



# Test Report

## MULTIFUNCTIONAL PRODUCTS

**Muratec MFX-1500**  
Fax/Copier/Printer



### **Manufacturer:**

Muratec America Inc.  
Plano, TX  
Made in Japan

### **Test period duration:**

13,500 impressions in three months

### **Suggested retail price:**

\$3,495; \$3,990 as tested with optional Windows GDI printer driver.

### **Type:**

Desktop, LED-imaging, monocomponent developing, heat and pressure fusing multifunctional device with standalone facsimile, copier and optional PC-based print capabilities.

### **Manufacturer's recommended monthly volume:**

Up to 4,500 copies/prints.

### **BLI recommended usage:**

The Muratec MFX-1500 is suited for offices with mid- to high-volume faxing, and low-volume copying and printing requirements.

## GENERAL APPRAISAL

The Muratec MFX-1500, in its standard configuration, effectively combines the capabilities of a fully-featured mid- to high-volume fax with those of a low-volume platen-based 400-dpi digital copier. Based on a 12-ppm LED print engine, the Muratec MFX-1500 also supports optional 400-dpi Windows GDI printing. Tested as a three-in-one multifunctional device, the Muratec proved to be a good overall performer. In fact, the system operated without malfunctioning throughout BLI's three-month 13,500-impression test, requiring no service calls and experiencing no misfeeds. In addition to demonstrating reliability, the Muratec MFX-1500 was easy to program and use, thanks to a well-designed, uncluttered control panel with dedicated keys that eliminate the need

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## General Appraisal *continued*

to scroll through menus to make selections. In addition, numerous options offer an impressive upgrade path, specifically, expanded paper capacity, fax memory, second telephone line, Centronics parallel port and Windows GDI software for PC and LAN printing), RS-232C port for PC and network faxing and scanning (with user-supplied Class 1 software) and, something not seen as an add-on, fax encryption (see "Options"). Other strengths of this Energy Star-compliant system include excellent multitasking capabilities and a per-page supply cost that, at 3.95¢ (based on BLI's tested yield for the toner cartridge and Muratec's suggested retail price for the toner and drum cartridges), is somewhat below average for LED/laser multifunctional units tested to date. Maintenance, which involves replacement of toner and drum cartridges, was also judged to be good. These cartridges may or may not be replaced at the same interval, i.e., replacement toner cartridges come in manufacturer-quoted yields of either 7,500 pages (\$105) or 10,000 pages (\$137). The drum cartridge (\$116) has a manufacturer-quoted yield of 10,000 pages.

In contrast to comparably-equipped multifunctional products tested in this range, which typically offer 150- or 250-sheet standard paper supplies, the Muratec MFX-1500 offers a 400-sheet letter- or legal-size paper drawer standard. A single-sheet bypass feeder supports copying and printing onto special media (e.g., transparencies), though fax reception using the bypass is not possible. One or two optional 200-sheet cassettes can be added, for a maximum on-line paper supply of 800 sheets, with paper replenishment via convenient front-loading paper drawers.

Also, replacement of the toner and/or drum cartridge is aided by the clamshell design. Internal fax document memory can also be expanded, from the standard 2 MB (approximately 158 pages) to up to 10 MB (approximately 798 pages) in 2-MB increments. And whereas one-hour battery backup is not uncommon among multifunctional products tested, the memory in the MFX-1500 is protected by a 100-hour battery backup in the event that power to the unit is interrupted. To further boost productivity, the Muratec MFX-1500 can optionally be equipped with dual phone lines, the second of which utilizes a 33.6-Kbps modem.

The Muratec MFX-1500's standalone *fax* features are comparable to those of other mid- to high-volume fax machines tested. They include a 14.4-Kbps modem, 50-sheet automatic document feeder, dual access (Muratec calls this capability "QuadAccess"), MH/MR/MMR and proprietary compression schemes, 200 autodial destinations (with 32 groups), broadcasting (to 200 programmed one-touch and speed-dial locations, plus 20 manually dialed locations), relay broadcast request, batch transmission (up to 40 documents in up to five "batch boxes"), eight program keys, 99 timers for delayed transmission, alphanumeric directory, confidential transmission/reception (up to 10 electronic mailboxes), closed network, department codes, junk fax barrier, polling (secure, database, continuous), ITU-T subaddress routing, automatic collation, automatic cover sheet, BLI-tested scan-to-memory speed of 3.16 seconds per page, verification stamp (places small stamp on pages successfully scanned into memory), energy-saver mode, ITU-T Ultrafine 400-x-400-dpi resolution,

*continued*

## General Appraisal *continued*

remote diagnostics and transmission confirmation report with a reduced image of the first page. A unique fax feature is the Muratec MFX-1500's ability to scan an outgoing fax from both the ADF and the platen, and transmit the images in one, versus multiple, transmissions, for added time and money savings.

