Z-1Pro

Intelligent Black Light Full-Color Night Vision Micro Pod

Characteristics

- 1/1.8-inch star-light CMOS and AI-ISP full-color night vision imaging technology empowerment.

- Features AI multi-object detection and tracking, which can constantly track one of the persons and vehicles intelligently identified in the image.

- Micro 3-axis nonorthogonal mechanical stabilized structure reducing the weight down to 100g.

- Supports network, UART and S.BUS control and compatible with both private protocol and MAVLink protocol. Support image transmission though network and HDMI.

- Thanks to the Dual-IMU complementary algorithms with IMU temperature control and carrier AHRS fusion, the gimbal provides a stabilization accuracy at ±0.01°.

- Can be mounted onto multiple carriers, whether downward or upward.

- With the Dragonfly software, user can watch the image and control the pod without protocol ducking.

- With the customized QGC software, all the functions of the pod can be achieved in conjunction with an open source autopilot.

- Screen supports overlaying OSD information such as latitude, longitude and altitude. Image supports shooting point coordinate EXIF save.

- 10~26.4 VDC wide voltage input.

Specifications

General	
Product Name	Z-1_{Pro}
Dimensions	59.2 x 48.4 x 80.2mm
Weight	100g
Operating Voltage	10 ~ 26.4VDC
Power	6W (AVG) / 20W (Stall)
Mounting	Downward / Upward
Gimbal	
Gimbal Type	3-axis Nonorthogonal Mechanical Stabilization
Angular Accuracy	$\pm 0.01°$
Controllable Range	Pitch: -135°~+100°, Roll: $\pm 50°$, Yaw: $\pm 150°$
Max Controllable Speed	$\pm 200°/s$

Fixed Camera		
Image Sensor	1/1.8-inch CMOS, Effective Pixels: 4.08M	
Lens	Actual Focal Length: 8.5mm (Equivalent focal length: 34.8mm) Aperture: f/1.0 HFOV: 57.1° VFOV: 30.4° DFOV: 66.3°	
Resolution	2688(H) x 1520(V)	
Pixel Size	2.9μm(H) x 1520(V)	
Equivalent Digital Zoom Rate	6x	
Object Detection Distance	EN62676-4:2015	Person[1]: 122m; Light vehicle[2]: 161m; Large vehicle[3]: 343m
	Johnson Criteria	Person: 1466m; Light vehicle: 4494m; Large vehicle: 9575m
Object Identification Distance	EN62676-4:2015	Person: 25m; Light vehicle: 32m; Large vehicle: 69m
	Johnson Criteria	Person: 366m; Light vehicle: 1124m; Large vehicle: 2394m
Object Verification Distance	EN62676-4:2015	Person: 12m; Light vehicle: 16m; Large vehicle: 34m
	Johnson Criteria	Person: 183m; Light vehicle: 562m; Large vehicle: 1197m

AI Multi-object Detection & Tracking	
Object Size	16x16 ~ 128x128 px
Object Identification Delay	< 40ms
Tracking Speed	±32 px / field
Tracking Deviation Refresh Rate	30Hz
Tracking Deviation Output Delay	≤5ms

[1] Reference dimension of person: 1.8x0.5m. Critical dimension under Johnson criteria is 0.75m

[2] Reference dimension of light vehicle: 4.2x1.8m. Critical dimension under Johnson criteria is 2.3m

[3] Reference dimension of large vehicle: 6.0x4.0m. Critical dimension under Johnson criteria is 4.9m

Image & Video	
Image Format	JPEG
Maximum Image Resolution	2688 x 1520
EXIF	Shooting point coordinate
Video Format	MP4
Maximum Video Resolution	Stream: 1920 x 1080 @30fps
	Recording: 2688 x 1520 @30fps
Stream Encode Format	H.264 , H.265
Stream Network Protocol	RTSP
Storage	
Supported SD Cards	Supports a Speed Class 10 MicroSD card with a capacity of up to 256GB
Environment	
Operating Temperature	-20℃ ~ 50℃
Storage Temperature	-40℃ ~ 60℃
Operating Humidity	≤85%RH (Non-condensing)