

# D-80AI Dual-view Spherical Gimbal



## Characteristics

- Features AI multi-object detection and tracking, which can constantly track one of the persons and vehicles intelligently identified in the image.
- Combination of wide-angle camera and 30x hybrid zoom camera, which can quickly switch between overall and detailed view.
- Laser lighting module ensures the cameras getting a clear image even in complete darkness.
- Low-profile spherical shape and 3-axis nonorthogonal mechanical stabilized structure, minimize the gyration radius and the wind resistance of the gimbal. The D-80AI is able to spin continually around its yaw axis.
- With the GCU, the D-80AI supports network, UART and S.BUS control. The GCU supports both private protocol and MAVLink protocol.
- Thanks to the Dual-IMU complementary algorithms with IMU temperature control and carrier AHRS fusion, the D-80AI provides a stabilization accuracy at  $\pm 0.01^\circ$ .
- Can be mounted onto multiple carriers, whether downward or upward.
- With the GCU and the Dragonfly software, user can watch the image and control the gimbal without protocol ducking.
- Screen supports overlaying OSD information such as latitude, longitude and altitude. Image supports shooting point coordinate EXIF save. Video stream supports SEI stacking.
- 14~53 VDC wide voltage input.

# Specifications

General	
Product Name	D-80Ar
Dimensions	Gimbal: 85.8 x 86 x 129.3mm GCU: 45.4 x 40 x 13.5mm
Weight	Gimbal: 429g GCU: 18.6g
Operating Voltage	14 ~ 53 VDC
Power	Gimbal: 6.7W (AVG, light off) / 55 W (Stall, light on) GCU: 1.8W
Mounting	Downward / Upward
Gimbal	
Gimbal Type	3-axis Nonorthogonal Mechanical Stabilization
Angular Accuracy	±0.01°
Controllable Range	Pitch: -157° ~ +80°, Yaw: ±360° constantly
Max Controllable Speed	Pitch: ±200°/s, Yaw: ±200°/s
Zoom Camera	
Image Sensor	1/2.8" CMOS; Effective Pixels: 2.07M
Lens	Focal Length: 4.7~47mm HFOV: 61.3° ~ 6.8° VFOV: 36.9° ~ 3.9° DFOV: 68.4° ~ 7.8°
Resolution	1920 x 1080
Pixel Pitch	2.9µm
Optical Zoom Rate	10x
Equivalent Digital Zoom Rate	3x
Min Illumination	Night Vision off: 0.01Lux / F1.6 Night Vision on: 0.0015Lux / F1.6
Object Detection Distance	EN62676-4:2015 Person <sup>[1]</sup> : 709m; Light vehicle <sup>[2]</sup> : 932m; Large vehicle <sup>[3]</sup> : 1986m Johnson Criteria Person: 8103m; Light vehicle: 24851m; Large vehicle: 52943m
Object Identification Distance	EN62676-4:2015 Person: 142m; Light vehicle: 187m; Large vehicle: 397m Johnson Criteria Person: 2026m; Light vehicle: 6213m; Large vehicle: 13236m
Object Verification Distance	EN62676-4:2015 Person: 71m; Light vehicle: 93m; Large vehicle: 199m Johnson Criteria Person: 1013m; Light vehicle: 3106m; Large vehicle: 6618m
Wide Camera	
Image Sensor	1/2.8" CMOS; Effective Pixels: 2.07M
Lens	Focal Length: 2.4mm HFOV: 98.5° VFOV: 44.3° DFOV: 101.7°
Resolution	1920 x 1080
Pixel Pitch	2.9µm

[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>Laser Lighting Module</b>	
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)
<b>AI Multi-object Detection &amp; Tracking</b>	
Object Size	16x16 ~ 128x128 px
Object Identification Delay	< 40ms
Tracking Speed	±32 px / field
Tracking Deviation Refresh Rate	30Hz
Tracking Deviation Output Delay	≤5ms
<b>Image &amp; Video</b>	
Image Format	JPEG
Maximum Image Resolution	1920 x 1080
EXIF	Shooting point coordinate
Video Format	MP4
Maximum Video Resolution	1080P@25fps
Stream Encode Format	H.264, H.265
Stream Network Protocol	RTSP
<b>Storage</b>	
Supported SD Cards	Supports a Speed Class 10 MicroSD card with a capacity of up to 256GB
Support File System	HDD-FAT32
<b>Environment</b>	
Operating Temperature	-20°C ~ 50°C
Storage Temperature	-40°C ~ 60°C
Operating Humidity	≤85%RH (Non-condensing)