EPSON®

EPSON AculaserTM C1000

Sales Manual

Version 1.0, October 2001

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1. Introduction

A powerful color laser printer for Windows & Macintosh users, the Epson AcuLaser C1000 is designed to complement the AcuLaser C2000 in the Epson range of color laser printers.

This sales manual aims to explain the benefits of the Epson AcuLaser C1000, comparing it with both the AcuLaser C2000 and its main rival, Minolta QMS magicolor 2200 DeskLaser.

Epson AcuLaser C1000

2. Product concept

Designed to complement the AcuLaser C2000, the Epson AcuLaser C1000 provides individual and small businesses users for Windows & Macintosh based printing with low cost color laser printing – with no compromise on quality or speed.

Target users

Epson AcuLaser C1000	Epson AcuLaser C2000
SOHO /Personal users (Win & Mac based) on a small network	Small and medium sized users with a network

Important

The sales points of the Epson AcuLaser C1000 are described on the following pages. Please note, however, that certain memory and network restrictions exist for this printer. Be sure to refer to the section on these restrictions.

3. Sales points

3-1 Print quality

The AcuLaser C1000 provides small businesses and individual users with high-quality color laser printing that is the equivalent of the AcuLaser C2000. Output is highly stable, even after replacing toner cartridges.

High quality / high stability printing

3-2 Speed

Despite its lower cost and equivalent printing quality, the AcuLaser C1000 concedes nothing to the AcuLaser C2000 or the Minolta QMS magicolor 2200DeskLaser in terms of speed.

a. Engine speed comparison

	Epson AcuLaser C1000	Epson AcuLaser C2000	Minolta QMS magicolor 2200DL
Monochrome	**20 ppm**	20 ppm	20 ppm
Color	**5 ppm**	5 ppm	5 ppm

b. First print speed

Although the engine speed is the same, when printing business documents, the AcuLaser C1000 is faster than the Minolta QMS magicolor 2200DeskLaser. (See Chapter 6-2 Comparison data for details.)

*Performance of the AcuLaser C1000 depends on the PC being used.

Competitive printing speed

3-3 Macintosh capability

Unlike its main rival, the Minolta QMS magicolor 2200 DeskLaser, the AcuLaser C1000 is designed to offer superior color laser printing to Macintosh users either on a standalone basis or over a network using Appletalk. Macintosh users can connect to the AcuLaser C1000 using the USB port.

* The AcuLaser C2000 (with PostScript option) is recommended for Macintosh users with complex graphic arts requirements.

Ideal for Macintosh users

3-4 Network capability

Designed for individuals and small business users, the AcuLaser C1000 can be easily upgraded for use on small networks. The AcuLaser C1000 only supports LPR, Port9100 and AppleTalk protocols. (See Chapter 4 Network connectivity for details)

Network capability increase users

3-5 USB 1.1 capability

Unlike the Minolta QMS magicolor 2200DeskLaser, the AcuLaser C1000 is equipped with a USB 1.1. One of the advantages of the USB 1.1 is that it is not necessary to reinstall the printer driver when the printer is connected to a different USB port on the PC.

With previous versions, the user had to reinstall the printer driver whenever he or she changed the port connection.

USB 1.1 capability increases options

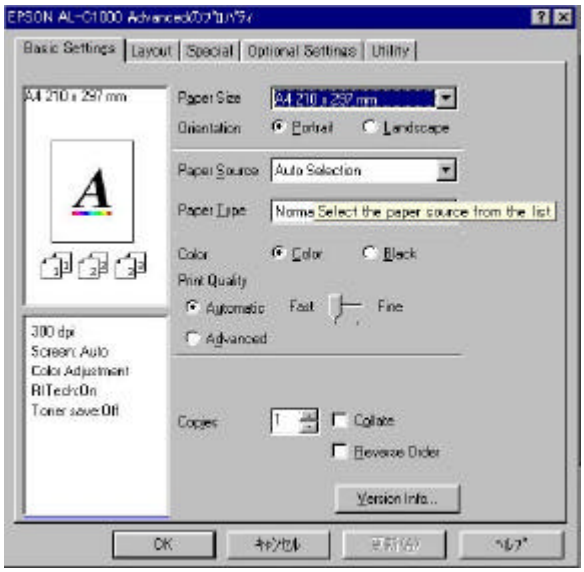
3-6 Superior paper handling

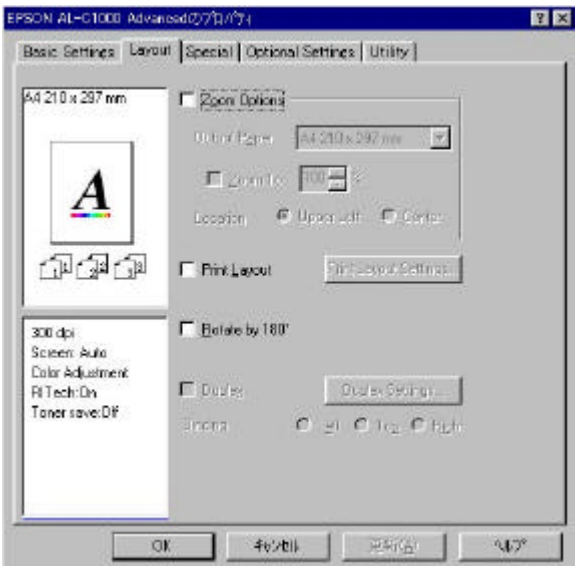
An optional duplex unit presents users with even greater printing options, while a 500-sheet paper tray shows that the AcuLaser C1000 makes no compromise on paper handling.

