Z Series™

ZM400™ /ZM600™

Thermal Bar Code Printer

Product Guide

ZM400/ZM600 Thermal Bar Code Printer
Product Guide
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I. INTRODUCTION

The Best in Class Just Got Better
Price-competitive, rugged Z Series metal printers have always been the price-performance leaders in their class. Offering 10-inches-per-second print speed, fast throughput, and rugged reliability, these industrial/commercial workhorses enhance productivity in a wide range of warehouse, manufacturing, and business applications. Now, the ZM400™ and ZM600™ printers offer more options to meet an even wider array of applications and needs.

Better Connected for a Connected World:

- Better connected to your customer's network—with a variety of modern connectivity options for easy integration into any network environment: USB 2.0, secure 802.11b/g wireless LAN, or ZebraNet® 10/100 Print Server that allows simultaneous parallel and Ethernet connectivity.

- Better connected to your customer's applications—with built-in RFID Ready investment protection, choice of print resolution including 600 dpi, ink side coated in or out ribbon spindles, and XML-enabled printing.

- Better connected to your customer's needs—with easy setup via a large, easy-to-read, operator friendly front panel that includes Asian-language support; easy loading of supplies; and easy maintenance with quick-changing printheads and platens.

Versatile:
Paired with performance-matched Genuine Zebra Supplies for optimal printing performance, the hardworking ZM400 and ZM600 are perfect for many industries and applications, including:

Work in process	Shipping/receiving
Order fulfillment	Compliance labeling
Distribution	Warehouse management
Transportation/Logistics	Pharmacy/healthcare

Positioning Summary

The ZM400 and ZM600 combine fast print speed, quick throughput and a high duty cycle into a rugged full-sized metal printer designed to enhance productivity. In addition, the Z Series printers' multitude of optional features and flexibility allow it to support most warehouse and business applications. The Z Series Thermal Printers are commercial/industrial workhorses that are the price-performance leaders in their class.

Fast Print Speed and Quick Throughput: The ZM400/ZM600 printer's ability to print fast and print a lot of labels for a long time means these printers can keep up with the needs of the fastest production lines.

Metal Frame and Case: The rugged construction of the ZM400/ZM600 printer makes it suitable for a variety of operating environments.

Multitude of Optional Features & Flexibility:

- Connectivity: While parallel, serial and USB 2.0 connectivity are standard, these printers also support internal 10/100 Ethernet and 802.11b/g wireless Ethernet. In addition, using Ethernet no longer requires the sacrifice of the parallel port.
- Media handling: These printers can be use in a variety of ways, including tear-off, peel and present (with and without liner take-up), full roll rewind for batch operations, and cut mode.
- Programming Language, Memory & Fonts: Of course, these new printers support Zebra's ZPL programming language, which is Unicode™ compliant, and with the addition of optional memory & fonts, are ready for any global printing needs. The ZM400/ZM600 printers also support Zebra's EPL programming language as well as its XML programming solution. They also supports ZebraLink APL technology, allowing the printer to adapt to legacy Intermec environments (APL-I™) or Datamax environments (APL-D™).

Most Applications: Like its legacy replacements, the Z4Mplus and Z6Mplus printers, the new ZM400/ZM600 printers are designed to fit into most applications seamlessly and effortlessly.

Price-Performance Leaders: The ZM400/ZM600 printers are backed with many standard features as well. A large, easy-to-read LCD display that handles 16 different languages (including Japanese, Chinese & Korean), USB 2.0 connectivity, and RFID-Ready for future-proofing your investment are just some of the many.

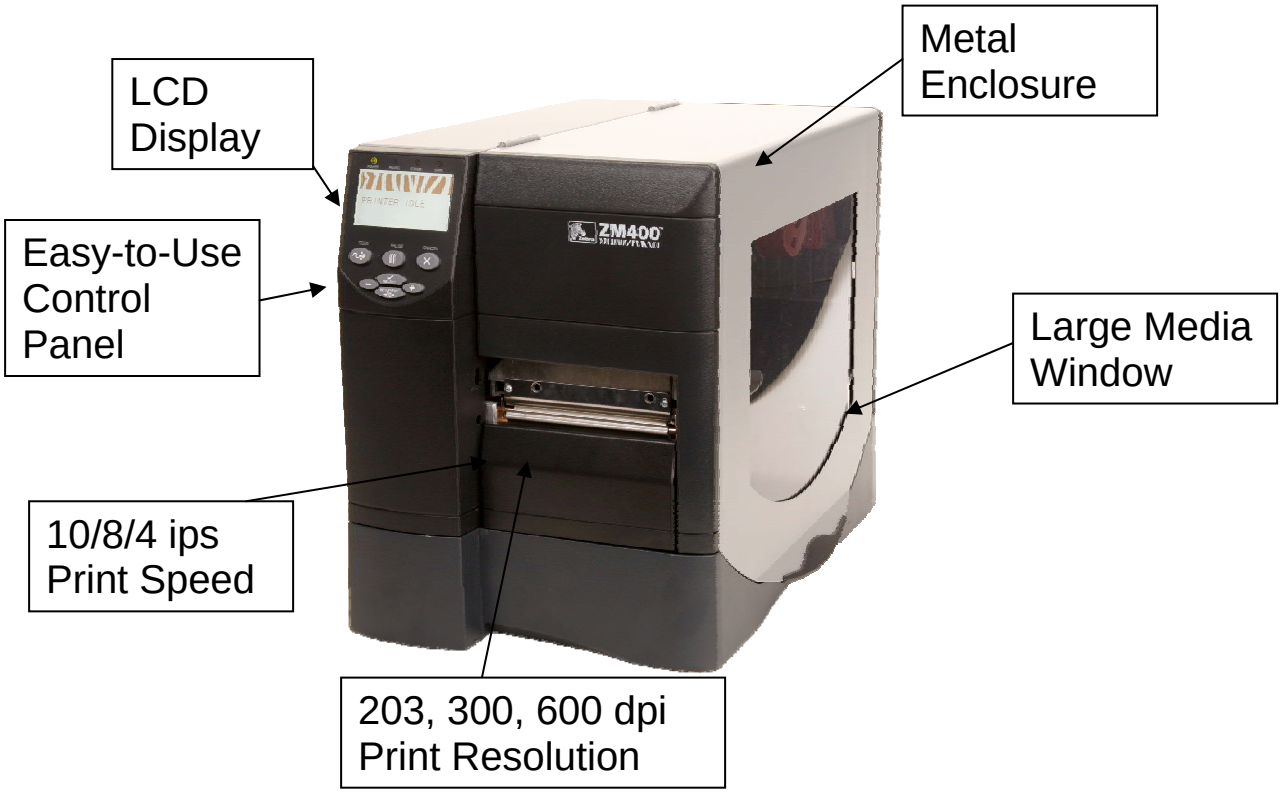
II. TARGET MARKETS AND APPLICATIONS

Given all the standard and optional features available on the ZM400 and ZM600 printers, they are well suited for most applications and vertical markets. Here are just a few:

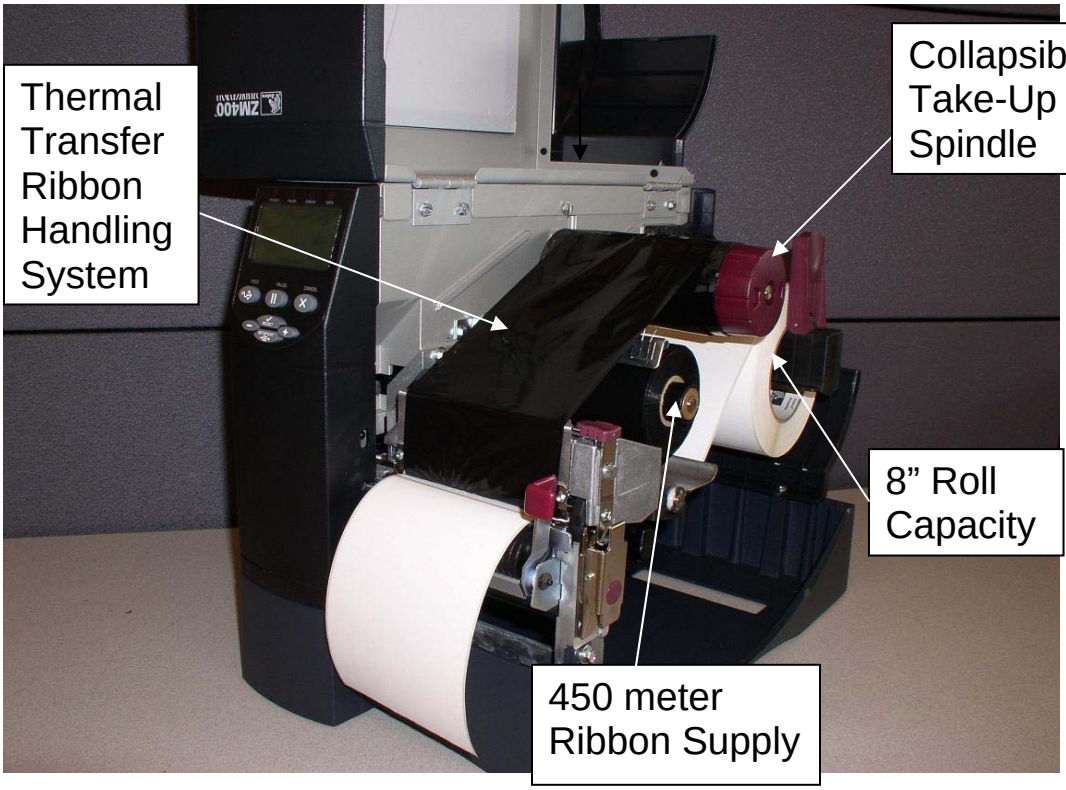
Market Segments	Example Applications
Manufacturing	
Automotive Electronics Aerospace Commercial Products Engineering/Industrial Design	Inventory Control Shipping/Receiving Order Entry Part Labeling Work in Progress Document Identification
	
