	pitch axis: 100° / s
Maximum allowable wind speed:	17m / S
Maximum flight time:	54minutes (No load)
Maximum flight altitude:	5000m
Recommended working environment temperature:	0 °C to +405 °C
Hover accuracy:	
With RTK:	vertical: ± 10cm horizontal: ± 5cm
Without RTK:	vertical: ± 0.5 m horizontal: ± 0.1 m

### Laser radar obstacle avoidance system

Obstacle sensing range:	0.5m-40m @90% reflectivity (100Klux) 0.5m-13.5m @10% reflectance (100Klux)
FOV:	Horizontal 3°
Measuring frequency:	50 Hz
Yaw:	360°
Pitch:	±90°
Detection distance:	≤ 40 m

### Network RTK

Use frequency band:	GPS: L1 / L2 / L5 GLONASS: F1 / F2
BeiDou:	B1 / B2 / B3 Galileo: E1 / E5
Orientation accuracy:	0.2 degree / 1m baseline
positioning accuracy:	Level: 1cm + 1ppm Vertical: 2cm + 1ppm
	1ppm: For every increase of 1km, the accuracy will deteriorate by 1mm.
Positioning update rate:	1Hz, 2Hz, 5Hz, 10Hz and 20Hz
Cold start:	<45s
Hot start:	<10s
Recapture:	<1s
Initialization reliability:	>99.9%
Differential data transmission format:	RTCM 2.X / 3.X
Data link:	4G
Communication distance:	unlimited distance (with 4G network signal)
Working environment temperature:	0°C to 45°C

### Camera

Image sensor:	1/2.3inch SONY IMX117 CMOS
Lens Pixel:	1200 Million
ISO range:	100-3200(video)/100-1600(photo)
Video resolution:	4K 30fps
Photo resolution:	3840x2160
Focal length:	6.7-134.5mm
Focus time:	7-8 seconds
Zoom magnification:	30 X optical zoom
Doubling speed:	about 2.0 seconds
Horizontal perspective:	59.8°-3.0°(wide angle-telescope)
Close range:	more than 5000mm(wide angle-telescope)
Max. Video bit stream:	64Mbps
Compression standard:	H.264/H.265
Supporting file storage format:	JPG/MP4
Support memory card type:	Micro-SD card,
Max. support:	128G, transmission speed of Class10 or above or up to UHS-1 rating Micro SD card

### Gimbal

Input voltage:	12V
Size:	136*98*139mm
Weight:	452g
Stabilization system:	3 axes (pitch, roll, yaw)
Accuracy of angle control:	static: ±0.008°; dynamic: ±0.02°; anti-shake: ±0.008°
Controllable Rotation Range:	Pitch: -110°to+60°; Horizontal: ±150°; Roll: ±10°;
Max. control speed:	pitch: 30°/s; horizontal: 30°/s; roll: direct control angle

### Downward View With Fixed Height Module

Speed measurement range:	flying speed <18km/h (height 2 m, sufficient light)
Height measurement range:	≤ 12 m
Accurate hovering range:	±0.1m
Measuring frequency:	100Hz

### Remote control WKRC - H12

Model:	WKRC - H12
Operating frequency:	2400MHz to 2483MHz
Maximum communication distance:	12KM(open without shelter, no electromagnetic interference)
Display equipment:	5.5-inch 1920*1080 1000NITS highlight screen
Charging interface:	Type-c
Battery:	3.7V 10000mAh LiPo 1S
Operating temperature:	-10°C to 40°C
Charging ambient temperature:	5°C to 40°C
Weight:	530 g
Size:	190 * 152 * 94 mm

### Intelligent Flight Battery

Voltage:	45.6V
Capacity:	14000mAh
Discharge rate:	10C
Battery type:	LiHV 12S