Zebra Technologies International, LLC

333 Corporate Woods Parkway
Vernon Hills, IL 60061-3109 USA
T: +1 847 634 6700
F: +1 847 913 8766
www.zebra.com

ZEBRA ZT200 SERIES PRINTER SPECIFICATIONS

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

ZT200 Standard Features

Physical Features

- 203 dpi print resolution (8 dots/mm)
- Thin film print head with $E^{3\circledR}$ Element Energy Control
- Direct thermal printing of bar codes, text, and graphics
- USB 2.0 and RS-232 Serial Ports
- Dual media sensors - transmissive and reflective sensing technology, selectable through software or front panel
- Media supply hanger designed for 1" (25mm) through 3" (76mm) core diameters
- Side loading metal print mechanism with head open lock withstands general wear & tear and facilitates media loading.
- Sleek industrial design simplifies printer operation while providing pleasing styling for commercial applications
  - Robust gold user touch points simplify operation by directing user to key areas for adjustment
  - Bi-Fold media door that decreases overall operating space by 35%
- Printer Construction
  - ZT230: Metal media cover with enlarged clear window: easy to view supplies
  - ZT220: Plastic media cover with large clear window for easy to view supplies

Firmware

- ZPL® or ZPL II® programming language, selectable through software or front panel
- XML Enabled Printing — allows XML communications for barcode label printing, eliminating license fees and printer server hardware and lowering customization and programming costs

Printer Operation

- User Interface
  - ZT230: Multiline graphic LCD display with easy to use keypad for quick and intuitive menu operation, and bi-colored status leds for quick printer status
  - ZT220: simple 3 button keypad with bi-colored status leds for quick printer status
- 32 bit, 400 MHz processor
- 128MB RAM memory (4MB User Available)
- 128MB Flash memory (58 MB User Available)
- Advanced label counters
- Auto calibration—printer calibrates when printer is turned on or when print head is closed using approximately two to three labels

Optional Features

Factory Installed Printer Options

- Thermal Transfer Core-to-Core Ribbon Handling System
- Print head 300 dpi (12 dots/mm)
- A front mount, passive peel option, w/ no take-up spindle
- A front mount guillotine cutter
- Liner Take-Up for ZT230 only, rewinds entire 8" roll of liner (includes peel option)

Connectivity Options (one per printer)

- Internal parallel port option
- ZebraNet® 10/100 Print Server – supports 10/100 Ethernet networks internally integrated option that enables the use of ZebraLink Webview and Alert features.
- ZebraNet® n Printer Server – supports 802.11 a/b/g/n networks via an internally integrated option.

Field Installed Printer Options

- Additional scalable and smooth bitmapped fonts available
- Print head 300 dpi (12 dots/mm)
- A front mount, passive peeler
- A front mount guillotine cutter
- Internal parallel port option
- ZebraNet 10/100 Print Server – supports 10/100 Ethernet networks internally integrated option that enables the use of ZebraLink Webview and Alert features.
- ZebraNet n Printer Server – supports 802.11 a/b/g/n networks via an internally integrated option.
- Real Time Clock (RTC) –date/time for standalone applications
- Keyboard Display Unit (KDU) option – Enter variable data and retrieve stored forms for standalone applications (requires null modem adapter with DB9 serial cable).

ZebraLink Solutions

Software

- **ZebraDesigner Pro** – An intuitive, easy-to-use software program for creating complex label designs (option).
- **ZebraDesigner** – Offers basic features for simple label design
- **ZebraNet Bridge Enterprise** – Centrally manage Zebra printers from a single PC screen anywhere on your global network.
- **Zebra Setup Utility** – fast and simple printer setup and configuration
- **ZebraDesigner printer drivers** – for 32 bit and 64 bit Windows XP, 2008, Vista, Windows 7
- **CUPS Driver -** Linux/Unix drivers available at CUPS.org

Firmware

ZPL II – Universal language for Zebra printers. Simplifies label formatting and enables format compatibility with existing systems that run Zebra printers.

