

## Xerox WorkCentre 3655X

45 PPM Laser Printer • Scanner • Copier • Fax



Reliability.....	Excellent
Multitasking.....	Very Good
Administrative Utilities .....	Excellent
Feedback to Workstations .....	Excellent
Ease of Network Setup.....	Very Good
Print Drivers.....	Excellent
Scan Functions.....	Very Good
Print Quality .....	Very Good
Copy Quality .....	Good
Print Productivity .....	Very Good
Copy Productivity .....	Good
Ease of Use.....	Very Good
Feature Set.....	Excellent
Security Features.....	Not Rated
Environmental Features .....	Not Rated
Toner Yield.....	Excellent

## BLI RECOMMENDATION

Packed with features that move it beyond a conventional laser printer MFP, the Xerox WorkCentre 3655X gave a stellar showing throughout its lab evaluation. While the unit demonstrated flawless reliability and provided print output that will meet or exceed the general-office needs of mid-size workgroups, it offers a strong value proposition based on performance and the aforementioned robust feature set. The WorkCentre 3655X includes the Xerox Extensible Interface Platform (EIP), open architecture that enables integration with time- and money-saving solutions developed by the OEM or third parties-critical in making devices more dynamic. Support for the Xerox Mobile Print app and Apple AirPrint let users print from mobile devices, which can help boost worker productivity in offices where BYOD is encouraged. Ease of use from both the desktop and at the control panel are also hallmarks of the unit: the well-designed drivers let users save settings for frequently used jobs, while the touchscreen, which is very similar to that on Xerox A3 hardware, allows for quick and efficient programming of walk-up jobs. Other noteworthy device attributes include a high memory capacity and a standard 250-GB hard drive, the ability for administrators to control features and functions via the embedded web server, and an outstanding level of feedback that keeps users well informed of status. BLI highly recommends the Xerox WorkCentre 3655X.

**Test duration:** Two months, including a 75,000-impression durability test.

**Maximum monthly duty cycle:** 150,000 impressions.

**Manufacturer's recommended monthly volume:** Up to 15,000 impressions.

**More information on the Xerox WorkCentre 3655X is available through bliQ ([www.buyerslab.com/bliQ](http://www.buyerslab.com/bliQ)).**

## STRENGTHS

- Highly reliable—flawless durability performance
- Open architecture enables integration with time- and money-saving solutions
- Supports mobile printing via standard AirPrint compatibility and two available for-pay mobile print solutions
- Well-designed drivers allow users to save settings for frequently used jobs; compatible with Xerox's Global and Mobile print drivers, which streamline deployment
- Touchscreen makes programming walk-up activity, including capture and send jobs, easy; simple routine maintenance procedures
- Eco-friendly features include standard automatic duplexing and toner-save mode (PostScript only), both of which help reduce TCO; EarthSmart settings in the drivers simplify programming "green" settings
- High memory capacity and the standard 250-GB hard drive aid in job processing; high bypass capacity; accommodates heavier media than most competitive devices
- Crisp text, consistent line art, the entire range of greyscale, and smooth transitions from light to dark shades in black-and-white photos, in print mode
- Fast running speed when printing the job stream; fast scan speed for double-sided document in black mode; small scan-file sizes in all tested modes
- Outstanding package of utilities that allow administrators to manage the unit and a mixed fleet of hardware, track output by device and user, and control features and functions such as colour usage (including by application type)
- Users are kept well informed of status via pop-up messages and information in the driver

## WEAKNESSES

- Slow first-print time from overnight sleep
- Slow first-copy times from the platen and document feeder
- Because of the size and weight of the unit, it might be cumbersome to turn the unit around when clearing misfeeds in the back

## TEST RESULTS AND OBSERVATIONS

+, – and ○ represent positive, negative and neutral attributes, respectively.



### RELIABILITY

EXCELLENT

- + The unit is certified highly reliable by BLI after producing 75,000 impressions and 7,500 scans with no misfeeds recorded or any service required.

PMs/Malfunctions	Service Required	Meter Count (Impressions)	ADF Count (Scans)
Starting Meter Count		0	0
Ending Meter Count		75,000	7,500
Total Misfeeds/Misfeed Rate		0/Not applicable	0/Not applicable
Service Calls	0		



## MULTITASKING

VERY GOOD

- + The unit accepts both print and copy jobs to memory capacity, and users can program scan jobs while another job is running. To reserve a copy job, users simply drop originals into the document feeder and can then make selections and press Start. Users can promote a print or copy job to the second position in queue.
- + The unit has an interrupt function, which is unusual for this class of device. Once the Interrupt hard key is pressed, users can access all supported typical features—quantity, duplex, the document feeder—for a copy job. The interrupted job stops immediately rather than (BLI's preference) at the end of a set, and it auto-resumes after the interrupt job has been complete for one minute; alternatively, users can press Start to force the interrupted job to resume.
- Jobs are processed on a first-in, first-out basis; priority mode can't be changed.

Primary Function	Secondary Function	Print	Scan	Copy
Print		Yes	Yes	Yes
Scan		Yes	*	*
Copy		Yes	Yes	Yes

\* As soon as the document feeder is free the secondary function can be programmed; however, the primary function is already complete.

A "Yes" indicates that the user can initiate the secondary function while the primary function is taking place and that no further user intervention will be required for the secondary function to take place.