Advanced paper handling capability

3-7 Printer driver

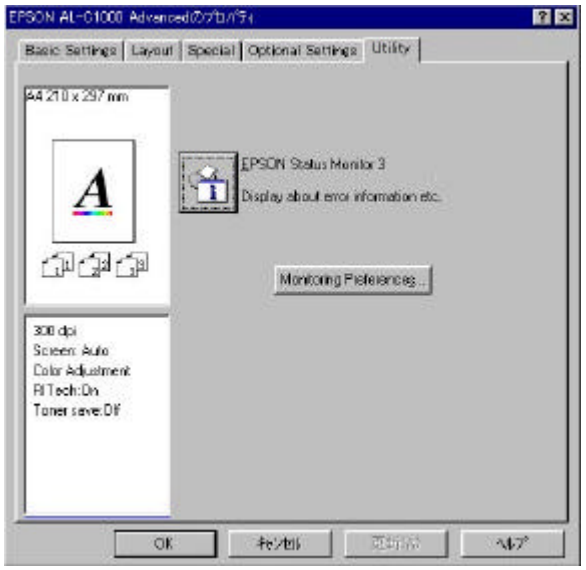
The AcuLaser C1000 offers users a number of options through its printer driver. Unlike the Minolta QMS magicolor 2200DeskLaser with its single mode, Epson provides the choice of either quality or fast mode.

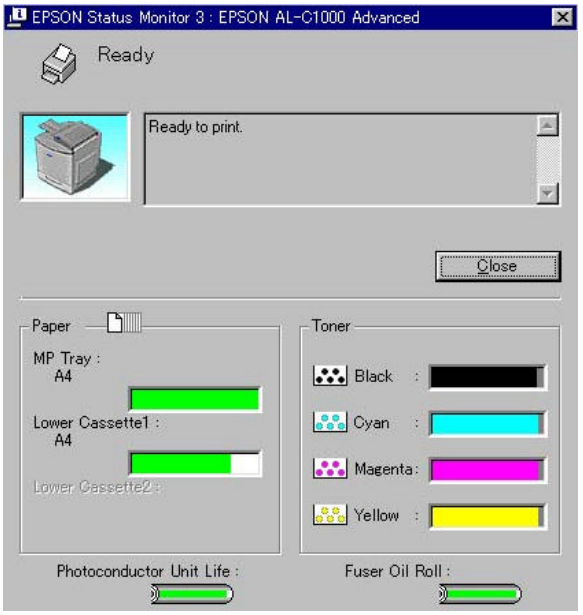




The driver of the AcuLaser C1000 provides users with a number of options

Users are soon aware of errors through the status monitor, which is automatically installed with the driver.

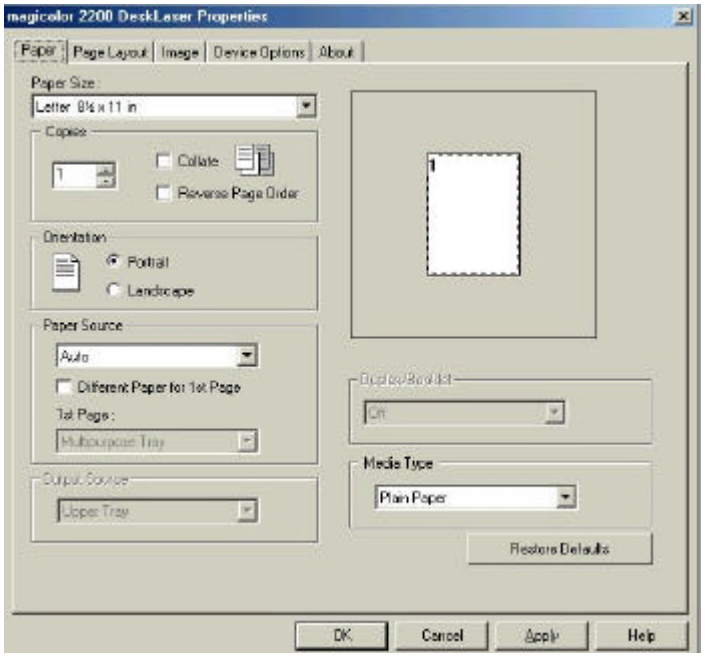




The status monitor shows details about remaining toner, paper, etc.

QMS magicolor 2200DeskLaser printer driver

In comparison, the printer driver of the QMS magicolor 2200DeskLaser provides users with very limited options.



QMS magicolor 2200DeskLaser printer driver

3-8 Stylish design

With its stylish 2-tone design, the AcuLaser C1000 will blend in perfectly with the interior of any small office.

4. Network Connectivity

Designed for individuals and small business users, the AcuLaser C1000 can be easily upgraded for use on small networks. The AcuLaser C1000 only supports LPR, Port9100 and AppleTalk protocols.

* For bigger Windows-based networks (except those with LPR and Port9100 protocols), the AcuLaser C2000 is recommended.

4-1 Leo 2.1 (EpsonNet 10/100 Base Tx Int. Print Server 2)

The AcuLaser C1000 can only be connected to a network via the Leo 2.1 interface card, which is connected to the printer via the Type B slot. Users already owning Leo 2.0 can upgrade to Leo 2.1 via the firmware. (The upgrade instruction sheet is inside the product) However, it is recommended that users wishing to upgrade download the latest version from the Web site.

Leo 2.1

4-2 Network Restriction

The AcuLaser C1000 only supports LPR, Port9100 and AppleTalk protocols.

AcuLaser C1000 network environment

	Windows 95/98/Me	Windows NT4.0/2000	Macintosh
LPR	Yes *1	Yes *2	NA
Port9100	Yes *1	Yes *2	NA
FTP	No *4	No *4	NA
IPP	No *4	No *4	NA
NetBEUI	No *3	No *3	NA
AppleTalk	NA	NA	Yes
Netware	No *3	No *3	NA
NDPS Gateway	No *4	No *4	NA

Yes: Recommended environments

No: User can send data to the AcuLaser C1000, and printing will be done. However, there is no guarantee, as the status monitor cannot communicate with the printer.

(It is necessary for the status monitor to communicate with host-based printers. If this is not possible, users cannot check the printer status, and are unable to clear errors because the printer has no LCD or switches.)