As a Segment 1 *copier*, the Muratec MFX-1500 offers digital scan-once/print-many operation. The platen offers added flexibility, such as copying of non-standard size/weight documents. And the platen cover is hinged, so that larger originals (books or other bound documents) can be opened freely on the glass. Copying via the unit's 50-sheet (letter-size) ADF is also supported, with reduction, but not enlargement, possible. The BLI-tested copy speed is 9 cpm, which is comparable to that of some standalone low-volume copiers, although first-copy-out times of 17.6 seconds from the platen and 17.8 seconds from the ADF are slower than that of standalone copiers in this speed range. When making sets, copies are printed from memory one set at a time, in correct-page sequence. Reduction/enlargement settings range from 50 to 200% in 1% increments (presets include: 200%, 129%, 100%, 78%, 64%, 50%); however, as noted, copying from the ADF supports reduction only. Particularly noteworthy is that output quality, in both copy and print modes, was rated as good in all areas – text, line art, halftones and solids – with one exception being halftone print quality, which received a fair rating (see “*Printer image quality*”).

As a standalone Windows GDI *printer*, the Muratec MFX-1500 also performed well, producing output at a rate of 9.43 ppm at

400 dpi (the highest available resolution), using BLI's Test Original (with 6% page coverage).

Testing also revealed that the MFX-1500's multitasking capability as a combination fax/copier/printer exceeded that of most other multifunctional products tested. In fact, there were no multitasking limitations in these areas when performing concurrent operations (it should be noted, however, that when receiving an incoming fax while the unit is printing or copying, the fax may be inadvertently sandwiched between pages of a copy or print job). Contributing to the unit's good multitasking capabilities is dual access (“QuadAccess”) a function that, most importantly, enables the user to scan an outgoing document into fax memory while the unit is busy sending or receiving, thus improving productivity. In addition, the unit has good procedures for transmitting from memory after a failed communication. A shortcoming of the unit's memory management, however, is that when the size of the file exceeds memory capacity, the user must send the document directly from the document feeder (i.e., bypassing memory), in order to transmit it in a single phone call. In contrast, some models tested scan additional pages into memory as memory becomes available, eliminating the need for a second phone call or the need to send the document from the document feeder.

Based on the system's good performance during testing and impressive expansion potential, BLI recommends the platen-based Muratec MFX-1500 for offices in need of a mid- to high-volume fax and a low-volume copier, with optional standalone or shared low-volume printing capabilities.

**FEATURES** *continued***Muratec MFX-1500 Options**

**2-MB Fax Memory:** Suggested retail price, \$299. Increases memory capacity to 4 MB (318 pages\*).

**4-MB Fax Memory:** Suggested retail price, \$499. Increases memory capacity to 6 MB (478 pages\*).

**8-MB Fax Memory:** Suggested retail price, \$699. Increases memory capacity to 10 MB (798 pages\*).

**200-Sheet Paper Cassette:** Suggested retail price, \$299. The unit accepts up to two cassettes (maximum paper capacity, 800 sheets).

**2<sup>nd</sup> Telephone Line Option (33.6-Kbps Modem):** Suggested retail price, \$995. Provides a connection for an additional phone line.

**Windows GDI Printer Driver:** Suggested retail price, \$495.

**Network Option:** Suggested retail price, \$849. With the addition of the network interface, the print option is compatible with Windows and Novell client/server and peer-to-peer networks.

**RS-232C Serial Interface:** Suggested retail price, \$150. Allows fax transmission and reception, as well as scanning to/from a Windows-based PC or network, employing user-supplied Class 1 fax software.

**Scrambler:** Suggested retail price, \$599. The MFX-1500 Scrambler option enables users to send and receive confidential fax documents as encrypted messages. Upon receipt of the encrypted pages, users enter a private "key code," which the receiving MFX-1500 uses to decode the fax documents and print them in their original form.

**Telephone Handset:** Suggested retail price, \$65.

\*Based on ITU-T Test Document #1 (also known as the "Slerexe letter") at 4% page coverage.

## TEST RESULTS AND OBSERVATIONS

### *Test equipment*

Pentium 200 MMX, 32 MB RAM, Windows 95.

### *Installation*

*Hardware:* The Muratec MFX-1500 ships with Operating Instructions, power and telephone line cords, original input tray, exit tray, multipurpose tray, starter toner cartridge (3,500 pages), drum cartridge and fuser

cleaner. The unit tested was configured with the optional Windows GDI printer driver (bidirectional parallel cable not included).

*Software:* BLI technicians installed and evaluated the following software:

*Muratec GDI Printer Driver for Windows 95* - one diskette.

