

The Ultimate Label Printer Guide



Cody-3™



DiTi™ 203iD



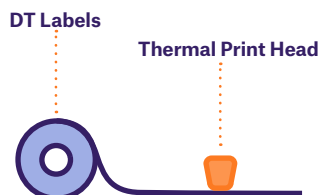
Zebra ZD621

About This Guide

This guide will help you choose the printing technology and label printer best suited for your needs. There are many important factors to consider when making your choice, such as the intended application of your labels, the volume of labels you print daily, as well as the type and quantity of information you will be printing. Let's dive in and make sure you have the necessary knowledge to make an informed decision.

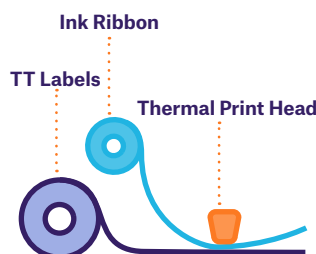


1. What are the different types of label printing technologies?



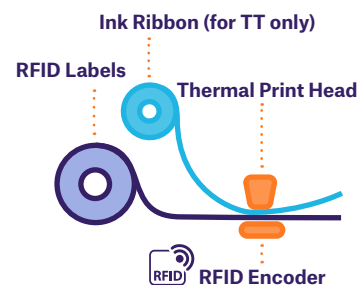
Direct Thermal (DT)

Direct thermal (DT) printers use heat from the print head to darken the material of heat-sensitive, direct thermal labels. However, the printout provided by direct thermal printers can be compromised by heat, extended periods of light, mild chemicals, abrasives, and moisture. For these reasons, direct thermal labels are normally recommended for room temperature archiving applications, as well as short-term storage procedures that do not involve the use of alcohol disinfectants.



Thermal-Transfer (TT)

Thermal-transfer (TT) printers use heat from the print head to transfer ink from a ribbon onto the label. Unlike DT printers, TT printers have a compartment for an ink ribbon to be mounted. Moreover, TT printers can work in both DT and TT modes. TT labels provide robust resistance to various conditions, including extreme temperature, harsh chemicals, abrasion, and light. We recommend TT printers for most laboratory applications due to their versatility.



Radio-Frequency Identification

Radio-frequency identification (RFID) printers are specifically designed to encode data onto RFID chips embedded in smart labels. The printer can also print in DT or TT modes to add barcodes, graphics, or any other human-readable information desired to the label. RFID printers are the best way to encode smart labels as they also check the data to ensure it has been encoded correctly and provide a way to automate the manual process of encoding each tag.

2. Should I buy a dedicated label printer or use my office printer?

Office printers that print either laser or inkjet labels are a great way to get started with labeling in the lab. Dedicated label printers, however, will provide various benefits that cannot be achieved with office printers. Thermal-transfer label printers produce labels that are far more resistant to harsh chemicals and environmental conditions. They allow you to print the exact number of labels you need, don't require expensive ink cartridges or toners, and offer more options in terms of adhesive and label material. Dedicated label printers are also a sophisticated tool that can integrate with a label printing software or your LIMS system, giving you total data control. For better results and considerable savings, a dedicated label printer is a wise investment.



Laser Printer



Thermal Printer

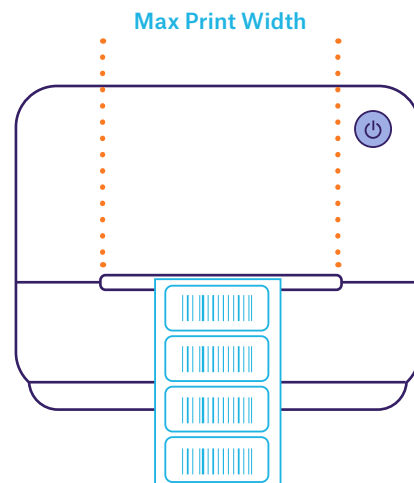
3. Is a desktop printer best suited for my needs, or should I opt for an industrial printer?

Industrial printers are designed for high-volume continuous printing, are made of more durable material, and are typically larger in size. In terms of specifications, industrial printers usually support higher print resolutions and can print faster than desktop printers. As a general rule, if you intend on printing less than 500 labels per day, a desktop printer like Cody, cab, or Zebra would be ideal. If you will be printing more than 500 labels a day, you would be best served with an industrial printer, which are available in both cab and Zebra models.



