
HP Apollo Series 700 Models 725/50 and 725/75 Low-cost, High-performance Workstations



The HP Apollo Series 700 Model 725/50 and 725/75 are the highest-performing workstations in the power desktop environment, extending HP's record-setting PA-RISC-based Series 700 workstation family. These models deliver 69 and 110 SPECmarks (89), setting new industry price/performance standards. The Model 725/50 and 725/75 graphics capabilities are derived from the industry's leadership price/performance Series 700 GRX and CRX graphics. They deliver 11,187 and 15,975 X11 perf and 925,000 and 1,100,000 2D/3D vec/sec performance (peak).

The Model 725/50 and 725/75 are designed for easy installation, upgradability, expansion, and serviceability. These workstations are as easy to configure as stereo components, featuring plug-in memory modules, processor upgrade boards, disks, and removable media devices.

The Model 725/50 and 725/75 support a wide variety of industry-standard I/O interfaces, similar to the other members of the Series 700 family. To provide the best possible performance and cost savings for the user, the systems have built-in local area networking (LAN), an AUI (ThickNET) connection, four user EISA slots, an external SCSI-2

port, a bidirectional Centronics interface, two RS232 Serial ports, and HP-HIL.

The Model 725/50 and 725/75 are the low-cost workstation of choice for a broad range of applications that require fast X Window System performance and 2D/3D wireframe color and grayscale graphics. They are designed primarily to meet the needs of such workstation markets as electronic computer-aided design (ECAD), mechanical computer-aided design (MCAD), computer-aided software engineering (CASE), desktop publishing, and desktop productivity, as well as many emerging markets, such as customer services and financial services. Multimedia functionality is also supported in the form of a CD-quality audio capability and add-on video card options. Entry-level surface rendering is available through HP's 3D surfaces software, PowerShade.

The Model 725/50 and 725/75 share in HP's rich tradition of standards, advanced transparent networking, advanced development tools, and advanced user interfaces. HP also offers financing alternatives to help get you the equipment you need now and to upgrade in the future. And, as always, HP is famous for its quality assurance, support, and service.

Features	725/50	725/75	Benefits
CPU Performance			
Clock Frequency	50MHz	75MHz	• Industry's fastest entry-level workstation • Industry leadership price/performance
MIPS	62	86	
SPECmark89	69	110	
SPECint92	36	61	
SPECfp92	72	113	
MFLOPS (DP)	13	31	• Speeds technical computations
Memory and Cache			
Memory Capacity	32-256MB	32-256MB	• Improves application performance
Instruction cache	64KB	256KB	
Data cache	64KB	256KB	
Mass Storage			
Internal Capacity	2GB	2GB	• A wide range of mass storage options
Total Capacity	68.6GB	68.6GB	
Removable Media			
Internal options	600MB CD-ROM 1.44MB Floppy 2GB DDS tape 4-8GB DDS tape	600MB CD-ROM 1.44MB Floppy 2GB DDS tape 4-8GB DDS tape	• Package flexibility
Graphics			
2D/3D Wireframe			
Grayscale (standard built-in 2D hardware)			
19", 1280 x 1024, 72Hz monitor			• Superb image detail • Leadership windowing and vector performance through X11 and PHIGS • 256 shades aid user comprehension • Fast performance for text-intensive applications
X11perf	11,187	15,975	
8-plane grayscale			
Character hardware			
Color (standard built-in 2D hardware)			
19", 1280 x 1024, 72Hz Monitor			• Superb image detail • Leadership windowing and vector performance • Ideal for design, engineering, and scientific applications • 256 colors aid user comprehension • Allows smooth movement of dynamic images
X11 perf	11,187	15,975	
2D/3D vectors/second	925,000	1,100,000	
8-plane color			
8/8 plane double buffering			
Triangles per second	18,000	27,000	• Superb image detail • Ideal for visualization and image processing • 16.7 million simultaneously displayable colors • Allows smooth movement of dynamic images • Annotation and image comparison • 3D price/performance leadership
Lighted, shaded quadrilaterals per second	12,000	15,000	
Optional CRX-24 (24 plane, 3D wireframe)			
19", 1280 x 1024, 72 Hz Monitor			• Superb image detail
X11 perf	10,646	15,975	• Ideal for visualization and image processing • 16.7 million simultaneously displayable colors • Allows smooth movement of dynamic images • Annotation and image comparison • 3D price/performance leadership
2D/3D vectors/second	680,000	680,000	
24-plane color			
12/12 plane double buffering			
8 overlay planes			
Triangles per second	18,000	27,000	
Lighted, shaded quadrilaterals per second	12,000	15,000	

