

General Information

The Xerox Phaser™ 4400 Laser Printer Service Manual is the primary document used for repairing, maintaining and troubleshooting.

To ensure complete understanding of the product, participation in Xerox Phaser 4400 Service Training is recommended.

Section Contents

Phaser 4400 Laser Printer Overview	1-2
Configurations	1-2
Printer Memory Configuration	1-3
Monitoring Consumables	1-3
Repackaging Information	1-3
Parts of the Printer	1-4
Base Configuration Components	1-4
Internal Components	1-6
Printer Options	1-6
Front Panel Configuration	1-8
Image Processor Board	1-10
Machine Orientation	1-12
Menu Map	1-13
Printer Specifications	1-14
Physical Specifications	1-14
Media and Tray Specifications	1-14
Functional Specifications	1-18
Electrical Specifications	1-19
Environmental Specifications	1-19

Phaser 4400 Laser Printer Overview

The Phaser 4400 Laser Printer combines a monochrome print engine with an image processor supporting PostScript 3 and PCL5e/6. The Phaser 4400 is a high performance, 26 ppm desktop laser printer with a resolution up to 1200 x 1200 dpi.

Configurations

The Phaser 4400 is available in four configurations. A replaceable “Configuration Upgrade Chip” holds configuration information that enables or disables built-in features as described here.

Phaser 4400B The Phaser 4400B is the base configuration laser printer. The printer comes standard with 32 Mbytes of memory, 600 x 600 dpi resolution, USB and Parallel support, a built in Multi-Purpose Tray, and a 550-sheet universal paper tray.

Note: The Phaser 4400B reports 32 Mbytes of memory even though it has a 64-Mbyte DIMM installed. In order to get the full 64 Mbytes of memory to be reported as well as activate other features, users need to upgrade to the N-configuration with a Configuration Upgrade Kit, part number 098S04703.

Phaser 4400N The Phaser 4400N is the networking configuration. This configuration includes all the features of the 4400B, but comes with 64 Mbytes of memory, built-in 10/100 Ethernet networking capabilities, and a resolution up to 1200 x 1200 dpi.

Phaser 4400DT The Phaser 4400DT includes all the features of the 4400N but comes standard with built in auto-duplexing, and one added 550-sheet feeder.

Phaser 4400DX The Phaser 4400DX includes all the features of the 4400DT, along with a 20-Gbyte hard drive and a Stacker with offset.

Page Description Languages (PDL)

- PCL5e/6
- Adobe PostScript 3
- PDF

Resident Fonts

- 39 PostScript Roman fonts available on all models, plus an additional 97 Roman fonts available with the optional Hard Drive.
- 81 PCL fonts (more fonts are available with the optional internal Hard Drive.)

Printer Memory Configuration

The printer features two slots which accept 32-, 64-, and 128-Mbyte SDRAM DIMMs. All combinations except 32 Mbytes alone are allowed to a maximum of 256 Mbytes.

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The Startup page and the Configuration pages list the amount of RAM installed in the printer.

If the memory does not meet the following specifications, it is ignored by the printer.

- PC133 DRAM Standard
- 144-Pin SODIMM
- Serial Presence Detect
- 3.3 Volt

Monitoring Consumables

The status of printer consumables is available through the Supplies Info Menu.

Replaceable Items	Print Life	
Print Cartridge (rated at 5% image coverage of letter-size paper)	High-Capacity	15,000 Toner wt. 620 g (1.36 lbs.)
	Standard-Capacity	10,000 Toner wt. 420 g (.9 lbs.)
Maintenance Kit (includes Fuser, Transfer Roller, and nine rollers for Feed, Retard, and Nudger Roller assemblies).	up to 200,000	

Repackaging Information

If the printer must be returned to Xerox and the customer has not saved the shipping box and all internal packaging, a repackaging kit is available for order from the local Customer Support Center.