*1 EpsonNet Direct Print is necessary

*2 Windows standard LPR or EpsonNet Direct Print

* 3 The default setting of NetBEUI and Netware is “ENABLE” in Leo 2.1.

However, the AcuLaser C1000 does not support these protocols as the status monitor cannot communicate with the printer via these protocols. Users or administrators should set the EUI and Netware default setting to DISABLE.

* 4 FTP, IPP, and NDPS Gateway cannot be set to DISABLE, and users can send data to the AcuLaser C1000 via the above protocols. However, the status monitor cannot communicate with the printer via these protocols, and the protocols cannot be guaranteed.

Support protocols are only for LPR, Port9100 and AppleTalk

5. Memory requirements for AcuLaser C1000

Buffalo memory
Buffalo supplies 16 MB, 32 MB (pictured left), 64 MB and 128 MB memory for the AcuLaser C1000.
Note that memory provided by other suppliers cannot be used with this product.

The following table explains the memory requirements for the AcuLaser C1000. Please note that only memory supplied by Buffalo can be used with this printer.

Business documents	Images	Duplex printing
No memory upgrade required when printing business documents on a standalone or network basis *	Memory upgrade of at least 32 MB required in 300 dpi, and 64 MB required in 600 dpi	Double required memory upgrade for simplex printing

* The table above is intended as a guideline only. Circumstances may vary according to the document being printed. Detail information , please refer to appendix.

6. Positioning

6-1 Comparison with Epson AcuLaser C2000

Epson AcuLaser C1000

Epson AcuLaser C2000

a. Major differences between the AcuLaser C1000 and C2000

In order to best fit the needs of its target market and to reduce the cost, the AcuLaser C1000 has some functional differences with the C2000. These are summarized below.

AcuLaser C1000	AcuLaser C2000
LED indicators on printer: control through printer driver	Control panel allows control from the printer
Personal / SOHO use or small networks only (LPR, Port9001, AppleTalk only)	Can be used on medium sized networks
For Windows & Macintosh based printing	Wide range of printer fonts and languages
No PostScript option	PostScript option available
No HDD option	Job management by using HDD option

b. Differentiating between AcuLaser C1000 and AcuLaser C2000 users

User profile

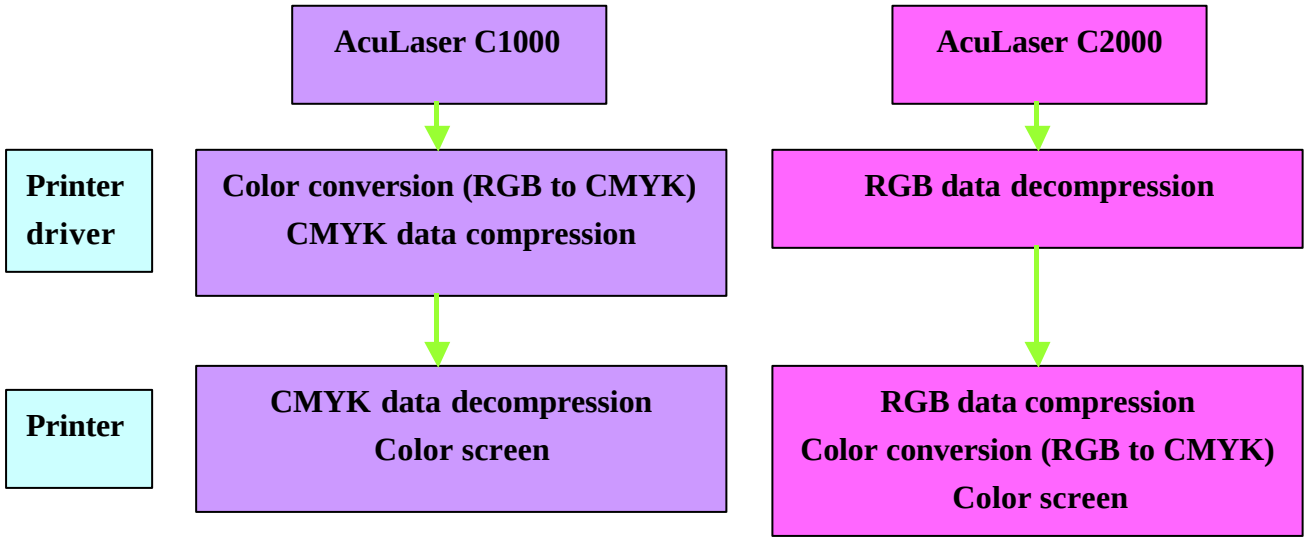
	AcuLaser C1000	AcuLaser C2000
Network printing	Yes *	Yes
Requires high-quality PostScript printing	No	Yes
Prints business documents and simple graphics	Yes	Yes
Macintosh user	Yes	Yes (option)
Prints via USB interface	Yes	No

* LPR or Port9100 on Windows, and AppleTalk on Macintosh.

c. Differences in data processing

Although the output of the Epson AcuLaser C1000 and the AcuLaser C2000 can be very similar, the data processing method is different. With the AcuLaser C2000, color conversion is carried out on the printer side (printer driver). However, color conversion for the AcuLaser C1000 is carried out on the PC side. The performance of the AcuLaser C1000 is therefore heavily dependent on the PC.