HP Computer Museum
www.hpmuseum.net

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Features	725/50	725/75	Benefits
725/50			
CRX-24Z (24 plane, Z-buffered, 3D solids)			
19", 1280 x 1024, 72 Hz monitor			• Superb image detail • High-performance lighting and shading for surface rendering and data animation • 16.7 million simultaneously displayable colors • Allows smooth movement of dynamic images • Annotation and image comparison triangles per second lighted, shaded quadrilaterals per second
X11perf	10,650	15,975	
2D/3D vectors/second	680,000	680,000	
24-bit color			
12/12 plane double buffering			
8 overlay planes			
Triangles per second	140,000	175,000	
Lighted, shaded quadrilaterals per second	65,000	94,000	
CRX-48Z (48 plane, Z-buffered, 3D solids)			
19", 1280 x 1024, 72 Hz Monitor			• Superb image detail • High-performance lighting and shading for surface rendering and data animation • 16.7 million simultaneously displayable colors • Annotation and image comparison • Allows smooth movement of dynamic images
X11perf	9,891	15,975	
2D/3D vectors/second	1 million	1,450,000	
24-plane color and 8 overlay planes			
24/24 plane double buffering			
Triangles per second	585,000	600,000	
Lighted, shaded quadrilaterals per second	90,000	107,000	
Graphics Software			
X11/PHIGS, X11/Starbase, X11/GKS			• Speed and realism through standards enhance the capabilities of all applications
User-friendly Features			
HP VUE, OSF/Motif, X11 Window System			• Ease of use through standards. • Provides immediate productivity through a preinstalled and preconfigured HP-UX environment
Instant Ignition			
Standard Interfaces			
Integrated I/O subsystem			• Low cost, high performance • Allows quick and easy integration in heterogeneous networks • Allows for user expansion needs • Simple connection of high-speed, low-cost disks and other peripherals • Multimedia capability
IEEE 802.3 (ThickNet),			
4 EISA Slots			
SCSI-II, RS-232(2), Centronics, HP-HIL			
Audio I/O ports			
Cooperative Computing Products			
NCS, Passwd Etc			• Supports distributed applications, ease of administration in a networked environment • Provides users with access to all available power on the network • Allows licensing of applications based on actual usage • Automates system backup in a networked environment
Task Broker			
NetLS			
OmniBack			



Technical Specifications	725/50	725/75
System Processing Unit		
Central Processor	PA-RISC	PA-RISC
Clock Frequency	50MHz	75MHz
Performance		
MIPS	62	86
SPECmark89	69	110
SPECint92	36	61
SPECfp92	72	113
MFLOPS (DP)	13	31
Memory Management Unit		
Virtual Memory Address	48 bit	48 bits
Instruction TLB and Data TLB	120 page entries, 16 variable block entries, fully associative	120 page entries, 16 variable block entries, fully associative
External Cache		
Instruction Cache Size	64KB	256KB
Organization	Direct mapped	Direct mapped
Bus Width	64 bits	64 bits
Instruction Cache Bus Performance	400MB/sec I-fetch (4 byte)	600MB/sec I-fetch (4 byte)
Data Cache		
Data Cache Size	64KB	256KB
Organization	Direct mapped	Direct mapped
Data Bus Width	64 bits	64 bits
Data Cache Peak Bus Performance	400MB/sec load (8 byte) 400MB/sec single store (8 byte)	600MB/sec load (8 byte) 600MB/sec single store 8 byte)
Main Memory Type		
	ECC SIMMs (single bit correct, double bit detect)	ECC SIMMs (single-bit correct, double-bit detect)
Capacity	32-256MB	32-256MB
Main Memory Bus Width	8 check bits	8 check bits
Main Memory Bus Peak Performance	160MB/sec (64 byte duration)	160MB/sec (64 byte duration)
System DRAM Technology	80nsec, 4 & 16 Mbit DRAM	80nsec, 4 & 16 Mbit DRAM
Memory Options	32, 64, 128, 256	32, 64, 128, 256

