

NightVista® M611 Low Light Level Camera



NightVista M611 Camera

The NightVista M611 camera utilizes Intevac’s proprietary Electron Bombarded Active Pixel Sensor (EBAPS®) for extreme low-light sensitivity. The camera uses the EBAPS ISIE11 sensor, a 1600 x 1200 pixel (UXGA format) back-illuminated CMOS anode, matched to a high-quantum efficiency (QE) Gallium Arsenide (GaAs) photocathode. The pixels are 10.8 μm square with 100% fill factor.

Through integration of an EBAPS sensor with a high voltage power supply (HVPS), temperature sensor, FLASH memory (with image correcting parameters) and support electronics, the camera’s optical window is able to transfer input to the sensor from the external lens. The optical image is then focused onto the photocathode and the resulting photoelectrons are accelerated across a vacuum gap and proximity-focused on the back-illuminated CMOS anode.

Gain is achieved by the electron multiplication that results when the high-velocity electrons dissipate their energy in the silicon chip. This creates electron-hole pairs in the back surface of the CMOS Focal Plane Array (FPA). The pixels are read out, sampled and converted to 10-bit LVTTTL digital data inside the camera. The pixel data is framed and sent to the digital video bus for camera output in the form of a CameraLink® signal interface.

By utilizing Intevac’s proprietary Zero Halo technology with Automatic Gain Control (AGC), the NightVista M611 camera is able to operate effectively in extreme low-light conditions as well as in limited day mode.



Standard Halo



Zero Halo

APPLICATIONS
• Day or night reconnaissance
• Helmet-mounted
• Ground, maritime and avionics
BENEFITS
• Digital output
• Small size
• Lightweight
• Low power CMOS-based design
• User configurable
• Zero Halo technology

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SPECIFICATIONS	
Image Format	1600 (H) x 1200 (V) pixels (UXGA resolution) with 20 pixel electronic positioning
Pixel Size	10.8 μm square (100% Fill Factor)
Sensor Format	4/3 inch (22.2 mm diagonal)
Spectral Response (typical)	Night mode: 375 nm – 900 nm; Day mode: 750 nm – 1075 nm
Minimum Faceplate Illumination	10^{-5} Lux
Frame Rate	Up to 60 Hz (Progressive) full frame
Shutter Types	Rolling or snapshot
Output Signal Format	CameraLink® Base
Communication	RS-232 or CameraLink®
Nyquist Resolution	46.3 lp/mm
Defective Pixels	< 0.1%
Voltage	Range: 6 VDC (min) to 15 VDC (max)
Power	2.4 W (Nominal)
Dimensions	1.8"W x 1.8"H x 3.2"L
Lens Mount	C-mount
Weight	271 grams (without lens)
Relative Humidity	0 – 90% non-condensing

FUNCTIONS	
Non-uniformity Correction (NUC)	Limited Day mode w/HVPS off
Bad Pixel Replacement (BPR)	Horizontal Image Orientation/Flip
Automatic Gain Control (AGC)	Zoom/Window/ROI/Frame Rate Options
Extended Dynamic Range (XDR)	External Signal Synchronization (Genlock)
Real-Time Contrast Enhancement	Electronic Image Centering
ACCESSORIES	
Shipped with camera	Control Software (GUI)
Optional	Control/video cables, C-mount lenses

Specifications subject to change without notice

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