# *Overview*

## At A Glance

*AlphaServer*™ DS20L 1U Systems include:

- 1U dual Alpha processor module with 833-MHz CPUs with 4-MB onboard cache per processor
- 512-MB, 1-GB or 2-GB SDRAM memory – 2-GB maximum memory capacity
- Onboard IDE controller for optional internal CD-ROM drive
- Onboard U160 SCSI adapter for optional internal disk drive
- Onboard dual 10/100 BaseT Ethernet ports
- Two 2/3-length 64-bit PCI expansion slots
- One 3.5″ x 1″ hard disk drive bay and optional CD-ROM drive
- Internal storage capacity up to 72.8 GB (SCSI)
- Integral remote system management console
- Two serial ports
- Bi-directional enhanced parallel port
- 425W (200-240V) power supply with auto-ranging AC input
- *Tru64*™ UNIX® Factory Installed Software with 90-day software product warranty; Linux®-Ready systems available
- Protected by Compaq Services, including one-year, on-site hardware with next business day response. —Certain restrictions and exclusions may apply. For details, consult the Product Information Centre at 1-888-88-COMPAQ.

1. Memory DIMMS
2. CPU0
3. CPU1
4. Hard Drive
5. CD-ROM (optional)
6. PCI Riser Card
7. PCI Options
8. I/O Daughter Card
9. Power Supply

## *Standard Features*

| | | |
|---|---|---|
| **Processor** | Two Alpha 21264A 833-MHz processor; 4-MB onboard cache per processor | |
| **Memory** (Two Banks, Four DIMM Slots per Bank) | Standard | 512 MB, 1 GB or 2 GB |
| | Maximum | 2 GB (Two 1-GB memory kits – each kit includes four industry-standard DIMMs with ECC support) |
| **Network Controller** | Two onboard 10/100 BaseT Ethernet ports, each port connection is limited to a 7-metre cable length | |
| **Expansion Slots** | PCI slots | Two 2/3 length 64-bit slots, 33 MHz – accepts PCI cards up to 8.375″ in length |
| | Storage bays | Two storage bays – one 3.5″ x 1″ hard disk drive bay and optional CD-ROM drive |
| **Storage Controller** | Onboard IDE controller for internal optional CD-ROM drive<br>Onboard Ultra3™ SCSI controller for internal storage, choice of optional storage controller | |
| **Storage** | CD-ROM | Optional |
| | Hard Drives | 18.2-GB, 36.4-GB, and 72.8-GB Ultra160 disk drives |
| **Expansion Ports** | Parallel | One bi-directional enhanced port |
| | Serial | Two serial ports: COM1 port and COM 2 port are both full-duplex asynchronous communications ports |
| **Form Factor** | 1U Rackmount<br>(H x W x D) 1.75 x 17 x 20 in/4.44 x 43 x 50 cm, 21 lb/9.4 kg | |
| **Power Supply** | 425W Power Supply | |
| **Supported Options** | A detailed summary of options supported on the AlphaServer DS20L is available at:<br>http://www.compaq.com/alphaserver/options/asDS20L/asDS20L_options.html<br>**NOTE**: This website is available in English only. | |
| **OS Support** | AlphaServer DS20L Tru64 UNIX systems include pre-installed software (V5.1A NHD4), 2-user Base license, and Open Source Internet Solutions<br>AlphaServer DS20L Linux-Ready systems ship without system software; RedHat® 7.1 may be purchased separately from a Linux distributor.<br>Minimum OS support: Compaq Tru64 UNIX V5.1A, New Hardware Delivery-4 (NHD-4) for Tru64 UNIX Version 5.1A, and the most recent Tru64 UNIX V5.1A Patch Kit.<br>Please refer to the following URL for recent updates: http://www.tru64unix.compaq.com/products.html<br>**NOTE**: This website is available in English only. | |
| **Service and Support** | Compaq Services provides a wide range of service offerings including a one-year limited warranty fully supported by a worldwide network of resellers and service providers; lifetime toll-free 7 x 24 hardware technical phone support.<br>**NOTE**: Certain restrictions and exclusions may apply. For details, consult the Product Information Centre at 1-888-88-COMPAQ. | |

## *Systems/Options*

### Step 1 – Select system

AlphaServer DS20L systems require the **mandatory** selection of the following items:

- To enable initial operating system boot, at least one AlphaServer DS20L per purchase order must include a slim CD-ROM drive (3X-PBXRZ-AA) or a management station. The remainder of the systems in the configuration can be remotely booted via the CD-ROM drive or the management station.
- A minimum of one AlphaServer DS20L Users Guide (EK-DS20L-UG) must be ordered per purchase order.
- AlphaServer DS20L is a rackmount-only system. If a rack is unavailable onsite, one must be selected from Step 6.
- For integration of more than 32 systems in a cabinet, contact C*ustom*Systems (1-800-AT-COMPAQ).
- Rackmount systems require PDU, PDU mounting kit, and power cords.

**NOTES**: Rackmount system minimum for factory integration is four.
AlphaServer DS20L minimum OS support – CompaqTru64 UNIX V5.1A, New Hardware Delivery-4 (NHD-4) for Tru64 UNIX Version 5.1A, and the most recent Tru64 UNIX V5.1A Patch Kit.
For system integration of options with 6 - 3 part numbers, contact *Custom*Systems (1-800-AT-COMPAQ).