Logistics	
Distribution Warehousing Third Party Logistics	Pallet/Carton/Product Labeling Shipping/Receiving Labels Inventory management Shelf Labeling Cross-docking labels Shipping Labels
Transportation and Ticketing	
Parcel Delivery Public Transportation Concert/Sporting Events Trains/Airlines Asset Tracking	Shipping/Receiving Ticketing Baggage Handling Receipt Printing

Healthcare	
Hospitals and Clinics Laboratories Pharmacies Medical Instrument Suppliers/Service Managed Care Facilities Back Office	Patient ID Blood Bag Labeling Pharmaceutical Labels Specimens Labelling Document management Patient File Labels Prescription Labeling
	
Postal	
Postal	Tracking Sorting Parcel/Baggage/Package Route
Offices	
Product/Services Law Firms/Insurance Agencies Lead Fulfillment/Mailroom Satellite Office Locations	Document/Labor/Parcel Tracking Record/Mailing Labels Document Identification
Government	
Defense Vehicle Licensing Law Enforcement Police	Asset Tracking Warehouses Inventory Management Document management Driver Records

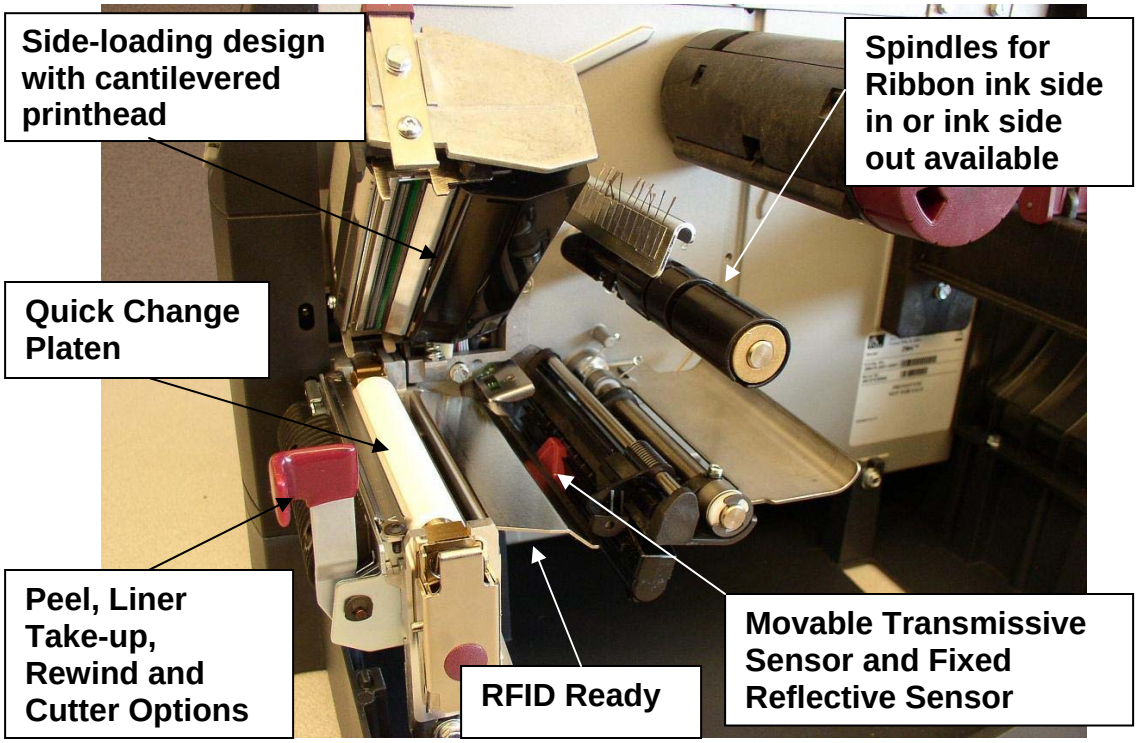
III. PRINTER TOUR WITH KEY BENEFITS



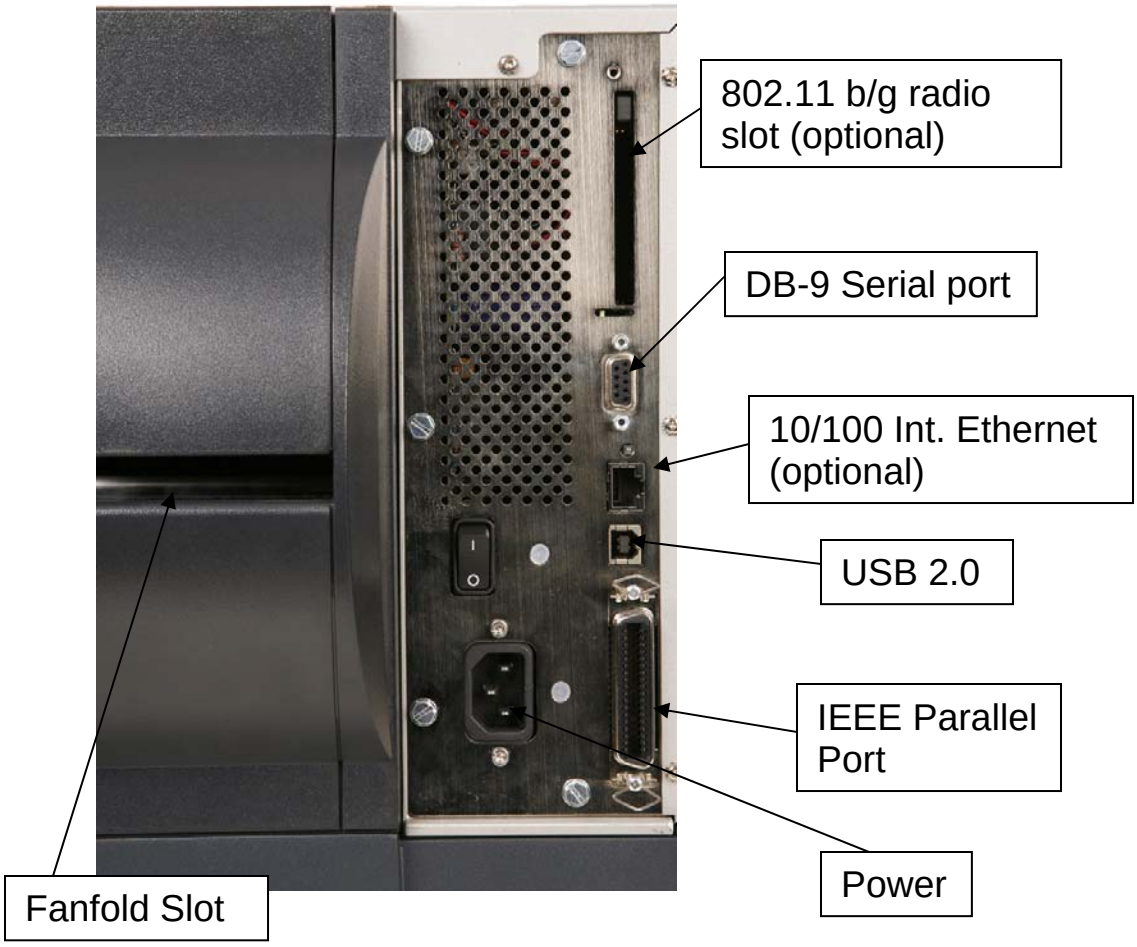
Feature	Benefit
LCD Display	• Large, easy-to-read display means less support requirements with a quick setup time • Easy to make adjustments or to configure the printer • 16 languages for truly global use • New support for Japanese, Chinese and Korean
10/8/4 ips Print Speed	• Industry leading print speed and throughput in its class • 10 ips @ 203 dpi, 8 ips @ 300 dpi, and 4 ips @ 600 dpi
Print Resolution	• Support for 203, 300 and 600 dpi • Flexibility to accommodate application needs • Field-changeable resolution options • 4” 600dpi (available on ZM400 only)
Large Media Window	• Monitor ribbon and media minimizing downtime • Improves customer efficiency and productivity
Metal Enclosure	• Low total cost of ownership • Reliability and dependability in various operating environments
Zebra Reliable Zebra Dependable	• Reduced downtime means improved productivity • Lower cost of ownership



Feature	Benefit
Thermal Transfer Ribbon Handling System	• Fits into both direct thermal and thermal transfer applications • Produce more durable and longer lasting images on a wide variety of thermal transfer media
450 Meter Ribbon Supply	• Reduces downtime by supporting a 3 to 1 media to ribbon ratio
8” Roll Capacity	• Reduces downtime by supporting full size media roll
Collapsible Take-Up Spindle	• Quick and easy ribbon change • No need to buy or save ribbon cores
Programming Languages Supported: ZPL, EPL, APL-I, APL-D, XML	• No need to switch from existing language • Easy to convert to Zebra printer without changing code • XML Support for direct connect to popular ERP systems such as Oracle WMS.



