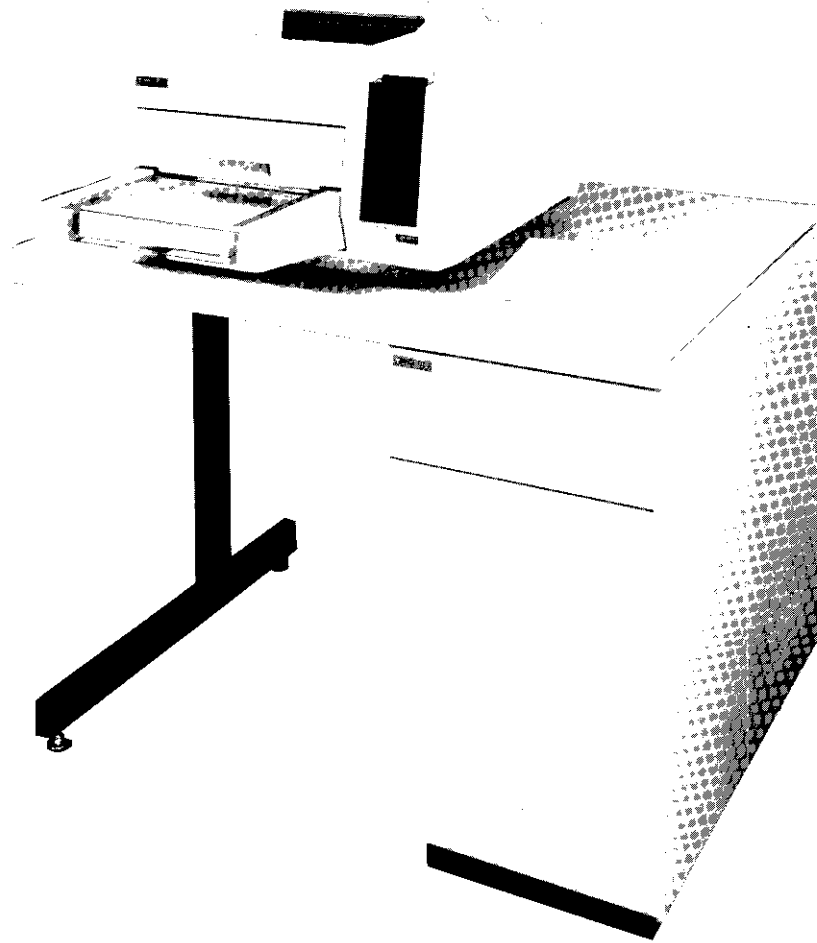


The HP 2688A Laser Page Printer

A Text and Graphics Printer

 HEWLETT
PACKARD





HP 2688A Features

Excellent Print Quality

- Print Resolution 300 X 300 Dots-per-Inch

High Throughput

- 12 Pages-Per-Minute Peak Speed

Designed for Office Use

- Quiet Operation (<55 dBA)
- Convenient, On-Demand Printing
- Cut Sheet Paper
- Easy to Maintain and Operate
- Low Power Requirements

Character Font Flexibility

- Prints Landscape (default), or Portrait Mode
- Variety of Word Processing Fonts Provided
- Line Printer Font (8 Point, 15 Pitch), Default
- Character Font Families Available from HP's Computer Supplies Operation
- Up to 32 Fonts May Be Downloaded and Used on Any Page

Advanced Printer Capabilities

- Merged Text and Graphics
- Electronic Forms
- Logos and Signatures
- Multiple Rotations
- 2:1 and 4:1 Reduction

Interface

Hewlett-Packard Interface Bus (IEEE-488)

The HP 2688A Laser Page Printer provides high-quality, medium volume output of both textual and graphic information. It is a quiet, reliable printer, uses cut sheet paper, and is ideally suited for today's office and/or workstation environment.

The HP 2688A is capable of handling many advanced printer functions such as variable sized characters, electronic forms, multiple pages of print on one sheet of paper, multiple print rotations, and printing composed pages that include proportionally spaced text, artwork, graphics, figures, columns and indices — in short, full document composition.

Safety and Environment Compliance

The HP 2688A is listed by Underwriter's Laboratories, Inc. (UL) in the following category with respective guide designations: Electronic Data Processing Equipment (EMRT).