**AlphaServer DS20L Systems**

| OS | CPU | Memory | PCI Slots | Ultra3 SCSI Controller | 2 Ethernet Ports | Hard Drive | Order No. |
|---|---|---|---|---|---|---|---|
| Tru64 UNIX | 2 x 833 MHz | 512 MB | 2 | Onboard | Onboard | Optional | DA-81BAA-EA |
| Tru64 UNIX | 2 x 833 MHz | 1 GB | 2 | Onboard | Onboard | Optional | DA-81BAA-FA |
| Tru64 UNIX | 2 x 833 MHz | 2 GB | 2 | Onboard | Onboard | Optional | DA-81BAA-GA |
| | | | | | | | |
| Linux-Ready | 2 x 833 MHz | 512 MB | 2 | Onboard | Onboard | Optional | DJ-81BAA-EA |
| Linux-Ready | 2 x 833 MHz | 1 GB | 2 | Onboard | Onboard | Optional | DJ-81BAA-FA |
| Linux-Ready | 2 x 833 MHz | 2 GB | 2 | Onboard | Onboard | Optional | DJ-81BAA-GA |

**NOTE**: 512-MB and 1-GB systems include one memory option (memory bank 0 populated) — 2-GB systems have both memory banks 0 and 1 populated, each with a 1-GB option.

### Step 2 – Select Options

#### Step 2a – System Disk Drive

- Maximum one internal disk drive.
- Internal support for 3.5″ x 1″ drives only
- For multiple system configurations that share a system disk external to system enclosure, contact Compaq *Custom*Systems (1-800-AT-COMPAQ)

**System Disk Cable Configuration Rules**

**For systems configured with a SCSI hard disk, order the following:**
One CK-DS20L-AA (One drop DS20L SCSI cable kits)

**Internal SCSI Disk Drives**

| | |
|---|---|
| 18.2-GB 10,000 rpm Ultra3SCSI 80-pin SCA2 HDD DS20Ldrive | 3X-RZ3ES-SA |
| 36.4-GB 10,000 rpm Ultra3 SCSI 80-pin SCA2 HDD DS20L drive | 3X-RZ3FS-SA |
| 72.8-GB 10,000 rpm Ultra3 SCSI 80-pin SCA2 HDD DS20L drive | 3X-RZ3GS-SA |

## *Options*

**Step 2 – Select options** *(continued)*

**Step 2b – Internal SCSI Adapter and Cable Kit –** (Internal SCSI disks require a SCSI cable kit)

| | | |
|---|---|---|
| **SCSI Adapters** (for Internal Drives) | • On-board PCI 1-channel Ultra3 SCSI adapter. Supports internal storage devices only.<br>• Single-channel SCSI adapters may only be used for internal or external drive connections, not both. Mixed cable types are not supported on the same SCSI bus. | |
| | PCI 1-channel Ultra2™ LVD SCSI adapter, HD 68-pin | 3X-KZPCA-AA |
| | PCI 2-channel multimode Ultra3 LVD SCSI adapter, VHDCI (Tru64 UNIX only) | 3X-KZPEA-DB |
| | PCI combo card – PCI 2-channel UltraSCSI single-ended adapter and 10/100 Mbit Ethernet (Tru64 UNIX only) | KZPCM-DA |
| **SCSI Cable Kit** (required for SCSI disks) | One drop DS20L SCSI cable kit | CK-DS20L-AA |

**Step 3 – Memory –** Optional

| | |
|---|---|
| • Maximum 2-GB memory<br>• Systems include two memory banks, four DIMM slots per bank, four DIMMs per memory kit | |
| 512-MB memory kit, four 168-pin, PC100, 100-MHz, 128-MB DIMMs | 3X-MS810-DA |
| 1-GB memory kit, four 168-pin, PC100, 100-MHz, 256-MB DIMMs | 3X-MS810-EA |

**Step 4 – Internal Storage –** Optional

| | |
|---|---|
| 600-MB 24X slim CD-ROM drive and installation kit | 3X-PBXRZ-AA |

**Step 5 – Documentation** – Optional

| | |
|---|---|
| AlphaServer DS20L Users Guide | EK-DS20L-UG |

**Step 6– M-series Cabinets –** Optional

M-series cabinet enclosures support up to 40 AlphaServer DS20L systems (H9A15) and/or up to three *Storageworks*™shelves by Compaq. For orders where more than 32 systems in a cabinet are required (33 to 40 systems), contact Compaq *Custom*Systems (1-800-AT-COMPAQ). M-series enclosures require selection of the following items:

- H9A10 or H9A15 Cabinet, 240V
- Minimum four AlphaServer DS20L systems for rack configuration
- Rack kit for each system (or quad rack for every four systems)
- PDU, PDU mounting bracket, and power cords needed according to configuration chart
- Cabinet front door based on cabinet height
- Factory integration
- Ballast kit according to the configuration chart

Up to six DS-SL13R shelves are supported; shelves cannot be mounted behind AlphaServer DS20L systems.

**Step 6 – M-series Cabinets –** Optional *(continued)*

**Cabinet Configuration Chart for AlphaServer DS20L Rackmount Systems with BA356 (4U) or DS-SL13R (3U)**

- Disk shelves cannot be mixed in same cabinet
- Minimum number of systems orderable in a rack is four
- For every eight systems, one PDU is required (3R-A3958-AA, North America/Japan, 3R-A3959-AA, International)
- For every system, one power cord is required (BN35S-4E)
- For every PDU, one rack mounting kit is required (3X-H7211-AA)

**NOTE**: For additional configurations beyond those listed in the following charts, contact C*ustom*Systems.

| **Cabinet** | **Rack Kits**<br>3X-PBX01-BD<br>quad | **Rack kit**<br>3X-PBX01-BE<br>single | **Systems 1U** | **DS-SL13R Shelves**<br>**@ 3U** |
|---|---|---|---|---|
| **H9A10, H9A15** | 1 for each set of 4 systems | 1 for each additional system | Per rack | Per rack |
| **H9A10-MG** | 1 or 2 | 0 to 3 | 4-8 | 6 |
| | 2 or 3 | 0 to 3 | 9-12 | 5 |
| | 3 or 4 | 0 to 3 | 13-16 | 4 |
| | 4 or 5 | 0 to 3 | 17-20 | 3 |
| | 5 or 6 | 0 to 3 | 21-24 | 2 |
| | 6 or 7 | 0 to 3 | 24-28 | 1 |
| | 7 or 8 | 0 to 3 | 29-32 | 0 |
| **H9A15-MG** | 1 to 2 | 0 to 3 | 5-8 | 6 |
| | 2 or 3 | 0 to 3 | 9-12 | 5 |
| | 3 or 4 | 0 to 3 | 13-16 | 4 |
| | 4 or 5 | 0 to 3 | 17-20 | 3 |
| | 5 or 6 | 0 to 3 | 21-24 | 3 |
| | 6 or 7 | 0 to 3 | 25-28 | 3 |
| | 7 or 8 | 0 to 3 | 29-32 | 2 |

**NOTE**: For **H9A10** cabinets: When four systems are ordered (minimum number of systems orderable), two ballast kits are required. When five or six systems are ordered, one ballast kit is required. When seven systems or above are ordered, no ballast kits are required.

