

ZT231 Industrial Printer

Smart features. Small investment. Big payoff.

Demands are rising and timelines are shrinking. Do you have the printing capabilities to keep up – without interruption? The ZT231 delivers the winning combination of the right features at the right price, along with the long-lasting quality you expect from Zebra. Fast print speeds, high-resolution print quality, large color touchscreen, future-forward design and more – all in one space-saving footprint. Plus, add optional capabilities like RFID, wireless connectivity and media handling features when you need them. But that's not all. Get built-in intelligence to make your work easier, and unmatched security so nothing stands in your way. That's how Zebra defines value.



Get More Value with Zebra

Simple Operation with Smart Features

Reduce training time with the ZT231's easy-to-use 4.3" full-color touchscreen. See status at a glance, access wizards and helpful how-to videos and make changes with the touch of a finger or gloved hand. Seamlessly integrate the ZT231 into your existing network as it is backwards compatible and features Printer Emulations to replace other brands without having to change label formats or rewrite code.

Make It Easy for Your IT Team

Take advantage of Zebra's robust, ever growing Print DNA™ software suite for added capabilities. Easily configure, troubleshoot and manage your printers onsite or remotely via a web-based dashboard. Compare your printer security settings against best practices and adjust to match your preferences, while protecting your data from vulnerabilities.

The Smart Choice Now and Later

The benefits of buying a ZT231 don't end at the point of purchase. Expand your printer's capabilities with field-installable upgrades when you need them. Add options such as a cutter or peeler, wireless connectivity or even UHF RFID encoding.

Built to Perform. Engineered to Endure.

Don't Compromise on Quality

With a durable metal frame, the ZT231 is ideal for light industrial environments. Print crisp text and barcodes with optional 300 dpi resolution. Advance your label throughput with industry-leading print speeds up to 12 ips at 203 dpi. Be confident knowing you're backed by Zebra, the #1 leader in barcode printing.



Expect more. More value. More features. More for your budget.

For more information, please visit www.zebra.com/zt231

Get More Done with Greater Visibility

The ZT231 includes an all-new architecture to process more jobs at once and evolve with emerging technologies. Onboard analytics and printhead element out detection help you plan maintenance in advance. And, the easy tool-less platen and print head removal makes maintenance easy.

Small Footprint, Big Access

To help you make the most of your workspace, we've engineered the ZT231 with a space-saving, compact design and bi-fold door that reduces the height needed to open your printer. Take the trouble out of media loading with an intuitive design and color-coded cues. Adjustable sensors offer greater media flexibility and the large ribbon roll capacity lets you change media less frequently.

Connect Your Way

Take advantage of a variety of standard connectivity options including USB, Serial, Ethernet and USB Host. Tap to pair and print with compatible mobile devices with the Print Touch tag (NFC). Add a second Ethernet port, 802.11ac or an Applicator port.

Get RFID Without Complication

Incorporate UHF RFID printing and encoding* for greater visibility and tracking. Get greater media flexibility and simple RFID calibration with Zebra's adaptive encoding technology that eliminates complex placement guidelines.

Software That Gives You a Serious Advantage

Update, Troubleshoot and Monitor – All from a Single Location

With Zebra's Printer Profile Manager Enterprise, part of Print DNA, you can easily manage, secure and troubleshoot your networked printers from any location. And an intuitive browser-based interface lets you see status at a glance, quickly triage issues to minimize downtime and perform updates and maintenance.

Unparalleled, Peace-of-Mind Printer Security

Security risks are real and costly. Endpoints are becoming popular targets – including networked thermal printers. Shield yourself from cyber attacks with Zebra's PrintSecure, part of Print DNA. Easily configure your printers via secure connections, identify vulnerabilities, block unauthorized access and detect events before they happen.

Supplies, Service and Support

Zebra Certified Supplies

Printing supplies provide a digital voice for assets across your supply chain. You rely on them to disseminate critical data throughout your organization. If something goes wrong with your printing supplies, operations are interrupted, productivity suffers and costs rise. That's why we design, produce and rigorously pretest our own line of labels and tags to ensure consistent, optimized performance in your Zebra printer. For industry-leading quality, service and thermal printing expertise, choose Zebra Certified Supplies.