### *Reliability*

PMs/Malfunctions	Service Required	Meter Count (Impressions)	Impressions Between Service
Meter count (beginning of test)		0	
End of test period		13,500	
Total Misfeeds / Misfeed Rate	0 / Not applicable		
Service Calls	0		
PMs	0		
Total Service Calls (Including PMs)	0		
M.I.B.F. <sup>1</sup>	Not applicable		
M.I.B.S. <sup>2</sup>	Not applicable		
<p><i>1 Mean Impressions Between Failures (To obtain this number, BLI divides the total number of impressions produced during the test period by the number of service calls required. In actuality, it reflects the average number of impressions produced without a malfunction.)</i></p> <p><i>2 Mean Impressions Between Service (To obtain this number, BLI divides the total number of impressions produced during the test period by the number of service calls, including preventive maintenance calls, required. In actuality, it reflects the average number of impressions produced without a service call.)</i></p>			

### *Ease of Use*

Good. Ease of use was found to be good via the control panel and via the Muratec MFX-1500 Windows GDI printer driver. Copying and faxing can be performed from the platen glass and/or ADF with programming initiated directly from the control panel. Printing is selected from the PC via the intuitive printer driver software. The control panel is well-designed, with clearly labeled keys for programming and selection of desired mode, i.e., "FAX/COPY," as well as selection of contrast and resolution.

Dedicated keys eliminate the need to scroll through menus to make selections. Particularly helpful is the "BROADCAST" key, which helps the user program a fax broadcast. The "STAMP" function is also selectable from the control panel and allows users to confirm that documents have been successfully scanned into memory. Ease of use was also aided by a 20-character, two-line LCD display that indicates the status of the device, error and menu options.

# TEST RESULTS AND OBSERVATIONS *continued*

**Documentation:** Good. The Muratec MFX-1500 Operating Instructions Guide is clearly written and includes a complete index that makes information easy to find. Illustrations and step-by-step instructions are provided, along with information on troubleshooting.

## Paper Handling

**Automatic document feeder (ADF):** Good. The Muratec MFX-1500's ADF holds up to 50 sheets in sizes ranging from 5-3/4" x 4-1/8" to 11-3/4" x 35-3/8". The ADF can feed originals ranging in weight from 18 to 25 lbs.

**Tested original types:** The document feeder accepted glossy photographs; printed material (20-lb. bond) from a laser printer, dot-matrix printer and copier; 25% cotton bond and 9-lb. onionskin from a printwheel typewriter; originals from an offset duplicator and 110-lb. card stock.

**Paper output tray (fax/copy originals):** Originals exit the ADF onto the top of the platen cover.

**Paper output tray (fax receptions/copies/print jobs):** Print jobs exit onto a removable adjustable tray on the left side of the unit, with the printed side facing up, with the last page on top, i.e., in reverse sequence. Fax receptions are output face up in correct-page sequence when sent from a typical fax machine; that is, one without a reverse-order sending feature enabled. Copies are output face up in correct page sequence when sort mode is selected.

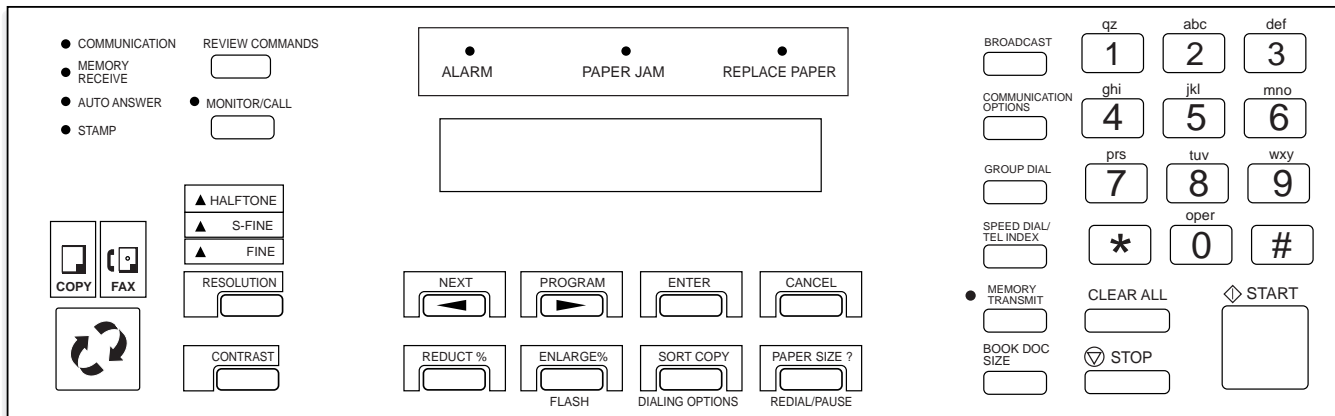
## Image Quality

**Density of solid black scanned image (based on eight readings corresponding to eight different locations on the original):**

**Density of original:** Range, 1.82 to 1.87 (on a scale of 0 to 2.5, with 2.5 being as dark as would be possible under most circumstances).

