

# MINI HAWK



## Ultra-Compact Autofocus Imager

The MINI HAWK is a powerful miniature imager that solves a wide range of data tracking and traceability needs across all industries. It provides aggressive barcode reading algorithms and easy setup for any 1D, 2D, or direct part mark (DPM) application. Reliable decoding is ensured through X-Mode technology, which reads damaged or difficult symbols with no configuration or setup required.

With easy setup, powerful image processing, and multiple configurations, the MINI HAWK is an ideal solution for any barcode or DPM application.

### MINI HAWK: At a Glance

- Decode speed and read range: Varies by model
- X-Mode Decoding Technology
- Autofocus
- Optional USB Connectivity

**MINI HAWK 3MP:** 3 megapixel resolution imager

**MINI HAWK HR:** High resolution imager

**MINI HAWK HS:** High speed imager



**ESP® Easy Setup Program:** Single-point software provides quick and easy setup and configuration of all Microscan readers.



**EZ Button:** This performs reader setup and configuration with no computer required.



**Visible Indicators:** Include "good read" green flash, LEDs and symbol positioning tool.

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

### MINI HAWK: Available Codes

Linear	All Standard 	Postal Codes 		
Stacked	MicroPDF 	PDF417 	GS1 Databar 	
2D	Data Matrix 	QR 	Micro QR 	Aztec 

#### X-Mode Technology

Our patented X-Mode technology provides easy setup and deployment in any application. In addition to reliable decoding of damaged or difficult linear codes and 2D symbols, the MINI HAWK features advanced decode algorithms to read a wide range of direct part marks.

#### Flexibility

Multiple resolutions are available to provide solutions to a wide range of applications.

#### Wide Field of View

Read symbols as large as 2" (50.8 mm) square as close as 1" (25.4 mm) with diffractive field illumination and optional right angle mirror.

#### Compact and Lightweight

Miniature form factor fits easily in tight spaces, and is lightweight for mounting into robotic applications.

#### Autofocus

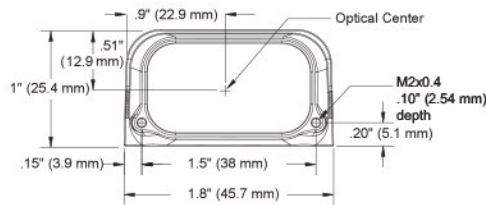
For real time dynamic autofocus, position the symbol at the center of the field of view, and push the EZ button. The MINI HAWK automatically adjusts focal distance and sets internal parameters to optimize the symbol.

#### Application Examples

- Assembly line manufacturing
- Component tracking
- Automotive
  - Dot peen mark on power-train components
  - Laser marks on automotive electronics components
- Medical devices
  - Laser marks on components
- Electronics
  - Laser markings on printed circuits boards, flex circuits
- Semiconductors
  - Laser marks on packages and components

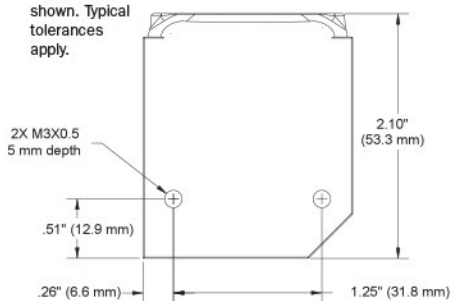
# MINI HAWK SPECIFICATIONS AND OPTIONS

## Front



Note: Nominal dimensions shown. Typical tolerances apply.

## Base



## 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

EN 55024: 1998 ITE Immunity Standard  
 EN 55022:98 ITE Disturbances

## LIGHT SOURCE

**Type:** High output LEDs

## LIGHT COLLECTION OPTIONS

Progressive scan, square pixel. Software adjustable shutter speed, electronic shutter  
**MINI HAWK 3MP:** 2048 by 1536 pixels (QXGA)  
**MINI HAWK HR:** 1280 by 1024 pixels (SXGA)  
**MINI HAWK HS:** 752 by 480 pixels (WVGA)



## SYMBOLOLOGIES

**2D Symbolologies:** Data Matrix (ECC 0-200), QR Code, Micro QR Code, Aztec Code  
**Stacked Symbolologies:** 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

## READ PARAMETERS

**Pitch:** ±30° **Skew:** ±30° **Tilt:** 360°  
**Decode Rate:** Up to 60 decodes per second (HS model)  
**Focus Range:** 1.3 to 9.3" (33 to 236 mm) (autofocus)

