VISION HAWK SMART CAMERA

Embedded Ethernet & Ultra-Lock Connectors

IP65/67 Enclosure

AutoVISION™ Technology

Built-in Lighting

Liquid Lens System

C-Mount Option

RoHS • WEEE COMPLIANT
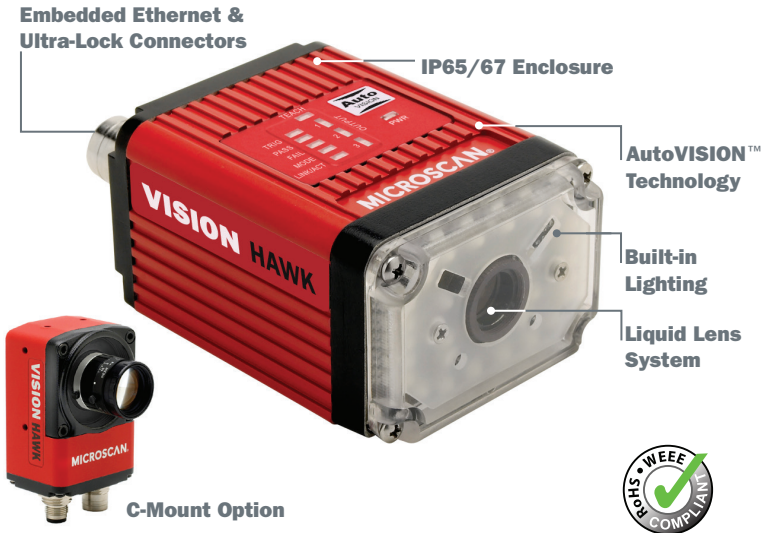
Flexible Industrial Vision System

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.

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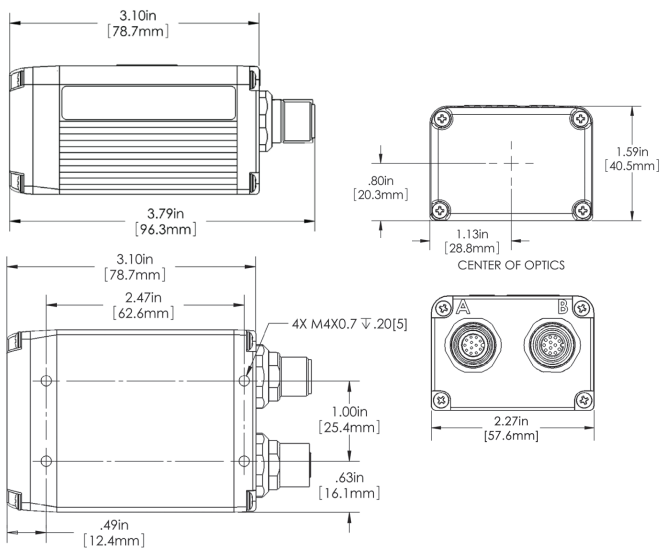
Rugged Design
The Vision HAWK features a rugged industrial design with a cast alloy IP65/67 enclosure and M12 connectors. Integrated Ethernet protocols are included for high speed communication.