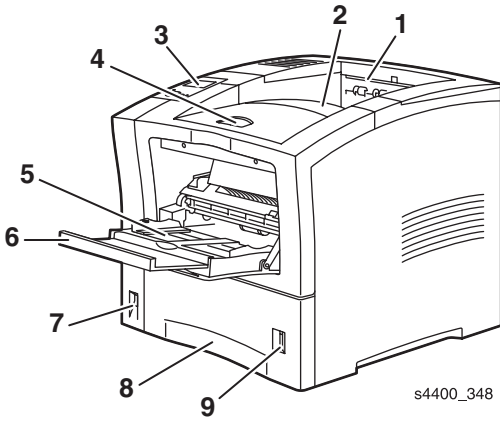
Repackaging Kit: part number 065-0606-00

Parts of the Printer

The parts of the printer are covered here in three groups:

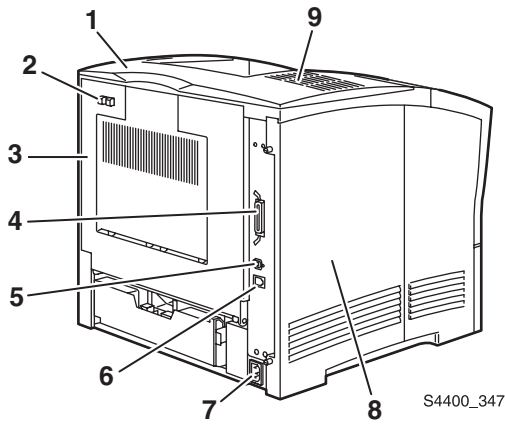
- Base configuration components
- Internal components
- Printer options

Base Configuration Components



Front view of base configuration

No.	Description
1.	Paper exit slot
2.	Standard Output Tray
3.	Front panel
4.	Front cover (shown closed)
5.	Multi-Purpose Tray (MPT)
6.	Multi-Purpose Tray extension
7.	Power switch
8.	Tray 1
9.	Paper level gauge

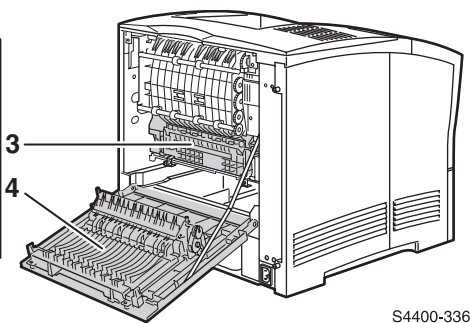
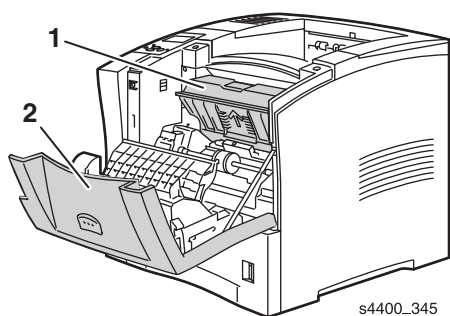


S4400_347

Rear view of base configuration

No.	Description
1.	Option Cover
2.	Rear cover release
3.	Rear cover (shown closed)
4.	Parallel connector
5.	USB connector
6.	Ethernet connector
7.	Power cord receptacle
8.	Left cover
9.	Ventilation slots

Internal Components



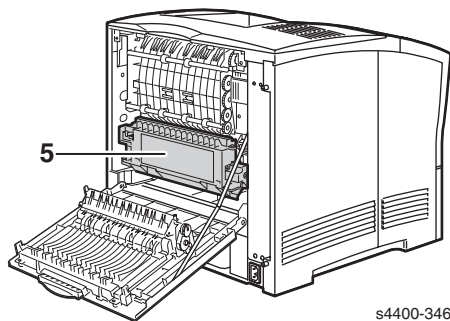
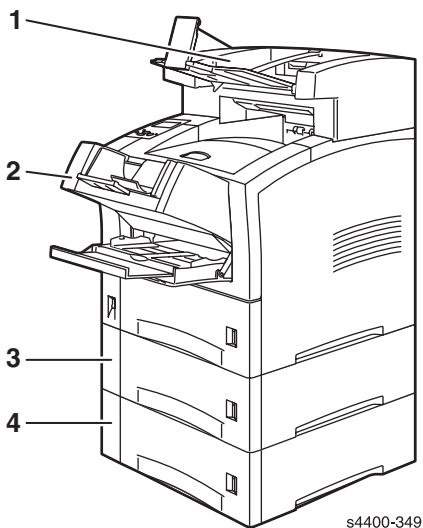
Front and rear views with covers open

No.	Description
1.	Print Cartridge
2.	Front cover (shown open)
3.	Fuser
4.	Rear door (shown open)

Printer Options

The following customer-installed options are available for the Phaser 4400 printer.

