

Lab Test Report

ASIA PACIFIC EDITION

# KYOCERA ECOSYS M2540dn

40 PPM Monochrome Print • Copy • Scan • Fax

A Comprehensive Keypoint Intelligence Laboratory Evaluation



<b>P</b> Reliability	
Apps/Onboard Tools	1
• Image Quality	
Print Quality	
Copy Quality	
• Usability	\
Serviceability/Management	
Walk-up Experience	
Workstation Experience	
• Mobility	ſ
• Security	Г
• Features	
• Speed	
Print Speed	
Scan Speed	
Copy Speed	
• Power Consumption	ſ
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Excellent Not Rated Good Good Good Very Good Very Good Very Good Very Good Not Rated Not Rated Good Good Good Very Good Very Good Not Rated



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# **OUR TAKE**

Designed for mid-size workgroups who don't need colour output, the 40-ppm KYOCERA ECOSYS M2540dn is a reliable, easy to use and feature-rich MFP that can help users to save time and boost productivity. Offering a lower than average cost of ownership, the unit gave a flawless durability performance, and coupled with impressive productivity the ECOSYS M2540dn promises to keep work moving smoothly. Ideal for environments where space is at a premium, this compact model includes a USB port that allows for direct printing of files from a flash drive. For added convenience, support for Mopria Print Service, KYOCERA Mobile Print, Apple AirPrint and Google Cloud Print lets users print to the device from their smartphones and tablets. An intuitive and graphical universal KX 7.x print driver means it's very easy to use at the desktop, while the unit is also easy to manage via KYOCERA NetViewer, which can assign specific alerts to different recipients, plus KYOCERA Command Center RX provides administrators with helpful details about device and consumables status. Output produced by the ECOSYS M2540dn will satisfy the needs of general office environments. KYOCERA employs long-life consumables to minimize the unit's environmental impact and further reduce TCO and downtime. BLI highly recommends the KYOCERA ECOSYS M2540dn.

## KYOCERA ECOSYS M2540dn Fast Facts\*

Max Monthly Duty Cycle	50,000 impressions
Manufacturer's Recom- mended Monthly Volume	INA
Rated Speed	40 ppm
Std Paper Source(s)	Single drawer
Std Paper Capacity	250 sheets
Paper Weights	60 to 163 gsm
Bypass/Paper Weights	100-sheet/60 to 220 gsm
Max Paper Capacity	850 sheets
System Memory (Std/Max)	512-MB RAM/1.5-GB RAM
Document Feeder/ Capacity	Std DSPF
PDL/PCL	PCL 5e/6/XL, PostScript 3, XPS
HDD	NA
Scanner Technology/Speed	ClS/23 ipm colour, 40 ipm black
* At time of publication	

**Test Duration:** Two months, including a 25,000-impression durability test. More information on the KYOCERA ECOSYS M2540dn is available through bliQ (www.buyerslab.com/bliQ).



# **BENEFITS**

Highly reliable performance, combined with simple routine maintenance, increases uptime

Wide variety of mobile print support (Apple Airprint, Mopria Print Service and Google Cloud Print) provides flexibility to iOS and Android users on the move

Increased flexibility for workers on the go with support for mobile applications, including KYOCERA Mobile Print, Apple Air-Print and Google Cloud Print; optional wireless interface. Print quality should more than meet the needs of general office environments

Compact footprint makes the device ideal for space-constrained office environments; intuitive control panel and LCD display simplifies job programming

Standard DSPF enables fast duplex print and scan, plus reduces wear and tear on originals

# ADVANTAGES

Fast first-copy times help users get back to work quickly after this common activity

Fast duplex scan speeds in colour and black

# **LIMITATIONS**

Slower than average speed when printing or copying sets in duplex mode

# RELIABILITY

Excellent

The unit is certified highly reliable by BLI, completing a 25,000-impression durability test and 2,500 scans with no misfeeds recorded and no service required.

