

# ZD410 Specifications

## STANDARD FEATURES

- 6 ips maximum print speed
- ZPL II® programming language
- EPL1™ Line Mode/EPL2™ programming language
- Connectivity: USB, Bluetooth Low Energy and USB Host
- OpenACCESS™ design for easy media loading
- 203 dpi print resolution (8 dots/mm)
- 2.2" (56 mm) print width
- Direct Thermal printing of barcodes, text and graphics
- 512 MB of Flash memory
- 256 MB SDRAM
- Head-up sensor
- Multi-position transmissive and full-width reflective sensor
- 5" outside diameter media capability
- Fan-fold media feed slot
- Link-OS®-enabled
- Print Touch™ app
- Unicode compliant for multi-language printing
- 16 resident expandable ZPL II® bitmap fonts
- Two resident scalable ZPL fonts
- Multiple DOS and Windows® codepage support
- Windows drivers
- Printer utilities
- Linear & 2-D barcode symbologies
- ENERGY STAR® Certified, meets Energy Efficiency Level VI

## OPTIONAL FEATURES

- 300 dpi print resolution (12 dots per mm)
- Field installable cutter:
  - Continuous paper, lined label and tag stock  
Note: Cutting through labels and liner is not supported
  - Maximum thickness 0.0075" (0.1905 mm)
- Field installable dispenser (peeler) – Label peel and present with label taken sensor

<b>Connectivity Options</b>	<ul style="list-style-type: none"> <li>• Field installable RS-232 auto-sensing Serial interface, DB-9</li> <li>• Factory installed wireless – Wi-Fi certified 802.11ac and Bluetooth 4.1</li> <li>• Field installable Ethernet - 10/100 internal</li> </ul>
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## ACCESSORIES

- ZKDU™ – keyboard display unit for ZPL
- Mounting adaptor plate
- Optional core adapters are available to accommodate 1.5", 2" and 3" ID core sizes.

## LINK-OS™ SOLUTIONS

<b>Software</b>	<ul style="list-style-type: none"> <li>• <b>Document Design</b> – Quickly design a customized print solution using your business data and Zebra's intuitive, plug-and-print design tools</li> <li>• <b>Printer Integration</b> – Zebra offers apps and products designed to help you integrate Zebra devices into your existing systems</li> <li>• <b>Printer Management</b> – Manage your print operations locally and globally with Zebra's suite of device management tools</li> <li>• <b>Developer Tools</b> – Provides you with the tools you need to create your own apps, including documentation, source code, programming languages, templates and more</li> <li>• <b>Zebra Setup Utility</b> – Single printer configuration utility</li> </ul> <p><b>ZebraDesigner™</b> – Windows Driver: Microsoft certified for Windows Vista®, Windows 7, Windows 8 Windows 8.1, Windows 10 (downloadable from <a href="http://www.zebra.com">www.zebra.com</a>)</p>
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<b>Firmware</b>	<ul style="list-style-type: none"> <li>• <b>EPL1/EPL2</b> – Eltron Programming Language simplifies label formatting and enables format compatibility with legacy applications</li> <li>• <b>ZPL II</b> – Universal language for Zebra printers. Simplifies label formatting and enables format compatibility with existing systems that run Zebra printers</li> <li>• <b>Web View</b> – Connect and control Zebra barcode printers via the printer's Web interface using a common Web browser (ZPL mode)</li> </ul>
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## PRINTING SPECIFICATIONS

Resolution	203 dots/inch (dpi) (8 dots/mm)	300 dots/inch (dpi) (12 dots/mm)
Speed inch/sec - ips (mm/sec)	Programmable 2, 3, 4, 5 or 6 max. (51, 76, 102, 127 with max. 152)	Programmable 2, 3 with 4 max. (51, 76, with max. 102)
Dot pitch	0.0049" (0.13 mm)	0.0033" (0.085 mm)
Max. print length	39.0" (991 mm)	39.0" (991 mm)
Min. print length	One dot	One dot
Max. print width	2.20" (56 mm)	2.20" (56 mm)
Min. print width	One dot	One dot

## MEDIA SPECIFICATIONS

- Media width: 0.585 – 2.36" (15 - 60 mm)
- Label length:
  - Minimum 0.25" (6.4 mm - tear)
  - Minimum 1" (25.4 mm - with cutter)
  - Minimum 0.5" (12.7 mm - with peeler)
  - Maximum 39" (991 mm)
  - Core inner diameter: Standard - 0.5"/12.7 mm, 1.0"/25 mm.  
With optional adaptor kit - 1.5"/37.1 mm, 2.0"/50.8 mm, 3"/76 mm
- Max roll outer diameter – 5.00" (127 mm)
- Media thickness – 0.003 - 0.0075" (0.08 - .1905 mm)
- Media sensing – gap, black line, notch
- Media type:
  - Roll-fed or fan-fold
  - Label stock (die cut or continuous, direct thermal)
  - Tag stock (die cut or continuous, direct thermal)
  - Receipt paper (continuous, direct thermal)
  - Wristband stock (direct thermal)