Feature	Benefit
Movable transmissive and a fixed reflective sensor standard	• Ability to sell into a wide variety of applications • Handles all types of gap, notch and black mark media
Peel, Full Roll Rewind, Liner Take-up and Cutter options	• Media handling options to meet most applications • Increase productivity
Side-loading design with cantilevered printhead	• Media and ribbons are easy to load • Reduces training and support requirements
Auto-calibration	• Automatically adjusts to any size label • Minimizes waste
Real Time Clock	• Ability to add a date or time stamp when required • Fits into many applications
Quick Change Platen	• Simplifies and reduces maintenance costs
Supports Ribbon coated-in or coated-out (Coated-in available on ZM400 Only)	• Can selected the type of spindle that matches current supplies • Provides ideal “drop-in” compatibility with Datamax Prodigy when used with Zebra’s APL-D.
RFID Ready	• Adaptable to grow with changing application needs • Upgradeability provides initial investment protection



Feature	Benefit
Fanfold Slot	• Multiple media feed path options provide supplies and application flexibility.
Parallel, USB 2.0 and Serial Standard	• Provides flexible connectivity options • Easy to integrate into a variety of communications environments • Connect to multiple hosts or sources
Optional Internal 10/100 Ethernet and 802.11b/g Wireless	
Simultaneous use of Parallel and Ethernet	
Plug n' Play compatibility with Windows	• Easy to set up the printer
ZebraLink™ Solutions (ZPL Only)	• User can control and monitor printer remotely
64 MB Flash Option	• Improve performance with ability to store formats, fonts and graphics directly on printer

IV. TYPICAL USER/HOW TO SELL

When should I sell or recommend a ZM400 or ZM600 thermal printer?
When the user wants one or more of the following:

- Minimal printer downtime
    - Metal frame and case enclosure provide a rugged and reliable printer with minimal downtime
    - Quick and easy platen and printhead replacement
    - Large LCD Screen for quick printer set-up
    - Side-loading printhead design for quick and easy loading media and ribbon

- A thermal printer designed for world-wide applications
    - Fully Unicode compliant
    - LCD menu commands in 16 languages
    - Compatible with ZebraNet Bridge Enterprise

- The ability to easily adapt should your application needs change
    - Cutter option
    - Field changeable printhead resolutions (dpi)
    - 8-inch diameter rewind
    - RFID printer encoding
    - 300dpi or 600dpi print resolution
    - Peel-N-Present
    - RFID printing and encoding

- Variety of ways to connect to the host system
    - USB 2.0
    - 802.11 b/g wireless
    - ZebraNet 10/100 PrintServer Ethernet
    - Serial & Parallel Ports

- Minimize time to print a single label
    - Fast 10 inches-per-second print speed
    - Fast throughput
    - Parallel and Ethernet simultaneous connectivity

- The printed image needs to last for months to years
    - Variety of Zebra media and ribbons to meet application needs
    - ZM400 and ZM600 are capable of handing most media types

- To replace a Datamax Prodigy/Prodigy Plus or an Intermec 3400d without changing formats by utilizing Zebra's Alternative Programming Languages

- To upgrade their desktop, Stripe S600, or S4M printer to a higher volume printer with upgradeable options.

How the ZM400 and ZM600 thermal printer compare to Zebra's other printer products.

Designed to enhance productivity, the versatile and cost effective ZM400 and ZM600 thermal printers provide the features, options, and performance that make them suitable for all but the most demanding applications. Both are sturdy full-size printers with rugged metal cases and frames that deliver fast print speeds, rapid throughput, and high duty cycles. The ZM400 and ZM600 represent the price-performance leaders in their class. This combination makes the ZM400 and ZM600 the ideal printers for most warehouse, industrial, and business applications.

The inexpensive S4M is another robust 4-inch printer sporting a sturdy metal frame and case. While the S4M offers the same durable construction as the ZM400, its smaller feature and option set delivers slightly less performance than the ZM400. The S4M represents the ideal low cost printer for many basic industrial commercial printing applications.

With its practical basic feature set, precision operation, reputation for reliability, and top-of-the-line all metal construction, the dependable 105SL thermal printer is a stalwart commercial / industrial workhorse suitable for both the precision printing of small labels as well as heavy duty industrial / commercial printing in most common applications.

The full featured XillIPlus printers are Zebra's flagship printers designed to optimize high performance printing in all applications. The XillIPlus printers feature all-metal construction throughout. The XiIIIPlus printers boast a full metal case, frame, and precision machined metal spindles to deliver the ultimate in durability and long life high speed printing precision. These designs consistently deliver the highest reliability, performance, quality, and precision printing available, even when positioned in the harshest of industrial environments. The Xilllplus is able to hold tight registration on all types of media, including the slick synthetic medias commonly found on electronic circuit boards. The XillIPlus are totally uncompromised in their design and are perfectly positioned for 24/7 duty in mission-critical environments.

The following chart will help to qualify the ZM400/ZM600 printers as the correct choice for a solution.

S4M	**ZM400/ZM600**	XilllPlus
Metal 4” print width only	Metal 4” & 6” print width	Full-Metal 4”, 6” and 8” print widths
6 ips Max Print Speed	10 ips Max Print Speed	12 ips Max Print Speed
Printing for many applications	Printing for most applications	Printing for all applications
Wide Range of Connectivity Options	Wide Range of Connectivity Options	Wide Range of Connectivity Options
No RFID	RFID Ready	RFID Ready RFID Enabled
Outstanding value printer for budget minded consumers	Price-Performance Leader delivering application flexibility	Peak Performance Printer for mission-critical, 24/7 applications

V. INTERNAL COMPARISON

	ZM400™	Stripe® S600
Printer Features		
Print Width, max.	4.09” (104mm)	4.09" (104mm)
Dots/Inch	203/300/600	203 dpi
Max Print Speed	10 ips (254mm/s)	6 ips (152mm/s)
Standard RAM	16MB	2 MB
STD Flash Memory	8MB	1 MB
Media Features		
Label Width, max.	4.5” (114mm)	4.5” (114mm)
Label Width, min.	1.0” (25.4mm)	0.75” (19.4mm)
Label Length, max	39.0” (991mm)	39” (991mm)
Label Length min.	0.5” (12.7mm) Tear/Peel/Rewind, 1.0” (25.4mm) Cut.	0.63” (16.0mm) Tear 1.0” (25.4mm) Peel
Roll Size, O.D. & Mounting	8.0” (203mm)	8.0" (203mm)
Max Ribbon Length	1476’ (450m)	1476’ (450m)
Interface		
Serial	Std	Std
Parallel	Std	Std
Ethernet	10/100 Opt	N/A
USB 2.0 Interface	Std	N/A
Wireless	802.11b/g Opt	N/A
Other		
Ribbon Coated	Inside or Outside	Outside
Media and Ribbon Window	Std	N/A
Field Upgradeable Printhead	Yes	N/A
RFID Ready	Std	N/A
Full Roll Rewind	Opt	Partial Only
Cutter	Opt	Opt
Media Supply Spindle	No	No
Quick Change Platen Roller	Std	No
Real Time Clock	Std	N/A
Printer Languages	ZPL, EPL, APL-I, APL-D, XML	ZPL
LCD Display	240 x 128 (pixels)	None
Weight	32.4lbs (15kg)	17lbs (7.7kg)
Size (H x W x L)	13.3” x 10.9” x 18.7” (338mm x 278mm x 475mm)	13” x 8.2” x 17” (330mm x 210mm x 432mm)

ZM400 vs. Stripe S600

- While the S600 printer is made entirely of plastic, the ZM400 printer is more robust containing a metal frame and case ideally suited for many applications, including product ID, receiving, shipping, and compliance labeling.
- The ZM400 printer offers a larger selection of connectivity options than the S600, including internal Ethernet and wireless.
- The ZM400 printer has a much faster print speed and duty cycle than the S600.
- The footprint of the ZM400 printer, while slighter larger than the S600 is still small enough to be a good fit for certain space constrained environments such as mobile carts.
- The ZM400 printer’s LCD and quick change platen offer quicker setup time and easy maintenance resulting in more time to print labels and be productive.

	ZM400™	2746e
Printer Features		
Print Width, max.	4.09” (104mm)	4.09" (104mm)
Dots/Inch	203/300/600	203 dpi
Max Print Speed	10 ips (254mm/s)	6 ips (152mm/s)
Standard RAM	16MB	512KB
STD Flash Memory	8MB	1MB
Media Features		
Label Width, max.	4.5” (114mm)	4.5" (114mm)
Label Width, min.	1.0” (25.4mm)	1.12" (29mm)
Label Length, max	39.0” (991mm)	22" (559mm)
Label Length min.	0.5” (12.7mm) Tear/Peel/Rewind, 1.0” (25.4mm) Cut.	.38” (9.7mm) Tear .5” (12.5mm) Peel 1.0” (25.4mm) Cutter
Roll Size, O.D. & Mounting	8.0” (203mm)	8.0" (203mm)
Max Ribbon Length	1476’ (450m)	1160' (360m)
Interface		
Serial	Std	Std
Parallel	Std	Std
Ethernet	10/100 Opt	10 Base-T Opt
USB 2.0 Interface	Std	USB v1.1
Wireless	802.11b/g Opt	None
Other		
Ribbon Coated	Inside or Outside	Outside
Media and Ribbon Window	Std	Std
Field Upgradeable Printhead	Yes	No
RFID Ready	Std	No
Full Roll Rewind	Opt	Std Liner Take-up only
Cutter	Opt	Opt
Media Supply Spindle	No	No
Quick Change Platen Roller	Std	No
Real Time Clock	Std	Opt
Printer Languages	ZPL, EPL, APL-I, APL-D, XML	EPL
LCD Display	240 x 128 (pixels)	None
Weight	32.4lbs (15kg)	28.6 lbs (13 kg)
Size (H x W x L)	13.3” x 10.9” x 18.7” (338mm x 278mm x 475mm)	12.38" x 9.5" 16.75" (314mm x 241mm x 425 mm)

ZM400 vs. 2746e

- The ZM400 printer’s front control panel features a streamlined menu for simple navigation, while its proven side-loading design eliminates label and ribbon threading for quick, easy loading.
- Built with the ruggedness of a metal enclosure and die-cast frame, the ZM400 offers Zebra quality and reliability at a competitive price.
- The ZM400 printer offers much faster print speed and throughput than the 2746e (10 ips vs. 6 ips).
- The ZM400 printer offers a larger selection of connectivity options than the 2746e, including wireless.
- The ZM400 printer is easy to integrate in existing applications as it operates in EPL, as well as ZPL, APL-D and APL-I.