4. Does the size of my labels affect my printer choice?

Every printer has a maximum print width and height. Most desktop and industrial printers will print up to 4" (101.6 mm) wide, whereas small footprint printers will only print up to 2.24" (56.9 mm) in width. In addition, most printers can print a minimum height of 0.5" (12.7 mm), though some models can print smaller labels measuring 0.25" (6.35 mm) in height. Make sure to know in advance the size of the labels that you will be printing and verify the printer's specifications to see if they will fit before committing.



5. What print resolution do I require?



The necessary print resolution will depend on the amount of information printed, the size of the label, and whether you will be printing barcodes. Most desktop and industrial printers have a resolution of 300 dpi. There are more economical options that print at 203 dpi, and some industrial printers go up to 600 dpi. If you are printing small labels, such as for vials or microscope slides, packed with text and barcodes, we recommend at least 300 dpi. Smaller barcodes and barcodes encoded with higher character density require higher resolution for optimal printing and subsequent scan readability.



6. What type of printer connectivity options are there?

A printer generally comes with a USB cable that connects directly to your computer to provide a simple printing interface. Several computers can be connected to a single printer or multiple printers via a local network (LAN), though this requires printers equipped with an Ethernet port. If you require a mobile setup, you may opt for a printer with wireless features like Wi-Fi and Bluetooth may be ideal for you. Some newer models of printers are provided with USB host ports to allow them to print without a computer.



USB



LAN



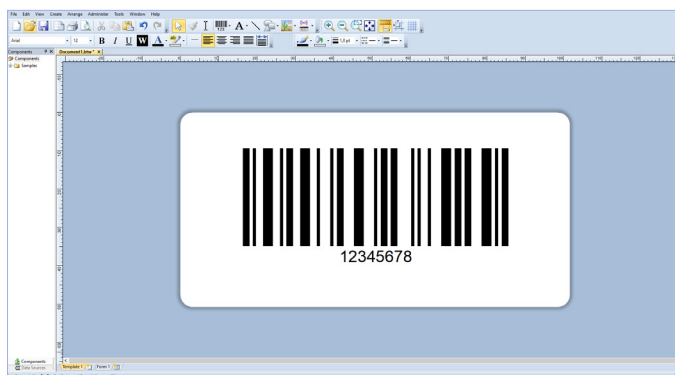
Wi-Fi



Bluetooth

7. Do I require software to print labels?

Software is typically required to print using a label printer. Most printer manufacturers offer free downloadable software to generate barcodes and print serialized information. You may require upgrading to paid software, such as BarTender™ and ZebraDesigner Professional 3, to connect to a database (Excel, Access), encrypt documents, and generate serial numbers or variable data. Consult with your system administrator to determine if you can integrate your inventory management software or laboratory information management system (LIMS) directly with your printer.



8. What kind of add-ons are available?

Advanced printer models offer optional add-ons for convenience. Peelers neatly separate labels from their liner once the label is printed, preventing tedious removal by hand. Cutters can automatically cut media at predefined positions upon printing. Rewinders allow for easy collection and rewinding of printed media onto new rolls. Unwinders are ideal when using heavy or wide-diameter rolls.

9. How much will a new printer cost?

Printers can range considerably in price depending on the type, brand, features, and accessories you choose. Desktop printers typically cost less than industrial printers, while additional features will often increase the price. Industry leaders, including Zebra, offer quality products but at a premium, while lesser-known brands usually offer more economical pricing. Cab printers are a great mid-range option.

10. What type of barcode scanner do I need?

Barcode scanners are available with different options and additional features. Handheld scanners are portable, emitting a scanning light at the push of a button, while stationary scanners require the container to be held directly under or above the scanner to register the barcode. Handheld scanners can work online or offline, either sending data immediately to be processed by a computer or storing it in the scanner itself before downloading the information and relaying it to another system. These scanners can also be wireless or wired, depending on how much flexibility you require when scanning. Mobile app scanners can also be implemented, depending on the tracking method used (e.g., 2D barcodes can often be scanned with mobile apps).



All-in-One Printing Kits!

We offer a variety of printing kits designed with unique applications in mind. These kits provide complete printing solutions intended to make the initial setup quick and easy, so you can start printing your labels as soon as possible. Our kits are supplied with a thermal printer, your choice of labels, and can also include a resin ribbon and barcoding software. Some kits are also provided with a barcode scanner. **These printing kits represent an exceptional value, offering significant savings compared to buying the components separately.**

We also have specialized kits for cryogenic storage, PCR, sterilization, histology, and IVF, as well as refill bundles to help restock your supplies when needed. We offer general printing kits for the various printers we supply, allowing you to customize the kit to your exact needs.



