

## MANTIS" 145 N NIGHT PAYLOAD

Aerovironment's Mantis<sup>™</sup> i45 N is a multi-sensor nighttime imaging payload designed for maximum visibility during low light or nighttime intelligence, surveillance and reconnaissance (ISR) operations. The next-generation imaging system features improved long-wave IR (LWIR) thermal cameras, an upgraded 5 megapixel monochrome low-light camera sensor and high-powered 860 nm laser illuminator. Through its advanced suite of sensors, the Mantis i45 N payload allows operators to extend aircraft standoff distance for covert operations.

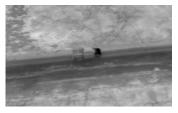
## **SPECIFICATIONS**

Resolution: Dual LWIR 640x512 px HFOV: 40° to 5.3° Zoom: 6 Levels; 7.6x
Resolution: 5 MP HFOV: 17.8° to 2.3° Zoom: 6 Levels; 7.6x
Beam power: 450 mW Wavelength: 860 nm Class: 3B laser
SD @30 fps
32 oz (905 g)
4.2 in (10.7 cm)
-29 to 50 °C
All environment (waterproof)
360° rotation, continuous
-90° to +30°



## **KEY FEATURES**

- » Enhanced night and low-light performance
- Improved long-wave IR (LWIR) thermal camera imagers; wide-angle 9.2 mm and narrow-angle 32 mm IR
- » Upgraded 5 MP monochrome low-light camera sensor and optics
- » Enhanced laser illuminator 7.4x stronger beam intensity
- » Compatible with Crysalis<sup>™</sup> GCS and Puma<sup>™</sup> 2 AE or newer UAS
- Field-swappable for quick and simple change-out of payloads between day and night operations



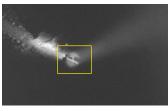




High-resolution, low-light



Wide-view from LWIR Thermal



Laser Illuminator at 250 m slant range



AeroVironment's Mantis<sup>™</sup> i45 delivers lightweight, compact and powerful visual awareness to the Puma AE small unmanned aircraft system (UAS) operator and supports an advanced suite of sensors, including high resolution EO/IR imagers and laser illuminator. All environment rated, Mantis i45 is fully waterproof and provides day, low-light and nighttime capabilities ranging from Near-Infrared (NIR) to Long Wave Infrared (LWIR) imaging. During flight operations, the i45 gimbal provides full lower hemisphere coverage, continuous pan and is packaged to provide reliable operations in extreme environments.

## **SPECIFICATIONS**

ELECTRO/OPTICAL (EO)Resolution: Dual 15 MP color JFDV: 56° to 1.2° Zom: 6 Levels; 50xTHERMALIRResolution: 640x512 px HFOV: 21.4° to 10.8° Zom: 3 Levels; 2xLOW LIGHT (LL)Resolution: 1.2 MP HFOV: 10.7° to 4.7° Zom: 3 Levels; 4.6xLASER ILLUMINATORBeam power: 500 mW Wavelength: 860 nm Class: 3B laserVIDE0SD @30 fpsKulight9.10 @30 fpsBALL DIAMETER3.14 oz (890 g)GPERATING EMPERATURE-29 to 50 °CVEATHERIZATIONAll environment (waterproof)FAN360° rotation, continuousFILT-90° to +30°		
THERMAL IRHFOV: 21.4° to 10.8° Zoom: 3 Levels; 2xLOW LIGHT (LL)Resolution: 1.2 MP HFOV: 10.7° to 4.7° Zoom: 3 Levels; 4.6xLASER ILLUMINATORBeam power: 500 mW Wavelength: 860 nm Class: 3B laserVIDEOSD @30 fpsVIDEOSD @30 fpsBALL DIAMETER4.2 in (10.7 cm)OPERATING TEMPERATURE-29 to 50 °CWEATHERIZATIONAll environment (waterproof)PAN360° rotation, continuous		HFOV: 56° to 1.2°
LOW LIGHT (LL)HFOV: 10.7° to 4.7° Zoom: 3 Levels; 4.6xLASER ILLUMINATORBeam power: 500 mW Wavelength: 860 nm Class: 3B laserVIDEOSD @30 fpsWEIGHT31.4 oz (890 g)BALL DIAMETER4.2 in (10.7 cm)OPERATING TEMPERATURE-99 to 50 °CWEATHERIZATIONAll environment (waterproof)PAN360° rotation, continuous	THERMAL IR	HFOV: 21.4° to 10.8°
LASER ILLUMINATORWavelength: 860 nm Class: 3B laserVIDEOSD @30 fpsWEIGHT31.4 oz (890 g)BALL DIAMETER4.2 in (10.7 cm)OPERATING TEMPERATURE-29 to 50 °CWEATHERIZATIONAll environment (waterproof)PAN360° rotation, continuous	LOW LIGHT (LL)	HFOV: 10.7° to 4.7°
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BALL DIAMETER4.2 in (10.7 cm)OPERATING TEMPERATURE-29 to 50 °CWEATHERIZATIONAll environment (waterproof)PAN360° rotation, continuous	VIDEO	SD @30 fps
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TEMPERATURE -29 to 50 °C   WEATHERIZATION All environment (waterproof)   PAN 360° rotation, continuous	BALL DIAMETER	4.2 in (10.7 cm)
PAN 360° rotation, continuous	•••	-29 to 50 °C
	WEATHERIZATION	All environment (waterproof)
TILT     -90° to +30°	PAN	360° rotation, continuous
	TILT	-90° to +30°



- » Daylight, low-light, and thermal imaging
- » Dual 15 MP high-resolution color cameras (wide and narrow views)
- » Low-light and LWIR cameras
- >>> Dedicated onboard image processor
- >>> Compatible with Crysalis<sup>™</sup> GCS and Puma<sup>™</sup> 2 AE or newer UAS



Electro/optical extreme wide-view



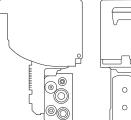
Downlink imagery from thermal IR

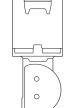


Electro/optical extreme narrow-view



Downlink imagery from low-light camera





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