For **H9A15** cabinets: When four systems are ordered (minimum number of systems orderable), two ballast kits are required. When five, six, or seven systems are ordered, one ballast kit is required. When eight systems or above are ordered, no ballast kits are required.

**Step 6 – M-series Cabinets –** Optional *(continued)*

**Cabinet Configuration Chart for AlphaServer DS20L Rackmount Systems with Storageworks RA3000 and Disk Shelves by Compaq**

- 12U of vertical cabinet space is reserved for one RA3000 controller shelf and up to four disk shelves mounted in top of cabinet, front to back; an additional 2U of vertical space is required for RA3000 controller shelf UPS.
- RAID Array 3000 and UPS each require a separate PDU
- Disk shelves can be a combination of RA3000 DS-SWXRA-GN disk shelves and Storageworks BA36R-RC/RD disk shelves
- RA3000 controller shelf supports a maximum of four DS-SWXRA-GN disk shelves; third and fourth DS-SWXRA-GN disk shelf ordered will be installed in rear of M-series cabinet; rear mounted shelves require that a 2-metre SCSI cable (BN37A-02) be ordered separately.
- Systems are supported in remaining vertical space. The table below considers space requirements for the RA3000, systems, PDU kits, and UPS.
- 1.75″ or 1U space required for each system unit.

| Cabinet | Mounting Kit | Cabinet Height/Space | Systems | RA3000 + Shelves |
|---|---|---|---|---|
| H9A10-MG | 3X-PBX01-BE | 54.2″/32U | 4-8 | 1 + 4 (maximum) |
| | | | 9-14 | 1 + 2 |
| | | | 15-23 | 1 + 1 (basic) |
| H9A15-MG | 3X-PBX01-BE | 66.5″/40U | 5-16 | 1 + 4 (maximum) |
| | | | 17-22 | 1 + 3 |
| | | | 23-24 | 1 + 2 |
| | | | 25-30 | 1 + 1 (basic) |

**H9A10 Cabinet**

**H9A15 Cabinet**

| | | |
|---|---|---|
| **M-series Cabinet Descriptions** | 67″ cabinet enclosure with 54.2″ or 33U of usable vertical space; includes rear door | H9A10-MG |
| | 79″ cabinet enclosure with 66.5″ or 40U of usable vertical space; includes rear door | H9A15-MG |

| | | |
|---|---|---|
| **M-series Cabinet Rackmount Kits for AlphaServer DS20L** | (Refer to the Cabinet Configuration Charts above for configuration rules) | |
| | Single rack kit for AlphaServer DS20L | 3X-PBX01-BE |
| | Quad rack kit for AlphaServer DS20L | 3X-PBX01-BD |

**Step 6 – M-series Cabinets** – Optional *(continued)*

| | | |
|---|---|---|
| **M-series Cabinet PDU, PDU mounting bracket and power cord** | Power Distribution Unit (North America/Japan) | 3R-A3958-AA |
| | Power Distribution Unit (International) | 3R-A3959-AA |
| | Power Distribution Unit mounting bracket | 3X-H7211-AA |
| | M-series Cabinet Rackmount Power Cord (US/Canada, Non-U.S. and Japan) | BN35S-4E |
| **Storageworks Shelves Supported in M-series Cabinets** – Optional | Storageworks Model 4314R, 4314T and 4354R Ultra3 SCSI (LVD) single-bus and split-bus Universal drive shelves; refer to Compaq Storageworks Enclosure 4300 Family QuickSpecs when configuring shelves. When selecting a DS-SL13R-xx split-bus shelf, two SCSI channels are required from selected storage adapters. BN38C-05 cable is required per channel. | |
| | Storageworks Model 4314R Ultra3 SCSI (LVD) single-bus Universal drive rackmount shelf, U.S. – no support for Model 4314R single-bus shelves with 3X-KZPEA-DB adapter (190209-001) | DS-SL13R-AA (All regions except Japan) |
| | Storageworks Model 4314R Ultra3 SCSI (LVD) single-bus Universal drive rackmount shelf, Japan – no support for Model 4314R single-bus shelves with 3X-KZPEA-DB adapter | 190209-291 (U.S./Canada Orders for Japan variant) |
| | | DS-SL13R-AJ (Non U.S./Canada orders for Japan variant) |
| | Storageworks Model 4354R Ultra3 SCSI (LVD) split-bus drive rackmount shelf, U.S. (190211-001) | DS-SL13R-BA (All regions except Japan) |
| | Storageworks Model 4354R Ultra3 SCSI (LVD) split-bus Universal drive rackmount shelf, Japan | 190211-291 (U.S./Canada orders for Japan variant) |
| | | DS-SL13R-BJ (Non U.S./Canada orders for Japan variant) |
| **M-series Cabinet Rear Cabinet Extender** | • Requires selection of one cabinet extender for each H9A10 or H9A15 cabinet | |
| | Rear cabinet extender, carbon black, for H9A10-MG cabinets | H9C10-ZE |
| | Rear cabinet extender, carbon black, for H9A15-MG cabinets | H9C15-ZE |
| **M-series Cabinet Front Doors** | • Requires selection of door based on cabinet height | |
| | Front door, carbon black, for H9A10-MG cabinet enclosure | H9C10-ZF |
| | Front door, carbon black, for H9A15-MG cabinet enclosure | H9C15-ZF |
| **M-series Cabinet Joiner Kit** | Joiner kit, H9A10 cabinet | H9C10-JD |
| | Joiner kit, H9A15 cabinet | H9C15-JD |
| **M-series Cabinet Factory Integration** | • Factory integration required | |
| | Factory integration of systems and storage devices assembled and configured in cabinet enclosure in H9A10 or H9A15 cabinet enclosures | YS-ASCAA-AA |
| **M-series Cabinet Ballast Kits** | • Ballast is added to a cabinet at particular locations for specific configurations to meet safety regulations for installation, operation, and service; see the Notes below the Cabinet Configuration Charts in Step 5. | |
| | Two 35 to 40 lb/15.8 to 18 kg steel plates | H9C10-MC |
| **M-series Cabinet Rackmount Power Cord** | • Used for both PDUs | |
| | U.S./Canada, Non-U.S. and Japan | BN35S-4E |