	ZM400™	S4M
Printer Features		
Print Width, max.	4.09” (104mm)	4.1" (104mm)
Dots/Inch	203/300/600	203/300 dpi
Max Print Speed	10 ips (254mm)	6 ips (152mm)
Standard RAM	16MB	8MB
STD Flash Memory	8MB	4MB
Media Features		
Label Width, max.	4.5” (114mm)	4.5" (114mm)
Label Width, min.	1.0” (25.4mm)	0.75" (19.4mm)
Label Length, max	39.0” (991mm)	39" (991mm)
Label Length min.	0.5” (12.7mm) Tear/Peel/Rewind, 1.0” (25.4mm)Cutter	0.7" (17.8mm) Tear, 0.5" (12.7mm) Peel.
Roll Size, O.D. & Mounting	8.0” (203mm)	8" (203mm)
Max Ribbon Length	1476’ (450m)	1476' (450m)
Interface		
Serial	Std	Std
Parallel	Std	Std
Ethernet	10/100 Opt	10/100 Opt
USB 2.0 Interface	Std	USB v1.1 Std
Wireless	802.11b/g Opt	802.11b/g Opt
Other		
Ribbon Coated	Inside or Outside	Outside
Media and Ribbon Window	Std	Std
Field Upgradeable Printhead	Yes	Yes
RFID Ready	Std	No
Full Roll Rewind	Opt	No
Cutter	Opt	No
Media Supply Spindle	No	No
Quick Change Platen Roller	Std	No
Real Time Clock	Std	Opt
Printer Languages	ZPL, EPL, APL-I, APL-D, XML	ZPL, EPL, APL-I, APL-D,
LCD Display	240 x 128 (pixels)	2 x 14
Weight	32.4lbs (15kg)	27.2 lbs (12.4 kg)
Size (H x W x L)	13.3” x 10.9” x 18.7” (338mm x 278mm x 475mm)	11.7" x 10.7" x 18.8" (295mm x 272mm x 477mm)

ZM400 vs. S4M

- Both the ZM400 and the S4M printer are reliable, metal printers ideally suited for many applications, including product ID, receiving, shipping and compliance labeling.
- While both printers offer setup via an LCD display, the display on the ZM400 is larger, easier to read and offers Asian language support.
- The S4M printer has a lower duty cycle than the ZM400, but much higher than that of a LP/TLP 2844. The S4M is the ideal printer for applications that need more than a desktop yet don’t need the horsepower of a ZM400.
- The ZM400 printer offers significantly faster print speeds and thus faster throughput for batch printing and other high speed applications.
- The ZM400 printer offers greater application flexibility with regard to Media handling and resolution, supporting options such liner take-up, full media rewind, cutter and 600 dpi.

	ZM400™	*Z*4Mplus
Printer Features		
Print Width, max.	4.09” (104mm)	4.09" (104mm)
Dots/Inch	203/300/600	203/300 dpi
Max Print Speed	10 ips (254mm)	10 ips (254mm)
Standard RAM	16MB	8MB
STD Flash Memory	8MB	4MB
Media Features		
Label Width, max.	4.5” (114mm)	4.5" (114mm)
Label Width, min.	1.0” (25.4mm)	1.0" (25.4mm)
Label Length, max	39.0” (991mm)	39.0" (991mm)
Label Length min.	0.5” (12.7mm) Tear/Peel/Rewind, 1.0” (25.4mm)Cutter	0.5” (12.7mm) Tear/Peel/Rewind, 1.0” (25.4mm)Cutter
Roll Size, O.D. & Mounting	8.0” (203mm)	8.0" (203mm)
Max Ribbon Length	1476’ (450m)	1476' (450m)
Interface		
Serial	Std	Std
Parallel	Std	Std
Ethernet	10/100 Opt	10/100 Opt
USB 2.0 Interface	Std	No
Wireless	802.11b/g Opt	802.11b Opt
Other		
Ribbon Coated	Inside or Outside	Outside
Media and Ribbon Window	Std	Std
Field Upgradeable Printhead	Yes	Std
RFID Ready	Std	No
Full Roll Rewind	Opt	Opt
Cutter	Opt	Opt
Media Supply Spindle	No	No
Quick Change Platen Roller	Std	No
Real Time Clock	Std	Std
Printer Languages	ZPL, EPL, APL-I, APL-D, XML	ZPL, APL-I, APL-D, XML
LCD Display	240 x 128 (pixels)	2 X 16)
Weight	32.4lbs (15kg)	32.4lbs (15kg
Size (H x W x L)	13.3” x 10.9” x 18.7” (338mm x 278mm x 475mm)	13.3” x 10.9” x 18.7” (338mm x 278mm x 475mm)

ZM400 vs. *Z*4Mplus

- The ZM400 is the next generation of 4” Z Series printers, offering everything that Z4Mplus offers and more. The best in class just got better.
- While both printers offer setup via an LCD display, the display on the ZM400 is larger, easier to read and offers Asian language support.
- The ZM400 offers a higher print speed at 300 dpi (8 ips vs. 6 ips.) and a true 4” 600 dpi print solution.
- Ethernet support has been greatly enhanced. Internal 10/100 Ethernet no longer requires sacrificing the parallel port. Additional wireless support is offered via the WirelessPlus PrintServer.
- RFID-Ready on the ZM400 offers investment protection for when you are ready to upgrade to RFID.
- An optional ribbon spindle supporting ribbon coated ink-side in allows better “drop in” compatibility with Datamax Prodigy replacements when used with APL-D.

	ZM400™	110 *Xi*IIIPlus™
Printer Features		
Print Width, max.	4.09” (104mm)	4.01" (103mm)
Dots/Inch	203/300/600	203/300/600
Max Print Speed	10 ips (254mm)	10 ips (254mm)
Standard RAM	16MB	16MB
STD Flash Memory	8MB	4MB
Media Features		
Label Width, max.	4.5” (114mm)	4.5" (114mm)
Label Width, min.	1.0” (25.4mm)	0.79" (25.4mm)
Label Length, max	39.0” (991mm)	39" (991mm)
Label Length min.	0.5” (12.7mm) Tear/Peel/Rewind, 1.0” (25.4mm)Cutter	0.7” (17.7mm) Tear, 0.5” (12.7mm) Peel, 0.25”(6.4mm)Rewind, 1.5”(57.2mm) Cutter.
Roll Size, O.D. & Mounting	8.0” (203mm)	8" (203mm)
Max Ribbon Length	1476’ (450m)	1476' (450m)
Interface		
Serial	Std	Std
Parallel	Std	Std
Ethernet	10/100 Opt	Opt
USB 2.0 Interface	Std	Std
Wireless	802.11b/g Opt	802.11b/g Opt
Other		
Ribbon Coated	Inside or Outside	Outside
Media and Ribbon Window	Std	Std
Field Upgradeable Printhead	Yes	No
RFID Ready	Std	Opt
Full Roll Rewind	Opt	Opt
Cutter	Opt	Opt
Media Supply Spindle	No	Opt
Quick Change Platen Roller	Std	No
Real Time Clock	Std	Std
Printer Languages	ZPL, EPL, APL-I, APL-D, XML	ZPL, APL-I, APL-D, XML
LCD Display	240 x 128 (pixels)	2X16
Weight	32.4lbs (15kg)	50lbs (23kg)
Size (H x W x L)	13.3” x 10.9” x 18.7” (338mm x 278mm x 475mm)	15.5" x 10.4" x 19.5" (394mm x 264mm x 495mm)

ZM400 vs. 110XiIIIPlus

- While the ZM400 offers a 4” 600 dpi print width vs. the 110XiIIIPlus 3.2” 600 dpi print width, the min label length of the 110XiIIIPlus is smaller, offering a better solution for small electronic labels
- The 110XiIIIPlus is all metal, including spindles, gears, etc. offering a heavy duty construction capable of lasting in the most abusive environments.
- While the print speed of both printers is comparable, the 110XiIIIPlus offers a higher duty cycle making it more appropriate for 24/7 mission critical applications.
- The 110XiIIIPlus printer’s optional media spindle allows unique mounting possibilities not offered by the ZM400.
- By providing media back tension, the 110XiIIIPlus printer’s media spindle can also help provide tighter registration when printing on tiny labels.
- The 110XiIIIPlus printer’s adjustable print mechanism allows users to precisely “dial-in” a print line position for the best print quality possible.