Backed by Zebra's Worldwide Service and Support

Access repair support services anywhere around the globe through Zebra and its trusted network of more than 10,000 partners. Zebra OneCare™ Maintenance Plans provide enhanced coverage that exceeds standard warranty.

Specifications

Markets and Applications

Standard Features

- Print methods: direct-thermal or thermal-transfer
- Construction: metal frame and metal enclosures
- Bi-fold media door with large clear window
- Side-loading supplies path for simplified media and ribbon loading
- Thin film printhead with E3™ Element Energy™ Equalizer for superior print quality
- Three-color LEDs for quick printer status
- 4.3" color resistive touch screen with intuitive menu for quick operation and settings
- Communications: USB 2.0, RS-232 Serial port, 10/100 Ethernet, and USB Host
- ENERGY STAR® certified
- Bluetooth Low Energy (BTLE) technology for enhanced location precision
- ZebraDesigner Essentials – easy label design tool free at www.zebra.com/zebradesigner
- Real-Time Clock (RTC)

Physical Characteristics

Dimensions*	ZT231 Closed: 17 in. L x 9.5 in. W x 11 in. H 432 mm L x 241 mm W x 279 mm H ZT231 with Liner Takeup Unit: 17 in. L x 9.5 in. W x 12.75 in. H 432 mm L x 241 mm W x 324 mm H
Weight	ZT231: 20 lbs./9.1 kg ZT231 with Liner Takeup Unit: 24 lbs./10.9 kg
	*Dimensions are for the base model printer. Consult your salesrepresentative for specifics regarding other configurations.

Printer Specifications

Resolution	203 dpi/8 dots per mm 300 dpi/12 dots per mm (optional)
Memory	256 MB SDRAM memory 256 MB on-board linear Flash memory
Maximum Print Width	4.09 in./104 mm
Maximum Print Speed	12 ips (203 dpi) 8 ips (300 dpi)
Media Sensors	Moveable transmissive and reflective sensors
Maximum Print Length	203 dpi: 157 in/3988 mm 300 dpi: 73in/1854 mm

Media Characteristics

Minimum Label and Liner Length	Tear mode: 0.7 in/18 mm Cutter mode: 1 in/25 mm Peel mode: 0.5 in/13 mm
Media Width	0.75 in./19.4 mm to 4.50 in./114 mm
Media Roll Size	8.0 in./203 mm O.D. on a 3.0 in./76 mm I.D. core 6.0 in./152 mm O.D. on a 1.0 in./25 mm I.D. core
Media Thickness	0.003 in./0.076 mm to 0.010 in./0.25 mm
Media Types	Continuous, die-cut, notch, black mark

Firmware

ZBI 2.0™ — Optional powerful programming language that lets printers run stand-alone applications, connect to peripherals, and much more.
ZPL and ZPL II™ — Zebra Programming Language provides sophisticated label formatting and printer control and is compatible with all Zebra printers.
EPL and EPL2™ — Eltron Programming Language simplifies label formatting and enables format compatibility with legacy applications. (EPL available on 203 dpi models only.)

Barcode Symbologies

Linear Barcodes: 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 with 2 or 5 digit extensions, Plessey, Postnet, Standard 2-of-5, Industrial 2-of-5, Interleaved 2-of-5, Logmars, MSI, Codabar, Planet Code
2D Barcodes: Aztec, Codablock, PDF417, Code 49, Data Matrix, MaxiCode, QR Code, MicroPDF417, TLC 39, RSS-14 (and composite)

Fonts and Graphics

Z7 bitmapped, 1 smooth-scalable (CG Triumvirate™ Bold Condensed) Pre-loaded Unicode™-compliant scalable fonts for EMEA character sets International character sets supporting the following code page: IBM® Code Page 850
Supports user-defined fonts and graphics, including custom logos ZPL II drawing commands including boxes and lines 64 MB user available Flash memory storage for downloadable objects; 32 MB user-available SDRAM