The Canadian Standard Association (CSA) has certified the HP 2688A for EDP equipment (also meets office standards).

The HP 2688A complies with IEC 380 and IEC 435.

The HP 2688A has been tested and found to comply with the limits for FCC Level A certification for computing devices.

The HP 2688A is further certified to VDE 0836, VDE 0806, and VBG 93, for laser safety.

The HP 2688A has been classified as a BRH Certified Class I Laser Product, safe for office/EDP use. It is necessary to check with local restrictions, safety codes, or reporting requirements in your area. Hewlett-Packard will aid in determining local safety requirements. Any questions concerning regulatory agency compliance should be directed to your local Hewlett-Packard Sales Office.

Print Capacity

- **Print Speed:** First page less than 15 seconds after data transmission to the HP 2688A has begun; subsequent pages at up to 12 pages-per-minute; print speed will be application dependent and system dependent
- **Warm-up Time:** Less than two minutes
- **Paper Capacity:** 250 sheets, single input tray; 250 sheets, single output bin
- **Paper Feed:** Single sheet, automatic feed; simplex printing (one-sided); correct order stacking

Development Process

- Dry type electrophotography, single component toner.

Paper

- **Paper:** Cut Sheet
- **Weights:** 16-24 Pounds (62-93 grams/square metre)
- **Size:** Standard letter size (8.5" X 11")
European A4 (210mm X 297mm)
- **Usage:** The printer was designed for use with high quality copier bond paper. Therefore, for maximum printer reliability, high quality, copier bond paper (HP or equivalent) is recommended for normal usage. The HP 2688A laser printer can also accommodate a wide variety of application

paper, such as labels, colored and preprinted paper, paper with prepunched binder holes, as well as overhead transparency film. It is strongly recommended that all paper be tested before purchasing. Reference the HP 2688A Paper Specification (P/N 5953-7132) for further definition of tested paper.



Printing

- **Print Resolution:** 300 x 300 dots-per-inch
- **Print Orientations:** Portrait, Reverse Portrait, Landscape (default), and Reverse Landscape
- **Standard Fonts:** A variety of word processing fonts in multiple pitch and point sizes are provided standard with the printer (for example, Courier 10 and Letter Gothic 12 in regular, bold and italic typestyles.)
- **Optional Fonts:** For complete document formatting flexibility, Character Font Families are available from HP's Computer Supplies Operation. A Family includes four typestyles (regular, bold, italic and bold-italic), and multiple point sizes (ranging from 4-point to 36-point), for a total of 37 typestyles and point sizes per Family.

Supported Printable Surface (For Maximum Print Quality)

| | Standard | A4 |
|---------|--------------------|--------------------|
| Width: | 7.75 in. (197 mm) | 7.52 in. (191 mm) |
| Length: | 10.25 in. (260 mm) | 10.87 in. (276 mm) |

Electrical

- **Voltage/Frequencies:**
115V +/- 10% 60 Hz
220V +/- 10% 50 Hz
240V +/- 10% 50 Hz
- **Power Consumption at 115 VAC:**
1040 Watts Printing (maximum)

Environmental

Ambient Temperature

(maximum rate of change = 20° C/hour without reaching dew point):

- 50° to 86° F (10° to 30° C) operating
- 40° to 131° F (-40° to 55° C) storage (printer and OPC belt)
- 40° to 104° C (-40° to 40° C) storage (toner)

Humidity

- 20 to 80% RH @ 50° to 86° F (10° to 30° C) operating
- 10 to 90% RH @ 50° to 86° F (10° to 30° C) storage

- The 9111A graphics tablet may be used to facilitate the outlining of characters which can then be automatically filled using special IDS/3000 functions.
- Multiple versions and different sizes of character fonts or logos may be created and maintained in a disc file.

Forms Design Subsystem (IDS/FORM)

The forms design subsystem allows a user to interactively design or modify a "form," the fixed, non-variable portion of a document.

Users complete a series of menus that specify the parameters of the form. Then forms graphics may be used for design, including lines, boxes, and shading.

Headings and logos may also be incorporated as part of a form by using characters developed on the Character Design Subsystem or selected from standard character fonts. Once a form is complete, it is stored in a forms file.

Features

- Interactive, menu-driven, graphic design of forms using an HP 2647A/F or 2648A. Cursor positioning facilitates easy line and box drawing. Menu specification permits box shading and positioning of text and logos.
- Visual feedback from the graphics terminal allows you to see the basic outline of the form as it is designed.