## CONNECTOR

**Type:** 3 ft. cable terminated with High Density 15-pin D-Sub socket or USB 1.1 Type A connector

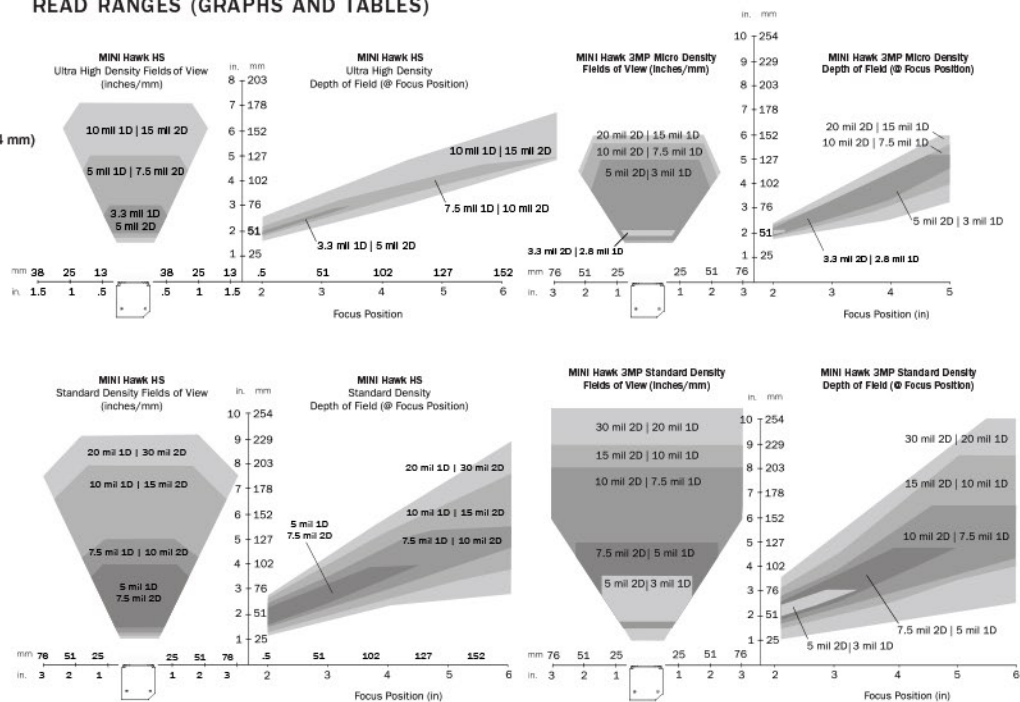
## INDICATORS

**LEDs:** Read Performance, Power, Read Status  
**Green Flash:** Good read **Blue V:** Symbol locator  
**Beeper:** Good read, match/mismatch, noread, serial command confirmation, on/off

## COMMUNICATION PROTOCOLS

**Standard Interface:** RS-232, RS-422, or USB 1.1

## READ RANGES (GRAPHS AND TABLES)



Narrow-bar-width		Field of View (maximum)	Read Range (using autofocus)
1D	2D		
<b>Ultra High Density</b>			
.0033" (0.08 mm)	.005" (0.13 mm)	1.6" (40 mm)	1.9 to 4.4" (47 mm to 110 mm)
.0075" (0.19 mm)	.010" (0.25 mm)	2.5" (64 mm)	1.7 to 6.7" (42 mm to 170 mm)
.015" (0.38 mm)	.020" (0.38 mm)	2.9" (74 mm)	1.5 to 8.0" (38 mm to 203 mm)
<b>Standard Density</b>			
.005" (0.13 mm)	.0075" (0.19 mm)	2.8" (72 mm)	1.6 to 4.4" (41 mm to 112 mm)
.0075" (0.19 mm)	.010" (0.25 mm)	3.8" (97 mm)	1.5 to 6.2" (38 mm to 157mm)
.010" (0.25 mm)	.015" (0.38 mm)	4.7" (118 mm)	1.4 to 7.6" (36 mm to 193 mm)
.020" (0.51 mm)	.030" (0.76 mm)	6.2" (158 mm)	1.3 to 10.0" (33 mm to 254 mm)

MINI HAWK HS units used for data provided in table. Subject to change. See User Manual for complete data.

## HOST CONNECTOR/PIN ASSIGNMENTS

### High Density 15 Pin D-sub Socket Connector

Pin No.	Host RS232	Host/Aux RS232	Host RS422/485	In/Out
1	Power +5 VDC			In
2	TxD	TxD	TxD(-)	Out
3	RxD	RxD	RxD(-)	In
4	Power/Signal Ground			
5	NC			
6	RTS	Aux TxD	TxD(+)	Out
7	Output 1 TTL			Out
8	Default configuration <sup>a</sup>			In
9	Trigger			In
10	CTS	Aux RxD	RxD (+)	In
11	Output 3 TTL			Out
12	New Master (NPN)			In
13	Chassis ground <sup>b</sup>			
14	Output 2 TTL			Out
15	NC			

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

## ELECTRICAL

**Power:** 5 VDC +/- 5%, 200 mV p-p max. ripple, 494 mA @ 5 VDC (typ.) **Optional Int.:** 10-28 V Accessory

## DISCRETE I/O

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

## SAFETY CERTIFICATIONS DESIGNED FOR

FCC, UL/cUL, CE, CB

## ROHS/WEEE COMPLIANT

## ISO CERTIFICATION

Certified ISO 9001:2008 Quality Management System

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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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