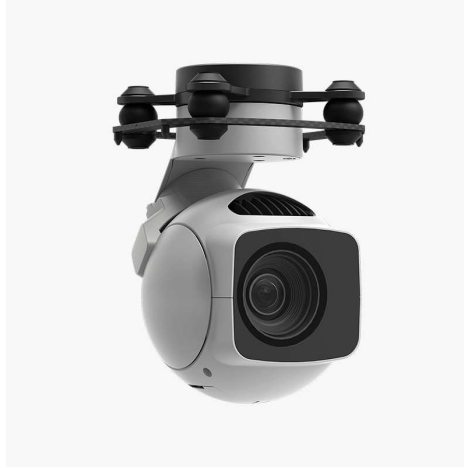# D-80U 4K Full-Color Night Vision Spherical Gimbal Camera

Characteristics

· 80x hybrid zoom camera with 4K resolution, powered by the AI-ISP full-color night vision imaging engine, delivers clear full-color images in low-light environments. Featuring advanced HDR capability, it ensures both highlights and shadow details remain vividly visible even in complex lighting scenarios with extreme brightness contrasts.

· 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 customized 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 svaing. 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-80U
Dimensions	89.6 x 86 x 124.6mm
Weight	398g
Operating Voltage	20 ~ 53 VDC
Power	6.5W (AVG) / 23.4W (Stall)
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: 8.29M
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	3840(H) x 2160(V)
Pixel Pitch	1.45μm(H) x 1.45μm(V)
Optical Zoom Rate	10x
Equivalent Digital Zoom Rate	8x

Object Detection Distance	EN62676-4:2015	Person[1]: 1854m Light vehicle[2]: 2436m Large vehicle[3]: 5190m
	Johnson Criteria	Person: 21172m Light vehicle: 64929m Large vehicle: 138326m
Object Identification Distance	EN62676-4:2015	Person: 371m Light vehicle: 487m Large vehicle: 1038m
	Johnson Criteria	Person: 5293m Light vehicle: 16232m Large vehicle: 34582m
Object Verification	EN62676-4:2015	Person: 185m

Distance			Light vehicle: 244m
			Large vehicle: 519m
	Johnson Criteria		Person: 2647m
			Light vehicle: 8116m
			Large vehicle: 17291m

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	3840 x 2160	
Video Format	MP4	
Maximum Video Resolution	Stream:3840 x 2160 @30fps Recording: 3840 x 2160 @30fps （3840 ×2160@30fps will be supported via subsequent firmware updates）	
OSD	Time, Camera attitude, Carrier coordinate, Zoom rate,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: 210ms QGC: 260ms FPS: 30
	OSD ON & target detection OFF	Dragonfly: 300ms QGC: 330ms FPS: 30
	OSD OFF & target detection ON	Dragonfly: 370ms QGC: 400ms FPS: 21
	OSD ON & target detection ON	Dragonfly: 530ms QGC: 600ms FPS: 13

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.