## *Options*

**Step 6 – M-series Cabinets** – Optional *(continued)*

**Compaq *Custom*Systems Support**

- Cabinets containing systems and storage must be assembled by qualified assemblers: Compaq Manufacturing, Compaq *Custom*Systems, or an authorized Compaq Certified Integration Partner.
- For custom integration of systems, options, cabinet expansion offerings, and additional Compaq and third party devices, or for other cabinets, doors, and trim kits of a different colour, contact Compaq *Custom*Systems at 1-800-AT COMPAQ, or your local authorized Compaq Certified Integration Partner.

**Step 7 – External Storage** – Optional

**UltraSCSI Configuration Rules**

- UltraSCSI configurations require UltraSCSI components (controllers, adapters, shelves, disks, and cables)
- UltraSCSI adapters and RAID controllers support UltraSCSI disks at UltraSCSI speeds in UltraSCSI top gun blue shelves (DS-BA356-xx)

**UltraSCSI Storageworks Pedestals**

- UltraSCSI top gun blue pedestals provide support for UltraSCSI disk drives; pedestal is available in single-bus or split-bus configurations and includes a personality module and 180W power supply
- UltraSCSI shelf supports: seven 3.5″ hard disk drives, or one 5.25″ device and four 3.5″ hard disk drives, or two 5.25″ devices and one 3.5″ hard disk drive
- Installation of redundant power supply reduces number of 3.5″ drive slots by one

| | |
|---|---|
| UltraSCSI single-ended pedestal, single-bus personality module, 180W power supply | DS-BA356-KF |
| UltraSCSI single-ended pedestal, split-bus personality module, 180W power supply | DS-BA356-KG |
| UltraSCSI pedestal, single-channel differential personality module, 180W power supply | DS-BA356-KH |
| 180W power supply, or redundant power, includes 120V North American and 240V IEC power cord | CK-BA35X-HH |

**Tabletop Tape Drives**

- Tape drives require LVD or single-ended UltraSCSI adapter and country-specific power cord

| | |
|---|---|
| 12/24-GB 4-mm DAT narrow single-ended tabletop SCSI tape, includes 120V North American power cord, requires BN31W-xx SCSI cable | DS-TLZ10-DB |
| 20/40-GB 4-mm DAT LVD tabletop SCSI tape – North America (Tru64 UNIX only) | 157770-001 |
| 20/40-GB 4-mm DAT LVD tabletop SCSI tape – International (Tru64 UNIX only) | 157770-B31 |
| 20/40-GB 4-mm DAT LVD tabletop SCSI tape – Japan (Tru64 UNIX only) | 157770-291 |
| 35/70-GB AIT LVD tabletop drive unit, U.S. | 216885-001 |
| 35/70-GB AIT LVD tabletop drive unit, International | 216885-B31 |
| 35/70-GB AIT LVD tabletop drive unit, Japan | 216885-291 |
| 50/100-GB 8-mm AIT LVD tabletop SCSI tape drive – North America (Tru64 UNIX only) | 157767-001 |
| 50/100-GB 8-mm AIT LVD tabletop SCSI tape drive – International (Tru64 UNIX only) | 157767-B31 |
| 50/100-GB 8-mm AIT LVD tabletop SCSI tape drive – Japan (Tru64 UNIX only) | 157767-291 |
| 20/40-GB SCSI (DLT 4000E) tabletop tape drive (Tru64 UNIX only) | TZ88N-TA |
| 35/70-GB SCSI (DLT 7000) tabletop tape drive (Tru64 UNIX only) | DS-TZ89N-TA |
| 40–80-GB SCSI LVD (DLT 8000) tabletop drive, Worldwide | 146197-B21 |
| 40–80-GB SCSI LVD (DLT 8000) tabletop drive, Japan | 146197-291 |
| 110/220-GB SDLT Ultra2 LVD tabletop tape drive, U.S. | 192103-001 |
| 110/220-GB SDLT Ultra2 LVD tabletop tape drive, International | 192103-B31 |
| 110/220-GB SDLT Ultra2 LVD tabletop tape drive, Japan | 192103-291 |
| 20/40-GB 4-mm DAT LVD hot plug tape | 3R-A2780-AA |
| 35/70-GB AIT LVD hot plug tape | 3R-A2396-AA |
| 50/100-GB AIT LVD hot plug tape | 3R-A2779-AA |

