

# BERTL

**HIGHLY RECOMMENDED**



## RISO CZ180



Up to 130-ppm Monochrome

Print • Copy

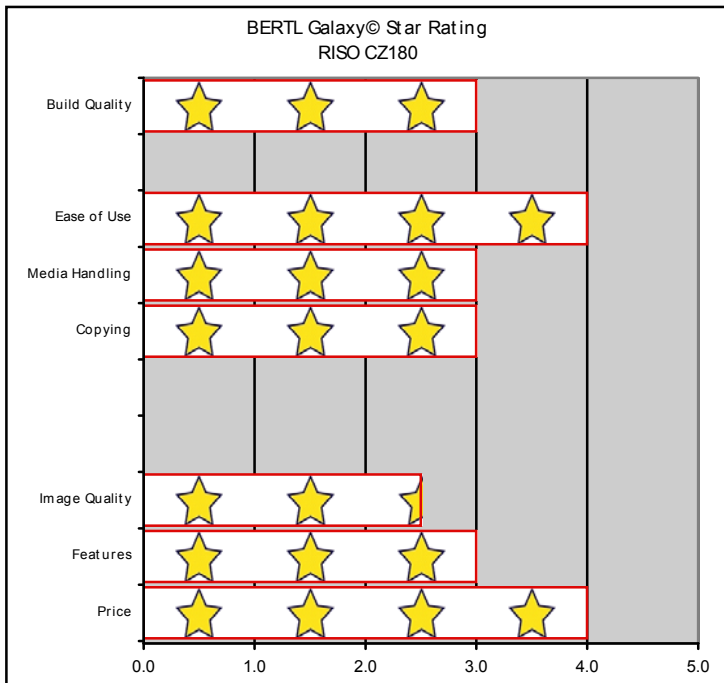


**100% INDEPENDENT ANALYSIS**

## TABLE OF CONTENTS

<b>BERTL Galaxy® Star Rating</b> .....	3
About BERTL's Galaxy® Star Rating .....	3
<b>Introduction</b> .....	4
Device Features Summary .....	5
Pricing, Specifications, Features, Software .....	6
Product Highlights .....	
<b>Productivity</b> .....	7
Printer First Page Out Time .....	7
Copier First Page Out Time .....	7
What We Liked/Would Like To See .....	7
<b>Image Quality</b> .....	8
Density .....	8
Resolution .....	8
Halftones .....	8
Negative/Positive Lines .....	8
Negative/Positive Dots .....	8
What We Liked/Would Like To See .....	8
<b>Ease of Use</b> .....	9
Programming the Control Panel .....	9
Routine Maintenance .....	10
What We Liked/Would Like To See .....	13
<b>Media Handling</b> .....	14
Media Input .....	14
Media Output and Finishing .....	15
What We Liked/Would Like to See .....	15
<b>Summing Up</b> .....	16
<b>About BERTL</b> .....	18

OFFICE/LT. PRODUCTION



## ABOUT BERTL'S GALAXY® STAR RATING

BERTL understands how difficult it is to choose one office-imaging device over another and exists to make this an easier choice for the consumer. That said, how does a consumer decide between two or more devices that carry the same BERTL 3-, 4- or 5-star rating?

### Category-Criteria

**Build Quality** - An analysis of the construction quality of the major components that the user must interact with on a regular basis (e.g.: paper trays, access covers, supplies, etc.).

**Network Administration** - The quality of administrative and management utilities (both executable and Web-based) when compared to that of a sliding scale benchmark based on the network administration feature set of other vendors.

**Finishing** - The productivity penalty (punch, staple, booklets) based on tests and finishing specifications and effectiveness based on a sliding scale benchmark when compared to that of other finishing systems found on other devices.

**Ease of Use** - Ease of maintenance (adding paper, toner, misfeeds, cleaning) and ease of using the documentation, help, control panel, print drivers and client utilities when compared to a sliding scale benchmark based on of the ease of use of other devices.

**Media Handling** - Throughput specifications and evaluations based on a sliding scale benchmark when

compared with the handling of special media (e.g.: oversize, thick or coated stock) found on other devices.

**Copying** - Copy productivity based on tests and a feature-set analysis when compared to a sliding scale benchmark based on the feature set found on other devices.

**Scanning** - Simplex and duplex scan productivity and quality based on tests and a comparison of the overall scan and send feature set when compared to a sliding scale benchmark based on the feature set found on other devices.

