

digital



Introduction

As computing technology has evolved, printing resources have become easier to use and manage without limiting their selection. Your choice of printers should be made in light of the user and systems environment and the network interconnection. Today printers must be considered part of the whole system and not just peripherals.

These are the kinds of conditions that must be considered before deciding which printer best fits a given application:

- Number of users and their locations
- Types of tasks to be performed
- Amount of floor space or table space available
- Computers to which printers connect
- Geographic location of computers
- Method of interconnection among computers
- Type and size of documents printed
- Need for duplex (two-sided) printing
- How quickly printouts are needed
- How much printing is done

Digital has the right printer solution for your every need. Digital's printers deliver networked, standards-based, and vendor-independent printing solutions. Only Digital can offer you the ability to print both ANSI and PostScript® files on the same printer. Today, Digital is leading the way with printing solutions that range from desktop, dot-matrix printers to networked laser print systems.

You must consider many different factors when selecting your next printer. This document has been designed to help you evaluate your printing requirements. Refer to it when you have questions about which technology is best suited to your organization's printing needs.

Printer Technology Overview

A printer is a direct link to the power and intelligence of your computing system, and your printer will be one of the tools you use most often. Naturally, you want your printer to be responsive to your printing task.

You must fully understand your printing requirements to select the right printer from the following technologies:

Nonimpact Printers

- Print Servers
- Laser
- Ink-jet

Impact Printers

- Print Band
- Line Dot-matrix
- Dot-matrix
- Daisywheel

Each of these technologies offers its own performance and benefits. The one you choose will depend on your own environment and application needs.

Descriptions of Digital's various printer technologies follow. These will be useful in helping you arrive at the best buying decision for your own application.

Nonimpact Printers

Print Servers

Digital's PrintServer family features powerful, network-connected, laser printing systems. Because businesses depend on computer networks for a variety of shared computing resources, network-connected print servers can bring flexible printing capabilities to users throughout an organization.

By using print servers, an organization can respond rapidly to change, adding printing resources incrementally and shifting printing resources to the place in which the demand is greatest. Users running different applications can share the same printer, utilizing multiple formats on various sizes and types of media. Sharing printing resources over a network improves the quality and variety of printing services at a low cost per user.

Laser Printers

Laser printers are among the most versatile and reliable printers available today, capable of printing multifold text and graphics quickly, quietly, and easily. Print quality is excellent because most of today's laser printers offer 300-dots-per-inch (dpi) resolution.

Laser printers use a focused beam of laser light to expose a rotating, light-sensitive drum inside the printer. As the beam of light strikes the drum, a strong electric charge is applied to its surface. Pulsing on and off at high speeds, the laser beam draws an image of the page directly onto the photoconductive drum.

Inside the printer, a black powder toner is applied to the drum as it rotates. The image on the drum is attached to an oppositely charged sheet of paper. Through heat and pressure, the toner is fused to the paper, creating a permanent image.

Ink-jet Printers

Ink-jet printers create text and graphics using a large palette of vivid colors (or just plain black) on paper or transparencies. Ink-jet technology offers the benefits of high-resolution and quiet printing using neat, easy-to-replace ink cartridges.

Most ink-jet printers sold today use drop-on-demand ink-jet printing technology. This technology operates by depositing tiny droplets of black or colored ink "on-demand" from fast-moving nozzles contained in the printheads. These droplets form a pattern that effectively "paints" text and graphics directly onto the paper.

Impact Printers

Impact printing is a popular method of producing reports from computer databases. Digital offers printers that utilize dot-matrix and band-impact printing technologies. Both are proven and reliable technologies, and each offers its own level of performance and benefits. Which one you choose will depend on your environment and application needs.

Line Printers

With Digital's family of high-speed, parallel line printers, you have more options in selecting the printer's location. You can choose to centralize all printing in a computer room or print production room; or to locate quiet, high-speed line printers in work group areas; or to give all workers their own personal printers. Still another option is to combine all three methods of placing printers.

Line printers are rugged, reliable printers that offer heavy-duty hardcopy production from large databases. In addition to fast print speeds ranging from 300 to 2,000 lines per minute, today's line printers offer users a wide range of functionality.

Line printers employ two types of impact printing technology: line dot-matrix and print bands.

Print Band

Print band technology also uses a hammer bank. However, these hammers strike a single, rapidly rotating metal print band that carries fully formed letters, numbers, and symbols. The characters on the print band strike an inked ribbon to create the image on paper. The high-speed rotation of the print bands allows for extremely fast hardcopy output speeds of up to 2,000, 132-character lines a minute.

Line Dot-matrix

Line dot-matrix technology uses a long row or bank of hammers that are analogous to the print wires on desktop dot-matrix printers. These hammers shuttle horizontally, striking an inked ribbon against paper to create a matrix of dots that make up text and graphic images.

Dot-matrix Printers

Dot-matrix printers are a popular choice because they offer fast printing speed, satisfactory print quality, and superior versatility at a reasonable price.

Dot-matrix printers form characters (and bit-mapped graphics) by printing a series (or matrix) of dots on the page. These dots result when a group of tiny print wires contained in the machine's print-head strike an inked ribbon.

Dot-matrix printers provide text and/or graphics output in various resolutions from draft-quality to letter-quality.

Daisywheel

Daisywheel printers are ideal for those who place a premium on superior print quality. They generally provide excellent dual-sheet and envelope capabilities, and print multipart forms.

Daisywheel printers use a rotating print-wheel to print one solid, fully formed character at a time. The printwheel strikes an inked ribbon that is pressed against the paper. The print quality is unsurpassed, resembling a hand-typed letter.

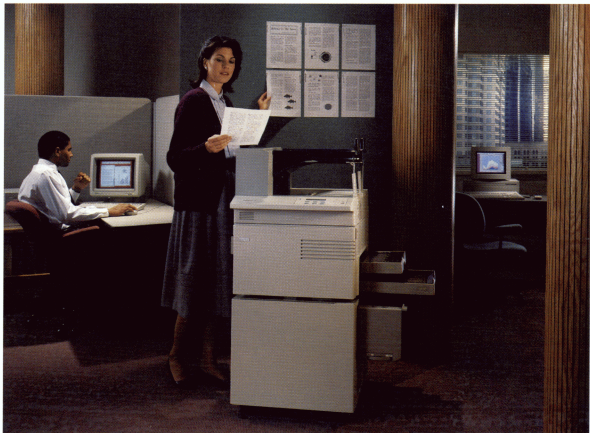
Printer Selection Criteria

The following information discusses the features of Digital's printer products, including:

- Speed
- Duty cycle
- PostScript
- Print quality
- Paper handling
- Shared or personal
- Color

Nonimpact Printers

PrintServer 20



Print Servers

Digital's PrintServers connect directly to an Ethernet network and can be accessed by VMS, ULTRIX, UNIX*, MS-DOS*, and Apple* Macintosh* systems. The PostScript page description language from Adobe Systems, Inc., enables PrintServers to print text, graphics, and scanned images. The PostScript interpreter includes 29 standard typefaces. Translators for ASCII, ANSI/Sixel, ReGIS, and Tektronix* 4010/4014 are resident in the PrintServer software.

