

# Z-8RB\_Ver3.0.0

## Laser Night Vision Ranging Pod



### Synopsis

The Z-8RB equips with a high-accuracy 3-axis pod and a 2.07M pixels 360x hybrid zoom camera, which presents scene hundreds of meters away. Combined with the laser lighting module and starlight level night vision function, the Z-8RB can provide a clear image even in complete dark environments. Thanks to the laser range finder, the Z-8RB can provide the location of a target and the distance to it that improves working efficiency.

The Z-8RB have AI multi-object detection and tracking function. The pod can intelligently identify the persons and vehicles in the image, and constantly track one of them.

The Z-8RB can be mounted tool-lessly onto unmanned aerial vehicles with its quick-release port. It is able to be applied on multiple industries such as firefighting, forest police, public security, search & rescue and environment protection.

### Characteristics

- Features AI multi-object detection and tracking, which can constantly track one of the persons and vehicles intelligently identified in the image.
- Carries a 360x hybrid zoom (30x optical zoom) camera, an 1800m laser range finder and 2 laser lighting modules.
- 3-axis mechanical stabilized structure which is able to spin continually around its yaw axis.
- With the Dual-IMU complementary algorithms with IMU temperature control and carrier AHRS fusion, the Z-8RB provides a stabilization accuracy at  $\pm 0.01^\circ$ .
- Image supports shooting point coordinate EXIF save.
- Support remote screen projection and docking command platform.
- Can be mounted tool-lessly onto unmanned aerial vehicles with its quick-release port.

## Specifications

Item		Parameters		
General	Dimensions	150 x 144 x 172mm		
	Weight	870g		
	Operating Voltage	20~53V		
	Power	19W (AVG, ranging & lighting off) 57.6W (Stall, ranging & lighting on)		
	Protection Rating	IP43		
Gimbal	Angular Vibration Range	±0.01°		
	Maximum Controllable Speed	Pitch: ±200° /s, Yaw: ±200° /s		
	Controllable Range	Pitch: -120° ~ +60°, Yaw: ±360° constantly		
Zoom Camera	Image Sensor	1/2.8" CMOS; Effective Pixels: 2.07M		
	Lens	Focal Length: 4.3~129mm HFOV: 63.7° ~ 2.3° VFOV: 40° ~ 1.4° DFOV: 52.1° ~ 2.8°		
	Optical Zoom Rate	30x		
	Equivalent Digital Zoom Rate	12x		
	Aperture	F2~F16		
	Electronic Shutter Speed	1/2~1/2000s		
	Object Detective Distance	EN62676-4:2015	Person <sup>[1]</sup> : 1947.1m Vehicle <sup>[2]</sup> : 2559.1m	
		Johnson Criteria	Person: 22241.4m Vehicle: 68206.9m	
	Object Identification Distance	EN62676-4:2015	Person: 389.4m Vehicle: 511.8m	
		Johnson Criteria	Person: 5560.3m Vehicle: 17051.7m	
	Object Verified Distance	EN62676-4:2015	Person: 194.7m Vehicle: 255.9m	
		Johnson Criteria	Person: 2780.2m Vehicle: 8525.9m	

[1] Person: 1.8 x 0.5m

[2] Vehicle: 4.2 x 1.8m

Item		Parameters
Laser Range Finder	Wavelength	905nm
	Measuring Range	5-1800m ( $\phi$ 12m vertical surface with 20% reflectivity)
	Measuring Accuracy	$\pm 0.3\text{m} (< 300\text{m}) / \pm 1.0\text{m} (> 300\text{m})$
	Beam Angle	2.5mrad
	Measuring Method	Pulse
	Max Laser Power	< 1mW
	Laser Safety	Class 1M (IEC 60825-1: 2014)
Laser Lighting Module	Wavelength	850 $\pm$ 10nm
	Laser Power	0.8W x2
	Beam Angle	8° + 30°
	Effective Illumination Distance	$\leq 200\text{m}$
	Laser Safety	Class 3B (IEC 60825-1:2014)
AI Multi-object Detection & Tracking	Tracking Deviation Refresh Rate	50Hz
	Tracking Deviation Output Delay	< 15ms
	Minimum Target Contrast	5%
	Target Memory Tracking	100frames / 4s
	Object Size	16x16 ~ 128x128px
Image & Video	Output Video Resolution	1080P@30fps
	Store Video Resolution	1080P@30fps
	Image Resolution	1920 x 1080
	Stream Encode Format	H.264, H.265
	Stream Network Protocol	RTSP, UDP
	Supported SD Card	Supports a TF card with a capacity of up to 128GB
Environment	Operating Temperature	-20°C ~ 60°C
	Storage Temperature	-20°C ~ 70°C
	Operating Humidity	$\leq 85\%RH$ (Non-condensing)