## *Options*

**Step 7 – External Storage –** Optional *(continued)*

**Storage Controllers/Adapters for External Storageworks Shelves**

- PCI controllers/adapters use one PCI slot

| | Maximum # Supported | | |
|---|---|---|---|
| | **Tru64 UNIX** | **Linux** | |
| PCI-to-Fibre Channel host bus adapter | 1 | - | DS-KGPSA-CA |
| Fibre Channel cable xx=02, 05, 15, 30, 50 metre | | | BNGBX-xx |
| | | | |
| PCI 2-port UltraSCSI single-ended adapter and 10/100 Mb Ethernet combo adapter; includes internal 68-pin and 50-pin HD connectors and two external 68-pin VHDCI SCSI connectors, requires BN37A-xx cable to connect to single-ended UltraSCSI shelf | 2 | - | KZPCM-DA |
| VHDCI male-to-VHDCI male UltraSCSI cable, xx = 02, 2E [2.5], 03, 05, 10, 20 metre | | | BN37A-xx |
| | | | |
| PCI 1-port Ultra2 SCSI (LVD) single-ended adapter, 68-pin HD connector, requires BN38C cable (2 to 20 metre) to connect to single-ended UltraSCSI shelf | 2 | 2 | 3X-KZPCA-AA |
| 68-pin HD male-to-VHDCI male UltraSCSI cable; xx = 02, 03, 05, 10, 20 metre | | | BN38C-xx |
| | | | |
| PCI 2-channel LVD multimode Ultra3 SCSI adapter, VHDCI | 2 | - | 3X-KZPEA-DB |
| | | | |
| PCI 1-port UltraSCSI differential adapter; includes external 68-pin HD connector, requires BN38C-xx cable (2 to 25 metre) to connect adapter to differential UltraSCSI shelf or RAID controller | 2 | 2 | 3X-KZPBA-CC |
| 68-pin HD male-to-VHDCI male UltraSCSI cable; xx = 02, 03, 05, 10, 20, 25 metre | | | BN38C-xx |

**Storageworks Fibre Channel Switchs**

| | |
|---|---|
| Fibre Channel SAN Switch, 8 ports with Fabric Operating Software (DS-DSGGB-AA) | 158222-B21 |
| Fibre Channel SAN Switch, 16 ports with Fabric Operating Software (DS-DSGGB-AB) | 158223-B21 |
| Fibre Channel SAN Switch 8-EL (DS-DSGGC-AA) | 176219-B21 |
| Fibre Channel SAN Switch 16-EL (DS-DSGGC-AB) | 212776-B21 |

**NOTE**: For above switches, refer to http://www.compaq.com/products/quickspecs/10457_na/10457_na.HTML for more information.
**NOTE**: This website is available in English only.

**Removable Media Devices for External Storageworks Shelves**

| | |
|---|---|
| 12/24-GB 4-mm DAT narrow SCSI tape drive in Storageworks carrier | DS-TLZ10-VA |
| 20/40-GB DLT tape drive in Storageworks carrier (Tru64 UNIX only) | TZ88N-VA |
| 40/80-GB DLT tape drive in Storageworks carrier | DS-TZ90N-VW |

**Storageworks UltraSCSI Shelves**

- Requires selection of UltraSCSI adapter and SCSI cable
- Storageworks Shelf supports seven 3.5″ x 1.6″ hard disk drives; with the addition of redundant power supply, six drives are supported.
- Storageworks shelf kits are mounted back-to-back cabinets

| | |
|---|---|
| Storageworks UltraSCSI single-bus shelf kit | BA36R-RC |
| Storageworks UltraSCSI split-bus shelf kit | BA36R-RD |
| 3-metre SCSI cable | BN37A-03 |

## *Options*

**Step 7 – External Storage** – Optional *(continued)*

| | | |
|---|---|---|
| **Disk Drives supported in Storageworks UltraSCSI Shelves** | • Maximum six (10,000 rpm) or seven (7,200 rpm) drives supported in Storageworks shelf<br>• One power supply supports a maximum of six 10,000 rpm disks | |
| | 9.1-GB 10,000 rpm UltraSCSI drive | DS-RZ1DD-VW |
| | 18.2-GB 10,000 rpm UltraSCSI drive | DS-RZ1ED-VW |
| | 36.4-GB 10,000 rpm UltraSCSI drive | DS-RZ1FC-VW |
| **Storageworks Universal Drive Shelves – Model 4314R** (Ultra3) | Storageworks Model 4314R Ultra3 rackmount single bus, U.S. and International | DS-SL13R-AA |
| | Same as above, Japan | DS-SL13R-AJ |
| **Storageworks Universal Drive Shelves – Model 4354R** (Ultra3) | Storageworks Model 4354R Ultra3 rackmount dual bus, U.S. and International | DS-SL13R-BA |
| | Same as above, Japan | DS-SL13R-BJ |
| **Storageworks Universal Drive Shelves Single Bus – Model 4314T Tower** (Ultra3) | Storageworks Model 4314T, Ultra3, Universal Drive Shelves Single Bus, Tower, U.S. | DS-SL13T-AA |
| | Same as above, Tower, International | DS-SL13T-AB |
| | Same as above, Japan | DS-SL13T-AJ |
| **Storageworks Universal Drive Shelves Single Bus – Model 4300 Upgrade I/O Modules** | Storageworks Model 4300 Ultra 160 single-port LVD I/O module | DS-SE3ZJ-DA |
| | Storageworks Model 4300 Ultra 160 dual-port LVD I/O module | DS-SE3ZJ-SA |
| **Universal Disk Drives Supported in Model 42xx/43xx Universal Drive Shelves** | 18.2-GB Ultra3 (LVD) 15,000 rpm 1.0″ Universal drive | 3R-A1543-AA |
| | 18.2-GB Ultra 3 (LVD) 10,000 rpm 1.0″ Universal drive | 3R-A0585-AA |
| | 36.4-GB Ultra3 (LVD) 10,000 rpm 1.0″ Universal drive | 3R-A0919-AA |
| | 36.4-GB Ultra3 (LVD) 15,000 rpm 1.0″ Universal drive | 3R-A3079-AA |
| | 72.8-GB Ultra3 (LVD) 10,000 rpm 1.0″ Universal drive | 3R-A3050-AA |