Highlights

- Connects to standard Ethernet networks, supporting both DECnet/OSI and Internet environments
- Supports VMS, ULTRIX, and UNIX systems on Ethernet networks; software available to support Apple Macintosh and MS-DOS systems
- Supports the PostScript page description language by Adobe Systems, Inc., with 29 resident PostScript fonts
- Supports software translators for ASCII, ANSI/Sixel, ReGIS, and Tektronix 4010/4014 files
- 300-dots-per-inch (dpi) resolution
- Flexible paper-handling: paper sizes from 7.5-by-10.5 inches to 11-by-17 inches and metric equivalents; predrilled paper, transparencies, and specified label stock

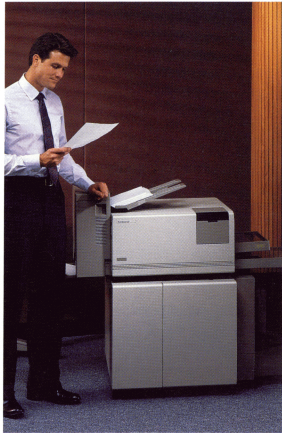
PrintServer 20

The PrintServer 20 is the entry-level member of the PrintServer family. It includes an integral liquid crystal display control panel that displays 48 characters of text to inform users of the printer's status. The PrintServer 20 is user-installable.

Highlights

- Performs user-selectable duplex (double-sided) and simplex (single-sided) printing
- Prints up to 20 pages per minute
- Supports print volumes up to 40,000 pages per month
- Input and output capacities are 1,500 sheets each
- Integral control panel indicates printer and print job status
- Offset stacking separates print jobs

PrintServer 40 Plus



PrintServer 40 Plus

The PrintServer 40 Plus satisfies larger departmental needs with faster throughput and a higher duty cycle. It includes a CMOS-based MicroVAX controller. Processor-intensive print jobs, such as complex graphics and multifont text, can realize fast, high-performance printing. A kit is available to upgrade existing PrintServer 40 systems to the PrintServer 40 Plus.

Highlights

- Provides high-performance CMOS-based MicroVAX controller for higher throughput of processor-intensive print jobs
- Prints up to 40 pages per minute
- Supports print volumes up to 100,000 pages per month
- Provides input capacity of 2,500 sheets; output capacity of 1,000 sheets
- Includes a VT320 video terminal console to monitor system and print job status

For additional information on Digital's PrintServer Family, refer to information sheet number EC-F0120-56.

PostScript

PostScript is the industry-standard page description language from Adobe Systems, Inc. It enables users to print text, graphics, and scanned images on the same page. With PostScript, users can create and print complex documents that have multiple typefaces in a variety of sizes, weights, and styles, as well as rotated type, textures and patterns, halftones and other images, in virtually any size or shape.

In the past, application software developers had the difficult problem of supporting specific commands for various types of printers. Each piece of print software created and formatted data for a specific model of printer. An ANSI standard was developed to reduce the differences between printers and make the software developer's task less difficult.

PostScript further simplifies the software developer's task. PostScript was specifically designed to be device-independent. It has been implemented in the Digital style of printing through the use of print commands at the operating system level, specifying parameters that vary between machines. This makes it possible for the application to generate one "device-independent" PostScript file and print it on any PostScript printer.

An application software product that supports PostScript will work with all of Digital's PostScript printers. Additionally, applications supporting the LN03 ANSI print format are compatible with all of Digital's PostScript printers.

PrintServer Software

While PostScript software takes care of page composition, the PrintServer software handles all the print management functions. This software provides the communication between a computer system with a print job and the PrintServer system. PrintServer software consists of two separate pieces of licensed software: the *supporting host* portion and the *client* portion.

One system on the network is designated as the *supporting host*. The *supporting host* loads Print Services software into the PrintServer controller via the network. Any system that sends a print job to the PrintServer system is called a *client*.

For additional information on Digital's PrintServer Software, refer to the following SPD numbers:

- VAX PrintServer Supporting Host Software, V3.1: 27.68.04
- VAX PrintServer Client Software, V3.0: 27.67.03
- PrintServer Client Software for ULTRIX, V2.0: 30.86.01
- PrintServer TCP/IP Supporting Host Software for ULTRIX, V2.0: 30.85.01

Laser Printers

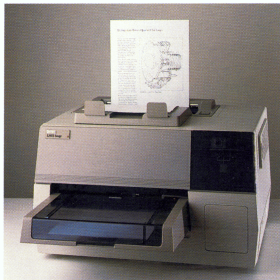
Digital has a choice of desktop laser printer offerings — the DEClaser family and the LN03 Image Printer and ScriptPrinter. All these laser printers work in several operating environments, supporting terminals, workstations, terminal servers, and personal computers.

The DEClaser family consists of the DEClaser 2100 for simplex printing, and the DEClaser 2200 for duplex and simplex printing. Both DEClasers include an EIA423 serial interface and a Centronics-type parallel interface.

Highlights Common to LN03 Printers

- 250 sheet input and output capacity
- Excellent near-typeset print quality with 300-by-300-dpi resolution
- Collated output
- Prints on 8.5-by-11 inch cutsheet paper, transparencies, and paper copier labels
- Prints in both portrait and landscape modes

LN03 Image Printer



LN03 Image Printer

The LN03 Image Printer is Digital's desktop laser printer designed to print compound documents—containing images, type, textures, patterns, and half-tones—as fast as other printers deliver text files alone. Using the PostScript page description language, the LN03 Image Printer offers fast, dependable, high-quality printing at the desktop to individual users and small groups of users.

The LN03 Image Printer can print directly from a local Q-bus workstation, or as part of a complete black-and-white image input-output center when used with the Digital MD300 Image Scanner.

Highlights

- Accepts bit-mapped files sent over a high-speed (5-Mbits/s) video line
- Works with VAX-based PostScript interpreter to speed file transfer and printing
- Prints ReGIS and Tektronix 4010/4014 files
- Prints PostScript files created by Digital's desktop publishing software, including DECwrite, DECdecision, DECchart, and VAX DOCUMENT, or by several third-party software products

ScriptPrinter



For additional information on Digital's LN03 Image Printer, refer to information sheet number EC-F0643-49.

