

# VISION HAWK SMART CAMERA

## Flexible Industrial Vision System



The Vision HAWK is a flexible industrial smart camera that delivers powerful vision capabilities in a compact, easy-to-use package. Developed for vision users of all experience levels in a broad range of applications, the Vision HAWK features an intuitive vision interface, optional C-mount lens design, integrated lighting, simple plug and play connectivity and high resolution, optical zoom.

With the Vision HAWK, both integrators and end-users have a scalable, fully integrated vision solution to confidently solve any inspection, verification, or auto ID application.

### Vision HAWK: At a Glance

- Fully integrated with processor, lens and illumination
- Easy connection to industrial control systems through Microscan Link
- Storage for multiple jobs
- Integrated Ethernet TCP/IP and EtherNet/IP networking
- Optional C-Mount Lens and Color Sensor models available



**AutoVISION® Software (WVGA/WUXGA/SXGA Mono only):** Provides a simple setup and runtime interface for solving basic to mid-range vision applications.



**Visionscape® Software (SXGA Color standard; WVGA/WUXGA/SXGA Mono optional):** Enables scripting and other advanced programming capabilities.



**Microscan Link:** Allows visualization and management of tool values on external systems (PLC, PC, or HMI).



**CloudLink:** Displays linked tool values in a fully-customizable web-based HMI on browser-enabled devices.

For more information on this product, visit [www.microscan.com](http://www.microscan.com).

### Vision HAWK: Capabilities



- 1D/2D symbol decoding
- Optical Character Recognition (OCR)
- Symbol Quality Verification and OCV
- Dynamic part location
- Assembly verification
- Dimensional measurements
- Plus Visionscape Option:
- Image transformation and scaling
- Precision calibration
- Custom vision tools (scripting)
- Program control functions
- 50+ machine vision tools

#### Powerful Capabilities

Features a robust tool set to address a wide range of automation challenges using vision technology. Combined with patented liquid lens autofocus, the Vision HAWK can easily cover almost any vision or barcode application.

#### Advanced Optical System

High resolution, modular optical zoom system enables the Vision HAWK to inspect objects and labels at distances from 20 mm to 800 mm and beyond.

#### Fully Integrated

The Vision HAWK features on-board optically isolated I/O connections for trigger and results.

#### Scalable System

AutoVISION software allows easy expansion to more complex vision applications through migration to full Visionscape software.

#### Ease of Use

In addition to a compact size for flexible positioning, the Vision HAWK includes AutoVISION software with an intuitive interface, step-by-step guides, and a library of templates that allow easy set up and deployment.

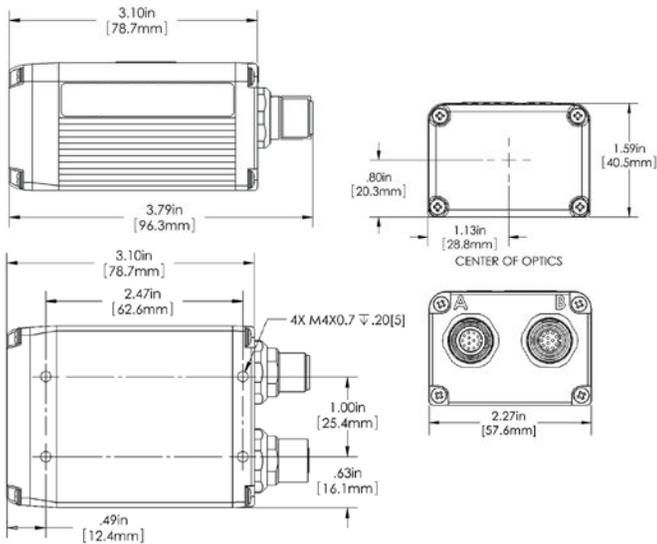
#### Rugged Design

The Vision HAWK features a rugged industrial design with a cast alloy IP65/67 enclosure and M12 connectors. Integrated Ethernet protocols are included for high speed communication.