Options and Accessories

Communication

- 802.11ac Wi-Fi option card
- 10/100 Ethernet option card
- Applicator Interface

Media Handling

- Peel — a front-mount, passive-peel with no take-up spindle
- Peel — a front-mount, passive-peel with liner take-up spindle (factory-fit only)
- Cutter — a front-mount guillotine cutter

RFID

- UHF field-installable RFID kit

Keyboard Display Unit

- ZKDU™ keyboard display units for stand-alone printing applications

Managed Print Services (MPS) Made Simple

Our printers offer innovative remote management, analytics and security capabilities that make them the obvious choice for MPS. With the Print DNA software suite, your Zebra MPS provider can remotely manage and optimize your printers, track and automate supplies replenishment and ensure security. For more information, please visit www.zebra.com/managed-print-services

Manufacturing

- Work-in-process
- Product ID/serial numbers
- Packaging labeling
- Receiving/put-away labeling

Transportation and Logistics

- Order picking/packing
- Shipping/receiving
- Cross-docking
- Compliance labeling

Healthcare

- Laboratory labeling
- Blood bank labeling
- Asset tracking
- Unit-dose labeling
- Pharmacy labeling

Retail

- Buy online pick up in store labeling
- Return tagging
- Price labeling
- Shipping labeling

Ribbon Characteristics (Thermal-transfer option only)

Standard Length	1,476 ft./450 m
Width	2 in./51 mm to 4.33 in./110 mm
Core	1.0 in./25.4 mm

Operating Characteristics

Operating Temp.	Thermal transfer: 40°F to 105°F/5° to 40°C Direct thermal: 32°F to 105°F/0° to 40°C
Storage/Transportation Temperature	-40°F to 140°F/-40° to 60°C
Operating Humidity	20% to 85% non-condensing
Storage Humidity	5% to 85% non-condensing
Electrical	Universal auto-ranging (PFC-compliant) power supply 100-240 VAC; 50-60 Hz ENERGY STAR certified
Agency Approvals	IEC 62368-1, EN55022 Class B, EN55024, EN55035, 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, UKCA, VCCI, RCM, S-Mark, CCC, CU EAC, BSMI, KCC, and BIS

Print DNA Software

This printer is supported by our Print DNA suite of software capabilities to get your printer up and running quickly and securely, and enable your printer to evolve with your business needs. Print DNA features may vary by model, and some features may require a license. For more information, please visit www.zebra.com/printdna



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ZT411 Industrial Printer

Specifications are provided for reference and are based on testing the ZT411 printer using genuine Zebra 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

Printing

- Thermal transfer and direct thermal printing
- Thin film printhead with E3™ Element Energy™ Equalizer for superior print quality
- 203 dpi print resolution (8 dots/mm)
- Print speed per second up to 14 in. (356 mm/second)

Communication

- USB 2.0, high speed
- RS-232 Serial (RS-232C with DB9F connector; Configurable baud rate (2400–115,200kb), parity, and data bits. Stop bits at 1 or 2; Software (XON/XOFF), hardware (DTR/DSR or RTS/CTS) communication handshake protocols)
- 10/100 Ethernet: Supports networks internally integrated option that enables the use of Webview and Alert features
- Bluetooth® 4.1 (including Apple®)
- Dual USB Host

Operation

- 4.3 in. color touch display with intuitive menu for quick operation and settings management
- Bi-colored status LEDs for quick printer status
- ARM Cortex A7 processor
- 256 MB RAM memory (8 MB User Available)
- 512 MB Flash memory (64 MB User Available)
- Print Touch application
- Link-OS®-enabled
- Auto-switching 100-240V power supply
- ENERGY STAR® qualified
- Printhead element out detection



Media Support

- Dual media sensors—transmissive and reflective
- 3 in. media supply hanger
- Auto calibration when printer is turned on or when printhead is closed

Design

- Easy, side-loading metal print mechanism
- Tool-less printhead and platen replacement
- Metal media cover with enlarged clear viewing window
- Robust-gold user touch points indicating key adjustments
- Bi-fold media door decreasing overall operating space by 35%

