

# 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 through 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  $\pm 0.01^\circ$ .
- 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.
- Photos and videos can be downloaded online through the "Gallery" function of the Dragonfly software.
- 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-1Pro
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	$\pm 0.01^\circ$
Controllable Range	Pitch: $-135^\circ \sim +100^\circ$ , Roll: $\pm 50^\circ$ , Yaw: $\pm 150^\circ$
Max Controllable Speed	$\pm 200^\circ/s$
Fixed Camera	
Image Sensor	1/1.8-inch CMOS, Effective Pixels: 4.09M
Lens	Actual Focal Length: 8.5mm (Equivalent focal length: 41.1mm)
	Aperture: f/1.0
	HFOV: $57.1^\circ$
	VFOV: $30.4^\circ$
DFOV: $66.3^\circ$	
Resolution	2688(H) x 1520(V)
Pixel Size	2.9 $\mu$ m(H) x 2.9 $\mu$ m(V)
Equivalent Digital Zoom Rate	6x
Object Detection Distance	EN62676-4:2015 Person <sup>[1]</sup> : 122m; Light vehicle <sup>[2]</sup> : 161m; Large vehicle <sup>[3]</sup> : 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	$\pm 32$ px / field
Tracking Deviation Refresh Rate	30Hz
Tracking Deviation Output Delay	$\leq 5$ ms

[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

<b>Image &amp; Video</b>	
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: 2560 x 1440 @30fps
Stream Encode Format	H.264 , H.265
Stream Network Protocol	RTSP
<b>Storage</b>	
Supported SD Cards	Supports a U3/V30 or above MicroSD card with a capacity of up to 256GB
<b>Environment</b>	
Operating Temperature	-20°C ~ 50°C
Storage Temperature	-40°C ~ 60°C
Operating Humidity	≤85%RH (Non-condensing)