

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.

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

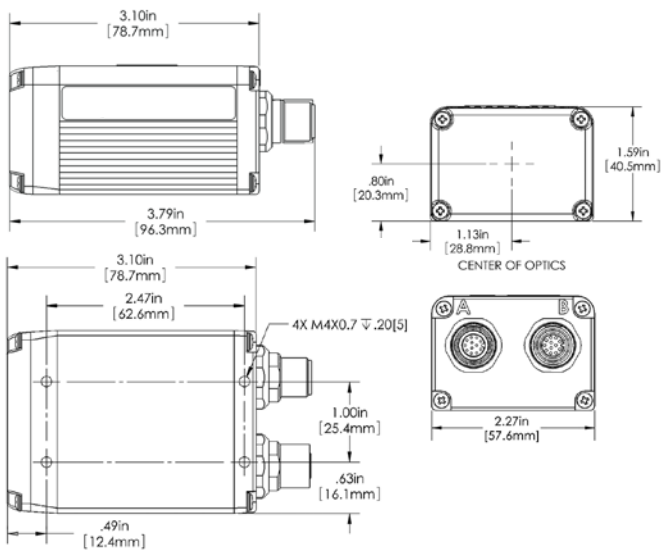
The Vision HAWK features a rugged industrial design with a cast alloy IP65/67 enclosure and M12 connectors. Integrated Ethernet protocols are included for high speed communication.

Application Examples

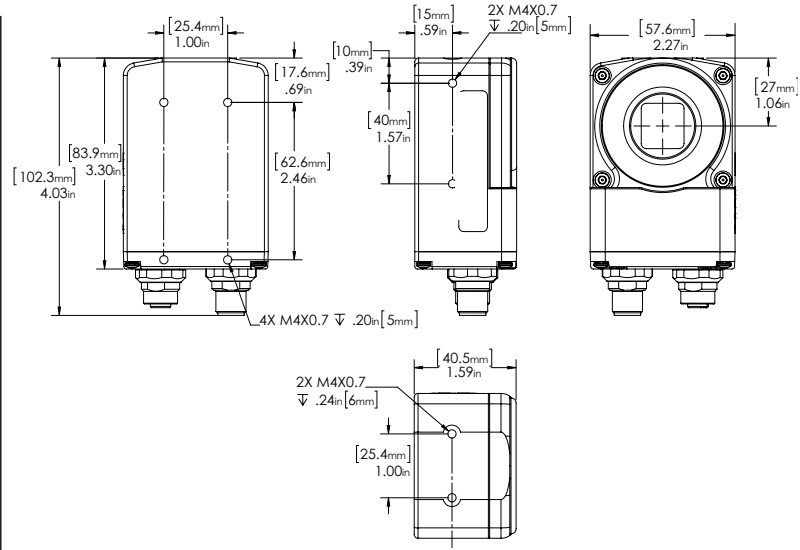
- Automotive
 - Assembly verification
 - Part identification
- Packaging
 - Label positioning
 - Contents verification
- Electronics
 - Assembly verification and identification
- Semiconductors
 - Packages and components

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



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

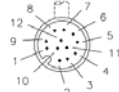
ELECTRICAL

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:

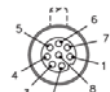


Pin Assignment

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_{CE} < 100 mA at 24 VDC, current limited by user)

PROTOCOLS

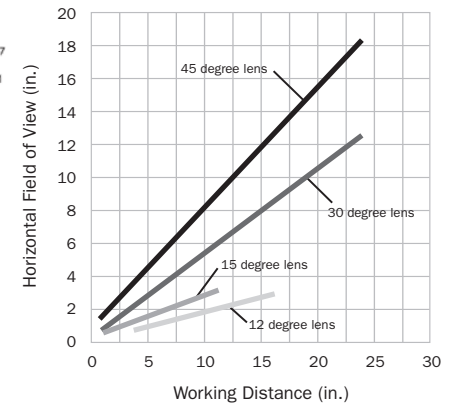
Point-to-Point, Point-to-Point w/XON/XOFF, Ethernet TCP/IP, EtherNet/IP, PROFINET I/O

SOFTWARE OPTIONS

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

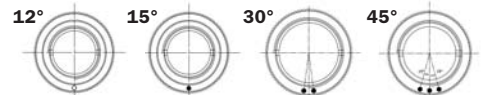
INTEGRATED OPTICS MODEL:

FIELD OF VIEW AND WORKING DISTANCE



INTEGRATED OPTICS 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.

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