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ZEBRA LP/TLP 2824-Z™ 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.

Standard Features

- OpenACCESS™ design for easy media loading
- 203 dpi print resolution (8 dots/mm)
- Direct thermal (LP) and Thermal transfer (TLP) printing of bar codes, text, and graphics
- Fully enclosed 5.0" (127mm) media compartment
- Double-walled ABS case construction
- ZPL® or ZPL II® programming language, software selectable
- 32 bit RISC processor
- 8MB Standard SDRAM Memory (4MB available to user)
- 4MB Standard Flash Memory (2.75 available to user)
- Zebra E³ Printhead Energy Control
- Interfaces available: Serial (RS232) and USB (V1.1), or Parallel (Centronics)
- Auto-Calibration
- 16 resident expandable bitmap fonts
- One resident scalable font
- Auto-switching 120V and 240V power supply
- Linear & 2-D bar code symbologies
- Transmissive and reflective media sensing
- Head-up sensor
- Programmable print speeds of 2, 3 and 4 inches/second (ips)
- Standard Tear-off mode feature
- Windows® drivers

Optional Features

- **8MB Flash Memory w/ Real Time Clock**– for a total of 12MB (10.75 available to user) for applications requiring additional levels of memory and time and date information for applications that require date or freshness coding
- **Label Dispenser** – label peel and present with label taken sensor
- **Internal ZebraNet® Print Server II** – enables Ethernet 10Base-T network printing
- **Cutter** – may be used on the following media types with a maximum thickness of 0.007" (0.18mm) and minimum label length of 1.0" (25.4mm)
 - **Continuous Paper** – Most receipt or fax paper is generally acceptable
 - **Label Liner** – Cuts on the liner only. Cutter should not be used to cut through labels as adhesives may cause jams
 - **Tag Stock** – Tag stock is generally acceptable as long as it is no more than 0.07" (0.18mm) thickness
- **Liner-free platen (LP only)** – for use with liner-free media

Accessories

- **Media Adapter Guide (LP only)** – supports wristband media
- **External ZebraNet Print Server II** – Ethernet 10Base-T adapter through parallel port for network printing
- **Font Packs** – Asian and other international font kits

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

ZebraNet Utilities v 7.0 – provides enhanced printing, conversion, and administration capabilities; message management; and more

Zebra Universal Driver – the most powerful driver available from Zebra

Networking Options:

ZebraNet PrintServer II (internal or external)

Firmware:

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

Web View – connect and control Zebra bar code printers via the printer's web interface using a common web browser

Alert – printers equipped with ZebraNet print servers will notify you via any email-enabled, wired, or wireless device to minimize downtime

Printing Specifications

- Resolution: 203 dots/inch (dpi) (8 dots/mm)
- Dot Pitch: 0.0049" (0.125mm)
- Maximum print length: 39.0" (991mm)
- Minimum print length: 0.005" (0.125mm – one dot)
- Maximum print width: 2.2" (56mm)
- Minimum print width: 0.005" (0.125mm – one dot)
- Programmable print speed: 2, 3 and 4 ips (51,76 and 102mm/s)
- Barcode modulus "X" dimension: 203 dpi = 5mil to 50 mil

Ribbon Specifications (TLP model)

NOTE: For optimum print quality and printer performance, use of Zebra genuine ribbon is recommended as well as a notched ribbon core.

- Ribbon Width: 1.33 inches (33.8mm) to 2.24 inches (58mm)
- Ribbon Capacity: 1 roll of 5"OD media is the full ribbon capacity

- Core ID: 0.5" (12.7mm)
- Ribbon OD: 1.36"(35mm)
- Ribbon Length: 244' (74m) using 0.000328" ribbon thickness
- Ribbon Type: wax, wax/resin and resin

Media Specifications

NOTE: For optimum print quality and printer performance, use of Genuine Zebra Supplies is recommended.

- Media Width – 1.00" (25.4mm) - 2.36" (60mm)
- Media Width w/ 2" Media Guide – 0.585" (15mm) - 1.44" (36.6mm)
- Label Length:
Minimum - 0.38" (9.7mm)
Minimum with label taken sensor used - 0.75" (19mm)
Minimum with cutter – 1.0" (25.4mm)
Maximum with standard memory - 39.00" (991mm)
- Core Inner Diameter: 1.00" (25.4mm), 1.5" (38mm)
- Max Roll Diameter: 5.00" (127mm)
- Media Thickness: 0.003" (0.08mm) - 0.007" (0.18mm)
- Media Sensing: gap, black line, notch
- Media Types - roll-fed or fan-fold, die cut or continuous direct thermal labels with or without black mark, tag stock, continuous receipt paper, wristbands, and optional liner-free direct thermal media

Calibration Procedure

- The 2824-Z is equipped with a standard auto-calibration feature that initiates automatically during start-up of the printer - utilizing two to four labels to calibrate for efficient operation and less waste. The printer will also save the new settings in memory until the next calibration is performed.
- A manual calibration procedure can also be performed, if required. Consult your User's Guide for more details on the specific manual calibration steps.

Font Specifications 203 dpi (8 dots/mm)

Fonts	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	various	U-L-D	various	N/A
Ø	15 x 12	U-L-D	Scalable (Smooth) Font	

*U = upper case, L = lower case, 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).
- Character Sets: IBM® Code Page 850 International characters & graphic symbols
- 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
- IBM® Code Page 850 International Characters available in fonts A,B,D,E,F,G and Ø through software control

Bar Code Symbolologies & Specifications

- Bar code ratios: 2:1 (non-rotated) and 3:1
- Linear bar codes: Code 11, Code 39, Code 93, Code 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, RSS-14 (limited, truncated, stacked)
- 2-dimensional bar codes: PDF417, MicroPDF-417, Code 49, Maxicode, Codablock, Data Matrix, QR code, RSS Composite

Zebra 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

Communications Specifications

- Centronics® Parallel (36 Pin) connector ports
- RS-232 Serial interface
- USB V1.1
- Optional internal Ethernet (ZebraNet PrintServer II)

Electrical Specifications

- Auto-detectable (PFC Compliant) 100-240VAC, 50-60Hz

Agency Approvals

- **Emissions:** FCC Part 15, Subpart B, VCCI, C-Tick
- **Emissions and Susceptibility:** (CE): EN55022 Class-B, EN61000-3-2, EN61000-3-3 and EN55024
- **Safety:** CB Scheme IEC 60950:1991 +A1 +A2 +A3 +A4, UL 60950 and C-UL, IRAM, NOM, AAMI

Physical Specifications (no options installed)

	LP 2824-Z	TLP 2824-Z
Height	6.8" (173mm)	7.0" (178mm)
Width:	3.6" (91mm)	5.5" (140mm)
Depth:	7.5" (191mm)	9.5" (241mm)
Weight:	2.7lbs (1.2kg)	3.5lbs (1.6kg)
Shipping Weight:	5.3lbs (2.4kg)	6.1lbs (2.8kg)

Environmental Specifications

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