Application Examples
Automotive
- Assembly verification
- Part identification

Packaging
- Label positioning
- Contents verification

Electronics
- Assembly verification and identification

Semiconductors
- Packages and components

Vision HAWK: Capabilites

- 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

MICROSCAN®

Vision HAWK Smart Camera Specifications and Options

Note: Nominal dimensions shown. Typical tolerances apply.
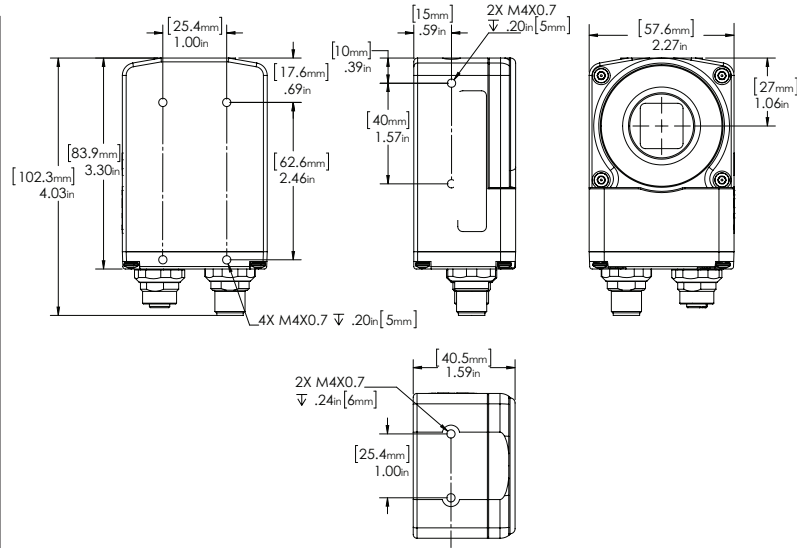
MECHANICAL (INTEGRATED OPTICS)
Height: 1.59" (40.5 mm) **Width:** 2.27" (57.6 mm)
Depth: 3.79" (96.3 mm) **Weight:** 10 oz. (280 g)

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

> **WARNING**
> LED LIGHT
> DO NOT VIEW DIRECTLY WITH OPTICAL INSTRUMENTS
> CLASS 1 LED PRODUCT
> Light Output: .564 mW, Wavelength: 470, 525, 617 nm.
> IEC 60825-1:1993+A1:1997+A2:2001

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, Pharmacode, PLANET, PostNet, Japanese Post, Australian Post, Royal Mail, Intelligent Mail, KIX
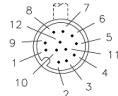
ELECTRICAL
WVGA Power Requirement: 5-28 VDC, 200 mV p-p max ripple, 135 mA at 24 VDC (typ.)
SXGA (Mono & Color) Power Requirement: 5-28 VDC, 200 mV p-p max ripple, 170 mA at 24 VDC (typ.)
WUXGA Power Requirement: 5-28 VDC, 200 mV p-p max ripple, 140 mA at 24 VDC (typ.)
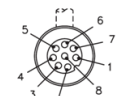
PIN ASSIGNMENTS
CONNECTOR A
M12 12-pin plug:

Pin	Assignment
9	Host RxD
10	Host TxD
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

> **CLASS 1 LASER PRODUCT**
> Complies with 21 CFR 1040.10 and 1040.11 except for deviations pursuant to Laser Notice No. 50, dated June 24, 2007.
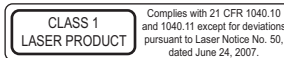
IMAGING RATES
WVGA CMOS: up to 60 full frame images/second
SXGA (Mono & Color): up to 20 full frame images/second
WUXGA CMOS: up to 48 full frame images/second

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_{CE} <100 mA at 24 VDC, current limited by user)
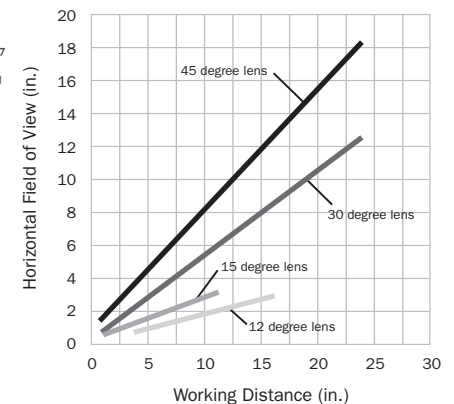
PROTOCOLS
Point-to-Point, Point-to-Point w/XON/XOFF, Ethernet TCP/IP, EtherNet/IP, PROFINET I/O

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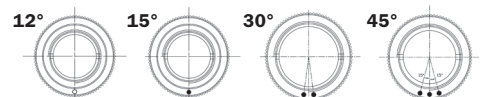**SXGA (Color):** Visionscape included

INTEGRATED OPTIONS MODEL: FIELD OF VIEW AND WORKING DISTANCE

INTEGRATED OPTIONS MODEL: MODULAR ZOOM OPTICS

QMS CERTIFICATION
www.microscan.com/quality

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Read Range and other 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 Read Range 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.

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