## ADMINISTRATIVE UTILITIES

EXCELLENT



CentreWare Internet Services (CWIS), the embedded web server, has an administrator mode, but all users—with or without credentials—can still make changes to device settings and the address book, which could become problematic. CWIS allows for other tasks to be performed by administrators, including viewing the queue, saved jobs and an array of counters; creating scan templates and managing the address book; and controlling access to features and functions such as colour usage or the USB port. (U.S. model pictured)

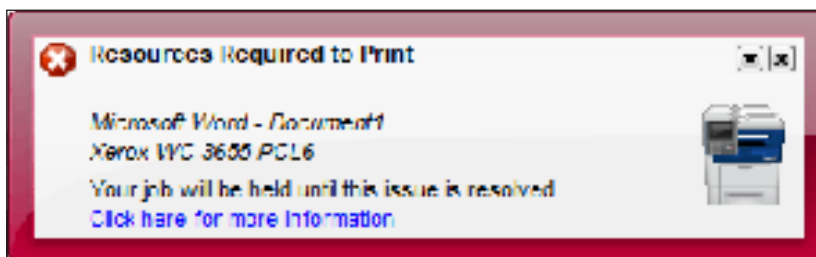
- Even in user mode, administrators need to take the extra step to lock down the CWIS tabs so that users don't have access to these functions; by default, the Properties tab is the lone one that's secured.
- + The embedded web server's Support tab has resources such as links to Xerox's website and browser software updates, while the Help link in the top-right corner provides guidance for anything that can be done in the utility.
- + The User Permissions feature allows administrators to create roles for users when printing or using the control panel. Administrators can specify which users can print in colour, for instance, or if they can output in simplex, what job types can be printed and which paper trays can be used. Administrators can also customize the driver's default application settings so that, for example, PowerPoint presentations can be set to always print in duplex, or Outlook email can be set to print in black, or jobs can be printed in colour only during certain hours of the day. These customized settings will be dynamically reflected in the driver.
- + Xerox's Remote Control Panel tool lets administrators or users operate the control panel from an office PC via the web server. Access to the control panel can be blocked when a remote session is active (a warning message will appear on the display).
- + Xerox Standard Accounting (XSA) tracks prints, copies, scans and faxes by device (up to 2,500), user and department (up to 500). The software is embedded, and no additional third-party applications are required. Setup of different types of accounts is enabled via the web server, and administrators and users alike can generate reports.
- + CentreWare Web (CWW) lets administrators manage a fleet of mixed hardware. They can choose up to 30 of the 1,000+ attributes to monitor for each device. The utility includes 21 canned reports and supports the ability to perform remote firmware upgrades, access embedded web servers and, most importantly, limit or restrict features and functions usage (achieved via access to CWIS). BLI has evaluated CWW for a Solutions Test Report and feels it's an approachable and effective remote device management tool.
- + Xerox SMart eSolutions provides two applications for automating device management: MeterAssistant automatically collects and securely submits meter reads using a built-in audit process to increase billing accuracy, and SuppliesAssistant proactively manages toner supplies and monitors usage to ensure that customers have the right inventory at the right time. Both tools can be downloaded from Xerox's website free of charge.
- + Xerox Job-Based Accounting (JBA) helps provide the necessary integration with third-party tracking tools.



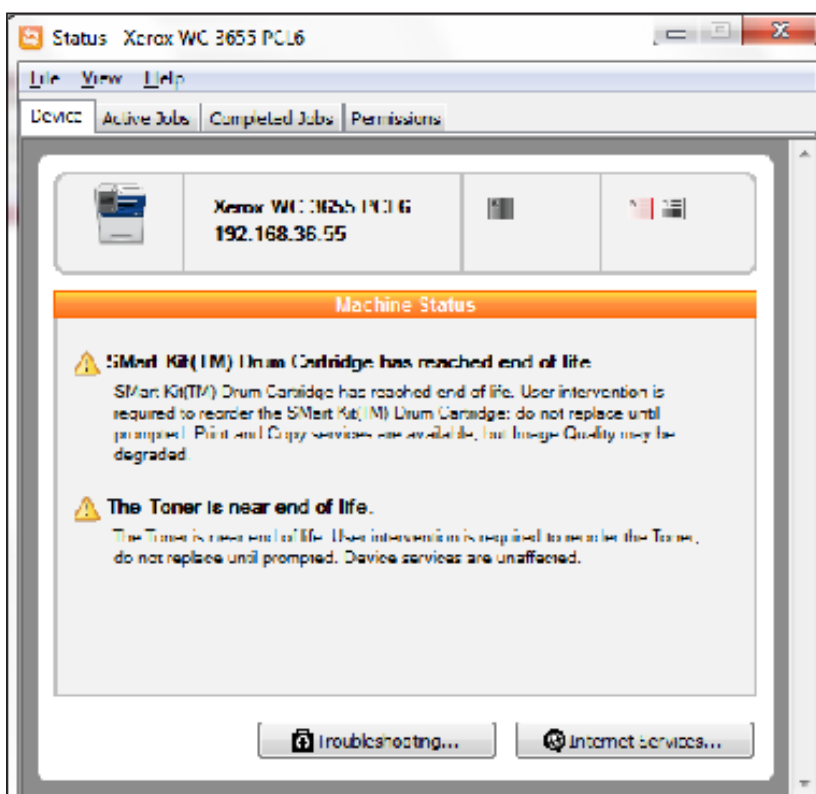
## FEEDBACK TO WORKSTATIONS

EXCELLENT

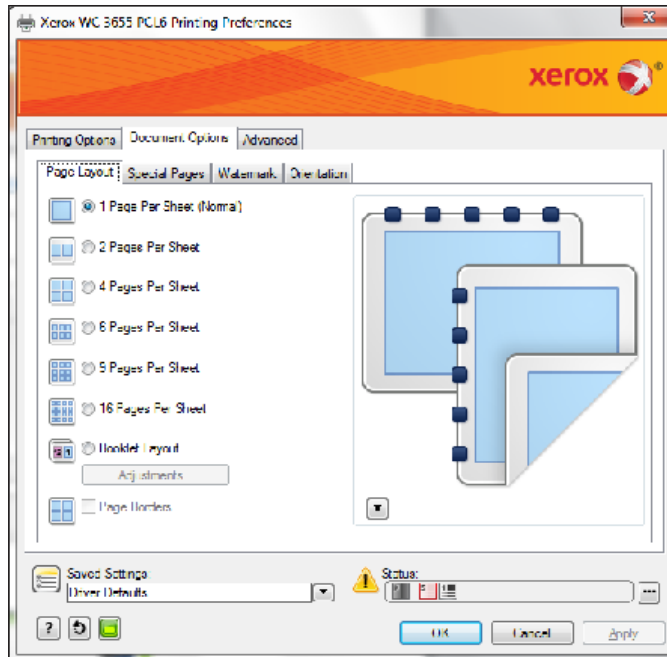
- + While icon alerts aren't available, the feedback utility provides automatic pop-up messages for warnings and errors such as when there's a jam or toner is running low; the list of conditions is preconfigured but covers everything that typical users will need. Print job completion notification is offered, and the unit can be set to beep when attention is required.



