ZD420 Specifications

STANDARD FEATURES

- 6 ips maximum print speed
- ZPL II and EPL2™ programming languages
- Connectivity: USB 2.0, Bluetooth Low Energy and USB Host
- OpenACCESS™ design for easy media loading
- 203 dpi print resolution (8 dots/mm)
- 4.09” (104 mm) print width
- Direct thermal and thermal transfer 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™-enabled
- 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, lineder 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
- Connectivity Options
  - Field installable Ethernet – 10/100 internal
  - Field installable RS-232 auto-sensing Serial interface, DB-9
  - Factory installed wireless – Wi-Fi certified 802.11ac and Bluetooth 4.1, MFI-certified (Apple)

ACCESSORIES

- ZKDU™ – keyboard display unit for ZPL
- Mounting adapter plate
- Optional media core adapters are available to accommodate 1.5”, 2” and 3” core sizes

LINK-OS™ SOLUTIONS

Software

- Document Design – Quickly design a customized print solution using your business data and Zebra’s intuitive, plug-and-print design tools
- Printer Integration – Zebra offers apps and products designed to help you integrate Zebra devices into your existing systems
- Printer Management – Manage your print operations locally and globally with Zebra’s suite of device management tools
- Developer Tools – Provides you with the tools you need to create your own apps, including documentation, source code, programming languages, templates and more
- Zebra Setup Utility – Single printer configuration utility

Firmware

- ZPL II – Universal language for Zebra printers. Simplifies label formatting and enables format compatibility with existing systems that run Zebra printers
- EPL2 – Eltron Programming Language simplifies label formatting and enables format compatibility with legacy applications
- Web View – Connect and control Zebra barcode printers via the printer’s Web interface using a common Web browser (ZPL mode)

PRINTING SPECIFICATIONS

<table>
<thead>
<tr>
<th>Resolution</th>
<th>203 dots/inch (dpi)</th>
<th>300 dots/inch (dpi)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Speed &amp; inch/sec - ips (mm/sec)</td>
<td>Programmable 2, 3, 4, 5 or 6 max. (51, 76, 102, 127 with max. 152)</td>
<td>Programmable 2, 3 or 4 max. (51, 76, with max. 102)</td>
</tr>
<tr>
<td>Dot pitch</td>
<td>0.0049” (0.13 mm)</td>
<td>0.0033” (0.085 mm)</td>
</tr>
<tr>
<td>Max. print length</td>
<td>39.0” (991 mm)</td>
<td>39.0” (991 mm)</td>
</tr>
<tr>
<td>Min. print length</td>
<td>One dot</td>
<td>One dot</td>
</tr>
<tr>
<td>Max. print width</td>
<td>4.09” (104 mm)</td>
<td>4.09” (104 mm)</td>
</tr>
<tr>
<td>Min. print width</td>
<td>One dot</td>
<td>One dot</td>
</tr>
</tbody>
</table>

MEDIA SPECIFICATIONS

- Media width: 0.585 – 4.65” (15 - 118 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 adapter kit - 1.5” (38.1 mm), 2.0” (50.8 mm), 3” (76 mm)
- Max roll outer diameter – 5.00” (127 mm)
- Media thickness – 0.003” (0.08 mm) min, 0.0075” (0.1905 mm) max
- Media sensing – gap, black line, notch
- Media type:
  - Roll-fed or fan-fold
  - Label stock (die cut or continuous, direct thermal or thermal transfer)
  - Tag stock (die cut or continuous, direct thermal or thermal transfer)
  - Receipt paper (continuous, direct thermal)
  - Wristband stock (direct thermal or thermal transfer) (Z-Band 4000)

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
**TECHNICAL SPECIFICATIONS**

**ZD420 SPECIFICATIONS (continued)**

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

<table>
<thead>
<tr>
<th>Font</th>
<th>Matrix (in dots) (H x W)</th>
<th>Type*</th>
<th>Minimum Char. Size (H x W)</th>
<th>Maximum CPI</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>9 x 5</td>
<td>U-L-D</td>
<td>0.44&quot; x 0.30&quot;</td>
<td>33.3</td>
</tr>
<tr>
<td>B</td>
<td>11 x 7</td>
<td>U</td>
<td>0.54&quot; x 0.44&quot;</td>
<td>22.7</td>
</tr>
<tr>
<td>C, D</td>
<td>18 x 10</td>
<td>U-L-D</td>
<td>0.89&quot; x 0.59&quot;</td>
<td>16.9</td>
</tr>
<tr>
<td>E</td>
<td>28 x 15</td>
<td>OCR-B</td>
<td>1.38&quot; x 0.98&quot;</td>
<td>10.2</td>
</tr>
<tr>
<td>F</td>
<td>26 x 13</td>
<td>U-L-D</td>
<td>1.28&quot; x 0.79&quot;</td>
<td>12.7</td>
</tr>
<tr>
<td>G</td>
<td>60 x 40</td>
<td>U-L-D</td>
<td>2.95&quot; x 2.36&quot;</td>
<td>4.2</td>
</tr>
<tr>
<td>H</td>
<td>21 x 13</td>
<td>OCR-A</td>
<td>1.03&quot; x 0.93&quot;</td>
<td>10.8</td>
</tr>
<tr>
<td>GS</td>
<td>24 x 24</td>
<td>SYMBOL</td>
<td>0.18&quot; x 0.18&quot;</td>
<td>8.5</td>
</tr>
<tr>
<td>P-V</td>
<td>15 x 12</td>
<td>U-L-D</td>
<td>Backward compatible w/ S-300 Scalable (Smooth) Font</td>
<td></td>
</tr>
</tbody>
</table>