Impressions Printed	25,000
Scanned Pages	2,500
Misfeeds	0
Misfeed Rate	Not applicable
Service Calls	0



# APPS/ONBOARD TOOLS

Not Rated

Good

This model does not support the HyPAS platform offered by some KYOCERA sister models.

# IMAGE QUALITY

	Print Mode	Copy Mode
Text	Good	Very Good
Line Art	Good	Very Good
Halftone Pattern	Good	Good
Halftone Range	Excellent	Fair
Solids	Very Good	Very Good

### PRINT QUALITY

Good

Dark, sharp and fully formed text, with no signs of breakup under magnification

Distinct fine lines, with consistent thickness, smooth circles and diagonal lines, with an average amount of breakup and stair-stepping

Some overspray and minimal haloing visible around text and line art when viewed under magnification

Distinct separation between all greyscale levels and smooth dot-fill with minimal banding

Dark solids, with no mottling visible.

### BLACK PRINT DENSITY RANGE

	Density Range	Average Density
KYOCERA ECOSYS M2540dn	1.39 to 1.40	1.40
Competitive Average	1.12 to 1.76	1.43

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.

### VISIBLE HALFTONE RANGE

#### KYOCERA ECOSYS M2540dn

10% to 100%

The halftone range test original consists of 10 blocks of increasing dot-fill levels (10 to 100%, in 10% increments).



20% to 80%

### COPY QUALITY

Good

**Very Good** 

Very Good

Average darkness and sharpness of characters, with smooth curves and serifs (default text mode)

Distinct fine lines, with consistent line thickness, fully formed circles and smooth diagonal lines

Above average amount of overspray visible when text or line art was viewed under magnification.

Distinct separation between levels over the entire range of greyscale, and smooth dot-fill with minimal banding

Dark solids, with smooth toner coverage in copy mode

### COPY DENSITY

	Density Range	Average Density
Original	1.68 to 1.78	1.72
KYOCERA ECOSYS M2540dn	1.35 to 1.41	1.38
Competitive Average	1.12 to 1.68	1.41

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

### VISIBLE HALFTONE RANGE

#### KYOCERA ECOSYS M2540dn

The halftone range test original consists of eight blocks of increasing dot-fill levels (15%, 29%, 53%, 77%, 83%, 91%, 95%, 100%).

# **USABILITY**

# SERVICEABILITY/MANAGEMENT

Physical set up is simple; packaging materials are not excessive and just one person can lift the unit out of the box and place it in the desired location. A 3,600-page print cartridge is preinstalled, but must be removed from the device to dispose of its protective seal.

KYOCERA's Product Library DVD contains the administrative utility suite, which includes KYOCERA Net Viewer, Job Status Monitor and KYOCERA Command Center RX, the embedded web server, as well as the drivers and documentation. The disc auto-runs and detects available KYOCERA devices on the network (either icon driven or as a list). After selecting the device with the Express Install option, just five clicks are required to install the KX driver, Status Monitor, Fonts and an Uninstall utility. The port is created automatically. Users should be up and running in minutes. When the Product Library DVD is inserted, administrators are notified about the best means of ensuring environmental best practice, including power management options, the use of recycled media and duplex printing.

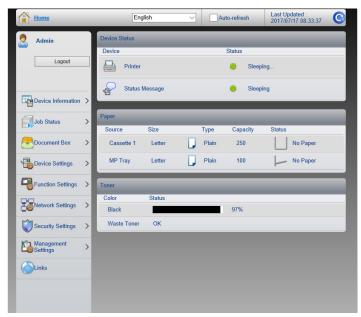
KYOCERA Net Viewer allows administrators to clone device settings from one device to another, plus they can deploy drivers to multiple workstations on the network, so that they don't have to be installed on each machine individually.