**Density of copy:** Range, 1.40 to 1.46 (on a scale of 0 to 2.5, with 2.5 being as dark as would be possible under most circumstances).

**Density range for multifunctional products tested to date:** 0.89 to 1.51.



Muratec MFX-1500

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TEST RESULTS AND OBSERVATIONS *continued*

HALFTONE FIDELITY READINGS			
Halftone Level	Coverage Of Original	Coverage Of Copy	% Difference
1	100%	100%	0%
2	92	98	7
3	87	93	7
4	78	78	0
5	70	63	-10
6	44	28	-36
7	19	9	-53
8	7	6	-14

**Halftone fidelity** - Average of two readings for each of eight levels of halftones, with the first level being a solid black and the eighth level being the lightest; negative values indicate a loss of coverage. Ideally, the copy of the halftone would have a coverage reading that is equal to that of the original; thus, 0% difference is optimal.

Average difference between copy of halftone and original (root mean square value): 24%; range for multifunctional products tested to date, 6% to 72%.

*Copy quality (tested in copy mode):*

Text: Good.  
Line copy: Good.  
Halftones: Good.  
Solids: Good.

*Printer image quality (tested in print mode):*

Text: Good.  
Line copy: Good.  
Halftones: Fair.  
Solids: Good.

*Comments:* Output produced using the 400-dpi Muratec MFX-1500 laser printer driver was comparable to that of 300-dpi laser devices. Solids were dark and consistent, but halftones appeared grainy, which is typical of 300-dpi devices; however, halftones within individual levels were even, with smooth transitions between levels.

TEST RESULTS AND OBSERVATIONS *continued*MURATEC MFX-1500  
COPY AND PRINT QUALITY INDEX**Buyers Laboratory Inc.**Magnified view of black text.  
Unit set to "Print mode-400-dpi."  
Printed on plain paper stock.**Buyers Laboratory Inc.**Magnified view of black text.  
Unit set to "Print mode-200-dpi."  
Printed on plain paper stock.**Buyers Laboratory Inc.**Magnified view of black text.  
Unit set to "Copy mode-Super Fine."  
Printed on plain paper stock.**Buyers Laboratory Inc.**Magnified view of black text.  
Unit set to "Copy mode-Fine."  
Printed on plain paper stock.**Buyers Laboratory Inc.**Magnified view of black text.  
Unit set to "Copy mode-Halftone."  
Printed on plain paper stock.***Performance of Standalone Fax Functions***

***Fax scanning speed:*** The average scanning speed, obtained from scanning into memory three originals using standard resolution and normal contrast settings; timing begins when the "Start" button is pressed and continues until the last page exits onto the exit tray.

***Fax scanning speed with 4% page coverage original:*** 3.16 seconds per page; range for multifunctional products tested to date, 1.77 to 17.44 seconds.

***Fax scanning speed with 12% page coverage original:*** 3.12 seconds per page; range for multifunctional products tested to date, 1.77 to 34.33 seconds.

***Transmitting documents:*** Good. The unit supports dual access and, thus, is programmed to transmit documents from memory, i.e., outgoing faxes are scanned into memory prior to being transmitted. Dual access allows the user to retrieve a scanned document and resume other activities while the fax is being transmitted, thus improving productivity. The "Memory Transmit" key, which is defaulted on, can be used to bypass memory transmission and cause the document to be sent directly

from the document feeder. When transmitting documents, up to 200 autodial destinations (72 one-touch/128 speed-dial), as well as up to 20 manually dialed numbers, can be selected at the time of transmission. The destination(s) can be dialed before inserting the document(s) into the feeder (which would allow, for example, the user to reference a fax number on the cover page). Broadcasting to up to 32 groups (within a one-touch key), each of which can contain up to 200 fax numbers, is supported.

***Memory capacity:*** 2-MB standard memory, which, in testing, held 35 pages of a 12% original in standard mode (while BLI uses a 12% original in determining memory capacity, note that Muratec uses a 4% page coverage original in standard mode to determine memory capacity and claims a capacity of 158 pages).

***Transmitting from memory after a failed communication:*** Good. When the Muratec MFX-1500 was subjected to excessive line noise during the tests, it was found that the destination was automatically redialed after the

## TEST RESULTS AND OBSERVATIONS *continued*

communication was terminated (it will automatically be redialed up to two times at three-minute intervals; user-settable for up to 15 redials at up to five-minute intervals) and when a connection was made after redialing, the remaining pages were transmitted. The transmit confirmation report was accurate, correctly indicating the number of pages successfully transmitted.