- Electronically stored forms eliminate the need for most preprinted forms, thus reducing inventory, ordering problems, or manual generation of data on preprinted forms. For instance, letterheads can be created and printed on the HP 2688A, or any type of office form (e.g., forecasts, management statements, order entry forms, etc.).

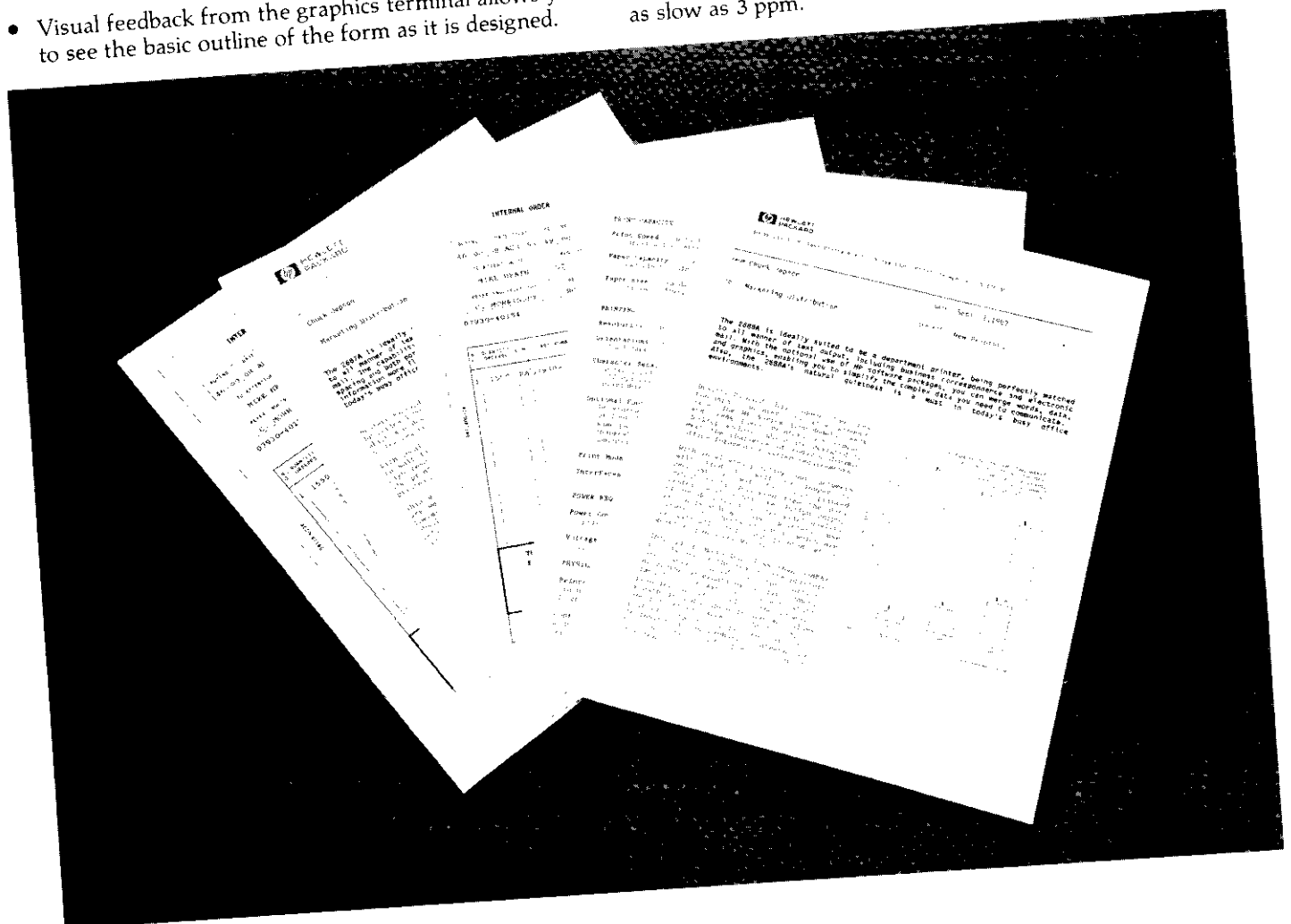
IDS/3000 Operating Requirements

- IDS/3000 operates only on the HP 2647A/F or 2648A graphics terminals.

