

User Guide

HP Engage Imaging Barcode Scanner II

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About this guide

- MARNING! Indicates a hazardous situation that, if not avoided, **could** result in serious injury or death.
- **CAUTION:** Indicates a hazardous situation that, if not avoided, **could** result in minor or moderate injury.
- **IMPORTANT:** Indicates information considered important but not hazard-related (for example, messages related to property damage). Warns the user that failure to follow a procedure exactly as described could result in loss of data or in damage to hardware or software. Also contains essential information to explain a concept or to complete a task.
- **NOTE:** Contains additional information to emphasize or supplement important points of the main text.
- ☆ **TIP:** Provides helpful hints for completing a task.

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1 Getting started

For safety and regulatory information, see the *Product Notices* provided in your documentation kit. To access the latest user guide, go to <u>http://www.hp.com/support</u> and follow the instructions to find your product. Then select **User Guides**.

Barcode scanner components

1		4	3	
Table	//			
Comp	onents			
(1)	Light	(3)	Scan window	
(2)	Cable release hole	(4)	Trigger	

Hands-free stand

A hands-free stand or an integrated stand is available, depending on model. The stand holds the barcode scanner at an angle that enables hands-free scanning as well as lets you store the scanner.

When you insert the barcode scanner into the stand, the scan mode is automatically changed to hands-free mode.

Omnidirectional operation

The barcode scanner is an omnidirectional reader that lets you scan a barcode from any orientation.

To read a symbol or capture an image, aim the barcode scanner and pull the trigger.

NOTE: If the barcode scanner is positioned in the barcode reader stand, the scanner automatically detects a barcode inside the field of view using magnetic coupling. The scanner then switches the reading system from trigger mode to autosense mode.

Decoding

The barcode scanner decodes all standard 1D (linear) and 2D bar codes, including GS1 DataBar linear codes, postal codes (China Post), and stacked codes (such as GS1 DataBar Expanded Stacked, GS1 DataBar Stacked, GS1 DataBar, Stacked Omnidirectional). The scanner sends the data stream from a decoded symbol to the host computer, and then the scanner is available to read another symbol.

Imaging

The barcode scanner can function as a camera by capturing entire images or the image portions of labels, signatures, and other items. For more information, see the HP Barcode Scanner D-Series Configuration Utility.

2 Setting up and using the scanner

Use the following steps to connect the barcode scanner and initiate communication with the host:

- 1. Connect the cable to the barcode scanner and the host (see <u>Connecting to the host on page 3</u>).
- 2. Configure the interface (see <u>Configuring the interface on page 6</u>).
- 3. Program the barcode scanner (see <u>Programming on page 13</u>).

Connecting to the host

Use the following illustrations to determine how to connect the scanner.

USB



Wedge



RS-232



Disconnecting and connecting the cable

To remove the interface cable from the barcode scanner, follow these steps:

- 1. Insert the end of a straightened paper clip into the release hole on the back of the handle.
- 2. As you apply pressure, pull out the cable.



TIP: When inserting the cable, make sure that the connector clip is on the same side as the barcode scanner release hole, and then insert the cable until it clicks into place.

Using the scanner

Aiming system

The barcode scanner captures and decodes barcodes. It is equipped with an internal motion-sensing function, which activates an intelligent aiming system upon sensing device motion. The aiming system indicates the field of view, which you should position over the barcode.

A red beam illuminates the label. The field of view indicated by the aiming system is smaller the closer the scanner is to the barcode. Place codes with smaller bars or elements closer to the reader and larger bars or elements farther from the reader.

A successful read occurs if the aiming system is centered and the entire barcode is within the aiming field. Successful reading is signaled by an audible tone plus a good read green spot LED indicator.

The following images show different aiming system patterns.

Good read green spot LED indicator:



Relative size and location of aiming system pattern:



2D matrix symbol:







Selecting the interface type

After connecting the barcode scanner to its host, scan the appropriate barcode for your system's interface type.

The barcode scanner supports the following host interfaces:

- RS-232 STD
- RS-232 WN
- IBM46XX port 9b (specific cable required)
- USB HID POS
- USB Toshiba TEC
- USB (Keyboard, COM, OEM)
- USB Composite (Keyboard + COM)
- USB for Magellan Scanners
- Keyboard Wedge

Configuring the interface

Scan the appropriate programming code from the following list to select the interface type for your system.

