

D90 PRO UAV AI CAMERA

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D-90Pro 4K Full-Color Night Vision Multi-Sensor Spherical Pod



The **D-90Pro** is a state-of-the-art triple sensor drone pod, combining a **4K EO camera with 10x optical and 6x digital zoom**, a **640×512 IR thermal camera**, and a **1,200 m laser range finder (LRF)**.

Equipped with a **high-precision 3-axis non-orthogonal gimbal**, **AI-powered object detection and tracking**, and a **robust build**, the D-90Pro excels in professional aerial applications such as surveillance, industrial inspection, and search-and-rescue operations.

Designed for versatility, it supports both upright and inverted installation on multiple UAV platforms, ensuring seamless integration with leading control software.

The D-90Pro delivers a comprehensive imaging and measurement solution, setting new standards in UAV applications. From high-resolution EO and thermal cameras to advanced AI tracking and laser range finding, it is designed to meet the most demanding operational requirements.

Features

- **Triple Sensor System:** Combines a 4K EO camera, a 640×512 IR thermal camera, and a 1,200 m laser range finder, providing complete visual and measurement capabilities.
- **4K Resolution & 10x Optical Zoom:** Captures high-definition images and videos with precise zoom for detailed observation.
- **Thermal Imaging:** Offers detailed thermal visuals with 8x digital zoom and a temperature measurement range of -20°C to 550°C.
- **Laser Range Finder:** Accurately measures distances up to 1,200 m, enabling precise positioning and target tracking.
- **AI Multi-Object Tracking (Optional AICore):** Provides real-time identification and tracking of up to 50 objects, maintaining consistent target focus.
- **High-Precision Stabilization:** ±0.01° angular accuracy with 360° continuous yaw rotation ensures stable imagery even during dynamic flight.
- **Seamless Integration:** Fully compatible with QGC and Dragonfly software for real-time control and monitoring with advanced protocol support.
- **Data Overlays:** Supports OSD overlays (latitude, longitude, altitude), SEI stacking for video streams, and EXIF metadata for images.

Applications

Surveillance and Security: Provides exceptional image quality and tracking for monitoring critical areas.

Search and Rescue: Combines thermal imaging and laser ranging for locating targets in low visibility conditions.

Industrial Inspection: Offers precision and detail for pipeline, solar panel, and infrastructure assessments.

Aerial Surveying: Enables detailed mapping and analysis with dual imaging systems and laser measurements.

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General			
Product Name	D-90Pro		
Dimensions	96.4 x 96 x 147mm		
Weight	620g		
Operating Voltage	20 ~ 53 VDC		
Power	10.5W (AVG, ranging off) / 55W (Stall, ranging on)		
Mounting	Downward / Upward		
Target Positioning Accuracy ^[1]	Horizontal Error: 1.8m Vertical Error: 0.7m	@	Horizontal Distance: 105m Relative Height: 75m
	Horizontal Error: 17.4m Vertical Error: 6.7m	@	Horizontal Distance: 513m Relative Height: 119m
	Horizontal Error: 33.8m Vertical Error: 13.7m	@	Horizontal Distance: 1003m Relative Height: 246m
Gimbal			
Gimbal Type	3-axis Nonorthogonal Mechanical Stabilization		
Angular Accuracy	±0.01°		
Controllable Range	Pitch: -175°~+105°, Roll: ±50°, Yaw: ±360°constantly		
Max Controllable Speed	±200°/s		
Zoom Camera			
Image Sensor	1/2.8-inch CMOS; Effective Pixels: 8.29M		
Lens	Focal Length: 5.5~54.7mm (Equivalent focal length: 37.2~370.5mm) Aperture: f/1.8~f/2.6 HFOV: 53.9°~5.8° VFOV: 31.9°~3.3° DFOV: 60.5°~6.7°		
Resolution	3840(H) x 2160(V)		
Pixel Pitch	1.45μm(H) x 1.45μm(V)		
Optical Zoom Rate	10x		
Equivalent Digital Zoom Rate	6x		
Object Detection Distance	EN62676-4:2015	Person ^[2] : 1651m Light vehicle ^[3] : 2170m Large vehicle ^[4] : 4624m	
	Johnson Criteria	Person: 18862m Light vehicle: 57844m Large vehicle: 123232m	
Object Identification Distance	EN62676-4:2015	Person: 330m Light vehicle: 434m Large vehicle: 925m	
	Johnson Criteria	Person: 4716m Light vehicle: 14461m Large vehicle: 30808m	
Object Verification Distance	EN62676-4:2015	Person: 165m Light vehicle: 217m Large vehicle: 462m	
	Johnson Criteria	Person: 2358m Light vehicle: 7231m Large vehicle: 15404m	

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Temperature Measurement	Optional (Thermometry Type)
Temperature Measurement Method	Spot Measurement, Area Measurement
Temperature Measurement Range	High Gain: -20°C~150°C Low Gain: 0°C~550°C
Temperature Alert	High-temp Alert, Low-temp Alert
Sun Burn Protection	Supported ^[5]
Palette	White Hot, Black Hot, Tint, Fulgurite, Iron Red, Hot Iron, Medical, Arctic, Rainbow 1, Rainbow 2
Laser Range Finder	
Wavelength	905nm
Max Laser Power	1mW
Beam Angle	3.5mrad
Beam Diameter	0.35m@100m
Laser Safety	Class 1M (IEC 60825-1:2014)
Measurement Accuracy	±1.0m
Measurement Range	5-1200m (φ12m vertical surface with 20% reflectivity)
AI Multi-object Detection & Tracking (Optional AICore)	
Object Identification Size	≥30x20 px
Object Identification Rate	≥85%
Object Identification Quantity	≤50
Target Tracking Size	16x16~256x256 px
Tracking Deviation Refresh Rate	30Hz
Tracking Deviation Output Delay	≤60ms
Target Pixel Error	≤±1 px
Tracking Speed	>24 px / frame
Target Memory Time	>5s
Image & Video	
Image Format	JPEG
Maximum Image Resolution	3840 x 2160
EXIF	Shooting point coordinate
Video Format	MP4
Maximum Video Resolution	Stream: 1920 x 1080P @30fps Recording: 3840 x 2160 @30fps
Stream Encode Format	H.264, H.265
Stream Network Protocol	RTSP
Storage	
Supported SD Cards	Supports a U3/V30 or above MicroSD card with a capacity of up to 256GB
Environment	
Operating Temperature	-20°C~50°C
Storage Temperature	-40°C~60°C
Operating Humidity	≤85%RH (Non-condensing)