Specifications

Performance

The HP 2688A is capable of a peak speed of 12 pages-per-minute (ppm). Its average speed will vary according to application. For example, printing multiple single page documents will result in a print speed of approximately 6 ppm. Also, the print speed of documents which incorporate extensive graphics and figures may be less than 12 ppm. For example, when printing a page that consists largely of a graphics image, the printer may print as slow as 3 ppm.



A highly versatile printer, the HP 2688A is at once a graphics-capable page printer and a high-quality word processing printer. It can serve as a distributed data center printer, conveniently located in the area of use, saving the time and labor of delivering the printed output. Whatever the application, it can provide output with all the benefits of printing flexibility.

Application Software

To fully utilize all of the powerful print features, HP offers an array of application software. This software includes interactive forms and character design, as well as graphics and word processing formatting packages. Brief descriptions are given of these application software packages.

Interactive Formatting System (IFS/3000)

IFS/3000 is supplied with the HP 2688A. It allows users to define what goes on a printed page (page formats), and to take advantage of the enhanced capabilities of the HP 2688A laser printer and the HP 3000 computers, such as multiple character fonts, electronic forms and dynamic page configurations.

A user may select one of several supplied pre-defined formats (environments) for a print job, or develop customized formats by selecting fonts from Character Font Families (purchased separately from HP's Computer Supplies Operation). A user may also select fonts, logos, and electronic forms that have been designed with the character and forms design subsystems of IDS/3000. Once a format has been defined, it may be downloaded to the printer at the beginning of the job.

IFS/3000 Features

- Interactive, menu-driven development of page formats for use on the HP2688A laser printer allows a user to define a custom format or choose a pre-defined format.
- Character Font Families, available separately, offer a wide range of point sizes and typefaces for document composition. They enable the user to dynamically interchange type fonts, to print multiple logical pages on one physical page, and to print across either the long (landscape) or short (portrait) dimension of a page.
- Multiple copies of a single page may be specified.
- IFS/3000 allows a user to divide a physical page into as many as 32 logical pages. Each logical page can have two forms associated with it, multiple character fonts, be rotated in 90 degree increments, and each physical page is limited to 32 forms in total. Logical pages can be of any rectangular shape and size, defined with IFS/3000 by specifying size and location on the physical page.

IFS/3000 Requirements

- IFS/3000 operates on any terminal that supports VPLUS/3000.
- IFS/3000 is required to specify characters and forms produced with IDS/3000 that are to be printed on the HP 2688A laser printer. If IDS/3000 is not purchased, only standard character fonts and environments provided with IFS/3000 or a purchased Character Font Family can be used for output. Custom digitizing may be purchased separately from HP's Output Design Service (ODS).
- HP graphics software (explained below) enables a user to print graphics with the HP 2688A, including merging text with graphics.

Graphics

Graphics may be generated from HP graphics software such as DSG/3000, HPDRAW and HPEASYCHART and then directed to the HP 2688A. This feature allows advanced business data and presentations to be produced. Through the use of HP word processing software (TDP/3000 or HPWORD), text and graphics can be merged to produce reports and manuals.

Graphics data from user written programs can be modified to print on the HP 2688A. Formatting can occur on the host system or the HP 3000. Once the data is stored it can be merged with text to produce reports, documents and manuals.

The HP 2688A is supplied with the HP Page Printer Graphics Package. This is software which supports graphics file output to the HP 2688A, and includes the necessary vector to raster conversion routines.

Interactive Design System (IDS/3000)

Character Design Subsystem (IDS/Char)

The character design subsystem allows a user to create or modify a "character," defined as any dot configuration within a specified area (i.e., a character, a numeral, a logo, or a symbol).

These "characters" are designed by completing a series of menus which specify the name and size of the character. The user can position a cursor over predefined grid points on the terminal screen and design a character composed of any combination of dots selected. The completed character is stored in a cell file on disc.

Features

- Interactive, menu-driven graphic design of characters using an HP 2647A/F or HP 2648A. Special functions include zooming, line drawing, arc generation, rectangle and outline filling, and display of multiple character cells on one screen.