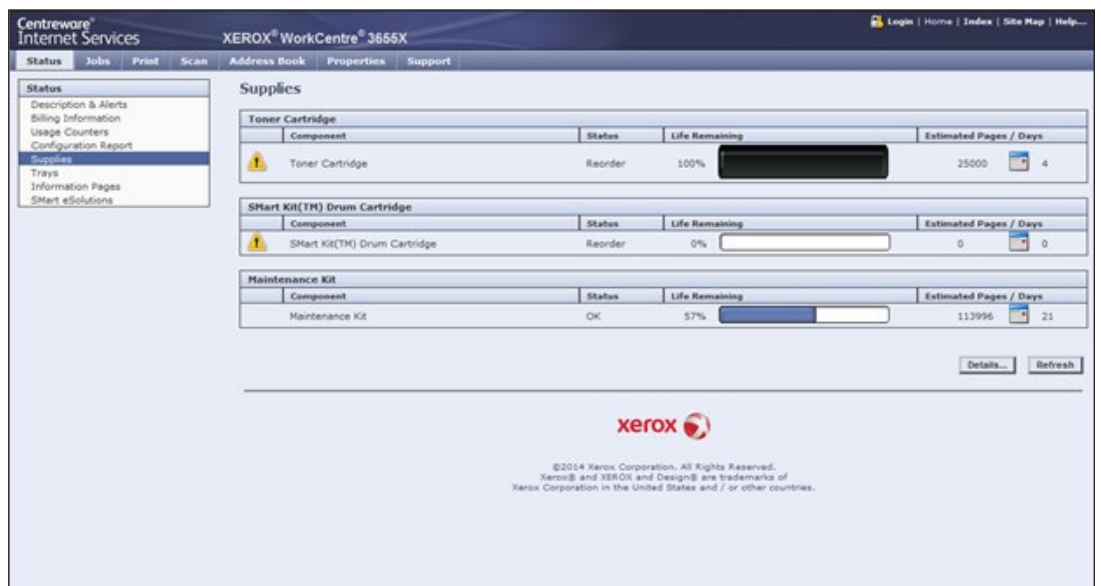
The pop-up gives users basic info about the current issue. (U.S. model pictured)



Via the “Click here for more information” link in the pop-up, users will be presented with this window, which details not only the current issue but also provides troubleshooting tips and the status of toner and paper. Users can also see active jobs in queue and jobs that have already been output, while the Permissions tab shows global access rights to features such as simplex/duplex. (U.S. model pictured)



The drivers have status icons that, when users hover over them, display the remaining life of toner (in percent) and the paper levels (Full or Empty). The “...” button links to the supplies page of the embedded web server. (U.S. model pictured)



Consumables status for toner, the drum and the maintenance kit are presented in gauges with the percent in text. For paper levels, users must navigate to the trays page, where the status of all paper sources-input and output-is indicated in text. (U.S. model pictured)



- + Via the embedded web server, administrators can establish email alerts for warnings and errors; three lists can be maintained, each supporting up to five people. The fleet management utility provides the same capability, along with similar type of status information as can be found in CWIS..



## EASE OF NETWORK SETUP

VERY GOOD

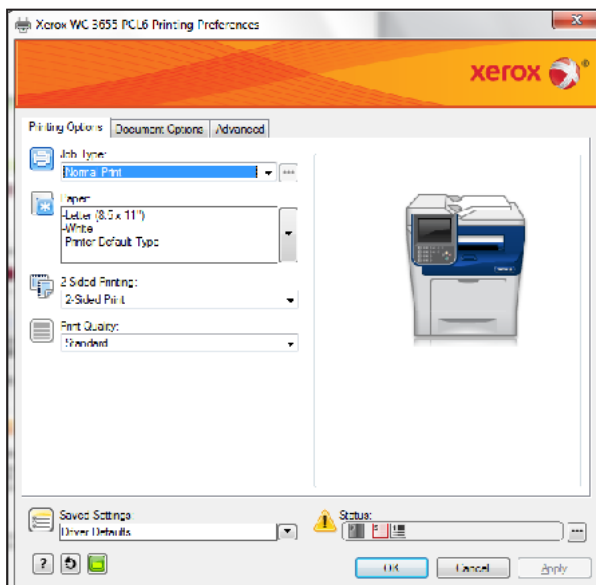
- Physical setup is straightforward as the WorkCentre 3655X ships fully assembled (optional drawers not tested). Xerox recommends at least two people lift the unit from the box and place it in the desired location. Packaging materials aren't excessive. A standard-yield toner cartridge (rated yield, 6,100 pages) is preinstalled and doesn't require users to remove a protective seal.
- + Administrators must download the drivers from Xerox's website. The PCL, PostScript, XPS and TWAIN drivers can be installed in a matter of minutes; during the six-click routine the port is created, the IP address is assigned and the unit detects configured accessories (none tested), all automatically.
- + While there's no utility that lets administrators configure the drivers and simultaneously install them on multiple workstations, this can be achieved through CWW, which is provided as a free download on Xerox's website.
- + One-to-one and one-to-many cloning are achieved through the embedded web server and the fleet management utility, respectively; this function can only be done with devices in the same family, which is common.
- The Xerox Global Print Driver (X-GPD) and Xerox Mobile Express Print Driver (X-MEPD) can be downloaded from Xerox's website.