Data processing differences between AcuLaser C1000 and AcuLaser C2000



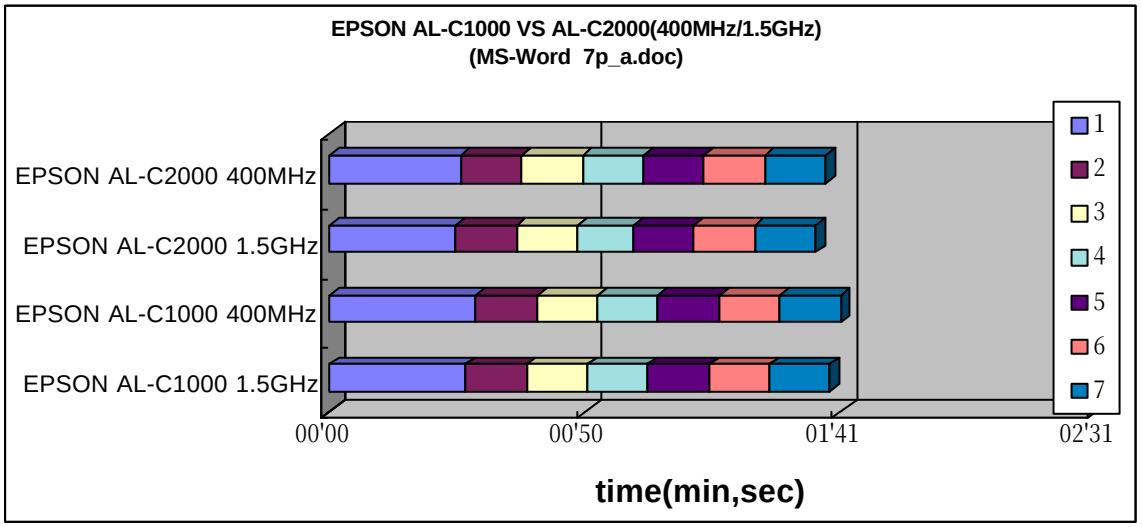
The AcuLaser C1000 ensures that colors are accurate and consistent through the use of Epson exclusive technologies.
Epson color RITech keeps color definition sharp, with clean edges that make charts and graphics stand out.
AcuLaser Color Halftoning provides print resolution equivalent to 2400dpi (defined print resolution: 600 dpi). Halftoning also improves the quality of the all-important black output, so text is extremely sharp and images have excellent contrast.

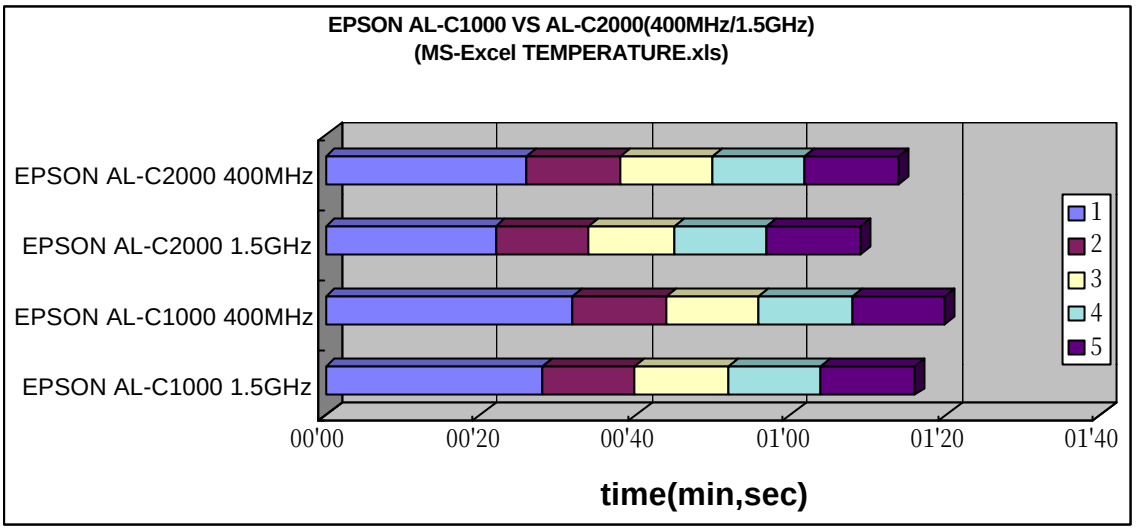
e. Performance comparison

Comment

When compared to the print speed performance when printing business documents, the AcuLaser C1000 is approximately the same speed as the C2000. However, the AcuLaser C2000 is faster when printing image data. (We recommend the C2000 for users who mainly print image-related documents.)

AL-C2000 VS AL-C1000





Host PC

Microsoft Windows 98

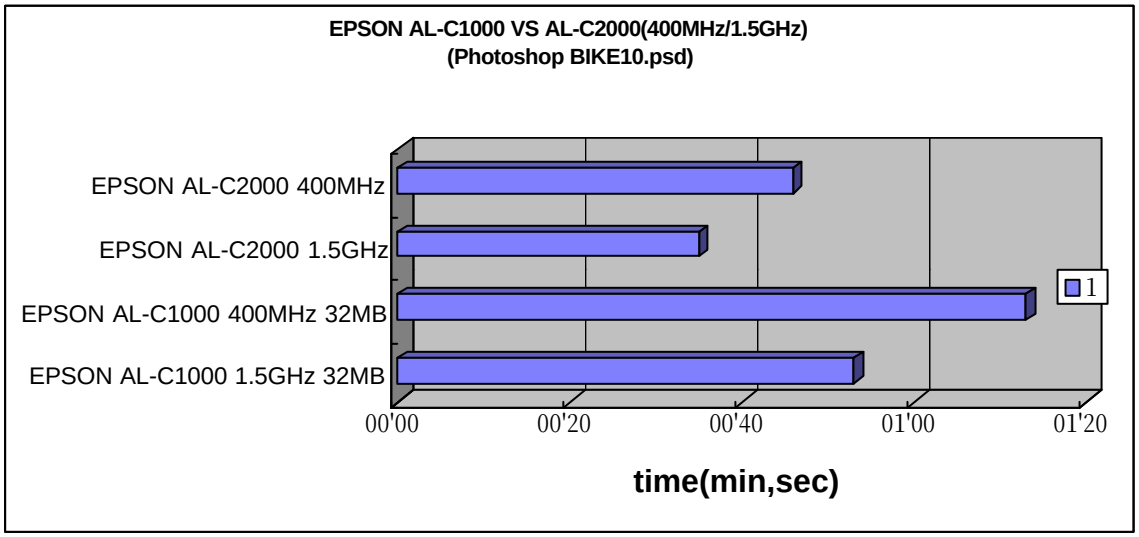
Pentium-400MHz /RAM 64MB & Pentium-1.5GHz /RAM 256MB

