

HEWLETT-PACKARD

● HP 2680/85/89 High Speed Laser Page Printer Family

Data Sheet

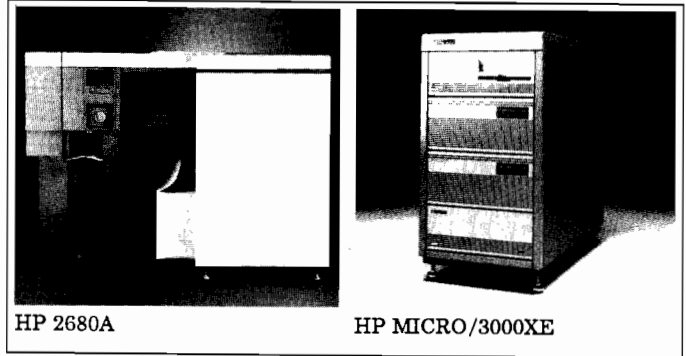
Features

- Professional-quality laser printing for text and graphics
- Large Selection of Optional Character Sets
- Interfacing Flexibility
- Complex Forms and Graphics Design
- Label and Bar Code Printing

The HP 268X family of printers (HP 2680A, HP 2685C, and HP 2689A) utilizes a laser-activated, electrophotographic process to print 45 pages per minute at 180 dots per inch. The scanning laser beam allows the flexibility of positioning dot images anywhere on the page. The printer's monitor and self-correcting print quality inform the operator when to schedule preventive maintenance visits, and advise of potential hardware problems. As a cost-effective replacement for traditional line printers, the optional forms design and graphics design packages combined with the high-quality printed output can provide solutions to a wide range of printing applications. These applications have traditionally required retyping, reformatting, copying and photo reduction of computer-generated output.

Standard printing features included with the HP 268X printers are:

- Convenient operator features simplify paper loading, print positioning, paper splicing, toner loading and paper stacking.
- Ability to print multiple copies of each page (up to 32,767) reduces post-processing requirements (decollating, photocopying and photo reduction) without increasing computer overhead.
- Pages can be printed in 4 different orientations (0, 90, 180, 270 degrees).
- Substantial savings in paper costs is possible by printing 2 or 4 logical pages on a single physical page.
- The use of continuous fanfold paper provides a more trouble-free paper path while accommodating a wide range of paper sizes.
- The HP 2689A supplies 15 standard print formats for line printer or office quality output, while the HP 2680A and HP 2685C come with 60 standard print formats.

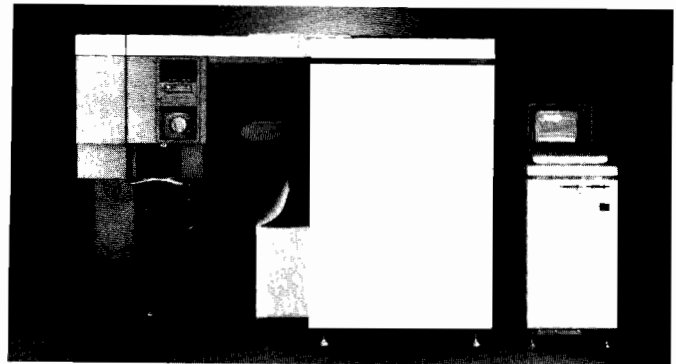


HP 2680A

HP MICRO/3000XE

HP 2685C*

* The HP 2685C is a HP 2680A combined with an HP MICRO/3000 or HP MICRO/3000XE



HP 2689A

Specifications

Printing process

A laser-activated, electrophotographic printing process.

Print speed

The HP 268X printers output information page-by-page. The actual throughput in pages-per-minute depends on the physical length of each sheet.

PAGE Inches	PAGE Millimetres	PRINT SPEED Pages/Minute
3.0*	76.2	113.75
3.5 to 4.0*	88.9 to 101.6	91.0
4.5 to 5.5*	114.3 to 139.7	68.3
6.0 to 8.5*	152.4 to 215.9	45.5
8.5 to 11.0 (std.)	215.9 to 279.4	45.5
9.0 to 17.0**	228.6 to 431.8	22.75

*Minimum length between folds is 6 inches (152 mm).