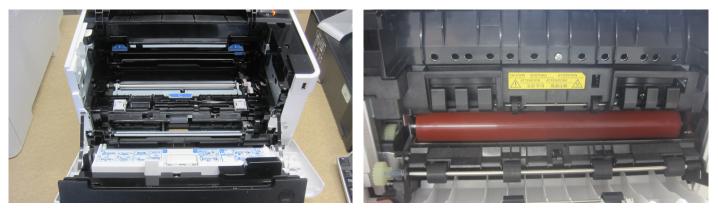
### KYOCERA ECOSYS M2540dn Lab Test Report

Net Admin is a unified solution for network device management for KYOCERA and third-party network printing devices. Via Net Admin administrators can view page counts and device status, as well as view and configure alerts for groups of devices on the network. Administrators can also access detailed information on individual devices such as the amount of toner remaining, configuration settings and event logs. Net Admin supports a map view that allows each device to be dragged and dropped to its specific location, allowing faster navigation for technical support.

Replacing toner is a mess-free process. Although it can't be replaced while the unit is running, the cartridge is accessible from the front. To replace toner, users must open the access door and release a blue lever on the left, and the cartridge lifts out easily.



Command Center RX provides administrators with information about the unit and lets them handle tasks such as changing device settings, viewing device status and monitoring toner and paper supplies. It also allows administrators to configure email alerts that can be sent to up to three recipients for error conditions, including paper jam, cover open and add toner/paper.



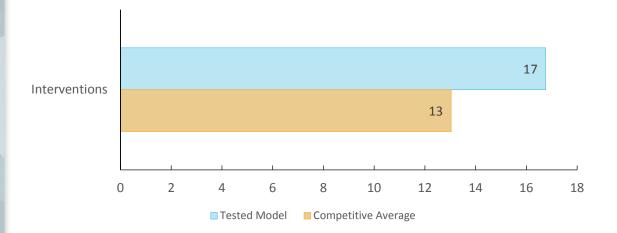
Users can expect to have to change consumables a little more frequently than they would with competitive models tested to date, according to BLI's calculations. Removing misfeeds, either at the front (shown left) or at the rear of the device (shown right), is extremely easy. If accessed at the front, the process unit (drum and developer) needs to be pulled out, but the surface of the drum is not exposed to any risk of damage during removal.





Adjusting the drawer for different-size paper is simple; the length and width guides move in sync. Loading A4size media is very easy: users press the tab at the front of the unit, pull out the drawer, load the paper and press down on the spring-loaded ramp before sliding the tray back in.

### Estimated User Interventions (Over 36 Months)



User interventions are calculated based on manufacturer's rated toner yields (in accordance with ISO/IEC 19752), 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 over 36 months (assuming 3,500 pages per month). Each individual cartridge or other consumable is counted as one intervention. 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.



# WALK-UP EXPERIENCE

### Very Good

As would be expected of a device in this class, the unit can't perform two functions concurrently. Print jobs are downloaded one at a time from the network queue to the print queue. The unit doesn't support program ahead or copy reserve. Jobs are processed on a first-in, first-out basis; administrators can't change priority.

Scan functionality is flexible and enables users to access the utility at the control panel, rather than having to put originals in the feeder and then go back to their PC to initiate scanning.

Scan to USB, PC, email and cloud are all supported; formats include JPEG, PDF (including PDF/A for archiving, standard, compressed or searchable and TIFF in colour or black at various resolutions from 75 to 600 dpi).

Print from USB is standard; the port is located on the front of the unit. The USB flash drive is auto-discovered; users can then browse folders to select files—JPEG, TIFF, PDF, XPS—to output.

The control panel's small touchscreen display is very easy to use.

# WORKSTATION EXPERIENCE

Very Good

Command Center RX provides administrators with information about the unit and lets them handle tasks such as changing device settings, viewing device status and monitoring toner and paper supplies.

KYOCERA Net Viewer allows administrators to create groups of products based on reporting or error notification requirements. Within a "report group", an administrator can receive email reports outlining a wide variety of device statistics, including printed page volumes and consumable levels, at time intervals of their choice.

A software utility, KYOCERA Net Direct Print, is also included on the CD that enables direct printing of PDF, PostScript, PRN and PRESCRIBE files without having the respective applications installed on the PC. Using this utility, users can send multiple files at one time and alter settings such as quantity, duplexing, N-up printing and resolution.