Internal Comparison

	ZM600™	Z6Mplus™
Printer Features		
Print Width, max.	6.60” (168mm)	6.60" (168mm)
Dots/Inch	203/300	203/300
Max Print Speed	10 ips (254mm)	10 ips (254mm)
Standard RAM	16MB	8MB
STD Flash Memory	8MB	4MB
Media Features		
Label Width, max.	7.0” (178mm)	7.0" (178mm)
Label Width, min.	2.0” (51mm)	2.0" (51mm)
Label Length, max	39.0” (991mm)	39.0" (991mm)
Label Length Min.	0.5” (12.7mm) Tear/Peel/Rewind, 1.0” (25.4mm)Cutter	.5" (12.7mm) / 1.0" (25.4mm)
Roll Size, O.D. & Mounting	8.0” (203mm)	8" (203mm)
Max Ribbon Length	1476’ (450m)	1476' (450m)
Interface		
Serial	Std	Std
Parallel	Std	Std
Ethernet	10/100 Opt	Optional
USB 2.0 Interface	Std	N/A
Wireless	802.11b/g Opt	802.11b Optional
Other		N/A
Ribbon Coated	Inside or Outside	Outside
Media and Ribbon Window	Std	Std
Field Upgradeable Printhead	Yes	Yes
RFID Ready	Std	No
Full Roll Rewind	Opt	Opt
Cutter	Opt	Opt
Media Supply Spindle	No	No
Quick Change Platen Roller	Std	No
Real Time Clock	Std	Std
Printer Languages	ZPL, ELP, APL-I, APL-D, XML	ZPL, APL-I, APL-D, XML
LCD Display	240 x 128 (pixels)	2X16 Char
Weight	34.7lbs (16kg)	34.7lbs (16kg)
Size (H x W x L)	13.3” x 13.4” x 18.7” (338mm x 441mm x 475mm)	13.3” x 13.4” x 18.7” (338mm x 441mm x 475mm)

ZM600 vs. *Z*6Mplus

- The ZM600 is the next generation of 6” Z Series printers, offering everything that Z6Mplus offers and more. The best in class just got better.
- While both printers offer setup via an LCD display, the display on the ZM600 is larger, easier to read and offers Asian language support.
- The ZM600 offers a higher print speed at 300 dpi (8 ips vs. 6 ips.).
- Ethernet support has been greatly enhanced. Internal 10/100 Ethernet no longer requires sacrificing the parallel port. Additional wireless support is offered via the WirelessPlus PrintServer.
- RFID-Ready on the ZM600 offers investment protection for when you are ready to upgrade to RFID.

	ZM600™	170XiIIIplus™
Printer Features		
Print Width, max.	6.60” (168mm)	6.60” (168mm)
Dots/Inch	203/300	203/300
Max Print Speed	10 ips (254mm)	12 ips (305mm)
Standard RAM	16MB	16MB
STD Flash Memory	8MB	4MB
Media Features		
Label Width, max.	7.0” (178mm)	7.1” (180mm)
Label Width, Min	2.0” (51mm)	2.0” (51mm)
Label Length, max	39.0” (991mm)	39.0” (991mm)
Label Length min.	0.5” (12.7mm) Tear/Peel/Rewind, 1.0” (25.4mm)Cutter	0.7”(17.7mm) Tear, 0.5” (12.7mm) Peel, 0.25”(6.4mm)Rewind, 1.5”(57.2mm) Cutter.
Roll Size, O.D. & Mounting	8.0” (203mm)	8" (203mm)
Max Ribbon Length	1476’ (450m)	1476' (450m)
Interface		
Serial	Std	Std
Parallel	Std	Std
Ethernet	10/100 Opt	10/100 Opt
USB 2.0 Interface	Std	Std
Wireless	802.11b/g Opt	802.11b/g Opt
Other		
Ribbon Coated	Inside or Outside	Outside
Media and Ribbon Window	Std	Std
Field Upgradeable Printhead	Yes	No
RFID Ready	Std	No
Full Roll Rewind	Opt	Opt
Cutter	Opt	Opt
Media supply spindle	No	Opt
Quick Change Platen Roller	Std	No
Real Time Clock	Std	Std
Printer Languages	ZPL, ELP, APL-I, APL-D, XML	ZPL, APL-I, APL-D, XML
LCD Display	240 x 128 (pixels)	2X16
Weight	34.7lbs (16kg)	67lbs. (30.5 kg)
Size (H x W x L)	13.3” x 13.4” x 18.7” (338mm x 441mm x 475mm)	15.5” x 13.15” x 19.5” (393.7mm x 334.4mm x 495.3mm)

ZM600 vs. 170XiIIIPlus

- The 170XiIIIPlus is all metal, including spindles, gears, etc. offering a heavy duty construction capable of lasting in the most abusive environments.
- The 170XiIIIPlus printer offers significantly faster print speeds and thus faster throughput for batch printing and other high speed applications.
- The 170XiIIIPlus offers a higher duty cycle making it more appropriate for 24/7 mission critical applications.
- The 170XiIIIPlus printer’s optional media spindle allows unique mounting possibilities not offered by the ZM600.
- By providing media back tension, the 170XiIIIPlus printer’s media spindle can also help provide tighter registration when printing on tiny labels.
- The 170XiIIIPlus printer’s adjustable print mechanism allows users to precisely “dial-in” a print line position for the best print quality possible.

VI. ZEBRA ADVANTAGE

THE ZEBRA ADVANTAGE

Zebra Technologies delivers innovative engineering to create the widest breadth of products in the market – all of which use Zebra's Programming Language (ZPL). Zebra's products are recognized for their quality and reliability. When you sell Zebra products, you can expect value-added services and support, including…

- **Quality Products / World-Wide Dedicated Zebra Technical Support**

  A high-quality product line backed by 30+ years of experience in the bar code printer industry coupled with the best service and support available. No other bar code printer company can back your selection with a solid base of manufacturing, sales, service and support.

- **Fast / Friendly Customer Service with Multi-Lingual Capabilities**

  Zebra takes pride in having a highly trained, multilingual customer service department and extensive reseller network to support your customers around the globe. Zebra assigns dedicated associates who are certified product experts, which means they will know which Zebra product combinations are optimal for your application(s). A Zebra associate will also ensure that your orders are shipped on time, will quickly resolve any problems, and will answer your questions as they arise.

- **Global Network of Authorized Service Providers**

  Zebra has a worldwide presence that extends into 70 countries, supporting customers and businesses anywhere it is required. When you make a commitment to Zebra, you know Zebra is making a commitment to you as well.

- **Fast, Affordable Depot Repair**

  If your printer should require maintenance that can't be resolved over the phone or via our fax back website system, Zebra's factory repair services department offers several service options, including two-day rush depot repair. Or, you can work with Zebra's third-party service providers who can provide on-site or depot repair programs.

- **24-Hour Interactive Technical Support via Zebra's Website at: www.zebra.com**

  Zip Support™ is Zebra's ***24/7/365*** (24hrs per day/7days a week/365 days a year) technical support via the internet. Access is a breeze! Our knowledgeable technical support staff is available to answer your questions and can be reached via phone or the internet. Information on flat-rate repair prices, training schedules, printer specifications, software, maintenance parts lists and troubleshooting procedures is also located on our internet website.

All information is accessible 24 hours a day, providing an invaluable service developed specifically with our partners and customers in mind.

- **Flexible Training Options**

  Zebra offers a variety of training courses that are unparalleled in the industry. Reseller partners and their customers can receive comprehensive certified manufacturer training by participating in Zebra's training programs, which are conducted by our knowledgeable staff. We have a flexible training schedule in which you can choose from individual courses or packaged course groupings that are offered at Zebra's offices. If you'd like, we can even arrange to come to your location with customized courses developed to tackle your specific needs.

- **12-Month Warranty on Zebra Printers**
  At Zebra, we have a quality philosophy that goes far beyond ISO 9001 certification procedures and Total Quality Management processes. Our competitive product warranties – 12 month for labor and parts and 6 months for printheads – are consistent with industry standards.

- **ZPL/ZPLII Backwards and Forwards Compatibility/Application Flexibility**
  Zebra's ZPL/ZPLII printer programming language represents a consistent platform that guarantees backward and forward compatibility with all existing and new generation Zebra printers. Compared to other competitive printer languages, ZPL/ZPLII offers more application flexibility in that it can be easily reconfigured for any ASCII based system. It is a compact, concise and relatively simple code language designed to promote quick printer processing, yet is rich in bar code font and graphics capabilities.

- **Software Options to Suit Your Specific Application Needs**
  Zebra's printers, software and wireless connectivity options produce the most integrated printing solutions available. Zebra's ZPL, ZebraDesigner™ Pro and ZebraNet™ Bridge Enterprise, and ZebraNet® products complement our printers to provide maximum printing power and seamless system integration, even for the most complex of labeling applications. Our printers have a number of connectivity options, including Ethernet and wireless (RFID) to name a few, that further facilitate painless system integration.

- **Genuine Zebra Supplies**
  Our Genuine Zebra Supplies are researched and made to a higher standard to ensure reliable printer performance. Developed specifically to optimize performance on Zebra printers, Zebra offers hundreds of labels, tags and ribbons to choose from. Many labels and ribbon varieties are (standard) in stock items, available to ship to your customers as part of our Zip Ship™ Supplies stocking program. Custom media options are also available to satisfy customer's specialized application requirements.

VII. Q & A

1. **Are the ZM400/ZM600 printers compatible with other Zebra printers?**
   YES. The ZM400 and ZM600 printers both use the same Zebra Programming Language (ZPL) and Zebra Programming Language II (ZPL II) as other Zebra Printers. ZPL II compatibility allows the ZM400 and ZM600 to seamlessly integrate into other existing applications using Zebra manufactured printers, including those who have upgraded from the S4M, and Z4Mplus (or Z6Mplus). Customers upgrading from the 2746e and EPL desktop printers will find the transition to the EPL version seamless. However, please note, customers choosing APL-I, APL-D, or EPL will not be compatible with other Zebra printers. These printers will be compatible with the legacy printer the customer is replacing.

