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Printer

Power source

Refer to the nameplate on the rear of the unit.

Temperature

Operating: 10°C to 32.5°C (50°F to 90.5°F)

Best Print Quality: 15°C to 25°C (59°F to 77°F)

Storage: 0°C to 40°C (32°F to 104°F)

Humidity

Operating: 20% to 80% RH

Best Print Quality: 30% to 70% RH

Storage: 10% to 80% RH

Warm-up time

Less than 300 seconds (at 20°C)

Power consumption

850 W Max. (printing with fuser on)

35 W (standby with fuser off)

25 W (Energy Star mode)

Meets Energy Star power conservation requirements.

Mass {Weight} of standard unit with all consumables

(without optional 2nd Cassette Feeder)

49.2 kg {108.4 lbs.}

Dimensions of standard unit (Without 2nd Cassette Feeder)

Height: 463 mm (18.2")

Depth: 498 mm (19.6")

Width: 510 mm (20.1") [784 mm (30.9") with the output tray]

Noise level

53 dB(A) [Printing mode]

47 dB(A) [Standby mode]

Printing method

Semiconductor Laser

Interface

Standard: Bidirectional Parallel
Option: Ethernet (10/100 baseT)

Altitude

Operating: 0 to 2,500 m (8,000 ft.)
Storage: 0 to 4,000 m (13,125 ft.)

Media

Media Sizes

Media	Size	Dimensions
Paper	Letter	216 mm x 279 mm (8.5" x 11")
	A4	210 mm x 297 mm (8.3" x 11.7")
	Legal	216 mm x 356 mm (8.5" x 14")
Transparency	Letter	216 mm x 279 mm (8.5" x 11")
	A4	210 mm x 297 mm (8.3" x 11.7")
Envelope	#10	104.9 mm x 241.3 mm (4.13" x 9.5")

NOTE

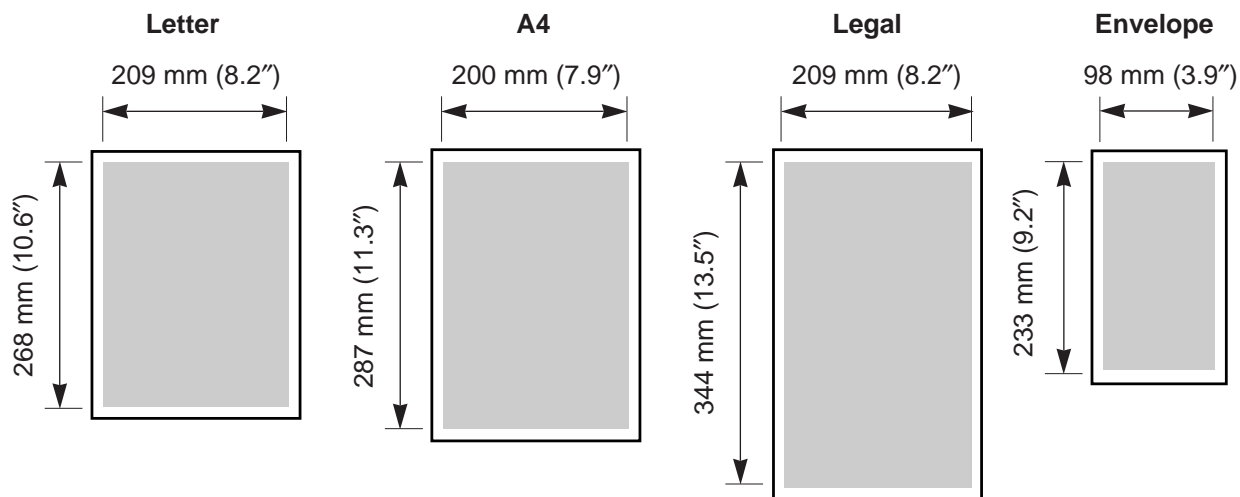
- Please store your paper according to the recommendations of the manufacturer.

Margins and Print Area

When the image is printed on the media, the image (print area) is a bit smaller than the media size. You may need to adjust the page margins in the application software to match the print area.

The following table and illustrations show the page sizes, the largest print areas, and the margins for the media sizes supported on this printer.

Media	Page size	Print area	Margins		
			Top	Bottom	Sides
Letter	216 mm x 279 mm (8.5" x 11")	209 mm x 268 mm (8.2" x 10.6")	5.6 mm (0.22")	5.6 mm (0.22")	3.6 mm (0.14")
A4	210 mm x 297 mm (8.3" x 11.7")	200 mm x 287 mm (7.9" x 11.3")	5.1 mm (0.2")	4.7 mm (0.18")	4.9 mm (0.19")
Legal	216 mm x 356 mm (8.5" x 14")	209 mm x 344 mm (8.2" x 13.5")	5.8 mm (0.23")	5.8 mm (0.23")	3.6 mm (0.14")
Envelope	104.9 mm x 241.3 mm (4.13" x 9.5")	97 mm x 233 mm (3.8" x 9.2")	4.2 mm (0.16")	4.2 mm (0.16")	3.6 mm (0.14")



Paper Weight

The printer is designed to work well with most types of paper. However, differences in paper may have significant effects on the quality of the print or the reliability of paper handling. It is strongly recommended that you always test paper before purchasing it to make sure it provides desirable performance.