## PRINT DRIVERS

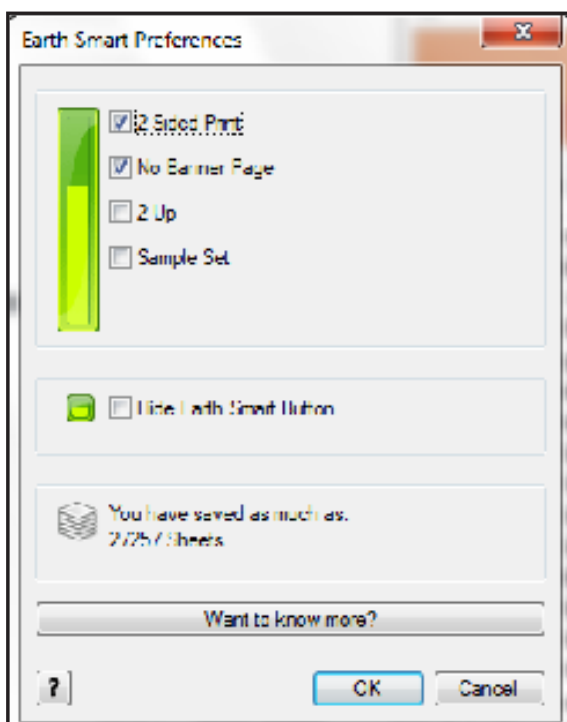
EXCELLENT

- + The PCL 5e/6, Adobe PostScript 3, and XPS drivers are compatible with Windows and Mac operating systems. A separate driver for environments running Linux, UNIX or Novell is also available for download on Xerox's website.



The ability to save settings for frequently used jobs, which is available on every tab of the well-designed drivers (PCL above), boosts ease of use thanks to single-click programming. Otherwise, users can choose duplex and paper size on the main screen, but will have to navigate to other tabs to select quantity and orientation. Graphical changes indicate when features such as duplex have been chosen. (U.S. model pictured)

- + The PCL and PostScript drivers share a common look and feel. Two noteworthy differences in the latter are that users can select toner-save mode, which helps save consumables and money, and that the Image Options tab allows for lightness and contrast to be adjusted.



EarthSmart settings in the drivers allow users to configure duplex and N-up printing defaults, among other things, to conserve paper. The "Want to know more?" button links to the environmental section of Xerox's website. (U.S. model pictured)



- + The X-GPD and X-MEPD allow administrators to deploy one driver for multiple devices regardless if they're Xerox or otherwise, further elevating ease of use. Of note, the X-MEPD auto-discovers devices on the network for document output, which is beneficial for users who work in multiple offices or locations.

### Xerox WorkCentre 3655X Print Driver Features

	PCL 6	Adobe PostScript 3
Auto Feature/Device Detection	Yes	Yes
Booklet Printing	Yes	Yes
Collate	Yes*	Yes*
Max Paper Sources per Job	2	2
Mirror Image	No	Yes
Negative Image	No	Yes
N-up Printing	2 to 16	2 to 16
Overlay	No	No
Paper Gauge	Yes	Yes
Print and Hold	No	No
Proof Print	Yes	Yes
Quantity Selection	9,999	9,999
Reduction/Enlargement	Auto, 1% to 999%	Auto, 1% to 999%
Resolution Modes (dpi)	Standard, High	Standard, High
Save Settings	Yes	Yes
Secure Print	Yes	Yes
Watermarks/Custom Watermarks	Yes	Yes
Cover Mode	Yes (front/back, with/out image)	Yes (front/black, with/out image)
Poster Mode	No	No
Separator Pages	Yes	Yes
Toner Gauge	Yes	Yes
Toner Save	No	Yes (Print Quality)
Print All Text as Black	No	No

\* File size doesn't increase if collate is selected in the driver or from the print screen within the application.



### SCAN FUNCTIONS

VERY GOOD

- Users can scan files in full colour, black or greyscale to email, the hard drive or, via FTP or SMB, network folders at various resolutions from 72 to 600 dpi. Supported formats include PDF, PDF/A, JPEG, TIFF and XPS. TWAIN scanning is supported. No scan preview is supported.
- + Features and formats available for scan to email are the same when scanning to a USB

drive. Users can choose a folder in which to store captured files rather than the unit placing the document on the top level. However, users can't create folders on the drive from the control panel.

- + Scanning to email is made easy thanks to LDAP, which means users can quickly find destinations at the control panel. Recipients can be entered in To, CC and BCC fields, and a list of favourites can be maintained. If an email address isn't in the directory, entering one on the display's QWERTY keypad is straightforward; the keys are responsive and, considering the size of the LCD, of decent size, while dedicated "@" and ".com" keys are on the main screen (note that the keypad language can be switched by pressing the button in the bottom-right corner of the screen).
- + The unit has built-in OCR capabilities.
- While tested scan speed in black duplex mode is faster than average compared with legal-size monochrome laser/LED printer MFPs in this class tested to date, those in all other tested modes are competitive.
- + Scan-file sizes in full-colour mode are among the smallest, while although no compression of black files is offered, file size is still smaller than average.
- Optional Scan to PC Desktop, which includes a one-seat licence, offers a simplified repository for scanned images.

#### Scan Speed in IPM | Competitive Average

Full Colour 1:1	25.1	25.3
Full Colour 2:2	13.5	14.0
Black 1:1	38.7	37.9
Black 2:2	24.1	21.0

Files are scanned at 300 dpi in PDF format.

#### Scan-File Size in KB | Competitive Average

Full Colour (no compression)	176	958
Full Colour (best compression)	132	495
Black (no compression)	52	64

Testing is conducted with single-page files scanned at 300 dpi in PDF format.