NOTE: Unlike some other programming features and options, interface selections require that you scan only one programming barcode label. Do not scan an Enter or Exit barcode before scanning an interface selection barcode.

Some interfaces require the scanner to start in the disabled state when turned on. If you need to perform additional scanner configuration while in this state, pull the trigger and hold for 5 seconds. The scanner changes to a state that allows programming with barcodes.

RS-232

RS-232 interface



RS-232 Wincor-Nixdorf

_ __ __ __ _



Select RS232-WN

RS-232 for use with OPOS/UPOS/JavaPOS

_ __ __ _



Select RS-232 OPOS

USB Com to simulate RS-232 interface



Select USB-COM-STD

USB-OEM

USB-OEM (can use for OPOS/UPOS/JavaPOS)



Select USB-OEM

USB-Composite

USB-Composite



Select USB-Composite

IBM46xx

IBM46xx Port 9b



Select IBM46xx Port 9b

USB for terminals

USB HID POS



Select USB HID POS

USB Toshiba TEC



Select USB Toshiba TEC

USB for Magellan scanners

USB for Magellans



Select for USB Magellan Scanners

Keyboard interface

Use the programming barcodes to select options for USB keyboard and wedge interfaces.

AT, PS/2 25-286, 30-286, 50, 50Z, 60, 70, 80, 90, and 95 with standard key encoding



Keyboard Wedge for IBM AT PS2 with standard key encoding but without external keyboard



Select KBD-AT-NK

AT, PS/2 25-286, 30-286, 50, 50Z, 60, 70, 80, 90, and 95 with alternate key



Select KBD-AT-ALT

Keyboard Wedge for IBM AT PS2 with alternate key encoding but without external keyboard



Select KBD-AT-ALT-NK

USB Keyboard with standard key encoding



Select USB Keyboard (default)

USB Keyboard with alternate key encoding



USB Keyboard with alternate key encoding

Country mode

This feature specifies the country or language supported by the keyboard. The following interfaces support all country modes:

- USB keyboard with alternate key encoding
- USB keyboard with standard key encoding
- AT, PS/2 25-286, 30-286, 50, 50Z, 60, 70, 80, 90, and 95 with standard key encoding
- Keyboard wedge for IBM AT PS2 with standard key encoding but without external keyboard
- AT, PS/2 25-286, 30-286, 50, 50Z, 60, 70, 80, 90, and 95 without alternate key
- Keyboard wedge for IBM AT PS2 without alternate key encoding but without external keyboard

All other interfaces support only the following country modes: U.S., Belgium, Britain, France, Germany, Italy, Spain, and Sweden.



Enter or exit programming mode



Country mode = U.S. (default)



Country mode = Belgium



Country mode = Croatia*



Country mode = Czech Republic*



Country mode = Denmark*



Country mode = France



Country mode = French Canadian*



Country mode =Germany



Country mode = Hungary*





Country mode = Japan 106 key*



Country mode = Lithuanian*



Country mode = Norway*



Country mode = Poland*



Country mode = Portugal*



Country mode = Romania*



Country mode = Spain



Country mode = Sweden



Country mode = Slovakia*



Country mode = Switzerland*

*Supports only the interfaces listed in the country mode feature description.

Programming

The barcode scanner comes configured with a set of standard default features. After scanning the interface barcode, select other options and customize the barcode scanner with the programming barcodes available in <u>Configuring the interface on page 6</u>.

Using programming barcodes

Some programming barcode labels, such as Reset Default Settings, require only the scan of that single label to enact the change. Other barcodes require that you place the barcode scanner in Programming Mode before scanning them, as follows:

- 1. Scan an Enter or Exit barcode once to enter Programming Mode.
- 2. Scan the parameter settings.
- **3.** Scan the Enter or Exit barcode to accept the changes. This scan exits programming mode and returns the barcode scanner to normal operation.

Resetting product defaults

If you want to restore the barcode scanner to its initial configuration, scan the following barcode.

NOTE: Factory defaults are based on the interface type. Make sure that the barcode scanner is configured for the correct interface before scanning this label. For more information, see <u>Selecting the interface type</u> on page 6.



Reset default settings

Numlock

This option specifies the setting of the Numlock key while in keyboard wedge interface. This only applies to alternate key encoding interfaces. It does not apply to USB keyboard.