Firmware

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

Optional Features

Printheads/Resolution

- Printhead 203 dpi (8 dots/mm)
- Printhead 300 dpi (12 dots/mm)
- Printhead 600 dpi (24 dots/mm)

Communication

- Parallel (Bi-directional interface)
- Wireless dual radio with 802.11ac Wi-Fi™ and Bluetooth 4.1
- 10/100 Ethernet
- Applicator interface

Media Handling

- **Rewind**—Internally rewinds a full roll of printed labels on 3 in. core, or peels and rewinds liner (factory installed only)
- **Peel**—Choice of two options:
 - Front mount, passive peel option
 - Liner take-up option—Additional full-roll liner take-up spindle accommodates standard printer base
- **Cutter**—Front-mount guillotine cutter and catch tray, operates under software control cutting labels individually, or in strips (not compatible with rewind and peel options)
- 1 in. I.D. Core media supply hanger
- Ink-side-in ribbon supply spindle

Fonts

Asian and other international scalable and smooth bitmapped fonts

Power Cords

US, Europe/UK, Israel, China, Japan, Australia, Argentina, Brazil and Taiwan

RFID

- Fully integrated UHF EPC Gen 2 V2.1/ISO 18000-63 RFID Reader/Encoder
- Prints and encodes tags with a minimum pitch of 0.6 in./16 mm
- Adaptive Encoding Technology simplifies RFID setup and eliminates complex RFID placement guidelines
- Field-installable on-metal RFID kit available for 203 and 300 dpi

ZKDU Keyboard Display Unit

Enter variable data and retrieve stored forms for standalone applications (requires null modem adapter with DB9 serial cable)

Print Specifications

Parameter	203 dpi (8 dots/mm)	300 dpi (12 dots/mm)	600 dpi (24 dots/mm)
Dot Size (W × L):	0.0049 in. × 0.0049 in. (0.125 mm × 0.125 mm)	0.0033 in. × 0.0039 in. (0.084 mm × 0.099 mm)	0.0016 in. × 0.0016 in. (0.042 mm × 0.042 mm)
Maximum Continuous Media Print Length	157 in. (3988 mm)	73 in. (1857 mm)	39 in. (991 mm)
Maximum Print Width	4.09 in. (104 mm)	4.09 in. (104 mm)	4.09 in. (104 mm)
Programmable Print Speeds (per second)	2.4 in. through 14 in. (61 mm–356 mm) in 1 in. increments	2.4 in. through 10 in. (61 mm–254 mm) in 1 in. increments	1.5 in. through 4 in. (38 mm–102 mm) in 1 in. increments

ZBI 2.0™

Field installed via activation key

First Dot Location: Measured from inside media backing edge:
0.10 in. ±0.04 in. (2.5 mm, not to exceed -0.5 mm +1.0 mm)

- Media Registration Tolerance:
 - Vertical = Less ±0.039 in. (±1.0 mm) on non-continuous media
 - Horizontal = Less ±0.039 in. (±1.0 mm) within a roll of media

Media Specifications

- Media Types: Continuous, die-cut, notch, black-mark
- Maximum Label and Liner Length:
 - 39 in. (991 mm) non-continuous—203 dpi, 300 dpi
 - 20 in. (508 mm) non-continuous—600 dpi
- Media Web Width (Label and Liner):
 - 1.00 in. (25.4 mm) to 4.50 in. (114 mm) Tear/Cutter
 - 1.00 in. (25.4 mm) to 4.25 in. (108 mm) Peel/Rewind
- Minimum Label Length:
 - Tear-off mode: 0.5 in. (12.7 mm)
 - Peel mode: 0.5 in. (12.7 mm)
 - Rewind mode: 0.5 in. (12.7 mm)
 - Cutter: 1.00 in. (25.4 mm)
- Media Thickness (Label and Liner):
 - 0.0023 in. (0.058 mm) to 0.010 in. (0.25 mm)
- Maximum Media Roll Dimensions:
 - 8.0 in. (203 mm) O.D. on a 3 in. (76 mm) I.D. core