**Printing** - Duplex and simplex print productivity based on tests and a printing feature set analysis when compared to a sliding scale benchmark based on the feature set found on other devices.

**Image Quality** - The quality of business color images (text, dot, line, halftone and solid quality) based on tests and a subjective rating on the quality of continuous tones (photos) when compared to a sliding scale benchmark based on the continuous tone quality produced by other devices.

**Features** - The feature set compared to a sliding scale benchmark based on the feature set found on other devices.

**Price** - MSRP of a system configured with network printing, copying, scanning, and one or two media trays/rolls (wide format) configuration.

Among RISO, Inc.'s next-generation digital duplicators recently introduced by the company in April 2008 was an entry-level unit, the CZ180, which provides powerful printing capabilities (at up to 130 ppm with a recommended monthly volume of up to half-a-million pages) in a small package and at an affordable price (less than \$5,000). The CZ180 is designed for enterprises with printing applications up to legal size (on paper up to 11"x17") and prints at 300 dpi. Network printing is optional, and the system utilizes a standard automatic document feeder (no scanning glass) for copying.

While the CZ180 doesn't have some of the features provided by the new higher-end RISO EZ systems (EZ 590, EZ390 and EZ220) such as a touch screen, 600 dpi printing, larger maximum printing area, and scanning glass, it makes up for this with a smaller desktop size and lower price. It doesn't, however, sacrifice powerful printing, substantial page-volume capabilities and cost per page as low as one-third of a cent. It also shares many important capabilities:

- Spot-color capability.
- Ability to handle a wide range of paper stocks, including newsprint, recycled paper, construction paper, envelopes, and index card stock.
- Automatic detection of color originals in copier mode.
- New environmentally friendly soy-based inks and natural fiber masters.
- RISO's i Quality System, which provides two-way communication between the system and its supplies via Radio Frequency (RF) tags. These tags relay information to the system, so that it can adjust to provide optimum image quality.
- Optional network printing; in testing, however, the CZ180 was not equipped with network printing.

Digital duplicators like the RISO CZ180 are generally designed for producing print jobs of at least 30 copies or more, and generally have a lower cost per page than toner-based digital copier/printers. RISO puts cost per page for the EZ180 U at \$0.03746 at 10 copies per original and as low as \$0.00344 at 5,000 copies per original (includes costs of ink, masters and maintenance at 6-percent page coverage on 8.5"x11" paper). This makes the CZ180 especially attractive for enterprises that are very budget-conscious, such as non-profit organizations, schools, hospitals, churches, etc., or indeed, any enterprise that requires the ability to produce high volumes at a low cost.

## Ink Versus Toner?

Digital duplicators rely on a different imaging process than laser, LED-array or ink-jet printers and MFPs. Like other digital duplicators, the RISO CZ180 begin by digitally scanning the original, and then burns the image—using a thermal process—onto a special porous material (called the master), creating openings in the master. The master is then wrapped around a drum. The ink is drawn through the openings (perforations) in the master and onto the paper to create the

printed image. This is generally a fast process— digital duplicators operate as fast as 60 to 180 ppm.

Users of digital duplicators need to be aware of the two-step process when making copies—making the master and then printing—and the fact that for each page scanned in, a separate master must be made. Because the master is the most expensive consumable (about 20 cents per master), and ink is very inexpensive, the most cost-effective jobs are those that consist of over 30 copies of a single page.

## Just How Much Can I Save?

The economics of digital duplicators makes them an attractive proposition in cost-conscious educational, religious and charitable establishments in that the imaging technology does not require expensive photo-sensitive components that need replacing. Because they don't utilize photo-sensitive components, they also tend to be more reliable. The most costly element in the print run is the master. This means that the longer the print run, the greater the cost advantage that the duplicator provides compared to a toner-based system. For most, the magic number is 30 copies. Cost per page can be as low as 1/3 of a cent.

Digital duplicators also have another important advantage over toner-based systems: they consume less power. Because there's no heating element, systems such as the RISO CZ180 consume as little 4 percent of the energy-cost of toner-based systems.

In this test report, BERTL takes an in-depth look at the CZ180 from the image quality it produces, to productivity, ease of use, and paper-handling.