Enter or exit programming mode



Numlock = Numlock key unchanged (default)



Numlock = Numlock key toggled

Caps Lock state

This option specifies the format in which the barcode scanner sends character data. This applies to keyboard wedge interfaces. This does not apply when an alternate key encoding keyboard is selected.



Enter or exit programming mode



Caps Lock State = Caps Lock off (default)



Caps Lock state = Caps Lock on



Caps Lock state = Auto Caps Lock enable

Reading parameters

Move the barcode scanner toward the target and center the aiming pattern and illumination system to capture and decode the image. For more information, see <u>Using the scanner on page 4</u>.

The aiming system briefly switches off after image capture. If no code is detected, the aiming system switches on before the next capture. The illuminator remains on until the symbol is decoded.

When scanning symbols, adjust the distance at which you are holding the barcode scanner until the image is captured.

Aiming system

Several options for customizing control of the aiming system are available. For more information and programming bar codes, see <u>Aiming system on page 4</u>.

Good read green spot duration

The barcode reader can project a green spot to indicate a successful read. Use the following barcodes to specify the duration of the good read pointer beam after a successful read.

_ ___ ___ ___ ___



Enter or exit programming mode



Good read green spot disabled



Good read green spot duration = short (300 ms) (default)



Good read green spot duration = medium (500 ms)





Good read green spot duration = long (800 ms)

Operating modes

Scan mode

You can set the scanner to operate in one of several scanning modes, as follows:

Trigger Single (default) – This mode is associated with typical handheld barcode scanner operation. When the trigger is pulled, illumination is turned on, and the scanner attempts to read a label. Scanning is activated until one of the following occurs:

- The programmable maximum scan on time has elapsed.
- A label is read.
- The trigger is released.

Trigger Pulse Multiple – Scanning begins when the trigger is pulled and continues after the trigger is released and until the trigger is pulled again or the programmable maximum scan on time has elapsed. Reading a label does not disable scanning. Double Read Timeout prevents unwanted multiple reads while in this mode.

Trigger Hold Multiple – When the trigger is pulled, scanning starts and the product scans until the trigger is released or maximum scan on time* has elapsed. Reading a label does not disable scanning. Double Read Timeout prevents unwanted multiple reads while in this mode.

Always On – The illuminator is always on and the barcode scanner is always ready for code reading. Double Read Timeout prevents unwanted multiple reads.

Flashing – The barcode scanner illuminator flashes on and off regardless of the trigger status. Code reading takes place only during the Flash On* time. Double Read Timeout* prevents unwanted multiple reads.

Object Detection – The scanner looks for changes within its field of view. The aiming pattern is always on to show the optimum reading area. If a predefined amount of movement is detected, white illumination switches on. Scanning continues until a label is read or maximum scan on time is reached.

*Controlled by Flash On Time and Flash Off Time.



Enter or exit programming mode



Scan Mode = Trigger Single (default)



Scan Mode = Trigger Pulse Multiple



Scan Mode = Trigger Hold Multiple



Scan Mode = Flashing



Scan Mode = Always On



Scan Mode = Stand Mode

_ __ __ __ __ _

Pick mode

Pick mode specifies the ability of the barcode scanner to decode labels only when they are close to the center of the aiming pattern, which is the area indicated by the red cross. Pick mode is a decoding and transmission process in which barcodes that are not within the configurable distance from the center of the aiming pattern are not acknowledged or transmitted to the host. It is active only while the scanner is in Trigger Single mode. If the scanner switches to a different read mode, Pick mode is automatically disabled.

NOTE: This feature is not compatible with Multiple Labels Reading in a volume.



Enter or exit Programming mode



Pick mode = Disable (default)



Pick mode = Enable

Multiple label reading

The barcode scanner offers a number of options for multiple label reading. See the HP Barcode Scanner D-Series Configuration Utility for descriptions of these features and programming labels.

3 Light and beep indications

The scanner's beep sounds, and its illumination flashes or changes color to indicate various functions or errors on the barcode scanner. A green spot also lights to indicate a good read. The following table lists these indications.