Parallel interface

Tested Printer

AL-C1000: 300 dpi/RAM 16MB

AL-C2000: 300 dpi/RAM 32MB



Host PC

Microsoft Windows 98

Pentium-400MHz /RAM 64MB & Pentium-1.5GHz /RAM 256MB
Parallel interface

Tested Printer
AL-C1000: 600 dpi/RAM 32MB
AL-C2000: 600 dpi/RAM 32MB

e. Specification comparison

Specification	Epson AcuLaser C1000	Epson AcuLaser C2000
Resolution	600dpi (Epson AcuLaser Color 2400)	¬
Printing speed	Color: 5 ppm (A4/LT) Monochrome: 20 ppm (A4/LT)	¬
CPU	200MHz RISC processor	266MHz 64bit RISC processor
Font	-	LJ (PCL®) mode 80 scaleable fonts + 9 bitmap fonts ESC/2 mode 12 scaleable fonts + 6 bitmap fonts FX mode 8 scaleable fonts + 2 Bitmap fonts IBM® mode 8 scaleable fonts + 1 bitmap fonts
Standard paper cassette	500 sheets	¬
Paper size	A4/LT	¬
Multi-purpose tray	150 sheets	¬
Paper size	A4/A5/B5/I-B5/LT/HLT/EXE/GLT	¬
Envelope size	Com10/Monarch/DL/C5/C6	¬
Optional paper input	500-sheet paper cassette unit	¬
Interface standard	IEEE1284 bi-directional parallel interface with compatibility mode, nibble mode and ECP mode	¬
	Universal Serial Bus (USB) 1.1 compliant	Ethernet 100 Base TX / 10 Base T
Interface option	1 slot for Type B interface card	¬
Memory	16 MB (expandable to 256 MB)	32 MB (expandable to 512 MB)
Dimensions	463 (W) x 559 (D) x 511 (H)	¬
Weight	44.5 kg	¬
Printer driver	Printer driver: Microsoft® Windows® 95/98/ME/2000, Windows NT™ version 4.0, Mac™ OS 8.1 or later, Mac™ OS9.x	Printer driver: Microsoft® Windows® 95/98/ME/2000, Windows NT™ version 4.0
Networking	Microsoft® Windows® LPR, Port 9100, Macintosh AppleTalk	Microsoft® Windows® TCP/IP, NetBIOS, NetBEUI Novell Netware (IPX/SPX) Macintosh AppleTalk
Printer control language	-	Standard PCL®5e,FX, ESC/P2, IBM® mode Option

		Adobe®PostScript®3™
Host requirements recommended environment: Windows	CPU: Pentium 450 MHz or more	None
	RAM: 96 MB or more	
	HDD free space: 500 MB or more	
Host requirements recommended environment: Macintosh	CPU: Power PC G3 500 MHz or more	None
	RAM: 128 MB or more	
Minimum environment: Windows	CPU: Pentium 233 MHz or more	None
	RAM: 64MB or more	
	HDD free space: 500 MB or more	
Minimum environment: Macintosh	CPU: Power PC G3 233 MHz or more	None
	RAM: 128 MB or more	
Control panel	2 LEDs	1-line, 20-charactor LED display with 6LEDs & 8 switches
Toner cartridge life	Developer cartridge life span: Black: 6000 pages	¬
	Yellow: 6000 pages	¬
	Magenta: 6000 pages	¬
	Cyan: 6000 pages	¬
Options	500-sheet paper cassette unit	¬
	Duplex unit	¬
	EpsonNet 10/100 Base Tx Int. Print Server 2	Hard disk drive
		Adobe® PostScript® 3™ Kit (for user option model)

6-2 Comparison with Minolta QMS magicolor 2200 DeskLaser

Advantages of the Epson AcuLaser C1000

- Available to Macintosh users
- Support AppleTalk
- USB 1.1 compliant

Epson AcuLaser C1000 **Minolta QMS magicolor 2200 DeskLaser**

a. Performance comparison

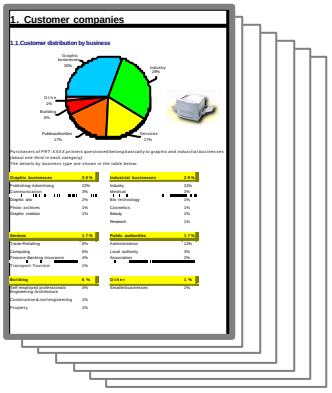
Comment

The engine of the AcuLaser C1000 performs well even when printing business documents from a slower PC. This is in contrast to the Magicolor 2200DeskLaser, whose engine performs poorly under similar circumstances. The C1000 even has a slight advantage when printing from a faster PC.

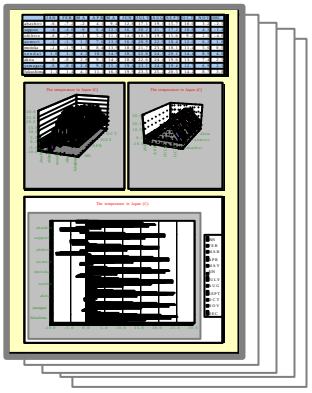
When printing image documents the magicolor2200DeskLaser is faster. However, the printing quality of the C1000 is superior. (magicolor 2200DeskLaser seems to be sacrificing print quality for speed.)

Documents used in comparison

The following documents were used in comparing the AcuLaser C1000 and the QMS magicolor2200 DeskLaser.