## PRINT QUALITY

VERY GOOD

- + Characters were fully formed, dark and sharp, with competitive smoothness of curves/serifs. Production of closely spaced fine lines was average, lines were of a consistent thickness and circles were fully formed, while diagonal lines exhibited some stair-stepping. No overspray was detected around text or line art. Greyscale was visible over the entire range, with distinct separation between all levels; halftone fill was smooth, with minimal banding. Solids had average darkness and competitive consistency of coverage.

Text	Very Good
Line Art	Very Good
Halftone Pattern	Very Good
Halftone Range	Excellent
Solids	Good

### Print Density Range

Xerox WorkCentre 3655X	1.18 to 1.26
Average for devices in this class tested to date	1.12 to 1.76

Measurements are based on four readings corresponding to four different solid black locations on the output. The higher the density reading, the darker the image.

### Print Density Average

Xerox WorkCentre 3655X	1.23
Devices in this class tested to date	1.43

The higher the density reading, the darker the image.

### Visible Halftone Range

Xerox WorkCentre 3655X	10% to 100%
Halftone increments on test original	10%, 20%, 30%, 40%, 50%, 60%, 70%, 80%, 90%, 100%

The halftone range test original consists of 10 blocks of increasing dot-fill levels.



## COPY QUALITY

GOOD

- Characters were fully formed and dark, with average sharpness and competitive smoothness of curves/serifs. Production of closely spaced fine lines and consistency of line thickness were average, while circles and diagonal lines displayed some breakup and stair-stepping, respectively. No overspray was detected around text or line art. Greyscale was visible over a decent range, with distinct separation between most levels; halftone

fill had average smoothness and minimal banding. Solids had average darkness and competitive consistency of coverage.

Text	Good
Line Art	Very Good
Halftone Pattern	Good
Halftone Range	Fair
Solids	Very Good

### Copy Density Range

Original	1.69 to 1.74
Xerox WorkCentre 3655X	1.23 to 1.34
Average for devices in this class tested to date	1.12 to 1.68

Measurements are based on two readings corresponding to two different solid black locations on the output. The higher the density, the darker the image.

### Copy Density Average

Xerox WorkCentre 3655X	1.31
Devices in this class tested to date	1.41

The higher the density reading, the darker the image.

### Visible Halftone Range

Xerox WorkCentre 3655X	29% to 100%
Halftone increments on test original	15%, 29%, 53%, 77%, 83%, 91%, 95%, 100%

The halftone range test original consists of eight blocks of increasing dot-fill levels.



## PRINT PRODUCTIVITY

VERY GOOD

- + Running speed when printing BLI's job stream, which simulates typical traffic in a busy workgroup, is faster than average compared with legal-size monochrome laser/LED printer MFPs in this class tested to date.
- First-print times for all three test files are competitive, as are running speeds when printing sets in both modes.
- First-print time from overnight sleep is slower than average.

## First-Print Time from Overnight Sleep

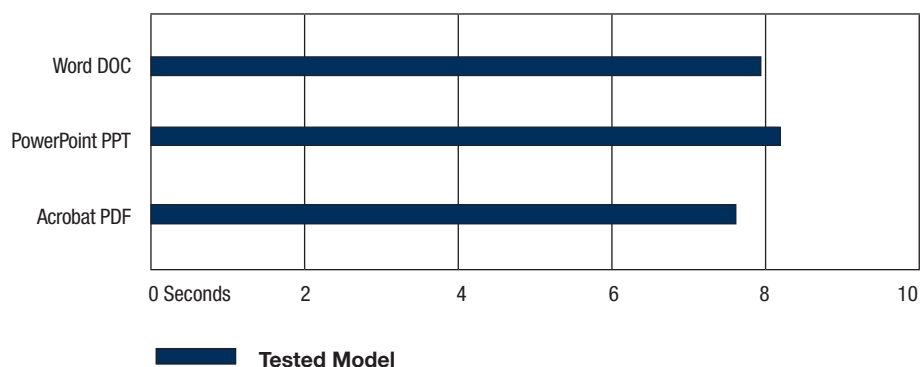
Xerox WorkCentre 3655X	35.59
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Device sits idle overnight; a single-page black Word document is sent to the device; first-print time in seconds indicates the time it took to warm up, process, image and deliver a single-page test document to the output tray. The unit was tested with the PCL driver.

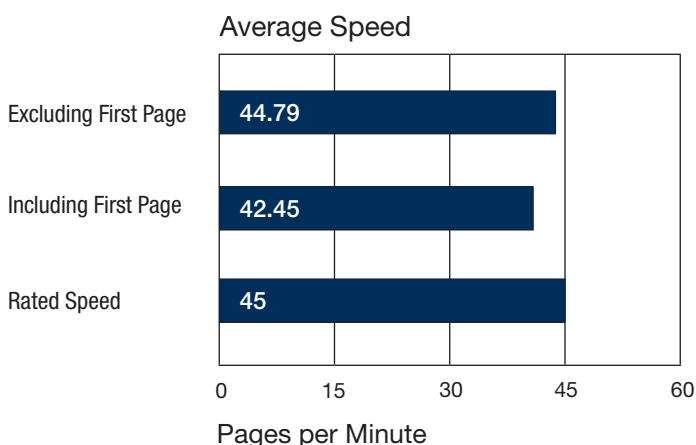
## First-Print Times by File Type

Windows XP		Time in Seconds
Word DOC	Black Text	7.98
PowerPoint PPT	Colour Graphic/Text	8.19
Acrobat PDF	Black Graphic/Text	7.67

First-print time in seconds indicates the time it took to process, image and deliver a single-page test document set to the output tray. The unit was tested using the PCL driver.