Operating System

HP-UX 9.01: Complies with IEEE POSIX.1003.1 and 1003.2 FIPS 151-1, ANS X3.159-1989, System V Interface Definition (SVID) Issue II (Base System and all Extensions except AS, NS and shmat [KE_OS]), X/Open Portability Guide Issue (XPG3), (Base Branding).

HP-UX 9.01 also complies with IS 9945/1 and Base Component and all Optional Components except XTI only.

Window Systems

X Window System

Version 11 Release 5 (X11R5), OSF/Motif 1.2

Languages

C, C++, Pascal, ANSI FORTRAN, ANSI C

User Interface

HP VUE 3.0

Human Interface

Keyboards

109 key, 3 adjustable angle settings, HP-HIL, available in 21 languages

Length 443.9mm
Width 177.6mm
Height 53.5mm (max - highest angle setting)
38.6mm (min - lowest angle setting)
Weight 1.48kg

101 key, PC style, 3 adjustable angle settings, HP-HIL, available in 11 languages

Length 463.2mm
Width 177.6mm
Height 55.3mm (max - highest angle setting)
40.4mm (min - lowest angle setting)
Weight 1.54kg

Regulatory Specifications — above keyboards designed to meet all applicable sections of the following:

**Electromagnetic Compatibility (EMC)
Directive**

EN 55022 Class A / CISPR 22
Class A
prEN 55024-2 / IEC 801-2
prEN 55024-3 / IEC 801-3

German Standard

TUV/GS Safety Body
IEC 950 / EN 60950
ZH1/618

Spanish Homologation

Underwriters Laboratories (UL)

UL 1950, "Information
Technology Equipment"

Canadian Standards Association (CSA)

C22.2 No. 950, "Information
Technology Equipment"

Federal Communications

Commission (FCC)

FCC Part 15, Sub-part B -
Computing Devices, Class A

Radio Research Laboratory of

Korea (RRL)

Electromagnetic Interference
(EMI) Control Regulations

Mouse

3 button, rollerball, HP-HIL

Audio

16 bit CD/DAT quality stereo

Digital Data Rate

16 bit resolution, 44.1 or
48 KHz sampling input/output

Connectors

1 mono mic, 1 stereo head-
phones, 1 mono speaker, 1
stereo line in, 1 stereo line out
(all mini phone jacks)

Three independent time generators
controllable over 30db Frequency
Range — 81.46Hz to 83.3KHz
(Available via speaker connected to
external jack 250mW @ 8 ohms)

Interface Specifications

Type

HP-HIL, 1.0 Amp, built-in audio
beeper

Device Limit

7 per interface

Connector

AMP SMD

Networking Options

LAN

Standard

IEEE 802.3 LAN with interface
with ThickNET (AUI) connector

Optional

FDDI EISA controller

Networking Products

NCS, NFS, Berkeley 4.3 TCP/IP, BSD
4.3 Network Services, and ARPA
Services

I/O Specifications

Graphics Bus (standard)

1 slot

Width

32-bit address

Peak Bus Performance

133MB/sec (block move out,
32 bytes)

LAN Interface (standard)

Type

IEEE 802.3/Ethernet

Data Rate

10 Mbits/sec

Connectors

15-pin AUI (ThickNET)
connector

SCSI Interface (standard)