*Transmitting from memory when the file exceeds memory capacity:* Fair. When the file exceeds memory capacity, "Memory Overflow Start or Stop" is displayed. If "Start" is pressed, the pages stored in memory are transmitted. If "Stop" is pressed or if the user does not respond to the prompt, memory is cleared and the pages in the ADF are ejected. The user can then send the entire document in one phone call directly from the document feeder (i.e., bypass memory). In contrast, some models tested scan the additional pages into memory as memory becomes available, eliminating the need for a second phone call or the need to send the document from the document feeder in order to send it in a single phone call.

*Legal-to-letter reduction:* During testing, a legal-size (8-1/2" x 14") document that was transmitted to the Muratec MFX-1500 with letter-size (8-1/2" x 11") paper loaded was automatically reduced. The reduction took place both vertically (X axis) and horizontally (Y axis), a two-dimensional implementation of legal-to-letter reduction that can reduce legibility, particularly of text. Some multifunctional systems reduce only vertically (a user-selectable setting in some instances), thereby optimizing readability. The image was also shifted toward the left side of the paper, as opposed to being centered.

### ***Performance of Copier Functions***

The Muratec MFX-1500 serves as a copier with a multicopy capacity of 99 and a manufacturer-rated multicopy speed of 12 cpm (see BLI-tested first-copy speed below). Use of the copy function, which is only possible via the control panel, was straightforward. Unlike some other multifunctional products tested, it features platen scanning of originals in addition to scanning via the document feeder, making it more versatile than ADF-only devices. When copying, the user can specify

the number of copies, reduction and enlargement setting (while variable reduction/enlargement from 50 to 200% in 1% increments or preset settings of 200%, 129%, 100%, 78%, 64% and 50% are available from the platen, only variable or preset *reduction* is available from the ADF), contrast (over a range of five steps from light to dark), sort mode (for collated output of sets of multiple-page originals, e.g., two copies of a three-page document are output as one set of pages 1, 2 and 3, followed by a second set) and resolution. The default copy resolution is 400 x 400 dpi. Copies can be made onto letter- (8-1/2" x 11") or legal-size (8-1/2" x 14") paper. Copy settings default to "Standard" one minute after a copy session is completed.

*Warm-up time:* About 40 seconds, from a cold start.

*Copy speed (8-1/2" x 11"):\**

*First-copy time from platen:* 17.6 seconds

*First-copy time from document feeder:* 17.8 seconds

*Number of copies per minute:* 13

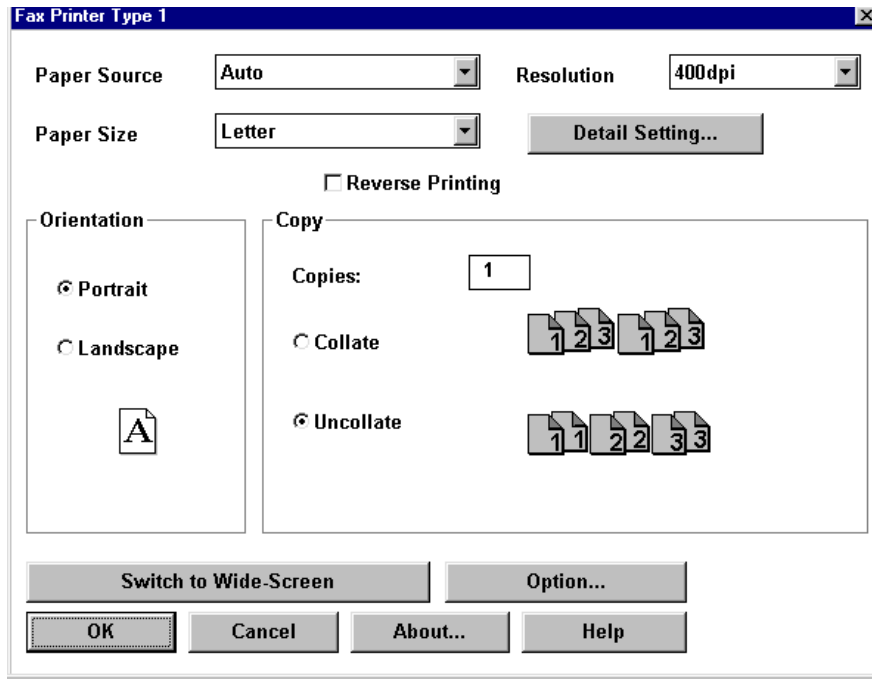
*Number of copies per minute (including first copy):* 9

\*Copy speed is tested using the BLI Test Original (with 6% page coverage), normal contrast and standard resolution.