## ZPL PROGRAMMING LANGUAGE (ZPL/ZPL II)

- Communicates in printable ASCII characters
- Compatible with mainframe, mini and PC hosts
- Downloadable objects include graphics and bitmap fonts, label templates and formats
- Automatic memory allocation for format while printing
- Automatic serialization of fields
- Format inversion (white on black)
- Mirror-image printing
- Four position field rotation (0°, 90°, 180°, 270°)
- Slew command
- Programmable label quantities with print, pause
- Status messages to host upon request

## ZD410 SPECIFICATIONS (continued)

### ZPL FONT SPECIFICATIONS 203 DPI (8 DOTS/MM)

Font	Matrix (in dots) (H x W)	Type*	Minimum Char. Size (H x W)	Maximum C.P.I.
A	9 x 5	U-L-D	.044" x .030"	33.3
B	11 x 7	U	.054" x .044"	22.7
C,D	18 x 10	U-L-D	.089" x .059"	16.9
E	28 x 15	OCR-B	.138" x .098"	10.2
F	26 x 13	U-L-D	.128" x .079"	12.7
G	60 x 40	U-L-D	.295" x .236"	4.2
H	21 x 13	OCR-A	.103" x .093"	10.8
GS	24 x 24	SYMBOL	.118" x .118"	8.5
P-V		U-L-D	Backward compatible w/ S-300 Scalable (Smooth) Font	
Ø	15 x 12	U-L-D		

\*U = upper case, L = lower case, D = descenders

### ZPL FONT SPECIFICATIONS 300 DPI (12 DOTS/MM)

Font	Matrix (in dots) (H x W)	Type*	Minimum Char. Size (H x W)	Maximum C.P.I.
A	9 x 5	U-L-D	.030" x .020"	50.8
B	11 x 7	U	.037" x .030"	33.8
C,D	18 x 10	U-L-D	.060" x .040"	25.4
E	42 x 20	OCR-B	.138" x .085"	11.5
F	26 x 13	U-L-D	.085" x .053"	19.06
G	60 x 40	U-L-D	.200" x .160"	6.36
H	30 x 19	OCR-A	.100" x .098"	10.02
GS	24 x 24	SYMBOL	.80" x .80"	12.7
P-V		U-L-D	Scalable (Smooth) Font	
Ø	15 x 12	U-L-D		

- Character Fonts: Standard bitmapped Zebra fonts: A, B, C, D, E (OCR-B), F, G, H, (OCR-A), GS, P, Q, R, S, T, U, V & Ø Smooth font (CG Triumvirate™ Bold Condensed\*)
- Supports user-defined fonts and graphics, including custom logos  
Bitmap fonts are expandable up to 10 times, height and width independent. Fonts E and H (OCR-B and OCR-A), however, are not considered in spec when expanded
- Smooth scalable font Ø (CG Triumvirate Bold Condensed\*) is expandable dot-by-dot, height and width independent, while maintaining edges to a max. 1500 x 1500 dots
- Printers sold in China include the Simplified Chinese SimSun font pre-installed
- 64 MB user available non-volatile memory storage for downloadable objects
- 8 MB user-available SDRAM

\* Contains UFST® from Agfa Monotype Corporation

### ZPL BARCODE SYMBOLOGIES

- Barcode ratios:** 2:1 (non-rotated) and 3:1
- Linear barcodes:** Code 11, Code 39, Code 93, Code 128, UPC-A, UPC-E, EAN-8, EAN-13, EAN-14, UPC-A and UPC-E with EAN 2 or 5 digit extensions, Plessey, POSTNET, Standard 2 of 5, Industrial 2 of 5, Interleaved 2 of 5, LOGMARS, MSI, Codabar, and GS1 DataBar (formerly RSS)
- 2-dimensional barcodes:** PDF417, MicroPDF-417, Code 49, Maxicode, Codablock, Data Matrix, QR code, and Aztec

### EPL PROGRAMMING LANGUAGE (EPL2)

- ASCII EPL2 programming language (Page Mode)
- Field Rotations
- Variable field support (up to 100)
- Counter support (up to 10)
- Variable field addition and subtraction
- Status reporting
- Form, fonts and graphics storage
- Simple set of formatting commands
- Support of selected barcode