For additional information on the MD300 Image Scanner, refer to information sheet number EC-F0517-49.

ScriptPrinter

The ScriptPrinter's PostScript capability enables it to be used with a variety of Digital systems, other host computers, and hundreds of industry-standard software applications that support PostScript.

The ScriptPrinter gives you the ability to take advantage of a wide variety of applications, including desktop publishing, that support the PostScript page description language. With the ScriptPrinter, you can print everything PostScript allows: sophisticated text and graphics page composition; rotated, scaled, enlarged, and reduced text and images. The ScriptPrinter does not support LN03 font cartridges.

VMS systems require installation of VAX ScriptPrinter software on the CPU. The software license is packaged with the printer; media and documentation kits must be ordered separately.

Highlights

- 29 resident scalable fonts for a wide variety of print styles
- 2 Mbytes of RAM for full-page graphics and images
- 1 Mbyte of ROM for PostScript interpreter
- Prints PostScript files
- Prints ANSI/Sixel, ReGIS, Tektronix 4010/4014 files through software translators
- Includes license for VAX ScriptPrinter Software

For additional information on Digital's ScriptPrinter, refer to information sheet number ED-29729-56.

VAX ScriptPrinter Software

Digital's VAX ScriptPrinter Software provides a sophisticated print symbiont, or print supervisor, that manages the dialog between the host and the ScriptPrinter. Additionally, VAX ScriptPrinter Software includes a set of host-based translators that enables standard ANSI text/sixel graphics, ReGIS, and Tektronix 4010/4014 output to be printed to the ScriptPrinter and the LN03 Image Printer.

Highlights

- Supports multihost access
- Can print multiple page images on a single side of paper (lay-up feature)
- Enables recording of system performance data (accounting feature)
- Provides enhanced ANSI translator performance
- Supports /SETUP and /FORM print qualifiers

For additional information on VAX ScriptPrinter Software, refer to SPD number 27.84.03.

DECLaser 2100



DECLaser Family Highlights

- Up to 8 page-per-minute printing
- 300-by-300 dpi resolution
- Serial and Centronics-type parallel interface standard
- Prints standard, legal, executive, and international paper sizes, and envelopes
- Options include automatic envelope feeder, and multibin paper tray for duplex model
- Prints PostScript output with optional DECprint Utility software
- Multiple font cartridge support—each I.C. Card (a compact size font cartridge) contains several typefaces in a variety of sizes
- Easy maintenance with one user-replaceable cartridge
- Printing support for a wide variety of application environments on operating systems such as VMS, ULTRIX, UNIX, OS/2*, Macintosh, and DOS
- Easy to read LCD status displays on the front of the printers
- Portrait and landscape printing
- Optional memory upgrade cartridges up to a total of 4 Mbytes

DECLaser 2200



DECLaser 2100

The DECLaser 2100 is a compact, simplex (one-sided) laser printer, designed to fit on your desktop or on the optional printer stand. It offers a single input tray which can be adjusted to handle multiple paper sizes or transparencies.

The DECLaser 2100 is an easy fit for most any office environment, as a networked printer on a terminal server, or for personal printing on a video terminal, printer port, or PC connection.

DECLaser 2100 Highlights

- Simplex printing
- One standard paper tray, adjustable to handle a wide range of paper sizes
- Monthly print volume up to 10,000 pages

DECLaser 2200

The DECLaser 2200 offers all the features of the DECLaser 2100 plus duplex (two-sided) printing for those printing jobs that require it. With the DECLaser 2200, the user can select duplex or simplex printing. The DECLaser 2200 is ideal for printing large documents and reports while using half the amount of paper.

As a standard feature, the DEClaser 2200 also offers two paper trays so that you can have two different types or paper sizes loaded into the printer at the same time. It also offers an additional optional envelope feeder. These paper trays can be selected through software.

The DEClaser 2200 is the ideal printer for office environments that have a higher monthly print volume, where low paper costs and the added flexibility of duplex printing are needed.

DEClaser 2200 Highlights

- Multibin optional envelope feeder
- Duplex and simplex printing
- Two paper trays, standard
- Monthly print volume up to 12,000 pages

For additional information on the DEClaser family, refer to information sheet number EC-F0657-56.

Ink-jet Printers

Digital's color ink-jet printers take full advantage of ink-jet technology, producing excellent business and presentation graphics in a wide range of colors. Digital combines this advanced printing technology with support of both ANSI/Sixel and HP-PCL protocols to make the Companion Color Printers useful, compatible partners to PCs, workstations, and video terminals in both Digital and non-Digital environments.

Companion Color Printers



Companion Color Printers

Digital's Companion Color Printers are quiet, compact desktop printers that create high-quality color graphics and text documents quickly and economically. The Companion Color Printers are available in two models: the LJ250, with EIA423 and EIA232 serial interfaces; and the LJ252, with a Centronics™-type parallel interface.

The LJ250 and LJ252 print up to seven pure colors (including black) at 180-by-180 dots per inch and hundreds of mixed colors at 90-by-90 dots per inch, on a single page. The Companion Color Printers print on paper and transparencies in the A (8.5-by-11-inch) and European A4 (8.27-by-11.69-inch) sizes, using single-sheet or fanfold paper. Digital's specially treated paper and transparencies provide optimum print quality with the disposable ink-cartridge technology.

Highlights

- Exceptionally quiet (less than 45 dBA)
- Very reliable
- Supports Digital systems through ANSI/Sixel and color sixel protocols
- Supports many software applications on IBM PCs and PC-compatibles through Hewlett-Packard® PCL protocol
- Compact and lightweight (less than 10 pounds)
- Prints ReGIS files with optional RETOS software
- Prints color PostScript output with optional DECprint Utility

For additional information on Digital's Companion Color Printers, refer to information sheet number ED-30926-56.

Impact Printers

LP37



Print Band Printers

LP37

The LP37 is a high-volume printer suitable for both open-office and data-processing environments. Even at its top speed of 1,200 lines per minute, it runs at only 55 decibels.

The versatile LP37 printer may be located near end users through an Ethernet connection with the DECserver 250 Network Server. For even more placement flexibility, the optional Long-line Fiber Optic Interface (LLF01) allows printer placement up to 1,500 feet from the server.