Type

SCSI-II: single-ended, 8 bit

Data Rate

5MB/sec synchronous
1.5MB/sec asynchronous with
standard length cables

Device limit

7 devices

Connector

ALT-1 of SCSI-2 50-pin high
density

**Serial Interface
(two standard)**

Type

EIA RS232C, CCITT V.24/V.28

Data Rate

to 460.8Kbps

Connector

9 pin male DTE (PC Standard)

Parallel Interface (standard)

Type

Centronics, BUSY handshake

Data Rate

300+ KB/sec with DMA
200KB/sec sustained

Connector

25-pin female (PC standard)

EISA Bus

Number of Slots:

4 w/out CRX Graphics, 3 with
CRX

Width

32-bit address, 32-bit data

Peak Bus Performance

33MB/sec sequential memory
write

Optional Internal Mass Storage

Max. Mass Storage Devices

Two 3.5" hard disks and one
3.5" or two 5.25" removable
media devices

Max Internal Mass Storage

2GB

Internal 525MB Disk

Number supported

up to 2

Operating system

HP-UX 9.01

Size

3.5-inch

Formatted capacity

525MB

Average seek time

10 ms

Average latency

6.7 ms

Internal 1GB Disk

Number supported
up to 2
Operating system
HP-UX 9.01
Size
3.5 inches
Formatted capacity
1.05GB
Average seek time
10 ms
Average latency
5.6 ms

2GB 3.5-inch DDS Tape Drive

Max. number supported
1 per unit
Operating system
HP-UX 9.0 and HP-UX 9.01
Media
90m DDS
Capacity
2GB
Average random access time
30 sec
Max. burst data transfer rate
1.5MB/sec
Max. sustained data transfer rate
183KB/sec

**4-8GB 3.5-inch Data Compression
DDS Tape Drive**

Max. number supported
1 per unit
Operating system
HP-UX 9.0 and HP-UX 9.01
Media
90m DDS
Capacity
4-8GB
Average random access time
30 sec
Max. burst data transfer rate
1.5MB/sec
Max. sustained data transfer rate
732KB/sec

1.44MB 3.5-inch Floppy

Max. number supported
1 per unit
Operating system
HP-UX 9.0 and HP-UX 9.01

Media
HP 2MB or HP 1MB Floppy disk
Formatted capacity
1.44MB or 720MB
Format
MFM or FM
Transfer rate
500KB/sec or 250KB/sec

600MB 5.25-inch CD-ROM

Max. number supported
1 per unit
Operating system
HP-UX 9.0 and HP-UX 9.01
Media diameter
4.7 inches
Data capacity mode 1/2
599/683MB
Avg. data transfer rate
154Kbits/sec
Avg. random access time
350 ms

**SPU Power - Output
Specifications**

Power	
227 W max output	
+5 V current	27 A
+12 V current	7 A
-12 V current	0.3 A
-5 V current	0.3 A

SPU Physical and Environmental**System Unit Power**

Input voltage worldwide
90-132 VAC/198-264 VAC Auto
Ranging
Line frequency
47-63Hz/47-63Hz
Input current
6.0A @ 110VAC
3.0A @ 220VAC
Input power
405W Peak @ 110V
376W max @ 110V
382W Peak @ 220V
345W max @ 220V
1382 BTU/hour (405 watts)
Max. Peak

Physical Dimensions

Desktop:
Height
6.6 inches (17cm)
Width
17.3 inches (44cm)
Depth
16.1 inches (41cm)

Deskside:
Height
17.3 inches (44cm) without
pedestal
Width
6.6 inches (17cm)
Depth
16.1 inches (41cm)
Net Weight (Desktop/Side)
24.8 lbs (11.3kg) without
monitor, keyboard and internal disk

Environmental Specifications

Temperature: operating
5° C to 40° C; 20° C/hr. rate of
change max.
Temperature non-operating
-40° C to +70° C
Humidity:
Non-condensing
Operating
15% to 80% R.H. max
Operating max wet bulb temp
37° C
Non-operating
90% R.H. max.
Max wet bulb temp
@68° C, 12 hour soak humidity
*Altitude, max., operating
3,048 meters (10,000 ft) @40° C
*Altitude: non-operating
4,572 meters (15,000 ft) @60° C
* Note that operating temperature and
humidity ranges may vary with
installed data storage device(s).