## BLI's Tested Print Speeds versus Manufacturer's Rated Speed



Print speed is tested using BLI's Monochrome Test Original with 6% page coverage. The test page is printed in a quantity equal to double the vendor's rated print speed for the device in each mode tested (e.g., if the vendor's rated print speed is 20 ppm, 40 pages are printed). The unit was tested using the PCL driver.

## Average Print Productivity

	SPEED IN PPM	PERCENT OF RATED SPEED
1:1	40.0	88.8
1:2	25.8	57.3

Productivity is tested using a 10-page black document. BLI obtains the overall efficiency for each mode by averaging the efficiency ratings (derived by dividing the tested speed of the device by the rated speed and then multiplying by 100) for each run length (1, 5, 10 and 20 sets). The unit was tested using the PCL driver.

## Job Stream

	SPEED IN PPM	PERCENT OF RATED SPEED
PCL	36.9	81.9

BLI's job stream includes Word documents, Outlook email messages, Excel spreadsheets, PowerPoint, HTML and Acrobat PDF files, totalling 19 pages. This test simulates the type of traffic a typical device might experience in a real-world, multi-user environment. All of the files are sent to the device as a group, at which time the stopwatch begins; timing ends when the last page of the last file exits the device. Job stream efficiency is determined by the percentage of the rated speed at which the device operates when producing real-world jobs. The closer the rate is to 100%, or if it exceeds 100%, the more efficient the device.

## COPY PRODUCTIVITY

GOOD

- Running speeds when copying sets in all modes are competitive compared with legal-size monochrome laser/LED printer MFPs in this class tested to date.
- First-copy times from the platen and document feeder are among the slowest.

## First-Copy Time in Seconds

Platen	12.28
Document Feeder	13.03

## Average Copy Productivity | Competitive Average

	SPEED IN PPM	PERCENT OF RATED SPEED
1:1	37.6	83.6
1:2	24.2	53.7
2:2	22.1	49.2

Productivity is tested using a 10-page black document. BLI obtains the overall efficiency for each mode by averaging the efficiency ratings (derived by dividing the tested speed of the device by the rated speed and then multiplying by 100) for each run length (1, 5, 10 and 20 sets).



## EASE OF USE

VERY GOOD



The control panel, which can be tilted and swivels left or back to the original position, has hard keys, including an alphanumeric keypad, and some LEDs (of note, one for when the unit is in sleep mode). The Help function offers guidance with specific jobs and, BLI technicians think, provides a high level of support. Users can check consumables levels by pressing the Machine Status hard key and then the Supplies tab. (U.S. model pictured)

- + Navigation of the display is made easy thanks to the touchscreen, as well as clearly labelled buttons that have text and icons. And environments that have a mix of Xerox legal-size and A3 devices will appreciate the fact that the control panels of both types of devices are nearly identical, thus making life easy for workers who use both.
- + Adjusting the drawer for different-size paper is straightforward. The length guide (slides) and width guides (move in sync) once the tabs have been pressed; for larger-size media, users unlock the green button at the front of the drawer and pull the front of the drawer forward. And with no corner separators, a spring-loaded ramp or anything else to make the process difficult, loading paper is also simple.
- While the unit auto-detects paper size, users must still confirm a change in media size via the display, which is typical of devices in this class.
- + Clearing misfeeds from the three access areas-one in the document feeder, two in the



rear-is also easy. Consumables don't have to be removed. An graphical depiction of the unit is brought up on the display when a jam happens, along with step-by-step instructions in text and animation; once a step is complete, the unit automatically brings up the next part of the process.

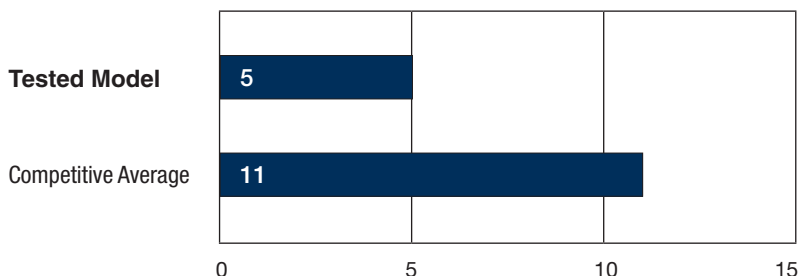
- However, if the unit is positioned against a wall and needs to be turned around to clear the jam, it might be cumbersome for some users due to its size and weight. Also, while the drum is exposed in the back, it's out of the way of the two misfeed locations, but users should still take care not to come in contact with it.



Replacing toner is clean. Users must first turn the control panel to the left and can then open the front cover, which includes most of the output tray; the black tabs on the cartridge must be unlocked, after which users can simply pull out the cartridge. Instructions on the touchscreen and the packaging provide guidance, should it be needed. (U.S. model pictured)

- + Replacing the drum requires users to pull out the entire assembly, which has a handle in the front. While this process is certainly more difficult than with competitive devices that utilise a print cartridge rather than separate a separate toner cartridge and a drum, it's still simple and only happens once every 85,000 pages or so.
- + The user will have to replace supplies fewer times than the average of competitive devices tested to date.

### Projected 36-Month User Interventions (Over 180,000 impressions)



User interventions are calculated based on BLI's average tested toner yields (using the ISO 19752 test target, printed in a semi-continuous mode), as well as the manufacturer's rated yields for other consumables (drums, developer units, waste containers, etc.). BLI calculates the total number of supplies and maintenance parts that would be required to output 180,000 pages (assumes 5,000 pages per month, which is an average volume for this class of device, over three years). Each individual cartridge or other consumable is counted as one intervention. Long-life maintenance parts, such as fuser kits and rollers, and paper supply replenishments, aren't included in BLI's calculations. Depicted scenario is for illustrative purposes only. The actual number of interventions over three years will vary based on a number of factors, including (but not limited to) page coverage, run lengths, usage patterns, periods of inactivity and calibrations performed.