**Special stacker platform required for 17 inch (431 mm) media.

Text and graphics

A graphics option allows the printing of merged text and graphics. Graphics can be generated from HP graphics systems such as DSG/3000, HPDRAW, EASYCHART,

GRAPHICS GALLERY and CURATOR in combination with a software intrinsic program. This feature allows advanced business data and presentations to be produced. Text and graphics can be merged to produce reports and manuals.

NOTE: Forms can also be printed on the HP 2689A, but the design of the individual forms must be done on an HP Series 3000. If the customer does not own an HP Series 3000, then forms design can be done by HP's Output Design Service for reasonable rates with prompt service.

Printer Format

The supplied print format environments are listed on the following table. In the environment descriptions, portrait orientation refers to printing text from left to right across the width of the page; landscape orientation refers to printing from left to right across the length of the page. Two-to-one reduction refers to printing two pages of data per physical page, and four-to-one reduction refers to printing four pages of data per physical page.

ENVIRON FILE	FONT	COL WIDTH	LINES/ PAGE	REDUC- TION	ORIEN- TATION
2680/85					

LP	Line P	132	66	1 to 1	Land
LP2	Line P	132	66	2 to 1	Port
LP4	Line P	132	66	4 to 1	Land
LP60	Line P	132	61	1 to 1	Land
LP602	Line P	132	61	2 to 1	Port
LP604	Line P	132	61	4 to 1	Land
PICA	Pica	75	66	1 to 1	Port
PICA2	Pica	75	66	2 to 1	Land
PICA4	Pica	75	66	4 to 1	Port
ELITE*	Elite	90	66	1 to 1	Port
ELITE2*	Elite	90	66	2 to 1	Land
ELITE4*	Elite	90	66	4 to 1	Port
DOC*	Doc	Prop	66	1 to 1	Port
DOC2*	Doc	Prop	66	2 to 1	Land
DOC4*	Doc	Prop	66	4 to 1	Port
LAND**	N/A	N/A	N/A	1 to 1	Land
Land2**	N/A	N/A	N/A	2 to 1	Port
LAND4**	N/A	N/A	N/A	4 to 1	Land
PORT**	N/A	N/A	N/A	1 to 1	Port

KEY: Fr = French; Gr = German; Dan = Norwegian/Danish; Sp = Spanish Swd = Swedish/Finnish; UK = United Kingdom; RX = Roman Extension; RXI = Italics with Roman Extension; Kata = Katakana; El, Eli = Elite; Pi, Pic = Pica; Doc = Document; Scr = Script; Line P = Line Printer

ENVIRON FILE	FONT	COL WIDTH	LINES/ PAGE	REDUC- TION	ORIEN- TATION
PORT2**	N/A	N/A	N/A	2 to 1	Land
PORT4**	N/A	N/A	N/A	4 to 1	Port
PICA1F	Pic-Fr	75	66	1 to 1	Port
PICA2F	Pic-Fr	75	66	2 to 1	Land
ELITE1F	Eli-Fr	90	66	1 to 1	Port
ELITE2F	Eli-Fr	90	66	2 to 1	Land
PICA1G	Pic-Gr	75	66	1 to 1	Port
PICA2G	Pic-Gr	75	66	2 to 1	Land
ELITE1G	Eli-Gr	90	66	1 to 1	Port
ELITE2G	Eli-Gr	90	66	2 to 1	Land
PICA1N	Pi-Dan	75	66	1 to 1	Port
PICA2N	Pi-Dan	75	66	2 to 1	Land
ELITE1N	El-Dan	90	66	1 to 1	Port
ELITE2N	El-Dan	90	66	2 to 1	Land
PICA1S	Pic-Sp	75	66	1 to 1	Port
PICA2S	Pic-Sp	75	66	2 to 1	Land
ELITE1S	Eli-Sp	90	66	1 to 1	Port
ELITE2S	Eli-Sp	90	66	2 to 1	Land
PICA1W	Pi-Swd	75	66	1 to 1	Port
PICA2W	Pi-Swd	75	66	2 to 1	Land
ELITE1W	El-Swd	90	66	1 to 1	Port
ELITE2W	El-Swd	90	66	2 to 1	Land