2. **Are the ZM400/ZM600 printers Windows compatible?**
   YES. All ZM400 and ZM600 printers include a Windows driver. This driver will allow the printer to be used in conjunction with popular Windows applications, like that of Microsoft® Word™, Excel™, or PowerPoint™. The Windows driver will enable the end-user to design labels in their applications of choice for print output directly to the printer. In addition to the driver, you can download a ZebraDesigner™ demonstration package from our Internet homepage: www.zebra.com.

3. **Can the ZM400/ZM600 printers support Asian fonts?**
   YES. The ZM400 and ZM600printer support several Asian languages, including Japanese, Chinese, and Korean. Asian support is built-in to the printer, but requires the use of an Asian font. These fonts can be purchased from Zebra. Some fonts may require the 64MB flash option.

4. **Can the ZM400/ZM600 printers replace legacy Intermec and Datamax printers?**
   YES. The ZM400 and ZM600 printers support both APL-I and APL-D, meaning that the ZM400 and ZM600 can be dropped into many legacy printing application without costly modifications to label formats. However, it is important to note that the user will not be able to use ZPL when purchasing an APL-I or APL-D ZM400 or ZM600 printer.

5. **Do the ZM400/ZM600 printers have the ability to upgrade to RFID?**
   YES. Both the ZM400 and ZM600 printers are RFID ready and can be easily upgraded to RFID whenever desired with the appropriate RFID encoder upgrade kit for your local geography (availability is dependent on local laws/geography).

6. **I would like to use a peel with rewind, is that available?**
   The ZM400 printer supports a value peel option, which can be alone, or in combination with liner take-up or full roll rewind. The peel option on the ZM600 can be used alone or in combination with full roll rewind. Cutter options are also available on both the ZM400 and ZM600.

7. What supplies are supported?
Visit www.zebra.com for the listings of supplies that can be used with the ZM400 or ZM600 printer.

8. What connectivity options are available?
Both printers come standard with Parallel, Serial and USB 2.0 ports. Other options include internal Ethernet via ZebraNet PrintServer 10/100baseT PrintServer and 802.11b/g wireless PCMCIA card socket.

9. How much memory is standard on the ZM400/ZM600 printers?
The ZM400 and ZM600 printers come standard with 16MB DRAM memory and 8MB flash (2MB user available). An optional 64MB on board Flash option is also available. The 64MB option is a factory only option and must be selected when ordering. There are no PCMCIA or compact flash memory card options available for the ZM400 or ZM600 printer.

VIII. APPENDIX A (ZM400)

Technical Specifications Sheets

ZEBRA ZM400™ 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

- 203 dpi print resolution (8 dots/mm)
- Thin film print head with E3® Element Energy Control
- Thermal transfer and direct thermal printing of bar codes, text, and graphics
- ZPL® or ZPL II® programming language, selectable through software or front panel
- 32 bit high speed processor
- On board Real Time Clock (RTC)
- 16MB DRAM memory
- 8MB Flash memory (2 MB User Available)
- USB 2.0, RS-232 Serial and bi-directional parallel ports
- A fixed position reflective sensor and a movable transmissive sensor to support gap, notch and black mark media
- Sleek personality / rugged metal design:
  - ⇒ Die-cast aluminum frame: 0.20" (5mm) thick – ensures parallelism of spindles for consistent print quality
  - ⇒ Metal powder-coated base withstands harsh industrial conditions
  - ⇒ Metal media cover with enlarged clear window: easy to view supplies
  - ⇒ Die-cast print mechanism with head open lock withstands general wear & tear and facilitates media loading.
- Standard LCD control panel: Back-lit, 240 x 128 pixel graphic display w/ full menus to change set-up options in multiple languages (16 languages including Japanese, Chinese & Korean)
- Charcoal gray form design for improved smudge resistance
- RFID-Ready: providing a migration path to the RFID technology needed in the future (where allowed by regulatory agencies).

Optional Features

- Print head: 300 dpi(12 dots/mm) & 600 dpi(24 dots/mm)
- Full-width guillotine knife cutter and catch tray, operates under software control cutting labels individually or in strips (not compatible with rewind and peel options)
- Choice of 2 peel options:
  - ⇒ A front mount, passive peel option, w/ no take-up spindle
  - ⇒ Liner-Take-Up option - full roll liner take-up spindle accommodates standard printer base –works with peel option
- Rewind – internally rewinds full roll of printed labels on 3" core, or peels & rewinds liner
- Factory Installed 64MB (58MB user available) Flash Memory Option
- Additional scalable and smooth bitmapped fonts available
- Internal or external ZebraNet 10/100 Print Server option — supports 10Base-T, 100Base-TX, and fast Ethernet 10/100 auto-switching networks, plus complete use of ZebraLink WebView and Alert features.
- ZebraNet Wireless Plus Print Server – provides internally integrated wireless option with support for Symbol and Cisco radio cards.
- Optional ribbon spindle to support ribbon wound ink-side in.

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

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 provide alerts via any email-enabled, wired, or wireless device to minimize downtime.

XML-Enabled ZPL – allows XML communications from today's enterprise systems
EPL II – Eltron Programming Language is an optional firmware version for 203 dpi printers that provide backwards compatibility with many desktop printers as well as the Zebra 2746e Thermal Transfer Printer.
APL – Zebra's Alternative Programming Language allows integration into mixed printer environments without re-programming formats.

- APL-I firmware – allows a 203 dpi (8 dots /mm) Zebra printer to parse and print IPL code intended for an Intermec 3400D. (With APL-I firmware installed, ZPL programming language is not recognized, and ZPL specific features are not available.)
- APL-D firmware – allows a 203 dpi (8 dots / mm) Zebra Printer to parse and print DPL code intended for a Prodigy Plus. (With APL-D firmware installed, ZPL programming language is not recognized, and ZPL specific features are not available.)

Printing Specifications

- 203 dpi resolution (8 dots/mm)
  - Dot size (W x L):
  0.0049" x 0.0049" (0.125mm x 0.125mm)
- 300 dpi resolution (12 dots/mm)
  - Dot size (W x L):
  0.0033" x 0.0039" (0.084mm x 0.099mm)
- 600 dpi resolution (24 dots/mm)
  - Dot size (WxL):
  0.0016" x 0.0016" (0.042mm x 0.042mm)
- First dot location measured from inside media backing edge:
  0.10" ±.04" (2.5mm ± 1 mm)
- Maximum print width: 4.09" (104mm)
- Maximum continuous media print length:

203 dpi	300 dpi	600 dpi
157" 3988mm	73" 1854mm	39" 991mm

- Media registration tolerance:
  - Vertical = ≤ ±0.039" (±1.0mm) on non-continuous media - ---
  Horizontal = ≤ ±0.039" (±1.0mm) within a roll of media
- Programmable print speeds:
  - 203 dpi = 2.4" (61mm), 3" (76mm) through 10" (254mm) per second in 1" increments
  - 300 dpi = 2.4" (61mm), 3" (76mm) through 8" (203mm) per second in 1" increments
  - 600 dpi = 1.5" (38mm), 2" (51mm), 3" (76mm), 4" (102mm) per second

Media Specifications

- Maximum non-continuous label length: 39" (991mm)
- Media type: continuous, die-cut, tags, black-mark
- Media web width (label and liner):
  1.0" (25.4mm) to 4.50" (114mm) Tear / Cutter
  1.0" (25.4mm) to 4.25" (108mm) Peel / Rewind
- Minimum label length:
  - 0.5" (12.7mm) in Tear, Peel and Rewind Mode
  - 1.0" (25.4mm) in Cutter Mode
- Media thickness (label and liner):
  0.0023" (0.058mm) to 0.010" (0.25mm)
- Maximum media roll size:
  8.0" (203mm) O.D. on a 3" (76mm) I.D. core
- Maximum fan-fold pack size:
  8.0"L (203mm) x 4.5"W (114mm) x 6.2"H (157mm)
- Gap and notch sensing standards:
  - Inter-label gap: 2 - 4mm, preferably 3mm
  - Sensing notch: 0.25"W (6mm) x 0.12"L (3mm)
  - Sensing hole: 0.125" (3mm) diameter
  * Note: Notch & Hole Position centered from 0.25" to 2.25" from media inner edge
- Black mark sensing standards:
  - Black mark length (parallel to inside media edge):
  0.098" - 0.453" (2.5mm - 11.5mm)
  - Black mark width (perpendicular to inside media edge):
  ≥ 0.37" (≥ 9.5mm)
  - Black mark location: within 0.040"(1mm) of inside media edge
  - Black mark density: > 1.0 Optical Density Units (ODU)
  - Maximum media density: 0.5 ODU

Ribbon Specifications

- Ribbon width: 2.00" (51mm) to 4.33" (110mm)
- Standard Lengths: 984' (300m) or 1476' (450m)
- Maximum ribbon roll size:
  3.2" (81.3mm) O.D. on a 1.0" (25.4mm) I.D. core
- Ribbon wound ink-side out (Ribbon wound ink-side in can be used with optional ribbon spindle).