## FEATURE SET

EXCELLENT

- + Xerox EIP enables the seamless integration with solutions developed by the manufacturer or third parties, to boost productivity, tighten security and save money. The OEM offers an array of software, from various versions of its own DocuShare platform to support for all Nuance Equitrac offerings.
- + The unit offers standard AirPrint compatibility and support for a pair of optional mobile print solutions, Xerox Mobile Print Cloud (XMPC) and the Xerox Mobile Print Solution (XMPS). Ideal for low to mid-volume use, XMPC is hosted in the cloud, where jobs are sent and stored until the user authenticates at the device to release the job. For added security in higher volume environments, XMPS uses an on-site server component within the corporate firewall to enable secure pull printing. Both systems are fee-based services and support Microsoft Office to ensure document fidelity, allow users to send jobs to Xerox and third-party devices, and are flexible, feature-rich and easy to use.
- + In conjunction with XMPC and XMPS, the Xerox Mobile Print app provides a well-designed interface from which to print files from mobile devices. The unit is certified by Mopria, a non-profit organisation dedicated to consistently improve the process of printing from smartphones, tablets and laptops
- Xerox PrintBack is a free app that allows users to print from iOS and Android devices to the device connected to a PC. BLI has looked at PrintBack and found it easy to use, with a competitive feature set.
- + The unit supports over 90 different types of optional ID card readers, thereby making authentication at the control panel that much more flexible.

- + Once it's inserted in the port on the left side of the unit, the USB drive is auto-discovered and users can browse folders to locate a file to be output. Supported formats are PDF, JPEG, TIFF and XPS. Before printing, users can make selections for quantity, simplex/duplex, collate and paper supply.
- + Direct printing can be performed via the embedded web server. Supported formats include PDF, PCL, PS and XPS. Users can change settings such as quantity, simplex/duplex and orientation, among others.
- + In only three clicks, users can navigate the display before selecting a job that's saved in either a private or public mailbox. Administrators have to enable this function in the embedded web server.
- + Users can build a job via the scan (to memory) or copy (for output) menus on the display. A range of settings can be changed from one batch to the next, and users can switch from capturing pages from the platen to the document feeder, or vice versa. BLI technicians found the process to be intuitive.
- Compared with conventional toner, Xerox EA toner fuses at a much lower temperature and can reduce power consumption and CO<sub>2</sub> emissions by up to 20 and 35 percent, respectively, according to the manufacturer.
- + Not only does the unit have a non-upgradeable RAM capacity of 2 GB that's among the highest compared with the average standard and maximum capacities of legal-size laser/LED monochrome printer MFPs in this class, it's also outfitted with a standard 250-GB hard drive. The bypass has an above average capacity of 150 sheets. Media-weight accommodation, at up to 216 gsm through the drawers and bypass, is among the heaviest.
- Standard (700 sheets) and maximum (2,350 sheets) paper capacities are competitive, as is the 60-sheet capacity of the standard RADF. Output capacity is 250 sheets. Every device in the group has standard automatic duplexing, a feature that can help conserve paper and lower costs. And while some devices in the group have a standard finisher or offer one as an option, the unit comes with a convenience stapler that can staple up to 20 sheets. Users can scan the front and back of an ID card and have both output on a side of paper. A wireless interface is optional.
- As part of its three-year Total Satisfaction Guarantee, Xerox will replace the WorkCentre 3655X with the same device, or another one that has comparable features and capabilities, if an organisation is unhappy with the unit for whatever reason.



## SECURITY FEATURES

NOT RATED

AUTHENTICATION		
Network user authentication at control panel		Standard
Windows		Yes
Novell NetWare NDPS		Yes
LDAP		Yes
Kerberos		Yes
802.1x wireless		Yes
SMTP		Yes
POP before SMTP		No
Biometric		No
ID Card		Optional
HID		Yes
Common Access		Yes
Other	Mifare, Indala, Magnetic Stripe Readers, Visual Barcode Reader	
Registered department or user ID codes		Standard
Number	XSA: 2,497 user IDs, 500 general account IDs, 498 group accounts; JBA: 10,000 user IDs and 60,000 account IDs	
ACCESS CONTROL		
Restrict colour		NA
Control panel lock/disablement		Standard
Restrict access to address book		Standard
Restrict USB port		Standard
Restrict direct printing		Standard
Restrict other		NA
HARD DRIVE		
Encryption		Standard
Maximum level		256-bit AES
Overwrite		Standard
Method		Scheduled or on-demand
Maximum number after a job		3
Maximum number at end of lease		3
Lock		No
Removable		No
Password-protected mailboxes		Standard
Data auto-deletion in mailboxes		Standard
JOB TRACKING		
Job logs		Standard
Digital signature		Standard
Verify document came from device		No
Verify document came from specific user		Yes
JOB PROTECTION		
Encrypted secure print		Yes (via X-GPD)
Secure print		Yes
Encrypted scanning		Yes
Maximum level		NA
For scan to USB		No

Unauthorised scan/copy protection block (watermark)	Standard
Compatible with same-brand devices	Yes
Compatible with third-party devices	Yes
NETWORK SECURITY/PROTOCOLS	
Protocol disablement	Standard
Port disablement	Standard
IP address filtering	Standard
MAC address filtering	Standard
HTTPS	Standard
Self-signed certificate	Yes
Certificate signing request	Yes
IPsec	Standard
IPv6	Standard
Secure Sockets Layer (SSL)	Standard
S/MIME encryption	Standard
SNMPv3 support	Standard
Transport Layer Security (TLS)	Standard
Trusted Platform Module (TPM)	No
CERTIFICATIONS	
Common Criteria	Pending
EAL level	2+
Capabilities certified	Entire suite
FIPS 140-2	Yes
Level	2
IEEE 2600	Yes
OTHER	
Administrator password length	Up to 12 alphanumeric characters
Password-protected web server	Yes
Additional features	NA
Third-party features	McAfee Embedded with whitelisting technology, optional McAfee Integrity Control, Cisco TrustSec integration