Highlights

- Prints at 1,200 lines per minute with a duty cycle of 150,000 pages per month
- Low noise level of 55 decibels at full operational speed
- Simple reel-to-reel ribbon replacement
- Attractive cabinet holds built-in paper restacker
- Compatible with DECserver 250 and Long-line Fiber Optic Interface

For additional information on Digital's LP37 Line Printer, refer to information sheet number ED-32716-49.

LP29



LP29

Digital's 2,000-lines-per-minute LP29 is the fastest high-speed impact line printer offered to users of midrange to high-end VAX systems.

The LP29 offers a hardcopy solution for the most time-critical print jobs in the data-processing VAX environment.

Highlights

- Digital's proprietary 64-character optimized band and unique double-buffer interface provide speeds up to 2,000 lines per minute
- Monthly output of 300,000 pages
- Handles multipart (1-6) forms
- Uses tractor-fed fanfold paper from 3.5 inches to 18.75 inches wide, 132-column printouts
- Ribbon skewing sensor, frictionless hammer-bank design, paper path without abrupt turns, and heavy-duty paper-handling system provide reliable operation with minimum downtime
- Compatible with DECserver 250 and Long-line Fiber Optic Interface

For additional information on Digital's LP29 Line Printer, refer to information sheet number EC-F0349-49.

LG31



Line Dot-matrix Printers

LG31

The LG 31 is a 300-lines-per-minute data processing line printer designed for the open-office environment as a shared resource printer where the daily output is approximately 1,100 pages, or 25,000 pages per month.

It complements office laser printers by handling large text and tabular documents at faster speeds and less cost per page.

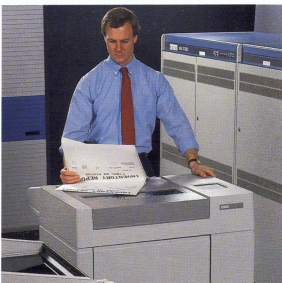
The LG 31 also prints extended text, bar code, and sixel graphics.

Highlights

- Quiet (55 decibels) for open-office operation at 300 lines per minute
- Offers underlining, bolding, bar codes, superscript, and subscript
- Handles multipart (1-6) forms
- Long-life, 50-million-character nylon ribbon cartridge for clean hands ribbon changing
- A single serial EIA232-D connection to the host system or DECserver 250 makes installation simple

For additional information on Digital's LG31 Printer, refer to information sheet number EC-F0642-49.

LG01/LG02



LG01/LG02

The LG01 and LG02 are 600-lines-per-minute data processing printers that utilize line dot-matrix technology for reliable, long-term use.

The LG01, a text-only printer, produces correspondence mode printing, multiple characters per inch, and other optional print selections.

The LG02 is capable of printing graphics, bar codes, custom forms, superscript and subscript, portrait and landscape modes, in addition to all of the text capabilities of the LG01. The LG01 printer can be field-upgraded to an LG02 text/graphics printer.

LG01 Highlights

- Print speeds include
 - 600 and 480 lines per minute (li/min) (data processing)
 - 280 and 240 li/min (correspondence)
- Compressed or expanded print, underlining, strike-through, and bolding
- Multipart forms (1-6 parts) and multiple character sets
- Compatible with DECserver 250 and Long-line Fiber Optic Interface

LG02 Highlights

- Prints bar codes
- Sixel protocol processing for graphics

LA 324 MultiPrinter



- Subscripts, superscripts, and rotation of text for spreadsheets
- Ability to create custom forms and logos

For additional information on Digital's LG01/LG02 Line Printers, refer to information sheet number EC-F0348-49.

Dot-matrix Printers

Digital's family of dot-matrix printers helps you work the way you want to. These printers offer flexible graphics and text output, and are well suited for various environments from the factory floor to the desktop.

Highlights

- Low cost
- Flexible graphics and text output
- Multipart forms

LA324 MultiPrinter

The LA 324 MultiPrinter is Digital's 24-wire, high-resolution, wide-carriage, receive-only, impact dot-matrix printer. It offers speed, quiet operation, and superior paper-handling features. Digital's most versatile desktop printer, the LA 324 MultiPrinter works equally well in settings ranging from the office to the factory floor.

The LA 324 is compatible with all of Digital's computer products. It replaces

Digital's popular LA120 DECwriter III pedestal-based printer and offers an alternative to the wide-carriage Letterprinter 210 for the desktop.

It is also designed for the IBM personal computer environment with its built-in IBM Proprinter XL24 emulation mode and its parallel interface. The LA324 MultiPrinter's superior paper-and-forms-handling capabilities, such as autoloading, autopark, and document-on-demand, make it ideal for a variety of applications. For users who need spreadsheet and color output, the LA324 MultiPrinter offers a wide carriage and eight-color capability.

The rugged modular design of the LA324 MultiPrinter makes it very reliable for high-volume printing in areas such as online transaction processing, engineering and science, financial services, and insurance applications.

Highlights

- 300 characters-per-second (ch/s) draft printing speed, 100 ch/s letter-quality printing speed
- Prints Digital and IBM PC applications through Digital ANSI and IBM Proprinter XL24 protocol support
- Handles up to six-part forms, envelopes, and labels
- Superior paper handling: document-on-demand, autopark, optional three-bin automatic sheetfeeder
- 5000 pages per month average duty cycle
- Pedestal or desk mounting for versatility and mobility in shared printing environments
- Prints ReGIS output with optional RETOS software
- Prints color PostScript output with optional DECprint Utility

For additional information on Digital's LA324 MultiPrinter, refer to information sheet number EC-F0401-56.

LA70 Personal Printer



LA70 Personal Printer

The LA70 Personal Printer is an entry-level personal printer for those who need a low-duty printer. It is ideal for screen dump graphics printing, simple word processing, and PC applications at an extremely attractive price. The LA70 offers print speeds up to 200 characters per second, in three printing densities.

The LA70 incorporates both serial and parallel interfaces in every unit, so no matter which video device you have, the LA70 will be compatible. Features that make your job a little easier include: autoloading, which advances the paper to the first printable position; viewing, advances the page so you can easily read the last few printed lines; and quiet mode, drops the noise level of the printer to <math>< 52\text{ dBa}</math> with a touch of a button.

Highlights

- Print volume—500 pages per month
- Three text printing densities—near-letter-quality, memo, and draft
- Quiet mode operation <math>< 52\text{ dBa}</math>, activated by a front panel switch
- Normal operation is <math>< 55\text{ dBa}</math>
- Lower cost personal desktop printer for general business applications
- Document-on-demand printing features: zero tear-off loss and viewing
- Serial and parallel interfaces built into every printer

LA75 Companion Printer



- Prints ReGIS files with optional RETOS software
- Prints PostScript output with optional DECprint Utility

LA75 Companion Printer

Very quiet, the compact LA75 Companion Printer is a serial dot-matrix printer that provides quality, performance, and versatility at a low cost for your desktop. Fast print speed, flexible paper handling, and easy operation make the Companion Printer a superb choice for anyone who requires high-quality text and graphics printing capabilities.