Table 3-1	Light and beep indications	
-----------	----------------------------	--

Indication	Light	Веер
Power up	Upper light blinks on turn on, however, this may be too rapid to view. With a USB interface, the light blinks until pairing with the host is completed.	Scanner beeps four times at highest frequency and volume when turned on.
Good read	Upper green light comes on for programmed time (default). You can configure light behavior for this indication using the HP Barcode Scanner D-Series Configuration Utility.	One beep at current frequency, volume, monotonal or bitonal setting upon a successful label scan. You can also upload custom jingles with the HP Barcode Scanner D-Series Configuration Utility.
ROM failure	200 ms on or 200 ms off.	Scanner sounds one error beep at highest volume for 200 ms.
Limited scanning label read	n/a	Scanner chirps six times at the highest frequency and current volume.
Scanner disabled	The light blinks continuously 100 ms on or 900 ms off.	n/a

4 Troubleshooting

Table 4-1 Troubleshooting

Problem	Cause	Solution
Nothing happens when you pull the trigger.	There is no power to the scanner.	Check system power. Make sure that power supply is connected.
	Interface or power cables are loose.	Make sure that all cable connections are secure.
Light comes on, but bar code does not decode.	Barcode label is unreadable.	Check the label to make sure that it is not defaced. Try scanning another barcode type.
	Distance between scanner and bar code is incorrect.	Move scanner closer to or further from the barcode.
Barcode is decoded but not transmitted to the host.	The scanner is not programmed for the correct host type.	Scan the appropriate host type barcode. See the user guide for more information.

5 Ergonomic recommendations

<u>A</u> CAUTION: To avoid or minimize the potential risk of ergonomic injury, see the following recommendations:

- Reduce or eliminate repetitive motion.
- Maintain a natural position.
- Reduce or eliminate excessive force.
- Keep objects that are used frequently within easy reach.
- Perform tasks at correct heights.
- Reduce or eliminate vibration.
- Reduce or eliminate direct pressure.
- Provide adjustable workstations.
- Provide adequate clearance.
- Provide adequate clearance.
- Provide a suitable working environment.
- Improve work procedures.

6 Cleaning

Exterior surfaces and scan windows exposed to spills, smudges, or debris accumulation require periodic cleaning to ensure best performance during scanning operations. Use the following procedures to keep the scanner in good operating condition.

🗥 CAUTION: Be sure to turn off power and unplug the device from the electrical outlet before cleaning.

IMPORTANT: Do not use abrasive pads or cleaning agents.

Common cleaning solutions

The following cleaners and disinfectants are tested for use on enclosures.

Table 6-1 Common cleaning solutions

Disinfectant	Cleaner
CaviWipes	Formula 409 Glass and surface cleaner
Bleach	Isopropyl alcohol
Hepacide Quat II	Dish soap and water
Sani-Cloth	Windex Original (blue)
Virex II 256	

IMPORTANT: Disinfectants can be harsh on metal. They are recommended for use only on enclosures.

Do not spray or pour cleaner directly onto the unit.

Do not use solutions in their concentrated form.

Do not use aerosols, solvents, or abrasives.

Do not use paper towels or rough cloths to clean windows.

Cleaning enclosure and window surfaces

- 1. Moisten a soft cloth with a recommended cleaning solution. Be sure to apply the solution to your cloth first. Wring excessive liquid from the cloth.
- 2. Use the cloth to wipe down the surface of the unit. Use cotton swabs, lightly moistened, to reach in corners and crevices.
- Use another clean dry cloth to remove any residue from the cleaning agent and make sure that the unit is dry.

7 Accessibility

HP and accessibility

Because HP works to weave diversity, inclusion, and work/life into the fabric of the company, it is reflected in everything HP does. HP strives to create an inclusive environment focused on connecting people to the power of technology throughout the world.

Finding the technology tools you need

Technology can unleash your human potential. Assistive technology removes barriers and helps you create independence at home, at work, and in the community. Assistive technology helps increase, maintain, and improve the functional capabilities of electronic and information technology. For more information, see Finding the best assistive technology on page 25.

The HP commitment

HP is committed to providing products and services that are accessible for people with disabilities. This commitment supports the company's diversity objectives and helps ensure that the benefits of technology are available to all.

The HP accessibility goal is to design, produce, and market products and services that can be effectively used by everyone, including people with disabilities, either on a stand-alone basis or with appropriate assistive devices.