NA: Not applicable



## ENVIRONMENTAL FEATURES

NOT RATED

Specified capable of running 30% post-consumer recycled paper	Yes
Specified capable of running 50% post-consumer recycled paper	Yes
Specified capable of running 100% post-consumer recycled paper	Yes
Instant/Quick Fusing	No
Duplexing	Yes
Toner-save mode	Yes (PostScript only; Print Quality)
RoHS compliant	Yes
Percent of product made from previous devices	0
Percent of product made from post-consumer materials	<0.1

Percent of product made from pre-consumer materials	0
Percent of product made from bio-based materials	0
Product designed for recycling (easily disassembled, no binding agents)	Yes
Items that can be recycled	INA
Hardware remanufacturing program for this product	No
Cartridge recycling program for this product	Yes
Prepaid label for return of cartridges/bottles for this unit	Yes (via Xerox's online Ecobox program)
Toner recycling system	No
Ability to program features such as duplexing and auto shut-off over entire fleet	Yes
What tool can be used to do this?	CentreWare Web
Green packaging materials for the product	Yes
Green packaging materials for its consumables	Yes
Packaging materials used	Corrugated paper/box, EPS, EPE, HDPE, LDPE, tape, nitron
Eco-Label Certifications	
ENERGY STAR	Yes
Other	Canada EcoLogo, The Eco Declaration, Germany Blue Angel, EPEAT Silver
Tested energy consumption levels of the device (watts)	
Ready/Idle	70
Energy-save	19
Sleep mode	4
During Printing	501
How fast can this product be programmed to go into the following modes (seconds)	
Ready/Idle	0
Energy-Save	0
Sleep mode	0
Can the above settings be programmed by a walk-up user?	Yes
First-print time out of sleep mode (seconds)	21
Emissions output from this device for the following substances (mg/h)	
Ozone	0.34
Styrene	0.09
Benzene	<0.001
TVOC	1.1
Dust	0.49
Other	NA

INA: The vendor declined to provide this information

NA: Not applicable



## TONER YIELD

EXCELLENT

- + Based on an average of two cartridges, not only is tested yield among the highest compared with legal-size monochrome laser/LED printer MFPs in this class tested to date, it exceeded the declared specification by over 11,000 pages.

### Tested Toner Yield | Competitive Average

Tested Impressions	36,633	25,911
Rated Toner Yield	25,900	21,373
Rated Drum Yield	85,000	120,995

Tested impressions is based on an average of two cartridges using the ISO 19752 toner yield test original. Some devices in the competitive group employ a cartridge that includes the toner and drum in a single component; in those cases, rated toner yield is used as the rated drum yield in calculating the average.

### Tested Supplies Cost per Page

	France	Germany	Italy	UK
Supplies Cost per Page <sup>1</sup>	0,101 €	0,101 €	0,101 €	0.806 p

Supplies CPP is based on Xerox's web pricing for the cartridges and BLI's tested toner yields as well as Xerox's web pricing and the rated yield of the drum.



## SUPPORTING TEST DATA

**Test Environment:** This product was tested in BLI's 929-square-metre U.S. test lab, in an environment monitored by an Extech RH S20 Digital RH/Temperature Recorder and Honeywell Model 61 Seven-Day Temperature/Relative Humidity Chart Recorder. All products lab tested by BLI are powered by dedicated circuits that are protected by ESP (Electronic Systems Protection, Inc.) surge protectors to prevent transient power and communication disturbances from impacting equipment under test.

**Test Equipment:** BLI's dedicated test network, consisting of Windows 2003 servers, Windows 7 workstations, 10/100BaseTX network switches and CAT5 cabling.

**Test Duration:** Products are tested for two months, a portion of which consists of a durability test during which the product is run at its manufacturer-rated maximum monthly volume, with varying daily test volumes designed to replicate real-world use over an eight-hour workday. This variable schedule includes a mix of various-size documents, simplex and duplex modes, and a mix of short, moderate and long run lengths, and on/off cycles, throughout the day.

**Tested Configuration:** Xerox WorkCentre 3655X base unit.

**Test Procedures:** The test methods and procedures employed by BLI in its lab testing include BLI's proprietary procedures and industry-standard test procedures, which include a BLI-developed variation of ASTM's 1318-90 Test Method for Determination of Productivity using Electrostatic Copy Machines. In addition to a number of proprietary test documents, BLI uses an industry-standard KATUN test original for evaluating black image quality and test suites from Quality Logic to evaluate applications compatibility. In addition to a visual observation under a Graphiclite D5000 Standard Viewer, colour print quality is tested using a colour test target, which is read using the X-Rite Eye-One/iO Colour Spectrophotometer, and samples are analysed using the CIE XY Chromaticity Diagram. In addition, density of black and colour output is measured using an X-Rite 500 Series Densitometer. Georgia-Pacific Spectrum Multi-Use Paper is used in the tests, 10 percent of which is recycled paper containing 30 percent post-consumer content. Image quality is tested using Georgia-Pacific Printing Paper. Units are tested for compatibility on Windows 7 with Microsoft Office Suite 2010, as well as Adobe Acrobat Reader 10.0.

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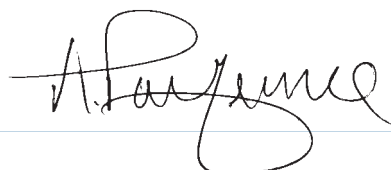
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# CERTIFICATE OF RELIABILITY

Awarded to  
**XEROX CORPORATION**  
for the performance of the  
**Xerox WorkCentre 3655X**  
in BLI's in-house durability test.



ANTHONY F. POLIFRONE  
MANAGING DIRECTOR



DECEMBER 2014

This is to certify that when subjected to a 75,000-impression Buyers Lab durability test,  
the Xerox WorkCentre 3655X proved to be a highly reliable product.

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