ENVIRON FILE	FONT	COL WIDTH	LINES/PAGE	REDUC-TION	ORIEN-TATION
PICA1U	Pic-UK	75	66	1 to 1	Port
PICA2U	Pic-UK	75	66	2 to 1	Land
ELITE1U	Eli-UK	90	66	1 to 1	Port
ELITE2U	Eli-UK	90	66	2 to 1	Land
ELITE1X*	Eli-RX	90	66	1 to 1	Port
ELITE2X*	Eli-RX	90	66	2 to 1	Land
LTITAL1X*	El-RXI	90	66	1 to 1	Port
LTITAL2X*	El-RXI	90	66	2 to 1	Land
PICA1X*	Pic-RX	75	66	1 to 1	Port
PICA2X*	Pic-RX	75	66	2 to 1	Land
DOC1X*	Doc-RX	Prop	66	1 to 1	Port
DOC2X*	Doc-RX	Prop	66	2 to 1	Land
SCRIPT1X*	Scr-RX	90	66	1 to 1	Port
LPK*	Kata	132	66	1 to 1	Land
LPK2*	Kata	132	66	2 to 1	Port
LPK4*	Kata	132	66	4 to 1	Land
PICAK*	Kata	75	66	1 to 1	Port
PICA2K*	Kata	75	66	2 to 1	Land
PICA4K*	Kata	132	66	4 to 1	Port

ENVIRON FILE	FONT	COL WIDTH	LINES/PAGE	REDUC-TION	ORIEN-TATION
2689A					

P661	Line P	132	66	1 to 1	Land
P662	Line P	132	66	2 to 1	Port
P664	Line P	132	66	4 to 1	Land
P601	Line P	132	60	1 to 1	Land
P602	Line P	132	60	2 to 1	Port
P604	Line P	132	60	4 to 1	Land
EL61*	Elite	90	66	1 to 1	Port
EL62*	Elite	90	66	2 to 1	Land
EL64*	Elite	90	66	4 to 1	Port
PI61*	Pica	75	66	1 to 1	Port
PI62*	Pica	75	66	2 to 1	Land
PI64*	Pica	75	66	4 to 1	Port
PGB1***	Line P	132	66	1 to 1	Land
P801	Line P	132	80	1 to 1	Land
P881	Line P	132	88	1 to 1	Land

*These environments contain two character fonts

**These normally used as the basis for creating new environments

***Same as P661 but also simulates graybar paper

Forms Design

(HP 2680A and HP 2685C)

Forms Design Workstation (Optional)

A graphics terminal is the interface for the forms design capabilities of the system. This terminal operates with friendly, easy to use menus for specification entries followed by a graphics area display for the designer to enter graphical data via line drawing, dot entry and shading selection. This design operation can be performed concurrently with any print job. The printing of any document can take place without interference from a design task. The two powerful design packages with the forms workstation are:

- Interactive Design System (IDSF/3000) - a forms design package.
- Interactive Formatting System (IFS/3000) - a page formatting package which defines the layout of each printing application, using standard character fonts and forms designed with the IDSF/3000 package.

Line Length 255 characters maximum (not including blanks)* 11.38 inches (28.9 cm) between tractor strip holes 16.0 inches (40.64 cm) between folds

* Form images and/or overstriking may reduce the effective number of characters per line.

Symbol Limitation Two character sets per environment for a total of 250 symbols per print job.



Margins One-half inch (1.27 cm) required at the top and bottom (folded edge) of each page. Margin of .08 inches (.2 cm) required at the left and right (tractor strip edges) of each page.

NOTE: Printing within .8 inches (2 cm) of the top folded edge may create smearing in some applications. Applications with print inside this range should be tested to determine satisfactory positioning on page.

