

# VISION MINI SMART CAMERA

## World's Smallest Vision System



The Vision MINI smart camera is designed specifically for reliable vision performance in embedded identification and inspection applications. As the world's smallest fully integrated vision system, the Vision MINI's ultra-compact size and wide angle optics provide the best performance available for machine vision tasks at close range.

With the Vision MINI, OEM design engineers can quickly implement robust inspection, color matching, symbol decoding, OCR and more in a single compact vision solution.

### Vision MINI: At a Glance

- Ultra-compact shape and size
- Complete with processor, lens, illumination and AutoVISION® software for easy integration into embedded applications
- Simultaneously inspect multiple part features
- Storage for multiple jobs
- Mono and color sensor options



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



**Visionscape Software (QXGA standard; WVGA/SXGA 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 MINI: Capabilities



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

#### Compact & Lightweight

The Vision MINI is the world's smallest fully integrated smart camera. Its compact size allows flexible positioning in tight spaces. The lightweight and durable magnesium alloy case weighs less than 2 oz.

#### Autofocus

The AutoVISION button provides one button set up of targeting and autofocus, and sets internal parameters to optimize image capture.

#### Reliability & Longevity

The Vision MINI delivers both high performance and reliability, along with the assurance of long term availability and support. This is essential for OEMs, who require uninterrupted availability throughout the lifecycle of their products, and enables them to focus on new development instead of obsolescence issues.

#### Powerful Capabilities

Features a robust tool set to address a wide range of automation challenges using vision technology. AutoVISION software provides an intuitive interface, step-by-step guides, and a library of presets that allow easy set up and deployment.

#### Scalable System

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

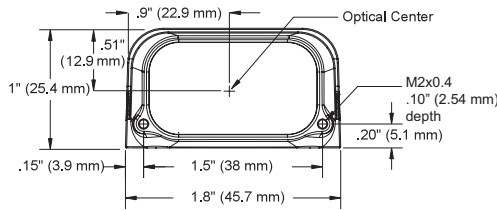
#### Application Examples

- Clinical instruments
  - Tube and cap absence and presence
  - Color detection and matching
- Electronics assembly
  - Fiducial location
- Pharmaceutical packaging
- Medical devices

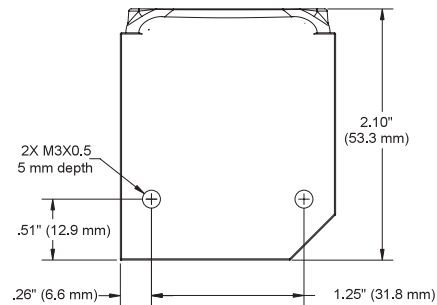
**MICROSCAN®**

# VISION MINI SMART CAMERA SPECIFICATIONS AND OPTIONS

## FRONT



## BASE



Note: Nominal dimensions shown. Typical tolerances apply.

## MECHANICAL

**Height:** 1" (25.4 mm) **Width:** 1.80" (45.7 mm)  
**Depth:** 2.10" (53.3 mm) **Weight:** 2 oz. (57 g)

## ENVIRONMENTAL

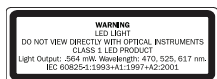
**Enclosure:** IP54 (category 2)  
**Humidity:** up to 90% (non-condensing)  
**Operating Temperature:** 0° to 40° C (32° to 104° F)  
**Storage Temperature:** -50° to 75° C (-58° to 167° F)

