D-80N

Intelligent Black Light Full-Color Night Vision Spherical Pod

Characteristics

- Carriers a 40x hybrid zoom camera with ultra-starlight image sensor, combined with the AI-ISP full-color night vision imaging engine, can present clear full-color images in extremely low-light environments, delivering night vision-level low-light imaging experience. Featuring AI-HDR, it ensures both highlights and shadow details remain vividly visible even in complex lighting scenarios with extreme brightness contrasts.
- NIR laser lighting ensures the camera getting a clear image even in complete darkness.
- Features AI multi-object detection and tracking, which can constantly track one of the persons and vehicles intelligently identified in the image.
- Low-profile spherical shape and 3-axis nonorthogonal mechanical stabilized structure, minimize the gyration radius and the wind resistance of the pod. The gimbal is able to spin continually around its yaw axis.
- Supports network, UART and S.BUS control and compatible with both private protocol and MAVLink protocol.
- 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, and download photos and videos online as well.
- With the XF-QGC software, all the functions of the pod can be achieved in conjunction with an open source autopilot.
- Screen supports overlaying OSD information. Image supports EXIF saving. Live video stream and recording supports SEI saving. (The SEI functionality will be supported via subsequent firmware updates)
- 20~53 VDC wide voltage input.

Specifications

General		
Product Name	D-80N	
Dimensions	89.6 x 86 x 124.6mm	
Weight	398g	
Operating Voltage	20 ~ 53 VDC	
Power	6.5W (AVG) / 28.2W (Stall, lighting on)	
Mounting	Downward / Upward	
Gimbal		
Gimbal Type	3-axis Nonorthogonal Mechanical Stabilization	
Angular Accuracy	±0.01°	
Max Stable Tilt Angle	45°	
Controllable Range	Pitch: -145° ~ +60°, Yaw: ±360°constantly	
Max Controllable Speed	150°/s	
Zoom Camera		
Image Sensor	1/2.8-inch CMOS; Effective Pixels: 2.07M	
Lens	Focal Length: 6.1~61.4mm (Equivalent focal length: 41.6~415.8mm) Aperture: f/1.8~f/2.6 HFOV: 48.8° ~ 5.2° VFOV: 28.6° ~ 2.9° DFOV: 55.0° ~ 6.0°	
Resolution	1920(H) x 1080(V)	
Pixel Pitch	2.9μm(H) x 2.9μm(V)	
Optical Zoom	10x	
Equivalent Digital Zoom	4x	
Object Detection Distance	EN62676-4:2015	Person[1]: 927m; Light vehicle[2]: 1218m; Large vehicle[3]: 2595m
	Johnson Criteria	Person: 10586m; Light vehicle: 32464m; Large vehicle: 69163m
Object Identification Distance	EN62676-4:2015	Person: 185m; Light vehicle: 244m; Large vehicle: 519m
	Johnson Criteria	Person: 2647m; Light vehicle: 8116m; Large vehicle: 17291m
Object Verification Distance	EN62676-4:2015	Person: 93m; Light vehicle: 122m; Large vehicle: 260m
	Johnson Criteria	Person: 1323m; Light vehicle: 4058m; Large vehicle: 8646m
NIR Laser Lighting		
Wavelength	850±10nm	
Laser Power	0.8W	
Beam Angle	8°	
Beam Diameter	14m @ 100m	
Effective Illumination Distance	≤200m	
Laser Safety	Class 3B (IEC 60825-1:2014)	

[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

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	
Image & Video		
Image Format	JPEG	
Maximum Image Resolution	1920 x 1080	
Video Format	MP4	
Maximum Video Resolution	Stream: 1920 x 1080 @30fps Recording: 1920 x 1080 @30fps	
OSD	Time, Camera attitude, Carrier coordinate, Magnification level, Storage status	
EXIF	Time, Camera attitude, Carrier coordinate, Resolution	
SEI	Will be supported via subsequent firmware updates	
Stream Encode Format	H.264，H.265	
Stream Network Protocol	RTSP	
Average Stream Delay & FPS[4]	OSD OFF & target detection OFF	Dragonfly: 190ms QGC: 230ms FPS: 30
	OSD ON & target detection OFF	Dragonfly: 190ms QGC: 240ms FPS: 30
	OSD OFF & target detection ON	Dragonfly: 200ms QGC: 250ms FPS: 30
	OSD ON & target detection ON	Dragonfly: 200ms QGC: 250ms FPS: 30
Storage		
Supported SD Cards	Supports a U3/V30 or above MicroSD card with a capacity of up to 256GB	
Environment		
Operating Temperature	-20℃ ~ 50℃	
Storage Temperature	-40℃ ~ 60℃	
Operating Humidity	≤85%RH (Non-condensing)	

[4] Measured with the pod directly wired to a computer at 1x zoom ratio. When the zoom ratio exceeds 10x, video stream delay will increase and frame rates will decrease