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ZEBRA MOBILE LINE *QL SERIES/ QL PLUS SERIES* PRINTER SPECIFICATIONS

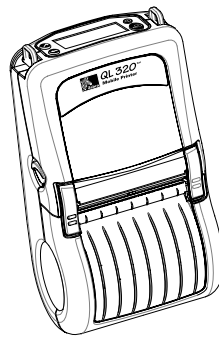
Specifications are provided for reference and are based on printer tests using Zebra brand stock and labels. Results may vary in actual application settings or when using other than recommended Zebra supplies. Zebra recommends always qualifying any application with thorough testing.

Standard Features

- 203 dpi print resolution (8 dots/mm)
- Direct thermal printing of bar codes, text, and graphics
- CPCL programming language
- 2 MB Flash for downloadable programs, receipt formats, scalable fonts and graphics (QL Plus- 4 MB)
- 2 MB SRAM (QL Plus- 8 MB)
- 7.4 V, 2.1 Ahr (QL 220, QL 320) 4.2 Ahr (QL 420) removable, rechargeable Li-Ion battery
- Serial RS-232 (8 Pin) port for 1-way or 2-way communication to terminal or other host up to 115.2 Kbps
- Resident Scaleable Fonts
- Flexible Ordering & Configuration options tailored to meet user's present and future application requirements.
- Fixed transmissive/ reflective (black mark) media sensing
- Print speeds of up to 4 ips (QL 320), up to 3 ips (QL 220, QL 420)
- Tear bar for easy receipt dispensing
- QuickFlip, one step peel and present mode
- Supports vertical or horizontal printing
- Power on/off from printer keys, terminal or host
- Center-loading media locking for variable roll widths
- "Clamshell" design for easy loading
- Rubber-infused plastic housing eliminates need for environmental case
- Tolerance of multiple drops up to 5' to concrete

Optional Features

- Battery Charging Options – include:
 - ⇒ *Fast Charger*- the LI72 series of fast chargers is the recommended charging method. Average charge time is 2-3 hours. LI72 fast chargers have LEDs to clearly indicate battery status during charging.
 - ⇒ *Quad Charger*- the quad charger provides a convenient way to charge up to 4 batteries in a single location. Both the 2.1 Ahr and 4.2 Ahr Li-Ion batteries can be charged in the same unit.
- QuickLink™ Connectivity Options:



- ⇒ Bluetooth
- ⇒ Optional 2.4 GHz, 802.11b, VPN, Kerberos or LEAP functionality (802.11g with WPA2 and 802.11i also available on QL Plus series)
- LCD control panel
- Linerless printing

Additional Features on QL Plus

- ⇒ USB 2.0 full-speed support
- ⇒ VPN, WPA, EPL, XML and ZPL support in the standard firmware application
- ⇒ 4MB Flash, 8 MB RAM
- ⇒ High speed, 32-bit processor

ZebraLink Solutions

Software

Label Vista – Easy-to-use software program for designing label formats.

ZebraNet Bridge Enterprise – Centrally manage Zebra printers from a single PC screen anywhere on your global network.

Zebra Universal Driver – The most powerful driver available from Zebra

Networking Options

Bluetooth wireless

802.11b wireless Local Area Network

Dual Radios-802.11b AND Bluetooth (QL 420 Plus only)

802.11g wireless Local Area Network (QL Plus only)

Firmware

CPCL Native programming language used by Zebra mobile printers.

Emulations – ZPL II and EPL II emulators available as standard.

Printing Specifications

- 203 dpi resolution (8 dots/mm)
- Programmable print speed: up to 4 ips (QL 320), up to 3 ips (QL 220, QL 420)

Media Specifications

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

	QL 220	QL 320	QL 420
Min. Media Wid.	.75" (19.0mm)	1.25" (38.1mm)	2.0" (50.8mm)
Max. Media Width	2.12" (53.9mm)	3.12" (79.3mm)	4.12" (104.6mm)
Max. Print Width	1.9" (48.3mm)	2.9" (72mm)	3.9" (99.1mm)
Max. Media Thickness	6.5 mil	6.5 mil	6.5 mil
Min. Print Length	.5" (12.7mm)	.5" (12.7mm)	.5" (12.7mm)
Max. Print Length	32" (813mm)	30" (762mm)	20" (508mm)
Max. Roll Length	111.11' with 2.4 mil journal	163.47' with 2.4 mil journal	163.47' with 2.4 mil journal
Label Roll ID Core Min.	.75" (19mm)	.75" (19mm)	.75" (19mm)
Label Roll ID Core Max.	1.375" (34.9mm)	1.375" (34.9mm)	1.375" (34.9mm)
Label Roll OD Max.	2.2" (55.88mm)	2.60" (66.0mm)	2.60" (66.0mm)