Paper Sizes

Paper dimensions may range between 6.5 inches and 12.7 inches (165 to 322 mm) in width with a maximum print width of 11.38 inches. Paper length may be 3.0 inches to 17.0 inches (76 to 432 mm) in one-half inch increments. Minimum length between folds for proper stacking is 6 inches (152 mm). **HP recommends that paper greater than 12 inches between folds be tested for stacking ability (the power stacker must be set to manual mode when using large paper). See the HP 2680A Paper Specification Guide (5953-7110) for detailed information on paper sizes, weights, types, labels, etc.**

Note: Due to variations in manufacturing processes, quality and composition of forms, HP cannot guarantee satisfactory performance with all paper and forms. Therefore, all special paper, including pre-printed forms, card stock and label stock should be tested for satisfactory feeding, registration and print quality prior to purchase. Please refer to the 2680A Paper Specification Guide (part number 5953-7110) for additional information.

Paper Weight

Paper weights between 16 and 24 pounds (60 and 92 grams/sq. metre) may be used.

HP Computer Museum
www.hpmuseum.net

For research and education purposes only.

Paper Handling

Corona Shield Specifications

The HP 2680A is equipped with corona shields for use with standard paper widths. The corona shields are plastic inserts used to protect the transfer corona from

attracting unused toner and paper dust. Nonstandard paper widths may require a custom corona shield, which can easily be ordered from HP with 4 to 8 week lead time for delivery.

Interfaces

	HP 2680A	HP 2685C	HP 2689A
System Controller	None Required	HP MICRO/3000 or HP MICRO/3000XE	HP 26029A which includes console and two 3 1/2 inch dual sided flexible disc drives.
I/O Interface	HPIB connect to HP Series 3000	HPIB to MICRO/3000/3000XE Supports DSN/RJE, DSN/MRJE and DSN/NRJE between MICRO/3000/3000XE and mainframes	HPIB to the 26029A, direct channel connect to IBM 303X 308X, 43XX and System/370 with DOS/VSE, MVS, VM/370 OS/VS1, DOS/VSE, MVS/XA and VM/SP operating systems
Terminals	2393A for forms and graphics design	2392A for console terminal. 2393A for forms and graphics design	(console terminal comes with 26029A)
Disc Drives	None required	Must have 7958A or 7936H	(floppy disc drive comes with 26029A)
Tape Drives	None required	Must have 9144A, 35401A or 7974A	None required
Forms and Graphics Design Software	Supports IFS/3000, IDIFORM/3000 and graphics intrinsics	Supports IFS/3000 IDIFORM/3000 and graphics intrinsics	Must use Output Design Service for forms design if customer does not own HP Series 3000

Environmental Ranges

Temperature	Degrees	
	C	F
Operating	20 to 25	68 to 77
Non-operating	-20 to 40	-4 to 104

Relative Humidity	
Operating	40% to 60% non-condensing
Non-operating	5% to 60% non-condensing

The HP 2680A is intended for operation in a humidity-controlled environment.

Power and Heat Dissipation	
Operating	Approximately 4200 watts (14,330 BTU/hour)
Standby	Approximately 625 watts (2125 BTU/hour)

Altitude	
Operating	Sea level to 8,200 feet (2500 metres)
Non-operating	Sea level to 33,000 feet (10,000 metres)

Power Requirements

Two wire, single phase plus earth ground, 208, 220, 230, 240 VAC, +5%/-10%. 30 amps, 60 Hz +/-5%. Option 015: 50 Hz +/-5%.

HP 268X TRANSIENT SUSCEPTIBILITY

NORMAL MODE

Peak = 500V
 Max. rise time at 50% peak = 500ns.
 Max. fall time at 50% peak = 100ns.

COMMON MODE

Peak = 1000V
 Max. rise time at 50% peak = 500ns.
 Max. fall time at 50% peak = 100ns.

Peak = 500V
 Max. rise time at 50% peak = 10ns.
 Max. fall time at 50% peak = 1ms.

NOTE: Prior to installation, a customer site survey is conducted to assure a smooth installation.



Physical Specifications

Height	48.0 inches (122 cm)
Width	64.5 inches (164 cm)
Depth	26.4 inches (67 cm)
Weight	890 lbs. (404 Kg)

NOTE: A 30 inch (75 cm) service clearance on all sides of the printer is required. The printer is mounted on casters which allow the unit to be moved for servicing.

Physical specifications for the other components of the 2689A and 2685C may be obtained from the data sheets for each component.