Ö	Orientation	Collate	Duplex	Pages per sheet	EcoPrint
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					Reset
	Printer profiles:				
~	Factory				
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		_			Apply
				Save As	Profiles
<b>1</b> 8 KYD0	CERa			ОК	Cancel

Note that the PCL and PostScript drivers are similar in style to reduce the learning curve for users who switch between the drivers.



# MOBILITY

**Not Rated** 

**Not Rated** 

The device is Mopria-certified with optional wireless and Wi-Fi Direct interfaces; it supports mobile printing from leading tablets and smartphones via AirPrint, Google Cloud Print and KYOCERA Mobile Print app. A USB host port supports direct printing of a variety of file formats including PDF, JPEG, TIFF, and XPS.

# **SECURITY**

# SECURITY FEATURES

Network user authentication at control panel	Standard
Windows	Yes
Novell NetWare NDPS	NA
LDAP	No
Kerberos	Yes
802.1x wireless	Yes(Optional)
SMTP	Yes
POP before SMTP	Yes
Biometric	No
ID Card	Optional
HID	Yes
Common Access	INA
Other	PaSoRi, RFIDEAS, ELATEC, Omnikey
Registered department or user ID codes	Standard
Number	100
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	Any function using User ID
HARD DRIVE	
Encryption	NA
Maximum level	NA
Overwrite	NA
Method	NA
Maximum number after a job	NA
Maximum number at end of lease	NA
Lock	NA
Removable	NA
Password-protected mailboxes	NA
Data auto-deletion in mailboxes	NA

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JOB TRACKING	
Job logs	Standard
Digital signature	No
Verify document came from device	NA
Verify document came from specific user	NA
JOB PROTECTION	
Encrypted secure print	Standard
Secure print	Standard
Encrypted scanning	Standard
Maximum level	AES 128bit
For scan to USB	Yes
Unauthorised scan/copy protection block (watermark)	Standard
Compatible with same-brand devices	Yes
Compatible with third-party devices	No
NETWORK SECURITY/PROTOCOLS	
Protocol disablement	Standard
Port disablement	Standard
IP address filtering	Standard
MAC address filtering	No
HTTPS	Standard
Self-signed certificate	Yes
Certificate signing request	Yes
IPsec	Standard
IPv6	Standard
Secure Sockets Layer (SSL)	Standard
S/MIME encryption	INA
SNMPv3 support	Standard
Transport Layer Security (TLS)	Standard
Trusted Platform Module (TPM)	INA
CERTIFICATIONS	
Common Criteria	No
EAL level	NA
Capabilities certified	NA
FIPS 140-2	No
Level	NA
IEEE 2600	No
OTHER	
Administrator password length	Up to 64 alpha/numeric characters (UTF-8)
Password-protected web server	Yes
Additional features	NA
Third-party features	NA
INA: The vendor declined to provide this information	

INA: The vendor declined to provide this information NA: Not applicable



# **FEATURES**

Good

The unit's standard RAM capacity of 512 MB is competitive compared with the standard capacity of A4-size printer MFPs in this class, but its maximum 1.5-GB capacity is above average.

The standard paper capacity of 250 sheets (with an additional 100-sheet bypass) is competitive. It can be upgraded to a maximum of four paper sources totalling 850 sheets, which is below average.

Media weights accommodated through the drawers (163gsm) and bypass (220gsm), are competitive in this class.

# **SPEED**

# PRINT SPEED

Good

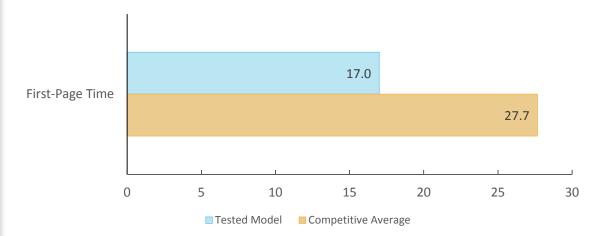
Good

For first-page print time from overnight sleep, the device was among the fastest, performing well above average. Similarly, the speed during its Job Stream test was above average.