Option	Customer Order Number	Description
32-Mbyte DIMM	97S02923	32-Mbyte Memory
64-Mbyte DIMM	97S02912	64-Mbyte Memory
128-Mbyte DIMM	97S02913	128-Mbyte Memory
16-Mbyte Flash DIMM	97S02914	16-Mbyte Flash ROM for storage of fonts, forms, etc.
4400 Network Upgrade Kit	98S04703	Configuration Upgrade Chip upgrades a Base printer to a Network printer.
20+ Gbyte Hard Drive	97S02917	Adds hard disk capability to the printer: <ul style="list-style-type: none"> ■ Stores fonts, forms, etc. ■ Enables collation, proof, secure and save jobs. ■ Provides user documentation, setup and care videos, and printer drivers.
550-Sheet Feeder	97S02878	Provides 550-sheet additional input capacity when used in conjunction with the 550-sheet Paper Tray. You can install one or two 550-Sheet Feeders.
550-Sheet Paper Tray	109R00448	Used with the 550-Sheet Feeder. The Tray holds 550 sheets of paper.
Duplex Unit	97S02880	Provides duplex (two sided) printing capability.
Stacker	97S02881	Adds 500 sheet output capacity with offset capability.
Envelope Feeder	97S02879	Provides dedicated envelope feed.



Printer options

No.	Description
1.	500-Sheet Stacker
2.	Envelope feeder
3.	550-sheet feeder with tray 2
4.	550-sheet feeder with tray 3
5.	Automatic duplex unit

Front Panel Configuration

The Front Panel consists of one tricolor LED, a display window and six functional keys. These keys navigate the menu system, perform functions and select modes of operation for the printer.

The LED (light emitting diode) above the Graphics Display can be green, yellow or red, and can be off, blinking or steady.

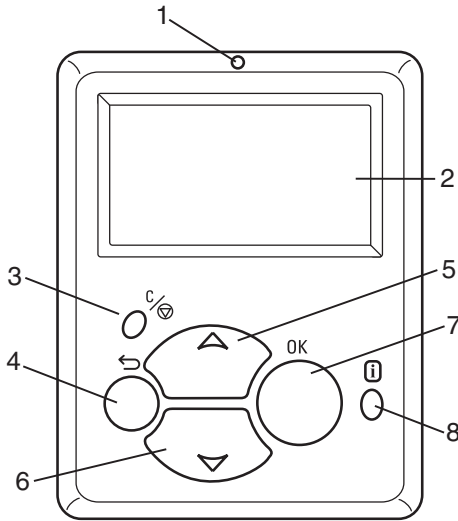
LED indications:

Green — Ready to Print

Flashing Green — Receiving, Processing Data or Printing

Flashing Yellow — Warning

Flashing Red — Error (blinks in unison with Image Processor Health LED)



s4400_006

Phaser 4400 Front Panel Configuration

Front Panel Key Descriptions

1	Status LED	5	Up Arrow Key - scrolls up the menu system
2	Graphic front panel display	6	Down Arrow Key - scrolls down the menu system
3	Cancel Key	7	OK (select) Key
4	Back Key	8	INFO Key - for additional explanation or help

Front Panel Shortcuts

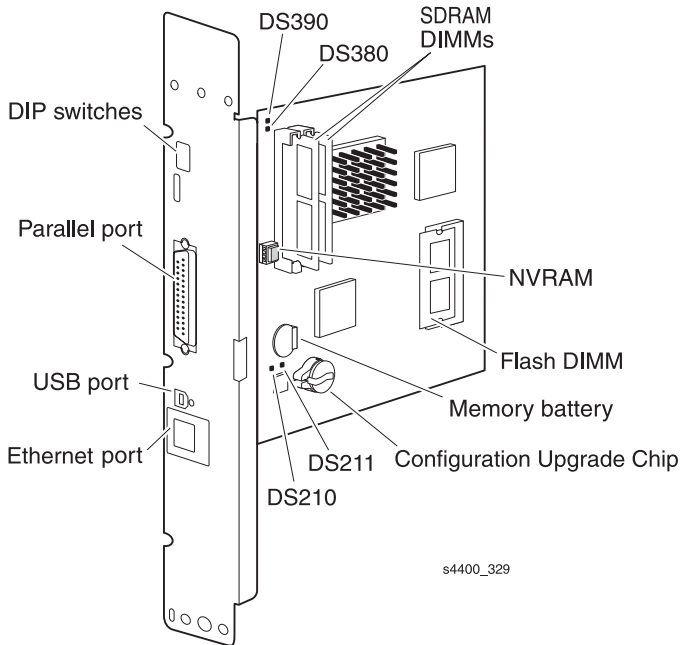
Mode	Press this selection at power-on
Skip execution of POST diagnostics	OK
Print Service Menu Map	INFO
Reset PostScript NVRAM	BACK+OK When "Password" appears, press UP + DOWN keys within 2 seconds
Enter Service Diagnostics	BACK+INFO