To achieve that goal, this Accessibility Policy establishes seven key objectives to guide HP actions. All HP managers and employees are expected to support these objectives and their implementation in accordance with their roles and responsibilities:

- Raise the level of awareness of accessibility issues within HP, and provide employees with the training they need to design, produce, market, and deliver accessible products and services.
- Develop accessibility guidelines for products and services, and hold product development groups accountable for implementing these guidelines where competitively, technically, and economically feasible.
- Involve people with disabilities in the development of accessibility guidelines and in the design and testing of products and services.
- Document accessibility features, and make information about HP products and services publicly available in an accessible form.
- Establish relationships with leading assistive technology and solution providers.
- Support internal and external research and development that improves assistive technology relevant to HP products and services.
- Support and contribute to industry standards and guidelines for accessibility.

International Association of Accessibility Professionals (IAAP)

IAAP is a not-for-profit association focused on advancing the accessibility profession through networking, education, and certification. The objective is to help accessibility professionals develop and advance their careers and to better enable organizations to integrate accessibility into their products and infrastructure.

As a founding member, HP joined to participate with other organizations to advance the field of accessibility. This commitment supports HP's accessibility goal of designing, producing, and marketing products and services that people with disabilities can effectively use.

IAAP will make the profession strong by globally connecting individuals, students, and organizations to learn from one another. If you are interested in learning more, go to http://www.accessibilityassociation.org to join the online community, sign up for newsletters, and learn about membership options.

Finding the best assistive technology

Everyone, including people with disabilities or age-related limitations, should be able to communicate, express themselves, and connect with the world using technology. HP is committed to increasing accessibility awareness within HP and with our customers and partners. Whether it's large fonts that are easy on the eyes, voice recognition that lets you give your hands a rest, or any other assistive technology to help with your specific situation—a variety of assistive technologies make HP products easier to use. How do you choose?

Assessing your needs

Technology can unleash your potential. Assistive technology removes barriers and helps you create independence at home, at work, and in the community. Assistive technology (AT) helps increase, maintain, and improve the functional capabilities of electronic and information technology.

You can choose from many AT products. Your AT assessment should allow you to evaluate several products, answer your questions, and facilitate your selection of the best solution for your situation. You will find that professionals qualified to do AT assessments come from many fields, including those licensed or certified in physical therapy, occupational therapy, speech/language pathology, and other areas of expertise. Others, while not certified or licensed, can also provide evaluation information. You will want to ask about the individual's experience, expertise, and fees to determine if they are appropriate for your needs.

Accessibility for HP products

The following links provide information about accessibility features and assistive technology, if applicable, included in various HP products. These resources will help you select the specific assistive technology features and product(s) most appropriate for your situation.

- HP Elite x3–Accessibility Options (Windows 10 Mobile)
- HP PCs–Windows 7 Accessibility Options
- HP PCs–Windows 8 Accessibility Options
- <u>HP PC's–Windows 10 Accessibility Options</u>
- HP Slate 7 Tablets–Enabling Accessibility Features on Your HP Tablet (Android 4.1/Jelly Bean)
- <u>HP SlateBook PCs–Enabling Accessibility Features (Android 4.3,4.2/Jelly Bean)</u>
- <u>HP Chromebook PCs–Enabling Accessibility Features on Your HP Chromebook or Chromebox (Chrome OS)</u>
- HP Shopping-peripherals for HP products

If you need additional support with the accessibility features on your HP product, see <u>Contacting support</u> on page 28.

Additional links to external partners and suppliers that may provide additional assistance:

- Microsoft Accessibility information (Windows 7, Windows 8, Windows 10, Microsoft Office)
- <u>Google Products accessibility information (Android, Chrome, Google Apps)</u>

- Assistive Technologies sorted by impairment type
- <u>Assistive Technologies sorted by product type</u>
- Assistive Technology vendors with product descriptions
- <u>Assistive Technology Industry Association (ATIA)</u>

Standards and legislation

Standards

Section 508 of the Federal Acquisition Regulation (FAR) standards was created by the US Access Board to address access to information and communication technology (ICT) for people with physical, sensory, or cognitive disabilities. The standards contain technical criteria specific to various types of technologies, as well as performance-based requirements which focus on functional capabilities of covered products. Specific criteria cover software applications and operating systems, web-based information and applications, computers, telecommunications products, video and multimedia, and self-contained closed products.

