D-80N Intelligent Black Light Full-Color Night Vision Spherical Gimbal Camera

Characteristics

· 40x hybrid zoom camera, combined with the ultra-starlight image sensor and AIISP full color night vision imaging engine, can present clear fullcolor images in extremely low light environments, delivering night vision-level lowlight imaging experience. The D-80N also features superior HDR capability, ensuring both highlights and shadow details remain clearly visible even in complex lighting environments with strong contrast between bright and dark areas.

· NIR Laser lighting module 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 Rate	**10x**
Equivalent Digital Zoom Rate	**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**

Laser Lighting Module	
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)**

AI Multi-object Detection & Tracking	
Object Size	**16 x 16 ~ 128 x 128 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, Zoom rate,Storage status**	
EXIF	**Time, Camera attitude, Carrier coordinate, Resolution**	
SEI	**Refer to User Manual**	
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: 240ms 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)	

[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.

[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.