Standard 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 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	Matrix			Type*	Character Size					
					Inches			Millimeters		
	Height	Width	Inter-character Gap		Height	Width	Char/inch	Height	Width	Char/mm
A	9	5	1	U-L-D	0.044	0.029	34.0	1.13	0.75	1.33
B	11	7	2	U	0.054	0.044	22.7	1.38	1.13	0.89
C,D	18	10	2	U-L-D	0.088	0.059	17.0	2.25	1.50	0.67
E	28	15	5	OCR-B	0.137	0.098	10.2	3.50	2.50	0.40
F	26	13	3	U-L-D	0.127	0.078	12.8	3.25	2.00	0.50
G	60	40	8	U-L-D	0.294	0.235	4.3	7.50	6.00	0.17
H	21	13	6	OCR-A	0.103	0.093	10.7	2.63	2.38	0.42
GS	24	24	2	SYMBOL	0.118	0.127	7.8	3.00	3.25	0.31
P	20	18	N/A	U-L-D	.098	.088	N/A	2.50	2.25	N/A
Q	28	24	N/A	U-L-D	.137	.118	N/A	3.50	3.00	N/A
R	35	31	N/A	U-L-D	.172	.152	N/A	4.38	3.88	N/A
S	40	35	N/A	U-L-D	.196	.172	N/A	5.00	4.38	N/A
T	48	42	N/A	U-L-D	.235	.206	N/A	6.00	5.25	N/A
U	59	53	N/A	U-L-D	.289	.260	N/A	7.38	6.63	N/A
V	80	71	N/A	U-L-D	.392	.348	N/A	10.00	8.88	N/A
0	Default: 15 x 12			U-L-D	Scalable					
*U = Uppercase, L = Lowercase, D = Descenders										

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/mm
A	9	5	1	U-L-D	.035	0.020	50.5	0.89	0.50	1.98
B	11	7	2	U	.043	0.030	33.7	1.09	0.76	1.32
C,D	18	10	2	U-L-D	.070	0.040	25.3	1.78	1.01	0.99
E	41	20	6	OCR-B	.160	0.086	11.7	4.06	2.18	0.46
F	26	13	3	U-L-D	.101	0.053	18.9	2.57	1.34	0.74
G	60	40	8	U-L-D	.234	0.158	6.3	5.94	4.03	0.25
H	30	19	9	OCR-A	.177	0.092	10.8	2.97	2.35	0.43
GS	24	24	2	SYMBOL	.094	0.086	11.7	2.38	2.18	0.46
P	20	18	N/A	U-L-D	.078	.059	N/A	1.98	1.51	N/A
Q	28	24	N/A	U-L-D	.109	.079	N/A	2.77	2.02	N/A
R	35	31	N/A	U-L-D	.137	.102	N/A	3.47	2.60	N/A
S	40	35	N/A	U-L-D	.156	.116	N/A	3.96	2.94	N/A
T	48	42	N/A	U-L-D	.187	.139	N/A	4.75	3.53	N/A
U	59	53	N/A	U-L-D	.230	.175	N/A	5.84	4.45	N/A
V	80	71	N/A	U-L-D	.312	.234	N/A	7.92	5.96	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/mm
A	9	5	1	U-L-D	.014	0.010	104.2	0.38	0.25	3.97
B	11	7	2	U	.018	0.014	69.4	0.46	0.38	2.65
C,D	18	10	2	U-L-D	.029	0.019	52.1	0.76	0.50	1.98
E	82	40	12	OCR-B	.131	0.083	12.0	3.44	2.18	0.46
F	26	13	3	U-L-D	.042	0.026	39.1	1.09	0.67	1.49
G	60	40	8	U-L-D	.096	0.077	13.0	2.52	2.02	0.50
H	60	38	18	OCR-A	.096	0.090	11.2	2.52	2.35	0.43
GS	24	24	2	SYMBOL	.038	0.042	24.0	1.01	1.09	0.92
P	20	18	N/A	U-L-D	.032	.029	N/A	0.84	0.76	N/A
Q	28	24	N/A	U-L-D	.045	.038	N/A	1.18	1.01	N/A
R	35	31	N/A	U-L-D	.056	.050	N/A	1.47	1.30	N/A
S	40	35	N/A	U-L-D	.064	.056	N/A	1.68	1.47	N/A
T	48	42	N/A	U-L-D	.077	.067	N/A	2.02	1.76	N/A
U	59	53	N/A	U-L-D	.094	.085	N/A	2.48	2.23	N/A
V	80	71	N/A	U-L-D	.128	.114	N/A	3.36	2.98	N/A
0	Default: 15 x 12			U-L-D	Scalable					
*U = Uppercase, L = Lowercase, D = Descenders										

Font Matrices for 24 dot/mm (600 DPI) Print head

Bar Code Symbologies & Specifications

(ZPL Only, Other Firmware Languages may vary)

- 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
    600 dpi = 1.6 mil to 16 mil
  - Ladder (rotated) orientation:
    203 dpi = 4.9 mil to 49 mil
    300 dpi = 3.9 mil to 39 mil
    600 dpi = 1.6 mil to 16 mil
- Bar code ratios – 2:1 to 3:1 in supported symbologies
- Aztec
- Codabar (supports ratios of 2:1 to 3:1
- CODABLOCK
- Code 11
- Code 16k
- Code 39 (supports ratios of 2:1 to 3:1
- Code 49 (2-D)
- Code 93
- Code 128 (subsets A, B, C, and UCC case C codes)
- Data Matrix
- EAN-8, EAN-13, EAN extensions
- Interleaved 2 of 5 (supports ratios 2:1 to 3:1, modulous10 check digit)
- Planet Code
- Logmars
- MaxiCode (2-D)
- PDF417 (2-D)
- Micro PDF (2-D)
- Plessy
- Postnet
- QR-Code
- MSI
- Standard 2 of 5
- Industrial 2 of 5
- UPC-A, UPC-E, UPC extensions
- RSS
- TLC 39

Zebra Programming Language® (ZPL® and ZPL II®)

- Communicates in printable ASCII characters
- Compatible with mainframe, mini, and PC hosts
- Downloadable objects include graphics, scalable and bitmap fonts, label templates and formats
- 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
- Unicode compliant
  Supports UTF-8 and UTF-16
  Natively supports bidirectional and complex scripts
  Support for OpenType Glyph Substitution

Eltron Programming Language® (EPL II®)

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

Communications Specifications

- USB 2.0
- IEEE 1284 Bi-directional parallel interface
- High-speed serial interfaces
  - RS-232C, with DB9F connector
  - Configurable baud rate (300 – 115,200kB), parity, and data bits. Stop bits at 1 or 2.
  - Software (XON/XOFF), hardware (DTR/DSR, or RTS/CTS) communication handshake protocols
  - RS422/485 with optional adapter.
- ZebraNet® Wireless Plus Print Server – 802.11b/g - compliant wireless print server
- ZebraNet® 10/100 Print Server - Ethernet network print server (10BASE-T, 100BASE-TX)

Electrical Specifications

- Auto-detectable 90-265VAC, 48-62 Hz, 5A fused power supply
- Agency approvals: IEC 60950-1 EN 55022 Class B, EN55024, EN 61000-3-2, EN 61000-3-3.
- Product Markings: cTUVus, CE, FCC-B, ICES-003, VCCI, C-Tick, NOM, S-Mark (Arg), CCC, GOST-R, BSMI, MIC, ZIK, SABS

Physical Specifications

- **Height:** 13.3" (338mm)
- **Width:** 10.9" (278mm)
- **Depth:** 18.7" (475mm)
- **Weight:** 32.4lbs. (15kg)
- **Shipping Weight:** 49 lbs (22kg)

Environmental Specifications

- Operating environment:
  Thermal Transfer = 40º to 104ºF (5º to 40ºC)
  Direct Thermal = 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 ZM400 and ZM600 printers are designed to work only with genuine Zebra™ printheads, thus maximizing safety and print quality.

IX. APPENDIX B (ZM600)

Technical Specifications Sheets

ZEBRA ZM600™ 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

- 203 dpi print resolution (8 dots/mm)
- Thin film print head with E$^{3®}$ Element Energy Control
- Thermal transfer and direct thermal printing of bar codes, text, and graphics
- ZPL® or ZPL II® programming language, selectable through software or front panel
- 32 bit high speed processor
- On board Real Time Clock (RTC)
- 16MB DRAM memory
- 8MB Flash memory (2 MB User Available)
- USB 2.0, RS-232 Serial and bi-directional parallel ports
- A fixed position reflective sensor and a movable transmissive sensor to support gap, notch and black mark media
- Sleek personality / rugged metal design:
  - ⇒ Die-cast aluminum frame: 0.20" (5mm) thick – ensures parallelism of spindles for consistent print quality
  - ⇒ Metal powder-coated base withstands harsh industrial conditions
  - ⇒ Metal media cover with enlarged clear window: easy to view supplies
  - ⇒ Die-cast print mechanism with head open lock withstands general wear & tear and facilitates media loading.
- Standard LCD control panel: Back-lit, 240 x 128 pixel graphic display w/ full menus to change set-up options in multiple languages (16 languages including Japanese, Chinese & Korean)
- Charcoal gray form design for improved smudge resistance
- RFID-Ready: providing a migration path to the RFID technology needed in the future (where allowed by regulatory agencies).

Optional Features

- Print head: 300 dpi(12 dots/mm)
- Full-width guillotine knife cutter and catch tray, operates under software control cutting labels individually or in strips (not compatible with rewind and peel options)
- A front mount, passive peel option, w/ no take-up spindle
- Rewind – internally rewinds full roll of printed labels on 3" core, or peels & rewinds liner
- Factory Installed 64MB (58MB user available) Flash Memory Option
- Additional scalable and smooth bitmapped fonts available
- Internal or external ZebraNet 10/100 Print Server option — supports 10Base-T, 100Base-TX, and fast Ethernet 10/100 auto-switching networks, plus complete use of ZebraLink WebView and Alert features.
- ZebraNet Wireless Plus Print Server – provides internally integrated wireless option with support for Symbol and Cisco radio cards.

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

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 provide alerts via any email-enabled, wired, or wireless device to minimize downtime.