### FONT SPECIFICATIONS

Type	Width	Height	SP	CPI	Chars
Font1	8	12	2	20.3	160
Font2	10	16	2	16.9	160
Font3	12	20	2	4.5	160
Font4	14	24	2	12.7	160
Font5	32	48	4	5.6	80

### EPL BARCODES SYMBOLOGIES

- Linear barcodes:** Code 39, Code 128A, B & C (User selectable/Auto), UCC/EAN-128, Code 93, Codabar, Interleaved 2 of 5, UPC-A, UPC-E, UPC-A with 2 and 5 add on, UPC-E with 2 and 5 add on, EAN 13, EAN 8, EAN 13 with 2 and 5 add on, EAN 8 with 2 and 5 add on, Postnet (5, 9, 11, & 13 digit) Japanese Postnet, Plessey (MSI-1), MSI-3, German Post Code, RSS-14 (limited, truncated, stacked)
- 2-dimensional barcodes:** Maxicode (modes 2,3,4,6), PDF417 (MicroPDF417 and MacroPDF417), Data Matrix

### CODE PAGES SUPPORTED

- DOS: 437, 850, 851, 852, 855, 857, 860, 861, 862, 863, 865, 866, 869, 737, Big 5, GB2312, GB18030
- Windows: 1250, 1251, 1252, 1253, 1254, 1255, 1256, and 1257

### INTERFACE/CONNECTIVITY TYPES

- Auto-sensing Serial – RS232:
  - Software selectable
    - baud rate (default 9600)
    - parity (default none)
    - data length (default 8)
    - stop bit (default 1)
  - Flow control – hardware and software
  - Connector: DB-9 Type: 9 pin D Sub connector female (standard)
  - Includes +5 VDC- 160 mA power output capability
- Wireless - factory installed option
  - Wi-Fi 802.11ac
  - Bluetooth 4.1
- USB:
  - Version 2.0 full speed, bi-directional
  - Supported in Win98 and Win98SE, Win Me and Windows 2000 platforms
  - Connector – Type B Female
- Internal 10/100 Ethernet – factory or field installable option

### ELECTRICAL SPECIFICATIONS

- Auto-ranging external power supply with C13 type connector
- Output: 24 VDC, 3.125A
- Input: 100-240 VAC, 50-60 Hz
- ENERGY STAR 2.0 qualified
- Healthcare models include IEC 60601-1 certified power supply

### AGENCY APPROVALS

- IEC 60950-1, EN55022 Class B, EN55024, EN61000-3-2, EN61000-3-3, FCC Class B, ICES-003, FCC 15.209; 15.247(d), IC RSS 247, EN 300 328, EN 301 893, EN 62311, cTUVus
- CE Marking, VCCI, C-Tick, S-Mark, CCC, CU, BSMI, KCC, SABS, IN-Metro, BIS, NOM.

## ZD410 SPECIFICATIONS (continued)

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### PHYSICAL SPECIFICATIONS

<b>Height:</b> 6.0" (151 mm)	<b>Depth:</b> 8.6" (220 mm)
<b>Width:</b> 4.5" (115 mm)	<b>Weight:</b> 2.2 lbs (1.0 kg)

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### OPERATING ENVIRONMENT

- Operating Temperature: 40°F to 105°F; (5°C to 41°C)
- Storage Temperature: -40°F to 140°F; (-40°C to 60°C)
- Operating Humidity: 10% to 90% non-condensing
- Storage Humidity: 5% to 95% non-condensing

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### PREVENTATIVE MAINTENANCE

Zebra recommends cleaning the printer on a regular basis using standard Zebra cleaning supplies. Refer to the User's Guide for more details.

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### CLEANING

The exterior is cleaned with a lint-free cloth, and if necessary, a mild detergent solution or desktop cleaner can be used. Interior components (printhead, platen, media path, and dispenser bar) are cleaned with alcohol or blown air.

For healthcare models refer to Zebra Guide to Disinfecting and Cleaning for a full list of Zebra approved cleaning agents.

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### MEDIA REGISTRATION

Media registration and minimum label length are affected by media type, width and print speed. Performance improves as these factors are optimized. Zebra recommends always qualifying any application with prior testing.

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**NA and Corporate Headquarters**  
+1 800 423 0442  
inquiry4@zebra.com

**Asia-Pacific Headquarters**  
+65 6858 0722  
contact.apac@zebra.com

**EMEA Headquarters**  
zebra.com/locations  
contact.emea@zebra.com

**Latin America Headquarters**  
+1 847 955 2283  
la.contactme@zebra.com