Programming Language

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

- Fonts: 16 resident expandable ZPL II bitmap and two resident scalable ZPL fonts
- Unicode: For multi-language printing
- Web View: Connect and control Zebra barcode printers via the printer's Web interface using a common Web browser
- Alert: Printers equipped with network connected printers provide alerts via any email-enabled, wired, or wireless device to minimize downtime

Link-OS Software Tools

Document Design—Use your business data to quickly create customized print solutions with 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

ZebraDesigner™ Windows® Driver—Microsoft certified for Windows: (downloadable from www.zebra.com)

Gap/Notch Sensing Standards

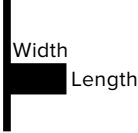
Sensor Adjustment Range: 0.06 in. to 2.81 in. from media inner edge

Parameter	Standard Dimensions	Metric Dimensions
Inter-label Gap	0.079 in. to 0.157 in. preferably 0.118 in.	2 to 4 mm preferably 3 mm
Sensing Notch (W × L)	0.25 in. × 0.12 in.	6 mm × 3 mm
Sensing Hole	0.125 in. diameter	3 mm diameter

Black Mark Sensing Standards

Sensor Adjustment Range: 0.06 in. to 2.81 in. from media inner edge

Parameter	Dimensions
Black Mark Length	0.098 in.–0.453 in. (2.5 mm–11.5 mm)
Black Mark Width	≥0.37 in. (9.5 mm)



- Black Mark Density: Greater than 1.0 Optical Density Units (ODU)
- Maximum Media Density: 0.5 ODU

Ribbon Specifications

- Ribbon Width: 2.00 in. (51 mm) to 4.33 in. (110 mm)
- Maximum Ribbon Length: 1476 ft. (450 m)
- Maximum Ribbon Roll Size: 450 m: 3.2 in. (81.3 mm) O.D. on a 1.0 in. (25.4 mm) I.D. core
- Ribbon Wound Ink-side Out: Ribbon wound ink-side in can be used with the optional ribbon spindle

Eltron Programming Language (EPL2™) (Available on 203 DPI Only)

- Compatible with mainframe, mini, and PC hosts
- Four-position field rotation (0°, 90°, 180°, 270°)
- Variable field support (00 to 99)
- Counter support (up to 10)
- Variable field addition and subtraction
- Status reporting
- Form storage
- Metered print odometer

ZPL Barcode Symbologies and Specification

- Barcode 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
- Barcode Ratios—2:1, 7:3, 5:2 and 3:1
- Linear Barcodes: 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
- 2D Barcodes: Codablock, PDF417, Code 49, Data Matrix, MaxiCode, QR Code, TLC 39, MicroPDF, RSS-14 (and composite), Aztec

Font Matrices: 203 DPI (8 Dots/mm) Printheads

Font	Matrix		Type ^f	Character Size			
	H × W	Inter-Character Gap		Inches		Millimeters	
				H × W	Characters Per	H × W	Characters Per
A	9 × 5	1	U-L-D	.044 × .029	33.90	1.13 × 0.75	1.33
B	11 × 7	2	U	.054 × .044	22.60	1.38 × 1.13	0.89
C, D	18 × 10	2	U-L-D	.088 × .059	16.95	2.25 × 1.50	0.67
E	28 × 15	5	OCR-B	.138 × .098	10.17	3.50 × 2.50	0.40
F	26 × 13	3	U-L-D	.128 × .079	12.71	3.25 × 2.00	0.50
G	60 × 40	8	U-L-D	.295 × .236	4.24	7.50 × 6.00	0.17
H	21 × 13	6	OCR-A	.103 × .093	10.71	2.63 × 2.38	0.42
GS	24 × 24	0	SYMBOL	.118 × .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
Ø	Default: 15 × 12		U-L-D	Scalable			

^f U = Uppercase L = Lowercase D = Descenders

ZPL Printer Fonts

- 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 O (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 O through software control
- Code Page 1250, 1252, 1253, 1254, 1255 Support with font O