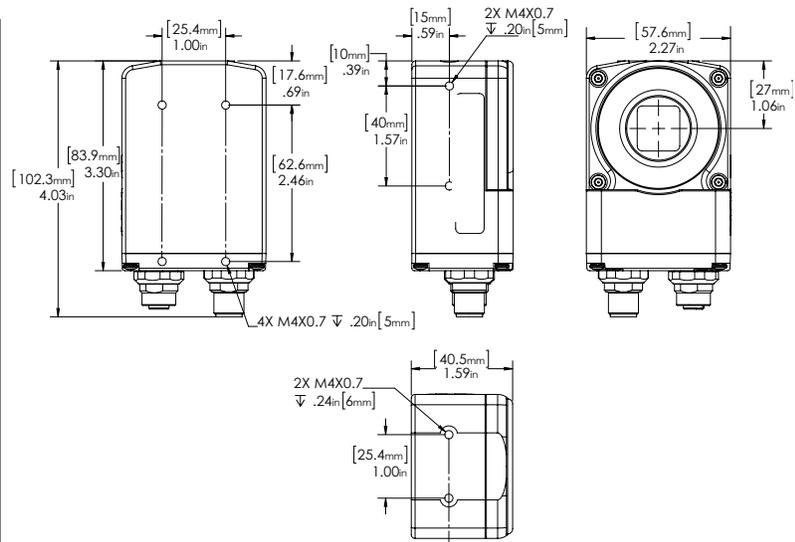
#### Application Examples

- Automotive
  - Assembly verification
  - Part identification
- Packaging
  - Label positioning
  - Contents verification
- Electronics
  - Assembly verification and identification
- Semiconductors
  - Packages and components

# VISION HAWK SMART CAMERA SPECIFICATIONS AND OPTIONS



Note: Nominal dimensions shown. Typical tolerances apply.



## MECHANICAL (INTEGRATED OPTICS)

Height: 1.59" (40.5 mm) Width: 2.27" (57.6 mm)  
 Depth: 3.79" (96.3 mm) Weight: 10 oz. (280 g)

## MECHANICAL (C-MOUNT OPTICS)

Height: 4.03" (102.3 mm) Width: 2.27" (57.6 mm)  
 Depth: 1.59" (40.5 mm) Weight: 11 oz. (320 g)

## ENVIRONMENTAL

Enclosure: Die-cast aluminum, IP65/67 rated  
 Operating Temperature: 0° to 50° C (32° to 122° F)  
 Operating Temperature (SXGA): 0° to 45° C (32° to 113° F)  
 Storage Temperature: -29° to 70° C (-20° to 158° F)  
 Humidity: Up to 90% (non-condensing)

## COMMUNICATION INTERFACE

Interface: RS-232, Ethernet TCP/IP and EtherNet/IP

## CE MARK

General Immunity for Light Industry:  
 EN 55024: 1998 ITE Immunity Standard  
 Radiated and Conducted Emissions of ITE  
 Equipment: EN 55022:98 ITE Disturbances

## LIGHT SOURCE (INTEGRATED OPTICS)

Type: High output LEDs



## SENSOR OPTIONS

Sensor: 1/3 inch  
 WVGA: CMOS, 752 by 480 pixels, up to 60 fps  
 SXGA (Mono & Color): CCD, 1280 by 960 pixels,  
 up to 20 fps  
 WUXGA: 2/3 inch sensor, CMOS, 2048 by 1088 pixels,  
 up to 48 fps (only available in C-mount configuration)

## SHUTTER OPTIONS

WVGA: 25µs to 100ms (1/40,000 to 1/10), default = 400µs (1/2,500)  
 SXGA (Mono & Color): 6µs to 100ms (1/150,000 to 1/10), default = 666µs (1/1,500)  
 WUXGA: 25µs to 100ms (1/40,000 to 1/10), default = 400µs (1/2,500)

## SYMBOLOGIES

2D Symbologies: Data Matrix (ECC 0-200), QR Code, Micro QR Code, Aztec Code, Dot Code  
 Stacked Symbologies: PDF417, Micro PDF417, GS1 Databar (Composite & Stacked)  
 Linear Barcodes: Code 39, Code 128, BC 412, I2 of 5, UPC/EAN, Codabar, Code 93, Pharmaco, PLANET, PostNet, Japanese Post, Australian Post, Royal Mail, Intelligent Mail, KIX

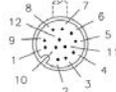
## ELECTRICAL

WVGA Power Requirement: 5-28 VDC, 200 mV p-p max ripple, 135 mA at 24 VDC (typ.)  
 SXGA (Mono & Color) Power Requirement: 5-28 VDC, 200 mV p-p max ripple, 170 mA at 24 VDC (typ.)  
 WUXGA Power Requirement: 5-28 VDC, 200 mV p-p max ripple, 140 mA at 24 VDC (typ.)