Mandate 376 – EN 301 549

The EN 301 549 standard was created by the European Union within Mandate 376 as the basis for an online toolkit for public procurement of ICT products. The standard specifies the functional accessibility requirements applicable to ICT products and services, together with a description of the test procedures and evaluation methodology for each accessibility requirement.

Web Content Accessibility Guidelines (WCAG)

Web Content Accessibility Guidelines (WCAG) from the W3C's Web Accessibility Initiative (WAI) helps web designers and developers create sites that better meet the needs of people with disabilities or age-related limitations. WCAG advances accessibility across the full range of web content (text, images, audio, and video) and web applications. WCAG can be precisely tested, is easy to understand and use, and allows web developers flexibility for innovation. WCAG 2.0 has also been approved as ISO/IEC 40500:2012.

WCAG specifically addresses barriers to accessing the web experienced by people with visual, auditory, physical, cognitive, and neurological disabilities, and by older web users with accessibility needs. WCAG 2.0 provides characteristics of accessible content:

- Perceivable (for instance, by addressing text alternatives for images, captions for audio, adaptability of
 presentation, and color contrast)
- **Operable** (by addressing keyboard access, color contrast, timing of input, seizure avoidance, and navigability)
- Understandable (by addressing readability, predictability, and input assistance)
- **Robust** (for instance, by addressing compatibility with assistive technologies)

Legislation and regulations

Accessibility of IT and information has become an area of increasing legislative importance. The links listed below provide information about key legislation, regulations, and standards.

- United States
- <u>Canada</u>
- <u>Europe</u>

- United Kingdom
- <u>Australia</u>
- <u>Worldwide</u>

Useful accessibility resources and links

The following organizations might be good resources for information about disabilities and age-related limitations.

Organizations

- American Association of People with Disabilities (AAPD)
- The Association of Assistive Technology Act Programs (ATAP)
- Hearing Loss Association of America (HLAA)
- Information Technology Technical Assistance and Training Center (ITTATC)
- Lighthouse International
- National Association of the Deaf
- National Federation of the Blind
- Rehabilitation Engineering & Assistive Technology Society of North America (RESNA)
- Telecommunications for the Deaf and Hard of Hearing, Inc. (TDI)
- W3C Web Accessibility Initiative (WAI)

Educational institutions

- California State University, Northridge, Center on Disabilities (CSUN)
- University of Wisconsin Madison, Trace Center
- University of Minnesota computer accommodations program

Other disability resources

- ADA (Americans with Disabilities Act) Technical Assistance Program
- ILO Global Business and Disability network
- EnableMart
- European Disability Forum
- Job Accommodation Network
- Microsoft Enable

NOTE: This is not an exhaustive list. These organizations are provided for informational purposes only. HP assumes no responsibility for information or contacts you encounter on the Internet. Listing on this page does not imply endorsement by HP.

HP links

Our contact webform

HP comfort and safety guide

HP public sector sales

Contacting support

NOTE: Support is in English only.

- Customers who are deaf or hard of hearing who have questions about technical support or accessibility of HP products:
 - Use TRS/VRS/WebCapTel to call (877) 656-7058 Monday through Friday, 6 a.m. to 9 p.m. Mountain Time.
- Customers with other disabilities or age-related limitations who have questions about technical support or accessibility of HP products, choose one of the following options:
 - Call (888) 259-5707 Monday through Friday, 6 a.m. to 9 p.m. Mountain Time.
 - Complete the <u>Contact form for people with disabilities or age-related limitations</u>.

8 Specifications

Scanner specifications

Table 8-1 Scanner specifications

	Metric	U.S.
Dimensions		
Length	10.9 cm	4.3 in
Width	6.8 cm	2.7 in
Height	16.6 cm	16.6 in
Weight		
Without stand	161 g	5.7 oz
With stand	374 g	13.2 oz
Input power		
Operating	< 300 mA @ 5 V to < 200 mA @ 12 V	
Standby or idle	< 90 mA @ 5 V to < 50 mA @ 12 V	
Temperature		
Operating	0°C to 50°C	32°F to 122°F
Nonoperating	–40°C to 70°C	–40°F to 158°F
Relative humidity	95% noncondensing	