XML-Enabled ZPL – allows XML communications from today's enterprise systems
EPL II – Eltron Programming Language is an optional firmware version for 203 dpi printers that provide backwards compatibility with many desktop printers as well as the Zebra 2746e Thermal Transfer Printer.
APL – Zebra's Alternative Programming Language allows integration into mixed printer environments without re-programming formats.

- APL-I firmware – allows a 203 dpi (8 dots /mm) Zebra printer to parse and print IPL code intended for an Intermec 3400D. (With APL-I firmware installed, ZPL programming language is not recognized, and ZPL specific features are not available.)
- APL-D firmware – allows a 203 dpi (8 dots / mm) Zebra Printer to parse and print DPL code intended for a Prodigy Plus. (With APL-D firmware installed, ZPL programming language is not recognized, and ZPL specific features are not available.)

Printing Specifications

- 203 dpi resolution (8 dots/mm)
  - Dot size (W x L):
  0.0049" x 0.0049" (0.125mm x 0.125mm)
- 300 dpi resolution (12 dots/mm)
  - Dot size (W x L):
  0.0033" x 0.0039" (0.084mm x 0.099mm)
- First dot location measured from inside media backing edge:
  0.10" ±.04" (2.5mm ± 1mm)
- Maximum print width: 6.6" (168mm)
- Maximum continuous media print length:

203 dpi	300 dpi
102" 2590mm	45" 1143mm

- Media registration tolerance:
  - Vertical = ≤ ±0.039" (±1.0mm) on non-continuous media - --
  - Horizontal = ≤ ±0.039" (±1.0mm) within a roll of media
- Programmable print speeds:
  - 203 dpi = 2.4" (61mm), 3" (76mm) through 10" (254mm) per second in 1" increments
  - 300 dpi = 2.4" (61mm), 3" (76mm) through 8" (203mm) per second in 1" increments

Media Specifications

- Maximum non-continuous label length: 39" (991mm)
- Media type: continuous, die-cut, tags, black-mark
- Media web width (label and liner):
  2.0" (51mm) to 7.0" (178mm) Tear / Cutter
  2.0" (51mm) to 6.75" (171mm) Peel / Rewind
- Minimum label length:
  - 0.5" (12.7mm) in Tear, Peel and Rewind Mode
  - 1.0" (25.4mm) in Cutter Mode
- Media thickness (label and liner):
  0.0023" (0.058mm) to 0.010" (0.25mm)
- Maximum media roll size:
  8.0" (203mm) O.D. on a 3" (76mm) I.D. core
- Maximum fan-fold pack size:
  8.0"L (203mm) x 7.0"W (178mm) x 6.2"H (157mm)
- Gap and notch sensing standards:
  - Inter-label gap: 2 - 4mm, preferably 3mm
  - Sensing notch: 0.25"W (6mm) x 0.12"L (3mm)
  - Sensing hole: 0.125" (3mm) diameter
  * Note: Notch & Hole Position centered from 0.15" to 3.5" from media inner edge
- Black mark sensing standards:
  - Black mark length (parallel to inside media edge):
  0.098" - 0.453" (2.5mm - 11.5mm)
  - Black mark width (perpendicular to inside media edge):
  ≥ 0.37" (≥ 9.5mm)
  - Black mark location: within 0.040" (1mm) of inside media edge
  - Black mark density: > 1.0 Optical Density Units (ODU)
  - Maximum media density: 0.5 ODU

Ribbon Specifications

- Ribbon width: 2.00" (51mm) to 6.85" (174mm)
- Standard Lengths: 984' (300m) or 1476' (450m)
- Maximum ribbon roll size:
  3.2" (81.3mm) O.D. on a 1.0" (25.4mm) I.D. core
- Ribbon wound ink-side out.

Standard 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 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	Matrix			Type*	Character Size					
					Inches			Millimeters		
	Height	Width	Inter-character Gap		Height	Width	Char/inch	Height	Width	Char/mm
A	9	5	1	U-L-D	0.044	0.029	34.0	1.13	0.75	1.33
B	11	7	2	U	0.054	0.044	22.7	1.38	1.13	0.89
C,D	18	10	2	U-L-D	0.088	0.059	17.0	2.25	1.50	0.67
E	28	15	5	OCR-B	0.137	0.098	10.2	3.50	2.50	0.40
F	26	13	3	U-L-D	0.127	0.078	12.8	3.25	2.00	0.50
G	60	40	8	U-L-D	0.294	0.235	4.3	7.50	6.00	0.17
H	21	13	6	OCR-A	0.103	0.093	10.7	2.63	2.38	0.42
GS	24	24	2	SYMBOL	0.118	0.127	7.8	3.00	3.25	0.31
P	20	18	N/A	U-L-D	.098	.088	N/A	2.50	2.25	N/A
Q	28	24	N/A	U-L-D	.137	.118	N/A	3.50	3.00	N/A
R	35	31	N/A	U-L-D	.172	.152	N/A	4.38	3.88	N/A
S	40	35	N/A	U-L-D	.196	.172	N/A	5.00	4.38	N/A
T	48	42	N/A	U-L-D	.235	.206	N/A	6.00	5.25	N/A
U	59	53	N/A	U-L-D	.289	.260	N/A	7.38	6.63	N/A
V	80	71	N/A	U-L-D	.392	.348	N/A	10.00	8.88	N/A
0	Default: 15 x 12			U-L-D	Scalable					
*U = Uppercase, L = Lowercase, D = Descenders										

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/mm
A	9	5	1	U-L-D	.035	0.020	50.5	0.89	0.50	1.98
B	11	7	2	U	.043	0.030	33.7	1.09	0.76	1.32
C,D	18	10	2	U-L-D	.070	0.040	25.3	1.78	1.01	0.99
E	41	20	6	OCR-B	.160	0.086	11.7	4.06	2.18	0.46
F	26	13	3	U-L-D	.101	0.053	18.9	2.57	1.34	0.74
G	60	40	8	U-L-D	.234	0.158	6.3	5.94	4.03	0.25
H	30	19	9	OCR-A	.177	0.092	10.8	2.97	2.35	0.43
GS	24	24	2	SYMBOL	.094	0.086	11.7	2.38	2.18	0.46
P	20	18	N/A	U-L-D	.078	.059	N/A	1.98	1.51	N/A
Q	28	24	N/A	U-L-D	.109	.079	N/A	2.77	2.02	N/A
R	35	31	N/A	U-L-D	.137	.102	N/A	3.47	2.60	N/A
S	40	35	N/A	U-L-D	.156	.116	N/A	3.96	2.94	N/A
T	48	42	N/A	U-L-D	.187	.139	N/A	4.75	3.53	N/A
U	59	53	N/A	U-L-D	.230	.175	N/A	5.84	4.45	N/A
V	80	71	N/A	U-L-D	.312	.234	N/A	7.92	5.96	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

Bar Code Symbologies & Specifications

(ZPL Only, Other Firmware Languages may vary)

- 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 to 3:1 in supported symbologies
- Aztec
- Codabar (supports ratios of 2:1 to 3:1)
- CODABLOCK
- Code 11
- Code 16k
- Code 39 (supports ratios of 2:1 to 3:1)
- Code 49 (2-D)
- Code 93
- Code 128 (subsets A, B, C, and UCC case C codes)
- Data Matrix
- EAN-8, EAN-13, EAN extensions
- Interleaved 2 of 5 (supports ratios 2:1 to 3:1, modulous10 check digit)
- Planet Code
- Logmars
- MaxiCode (2-D)
- PDF417 & Micro-PDF (2-D)
- Plessy
- Postnet
- QR-Code
- MSI
- Standard 2 of 5
- Industrial 2 of 5
- UPC-A, UPC-E, UPC extensions
- RSS
- TLC 39

Zebra Programming Language® (ZPL® and ZPL II®)

- Communicates in printable ASCII characters
- Compatible with mainframe, mini, and PC hosts
- Downloadable objects include graphics, scalable and bitmap fonts, label templates and formats
- 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
- Unicode compliant
  - Supports UTF-8 and UTF-16
  - Natively supports bidirectional and complex scripts
  - Support for OpenType Glyph Substitution

Eltron Programming Language® (EPL II®)

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

Communications Specifications

- USB 2.0
- IEEE 1284 Bi-directional parallel interface
- High-speed serial interfaces
  - RS-232C, with DB9F connector
  - Configurable baud rate (300 – 115,200kB), parity, and data bits. Stop bits at 1 or 2.
  - Software (XON/XOFF), hardware (DTR/DSR, or RTS/CTS) communication handshake protocols
  - RS422/485 with optional adapter.
- ZebraNet® Wireless Plus Print Server – 802.11b/g - compliant wireless print server
- ZebraNet® 10/100 Print Server - Ethernet network print server (10BASE-T, 100BASE-TX)

Electrical Specifications

- Auto-detectable 90-265VAC, 48-62 Hz, 5A fused power supply
- Agency approvals: IEC 60950-1, EN 55022 Class B, EN55024, EN 61000-3-2, EN 61000-3-3.
- Product Markings: cTUVus, CE, FCC-B, ICES-003, VCCI, C-Tick, NOM, S-Mark (Arg), CCC, GOST-R, BSMI, MIC, ZIK, SABS

Physical Specifications

- **Height:** 13.3" (338mm)
- **Width:** 13.4" (341mm)
- **Depth:** 18.7" (475mm)
- **Weight:** 34.7lbs. (16kg)
- **Shipping Weight:** 54 lbs (24.5kg)

Environmental Specifications

- Operating environment:
  Thermal Transfer = 40º to 104ºF (5º to 40ºC)
  Direct Thermal = 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:**
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  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.
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  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 ZM400 and ZM600 printers are designed to work only with genuine Zebra™ printheads, thus maximizing safety and print quality.