## PIN ASSIGNMENTS

### CONNECTOR A

M12 12-pin plug:



#### Pin Assignment

9	Host Rx/D
10	Host Tx/D
2	Power
7	Ground
1	Trigger
8	Input Common
3	Default
4	Input 1
5	Output 1
11	Output 2
6	Output 3
12	Output Common

### CONNECTOR B

M12 8-pin socket:



#### Pin Assignment

1	Terminated
2	Terminated
3	Terminated
4	TX (-)
5	RX (+)
6	TX (+)
7	Terminated
8	RX (-)

## LASER LIGHT (INTEGRATED OPTICS)

Type: Laser diode  
 Output Wavelength: Red = 655 nm nominal;  
 White = 6500K nm (typ.)  
 Operating Life: 50,000 hours @ 25° C  
 Safety Class: Class 1 visible laser



## IMAGING RATES

WVGA CMOS: up to 60 full frame images/second  
 SXGA (Mono & Color): up to 20 full frame images/second  
 WUXGA CMOS: up to 48 full frame images/second

## INDICATORS

LEDs: Trigger, Pass, Fail, Mode, Power, Network Activity, I/O  
 INTEGRATED OPTICS MODEL ONLY:  
 Green Flash: Good read Red X: Symbol locator

## DISCRETE I/O

Input 1/Trigger: Bi-directional, optoisolated, 4.5-28V rated, (13 mA at 24 VDC)  
 Outputs (1, 2 & 3): Bi-directional, optoisolated, 1-28V rated, (I<sub>CE</sub> < 100 mA at 24 VDC, current limited by user)

## PROTOCOLS

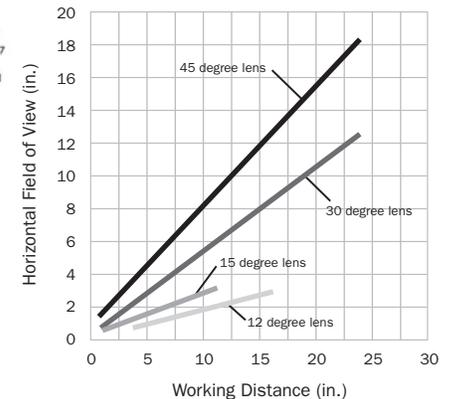
Point-to-Point, Point-to-Point w/XON/XOFF, Ethernet TCP/IP, EtherNet/IP, PROFINET I/O

## SOFTWARE OPTIONS

WVGA, SXGA (Mono), WUXGA: AutoVISION included, Visionscape and Verification/OCV upgrades available  
 SXGA (Color): Visionscape included

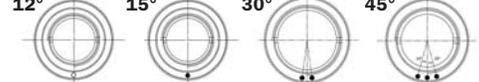
## INTEGRATED OPTIONS MODEL:

### FIELD OF VIEW AND WORKING DISTANCE



## INTEGRATED OPTIONS MODEL:

### MODULAR ZOOM OPTICS



## ROHS/WEEE COMPLIANT SAFETY CERTIFICATIONS

CDRH, FCC, UL/cUL, CE, CB, BSMI (compliant)

## ISO CERTIFICATION

Certified ISO 9001:2008 Quality Management System

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 Performance data is determined using high quality Grade A symbols per ISO/IEC 15415 and ISO/IEC 15416 in a 25° C environment. For application-specific results, testing should be performed with symbols used in the actual application. Microscan Applications Engineering is available to assist with evaluations. Results may vary depending on symbol quality.  
 Warranty-For current warranty information on this product, please visit [www.microscan.com/warranty](http://www.microscan.com/warranty).

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