### ***Performance of Printer Functions***

*PC compatibility:* Good. The Muratec MFX-1500 was tested for compatibility using application test suite intermediate files developed by Genoa Technology, Inc., for Microsoft Word for Windows 6.0, Microsoft Excel 5.0, Lotus 1-2-3 version 4.0 for Windows, Aldus PageMaker 5.0 and WordPerfect for Windows 6.0a. During testing, 49 individual application test files, which contain text, graphics, halftone images, etc., are printed. The output produced using these files enables BLI technicians to evaluate memory usage, file processing, font-rendering, tables, charts and grayscale capability. In addition, the test files also test for compatibility with each of the five applications listed above. BLI technicians found that the printer driver supplied with the Muratec software was compatible with all of the Windows programs used in testing. No problems were encountered during testing with any of the graphics files. The printer driver supplied has a setup utility that is typical of the Windows-based drivers of other multifunctional products tested.

## TEST RESULTS AND OBSERVATIONS *continued*



### BLI's TESTED PRINT SPEEDS

(Muratec MFX-1500 printer driver at 400 dpi)

Average speed:	9.43 ppm
First page:	1.67 ppm (35.88 seconds)
Average speed (excluding first page):	11.70 ppm

*Note: BLI's print speed is computed using BLI's 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 8 ppm, 16 pages are printed). Note that the manufacturer's rated print speed may differ from BLI's tested print speeds because the manufacturer's test methods may differ from BLI's methods. Print speeds were tested at the unit's highest resolution.*

### Multitasking Summary

The Muratec MFX-1500's multitasking capabilities as a combination fax/copier/printer were considered good. In fact, based upon the evaluation below, there were no multitasking limitations in these areas when performing concurrent operations. First, as a standalone fax, the Muratec MFX-1500 supports dual access, a function which enables the user to scan an outgoing document into fax memory while the unit is busy sending or receiving,

thus improving productivity. It is also possible to send a fax while the unit is busy printing a PC file, i.e., both operations take place simultaneously. Notably, the Muratec MFX-1500 will receive an incoming fax while the user is in the process of either copying a document or printing a PC file. This important capability is lacking on some (low-end) multifunctionals tested. Another function lacking on most multifunctional products tested,

**TEST RESULTS AND OBSERVATIONS** *continued*

though supported by the Muratec MFX-1500, is the ability to print a PC file and then make a convenience copy,

i.e., the copy instruction is automatically executed once printing has stopped.

<b>MURATEC MFX-1500 MULTITASKING EVALUATION</b>						
Primary Function \ Secondary Function	SEND PAPER FAX	RECEIVE PAPER FAX	PC FAX SEND	PC PRINT	PC SCAN	COPY
<b>SEND PAPER FAX (Memory TX)</b>	Yes <sup>1</sup>	No <sup>3</sup>	N/A	Yes <sup>2</sup>	N/A	Yes <sup>2</sup>
<b>RECEIVE PAPER FAX</b>	Yes <sup>1</sup>	No <sup>3</sup>	N/A	Yes <sup>4</sup>	N/A	Yes <sup>4</sup>
<b>PC FAX SEND</b>	N/A	N/A	N/A	N/A	N/A	N/A
<b>PC PRINT</b>	Yes <sup>2</sup>	Yes <sup>1</sup>	N/A	Yes <sup>1</sup>	N/A	Yes <sup>1</sup>
<b>PC SCAN</b>	N/A	N/A	N/A	N/A	N/A	N/A
<b>COPY</b>	Yes <sup>2</sup>	Yes <sup>1</sup>	N/A	Yes <sup>1</sup>	N/A	Yes <sup>1</sup>
<p>1 Secondary function is completed after primary function. (8)            2 Primary and secondary functions take place simultaneously. (4)            3 The phone line is busy with the primary function. (2)            4 Primary function is paused to allow secondary function to process. Output from the two functions is intermingled in the output tray. (2)            N/A - Not applicable. The unit was not tested with optional third party PC-fax and PC-scan functions.</p> <p>Note: (X) indicates number of occurrences. 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.</p>						

## COST ANALYSIS

### Consumables

*Toner cartridge yield:* The toner cartridge (\$137) yielded an average of 4,914 pages in BLI's tests. BLI's test results are based on the BLI Test Original (with 6% page coverage). Muratec claims that the toner cartridge yields 10,000 pages based on the ITU-T Test Document #1 at 4% page coverage.

*Warranty:* 90 days parts and labor.

#### COST PER COPY (PURCHASE) OF BASE UNIT

Monthly Volume	Depreciated Purchase Price <sup>1</sup>	Supplies and Consumables <sup>2</sup>	Paper <sup>3</sup>	Cost Per Page
300	18.011¢	3.948¢	0.723¢	22.682¢
500	10.807	3.948	0.723	15.478
750	7.204	3.948	0.723	11.875
1,500	3.602	3.948	0.723	8.273
3,000	1.801	3.948	0.723	6.472
4,500	1.201	3.948	0.661	5.810

<sup>1</sup> The suggested retail price of \$3,495, minus the cost of the included toner cartridge (\$137) and the drum cartridge (\$116), was depreciated over a five-year period using a straight-line method.