Image Processor Board

The following components must be transferred from the old board when installing a new Image Processor Board in the printer:

- SDRAM DIMMs (Slot 1 on the left, slot 2 on the right)
- NVRAM
- Configuration Upgrade Chip
- Flash DIMM

See [RRP 9.2 Image Processor Board](#) on page 6-88 for information on replacing the Image Processor Board.



Inside the printer on the Image Processor board are four LEDs shown in the figure.

DS210 illuminates when the e-net rate is set to 10 Mbits/sec (off indicates 100 Mbits/sec).

DS211 illuminates when a link is established.

DS380 is the HEALTH LED. The CPU flashes this LED to indicate that it is “alive”, or in the case of a failure, the CPU flashes this LED (and the Front Panel LED, also) with a code to help diagnose the problem.

DS390 is the CHECK STOP indicator, which illuminates when various fatal errors occur in the CPU.

Rear Panel Configuration Interfaces

- IEEE 1284 parallel
- Ethernet 10/100BaseTx
- USB

On the Ethernet port, the green LED is a RECEIVE DATA indicator and the yellow LED is a TRANSMIT DATA indicator.

Rear Panel DIP Switch Settings

Note: *The DIP switch setting information presented here is meant to provide a means of returning to as-shipped status in case the switches have been inadvertently changed. Except in extreme circumstances, the DIP switches should be left in the Normal operating mode.*

The DIP switches are defined as follows:

- Switches 1-2 select the modes of operation, as follows:

DIP Switch Settings

Mode of Operation	SW1	SW2	SW3	SW4
Normal (or Customer)	Open	Open	Open	Open
Manufacturing	Open	Closed	Open	Open
Developer (no POST)	Closed	Closed	Open	Open
Disaster Recovery (vxWorks only)	Closed	Open	Open	Open

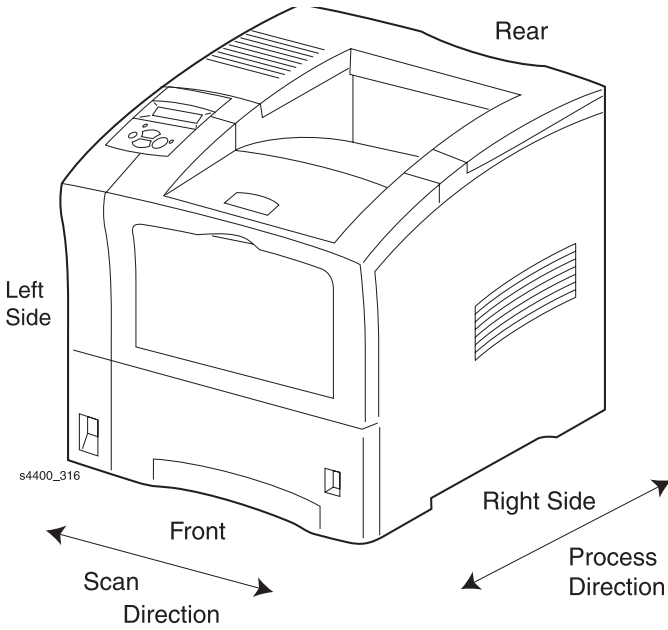
- Switch 3 selects whether the rear panel serial port presents PostScript or vxWorks backchannel messages. OPEN presents PostScript; Closed presents vxWorks.
- Switch 4 is an IP board Reset switch (normally OPEN).

Processor Information

The processor used on the Image Processor board is a 266 MHz PowerPC processor.