Media tray	Single-sided printing	B&W	60 to 105 g/m ² (16 to 28 lbs.)
		Color	75 to 105 g/m ² (20 to 28 lbs.)
	Auto duplex printing* ¹	75 to 90 g/m ² (20 to 24 lbs.)	
Multi-purpose tray	Single-sided printing	75 to 165 g/m ² (20 to 44 lbs.)	
	Manual duplex printing		

- Recommended paper (for optimum performance):
 LETTER/LEGAL : Hammermill LASERPRINT 90 g/m² (24 lbs.)
 A4 : 4CC 80 g/m²

*¹ Optional 2nd cassette feeder with ADU must be installed in your printer.

Types of Paper to Avoid

- Extremely smooth or shiny paper or paper that is highly textured
- Letterhead imprinted with low temperature or thermography. These materials may transfer onto the fuser unit's roller and cause damage. Any pre-printed paper should use inks compatible with 200°C (392°F) for 0.1 second.
- Damaged or wrinkled paper, or paper with irregularities such as tabs, staples, etc.
- Multipart forms or carbonless paper
- Paper with a 25% or more cotton and/or fiber content
- **Ink jet media** (paper, transparency, etc.)
 (It may transfer onto the fuser unit's roller and cause damage.)

Duplex Printing (Two-sided printing)

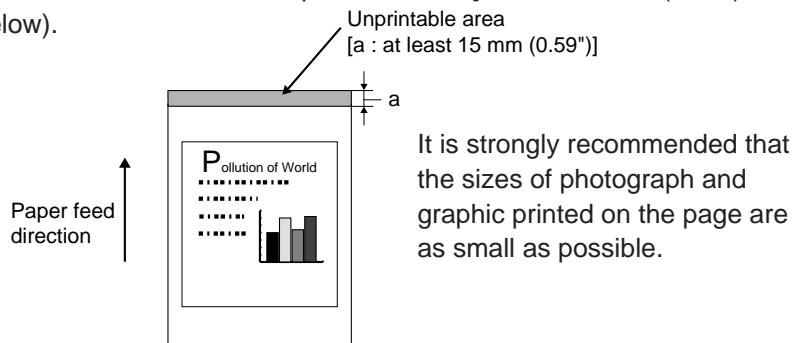
Manual duplex printing is possible by using the multi-purpose tray. Automatic duplex printing is possible by installing the optional 2nd cassette feeder with ADU. However, you should not expect the same print quality and reliability that you get with single-sided printing. We strongly recommend that you follow the guidelines below.

Notes for manual duplex printing:

- Do not load more than 50 sheets in the multi-purpose tray.
- Before loading paper in the multi-purpose tray, adjust it so that the edges of the media are lightly touching the media guides of the multi-purpose tray.
- Use the multi-purpose tray for second side printing.

Notes for manual / automatic duplex printing:

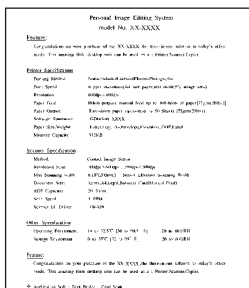
- It is strongly suggested to use color laser bond paper.
- Before printing on the first side, set the unprintable area [at least 15 mm (0.59") in length] on the top of paper (see below).



- When printing on the **first side**, avoid printing photograph or graphic in solid color to prevent paper jamming. It may cause a damage to the printer.

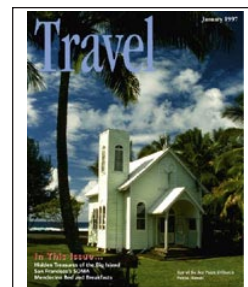
The first side printing

OK



Ex. Characters

N.G.