Recommended Printers

Cody-3 Thermal-Transfer/Direct Thermal Printer

The Cody-3 desktop printer from GA International can print in both thermal-transfer and direct thermal modes, perfect for printing barcodes, variable data, and serialized information. It can print high-quality 300 dpi text with a print speed of up to 4"/second, ideal for small to medium volume printing. It provides a variety of connection options, including USB, serial, and ethernet. This printer is provided with a 30-day trial version of the BarTender barcoding software.



DiTi 203iD Direct Thermal Printer

DiTi, the new direct thermal printer from GA International, can print a variety of direct thermal labels designed for various applications throughout the lab, without the need for additional ink sources. Small and lightweight, the DiTi printer can be easily moved and set up anywhere in the lab, with an easy loading design for quick roll replacement. Ideal for printing high-quality barcodes and alphanumeric text.



Zebra ZD621t Thermal-Transfer/Direct Thermal Printer

The ZD621t Zebra desktop printer line can print in both thermal-transfer and direct thermal modes to meet a wide variety of application requirements. It can print in 203 or 300 dpi to provide premium print quality with a print speed of up to 6"/second. Supported by a powerful Print DNA suite of applications, utilities, and developer tools, it includes various connectivity options, such as Ethernet, Bluetooth, Serial, and USB 2.0 and USB Host. The ZD621t can also include optional peeler and dispenser accessories, as additional features.



Zebra ZD621R UHF RFID Thermal-Transfer/Direct Thermal Printer

The ZD621R Zebra desktop printer can print in thermal-transfer and direct thermal print modes, in addition to its ability to encode a variety of RFID labels and tags. As such, this printer provides a 2-in-1 solution for printing and encoding RFID labels. It prints in 300 dpi resolution with a print speed of up to 6"/second, and can encode RFID inlays that are spaced closer together, enabling lower media costs, leading to less waste and fewer roll changes. The printer offers various connectivity options, including Ethernet, serial, and USB 2.0, as well as a full-color LCD touch screen interface.



Zebra ZD411 Compact Thermal-Transfer/Direct Thermal Printer

The ZD411 Zebra printer is a small thermal printer that offers high-resolution printing (up to 300 dpi) and a fast-printing speed (4"/sec). This compact printer is designed for the smallest of workspaces, and its lightweight design makes it conveniently moveable. Easy to use, operate, and troubleshoot, the ZD411 offers a new media handling design to help guide you through speedy media and ribbon changes with less mess, hassle, and training. This printer is also loaded with connectivity options, including Ethernet, Wi-Fi, and Bluetooth.



cab MACH1 Thermal-Transfer/Direct Thermal Printer

The cab MACH1 is a reliable desktop printer that can print in thermal-transfer and direct thermal modes. Ideal for small to medium volume printing, the MACH1 can print high-quality 300 dpi text with a 4"/second print speed, perfect for printing barcodes, variable data, and serialized information. It provides a variety of connection options, including USB and ethernet, for added flexibility and fast device connection. The Mach1 includes easy-to-use control buttons, with some models offering an LCD display.



Zebra ZT231 Thermal-Transfer/Direct Thermal Printer

The ZT231 offers an optimized design and a smaller footprint than similar printers, with a durable design to minimize maintenance. Built for light industrial and commercial environments, it is ideal for large volume printing, able to print 300 dpi resolution text and barcodes at up to 6"/second. The ZT231 printer has an easy-to-use display and can print in both thermal-transfer and direct thermal modes, great for a variety of labeling applications. The printer also provides various connectivity options, such as USB, parallel, and Ethernet.



cab SQUIX Thermal-Transfer/Direct Thermal Printer

The cab SQUIX is a reliable thermal printer that can print 300 dpi text and barcodes in thermal-transfer and direct thermal modes. Ideal for large volume printing, the SQUIX industrial printer has a higher printing speed than the MACH1, printing up to 11.8"/second. The SQUIX also includes an operational panel with easy-to-understand symbols and device settings that enables the printer to be operated intuitively. Furthermore, the SQUIX allows mobile devices to connect wirelessly, directly to the printer via WLAN, in addition to its other connection options.