Printer Control Language

- Communicates in printable ASCII characters
- Compatible with mainframe, mini, and PC hosts
- Downloadable objects include graphics and bitmap Fonts, label templates and formats.
- Label Vista for easy formatting and label design
- Scalable concatenation
- Advanced utilities to manage flash file systems, obtain information about firmware and applications, configure for use in other countries and set operating parameters
- Automatic memory allocation for format while printing
- Automatic serialization of fields
- Automatic print head temperature compensation
- Format inversion (white on black)
- Four position field rotation (0°, 90°, 180°, 270°)
- Power management controls and adjustable sleep mode
- Programmable label odometer with on-demand terminal reporting
- Status messages to host upon request
- Monitor and report battery voltage and temperature
- Easy network and security configuration

Bar Code Symbolologies & Specifications

- **Bar Code Ratios:** 1.5:1, 2:1, 2.5:1, 3:1, 3.5:1
- **Bar code Symbolologies:** Code 39, Code 93, Code 128; Codabar; Interleaved 2 of 5; FIM; Postnet; UPC-A, UPC-E, 2 & 5 digit add-on; EAN-8, 13, 2 & 5 digit add-on; MSI/Plessey; UCC/EAN 128
- **Two-dimensional Bar Codes:** PDF 417 or MaxiCode

Font Specifications: 203 dpi (8 dots/mm)

Fonts	Matrix (in dots) (H x W)	Minimum Char. Size (H x W)	Maximum CPI
0 (Standard)	9 x 8	.044" x .039"	25.4
1 (min.) script	48 x 13	.236" x .064"	15.6
1 (max.) script	48 x 39	.236" x .192"	5.2
2 (OCR-A)	12 x 20	.059" x .099"	10.2
4 Size 0 (min.) Unison	47 x 11	.232" x .054"	18.5
4 Size 0 (max.) Unison	47 x 43	.232" x .212"	4.7
5 Size 0 (min.) Manhattan	24 x 7	.118" x .034"	29
5 Size 0 (max.) Manhattan	24 x 23	.118" x .113"	8.8
6 (MICR)	27 x 28	.133" x .138"	7.3
7 (Warwick)	24 x 12	.118" x .059"	16.9

- Supports pre-scaled and scalable fonts
- Scalable text feature
- Standard resident fonts can be rotated in 90° increments
- Supports user defined fonts and graphics and logos
- Text concatenation to assign different character styles
- Allows text magnification 1-16 times the original size
- Proportional and fixed-width fonts

Communications Specifications

- Serial interface: 8-pin DIN RS-232C port for one-way or two-way communication to terminal or other host up to 115.2 Kbps
- Default Parameters: Baud Rate- 19,200; Parity- None; Data Bits- 8; Stop Bits-1; Handshaking- RTS/CTS
- Software (XON/XOFF) or hardware (RTS/CTS) communication handshake protocols
- Serial Port Pin Definitions:

PIN Number	Signal Name	Signal Type	Description
1	RXD	Input	Receive data into printer
2	TXD	Output	Transmit data out of printer
3	CTS	Input	Clear to send from host
4	RTS	Output	Set high when printer is ready to accept data
5	GND		Signal ground
6	NC		No connect
7	DSR	Input	Turns printer on/off
8	DTR	Output	Set high when printer is on

Electrical Specifications

- Standard Battery:
7.4 V, 2.1 AHr (QL 220, QL 320) 4.2 Ahr (QL 420)
removable, rechargeable Li-Ion battery
Approx. 3000"(75 m) of print stock per charge
- Agency approvals: FCC and CE Class B compliance; design certified by CSA; CB Scheme report; NOM certified; C-Tick clearance

Physical Specifications

(with battery, no options installed)

	QL 220	QL 320	QL 420
Height:	7.15" (181.6mm)	8" (203.2mm)	7.5" (190.5mm)
Width	3.57" (90.77mm)	4.6" (116.8mm)	6.0" (152.4mm)
Depth:	2.96" (75.2mm)	3.1" (78.7mm)	3.0" (76.58mm)
Weight (with battery):	1.04 lbs. (470g)	1.65 lbs. (748g)	2 lbs. (907g)

Environmental Specifications

- Operating temperature range: 5 °F(-15°C) to 122°F (50°C)
- Storage temperature range: -13°F(-25°C) to 158°F (70°C)
- Relative humidity:
 - Operation: 10% to 80% non-condensing
 - Storage: 10% to 90% non-condensing

Preventative Maintenance

Zebra recommends cleaning the *Mobile Line* 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 are cleaned with alcohol or blown air to remove any particles.
- **Battery:**

It is recommended that the battery be fully discharged several times by cycling it (fully charging/ discharging through normal use) to maximize performance.
- **Lubrication:**

All mechanical parts are self-lubricating and do not require additional lubrication.
- **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 thorough testing.