Altitude

0 to 8,200 ft. (0 to 2,500 metres) operating

0 to 49,200 ft. (0 to 15,000 metres) non-operating

Acoustic Noise

<55 dBA average sound pressure measured at 1 metre according to ISO/DP 7779.

Physical

Printer

- Width: 20.0" (51cm)
- Depth: 19.5" (50cm)
- Height: 11.0" (28cm)
- Weight: 138 lbs.
(62.7 Kg)

Controller

- Width: 37.0" (94cm)
- Depth: 28.0" (71cm)
- Height: 29.0" (74cm)
- Weight: 116 lbs.
(52.7 Kg)

Ordering Information

HP 2688A Laser Printer

Standard

- 2688A — maximum 12 ppm; 300 dpi; HPIB (IEEE-488) interface, 115V, 60 Hz; operator guidance panel; self-test; 8 meter HPIB cable; IFS/ 3000 and HP Page Printer Graphics Package

Options

| | |
|-----|--|
| 015 | 220V, 50 Hz |
| 017 | 240V, 50 Hz |
| 040 | Deletes IFS/3000 and Graphics Intrinsic |
| 340 | HP 3000 Series 30/40/42 Subsystems* |
| 344 | HP 3000 Series 44/48 Subsystems* |
| 364 | HP 3000 Series 64/68 Subsystems* |
| 850 | HP Series 200 Subsystem* (33402A purchased separately and required for support). |

*One must be ordered.

Equipment and Accessories Supplied

36580-90001 IFS/3000 Reference Manual
 26088-90901 Operator's Manual
 8 Meter HPIB I/F Cable (P/N 8120-3449)
 Power Cord
 Two Bottles of Toner, and One Toner Disposal Bottle
 250 Sheets of Paper

Customer Training

Operator training is provided at installation. Also course number 22838A, a four-day session on the use of IDS/3000 and IFS/3000 is available. This course covers the design of custom formats using IDS/3000 and IFS/3000 managing forms conversion, and an overview of the HP 2688A Laser Page Printer.

Supplies and Accessories

Available through Hewlett-Packard's Computer Supplies Operation

| | |
|--------|--|
| 92185A | Toner (box of 6 plus disposal bottle); 18,000 pgs./pkg. avg. use |
| 92185B | Cleaning Pad Assembly (box of 3); 60,000 pgs./pkg. avg. use |
| 92185D | Ozone Filer (box of 3); 60,000 pgs./pkg. avg. use |
| 92185E | OPC Belt (box of 3); 60,000 pgs./pkg. avg. use |
| 92185T | Additional paper tray |

Character Fonts

Typeface Families†

- Times New 2*† (comparable to HPROM) for HP 3000 Systems
 - supplied on 1/2" magnetic tape 92187A
 - supplied on 1/4" cartridge tape 92187C
- Geneva 2*† (comparable to HPHELV) for HP 3000 Systems
 - supplied on 1/2" magnetic tape 92187B
 - supplied on 1/4" cartridge tape 92187D
- Times New 2*† for use with HP T_EX on HP Series 200
 - supplied on 5-1/4" floppy disc 92288A
- Geneva 2*† for use with HPT_EX on HP Series 200
 - supplied on 5-1/4" floppy disc 92288B

Computer Modern (supplement)
 for use with HP T_EX on HP Series 200
 —supplied on 5-1/4" floppy disc 92288C

†Each family consists of 37 fonts, with the following typestyles and point sizes:

Regular, in point sizes:

4/6/8/9/10/12/16/18/24/36;

Bold, Italic, Bold-Italic, in point sizes:

6/8/9/10/12/16/18/24/36.

* Trademark of Autologic, Inc.

For more information, call your local HP Sales Office or nearest Regional Office: Eastern (301) 258-2000; Midwestern (312) 255-9800; Southern (404) 955-1500; Western (213) 877-1282; Canadian (416) 678-9430. Ask the operator for computer sales. Or write Hewlett-Packard, 1820 Embarcadero Road, Palo Alto, CA 94303. In Europe: Hewlett-Packard GMBH, Computer Products, Herrenberger Strasse 110, D-703 Boeblingen, Postfach 1430, West Germany. Canada: Hewlett-Packard (Canada) Ltd., 6877 Goreway Drive, Mississauga, Ontario, Canada. L4V 1M8. Elsewhere: Hewlett-Packard Intercontinental, 3495 Deer Creek Road, Palo Alto, California 94304.