Machine Orientation

For servicing the Phaser 4400 Laser Printer, all references to machine orientation are as illustrated below.

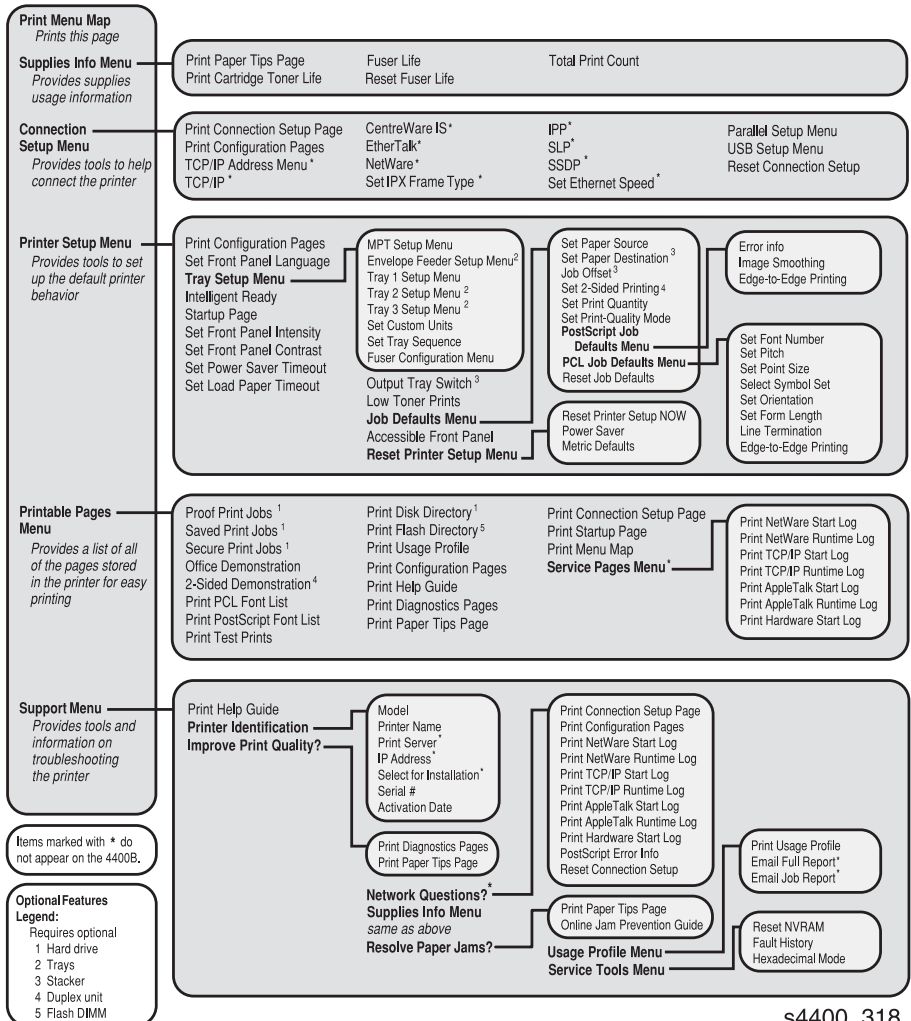


Machine Orientation

Menu Map

The menu map shown here lists the choices available when you select **Menus**, and is printed when you select **Print Menu Map** from the top level of Menus. The order of menus, items, and values found in the Menu Map is the order in which the menus, items, and values are displayed when scrolling through the menu items.

Menus and items in this map marked with a numbered footnote do not appear on the front panel display unless the associated option is installed in the printer. Items in this map marked with an asterisk (*) do not appear on the base configuration 4400B.



s4400_318

Printer Specifications

Physical Specifications

Physical Dimensions - Printer

Dimensions	Value
Size and weight (not including the Print Cartridge, Image Processor Board or any options)	Width: 422 mm x Depth 439 mm x Height 413 mm (16.5 in. x 17.25 in. x 16.25 in.) Weight: 25 Kg (55 lbs.) Packaged Weight: 32.7 kg (72 lbs.)