Highlights

- Print volume—2,000 pages per month
- Four text printing densities: letter-quality, near-letter-quality, memo and draft
- Prints up to 250 characters per second
- Options include automatic sheetfeeder and font cartridges
- Serial interface
- Quiet operation at 55 dBa
- Prints ReGIS files with optional RETOS software
- Prints PostScript output with optional DECprint Utility

For additional information on Digital's LA70 Personal Printer and LA75 Companion Printer, refer to information sheet number EC-F0570-56.

Letterprinter 210



Letterprinter 210

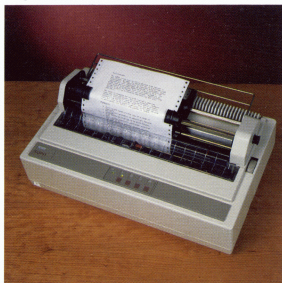
The Letterprinter 210 is a desktop text and graphics printer offering multiple print speeds and a wide carriage ideal for spreadsheet applications. The LA210 can print on office stationery, multipart forms, labels, roll, and fanfold paper up to 14.9 inches wide. Bidirectional tractors are optional. With an optional parallel interface and font cartridges, the LA210 supports IBM PCs and PC-compatibles.

Highlights

- Fully compatible with Digital and most IBM graphics printing applications
- Multiple print speeds include: 40 ch/s near-letter-quality; 80 ch/s memo (optional); 240 ch/s draft
- 132-by-72 dpi bit-mapped graphics
- Optional plug-in IBM/Centronics-type parallel interface and fonts for IBM PCs and PC-compatibles
- Unidirectional acoustic forms tractor included; optional bidirectional forms tractor available
- Variety of plug-in font cartridges
- Prints ReGIS files with optional RETOS software
- Prints PostScript output with optional DECprint Utility

For additional information on Digital's Letterprinter 210, refer to information sheet number ED-28047-56.

LQP45



Daisywheel Printers

LQP45

The LQP45 letter-quality printer brings the utmost in print quality to your Digital office systems. It uses daisywheel technology to print up to 45 characters per second in true letter-quality text. The LQP45 is supported by popular Digital applications.

Print wheels are available in an assortment of type styles. To provide you with even greater printing flexibility, paper-handling options are also available.

Highlights

- Fully formed letter-quality type in a variety of typefaces
- One multinational printwheel supports all European languages
- Bold, shadow, underline, overstrike, subscript, and superscript printing
- Optional automatic dual-bin cutsheet feeder with envelope tractor

For additional information on Digital's LQP45 daisywheel printer, refer to information sheet number ED-30893-56.

DECserver 250



Networking

Today, computer users can access any printer on an Ethernet network, whether their system is a PC running either MS-DOS or a PC-DOS operating system, a Macintosh system, or a VAX system running either VMS or the ULTRIX operating system. This wonderful flexibility is attained using products such as Digital's PrintServers, the DECserver printer connection capability, the Distributed Queuing Services (DQS) software, DEC LanWORKS software, and other PC-to-VAX system connection products.

Servers

DECserver 250

The DECserver 250 is a dedicated network printer server. It is the first server to provide Ethernet connection for both parallel and serial printers.

A full-function Ethernet-based server, the DECserver provides the interface between:

- Two parallel interfaces (compatible with Data Products™ parallel interface standard)
- 4 asynchronous EIA232 serial data communication channels
- A single Ethernet IEEE 802.3 local area network

Highlights

- 2 Data Products parallel ports
- 4 EIA232 serial ports
- 3 ports for serial printers only
- 1 serial port for terminal/modem control
- Supports printers with speeds up to 2,000 lines per minute
- Host software-compatible—VMS, ULTRIX, TSM, LAT, CCR
- Downline-loadable software for VMS or ULTRIX operating systems in a DECnet environment

- Compatible with LLF01—Long-line Fiber Optic Interface

For additional information on the DECserver 250, refer to information sheet number ED-32726-49.

Software

DECprint Architecture

The DECprint Architecture is Digital's new model for printing. It meets the dual needs for distributed printing and for the management of a wide variety of printers. The DECprint Architecture supports the ANSI standard and the PostScript page description language used on Digital's printers. It can support other page description languages as well.

Through Network Application Support (NAS) print services, the DECprint Architecture provides standardized software interfaces to the printing system that allow application developers, OEMs, and ISVs to easily add new features. Third parties who conform to industry standards can connect directly to the Digital printing system.

Designed to comply with the DECprint Architecture is DECprint Utility for PostScript to Sixel Printing for VMS software, and VAX ScriptPrinter software.

Highlights

- Integrates networked, heterogeneous systems (VMS, ULTRIX, MS-DOS, Macintosh, and OS/2) and their printers into a single printing system
 - Simplifies the user's interface to the printing system
 - Simplifies the programming interface to the printing system through easy-to-use standardized software interfaces
 - Simplifies the configuration and management of the printing system for system managers
-

DECprint Utility for PostScript to Sixel Printing for VMS Software

DECprint Utility for PostScript to Sixel Printing for VMS (DECprint Utility) is a software product that extends the capabilities of Digital printers by allowing PostScript files to be printed to sixel printers. Now Digital's graphics printers can print PostScript files!

Highlights

- Provides a low-cost Digital color PostScript output solution in combination with the LJ250, the LJ252, and the LA324
 - Supports all of Digital's desktop graphics printers
 - Expands Digital's printer capabilities by supporting printers attached to terminals or shared on the network
 - Is less expensive than a dedicated PostScript printer making it ideal for low-volume PostScript printing needs
-

For more information on the DECprint Utility for PostScript to Sixel Printing for VMS, refer to information sheet number EC-F0581-56, and SPD number 31.56.00.

Reggie™ Software

Reggie converts Macintosh graphics into Digital graphics formats. This enables Macintosh graphics to be printed on any of Digital's sixel printers. Reggie can also print in color to the LJ250 Companion Color Printer. Take advantage of Macintosh graphics and use Reggie to convert them to either ReGIS or sixel for use with any of Digital's printers or graphics terminals.

Highlights

- Define output devices as sixel or ReGIS
 - Adjust the size and position of the image
 - Preview the conversion on an attached terminal or printer
-

LaserTwin Software

LaserTwin software is a memory-resident PC program that provides true HP LaserJet® emulation. LaserTwin Version A works with Digital's dot-matrix and ink-jet printers. LaserTwin Version D for the LN03 and LN03 PLUS includes support for all soft fonts, graphics, and features of the LaserJet.