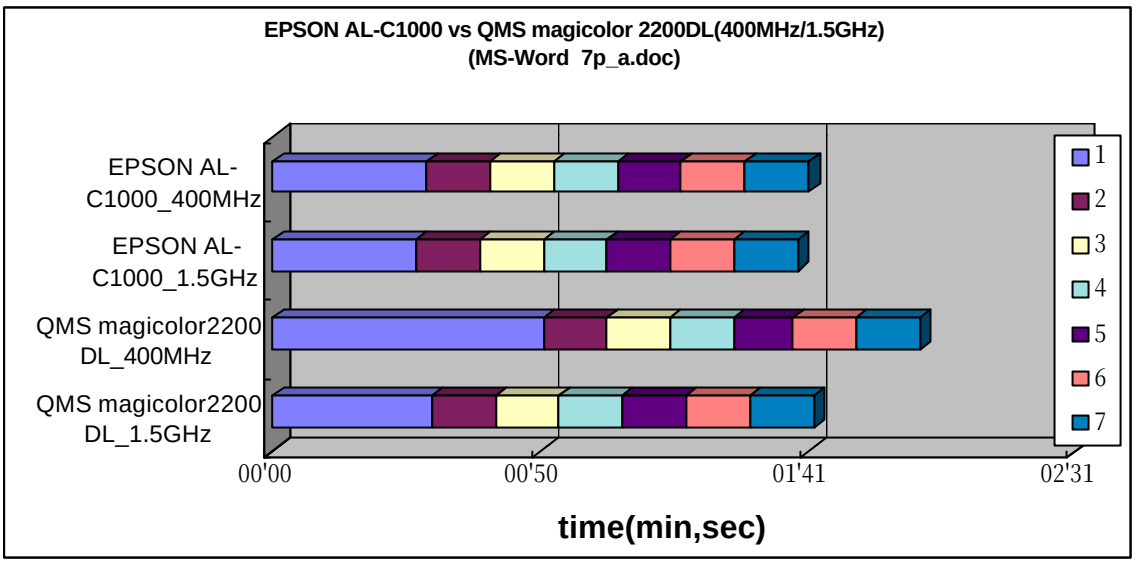


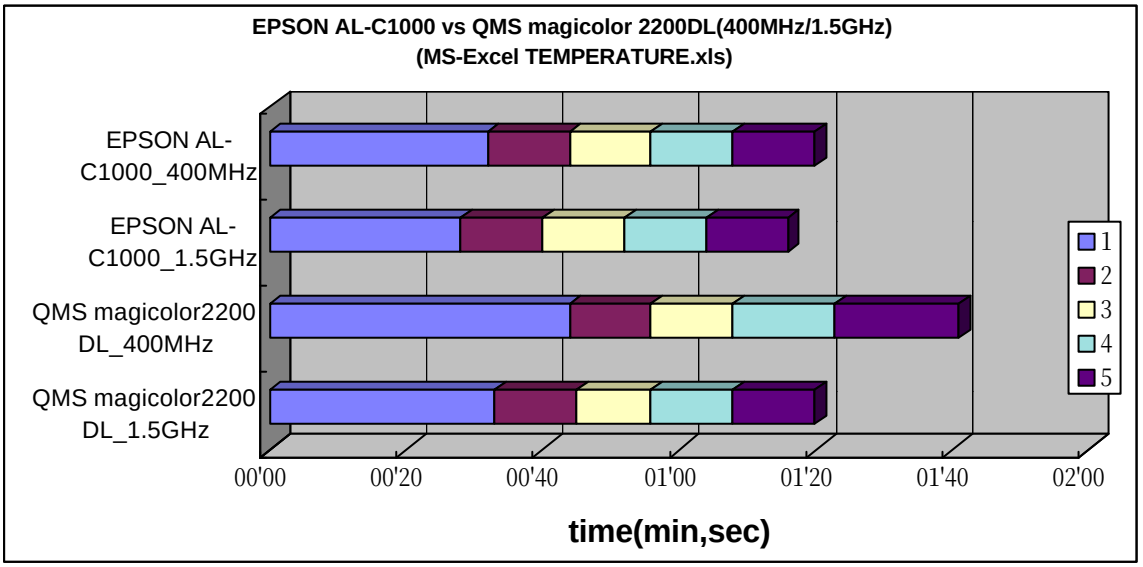
Word



Exel

AL-C1000 VS QMS magicolor2200 DeskLaser





Host PC

Microsoft Windows 98

Pentium-400MHz /RAM 64MB & Pentium-1.5GHz /RAM 256MB

Parallel interface

Tested Printers

AL-C1000: 300 dpi/RAM 16MB

QMS magicolor 2200DeskLaser: 1200No600 dpi/RAM 32MB

b. Specifications comparison

Specification	Epson AcuLaser C1000	Magicolor 2200 Desklaser
Resolution	600dpi (Epson AcuLaser Color 2400)	1200 x 600 dpi
Printing speed	Color: 5 ppm (A4/LT) Monochrome: 20 ppm (A4/LT)	Color: up to 5 ppm Monochrome: up to 20 ppm
CPU	200MHz RISC processor	100MHz RISC processor
Standard paper cassette	500 sheets	500 sheets
Paper size	A4/LT	A4/LT/Legal
Multi-purpose tray	150 sheets	150 sheets
Paper size	A4/A5/B5/I-B5/LT/HLT/EXE/GLT	A4/A5/B5 (JIS and ISO)/LT/ Legal/Executive/Statement/UK Quarto/Foolscap/Folio/SP Folio/ Japanese postcard
Envelop size	Com10/Monarch/DL/C5/C6	Com10/Monarch/DL/C5/C6
Optional paper input	500-sheet paper cassette unit	500-sheet lower feeder unit
Interface standard	IEEE1284 bi-directional parallel interface with compatibility mode, nibble mode and ECP mode	Ethernet (auto-sensing 10BaseT/ 100BaseTX), IEEE 1284 bi-directional parallel
	Universal Serial Bus (USB) 1.1 compliant	
Interface option	1 slot for Type B interface card	
Memory	16MB (expandable to 256MB)	32MB (expandable to 96MB)
Dimensions	463 (W) x 559 (D) x 511 (H)	463 (W) x 522 (D) x 511 (H)
Weight	44.5 kg	44.5 kg
Printer driver	Printer Driver: Microsoft® Windows® 95/98/ME/2000, Windows NT™ version 4.0 , Mac™ OS 8.1 or later, Mac™ OS9.x	Operating system compatibility: Windows 95/98/ME/2000, Windows NT version 4.0
Networking	Microsoft Windows LPR, Port 9100, Macintosh AppleTalk	Microsoft Windows LPR only