Printer clearances

Clearances	Value
Top (to closest overhead object):	With Stacker 102 mm (4.0") Without Stacker 292 mm (11.5")
Left:	Minimum 12" or 300 mm
Right:	300 mm (12 in.)
Front:	Minimum 600 mm (24 in.)
Rear:	Minimum 600 mm (24 in.)
Mounting surface flatness:	Horizontal bias within 5° of level

Media and Tray Specifications

Refer to the “Paper Tips” pages shown beginning on [page 1-15](#). You can print the Paper Tips pages from the Front Panel by selecting [Menus](#) | [Supplies Info Menu](#) | [Print Paper Tips Page](#).

The following table lists the total paper capacities available with the three paper deck combinations:

Maximum Paper Stack Capacity

Combination	MBF (standard)	1st deck (standard)	2nd deck (option)	3rd deck (option)	Total Capacity
1	100 sheets	550 sheets	—	—	650 sheets
2	100 sheets	550 sheets	550 sheets	—	1200 sheets
3	100 sheets	550 sheets	550 sheets	550 sheets	1750 sheets

Note: *Paper stack capacity applies to baseline paper: Xerox 4200/4024 20 lb. Letter and RX 80 A4 (3R91720).*

The Paper Tips Pages shown here list the supported paper and paper sizes, and provide the paper specifications for the printer.

Refer to the following tables to ensure the best print-quality and to avoid paper jams. For best results, use Xerox-branded paper as it is guaranteed to produce excellent results on your Xerox Phaser™ 4400 Laser Printer. Print-quality and paper handling performance may vary depending on vendor and type of paper used.

Note: If you change the type of paper or transparencies, you **must** specify the type on the front panel of the printer. For the Multi-Purpose Tray or envelope feeder only: if you change the size of paper, also specify the size on the front panel.

Supported paper and paper sizes

Paper Type	Input			Output	
	550-Sheet Tray	Multi-Purpose Tray	Envelope Feeder	Standard Tray	500-Sheet Slacker
A4 (210 x 297 mm)	●	●	---	●	●
A5 (148 x 210 mm)	● ⁽¹⁾	● ⁽¹⁾	---	●	●
A6 (105 x 148 mm)	custom ⁽¹⁾	● ⁽¹⁾	● ⁽¹⁾	●	●
ISO B5 (176 x 250 mm)	custom ⁽¹⁾	● ⁽¹⁾	---	●	●
B5 JIS (182 x 257 mm)	●	●	---	●	●
Index Card (3 x 5 in.)	---	● ⁽¹⁾	---	●	---
Statement (5.5 x 8.5 in.)	custom ⁽¹⁾	● ⁽¹⁾	---	●	●
Executive (7.25 x 10.5 in.)	●	●	---	●	●
Letter (8.5 x 11 in.)	●	●	---	●	●
US Folio (8.5 x 13 in.)	●	●	---	●	●
Legal (8.5 x 14 in.)	●	●	---	●	●
Envelopes					
#10 Commercial (4.12 x 9.5 in.)	custom ⁽¹⁾	● ⁽¹⁾	● ⁽¹⁾	●	●
Monarch (3.87 x 7.5 in.)	custom ⁽¹⁾	● ⁽¹⁾	● ⁽¹⁾	●	●
DL (110 x 220 mm)	custom ⁽¹⁾	● ⁽¹⁾	● ⁽¹⁾	●	●
C5 (162 x 229 mm)	custom ⁽¹⁾	● ⁽¹⁾	● ⁽¹⁾	●	●
B5 (176 x 250 mm)	custom ⁽¹⁾	● ⁽¹⁾	custom ⁽¹⁾	●	●
Transparencies					
A4 (210 x 297 mm)	● ⁽¹⁾	● ⁽¹⁾	---	●	●
Letter (8.5 x 11 in.)	● ⁽¹⁾	● ⁽¹⁾	---	●	●
Labels					
A4 (210 x 297 mm)	● ⁽¹⁾	● ⁽¹⁾	---	●	●
Letter (8.5 x 11 in.)	● ⁽¹⁾	● ⁽¹⁾	---	●	●
Capacity⁽²⁾	550	100	75	500	500

● = Short-edge feed (1) Simplex (one-sided) printing only. (2) Maximum capacity at 75 gm² (20 lb.) paper stock. Capacity is reduced for heavier/thicker stock.