Device-Features Summary – RISO CZ180	
Max. Engine Speed (Letter/A4)	130 ppm
Speed Intervals	3 steps (60 - 130 ppm)
Resolution	300x300 dpi
First Page Out Time	37 secs.
Maximum monthly volume	500,000 pages
Copy	Standard
Print	Optional
Scan	No

## PRICING

RISO CZ180	
List Price	BID (no price listed)
Options	Network Interface Card, Color Drum, Job Separator, Printer Control Board, Stand

## SPECIFICATIONS

Print	
Operating Platforms	MS Win 2000, 2003, XP, Vista
Standard Print Drivers	Opt. CZ180 driver
Standard Interfaces	No

Copy	
Automatic Document Feeder	10-sheet standard ADF
Max. Original Size (Platen)	Not applicable
Max. Original Size (ADF)	12.2"x17.1" (310x435mm)
Maximum Scanning Area	11.7"x17.1" (297x435mm)
Image Modes	Mode Line, Photo, Duo, Pencil
Pre-set Reproduction Ratios	154, 129, 121, 94, 78, 65, 61%
Image Combine (N in 1)	2-up printing
Stamp Options	No
Security Mode (master removal)	Yes

Maintenance	
Master Capacity	300 sheets per roll (\$44.50)
Ink Container Yield	10 copies per original: 2,026 pages 5,000 copies per original: 28,836 pages (\$25.75)
Color Drum	Optional
Available ink colors	Five optional spot colors

## Media Handling: Input

Standard Paper Feed Capacity	1,000 sheets
Max. Paper Feed Capacity	800 sheets
Min. Paper Size	3.9"x5.8" (100 x148 mm)
Max. Paper Size	11.7"x16.5" (297x420 mm)
Min. Paper Weight	14 lb. (50 gsm)
Max. Paper Weight	110 lb. index (210 gsm)
Maximum Imaging Area	Legal (8.5"x14")

## Media Handling: Output/Finishing

Standard Output Capacity	800 sheets
Maximum Output Capacity	800 sheets
Job Separation System	Optional
Collation System	No
Variable Data Module	No
Instant Drying Module	No

## FEATURES

### Software Features

Print Drivers	Opt. CZ180 driver
Client Software	No
Management Software	No
Other Software	No

### Device-Management Software

Web-based device monitoring	No
Job-tracking/ account management	No
Executable-based device monitoring	No
Group management of network devices	No
Monitor 3rd-party MIB-compliant network devices	No
HP Web JetAdmin compatible	No

## PRODUCT HIGHLIGHTS



The CZ180 is a compact unit with a small footprint that can be comfortably installed on a sturdy desk or tabletop or on its optional stand.



The CZ180 features a standard 1,000-sheet paper-input tray (above) and 800-sheet paper-output bin.



The CZ180 incorporates a control panel consisting of hard keys and an LED panel.

## BACKGROUND

A digital duplicator's productivity must be carefully assessed. Unlike a toner-based system that spends much of its time handling single-set (one copy) jobs where processing power must be taken into consideration, duplicators are exactly the opposite. Duplicators only become cost-effective when producing multi-set jobs (approximately 30 sheets per copy)—due to the cost of the master material—and as such tend to only be used for long-run, single-page jobs. In this setting, the processing time is insignificant over the entire print run.

Maximum speed is not always best in a duplicator, and operators often deliberately slow the device down in order to obtain the best image quality. It is important to look at the dynamic between image quality and speed, which can only be judged on a case-by-case basis. BERTL recommends that users take their typical jobs to their local dealer to see how factors like skip feed and speed settings affect the quality and productivity of the print job, and use this as a more accurate assessment of speed.

## Copier First Page Out Time (seconds)

Copier First Page Out Time (seconds)	
	Black-and-White Mode
<b>Number of Originals</b>	
1 Simplex Original	21.85
1 Duplex Original	32.28

## WHAT WE LIKED

- First Page Out Time (FPOT) as fast as 21.85 seconds in copier mode.

## WHAT WE WOULD LIKE TO SEE

- Overall, BERTL was satisfied with the CZ180's productivity.

## IMAGE QUALITY

BERTL evaluates the output of several “test targets” in order to determine image quality. Following are descriptions of key elements of image quality. Note the numbered examples on each of the test targets shown in the right column.