Since many IBM PC software packages support HP LaserJet printers, LaserTwin software offers a low-cost solution for Digital customers who have IBM PCs and would like to print to any of Digital's dot-matrix or ink-jet printers.

Highlights

- Supports all popular PC software packages through their HP LaserJet drivers
 - HP soft font support to 50 point
 - Programs that require a particular HP font cartridge can be used with LaserTwin by using software font equivalents
 - Available on 3.5-inch or 5.25-inch diskette
-

PrintAPlot® Software

PrintAPlot is a PC-resident software translation package that turns Digital's dot-matrix, ink-jet, and laser printers into high-resolution plotters. PrintAPlot can double the utility of your printer by producing complicated drawings up to ten times faster than a plotter. PrintAPlot is ideal for scientific and engineering drawings as well as for business graphics. Now these graphics can be printed with all the speed and resolution of today's advanced technology printers. This product converts HP-GL™ (plotter) output to sixel output.

Highlights

- Supports all of Digital's desktop graphics printers
 - Less printer memory required and faster throughput
 - Reduction or enlargement of drawings simplified
 - Maximum resolution graphics
-

ON-TAP® Software

ON-TAP enables users to print bar codes anywhere in a document by simply placing a "tilde" character at each position where a bar code is to be printed. Because ON-TAP is application-independent, the information that is marked for bar coding can be part of a letter produced by word-processing software, information from an accounting program, or part of any off-the-shelf program or custom-written application. ON-TAP prints the following symbologies: Code 39, Codabar, Code 128, Interleaved 2 of 5, Straight 2 of 5, MSI, UPC, and EAN.

One of ON-TAP software's greatest features is its intrinsic ease of use. No programming or technical expertise is required.

Highlights

- Print the most commonly used bar code symbologies
- Available for VMS systems, DECstation 200/300 PCs, and PCSA local area networks
- Easy to change bar code height, ratio, plot density, and use of check digits

VAX ReGIS to Sixels Converter (RETOS) Software

RETOS provides a simple, consistent, and flexible way of preparing ReGIS graphics files for printing on sixel printers in various orientations and resolutions. And RETOS is fast, providing ReGIS-to-sixels file conversions in just seconds, depending on host system loading.

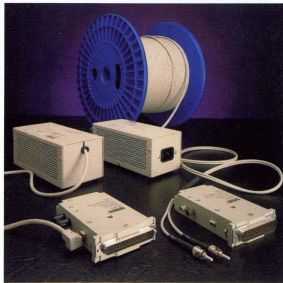
With RETOS, ReGIS printing support is now extended to the low-end, with full support for all of Digital's desktop graphics printers.

Highlights

- Fast ReGIS-to-sixels file conversions
- Prints up to 255 colors on the LJ250 and LJ252 Companion Color Printers
- Supports most Digital printers for high-quality graphics printing
- Supports variable sizing of ReGIS images
- Choice of portrait, landscape printing
- A layered VMS software product
- Ideal for shared-resource printing environments
- Supports Digital graphics video terminals
- Enhanced font output specific to printer resolutions

For more information on RETOS, refer to information sheet number ED-30927-56 and SPD number 27.88.01.

LLF01



Options

LLF01—Long-line Fiber Optic Interface

Digital's Long-line Fiber Optic Interface (LLF01) enables you to connect remote, parallel line printers to host computers and/or the DECserver 250 up to 1,500 feet away, with no loss in throughput, speed, accuracy, or security.

Highlights

- Data transmission and print speeds up to 2,000 lines per minute
- Makes line printers more accessible to more users
- Interface is bus-independent and compatible with LG01/02, LP27, LP37, LP29, and DECserver 250
- Supports UNIBUS, Q-bus, and BI bus
- Self-tests for local fault detection and needs no scheduled maintenance

For more information on the Long-line Fiber Optic Interface for line printers, refer to information sheet number ED-32473-49.

LN03 High Capacity Feeder (HCF)

The HCF is a high-capacity input device for use on both the LN03 family printers. It is a low-cost, highly reliable, paper-capacity solution that makes networked printers more effective. The LN03 with HCF installed will fit on the current LN03 mobile stand.

Highlights

- Operator installable and easy to load and operate
- 1,000-sheet capability
- Handles 16–24 lb cutsheet paper in 8.5-by-11-inch and LN03 transparencies
- Replaces original paper cassette
- Requires no printer engine modification or software changes

Printers Specification Chart

Nonimpact Printers

	PrintServer 20 (LPS20)	PrintServer 40 Plus (LPS40 Plus)	LN03 Image (LN03Q)
Technology	Laser	Laser	Laser
Speed (Max. 8.5 × 11 in pages per minute)	20-simplex 16 sides-duplex	40	8
Recommended Impressions/month (Max.)	40,000	100,000	10,000
Number of colors	1	1	1
Paper Type	Cutsheet Labels (special stock required) Transparencies	Cutsheet Labels (special stock required) Transparencies	Cutsheet Labels (special stock required) Transparencies
Paper Thickness	16–24 lb	16–24 lb	16–24 lb
Multipart Forms	No	No	No
Paper Sizes	7.5 in × 10.5 in, 8.5 in × 11 in, 8.5 in × 14 in, 11 in × 17 in ISO A3, ISO A4, ISO A5, JIS B4, JIS B5	7.5 in × 10.5 in, 8.5 in × 11 in, 8.5 in × 14 in, 11 in × 17 in ISO A3, ISO A4, JIS B4	8.5 in × 11 in ISO A4
Resident Fonts	29	29	N/A ¹
Optional Fonts	Downloadable	Downloadable	No
Characters per inch	†	†	†
Lines per inch	†	†	†
Graphics Protocols	PostScript ANSI/Sixel, ReGIS, Tektronix 4010/4014 (VMS ²); ANSI/Sixel (ULTRIX/RISC); ASCII text (UNIX)	PostScript ANSI/Sixel, ReGIS, Tektronix 4010/4014 (VMS ²); ANSI/Sixel (ULTRIX/RISC); ASCII text (UNIX)	PostScript (ANSI/Sixel, ReGIS, Tektronix 4010/4014) ²
Resolution (dpi)	300 × 300	300 × 300	300 × 300
Bar codes	Yes, through ANSI translator and application software ⁴	Yes, through ANSI translator and application software ⁴	Yes, through ANSI translator and application software ⁴
Interfaces	Ethernet	Ethernet	EIA422 Sync video data channel
IBM PC-compatible	Yes, with optional software	Yes, with optional software	Yes, through Ethernet
RAM Memory (standard)	N/A	N/A	2 MB
Noise Level	<55 dBa	57 dBa	<54 dBa
Dimensions	37 W × 27 D × 50 H in 93.5 × 69 × 126 cm	60 W × 28 D × 40 H in 152 × 72 × 103 cm	21 W × 23.5 D × 15 H in 53.4 × 59.7 × 38.1 cm
Weight	345 lb (155 kg)	485 lb (220 kg)	80 lb (36.3 kg)

¹ Fonts resident in host VAX/VMS system.

