

# MANTIS™ i45 N NIGHT PAYLOAD

AeroVironment's Mantis™ 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

<b>THERMAL IR</b>	Resolution: Dual LWIR 640x512 px HFOV: 40° to 5.3° Zoom: 6 Levels; 7.6x
<b>LOW LIGHT (LL)</b>	Resolution: 5 MP HFOV: 17.8° to 2.3° Zoom: 6 Levels; 7.6x
<b>LASER ILLUMINATOR</b>	Beam power: 450 mW Wavelength: 860 nm Class: 3B laser
<b>VIDEO</b>	SD @30 fps
<b>WEIGHT</b>	32 oz (905 g)
<b>BALL DIAMETER</b>	4.2 in (10.7 cm)
<b>OPERATING TEMPERATURE</b>	-29 to 50 °C
<b>WEATHERIZATION</b>	All environment (waterproof)
<b>PAN</b>	360° rotation, continuous
<b>TILT</b>	-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 Crystals™ GCS and Puma™ 2 AE or newer UAS*
- » *Field-swappable for quick and simple change-out of payloads between day and night operations*



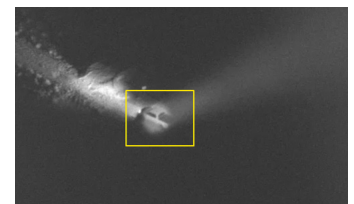
Narrow-view from LWIR Thermal



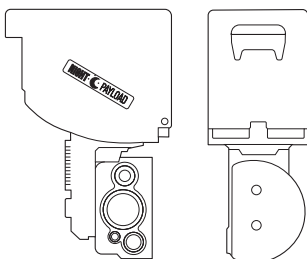
Wide-view from LWIR Thermal



High-resolution, low-light



Laser Illuminator at 250 m slant range



# MANTIS™ i45

AeroVironment's Mantis™ 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

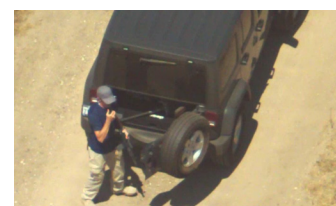
<b>ELECTRO/OPTICAL (EO)</b>	Resolution: Dual 15 MP color HFOV: 56° to 1.2° Zoom: 6 Levels; 50x
<b>THERMAL IR</b>	Resolution: 640x512 px HFOV: 21.4° to 10.8° Zoom: 3 Levels; 2x
<b>LOW LIGHT (LL)</b>	Resolution: 1.2 MP HFOV: 10.7° to 4.7° Zoom: 3 Levels; 4.6x
<b>LASER ILLUMINATOR</b>	Beam power: 500 mW Wavelength: 860 nm Class: 3B laser
<b>VIDEO</b>	SD @30 fps
<b>WEIGHT</b>	31.4 oz (890 g)
<b>BALL DIAMETER</b>	4.2 in (10.7 cm)
<b>OPERATING TEMPERATURE</b>	-29 to 50 °C
<b>WEATHERIZATION</b>	All environment (waterproof)
<b>PAN</b>	360° rotation, continuous
<b>TILT</b>	-90° to +30°

## KEY FEATURES

- » 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 Crystals™ GCS and Puma™ 2 AE or newer UAS



Electro/optical extreme wide-view



Electro/optical extreme narrow-view



Downlink imagery from thermal IR



Downlink imagery from low-light camera