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

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

<table>
<thead>
<tr>
<th>Font</th>
<th>Matrix (in dots) (H x W)</th>
<th>Type*</th>
<th>Minimum Char. Size (H x W)</th>
<th>Maximum CPI</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>9 x 5</td>
<td>U-L-D</td>
<td>0.30&quot; x 0.20&quot;</td>
<td>50.8</td>
</tr>
<tr>
<td>B</td>
<td>11 x 7</td>
<td>U</td>
<td>0.37&quot; x 0.30&quot;</td>
<td>33.8</td>
</tr>
<tr>
<td>C, D</td>
<td>18 x 10</td>
<td>U-L-D</td>
<td>0.60&quot; x 0.40&quot;</td>
<td>25.4</td>
</tr>
<tr>
<td>E</td>
<td>42 x 20</td>
<td>OCR-B</td>
<td>1.38&quot; x 0.88&quot;</td>
<td>11.5</td>
</tr>
<tr>
<td>F</td>
<td>26 x 13</td>
<td>U-L-D</td>
<td>0.85&quot; x 0.53&quot;</td>
<td>19.06</td>
</tr>
<tr>
<td>G</td>
<td>60 x 40</td>
<td>U-L-D</td>
<td>2.00&quot; x 1.60&quot;</td>
<td>6.36</td>
</tr>
<tr>
<td>H</td>
<td>30 x 19</td>
<td>OCR-A</td>
<td>1.00&quot; x 0.98&quot;</td>
<td>10.02</td>
</tr>
<tr>
<td>GS</td>
<td>24 x 24</td>
<td>SYMBOL</td>
<td>0.80&quot; x 0.80&quot;</td>
<td>12.7</td>
</tr>
<tr>
<td>P-V</td>
<td>15 x 12</td>
<td>U-L-D</td>
<td>Scalable (Smooth) Font</td>
<td></td>
</tr>
</tbody>
</table>

* Contains UFST® from Agfa Monotype Corporation

### 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

### FONTS SPECIFICATIONS

<table>
<thead>
<tr>
<th>Type</th>
<th>Width</th>
<th>Height</th>
<th>SP</th>
<th>CPI</th>
<th>Chars</th>
</tr>
</thead>
<tbody>
<tr>
<td>Font1</td>
<td>8</td>
<td>12</td>
<td>2</td>
<td>20.3</td>
<td>160</td>
</tr>
<tr>
<td>Font2</td>
<td>10</td>
<td>16</td>
<td>2</td>
<td>16.9</td>
<td>160</td>
</tr>
<tr>
<td>Font3</td>
<td>12</td>
<td>20</td>
<td>2</td>
<td>4.5</td>
<td>160</td>
</tr>
<tr>
<td>Font4</td>
<td>14</td>
<td>24</td>
<td>2</td>
<td>12.7</td>
<td>160</td>
</tr>
<tr>
<td>Font5</td>
<td>32</td>
<td>48</td>
<td>4</td>
<td>5.6</td>
<td>80</td>
</tr>
</tbody>
</table>

### 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-14R (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 (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; MFI-certified (Apple)
- 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, Energy Efficiency Level 6 certified
- 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, IECES-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, CE, BSMI, KCC, SABS, In-Metro, BIS, NOM
ZD420 SPECIFICATIONS

PHYSICAL SPECIFICATIONS

Dimensions  10.0 in. L x 8.0 in. W x 7.0 in. H
254 mm L x 202 mm W x 177 mm H
Weight  5.0 lbs / 2.3 kg

OPERATING ENVIRONMENT

Operating Temperature  40ºF to 105ºF (5ºC to 41ºC)
Storage Temperature  -40ºF to 140ºF (-40ºC to 60ºC)
Operating Humidity  10% to 90% non-condensing
Storage Humidity  5% to 95% non-condensing

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.

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 (print head, 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.

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.