Toner life	Developer cartridge life span: Black: 6000 pages	Developer cartridge life span: Black: 6000 pages
	Yellow: 6000 pages	Yellow: 6000 pages
	Magenta: 6000 pages	Magenta: 6000 pages
	Cyan: 6000 pages	Cyan: 6000 pages
Options	500-sheet paper cassette unit	500-sheet lower feeder unit
	Duplex unit	Duplexing
	EpsonNet 10/100 Base Tx Int. Print Server 2	5 bin mailbox

7. Options and consumables

7-1 Options

Options are the same as for the AcuLaser C2000, except for PostScript and the hard disk drive, which are not available with the AcuLaser C1000.

Duplex unit
C813471

500-sheet paper cassette unit
C813461

EpsonNet 10/100 Base Tx Int. Print Server 2
C12C823912 (EAI)
C12C823914 (non-EAI)
C12C823915 (non-EAI, bulk)

7-2 Consumables

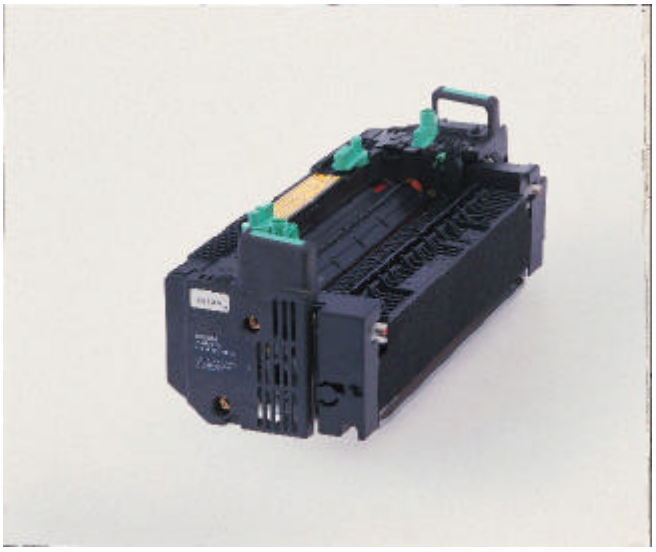
Consumables are all the same as for the AcuLaser C2000. Cost per page is also the same.

Developer Cartridge (Black) (Life span: 6,000 pages) * S050033
Developer Cartridge (Yellow) (Life span: 6,000 pages) * S050034
Developer Cartridge (Magenta) (Life span: 6,000 pages) * S050035
Developer Cartridge (Cyan) (Life span: 6,000 pages) * S050036

Photoconductor kit (Life span: 30,000 pages B/W or 7,500 pages color
(include waste toner collector) * S051072

Fuser kit (120 V) (life span: 100,000 pages) * S053002
Fuser kit (220 V) (life span: 100,000 pages) * S053003

* Approximate number of sheets under conditions of continuous printing on A4 size paper at A4 duty



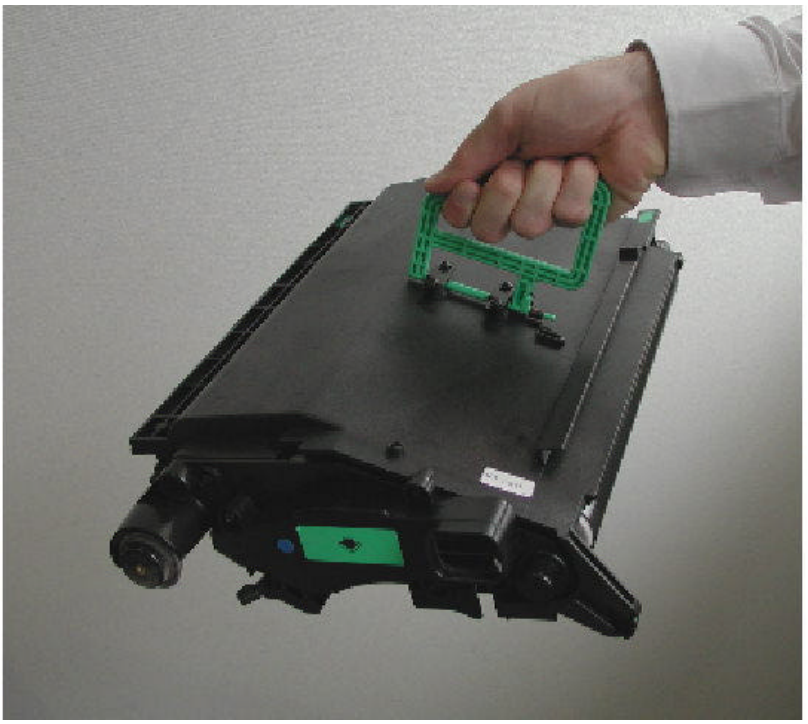
Fuser oil roll (life span: 21,000 pages B/W or 7,500 pages color) * S052003

Waste toner collector S050037

* Approximate number of sheets under conditions of continuous printing on A4 size paper at A4 duty

Transfer belt unit (Life span: 130,000 pages B/W or 30,000 pages color)