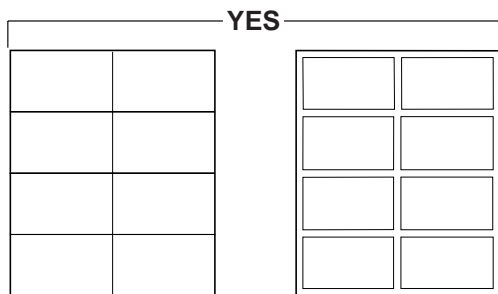
Ex. Photograph in solid color

Transparencies and Labels

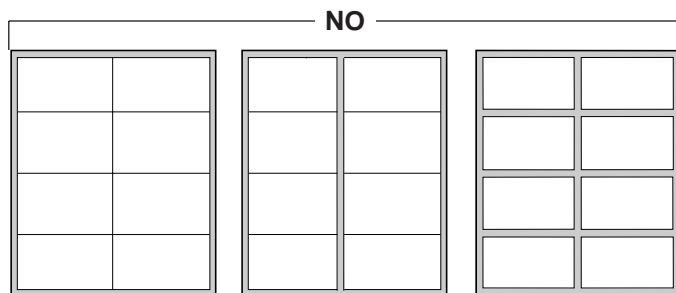
You may also print on transparencies and labels that are made for the printer. Panasonic has tested and found that the following work satisfactorily.

OHP transparency	3M CG3710
Labels	AVERY 5163, AVERY 5164, AVERY 5165 Avery L7163, Avery L7165, Avery L7166, Avery L7167 Avery L7168, Avery L7169

- Re-using transparencies that have been fed through the printer once (for example, after jams or if the transparency is ejected without being printed) can reduce the life of the consumables and paper path components.
- With any label stock, the labels must completely cover the backing material.



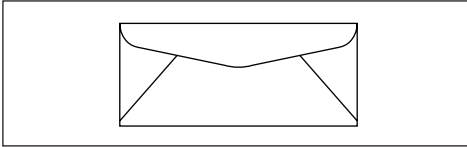
Labels cover the entire backing material.



The backing material is exposed.

Envelopes

It is recommended that you print in black text only and purchase high quality #10 or larger laser envelopes with diagonal seams, as shown in the diagram below:

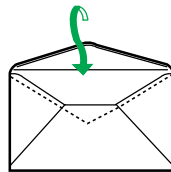


High quality envelopes have the following characteristics:

- A thin, sharply creased leading edge
- Paper weight of 90 g/m² (24 lbs.)
- Flat, free of curls, wrinkles, nicks, etc.

NOTES

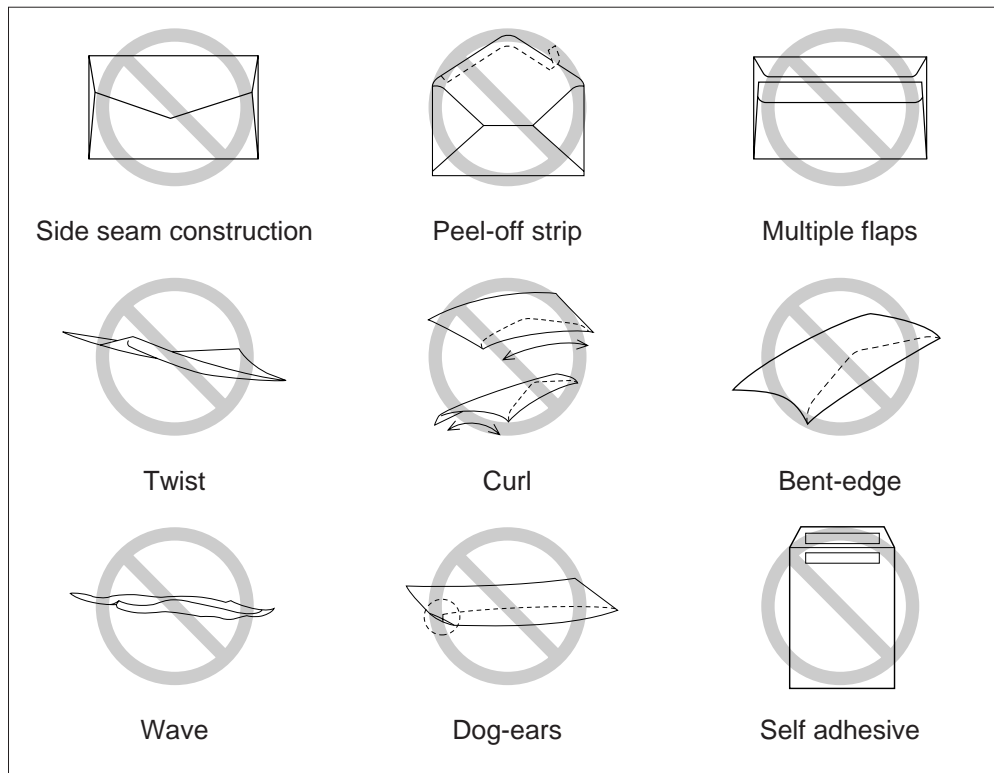
- Wrinkle may occur in some case, even if high quality envelopes are used.
- When a wrinkle occurs, try printing with the flap inserted inside the envelope as shown in figure.