**Step 8 – UltraSCSI RAID Array Controllers and UltraSCSI RAID Packaged Solutions** – Optional

| | | |
|---|---|---|
| **RAID Array 3000 Rackmount Controller Shelf** | • Selection of RA3000 Solutions Software Kit is required<br>• Supported SCSI adapter: 3X-KZPBA-CC PCI 1-port UltraSCSI differential adapter | |
| | RA3000 rackmount controller shelf, blue, with one controller, 110V<br>**Includes**: UltraSCSI BA356 controller shelf, one HSZ22 2-channel controller with 16-MB cache, integrated Environmental Monitoring Unit (EMU), two 180W power supplies, two dual-port host differential UltraSCSI I/O SBBs, dual-channel UltraSCSI single-ended personality modules, one 120V 1000VA rackmount UPS, 5-m host SCSI cable (BN37A-05), BN38E-0B adapter, UPS serial cable, PC connection serial cable (DB-9), two 68-pin HD tri-link adapters (H8861-AA), two North American power cords, and RETMA mounting bracket (disk shelves and disks not included)<br>**Requires**: Solutions Software Kit for platform, host adapter, RA3000 disk shelf, and disks<br>**Options**: Second HSZ22 controller, up to four additional RA3000 disk shelves, cache memory upgrade | DS-SWXRA-GH |
| | RA3000 rackmount controller shelf, blue, with one controller, 230V<br>**Includes**: UltraSCSI BA356 controller shelf, one HSZ22 2-channel controller with 16-MB cache, integrated Environmental Monitoring Unit (EMU), two 180W power supplies, two dual-port host differential UltraSCSI I/O SBBs, dual-channel UltraSCSI single-ended personality modules, one 230V 1000VA rackmount UPS, 5-m host SCSI cable (BN37A-05), BN38E-0B adapter, UPS serial cable, PC connection serial cable (DB-9), two 68-pin HD tri-link adapters (H8861-AA), RETMA mounting bracket (disk shelves and disks not included)<br>**Requires**: Solutions Software Kit for platform, two country-specific power cords, host adapter, RA3000 disk shelf, and disks<br>**Options**: Second HSZ22 controller, up to four additional RA3000 disk shelves, cache memory upgrade | DS-SWXRA-GK |
| **RAID Array 3000 Rackmount Disk Shelf** | • Select one to four disk shelves<br>• Third and fourth DS-SWXRA-GN disk shelf ordered will be installed in rear of M-series cabinet; rear mounted shelves require that a 2-m BN37A-02 SCSI cable be ordered | |
| | RA3000 rackmount disk shelf, blue, includes UltraSCSI BA356 disk shelf, two 180 W power supplies, single-ended UltraSCSI personality card, one half metre SCSI cable (BN37A-0E), two North American power cords, and RETMA mounting bracket (disks not included); order two country-specific power cords for non-North American use | DS-SWXRA-GN |
| **HSZ22 Controller** | • Note that second HSZ22 controller ordered is field installed only, not factory installed; requires BN37A-0E SCSI jumper cable be ordered separately | |
| | Second HSZ22 controller with 16-MB cache and two 16-MB SIMMs for mirror cache, one BN37A-05 5-metre UltraSCSI cable, one BN38E-0B cable adapter – field installable only; note that second HSZ22 controller does not require additional Solution Software Kit | DS-HSZ22-AA |
| | Second HSZ22 controller with 32-MB cache and two 32-MB SIMMs for mirror cache, one BN37A-05 5-metre UltraSCSI cable, one BN38E-0B cable adapter – field installed only; note that second HSZ22 controller does not require additional Solution Software Kit | DS-HSZ22-AB |
| **RA3000 Solutions Software Kit** | • Storageworks Command Console (SWCC) software<br>• Platform specific software<br>• Installation scripts and installation documentation | |
| | RA3000 Solutions Software Kit for Tru64 UNIX | QB-5TWAB-SA |

**Step 8 – UltraSCSI RAID Array Controllers and UltraSCSI RAID Packaged Solutions –** Optional *(continued)*

| | | |
|---|---|---|
| **HSG80 External Controllers** | Fibre Channel controller (DS-HSG80-BJ), includes 2-MB cache expandable to 128 MB; requires 128697-B21 HSG80 ACS V8.4F software kit or 128698-B21 V8.4P software kit for each HSG80 ordered | 380672-B21 |
| | Fibre Channel controller (DS-HSG80-BH), includes 64-MB cache expandable to 128 MB; requires 128697-B21 HSG80 ACS V8.4F software kit or 128698-B21 V8.4P software kit for each HSG80 ordered | 380671-B21 |

**ESA 12000, RAID Array 8000**

- Enterprise Storage Array 12000 and RAID Array 8000 (HSZ80) product set are supported on AlphaServer DS20L systems
- Supported SCSI adapter for HSZ80 – 3X-KZPBA-CC PCI 1-port UltraSCSI differential adapter
- Supported Fibre Channel adapter for HSG80 –DS-KGPSA-CA/DA PCI 1-port Fiber-Channel adapter

**Step 9 – Networks and Communications –** Optional

- Systems include dual embedded 10/100 BaseT Ethernet ports, each port connection is limited to a 7-metre cable length (BN25G-07 cable must be ordered separately)
- Additional Ethernet ports can be added using available PCI slots