Regardless of document type (Word, PPT or PDF), the first-page-print times from ready mode were competitive.

However, when printing multi-page documents, whether single or multi-set, the unit's performance was below average overall.

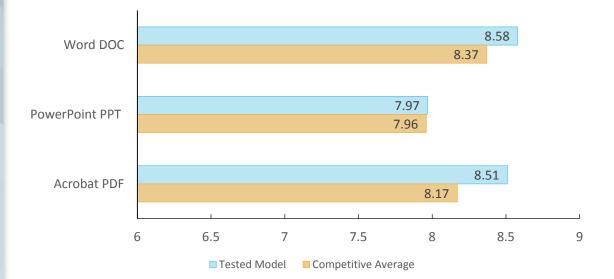
### First-Page Print Time From Overnight Sleep (in Seconds)



Device sits idle overnight; a single-page black Word document is sent to the device; first-print time indicates the time it took to RIP the image and deliver the first page of the test document to the output tray.

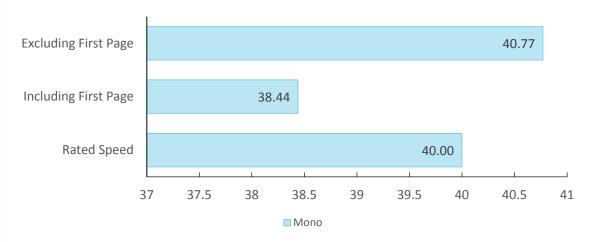


#### First-Page Print Time From Ready Mode by File Type (in Seconds)



First-print time indicates the time it took to process, image and deliver a single-page test document to the output tray. Files tested include a Word document (.doc; black text), a PowerPoint slide (.ppt; colour graphics and text) and an Acrobat file (.pdf; black text and graphics). The unit's print speeds were tested at the default 600 dpi using the PCL 6 driver.

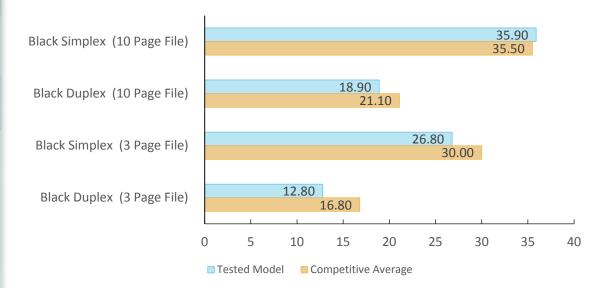
### BLI's Tested Print Speed (in PPM)



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's print speeds were tested using the PCL 6 driver.

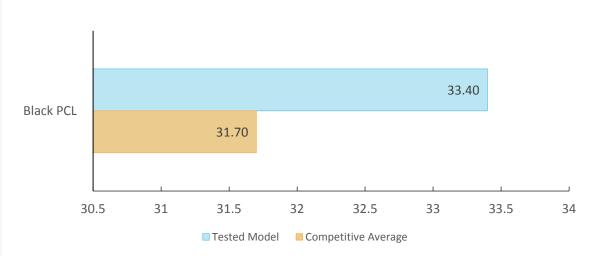


#### First-Set Print Speed (Single Set; in PPM)



Single-set speed is tested using a 3-page and a 10-page black document. The unit was tested using the PCL driver.

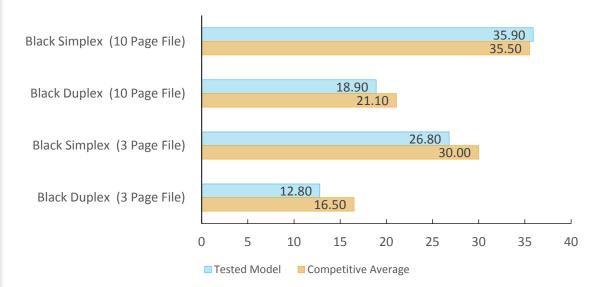




BLI's job stream includes Word documents, Outlook email messages, Excel spreadsheets, PowerPoint, HTML and Acrobat PDF files, totalling 19 pages. This test simulates the type of traffic a typical device might experience in a real-world, multi-user environment. All of the files are sent to the device as a group, at which time the stopwatch begins; timing ends when the last page of the last file exits the device.