<sup>2</sup> The cost of the toner cartridge was calculated based on BLI's tested toner yield of 4,914 pages when using the BLITest Original (with 6% page coverage), and Muratec's suggested retail price of \$137 per cartridge. The cost of the drum cartridge was based on an estimated yield of 10,000 pages and a suggested retail price of \$116.

<sup>3</sup> The cost of paper was calculated using an estimated price (\$36.15) for 5,000-sheet cartons of 8-1/2" x 11" 20-lb. bond.

Note: The cost of supplies was based on quantities to be used during one year by one machine at particular monthly volumes.

#### COST PER COPY (PURCHASE) WITH PRINT OPTION

Monthly Volume	Depreciated Purchase Price <sup>1</sup>	Supplies and Consumables <sup>2</sup>	Paper <sup>3</sup>	Cost Per Page
300	20.761¢	3.948¢	0.723¢	25.432¢
500	12.457	3.948	0.723	17.128
750	8.304	3.948	0.723	12.975
1,500	4.152	3.948	0.723	8.823
3,000	4.152	3.948	0.723	6.747
4,500	1.384	3.948	0.661	5.993

<sup>1</sup> The suggested retail price of \$3,495 and the suggested retail price of the Windows GDI printer driver with board (\$495), minus the cost of the included toner cartridge (\$137) and the drum cartridge (\$116), was depreciated over a five-year period using a straight-line method.

<sup>2</sup> The cost of the toner cartridge was calculated based on BLI's tested toner yield of 4,914 pages when using the BLITest Original (with 6% page coverage), and Muratec's suggested retail price of \$137 per cartridge. The cost of the drum cartridge was based on an estimated yield of 10,000 pages and a suggested retail price of \$116.

<sup>3</sup> The cost of paper was calculated using an estimated price (\$36.15) for 5,000-sheet cartons of 8-1/2" x 11" 20-lb. bond.

Note: The cost of supplies was based on quantities to be used during one year by one machine at particular monthly volumes.

## COST ANALYSIS *continued*

### *Maintenance*

Good. Installation/replacement of the toner cartridge and the drum unit (both of which are included with the unit) was straightforward. Muratec recommends that the user keep the ADF feed pulleys clean to prevent slippage or misfeeding and that the platen cover and glass be cleaned periodically. The MFX-1500 has a charger and transport roller cleaner that automatically operates periodically to keep these parts clean and free of paper dust and toner particles.

#### *Supplies:*

*Toner cartridge:* Suggested retail price, \$105.  
Manufacturer's quoted yield: 7,500 pages\*.

*Toner cartridge:* Suggested retail price, \$137.  
Manufacturer's quoted yield: 10,000 pages\*.

*Drum cartridge:* Suggested retail price, \$116.  
Manufacturer's quoted yield: 10,000 pages.

\*Based the ITU-T Test Document #1 at 4% page coverage.

*Remote service/diagnostics:* Yes.

*Customer support phone line:* 972-364-3350; Web site, [www.Muratec.com](http://www.Muratec.com)

*Muratec Information System:* 1-800-215-1698; available 24 hours a day, seven days a week, this is an automated (fax-on-demand) system.

## ENVIRONMENTAL/PHYSICAL SPECIFICATIONS

*Electrical system:* 120 V, 50-60 Hz, 6.9 amps. The unit tested had a three-prong cord (grounded), 6' 4" in length, and carried UL, but not CSA, approval.

*Power switch:* Yes.

*Power consumption:* Transmit, 47 watts; receive, 779 watts; copy, 805 watts; print, 779 watts.

*Energy Star compliance:* Muratec states that the MFX-1500 is Energy Star-compliant.

*Noise level:* Information not available.

*Dimensions (configured as tested) and weight:* 15-1/16" H x 20-7/8" W x 25" D; weight, 70.4 lbs.

**BACKGROUND INFORMATION**

SRP (USA; Canada): \$3,495; \$4,795  
 Manufacturing Status: New  
 Domestic Intro Date: May 1998  
 OEM: Muratec (Japan)  
 Also Sold As: None

Mfr's Rec Mo Vol/# Users: 4,500 pages/Not applicable

**MULTIFUNCTION MODES**

Copier: Std platen-based  
 Fax Machine: Std  
 Computer Fax: Opt  
 Printer: Opt  
 Scanner: Opt

**MULTITASKING**

RX Fax While Printing: Yes  
 RX Fax While Copying: Yes

**GENERAL SPECIFICATIONS/PAPER HANDLING**

Print Technology: LED  
 Color Support: No  
 Std/Max Memory: 2 MB/10 MB  
 Std Paper Source (#/Type): Single tray  
 Std/Max Paper Supply: 400/800 sheets  
 Paper Weights: 16 to 24 lbs.  
 Bypass/Paper Weights: Sheet/Up to 60 lbs.  
 Min/Max Output Size: 5.8 x 4.1/8.5 x 14  
 Document Feeder: Std ADF  
   Speed/Capacity: 35 opm/50 orig  
 DF Max Original Size: 12 x 35.4  
 Platen Max Original Size: 10.1 x 14.3  
 Envelope Feed: Yes  
 Sorting: Std electronic  
 Finishing: No  
 Other:

**STANDALONE FAX SPECIFICATIONS**

# of Phone Lines Supported: 1; 2d 33.6 opt  
 Modem Spd/Secs Per Page: 14.4 Kbps/6 sec  
 Maximum TX Resolution: 406 x 391 lpi  
 Compression: MH/MR/MMR/MSE  
 Scan Speed: 1.7 spp  
 AutoDialer (1+Speed): 72 + 128 = 200  
 Broadcasting: Relay/Sequen (220)  
 Dual Access: Yes  
 FaxTel Switch/Dist Ring: No  
 ECM: Yes  
 Other: Enhanced confirmation and error reports; ITU-T std secure TX/RX; remote diagnostics; guided software setup; verification stamp

**PRINTER SPECIFICATIONS**

Print Speed: 12 ppm  
 Engine: Muratec \*  
 Processor/Bits/MHz: Info not avail/32/Info not avail  
 Controller Manufacturer: Info not avail  
 Resolution (Unenhanced): 400 x 400 dpi  
 PDL/PCL: Windows GDI

Emulations: No

Other:

\*Engine model number not available

**PC FAXING SPECIFICATIONS**

RX to PC Memory: Yes  
 RX w/PC Off: Yes  
 Program Fax Via PC: No  
 Software Support:  
   Std/Opt Software: Opt Muratec MFS (HydraFax)  
   Class 1-Compatible: Yes  
   Class 2-/2.0-Compatible: No  
   CAS-Compatible: No  
 LAN Fax Support: Yes  
 Print-To-Fax Emulations:  
   PCL: No  
   Windows GDI: Opt  
   PostScript: No  
   Additional: No  
 Phonebook: Yes  
   Personal/System: Yes  
   Import/Export: Yes  
 # of Cover Sheets: 1 template  
   Covers Customized: Yes  
 Other:

(All specifications have been obtained from the manufacturer. They have not been confirmed by BLI test procedures.)

762-MF

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**SCANNER AND IMAGE MANAGEMENT**

Scanner Technology:	CCD
Scan Speed:	1.7 spp
Halftones/Max Resolution:	64/400 x 400 dpi
Scan/Image Software:	Opt Muratec MFS
OCR Software:	No
File Management Software:	No
TWAIN/ISIS Compatible:	No
Save-To-File-Formats:	
TIFF:	Yes
PCX:	No
BMP:	No
MMR:	Yes
JPEG:	No
Other:	No

**CONNECTIVITY**

Computer Functions:	PC fax, print, scan
Operating System Support:	Windows
Parallel Interface:	Opt
PC Fax/Print/Scan:	No/Yes/No
Serial Interface:	Opt
PC Fax/Print/Scan:	Yes/No/Yes
Network Interface:	Opt Ethernet
Direct Connect:	No
Interface Type:	10BaseT
LAN - Fax/Print/Scan	Yes/Yes/Yes
Other Interfaces:	No
Networks Supported:	
NetWare:	Yes
Windows NT:	No
AppleTalk:	No
Other:	No

**COPIER SPECIFICATIONS**

First-Copy Time:	14.6 sec
Multicopy Speed (Letter):	12 cpm
Quantity Selector:	1 to 99
Duplex:	No
Capacity/Paper Sizes:	Not applicable
Zoom Range (%):	50% to 200% (1% incr)
Other:	128-level grayscale for copying

**ADDITIONAL INFORMATION**

Dimensions (H x W x D):	15.2" x 20.9" x 24.2"
Weight:	70.4 lbs.
Power Requirements:	120 V, amps not avail
Dedicated Outlet:	Info not avail
Energy Star-Compliant:	Yes
Warranty:	90 days

**MAINTENANCE**

PM Schedule:	Info not avail
Engine Life:	Info not avail

**COMMENTS**

Platen-based unit allowing for book copying and faxing; users must use Class 1-compatible third-party software for PC faxing

**OPTIONS**

Windows GDI printer software w/ port:	\$495
Add'l 200-sheet cassette:	\$299
2-MB (160 pp) fax memory:	\$299
4-MB (320 pp) fax memory:	\$499
8-MB (640 pp) fax memory:	\$699
Network printer option:	\$849
Dual line (33.6 K) option:	\$995
RS-232C serial interface:	\$150
Scrambler:	\$599

**SUPPLIES**

Toner/developer unit	
Yield:	10,000 at 4%
Price:	\$137
Drum unit	
Yield:	10,000
Price:	\$116

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