| | **Maximum # Supported** | | |
|---|---|---|---|
| | **Tru64 UNIX** | **Linux** | |
| PCI 1-port 10/100-Mb Ethernet adapter (Twisted Pair) | 2 | 2 | 3X-DE600-AA |
| PCI 2-port 10/100-Mb Ethernet adapter (Twisted Pair) | 2 | 2 | 3X-DE602-AA |
| PCI 2-port 10/100-Mb Ethernet adapter, UTP | 1 | 1 | 3X-DE602-FA |
| Cable for 10BaseT twisted pair connection | | | BN25G-07 |
| | | | |
| PCI Gigabit Ethernet adapter, SC connectors, MMF, no boot support | 2 | 2 | DEGPA-SA |
| PCI Gigabit Ethernet adapter, UTP, no boot support | 2 | 2 | DEGPA-TA |
| SC-to-SC dual fiber optic cable | | | BN34B-xx |
| | | | |
| PCI FDDI adapter, single attachment station (SAS), multi-mode fiber (MMF), SC connector | 2 | - | 3X-DEFPA-AC |
| PCI FDDI adapter, DAS, MMF, SC connector | 2 | - | 3X-DEFPA-DC |
| MIC-SC dual fiber optic cable mm, pp xx = length in metres | | | BN34D-xx |
| SC-to-SC dual fiber optic cable mm, pp xx = length in metres | | | BN34B-xx |
| PCI FDDI adapter, SAS, TP-PMD, requires BN25H-03 cable | 2 | - | 3X-DEFPA-UC |
| PCI FDDI dual adapter, DAS, TP-PMD, requires BN25H-03 cable | 2 | - | 3X-DEFPA-MC |
| 3 metre (9.8″) FDDI cross-over cable mm, pp xx = length in metres | | | BN25H-03 |
| | | | |
| PCI 4-port asynchronous controller; maximum two PBXDA-xx controllers per system | 2 | - | PBXDA-AA |
| PCI 8-port asynchronous controller, cable included; maximum two PBXDA-xx controllers per system | 2 | - | PBXDA-AB |
| PCI 16-port asynchronous controller, cable included; maximum two PBXDA-xx controllers per system | 2 | - | PBXDA-AC |

## *Options*

**Step 10 – Console Terminal –** Optional

- Any terminal can be used as a console device
- Third-party console devices require an EIA-232 25-pin DSUB connector

| | |
|---|---|
| VT510 video terminal; requires H8575-x cable, either male or female | VT510-xx |
| Console cable, female connector | H8575-A |
| Console cable, male connector | H8575-D |
| Console cable, male connector (IBM compatible) | H8975-E |

**Step 11 – Software –** Required selection of media and online documentation kit for first system on site

- Software Processor Code = E

**Tru64 UNIX**

- Tru64 UNIX systems include Tru64 UNIX V5.1A NHD4, 2-user Base license and Open Source Internet Solutions

**When using Tru64 UNIX V5.0 or later**

| | |
|---|---|
| Tru64 UNIX media and online documentation kit on CD-ROM | QA-6ADAA-H8 |
| Tru64 UNIX full hard copy documentation | QA-6ADAA-GZ |
| *TruCluster*™Plus Software package with licenses for TruCluster Server, Storageworks Logical Storage Manager and AdvFS Utilities | QP-6R9AC-AA |
| TruCluster Server license | QL-6BRAC-AA |
| AdvFS Utilities License | QL-0EGAE-AA |
| Logical Storage Manger License | QL-2GVAE-AA |
| Advanced Server for Tru64 UNIX, 25 client concurrent use license | QL-5U29M-3D |
| Advanced Server for Tru64 UNIX, 50 client concurrent use license | QL-5U29M-3E |
| Advanced Server for Tru64 UNIX, 100 client concurrent use license | QL-5U29M-3F |
| Advanced Server for Tru64 UNIX, 250 client concurrent use license | QL-5U29M-3G |
| Advanced Server for Tru64 UNIX, 500 client concurrent use license | QL-5U29M-3H |
| Layered products media and documentation for Tru64 UNIX on CD-ROM | QA-054AA-H8 |
| DECnet/OSI end-system license for Tru64 UNIX | QL-MTJAE-AA |
| DECnet/OSI extended function license for Tru64 UNIX | QL-MTKAE-AA |

**Linux CD-ROM Kit**

| | |
|---|---|
| RedHat Linux CD-ROM kit | QA-6M1AA-H8 |

**Step 12 – Hardware and Software Supplemental Support Services**

- Systems include one-year hardware warranty, on-site, with 5 x 9, 24-hour response time
- Select one of the optional *CarePaq*™ Priority Service Packages described below which best supports the customer's operational requirements for system availability.
- Options ordered as part of "Initial System Sale" take on warranty of the enclosure; options added after "Initial System Sale" take on warranty of enclosure until enclosure warranty ends
- All unique AlphaServer DS20L options have a minimum of one-year Return-to-Compaq warranty

**NOTE**: Certain restrictions and exclusions may apply. For details, consult the Product Information Centre at 1-888-88-COMPAQ.

**CarePaq Priority Services**

CarePaq Priority Services are available for Compaq AlphaServer systems running Compaq Tru64 UNIX or *OpenVMS*™ operating system. Priority Services are designed for the growing number of customers who need support beyond the basic warranty. It offers five services packages - Priority, , Priority Silver, Priority Gold, and Priority Executive with coverage for both Principal servers systems and SSPs (Subsequent System Packages) - that meet a full range of customer support requirements.

**Program Features – Principal Server**

**Priority**

- 9 x 5 HW/SW support
- 4-hour response on-site hardware support
- 2-hour response for Bronze software support
- License Subscription for Compaq O/S software and embedded L/P (i.e., EIS for OpenVMS, unlimited users, and server extensions for Tru64 UNIX)
- Condist update distribution for OpenVMS or Tru64 UNIX and their layered products. (Layered products not on Condist can be ordered separately.)

