

# ZD420™ Printer Specifications

Specifications are provided for reference and are based on printer tests using Zebra brand supplies. Results may vary in actual application settings or when using other than recommended Zebra supplies. Zebra recommends always qualifying any application with thorough testing.

## STANDARD FEATURES

- 6 ips maximum print speed
- ZPL II® and EPL2™ programming languages
- Connectivity: USB 2.0, USB Host. ZD420c also includes Bluetooth Low Energy
- 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 (standard on ribbon cartridge model only). Included on ZD420t with thernet or dual-Wireless SKUs only.
- 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 upgradable
- 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

## 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" ID core sizes.
- Attached power supply

## SOFTWARE

- Zebra Print DNA software, powered by Link-OS. For a full list of applications, utilities and developer tools, visit [www.zebra.com/printdna](http://www.zebra.com/printdna)
- Zebra Basic Interpreter 2.0 (ZBI) allows programs to run directly on the printer
- Set-Get-Do commands to set and get printer configuration details
- 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
- EPL1 – Line Mode available on ZD420d
- Web View – Connect and control Zebra barcode printers via the printer's Web interface using a common Web browser (ZPL mode)

## MEDIA SPECIFICATIONS

- Media Width:
  - ZD420t - 0.585" - 4.65" (15 - 118 mm)
  - ZD420c - 0.585" - 4.65" (15 - 118 mm)
  - ZD420d - 0.585 - 4.25" (15 - 108 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" (0.08mm) min, 0.0075 (0.1905mm) 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)

## PRINTER SPECIFICATIONS

Resolution	203 dpi resolution (8 dots / mm)	300 dpi resolution (12 dots / mm)
<b>Speed inch/Sec - ips (mm/sec)</b>	Programmable 2, 3, 4, 5 or 6 max. (51, 76, 102, 127 with max. 152)	Programmable 2, 3 or 4 max. (51, 76, with max. 102)
<b>Dot Pitch</b>	0.0049" (0.13 mm)	0.0033" (0.085 mm)
<b>Max. Print Length</b>	39.0" (991 mm)	39.0" (991 mm)
<b>Min. Print Length</b>	One Dot	One Dot
<b>Max. Print Width</b>	4.09" (104 mm)	4.27" (108 mm)
<b>Min. Print Width</b>	One Dot	One Dot

## 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

## RIBBON SPECIFICATIONS

	ZD420t ONLY
<b>Ribbon Outside Diameter</b>	2.6"/ 66 mm (300 m); 1.34"/ 34 mm (74 m)
<b>Ribbon Standard Length</b>	984' (300 metre); 244' (74 m)
<b>Ribbon Ratio</b>	• 1:4 media to ribbon (300 m) • 1:1 media to ribbon (74 m)
<b>Ribbon Width</b>	1.33"/ 33.8 mm ~ 4.3"/ 109.2 mm
<b>Ribbon Core I.D.</b>	• 300 m ribbon 1"/ 25.4 mm • 74 m ribbon 0.5"/ 12.7 mm

## FONT SPECIFICATIONS: 203 DPI (8 DOT / MM)

Font	Matrix (in dots) (H x W)	Type†	Minimum Character Size (H x W) in inches (mm)	Max CPI
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	.088 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	20 x 18	U-L-D	Backward compatible w/ S-300 Scalable (Smooth) Font	
Ø	15 x 12	U-L-D		

†U—Uppercase L—Lowercase D—Descenders

- 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

## FONT SPECIFICATIONS: 300 DPI (12 DOT / MM)

Font	Matrix (in dots) (H x W)	Type†	Minimum Character Size (H x W) in inches (mm)	Max CPI
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	28 x 15	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	21 x 13	OCR-A	.100" x .098"	10.02
GS	24 x 24	SYMBOL	.80" x .80"	12.7
P-V	20 x 18	U-L-D	Scalable (Smooth) Font	
Ø	15 x 12	U-L-D		

## 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

## FONTS 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
    - o baud rate (default 9600)
    - o parity (default none)
    - o data length (default 8)
    - o 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; 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 VI 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, 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

## PHYSICAL SPECIFICATIONS

ZD420	
<b>Dimensions</b>	ZD420c ribbon cartridge model <ul style="list-style-type: none"><li>• 10 in. L x 8.0 in. W x 7.0 in. H</li><li>• 254 mm L x 202 mm W x 177 mm H</li></ul> ZD420t ribbon roll model <ul style="list-style-type: none"><li>• 10.5 in. L x 8.0 in. W x 7.5 in. H</li><li>• 267 mm L x 202 mm W x 192 mm H</li></ul> ZD420d direct thermal model <ul style="list-style-type: none"><li>• 8.7 in. L x 7.0 in. W x 5.9 in. H</li><li>• 220 mm L x 177 mm W x 151 mm H</li></ul>
<b>Weight</b>	ZD420c ribbon cartridge model <ul style="list-style-type: none"><li>• 5.0 lbs./2.3 kg</li></ul> ZD420t ribbon roll model <ul style="list-style-type: none"><li>• 5.3 lbx./2.4 kg</li></ul> ZD420d direct thermal model <ul style="list-style-type: none"><li>• 3.6 lbs./1.6 kg</li></ul>

## OPERATING ENVIRONMENT

ZD420	
<b>Operating Temperature</b>	40°F to 105°F (5°C to 41°C)
<b>Storage Temperature</b>	-40°F to 140°F (-40°C to 60°C)
<b>Operating Humidity</b>	10% to 90% non-condensing
<b>Storage Humidity</b>	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 (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.

## MEDIA REGISTRATION

TMedia 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.

For more information, visit [www.zebra.com/zd620](http://www.zebra.com/zd620)



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