## CE MARK

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

## LIGHT SOURCE

**Type:** High output LEDs



## SYMBOLGY TYPES

**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

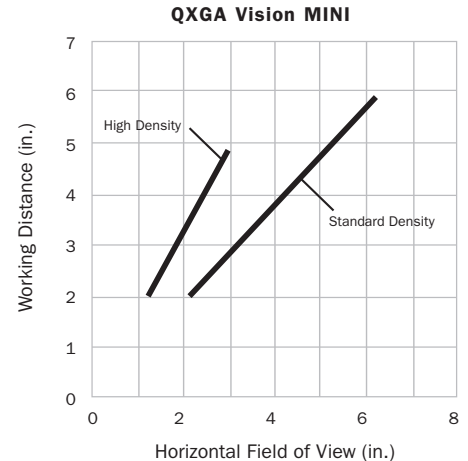
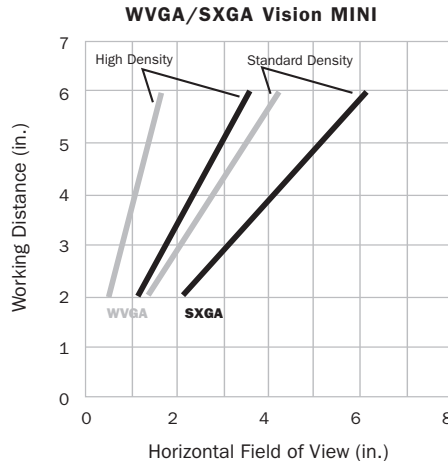
## INDICATORS

**LEDs:** Trigger, Pass, Fail, Mode, Power, Link/Act  
**Green Flash:** Pass  
**Blue V:** Target locator

## SENSOR OPTIONS

Progressive scan, square pixel.  
**Shutter:** Software adjustable 10 μs to 16.7 ms  
**Shutter Type:** Global (WVGA), Rolling (SXGA, QXGA)  
**Sensor:** 1/2 inch  
**WVGA: CMOS** 752 x 480 pixels, up to 60 fps  
**SXGA: CMOS** 1280 x 1024 pixels, up to 15 fps  
**QXGA (Color): CMOS** 2048 x 1536 pixels, up to 5 fps

## FIELD OF VIEW AND WORKING DISTANCE



## PIN ASSIGNMENTS

### High Density 15 Pin D-sub Socket

Pin No.	Host RS-232	In/Out
1	Power +5 VDC	In
2	TxD	Out
3	RxD	In
4	Power/Signal Ground	
5	NC	
6	NC	
7	Output 1 TTL <sup>a</sup>	Out
8	Default configuration <sup>b</sup>	In
9	Trigger	In
10	NC	In
11	Output 3 TTL <sup>a</sup>	Out
12	Learn (NPN)	In
13	Chassis ground <sup>c</sup>	
14	Output 2 TTL <sup>a</sup>	Out
15	NC	

a. Can sink 10 mA and source 10 mA.  
 b. The default is activated by connecting pin 8 to ground pin 4.  
 c. Chassis ground: Used to connect chassis body to earth ground only. Not to be used as power or signal return.

## SOFTWARE OPTIONS

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

## IMAGING PARAMETERS

**Focal Range:** 2 to 6" (50.8 to 152.4 mm) (autofocus)

## IMAGING RATES

**WVGA:** up to 60 full frame images/second  
**SXGA:** up to 15 full frame images/second  
**QXGA:** up to 5 full frame images/second

## CONNECTOR

**Type:** 3 ft. cable terminated with High Density 15-pin D-Sub socket connector and USB Type B connector

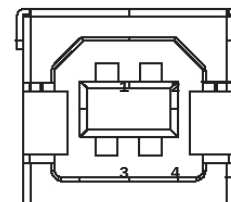
## ELECTRICAL POWER

**WVGA:** 400 mA @ 5 VDC (typ.), 4.0 watts max  
**SXGA:** 465 mA @ 5 VDC (typ.), 4.5 watts max  
**QXGA:** 400 mA @ 5 VDC (typ.), 4.2 watts max  
**Optional Int.:** 10-28V with IC-332 accessory

## COMMUNICATION PROTOCOLS

**Standard Interface:** RS-232 and/or USB 1.1 (Ethernet emulation mode driver supported)

## USB Type B Socket



No.	Function
1	Vbus (5V)
2	D-
3	D+
4	Ground

## DISCRETE I/O

**Trigger Input:** 5 to 28 VDC rated (.16 mA)  
**Learn:** 5 to 28 VDC rated (.16 mA)  
**Outputs (1, 2, 3):** 5V TTL compatible, can sink 10 mA and source 10 mA  
**Optional I/O:** Optoisolated (with IC-332 accessory)

## QMS CERTIFICATION

[www.microscan.com/quality](http://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](http://www.microscan.com/warranty).

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