### Office Color Image Quality

1. **Density of Solid Areas** - Better contrast; more vivid overall images
2. **Line Work** - Better production of lines and text
3. **Halftones** - Better production of photographic and screened images
4. **Negative/Positive** - Better production of fine detail

### Photographic Color Image Quality

5. **Flesh tones** - Better production of portraits
6. **Banding** - Better solid and dithered fill
7. **Low Contrast** - Better production of dark images
8. **Saturation** - Better production of bright colors
9. **Caste** - Better color fidelity
10. **Fine Detail** - Better reproduction of fine details

Density of Solid Areas*	
	Copy Density
Black	1.14

\*Density is on a scale of 0 to 2.5, with 2.5 being the best possible.

Copy Halftones		
	Min. Gradation*	Max. Gradation**
Black	20	100

\*Minimum gradation is on a scale of 10 – 100 percent in 10 percent increments. The best possible minimum gradation is 10 percent.

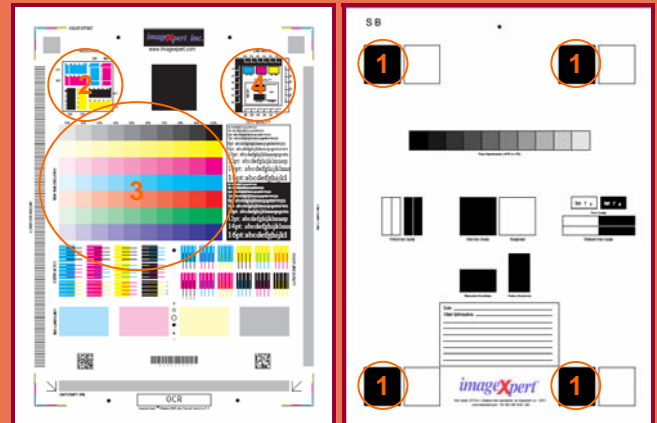
\*\*Maximum gradation is on a scale of 10 – 100 percent in 10 percent increments. The best possible maximum gradation is 100 percent.

## WHAT WE LIKED

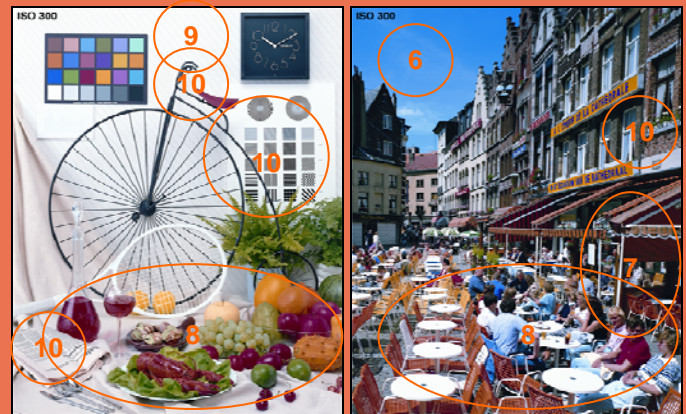
- Overall, the CZ180 produced good image quality that will be sufficient for use in traditional digital-duplicator markets (non-profit organizations, schools, religious organizations, etc.). It may also be acceptable for some applications in commercial-printing enterprises.
- Good production of halftones in copier mode.
- The control panel and print driver provide a variety of image-quality adjustments that enable users to adjust print quality, especially half-toning, in order to obtain optimum image quality.

## WHAT WE WOULD LIKE TO SEE

- Less grainy appearance—images produced in copier mode displayed a grainy appearance.
- Higher print density in copier mode.



BERTL uses ImageExpert printer test targets for the evaluation of printed image quality. BERTL technicians measure image density and evaluate the device's ability to produce a full range of halftones and various sizes of negative/positive text, dots and lines in each primary printing color (CMYK).



BERTL uses synthetic (photographic) test images obtained from ISO International Standard 12640--Graphic Technology--Prepress digital data exchange--CYMK Standard Color Image Data (CYMK/SCID) in order to evaluate the ability to print photographic images.

## PROGRAMMING THE CONTROL PANEL

Among digital duplicators, some units provide a selection of hard keys and an LED panel (no touch screen). Others provide a selection of hard keys and a touch screen. Usually, touch screens are easier to use than LED panels.

Most touch screens utilize a menu-driven system, while others utilize an icon-based system. Some menu-driven touch screens can involve many complicated sub-menus that can be difficult to navigate.

In general, different control panels' ease of use—or lack of—can often have a significant affect on user productivity. The harder it is to select frequently used options such as duplexing, document finishing, etc., the more time the user has to spend programming the device and the less productive they are.