- o **Web View** –Connect and control Zebra bar code printers via the printer's Web interface using a common Web browser.
- o **Alert** – Printers equipped with ZebraNet print servers provide alerts via any email-enabled, wired, or wireless device to minimize downtime.

Printing Specifications

Parameter	203 dpi resolution (8 dots/mm)	300 dpi resolution (12 dots/mm)
Dot size (W x L):	0.0049" x 0.0049" (0.125mm x 0.125mm)	0.0033" x 0.0039" (0.084mm x 0.099mm)
Maximum continuous media print length	157" 3988mm	73" 1854mm
Maximum print width	4.09" (104mm)	4.09" (104mm)
Programmable print speeds	2.0" (51mm) through 6" (152 mm) per second in 1" increments	2.0" (51mm) through 6" (152 mm) per second in 1" increments

- First dot location measured from inside media backing edge: 0.10" ±.04" (2.5mm, not to exceed -.5mm +1.0mm)
- Media registration tolerance:
  - o Vertical = < ±0.039" (±1.0mm) on non-continuous media
  - o Horizontal = < ±0.039" (±1.0mm) within a roll of media

Media Specifications

- Media types:
  - o Continuous, die-cut, notch, black-mark
- Maximum non-continuous label length:
  - o 39" (991mm)
- Media web width (label and liner):
  - o 0.75" (19.4mm) to 4.50" (114mm)
- Minimum label length:
  - o Tear-off mode: 0.7" (17.8mm)
  - o Peel mode: 0.8" (20.3mm)
  - o Cutter: 1.0" (25.4mm)
- Media thickness (label and liner):
  - o 0.003" (0.076mm) to 0.010" (0.25mm)
- Maximum media roll dimensions:
  - o 8.0" (203mm) O.D. on a 3" (76mm) I.D. core
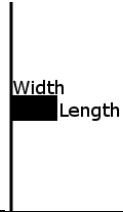 - o 6.0" (152mm) O.D. on a 1" (25mm) I.D. core

Gap and notch sensing standards:

Parameter	Standard dimensions	Metric dimensions
Inter-label gap	0.079" – 0.157", preferably 0.118"	2 - 4mm, preferably 3mm
Sensing notch* (W x L)	0.25" x 0.12"	6mm x 3mm
Sensing hole*	0.125" diameter	3mm diameter

* Note: Notch & Hole Position centered from 0.15" to 2.25" from media inner edge

- Fixed transmissive sensor location:
  - o 7/16" from media inner edge

Black mark sensing standards:

Parameter	Standard dimensions	Metric dimensions
Black mark length	0.098" - 0.453"	2.5mm - 11.5mm
Black mark width	≥ 0.37"	≥ 9.5mm
Black mark location (within inside media edge)	0.040"	1mm

- Black mark density: > 1.0 Optical Density Units (ODU)
  - o Maximum media density: 0.3 ODU

Ribbon Specifications (Thermal Transfer Option Only)

- Ribbon width: 1.57" (40mm) to 4.33" (110mm)
- Maximum ribbon lengths:
  - ZT230: 1476' (450m)
  - ZT220: 984' (300m)
- Maximum ribbon roll size:
  - 300m: 2.7" (68.6mm) O.D. on a 1.0" (25.4mm) I.D. core
  - 450m: 3.2" (81.3mm) O.D. on a 1.0" (25.4mm) I.D. core
- Ribbon wound ink-side out

Standard Printer Fonts (ZPL firmware)

- Fonts A, B, C, D, E, F, G, H, and GS are expandable up to 10 times, height and width independently. However, fonts E and H (OCR-A and OCR-B) are not considered ―in-spec" when expanded.
- The scalable smooth font 0 (CG Triumvirate™ Bold Condensed) is expandable on a dot-by-dot basis, height and width independent, while maintaining smooth edges. Maximum character size depends on available memory.
- IBM Code Page 850 international character sets are available in the fonts A, B, C, D, E, F, G, and 0 through software control.