Monitors

19" Grayscale

Screen refresh rate

72Hz (single sync)

Video signals

RS-343 A

Resolution

1280x1024

Electrical Specifications

Line voltage

88-135VAC

193-269VAC

Line frequency

47-63Hz

Maximum current

1.5A/1.0A

Power consumption

100 Watts max.

Environmental Characteristics

Operating temperature

0-55° C

Non-operating temperature

-40 to 71° C

Humidity operating 40° C

15-95% R.H.

Max. altitude operating

4572m (15,000ft.)

Max. altitude non-operating

15,250m (50,000ft)

Regulatory Compliance

CSPR level:

B

VDE level:

B

FCC class:

A

VCCI class:

1

Safety

UL, CSA, EN60950, GS Mark

Monitor Physical Characteristics

Height

444mm (17.5 in.)

Width

470mm (18.5 in.)

SPU Power Budget

+5 V
(Amps)

+12 V
(Amps)

-12 V
(Amps)

-5 V
(Amps)

Totals
(Watts)

256MB (max. memory)

9.1

.2

.1

0

49.1

HIL maximum load

1.0

12

1GB Hard disk

1.0

0.71

13.5

DDS tape drive

0.5

0.25

5.5

CD ROM

0.5

0.22

5.2

Floppy disk

.8

4.0

CRX-24Z

6.0

30

CRX-24

4.0

20.0

EISA/HP-IB

3.06

15.3

EISA/SCSI-differential

3.06

0.005

0.005

15.4

EISA/802.3 LAN

3.4

17.0

with AUI

3.4

0.36

21.3

EISA/802.5 LAN

2.24

11.2

EISA/FDDI

2.0

10

EISA/X.25

3.4

0.09

.10

19.2

EISA slot maximum load

21

Fans

.30

3.6

Depth

426mm (16.0 in.)

Net Weight

20.5kg (45.1 lbs)

(Packaged)

19" Color

Screen refresh rate

72Hz (single sync)

Video signals

RS-343 A

Resolution

1280x1024

Electrical Specifications

Line voltage

88-135VAC

193-269VAC

Line frequency

47-63Hz

Maximum current

3.7A/2.0A

Power consumption

250 Watts Max.

Environmental Characteristics

Operating temperature

10-40° C

Non-operating temperature

-40-60° C

Humidity operating 40° C

10-80% R.H.

Max. altitude operating

3048m (10,000ft)

Max. altitude non-operating

10,668m (35,000ft)

Regulatory Compliance

CSPR level:

B

VDE level:

B

FCC class:

A

VCCI class:

1

Safety:

UL, CSA, IEC 950, GS Mark

Monitor Physical Characteristics

Height

471mm (18.6 in.)

Width

500mm (20 in.)

Depth

505mm (20.2 in.)

Net Weight

29kg (64.3 lbs)

Regulatory Approvals

Safety:

UL 1950, CSA 22.2 950-M, TUV
EN60950, Finland TSH, EMKO
TUE (74) DK203, Sweden's SS
43614 50, SSI FS 1980: 2

Ergonomics:

TUX ZH1/618, ISO 9241

Acoustics:

5.0 Bels, Sound Power, up to
30° C — ISO 7779/ISO 9296
Methods

EMC:

Radiated/Conducted Emissions
and Susceptibility, Magnetic
Interference and Susceptibility
and ESD

FCC 47 cfr, part 15 sub-part J,
Class A

Korean RRL, Class B

VCCI Class 1

EN55022/CISPR 22 Class A

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any of our worldwide sales
offices or HP Channel Partners
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