s4400_351

Paper Tips Page 1 of 3

Custom paper sizes

	Input			Output	
	550-Sheet Tray	Multi-Purpose Tray	Envelope Feeder	Standard Tray	500-Sheet Stacker
Simplex (one-sided)					
Width	98 - 216 mm 3.87 - 8.5 in.	76 - 216 mm 3.0 - 8.5 in.	98 - 178 mm 3.87 - 7.0 in.	76 - 216 mm 3.0 - 8.5 in.	98 - 216 mm 3.87 - 8.5 in.
Length	148 - 356 mm 5.83 - 14.0 in.	127 - 356 mm 5.0 - 14.0 in.	148 - 254 mm 5.83 - 10.0 in.	127 - 356 mm 5.0 - 14.0 in.	148 - 356 mm 5.83 - 14.0 in.
Duplex (two-sided)					
Width	182 - 216 mm 7.16 - 8.5 in.	182 - 216 mm 7.16 - 8.5 in.	---	Same as Input	
Length	257 - 356 mm 10.12 - 14.0 in.	257 - 356 mm 10.12 - 14.0 in.	---	Same as Input	

Paper weights

The Phaser™ 4400 Laser Printer supports paper weights as follows:

- 16 - 130 lbs. (60 - 216 g/m²) simplex/one-sided
- 16 - 28 lbs. (60 - 105 g/m²) duplex/two-sided

Plain Paper: (60 - 120 g/m²) (16 - 32 lb.)

Card Stock: (120 - 216 g/m²) (32 - 130 lb.)

Paper tips

- If excessive jams occur, flip the paper in the tray or install fresh paper from a newly opened ream.
- Transparencies should be fanned prior to loading.
- Other size envelopes may be printed as custom paper sizes.
- Use only paper envelopes. Do not use envelopes with windows or metal clasps.
- Label media should be fanned prior to loading.
- Do not print to label stock once a label has been removed.

s4400_352

Paper Tips Page 2 of 3

Ordering supplies

See www.xerox.com/officeprinting/4400supplies for information on ordering supplies.

Xerox Branded Paper

Item	Paper Size	Part Number
Plain Paper		
Xerox Premier 80	A4 (210 x 297 mm)	3R91720
Xerox Premier 80	A5 (148 x 210 mm)	3R91832
Xerox 4024 DP statement	Statement (5.5 x 8.5 in.)	3R2072
Xerox 4024 DP	Letter (8.5 x 11 in.)	3R721
Xerox 4024 DP folio	Folio (8.5 x 13 in.)	3R725
Xerox 4024 DP legal	Legal (8.5 x 14 in.)	3R727

Transparencies

Xerox 3M Type L transparencies	A4 (210 x 297 mm)	3R91334
Xerox Clear transparencies	Letter (8.5 x 11 in.)	3R4446

Labels

Xerox A4 24-up label	A4 (210 x 297 mm)	3R96178
Xerox Multi-purpose 30-up label	Letter (8.5 x 11 in.)	3R12051

Replaceable Items

Item	Part Number
Standard-Capacity Print Cartridge	113R00627
High-Capacity Print Cartridge	113R00628
Maintenance Kit Contains: a Fuser Cartridge, 1 Transfer Roll, and 9 Feed Rollers.	108R00497 for 110 V (60 Hz) 108R00498 for 220 V (50 Hz)