It is not recommended that you use envelopes with any of the following characteristics (using these may result in paper jams):

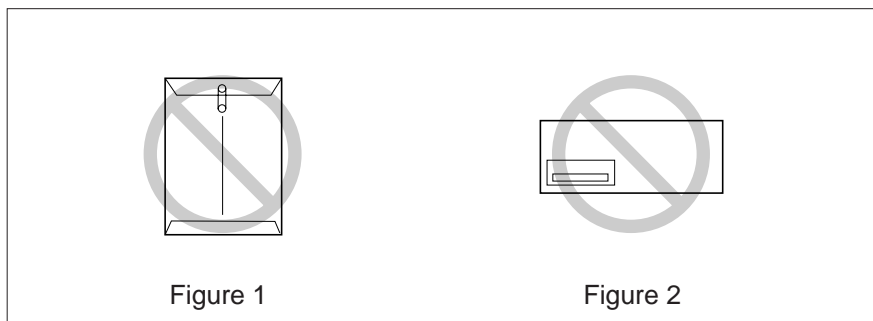
- Irregularly shaped envelopes
- Envelopes with curls, wrinkles, nicks, twists, dog-ears or other damage
- Envelopes with side seam construction
- Highly textured envelopes, or with extremely shiny surfaces
- Envelopes that seal by removing a peel-off strip
- Envelopes with more than one flap to be sealed
- Self-adhesive envelopes
- Envelopes that are baggy or not sharply creased
- Embossed envelopes
- Envelopes that have previously been printed on

(Continued)



Do not attempt to print on any of the following types of envelopes. These may cause damage to your printer.

- Envelopes with clasps, snaps or tie strings (see Figure 1)
- Envelopes with transparent windows (see Figure 2)
- Envelopes that will melt, discolor, scorch offset or release hazardous emissions when exposed to 200°C (392°F) for 0.1 second
- Envelopes that use encapsulated types of adhesive that do not require moistening but rely on pressure to seal them



Always test a sample of the envelopes you are thinking of buying. Confirm that the envelope performs acceptably.

For best printing results

- Avoid printing in high humidity i.e., above 70%.
High humidity may cause the envelope to curl and pick up excess toner.
High humidity may also cause the envelope to seal.
- Avoid printing below 10°C (50°F) with less than 30% relative humidity.
Low temperature with low humidity may cause light printing.

Envelope storage is very important. Store them away from moisture and humid air, where they can lay flat and their edges won't be bent or damaged. The humidity should not exceed 70% RH.

Software

Printer Driver

Version of Windows®*1 : Windows 95*2, Windows 98*3, Windows NT® 4.0*4 (Intel Only)

System Requirements

CPU:	Pentium 133 MHz or greater
Operating System:	Windows 95, Windows 98 or Windows NT 4.0 (Intel Only)
RAM:	16 MB or more (More than 32 MB is recommended.)
Free disk space	100 MB or more
Virtual memory:	16 MB or more (More than 32 MB is recommended.) for Windows 95 / Windows 98 50 MB or more (More than 100 MB is recommended.) for Windows NT 4.0.
Drive:	CD-ROM drive

*1 Microsoft® Windows® operating system

*2 Microsoft® Windows® 95 operating system (hereafter Windows 95)

*3 Microsoft® Windows® 98 operating system (hereafter Windows 98)

*4 Microsoft® Windows NT® Workstation operating system, and Microsoft® Windows NT® Server network operating system Version 4.0
(hereafter Windows NT 4.0)

Bidirectional Parallel Interface

The bidirectional parallel interface is based on the IEEE P1284-B standard.

If your computer has a bidirectional parallel port, the printer driver and printer can take advantage of faster data transfer.

Specifications

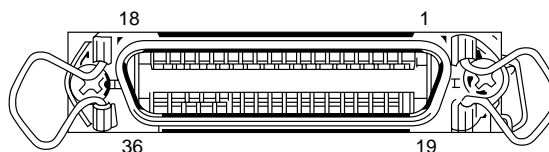
Connector Type	IEEE 1284-B type connector
Cable	Use a shielded cable 2 m (6.6 ft.) or less in length.

Pin configuration

Signal Pin	Return side pin	Signal
1	19	Busy
2	20	Select
3	21	nAck
4	22	nFault
5	23	PError
6	24	Data 1
7	25	Data 2
8	26	Data 3
9	27	Data 4
10	28	Data 5
11	29	Data 6
12	30	Data 7

Signal Pin	Return side pin	Signal
13	31	Data 8
14	32	nInit
15	33	nStrobe
16	34	nSelectin
17	35	nAutoFd
18	—	+5V(Host)
36	—	+5V(Peripheral)

Parallel Interface connector (printer side)



NOTES

- “Return” denotes the return side wire of a twisted pair cable and is connected to signal ground.
- Be sure to use only a shielded cable. The printer will not operate properly if any of the pins is not connected.