Selections Required for Frequently Used Copy Functions	
Corner Staple	Not applicable
Reduce to 64%	3
Photo Mode	1
Copied Front and Rear Covers	Not applicable



The CZ180 incorporates a control panel consisting of hard keys and an LED panel (no touch screen).



The left side of the control panel includes hard keys for scanning level, reproduction, auto scanning level adjustment, pencil/photo/duo modes, 2-up printing, confidential mode, and custom-mode options.



The center of the control panel contains the LED panel, numerical keypad for entering number of copies, and keys for master-making, printing, printing a proof page, resetting selections, and adjusting the image's position.

## ROUTINE MAINTENANCE

A digital duplicator's marking technology is very different compared to that of a typical laser or LED printer or MFP. With a digital duplicator, when the image is submitted to the marking engine, either via the scanner or the print driver, the device must first produce a master sheet for each page in the job. Using a thermal process, the image is transferred onto a special porous material (master) that is then wrapped around a drum. The printing process involves pressing the ink through the master's pores (perforations) directly onto either the media or via transfer roller to produce the printed image.

A duplicator has four components that require end-user maintenance: switching out imaging drums when performing different color work, replacing ink supplies, replacing master-roller supplies, and emptying the master-ejection unit.

The ink and imaging-drum replacement process usually means just simply sliding the units in and out.

With some devices, replacing the master roll can be awkward and costly if performed incorrectly. The media is very thin and delicate and has to be fed in accurately.

Potentially, the messiest part of the routine maintenance of some duplicators is the emptying of the master ejection unit. The ejected masters—which are still covered in ink—are deposited into a container. That container must be emptied on a regular basis.

## Maintenance Checklist

Load ink/toner while running?	Yes
Requires rear access for access to maintenance items?	No
Requires side access for access to maintenance items?	Yes
All-in-one imaging units?	No
User-disposable waste item(s)?	Yes

## REPLACING PAPER/ADJUSTING OUTPUT TRAY



The user slides this guide into position in order for the paper-input tray to accommodate different paper sizes.



Adjusting the CZ180's paper-output tray to accommodate different paper sizes. Users simply slide the guides into position as shown above.

## REPLACING THE IMAGING DRUM



In order to access the imaging drum and ink container, the user first opens the front drawer as shown above, pulling out the imaging drum and ink cylinder (next photo).



The ink cylinder is located in the bottom left of the photo above.

## REPLACING THE MASTER DISPOSAL BOX



The master disposal box, which contains used, inked masters, is located on the left side of the unit.



To dispose of used masters, the user opens the drawer on the left side of the unit, and then pulls out the box to remove it (below). The box can hold up to 30 used masters.



BERTL found disposing of used masters to be an easy and mess-free process.

## REPLACING INK



Replacing ink is a very easy process. The user first opens the front door, slides out the imaging drum/ink cylinder unit, and then twists the cap of the cylinder containing the ink to slide it out.



Sliding out the ink cylinder from its housing. It's an easy process to insert a new ink cylinder, twist it to lock it into place, slide the ink cylinder/imaging drum housing unit back into the unit, and close the door.

## WHAT WE LIKED

- Removing and replacing the imaging drum, master unit and ink was an easy and clean process.
- Adding paper and adjusting the paper tray to accommodate different paper sizes was easy.
- The control panel was relatively easy to navigate and use. Most users should be able to quickly acclimate to it.

## WHAT WE WOULD LIKE TO SEE

- Overall, BERTL found the CZ180 easy to use and maintain.

## MEDIA INPUT

Paper handling is a core requirement of every device. If a device cannot create documents on the paper users need, it does not matter how fast the print engine is, or how many pages it can produce in a month. Paper handling comes down to three key attributes: weight, capacity and size.

### Weight

The majority of paper used in the general office is graded between 20 lb. bond/80 gsm and 28 lb. bond/105 gsm. Duplicators are generally designed to handle heavy paper stocks so that they can produce a wide range of documents. Most duplicators incorporate a heavy card stock switch that operators should select so that the media-picking mechanism knows to be more forceful in its feed process.

### Capacity

Unlike printers and MFPs, duplicators do not come with cassettes stored under the main engine unit. To satisfy the high speeds and heavy media support, a large single paper input hopper on the side of the unit acts like a high-capacity bypass tray, feeding media at high speed via a very straight path through the engine.

The standard paper capacity for duplicators is 1,000 sheets. Some devices at the higher end of the duplicator market can be equipped with higher input capacities—up to 3,000 sheets—achieved with a single higher-capacity feed unit mounted to the side of the device.