Product Certifications

The components of the HP 2680A and 2689A Laser Printing System meet the following national safety standards:

USA: UL requirements for EDP equipment, office appliances.
 Canada: CSA requirements for EDP equipment (IEC380 and IEC435).
 Switzerland: SEV
 Germany: VDE (safety), FTZ (RFI).

The HP 2680A and 2689A have been classified as CDRH Class 1 laser products, safe for office/EDP use. It is necessary to check with local restrictions, safety codes, or reporting requirements in your area. HP will help to determine local safety requirements. Any questions should be directed to your local HP Sales Office. More details are available upon request.

Reliability and Estimated Typical Usage

The initial 90 days after installation are covered by an on-site warranty which provides parts and labor for repair of defects in workmanship. After this period, coverage may be continued under a Customer Maintenance Agreement.

The Customer Maintenance Agreement offers:

- Extended coverage service plans in most areas
- Assigned Account Customer Engineer
- A defined response time for maintenance

Details on tailoring a service program to meet the customer's particular needs are available through the local HP Sales and Service Office.

Ordering Information

Standard Configurations:

- 2680A** Includes one 256Kb memory board (one empty memory slot) and an 8 metre HPIB cable.
- 26804C (2685C)** Includes a 2680A printer, 7958A disc drive, 9144A tape drive (with cable), and a 2392A terminal (with U.S. modem cable).
- 2689A** Includes a 2680A printer, 26029A control unit, 82912A monitor, UCS image tape and file utility software.

	2680A	26804C (2685C)	2689A
Power Options			
015 - 220 VAC 50Hz	X	X	X
017 - 240 VAC 50Hz		X	
Firmware Options			
060 - Graphics Firmware Upgrade	X	X	
062 - Variable Density Print	X	X	X
Convenience Options			
093 - Add a second 2680A (with option 345 only), includes PIC		X	
094 - Add a 35401A autochanger tape and cable		X	
095 - Add a 7974A tape drive and cable		X	
096 - Add a 7936H disc drive and cable		X	
097 - Delete the 9144A tape drive		X	
098 - Delete the 7958A disc drive		X	
099 - Deletes the 8 metre HPIB cable and adds 2 metre cable	X		X
System Options			
335 - HP MICRO/3000 with ATP/M		X	
337 - HP 3000/37XE and Micro /3000/3000XE subsystem	X		
340 - HP 3000/39/40/42 subsystem	X		

	2680A	26804C (2685C)	2689A
344 - HP 3000/44/48/58 subsystem	X		
345 - HP MICRO/3000XE with ATP/M		X	
364 - HP 3000/64/68/70 subsystem	X		
393 - HP 3000/930/950 subsystem	X		
Forms and Graphics Options			
500 - Forms design, includes 062, 525 and 2393A terminal (with cable)*	X		
501 - Graphics design, includes 060 and 520*	X		
502 - Forms design, includes 2393A terminal*		X	
503 - Graphics design, includes 060, 062, 520 and 525*		X	
Printer Memory Options**			
505 - Adds 256Kb memory	X	X	X
510 - DOS output writer***			X
520 - Deletes 256Kb memory and adds 1MB memory	X	X	X
521 - Adds 1Mb memory	X	X	
Performance Options			
525 - Vacuum Splice	X	X	X
550 - Label printing hardware	X	X	X
560 - Adds 2Mb memory to the MICRO/3000		X	
570 - Adds 2Mb memory to the MICRO/3000XE		X	

* PSP software (36850A, 36581A and 36583A) must be ordered from SDC.

** Recommended memory configuration for forms design is 1Mb, and 2Mb for graphics applications.

*** This is not a memory option, but is a software spooling option for the 2689A.

Forms and graphics design software

(Must be ordered from SDC)

- 36580A** IFS/3000 Software supporting environment creation and modification for the 2680A and 2685C.
- 36581A** IDIFORM/3000 designs forms using an HP2393A graphics terminal.
- 36583A** Software supporting graphics file output to the 2680A and 2685C. Includes vector to raster conversion and is required for printing graphics.
- 36584A** Combination of above three packages

Accessory kits (2680A, 2685C and 2689A)

- 26075A** Multiple System Access Selector switch box. Allows sharing of one 2680A or 2685C with up to three HP3000 SPU's.
- 26080A** 256Kb field upgrade memory extension kit (same as option #505).
- 26084A** Field upgrade for Variable Density Print (same as option #062).
- 26085A** 1Mb field upgrade memory extension kit (for use with option #060 or 26086A).
- 26086A** Field installation of graphics firmware. A minimum of 1Mb of printer memory is required (same as option #060).