Depth of field (DOF) (typical)*

Symbology	SR	HD	
Code 39	5 mil: 7.0 to 38.0 cm (2.7 in to 14.9 in)	3 mil: 5.0 to 15.0 cm (2.0 in to 5.9 in)	
	10 mil: 2.2 to 58.0 cm (0.8 in to 22.8 in)	5 mil: 0.5 to 25.0 cm (0.2 in to 9.8 in)	
	20 mil: FOV lim. to 110 cm (up to 43.3 in)	10 mil: 0.5 to 45.0 cm (0.2 in to 17.7 in)	
EAN13	7.5 mil: 9.0 to 30.0 cm (3.5 in to 11.8 in)	7.5 mil: 2.0 to 23.5 cm (0.8 in to 9.2 in)	
	13 mil: 1.0 to 71.0 cm (0.4 in to 27.9 in)	13 mil: 1.0 to 40.0 cm (0.4 in to 15.7 in)	
PDF417	6.6 mil: 6.5 to 24.0 cm (2.6 in to 9.4 in)	4 mil: 3.0 to 12.0 cm (1.2 in to 4.7 in)	
	10 mil: 2.5 to 41.0 cm (1.0 in to 16.1 in)	6.6 mil: 0.5 to 23.5 cm (0.2 in to 9.2 in)	
	15 mil: 2.3 to 65.0 cm (0.9 in to 25.6 in)	10 mil: 0.5 to 31.0 cm (0.2 in to 12.2 in)	
Datamatrix	10 mil: 5.5 to 27.0 cm (2.2 in to 10.6 in)	5 mil: 5.5 to 9.0 cm (2.2 in to 3.5 in)	
	15 mil: 2.8 to 41.0 cm (1.1 in to 16.1 in)	10 mil: 0.2 to 27.0 cm (0.1 in to 10.6 in)	
Maximum resolution	1D Min = 4 mils	1D Min = 3 mils	
	PDF417 Min = 5 mils	PDF417 Min = 3 mils	
	Datamatrix Min = 7.5 mils	Datamatrix Min = 4 mils	

 Table 8-2
 Depth of field

13 mils DOF based on EAN. All other 1D codes are Code 39. All labels grade A, typical environmental light, 20°C, label inclination 10°.

Decode capability

Table 8-3 Decode capability

Decode capability

1D bar codes

UPC/EAN/JAN (A, E, 13, 8), UPC/EAN/JAN (including P2 /P5), UPC/EAN/JAN (including ISBN / Bookland & ISSN), UPC/EAN Coupons, Code 39 (including full ASCII), Code 39 Trioptic, Code39 CIP (French Pharmaceutical), LOGMARS (Code 39 w/ standard check digit enabled), Danish PPT, Code 32 (Italian Pharmacode 39), Code 128, Code 128 ISBT, Interleaved 2 of 5, Standard 2 of 5, Interleaved 2 of 5 CIP (HR), Industrial 2 of 5, Discrete 2 of 5, Matrix 2 of 5, IATA 2 of 5 Air cargo code, Code 11, Codabar, Codabar (NW7), ABC Codabar, EAN 128, Code 93, MSI, PZN, Plessey, Anker Plessey, GS1 DataBar Omnidirectional, GS1 DataBar Limited, GS1 DataBar Expanded, GS1 DataBar Truncated, DATABAR Expanded Coupon.

2D stacked codes

The scanner can decode the following symbologies using multiple frames (such as Multi-Frame Decoding): Datamatrix, Inverse Datamatrix. You can configure Datamatrix for the following parameters: Normal or Inverted, Square or Rectangular Style, Data length (1 - 3600 characters), Maxicode, QR Codes (QR, Micro QR, and Multiple QR Codes), Aztec, Postal Codes - (Australian Post, Japanese Post, KIX Post, Planet Code, Postnet, Royal Mail Code (RM45CC), Intelligent Mail Barcode (IMB), Sweden Post, Portugal Post), LaPoste A/R 39, PDF-417, MacroPDF, Micro PDF417, GS1 Composites (1 - 12), French CIP13^a; GS1 DataBar Stacked; GS1 DataBar Stacked Omnidirectional; GS1 DataBar Expanded Stacked; GSI Databar Composites; Chinese Sensible Code; Inverted 2D codes^b.

^a It is acceptable to handle this parameter with ULE.

^b The SW can apply the Normal/Reverse Decoding Control to the following symbologies: Datamatrix, QR, Micro QR, Aztec, and Chinese Sensible Code.