Choosing Your Printer

The comparison table below provides an excellent overview of each printer's specifications and the availability of special options. These printers are fully compatible with the labeling products for which they are intended. Please contact GA International for all your printing and labeling needs.

● Standard ○ Option - Not available

	GA Cody-3	GA DiTi 203iD	Zebra ZD621t	cab MACH1	Zebra ZD411	cab SQUIX 4 M	Zebra ZT231
Printing Technology							
• Direct thermal	●	●	●	●	●	●	●
• Thermal-transfer	●	-	●	●	●	●	●
Resolution							
• 203 dots per inch	-	●	○	○	○	-	○
• 300 dots per inch	●	-	●	●	●	●	●
• 600 dots per inch	-	-	-	-	-	○	-
Label Dimensions							
• Min. print height	0.25"	0.5"	0.25"	0.16"	0.25"	0.16"	0.38"
• Max. print width	4.16"	3.35"	4.27"	4.16"	4.09"	4.16"	4.09"
Capacity							
• More than 500 labels/day	-	-	-	-	-	●	●
Connectivity							
• USB	●	●	●	●	●	●	●
• Ethernet	●	-	●	●	●	●	○
• Wi-Fi	-	-	-	-	-	●	○
• Bluetooth	-	-	●	-	-	●	-
Add-ons							
• Peeler	-	-	○	-	-	○	○
• Cutter	-	-	-	○	-	○	○
• Rewinder	-	-	-	-	-	○	-
• External unwinder	-	-	○	○	-	○	○
Applications							
• Cryogenic labels	●	●	●	●	●	●	●
• Cryogenic labels (frozen surfaces)	●	●	●	●	●	●	●
• Autoclave labels	●	-	●	●	●	●	●
• Chemical-resistant (solvents, stains)	●	●	●	●	●	●	●
• Most laboratory applications	●	●	●	●	●	●	●

Why Choose LabTAG as Your Label Printer Supplier

As a worldwide leader in laboratory identification solutions, LabTAG offers complete sample identification solutions that keep your lab errorfree and running efficiently. Because our customer support and R&D teams have M.Sc. and Ph.D. degrees in life science, we understand the needs of your lab. As an ISO-certified company, we also implement stringent protocols to ensure we uphold high standards of quality in our products and services.

With a wide selection of thermal printers, we are sure to find the right solution for you. Our experts are always ready to assist you in product selection, solution development, and technical support. Give them a call and they can set you up with everything your lab needs to identify and track your samples and inventory, including labels, software, printer accessories, and scanners.



Dedication to Quality

Rigorously tested high-grade materials and high-quality products



Business Continuity

Mitigated risk of service interruption from unexpected disruptions or disasters.



Scientific Label Experts

Deep understanding of industry-specific identification requirements.



Two Decades of Business

Continuously scaling, improving, serving, and delighting, with our customers in mind.



Product Innovation

In-house R&D team continuously innovates and creates unique, patented products.



Tailor-Made Solutions

Helping you realize your multifaceted projects with custom labels and creative solutions.



Worldwide Distribution

Strategically located warehouses reduce friction for international shipments.



Fast Order Fulfillment

Daytime and evening crews ensure short lead times so you can meet your project deadlines.



Satisfaction Guarantee

Easy returns and exchanges if total satisfaction is not met.



Free Samples

Generous, free sample service allows you to try products before purchasing.



ISO 9001:2015 Certified

We are committed to providing reliable products and services that meet customer and regulatory requirements, through our quality management system.

ISO 22301:2012 Compliant

Our ISO 22301:2012 business continuity management system allows us to prepare for and reduce the likelihood of unexpected disruptions so that we may continue to serve our clients.



Experts ready to help



LabTAG provides excellent customer service and technical support – before, during, and after your purchase. We are with you every step of the way, during and after-sales, to help you achieve your printing goals. Our experts will ensure that you make the best choice possible, get set up quickly with your new printer, and achieve success in printing your labels. This service is free for all our customers.

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INTERNATIONAL

+1-450-973-9420

info@ga-international.com

Labtag.com

USA

P.O. Box 2633,
Champlain, NY
12919, United States
1-800-518-0364

CANADA

4455 Rue Louis-B.-Mayer
Laval QC,
H7P 6B5, Canada
1-800-518-0364

NETHERLANDS

Runweg 28A,
5258 BN Berlicum
Netherlands
+31 (0) 73-7370185

UK

10 John Street,
London WC1N 2EB
United Kingdom
+44 (20) 3769 5683