S053001



8. AcuLaser C1000 detailed specifications

Specification	Epson AcuLaser C1000
Resolution	600dpi (Epson AcuLaser Color 2400)
Printing speed	Color 5ppm (A4/LT) Monochrome 20ppm (A4/LT)
CPU	200MHz RISC processor
Standard paper cassette	500 sheets
Paper size	A4/LT
Multi-purpose tray	150 sheets
Paper size	A4/A5/B5/I-B5/LT/HLT/EXE/GLT
Envelop size	Com10/Monarch/DL/C5/C6
Optional 500-sheet paper cassette unit	500 sheets
Paper size	A4/LT
Paper type MP tray	Plain paper (60 to 90g/m2), exclusive transparencies, labels, colored paper, thick paper (91 to163g/m2), envelope
Feedable paper dimensions	Width: 92 to 216mm Length:148 to 297mm
Paper eject/capacity	Face down (maximum 500 sheets)
Interface standard	IEEE1284 bi-directional parallel interface with compatibility mode, nibble mode and ECP mode
	Universal Serial Bus (USB) 1.1 compliant
Interface option	1 slot for Type B interface card
Memory	16MB (expandable to 256MB)
Warm up time	150 sec (120V), 160 sec (220V)
First print time	B/W 16 sec (A4), Color 25 sec (A4)
Acoustic noise	Stand by: less than 41db (A)
	During operation: less than 55db (A)
Durability	5 years or 500,000 pages whichever comes first
Environmental conditions (operating) temperature	10° to 32°C (50° to 90°F)
Humidity	15% to 85% RH
Host requirements recommended environment: Windows	CPU: Pentium 450 MHz or more
	RAM: 96 MB or more
	HDD free space: 500 MB or more
Minimum environment: Windows	CPU: Pentium 233 MHz or more
	RAM: 64MB or more
	HDD free space: 500 MB or more
Host requirements recommended environment: Macintosh	CPU: Power PC G3 500 MHz or more
	RAM: 128 MB or more

Minimum environment: Macintosh	CPU: Power PC G3 233 MHz or more	
	RAM: 128 MB or more	
Operation	B/W: less than 700 Wh, color: less than 550 Wh	
	Stand-by mode: less than 250 Wh	
	Power down: less than 35 Wh	
Dimensions	463 (W) x 559 (D) x 511 (H)	
Weight	44.5 kg	
Printer driver /utility	Printer Driver: Microsoft® Windows® 95/98/ME/2000, Windows NT™ version 4.0 , Mac™ OS 8.1 or later, Mac™ OS9.x	
	Epson Status Monitor for: Microsoft® Windows® 95/98/ME/2000,Windows NT™ version 4.0 Mac™ OS 8.1 or later, Mac™ OS9.x	
Networking (option)	Microsoft Windows LPR Port 9100, Macintosh AppleTalk	
Consumable life span	Developer cartridge	Black: 6000 pages
		Yellow: 6000 pages
		Magenta: 6000 pages
		Cyan: 6000 pages
	Photoconductor kit	B/W: 30,000 pages
		Color: 7,500 pages
	Fuser kit	120V: 100,000 pages
		220V: 100,000 pages
	Fuser oil roll	B/W: 21,000 pages
		Color: 7,500 pages
	Waste toner collector	B/W: 30,000 pages
		Color: 7,500 pages
	Transfer belt unit	B/W: 130,000 pages
		Color: 30,000 pages
Options	500-sheet paper cassette unit	
	Duplex unit	
	EpsonNet 10/100 Base Tx Int. Print Server 2	

9.Appendix

9-1 Fantail Memory Requirement

The actual memory requirements for various types of business documents can be seen in

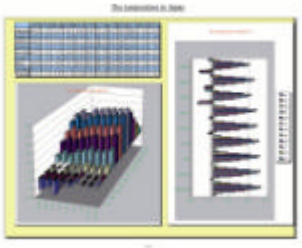
the following tables.

File size	Resolution	16MB (std)	32MB (+16MB)	48MB (+32MB)	Data size
Word (7.2MB)	300	Yes	Yes	Yes	5.67 MB
	600	NR	Yes	Yes	18.15 MB
Word2 (5.1MB)	600	Yes	Yes	Yes	14.26 MB
Excel (246KB)	300	Yes	Yes	Yes	-
	600	Yes	Yes	Yes	1.71 MB
PowerPoint (646KB)	300	Yes	Yes	Yes	-
	600	Yes	Yes	Yes	4.49 MB

NR = Not recommended

Word

Word 2



Excel

Power Point

Fantail RAM requirements for image data

File size	Resolution	16MB(std)	32MB(+16MB)	48MB(+32MB)	Data Size
SLADY Photoshop (22.6MB)	300	No	Yes	Yes	20.7MB
	600	No	No	Yes	70.3MB
Bike Photoshop (15.0MB)	300	Yes	Yes	Yes	7.7MB
	600	No	Yes	Yes	25.6MB
SDESK Photoshop (22.6MB)	300	No	Yes	Yes	22.0MB
	600	No	No	Yes	71.7MB

Health Illustrator (45MB)	300	Yes	Yes	Yes	8.26MB
	600	No	Yes	Yes	25.2MB

SLADY

Bike

SDESK

Health

Memory guidelines

	Resolution	Simplex/Duplex	Connection	Additional memory
Business documents (Word, Excel, Power Point , etc)	300	Simplex	Local	Not necessary
			Network	Not necessary
		Duplex	Local	Not necessary
			Network	Not necessary
	600	Simplex	Local	Not necessary (Depends on embedded image size)
			Network	Not necessary (Depends on embedded image size)
		Duplex	Local	32MB
			Network	32MB
Image printing (In case of A4 full size image printing)	300	Simplex	Local	16MB
			Network	16MB
		Duplex	Local	32MB
			Network	32MB
	600	Simplex	Local	64MB or more
			Network	64MB or more
		Duplex	Local	128MB or more
			Network	128MB or more