s4400_353

Paper Tips Page 3 of 3

Functional Specifications

Characteristic	Specification																																																						
Printing process	<p>Recording System - Electro-photographic system (roller charging, single component magnetic toner development)</p> <p>Exposure System - Infrared Laser Diode Beam Scanning</p> <p>Class 1 Laser Product</p> <p>Class 3B Laser, rated at 5 mW output @ 780 nm</p> <p>Fusing System - Heat and pressure</p>																																																						
Resolution / Addressability	600/1200 dots per inch (dpi), switchable at full engine speed.																																																						
Operating Modes	<p>Ready Mode: Ready to receive data.</p> <p>Power Saver Mode: entered after a user-specified period of Print Engine inactivity since completion of the last print to minimize energy consumption.</p>																																																						
Continuous Operating Printing Speed	<table border="1"> <thead> <tr> <th rowspan="2">Paper Size</th> <th colspan="2">Low</th> <th rowspan="2">Fuser Medium</th> <th colspan="2">Setting High</th> <th rowspan="2">Extra High</th> <th rowspan="2">Duplex (ipm)</th> </tr> <tr> <th>Low</th> <th>High</th> <th>High</th> <th>Extra High</th> </tr> </thead> <tbody> <tr> <td>Letter SEF</td> <td>18</td> <td>26</td> <td>22</td> <td>8</td> <td>19</td> <td></td> </tr> <tr> <td>A4 SEF</td> <td>18</td> <td>25</td> <td>22</td> <td>8</td> <td>18</td> <td></td> </tr> <tr> <td>Legal 14" SEF</td> <td>18</td> <td>21.5</td> <td>18</td> <td>7.5</td> <td>16</td> <td></td> </tr> <tr> <td>Legal 13" SEF</td> <td>18</td> <td>21.5</td> <td>18</td> <td>7.5</td> <td>16</td> <td></td> </tr> <tr> <td>Executive</td> <td>18</td> <td>26</td> <td>22</td> <td>8</td> <td>19</td> <td></td> </tr> <tr> <td>B5 (JIS) SEF</td> <td>18</td> <td>26</td> <td>22</td> <td>8</td> <td>19</td> <td></td> </tr> </tbody> </table>	Paper Size	Low		Fuser Medium	Setting High		Extra High	Duplex (ipm)	Low	High	High	Extra High	Letter SEF	18	26	22	8	19		A4 SEF	18	25	22	8	18		Legal 14" SEF	18	21.5	18	7.5	16		Legal 13" SEF	18	21.5	18	7.5	16		Executive	18	26	22	8	19		B5 (JIS) SEF	18	26	22	8	19	
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Fuser Configuration Temperature	<table border="1"> <thead> <tr> <th>Low - Medium setting</th> <th>High - Extra High setting</th> </tr> </thead> <tbody> <tr> <td>Range: 194-209°C/ 381-408°F</td> <td>Range: 197-212°C/ 387-414°F</td> </tr> </tbody> </table>	Low - Medium setting	High - Extra High setting	Range: 194-209°C/ 381-408°F	Range: 197-212°C/ 387-414°F																																																		
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A4	7.6	14.0/ 15.4	8.4	14.8/ 16.2	9.3	15.7/ 17.1	7.8	15.9/ 17.3																																															
Warm-up time	From a cold start (22° C / 71.6° F ambient temperature) to READY TO PRINT within 70 seconds.																																																						

Electrical Specifications

Characteristic	Specification
Power supply	120 VAC (98–140 VAC) 50/60 Hz (47 Hz – 63 Hz) 220/240 VAC (198–264 VAC) 50/60 Hz (47 Hz – 63 Hz)
Power consumption	Maximum - 600 Watts Printing - 525 Watts/hour or 1792 Btus/hour Standby - 110 Watts/hour or 375 Btus/hour Power Saver - 20 Watts/hour or 68 Btus/hour Note: No electrical power is supplied to the Fuser assembly in Power Saver Mode.

Environmental Specifications

Characteristic	Specification
Operating environment	5–35° C / 41–95° F @ 15% to 85% Relative Humidity (operating) 0 - 3100 meter (10171 ft.) above sea level
Storage environment with a packed Print Cartridge	Normal condition: 12 months maximum at 0–35° C/32–95° F @ 15–80% Relative Humidity with no condensation present Severe condition: 1 month maximum at -20° to 0° C / -4° to 32° F or 35° to 40° C / 95 to 104° F @ 5–15 or 80–95% Relative Humidity with no condensation present
Storage environment without a packed Print Cartridge	Normal condition: 12 months maximum at -20 to -50° C / -4 to -58° F @ 5-85% Relative Humidity with no condensation present Severe condition: 48 hours maximum at 50–60° C / 122–140 ° F @ 85-95% Relative Humidity with no condensation present
Heat Emission	Maximum - 2730 BTU; Average - 1603; 102 (sleep mode)
Acoustic Noise (MPT closed; options are Duplex Unit, two additional feeders, Envelope Feeder, Stacker)	Standby: 4.9 B (35.0 dB(A)) Power Saver: 0 dB above background noise Printing (without options): 6.8 B (52.0 dB(A)) Printing (with options): 7.1 B (55.5 dB(A))
Dust Emission	No more than 0.075 mg/m3 concentration.
Ozone Emission	No more than 0.02 mg/m3 concentration, measured in accordance with BAM Standard.