#### Average Print Speed (Multi-Set; in PPM)



Print speed is tested using a 3-page and a 10-page black document. BLI obtains the overall speed by averaging the tested speed for each run length (1, 5, 10 and 20 sets). The unit was tested using the PCL 6 driver.

## SCAN SPEED

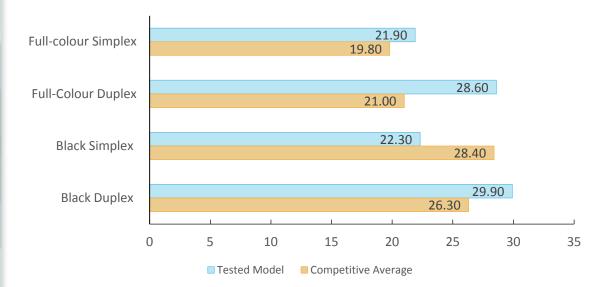
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Very Good

The unit is significantly faster than average in colour mode, and the same in black duplex mode. However, it performed below average in black simplex mode.

File size is significantly smaller than the average and the smallest in the group for all modes except for black mode where no compression is offered, but the file size is still only 40k.

#### Scan Speed (in IPM)



Testing is conducted with a 10-page file scanned in default mode at 300 dpi in PDF format.



#### SCAN FILE SIZE (IN KB)

	Tested Model	Competitive Average
Full-colour (Default Compression)	592	902
Full-colour (Best Compression)	133	275
Black (Default Compression)	47	192
Black (Best Compression)	47	40

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

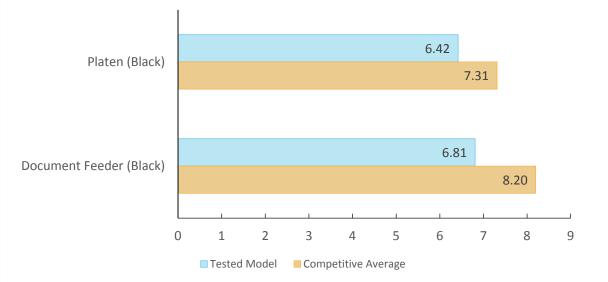
# COPY SPEED

Very Good

First-copy times from the platen and document feeder are both faster than average

Running speed when copying single sets in simplex and in both duplex modes is competitive, as is multi-set simplex. The performance for multi-set duplex was also competitive.

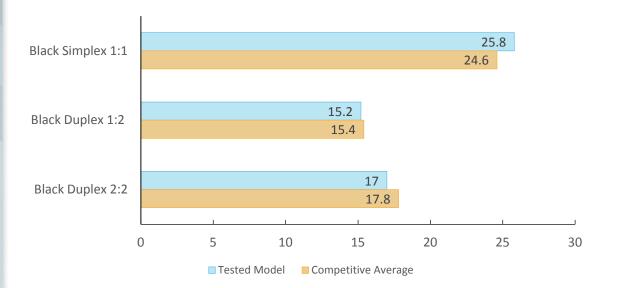
#### First-Copy Times (in Seconds)



First-copy time is measured as the time it takes for a single copy to completely exit the device when a copy is made from an original placed in the document feeder and on the platen.

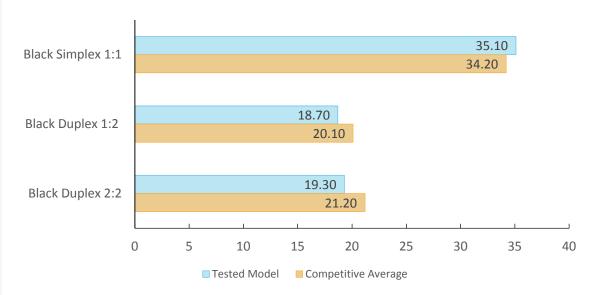


### Copy Speed (Single-Set; in CPM)



Single-set copy speed is tested using a 10-page black document. Timing begins as the start button is pressed, pages are scanned through the document feeder and timing ends when the last page of a single-set of the document exits the device.