Font Matrices for 8 dot/mm (203 DPI) Print heads

Font	Matrix			Type*	Character Size					
					Inches			Millimeters		
	Height	Width	Inter-character Gap		Height	Width	Char/inch	Height	Width	Char/inch
A	9	5	1	U-L-D	0.044	0.029	33.90	1.13	0.75	1.33
B	11	7	2	U	0.054	0.044	22.60	1.38	1.13	0.89
C,D	18	10	2	U-L-D	0.088	0.059	16.95	2.25	1.50	0.67
E	28	15	5	OCR-B	0.138	0.098	10.17	3.50	2.50	0.40
F	26	13	3	U-L-D	0.128	0.079	12.71	3.25	2.00	0.50
G	60	40	8	U-L-D	0.295	0.236	4.24	7.50	6.00	0.17
H	21	13	6	OCR-A	0.103	0.093	10.71	2.63	2.38	0.42
GS	24	24	0	SYMBOL	0.118	0.118	8.48	3.00	3.00	0.33
P	20	18	N/A	U-L-D	.098	.089	N/A	2.49	2.26	N/A
Q	28	24	N/A	U-L-D	.138	.118	N/A	3.51	2.99	N/A
R	35	31	N/A	U-L-D	.172	.153	N/A	4.37	3.89	N/A
S	40	35	N/A	U-L-D	.197	.172	N/A	5.00	4.37	N/A
T	48	42	N/A	U-L-D	.236	.207	N/A	5.99	5.26	N/A
U	59	53	N/A	U-L-D	.290	.261	N/A	7.37	6.63	N/A
V	80	71	N/A	U-L-D	.394	.349	N/A	10.0	8.86	N/A
0	Default: 15 x 12			U-L-D	Scalable					
*U = Uppercase, L = Lowercase, D = Descenders										

Font Matrices for 12 dot/mm (300 DPI) Print heads

Font	Matrix			Type*	Character Size					
					Inches			Millimeters		
	Height	Width	Inter-character Gap		Height	Width	Char/inch	Height	Width	Char/inch
A	9	5	1	U-L-D	.030	0.020	50.00	0.76	0.51	1.97
B	11	7	2	U	.037	0.030	33.33	0.93	0.76	1.31
C,D	18	10	2	U-L-D	.060	0.040	25.00	1.53	1.02	0.98
E	41	20	6	OCR-B	.137	0.087	11.54	3.47	2.20	0.45
F	26	13	3	U-L-D	.087	0.053	18.75	2.20	1.36	0.74
G	60	40	8	U-L-D	.200	0.160	6.25	5.08	4.07	0.25
H	30	19	9	OCR-A	.100	0.093	10.71	2.54	2.37	0.42
GS	24	24	0	SYMBOL	.080	0.080	12.50	2.03	2.03	0.49
P	20	18	N/A	U-L-D	.098	.089	N/A	2.49	2.26	N/A
Q	28	24	N/A	U-L-D	.138	.118	N/A	3.51	2.99	N/A
R	35	31	N/A	U-L-D	.172	.153	N/A	4.37	3.89	N/A
S	40	35	N/A	U-L-D	.197	.172	N/A	5.00	4.37	N/A
T	48	42	N/A	U-L-D	.236	.207	N/A	5.99	5.26	N/A
U	59	53	N/A	U-L-D	.290	.261	N/A	7.37	6.63	N/A
V	80	71	N/A	U-L-D	.394	.349	N/A	10.0	8.86	N/A
0	Default: 15 x 12			U-L-D	Scalable					
*U = Uppercase, L = Lowercase, D = Descenders										

Bar Code Symbologies & Specifications

(ZPL Only)