² VAX/VMS license for these translators included.

³ HP-PCL through optional PC resident Laser Twin software.

⁴ Through optional ON-TAP software.

⁵ Tektronix 4010/4014 and ReGIS through host-based translators and PostScript options.

⁶ PostScript through optional cartridge or optional DECprint Utility software.

⁷ HP-GL through optional PrintAPlot software.

⁸ Canon CaPSL through optional cartridge.

†Varies depending on fonts used.

ScriptPrinter (LN03R) Laser	DECLaser 2100 (LN05) Laser	DECLaser 2200 (LN06) Laser	Companion Color Printers (LJ250/LJ252) Color Ink-jet Drop on demand
8	8	8	3 (text) (167 ch/s)
10,000	10,000	12,000	500
1	1	1	7 plus white (255 shades)
Cutsheet Labels (special stock required) Transparencies	Cutsheet Labels (special stock required) Transparencies Envelopes	Cutsheet Labels (special stock required) Transparencies Envelopes	Cutsheet Fanfold Transparencies
16–24 lb	16–24 lb	16–24 lb	26 lb
No	No	No	No
8.5 in × 11 in ISO A4	7.5 in × 10.5 in 8.5 in × 11 in 8.5 in × 14 in ISO A4	7.5 in × 10.5 in 8.5 in × 11 in 8.5 in × 14 in ISO A4	8.5 in × 11 in ISO A4
29	†	†	N/A
Downloadable	Downloadable or Font Cartridges	Downloadable or Font Cartridges	HP-PCL Downloadable
†	†	†	5, 6, 9, 10, 12, 18
†	†	†	2, 3, 4, 6, 8, 12
PostScript (ANSI/Sixel, ReGIS, Tektronix 4010/4014) ²	ANSI/Sixel (See Footnotes 3, 5, 6, 7, 8)	ANSI/Sixel (See Footnotes 3, 5, 6, 7, 8)	ANSI/Sixel, HP-PCL ReGIS (with optional RETOS software)
300 × 300	300 × 300	300 × 300	180 × 180 (8 colors) 90 × 90 (255 colors)
Yes, through ANSI translator and application software ⁴	Yes, optional cartridge or application software	Yes, optional cartridge or application software	Yes, through optional software
EIA232 EIA423 (with optional adapter)	EIA232 EIA423 IBM/Centronics parallel interface	EIA232 EIA423 IBM/Centronics parallel interface	EIA232, EIA423 (LJ250) Parallel (LJ252)
Yes	Yes	Yes	Yes, emulates HP PaintJet
2 MB	.5 MB	1 MB	2 KB (Input Buffer)
<54 dBa	<54 dBa	<54 dBa	45 dBa
21 W × 23.5 D × 15 H in 53.4 × 59.7 × 38.1 cm	17.8 W × 17.8 D × 8.5 H in 45.2 × 45.2 × 21.6 cm	17.8 W × 18.7 D × 12.2 H in 45.2 × 47.5 × 31 cm	17.5 W × 12.25 D × 3.65 H in 44.5 × 31.1 × 9.3 cm
80 lb (36.3 kg)	47 lb (21.1 kg)	69 lb (31.1 kg)	10 lb (4.5 kg)

Impact Printers

	LP37	LP29	LG31	LG01/LG02
Technology	Band	Band	Line dot-matrix	Line dot-matrix
Speed	1200 lines/minute Uppercase characters	Up to 2000 lines/minute Optimized band, upper- case characters	300 lines/minute Uppercase characters, data processing mode	600 lines/minute Uppercase characters, data processing mode
Recommended Pages/month (Max.)	150,000	300,000	25,000	50,000
Number of Colors	1	1	1	1
Paper Type	Fanfold Labels	Fanfold Labels	Fanfold Labels	Fanfold Labels
Paper Thickness (Max.)	0.020 in (0.05 cm)	0.020 in (0.05 cm)	0.025 in (0.06 cm)	0.025 in (0.06 cm)
Multipart Forms	1-6	1-6	1-6	1-6
Width of Output	3.5-18.75 in 8.9-47.6 cm	3.5-18.75 in 8.9-47.6 cm	4-16 in 10.1-40.6 cm	4-16 in 10.1-40.6 cm
Resident Fonts	1 ¹	1 ¹	2	LG01-2 LG02-3
OCR-A/B	OCR-B	OCR-B	OCR-A/B	OCR-A/B
Characters per inch	10	10	5, 10, 12, 13.3, 15, 16.7	(LG01) 5, 10, 12, 15 (LG02) 5, 10, 12, 13.3, 15, 16.7
Lines per inch	6, 8	6, 8	6, 8, 10	(LG01) 6, 8, 10 (LG02) 6, 8, 10, 12
Graphics Protocols	No	No	ANSI/Sixel	ANSI/Sixel (LG02 only)
Resolution (dpi)	Fully formed character	Fully formed character	120 H × 144 V	200 H × 200 V
Bar Codes	No	No	Yes	LG02 only
Interfaces	Parallel ²	Parallel ²	EIA232 ⁶	EIA232 ⁶ Parallel ²
IBM PC-compatible	No	No	No	No
Baud Rate	N/A	N/A	9600	19,200
Buffer Size	N/A	N/A	2 KB	1KB
Noise Level	55 dBA	73 dBA	55 dBA	60 dBA
Dimensions	31 W × 35 D × 44 H in 70.7 × 88.9 × 111.7 cm	35 W × 49 D × 49 H in 88.9 × 125.2 × 124.5 cm	29 W × 40.6 D × 46 H in 73.6 × 103.1 × 116.8 cm	33.5 W × 22.3 D × 39 H in 85.1 × 56.5 × 99.1 cm
Weight	350 lb (159 kg)	610 lb (274.5 kg)	285 lb (128.3 kg)	350 lb (157.5 kg)
Ribbon/ink Technology	Reel-to-reel 50 M Characters	Towel ribbon 100 M Characters	Nylon cartridge 50 M Characters	Nylon cartridge 20 M Characters