#### Average Copy Speed (Multi-Set; in CPM)



Copy speed is tested using a 3-page and a 10-page black document. BLI obtains the overall speed by averaging the tested speed for each run length (1, 5, 10 and 20 sets).



# POWER CONSUMPTION

Not Rated

### PROJECTED ANNUAL ENERGY CONSUMPTION (IN KWH)

Total Annual Energy Consumed	39.5280 kWh
Competitive Average	71.0888 kWh

Calculations based on printing BLI's job stream test suite (details shown below) over a four-hour period, with the machine set to go into its energy-save and/or sleep modes at the shortest intervals possible. Total yearly energy consumption is calculated based on the total energy used during a typical workday, plus overnight and weekend sleep energy.

Pages Printed: 114 total - 6 jobs of 19 pages each Test Documents Used: DOC, XLS, PPT, HTML, PDF, Outlook e-mail messages Output Modes: 50% simplex, 50% duplex Total number of pages run is based on a BLI survey of average monthly volumes by speed range.

#### ENVIRONMENTAL FEATURES

Specified capable of running recycled paper (30%/50%/100% post-consumer content)	Yes
Instant/Quick Fusing	No
Duplexing	Yes
Toner-save mode	Yes
RoHS compliant	Yes
Toner cartridge recycling program for this product	Yes
Ability to program features such as duplexing and auto shut-off over entire fleet	Yes
What tool can be used to do this?	System menu, KX driver, KYOCERA Net Viewer, KYOCERA Net Admin
Eco-Label Certifications	
ENERGY STAR	Yes
Other	ECMA-370/The Eco Declaration, Germany Blue Angel, Montreal Protocol, EU RoHS compliant

INA: The vendor declined to provide this information NA: Not applicable



# **SUPPORTING TEST DATA**

**Test Environment:** This product was tested in BLI's European test lab, in an environment monitored by two Temp/RH chart recorders, which ensures that the typical office conditions are being maintained. 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 affecting equipment under test.

**Test Equipment:** BLI's dedicated test network in Europe, consisting of Windows 2008 servers, Windows 7, and 8 and 10 workstations, 10/100/1000BaseTX network switches and CAT5e/6 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 half of its manufacturer-rated maximum monthly volume, with daily volumes evenly divided over the course of the test.

Tested Configuration: KYOCERA ECOSYS M2540dn base unit (UK).

**Competitive Average Model Group:** BLI defines competitive models as comparably equipped models, that support the same maximum paper size as the tested model, in the same speed range (+/- 5ppm), with a similar duty cycle and target market.

**Test Procedures:** BLI's lab testing includes both BLI proprietary and industry-standard test procedures and documents. The reliability test is conducted using Georgia Pacific and Boise paper in the US, and UPM, Data Copy and Mondi paper in the UK. In both labs, 30 percent of the paper is recycled. The media used for image quality testing is Georgia Pacific Printing Paper (24 lb., 96 brightness) in the US and UPM Future ImageTech 100 gsm in the UK.

**Note:** This report is based on BLI testing one representative test sample at a specific point in time. BLI is not responsible for differences in performance that may be the result of lot-to-lot variation, changes in production and machine modifications implemented by the manufacturer, service issues or any other reason beyond BLI's control. Test unit serial #: VCG6Y04483

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Awarded to

# **KYOCERA** Document Solutions Inc.

for the performance of the

# **KYOCERA ECOSYS M2540dn**

in BLI's in-house durability test



This is to certify that when subjected to a 25,000-impression Buyers Lab durability test, the KYOCERA ECOSYS M2540dn proved to be a highly reliable product.

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THE LEADING INDEPENDENT OFFICE PRODUCTS TEST LAB AND BUSINESS CONSUMER ADVOCATE

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