*Contains UFST® from Agfa Monotype Corporation

ZPL 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 (0°, 90°, 180°, 270°)
- Slew command
- Programmable label quantities with print, pause, cut control
- Status messages to host upon request

Font Matrices: 300 DPI (12 Dots/mm) Printheads

Font	Matrix		Type [†]	Character Size			
	H × W	Inter-Character Gap		Inches		Millimeters	
				H × W	Characters Per	H × W	Characters Per
A	9 × 5	1	U-L-D	.030 × .020	50.00	0.76 × 0.51	1.97
B	11 × 7	2	U	.037 × .030	33.33	0.93 × 0.76	1.31
C, D	18 × 10	2	U-L-D	.060 × .040	25.00	1.53 × 1.02	0.98
E	41 × 20	6	OCR-B	.137 × .087	11.54	3.47 × 2.20	0.45
F	26 × 13	3	U-L-D	.087 × .053	18.75	2.20 × 1.36	0.74
G	60 × 40	8	U-L-D	.200 × .160	6.25	5.08 × 4.07	0.25
H	30 × 19	9	OCR-A	.100 × .093	10.71	2.54 × 2.37	0.42
GS	24 × 24	0	SYMBOL	.080 × .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
Ø	Default: 15 × 12		U-L-D	Scalable			

[†] U = Uppercase L = Lowercase D = Descenders

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 (printhead, 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.
- **Printhead 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. Printers are designed to work only with genuine Zebra printheads, thus maximizing safety and print quality.

Font Matrices: 600 DPI (24 dots/mm) Printheads

Font	Matrix		Type [†]	Character Size			
	H × W	Inter-Character Gap		Inches		Millimeters	
				H × W	Characters Per	H × W	Characters Per
A	9 × 5	1	U-L-D	.030 × .020	50.00	0.76 × 0.51	1.97
B	11 × 7	2	U	.037 × .030	33.33	0.93 × 0.76	1.31
C, D	18 × 10	2	U-L-D	.060 × .040	25.00	1.53 × 1.02	0.98
E	41 × 20	6	OCR-B	.137 × .087	11.54	3.47 × 2.20	0.45
F	26 × 13	3	U-L-D	.087 × .053	18.75	2.20 × 1.36	0.74
G	60 × 40	8	U-L-D	.200 × .160	6.25	5.08 × 4.07	0.25
H	30 × 19	9	OCR-A	.100 × .093	10.71	2.54 × 2.37	0.42
GS	24 × 24	0	SYMBOL	.080 × .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
Ø	Default: 15 × 12		U-L-D	Scalable			

[†] U = Uppercase L = Lowercase D = Descenders

Environmental Specifications

- Operating Environment:
 - Thermal transfer = 40° to 104°F (5° to 40°C)
 - Thermal direct = 32° to 104°F (0° to 40°C)
 - 20% to 85% non-condensing R.H.
- Storage/Transportation Environment:
 - 40° to 140°F (-40° to 60°C)
 - 5% to 85% non-condensing R.H.

Electrical Specifications

- Power Supply: Auto-detectable (PFC Compliant) 100-240VAC, 50-60Hz
- ENERGY STAR qualified
- Safety and EMC: IEC 62368, Class B, EN 55032, EN 55035, EN 61000-3-2, EN 61000-3-3
- Product Markings: Including, not limited to, cTUVus, CE, FCC, ICES-003(B), VCCI, RCM, NOM, S-Mark, CCC, EAC, BSMI, KCC, SABS, In-Metro, BIS.

Physical Specifications

Parameter	ZT411
Height	12.75 in. (324 mm)
Width	10.6 in. (269 mm)
Depth	19.50 in. (495 mm)
Weight	36 lb (16.33 kg)
Shipping Weight	41 lb (18.59 kg)

Parameter	ZT411 with Full rewind
Height	16.72 in. (425 mm)
Width	10.81 in. (274 mm)
Depth	19.69 in. (500 mm)
Weight	48.7 lb (22.09 kg)
Shipping Weight	53.7 lb (24.35 kg)

For more information, visit www.zebra.com/zt411



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