2689A Accessory kits

- 26029A** Control unit that connects the 2680A to an I/O interface channel of an IBM System/370, 303X, 308X, 43XX or compatible system. Includes console, control program, file utilities and 15 environment files. For more information consult the 26029A Data Sheet (5954-2264).
 - #015** Provides 195-250VAC, 50 Hz operation.
- 26032A** IBM channel cables to connect the 26029A to the IBM channel (two cables required per 26029A).
 - #001** 5 metre cable - (19 feet)
 - #002** 10 metre cable - (33 feet)
 - #003** 15 metre cable - (49 feet)
 - #004** 25 metre cable - (82 feet)
 - #005** Special Length (not to exceed 60 metres)
- 26033A** Power control cables for providing system power control of the 2680A and 26029A.
 - #001** 10 metre cable - (33 feet)
 - #002** 25 metre cable - (82 feet)
 - #003** 45 metre cable - (148 feet)
 - #004** Special Length (not to exceed 45 metres)

Hewlett Packard's computer supplies catalog

- 92180A** Twelve kilograms of dry electrophotographic toner. Depending on print density, one kilogram will typically provide 20,000 to 30,000 pages of output.
- 92180D** Print drum and wiper blade.
- 92181A** Six empty toner collection bottles for clean disposal of excess toner. One bottle will typically last 60,000 8 1/2 inch by 11 inch pages.
- 92182A** 24 bottles of dry carrier for replenishing the electrophotographic process.
- 92182D** Six bottles of developer.
- 92183A** Six rolls of splicing tape, enough for approx. 240 splices.
- 92184A** 18-pound continuous bond paper, 8 1/2 inch by 12 inch including the tractor strip. 8 1/2 inch by 11 inch with the tractor strips removed. Sold by the pallet only.
- 92192A** Box of ten 3.5 inch dual-sided flexible discs for the 26029A.
- 98628A*** Data communications hardware to allow the 26029A to download environment files from an HP3000 system to the 2689A.
- 09800-10380*** Data communications software for the 26029A to communicate with an HP3000 system.

*These products must be ordered from your Hewlett-Packard Sales Office.

Documentation

- | | |
|---|---------------|
| HP 2680A Operator's Preventive Maintenance Manual | (02682-90912) |
| HP 2680A Paper Specification Guide | (5953-7110) |
| HP 26029A Users Manual | (26029-90901) |
| HP 26029A Site Preparation Guide | (26029-90902) |
| HP 26029A Service Manual | (26029-90904) |
| HP 26029A Operator's Manual | (26029-90906) |
| HP 26029A Data Sheet | (5954-2264) |
| IDS/3000 Forms Design Reference Guide | (36581-90002) |
| IFS/3000 Reference Guide | (36581-90001) |
| Label Printing Application Note | (5954-8946) |

*This manual accompanies the product.

For the U.S Sales Office or authorized dealer nearest you, call (800) FOR-HPPC (367-4772); in Canada, call (800) 387-3867, or write your Hewlett-Packard regional office: U.S.A. (East) Choke Cherry Road, Rockville, MD 20850; (Midwest) 5201 Tollview Drive, Rolling Meadows, IL. 60008; (West) 5161 Lankershim Boulevard, North Hollywood, CA 91601; (South) 2000 South Park Place, Atlanta, GA 30339. CANADA-6877 Goreway Drive, Mississauga, Ontario, Canada, L4V 1M8. EUROPE - 150 Route du Nant-d'Avril, P.O. Box CH-1217 MEYRIN 2, Geneva, Switzerland. JAPAN - Yokogawa-Hewlett-Packard Ltd., 29-21, Takaido-Higashi 3-chrome, Suginami-ku, Tokyo 168. Elsewhere in the world - Hewlett-Packard Intercontinental, 3495 Deer Creek Road, CA 94304 U.S.A.



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