### Size

Letter/A4 size paper is used in the majority of day-to-day operations. Legal and financial documents often are printed on the longer legal size (8.5" x 14"), as are front and back booklet song-sheets for churches or event programs for schools. As a result, duplicator vendors offer entry-level models with an 8.5" wide imaging system at a low price.

However, some environments also rely heavily on the larger ledger/A3 size for printing pages from books, maps/floor plans, or spreadsheets. In production environments, printing letter/A4 documents two-up onto ledger/A3 paper, and guillotining offline is commonplace in order to reduce "click" charges by 50 percent, versus letter/A4 print runs. Many high-volume users are offered the same click charge for letter/A4 as they are for ledger A/3.

## Media Handling Checklist

Maximum media weight from all media sources?	Yes
Maximum media weight in duplex mode?	NA*
Drop-in loading of a full ream of paper?	Yes
Corner separators in paper trays?	No
Spring-loaded ramps in paper trays?	No
Geared media size side guides?	Yes
Captured rear media guide?	Yes
Automatic paper size detection?	No

\*Not applicable

## ADDING MEDIA/ADJUSTING OUTPUT TRAY

### Reloading Paper Supplies

Being able to move paper swiftly through the system without jams occurring or paper-control issues is key to the success of any duplicator. The RISO CZ180's paper-input tray, located on the left side of the unit, is easy to use. The tray can hold up to 1,000 sheets, and is equipped with a control for adjusting the device to print on lighter or heavier paper.



The CZ180's standard 1,000-sheet paper-input tray.

## **MEDIA OUTPUT AND FINISHING**

Since duplicators typically are used to create single-page documents instead of collated sets, there is usually no need for the finishing capabilities found on printers and MFPs.

Output stacking is generally limited to a 1,000-sheet output hopper which sits directly opposite the input hopper, thus maintaining a straight paper path. The sides of this hopper usually include plastic flaps that slow the rate of descent of each sheet, allowing for more time for the ink to dry before the sheet sits on the pile.

### **Job Separation**

To allow for easy job separation in the stack, many duplicators provide a job separation mechanism as standard or optional. This mechanism can be a tape that sticks out to the side of the stack, similar to a tab in a large document.

The job-separation mechanism allows users to quickly divide up jobs for offline collation (if creating multi-page documents) or for distribution of multiple single-page jobs to different users.

### **Other In-line Finishing Options**

Entry-level duplicators are usually limited to a 1,000-sheet output tray only. Higher-end duplicators may provide additional in-line document-output equipments.

- A large, multi-bin collation module acts like a sorter bin on an analog copier, depositing a sheet into each bin in turn as it builds up collated sets.
- A variable-data module with a separate ink-jet print engine allows users to add variable data to the standard template printed by the duplicator. This can be a useful for adding addresses to direct-mail pieces.
- To create multi-colored output, duplicators often carry out multiple passes on the same sheet, building up layers of color with every pass. The ink needs to dry between each pass to avoid smudging or contamination inside the device. To minimize the time delays between passes, one manufacturer provides a drying module that allows printed output to be run back through the device immediately.



The CZ180's standard paper-output tray, located on the right side of the unit, can hold up to 800 printed pages.

## **WHAT WE LIKED**

- Both the input paper tray and output paper tray are easy to adjust to accommodate different paper sizes.
- The device can be adjusted for optimal feeding of standard, light or heavy-weight paper.

## **WHAT WE WOULD LIKE TO SEE**

- Overall, BERTL was satisfied with the CZ180's paper-input and output capabilities.

Despite its small size (50" wide x 25.4" deep x 20" high), the RISO CZ180 is a workhorse system that packs a punch: recommended monthly volume for this digital duplicator is up to half-a-million pages per month. The system can make short work of heavy-duty workflows—as RISO points out that it can power through a 500-sheet print run in less than four minutes. Although the CZ180 doesn't have some more of the advanced features of RISO's EZ series (ledger-size printing, 600 dpi printing, touch screen control panel), it makes up for it with a considerably lower acquisition price. As with RISO's EZ series also tested by BERTL, the CZ180 performed very well throughout testing. BERTL observed the following:

- First Page Out Time in copier mode was as fast as 21.85 seconds.
- In testing, BERTL determined that the image quality produced by the CZ180 will be sufficient when used in the traditional digital-duplicator markets (non-profit organizations, schools, religious organizations, etc.) or used as a cost-effective adjunct/replacement for such existing offset/production-printer applications as printing spot-colors, forms and envelopes. That said, BERTL observed that when compared to that of most other printing technologies evaluated over the years, overall image quality displayed a somewhat grainy appearance. Keep in mind that although there is little doubt that while image quality could use density, resolution and line-and-dot production enhancements, the image quality as it stands is *more than serviceable for a wide variety of effective, economical AND profitable printing applications*.
- At first glance, it may appear a bit more intimidating for the user to maintain an ink-based digital duplicator versus a typical ink- or toner-based digital printer. However, BERTL found that it was easy to change the CZ180's ink, imaging drum and masters. Adding media and removing stacked prints is as easy as it gets. The control panel was also easy to use.

As with all digital duplicators, keep in mind that while image quality produced by these devices will tend not to match that produced by toner- and ink-based devices, duplicators' real value lies in their fast print speeds and ability to handle large workloads (up to 500,000 pages per month for the CZ180). But perhaps their greatest advantage however is the real economy they offer—cost per page is generally about a one-third of a cent, while cost per page for toner- and ink-jet-based devices can be more than 10 times as much. (RISO puts cost per page for the CZ180 at as low as \$0.00344.) The caveat of course is that with digital duplicators like the CZ180, because ink is the least expensive consumable and masters the most expensive, jobs should generally consist of approximately 30 copies or more of a single original in order to achieve low cost per page.

Considering its good performance in testing, excellent ease-of use, and exceptional economy, BERTL highly recommends the CZ180 for traditional digital-duplicator customers, such as non-profit organizations, as well as any organization with high monthly print volumes and where economy and low cost per page are a priority. With its low operating costs and ability to take on big workloads, the CZ180 should also be suitable for some commercial printing applications.

## WHAT WE LIKED

- First Page Out Time (FPOT) as fast as 21.85 seconds in copier mode.
- Overall, the CZ180 produced good image quality that will be sufficient for use in traditional digital-duplicator markets (non-profit organizations, schools, religious organizations, etc.). It may also be acceptable for some applications in commercial-printing enterprises.
- Good production of halftones in copier mode.
- The print driver and control panel provide a variety of image-quality adjustments that enable users to adjust print quality, especially half-toning, in order to obtain optimum image quality.
- Removing and replacing the imaging drum, master unit and ink was an easy and clean process.
- Adding paper and adjusting the paper tray to accommodate different paper sizes was easy.
- The control panel was relatively easy to navigate and use. Most users should be able to quickly acclimate to it.

- Both the input paper tray and output paper tray are easy to adjust to accommodate different paper sizes.
- The device can be adjusted for optimal feeding of standard, light or heavy-weight paper.

## WHAT WE WOULD LIKE TO SEE

- Less grainy appearance—images produced in copier mode displayed a grainy appearance.
- Higher print density in copier mode.

## About BERTL

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The success of an organization depends on its ability to manage its information and assets. An effective workflow process requires the complex integration of information, devices, software and people.

IT managers, office managers, and other knowledge-management professionals need to know what digital imaging devices would best serve their specialized workflow processes.

BERTL's services are designed around this real-world framework, delivering business consumers the independent analysis and insight needed to make critical decisions about digital imaging's role in their organization.

## Independent Analysis and Insight

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BERTL's reports, comparative data, and strategic guides look at digital imaging through the eyes of the business user. The research examines not only the technical features, but also vertical market applications, and business benefits. The impact on worker productivity is a primary concern.

BERTL is 100 percent independent. It receives no funding from manufacturers and all product evaluations and reports are published at BERTL's own expense for its subscribers. Business users worldwide trust BERTL for objective, unbiased analysis of digital imaging systems.

## BERTL Services

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### Reports and Star Ratings

BERTL analysts provide detailed reports on the technical and practical benefits of thousands of color and monochrome workgroup, office, graphic arts, and production devices.

### Product Specifications

DataCheck Gen II provides the most current competitive data on printers, copiers, MFPs, fax devices, wide format printers, scanners, and more.

### News, Interviews, and Analysis

The ITchat online magazine provides insight into the dynamics and trends of the digital imaging marketplace through interviews, feature articles, and software reviews.

## BERTL Awards

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BERTL analysts recognize the leading devices and software solutions in the annual BERTL's Best awards. BERTL also honors the performance of manufacturers in the annual Readers' Choice selections.

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