- Bar code modulus "X" dimension:
  - Picket fence (non-rotated) orientation:
    - 203 dpi = 4.9 mil to 49 mil
    - 300 dpi = 3.3 mil to 33 mil
  - Ladder (rotated) orientation:
    - 203 dpi = 4.9 mil to 49 mil
    - 300 dpi = 3.9 mil to 39 mil
- Bar code ratios – 2:1, 7:3, 5:2, & 3:1
- Linear bar codes: Code 11, Code 39, Code 93, Code 128 with subsets A/B/C and UCC Case Codes, ISBT-128, UPC-A, UPC-E, EAN-8, EAN-13, UPC and EAN 2-or 5-digit extensions, Plessey, Postnet, Standard 2-of-5, Industrial 2-of-5, Interleaved 2-of-5, Logmars, MSI, Codabar and Planet Code
- 2-dimensional bar codes: Codablock, PDF417, Code 49, DataMatrix, MaxiCode, QR Code, TLC 39, MicroPDF, RSS-14 (and composite), Aztec

Zebra Programming Language (ZPL/ZPL II)®

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

Communications Specifications

- USB 2.0, high-speed
- High-speed serial interfaces
  - RS-232C, with DB9F connector
  - Configurable baud rate (4800 – 115,200kB), parity, and data bits. Stop bits at 1 or 2.
  - Software (XON/XOFF), hardware (DTR/DSR, or RTS/CTS) communication handshake protocols
- Bi-directional parallel interface
- ZebraNet® 10/100 Print Server – supports 10/100 Ethernet networks internally integrated option that enables the use of ZebraLink Webview and Alert features.
- ZebraNet® n Printer Server – supports 802.11 a/b/g/n networks via an internally integrate option.

Electrical Specifications

- Energy Star certified auto-detectable 90-265VAC, 48-62 Hz, 100 W Power Supply
- Agency approvals: IEC 60950, EN 55022 Class B, EN55024, EN 61000-3-2, EN 61000-3-3.
- Product Markings: UL, CE Marking, FCC-B, ICES-003, VCCI, C-Tick, NOM, IRAM, CCC, GOST-R, BSMI

Physical Specifications

Parameter	ZT230	ZT220
Height:	10.9 in (277mm)	11.0 in (280mm)
Width:	9.5 in (242mm)	9.4 in (239mm)
Depth:	17 in (432mm)	17 in (432mm)
Weight:	20 lb (9.1 Kg)	17lb (7.8 Kg)
Shipping Weight:	25 lb (11.4 Kg)	22 lb (10 Kg)

Environmental Specifications

- Operating environment:
  - Thermal transfer = 40º to 104ºF (5º to 40ºC)
  - Thermal direct = 32º to 104ºF (0º to 40ºC)
  - 20% to 85% non-condensing R.H.
- Storage/Transportation environment:
  - -40º to 140ºF (-40º to 60ºC)
  - 5% to 85% non-condensing R.H.

Preventative Maintenance

Zebra recommends cleaning the printer on a regular basis using standard Zebra printer parts and cleaning supplies. Consult your *User's Guide* for further details.

- **Cleaning:**
  The exterior is cleaned with a lint-free cloth, and if necessary, a mild detergent solution or desktop cleaner. Interior components (print head, platen roller, media sensor, peel bar, ribbon and media paths) are cleaned with alcohol or blown air to remove any particles.

- **Lubrication:**
  All mechanical parts are self-lubricating and do not require additional lubrication.

- **Print Registration:**
  Media registration and minimum label length are affected by media type and width, ribbon type and print speed. Performance improves as these factors are optimized. Zebra recommends always qualifying any application with thorough testing.

- **Print head Replacement:**
  For optimal printing quality and proper printer performance across our product line, Zebra strongly recommends the use of genuine Zebra™ supplies as part of the total solution. Specifically, the ZT230 and ZT220 printers are designed to work only with genuine Zebra™ print heads, thus maximizing safety and print quality.