¹ Optional print bands available

² Data Products type; LLF01 optional

³ EIA232D compatible with optional adapter

⁴ PC-Centronics type

⁵ Optional cartridge

⁶ EIA423 compatible

⁷ Through optional ON-TAP software

⁸ 20mA with optional converter

LA324 MultiPrinter	LA70 Personal Printer	LA75 Companion Printer	Letterprinter 210 (LA210)
Dot-matrix, 24 wire	Dot-matrix, 9 wire	Dot-matrix, 9 wire	Dot-matrix, 9-wire
300 ch/s Draft 100 ch/s LQ	200 ch/s Draft 100 ch/s Memo 40 ch/s NLQ	250 ch/s Draft 125 ch/s Memo 42 ch/s NLQ 32 ch/s LQ	240 ch/s Draft 80 ch/s Memo ⁵ 40 ch/s NLQ
5,000	500	2,000	3,000
8	1	1	1
Cutsheet Fanfold Labels Envelopes	Cutsheet Fanfold Envelopes Labels	Cutsheet Fanfold Labels	Cutsheet Fanfold Labels Roll
0.020 in (0.052 cm)	0.012 in (0.031 cm)	0.012 in (0.031 cm)	0.015 in (0.038 cm)
1-6 4-17 in 10.2-40.6 cm	1-3 4.5-10 in 11.4-15.4 cm	1-3 4.5-10 in 11.4-15.4 cm	1-4 3.5-14.9 in 8.9-37.9 cm
2	1	2	2
OCR-A/B	N/A	N/A	N/A
5, 6, 6.67, 8.55, 9, 10, 12, 13.33, 17.14, 18	5, 6, 6.6, 8.25, 8.55, 9, 10, 12, 13.2, 16.5, 17.1, 18	10, 12, 16.5, 17.1	5, 6, 6.6, 8.25, 10, 12, 13.2, 16.5
2, 3, 4, 6, 8, 12	2, 3, 4, 6, 8, 12	2, 3, 4, 6, 8, 12	2, 3, 4, 6, 8, 12
ANSI/color Sixel IBM Proprinter XL24	ANSI/Sixel IBM Proprinter	ANSI/Sixel IBM Proprinter	ANSI/Sixel IBM Graphics ⁵
180 H × 180 V	180 H × 144 V	180 H × 144 V	132 H × 72 V
Yes, 3 of 9	Yes, through optional software ⁷	Yes, through optional software ⁷	Yes, through optional software ⁷
EIA423, ³ Parallel ⁴ 20mA ⁸	EIA423, ³ Parallel ⁴	EIA423 ³	EIA232 ⁶ Parallel ⁴ (optional)
Yes (IBM Proprinter XL24 emulation)	Yes (IBM Proprinter emulation)	Yes (IBM Proprinter emulation)	Yes (IBM Graphics Printer emulation optional)
200-19,200	200-9600	110-9600	50-9600
2KB	2KB	2KB	2KB
<55 dBA <51 dBA Quiet Mode	<55 dBA <52 dBA Quiet Mode	55 dBA	58 dBA
24.2 W × 12.2 D × 6.7 H in 61.5 × 31.0 × 17 cm	15.5 W × 11.4 D × 4.7 H in 39.3 × 29 × 12 cm	16.8 W × 13.6 D × 4.8 H in 42.7 × 34.5 × 12.1 cm	21.5 W × 13.5 D × 5 H in 54.6 × 34.3 × 12.1 cm
31.5 lb (14.3 kg)	16 lb (7.5 kg)	21 lb (9.5 kg)	27 lb (12.1 kg)
Black & color cartridges	Nylon cartridge	Nylon cartridge	Nylon cartridge

Ordering Information

Here are the U.S. order numbers for many products discussed in this document. In some cases, there are several versions of the product, but in the interest of space, they have not been listed. Please contact your local sales representative to discuss your needs.

Nonimpact Printers

PrintServer 20	LPS20-CA (DECnet); LPS20-DA (TCP/IP)
PrintServer 40 Plus	LPS40-DA (DECnet); LPS40-FA (TCP/IP)
LN03 Image Printer	Contact Sales Representative
ScriptPrinter	LN03R-AA
DECLaser 2100	LN05-CA
DECLaser 2200	LN06-CA
Companion Color Printers	LJ250-CA (serial); LJ252-CA (parallel)

Impact Printers

LP37, LP29, LG01, LG02	Contact Sales Representative
LG31	LG31-A2
LA324 MultiPrinter	LA324-CA
LA70 Personal Printer	LA70-AA
LA75 Companion Printer	LA75-CA
Letterprinter 210	LA210-AA
LQP45	LQP45-AA

Software

DECprint Utility for PostScript to Sixel Printing for VMS	QL-VZPA9-PB - single-user license
VAX ScriptPrinter	QL-VZPA9-H5 - TK50
	QL-VZPA9-HM - 9-track magtape
	QA-VF9AA-HM - 9-track magtape
	QA-VF9AA-H5 - TK50
	QA-VF9AA-CZ - documentation only
Reggie	Q6VKR-CZ - 3.5 inch diskette
LaserTwin (Version A)	Q6VS3-CZ - DOS 5.25 inch diskette (3.5 inch by request)
LaserTwin (Version D)	Q6VLP-CZ-DOS - 5.25 inch diskette (3.5 inch by request)
PrintAPlot	Q6VNW-CZ - DOS 5.25 inch diskette (3.5 inch by request)
ON-TAP	Q6VQH-CZ - DOS 5.25 inch diskette
	Q6VQJ-CZ - DOS 3.5 inch diskette
	Q6VQK-CZ - VMS MicroVAX on TK50
	Q6VQL-CZ - VMS MicroVAX on magtape
	Q6VQM-CZ - VMS 6xxx on TK50
	Q6VQN-CZ - VMS 6xxx on magtape
	Q6VQP-CZ - VMS 7xx on TK50
	Q6VQR-CZ - VMS 7xx on magtape
	Q6VQS-CZ - VMS 8xxx on TK50
	Q6VQT-CZ - VMS 8xxx on magtape
	QL-VEFA*. ** 9-track 1600-bpi magtape; TK50

RETOS

Servers

DECserver 250	DSRVP-AA
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Options

Long-line Fiber Optic Interface	LLF01-A
LN03 High Capacity Feeder	LN03X-HC

Service

Digital backs its printers with a world-wide service organization of more than 27,000 professionals in 450 locations in over 60 countries. The high level of quality and dedication to customers large and small is exactly what you'd expect from an industry leader. We emphasize the importance of proper maintenance and use, both of which are very important to the longevity of all of Digital's printers.

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