**Priority Silver**

- 24 x 7 HW Support with Named Engineer, 4-hour response
- 24 x 7 Silver SW Support - Named Account Rep, 1-hour response Monday – Friday, 8AM-5PM local time; 2-hour response remaining hours
- License Subscription for Compaq O/S software and embedded L/P (i.e., EIS for OpenVMS, unlimited users, and server extensions for Tru64 UNIX)
- Condist update distribution for OpenVMS or Tru64 UNIX and their layered products. (Layered products not on Condist can be ordered separately.)
- Technical newsletter and SW activity review
- Proactive Patch Notification
- One (1) System Healthcheck per year

**Priority Gold**

- 24 x 7 HW support with Named Engineer, 4-hour response for on-site support
- 24 x 7 Gold SW support - Named Account Rep
- 30-minute callback (critical); 1-hour callback (non-critical)
- License Subscription for Compaq O/S software and embedded L/P (i.e., EIS for OpenVMS, unlimited users, and server extensions for Tru64 UNIX)
- Condist update distribution for OpenVMS or Tru64 UNIX and their layered products. (Layered products not on Condist can be ordered separately.)
- Technical newsletter, SW activity review and 10 hours Upgrade impact planning
- Proactive Revision Management
- Two (2) System Healthchecks per year
- Mandatory pre-qualification required

**Step 12 – Hardware and Software Supplemental Support Services** *(continued)*

**CarePaq Priority Services** *(continued)*

**Program Features – Principal Server** *(continued)*

**Priority Gold Executive**

- 24 x 7 HW support with Named Engineer, 2-hour response for on-site support
- 24 x 7 Gold SW support - Named Account Rep
- 30-minute callback (critical); 1-hour callback (non-critical)
- License Subscription for Compaq O/S software and embedded L/P (i.e., EIS for OpenVMS, unlimited users, and server extensions for Tru64 UNIX)
- Software update distribution on CD-ROM: OpenVMS or Tru64 UNIX and their layered products (L/P not on CDDS are ordered separately)
- Technical newsletter, SW activity review and 10 hours Upgrade impact planning
- Proactive Revision Management
- Two (2) System Healthchecks per year
- Customer site must be within 25 miles of a Compaq service location
- Mandatory pre-qualification required

**Program Features – Additional Services**

SSPs (Subsequent System Packages)

- For Priority, Priority Silver, Priority Gold and Priority Gold Executive
- Hardware Support at same level as corresponding package for Principal server
- License Subscription: Compaq O/S (where applicable)
- Telephone support through Principal server covered by full support package

Installation

- Preinstallation review
- Unpacking of equipment
- Assemble and test
- Basic product usage into
- No software installation added

Installation & Startup Compaq O/S

- Preinstallation review
- Unpacking of equipment
- Assemble and test
- Basic product usage info
- Install operating systems
- Product Configuration
- Print & Network access
- Orientation

| Model/CarePaq Priority Service | Principal Server 1 Year | Principal Server 3 Years | Subsequent Systems 1 Year | Subsequent Systems 3 Years |
|---|---|---|---|---|
| Priority | FM-A01LE-12 | FM-A01LE-36 | FM-A21LE-12 | FM-A21LE-36 |
| Priority Silver | FM-A04LE-12 | FM-A04LE-36 | FM-A24LE-12 | FM-A24LE-36 |
| Priority Gold | FM-A08LE-12 | FM-A08LE-36 | FM-A28LE-12 | FM-A28LE-36 |
| Priority Gold Exec. | FM-A09LE-12 | FM-A09LE-36 | FM-A29LE-12 | FM-A29LE-36 |
| Installation | FM-AINST-LE | FM-AINST-LE | FM-AINST-LE | FM-AINST-LE |
| Installation & Startup | FM-ASTAR-LE | FM-ASTAR-LE | FM-ASTAR-LE | FM-ASTAR-LE |

**Step 12 – Hardware and Software Supplemental Support Services** *(continued)*

**CarePaq Priority Services** *(continued)*

**Program Features – Principal Server** *(continued)*

**NOTES**:

- DS20L AlphaServer systems include one year hardware warranty with 5x9, on-site Next Business Day response.
- New Compaq hardware options internal to the AlphaServer enclosure receive the same warranty or service level as purchased with the server.
- External storage devices/cabinets carry their own level of warranty and should be quoted separately for uplifted warranty services.
- In addition to the CarePaq Priority Services, uplifted warranty Supplemental Services are available for separate hardware and software support. For more information on Hardware and Software Supplemental Services and other Compaq service options available for AlpahServers, please consult your Compaq Sales Account Manager or visit http://www.compaq.com/services/

**NOTE**: This website is available in English only.

**NOTE**: Certain restrictions and exclusions may apply. For details, consult the Product Information Centre at 1-888-88-COMPAQ.

**Software Supplemental Support**

- Systems include 90-day Conformance to SPD and Telephone Advisory Support; select optional Software Supplemental Support Services if required
- Software service upgrades for Tru64 UNIX include advisory and remedial software support with new version license rights for operating system for time period indicated

| **Software Supplemental Services** | |
|---|---|
| 1-year, 5 x 9 Bronze Software Supplemental Support | FM-D10U9-12 |
| 3-year, 5 x 9 Bronze Software Supplemental Support | FM-D10U9-36 |
| 5-year, 5 x 9 Bronze Software Supplemental Support | FM-D10U9-60 |
| 1-year, 7 x 24 Bronze Software Supplemental Support | FM-D10US-12 |
| 3-year, 7 x 24 Bronze Software Supplemental Support | FM-D10US-36 |
| 5-year, 7 x 24 Bronze Software Supplemental Support | FM-D10US-60 |
| 1-year, Bronze Node Software Supplemental Support | FM-D10UN-12 |
| 3-year, Bronze Node Software Supplemental Support | FM-D10UN-36 |
| 5-year, Bronze Node Software Supplemental Support | FM-D10UN-60 |

## *Technical Specifications*

| | | | |
|---|---|---|---|
| **Physical Characteristics** | **Dimensions** (W x D x H) | 17.5 x 20.5 x 1.75 in/44.5 x 52 x 4.5 cm | |
| | **Shipping Dimensions** | 23.6 x 21.7 x 10.1 in/60 x 55 x 26 cm | |
| | **Weight** | 21 lb/9.4 kg | |

| | | | |
|---|---|---|---|
| **Cabinets** | | **H9A10 M-series** | **H9A15 M-series** |
| | **Dimensions** (H x W x D) | 67 x 23.6 x 41.5 in/170 x 60 x 10.5 cm | 79 x 23.6 x 41.5 in/200 x 60 x 10.5 cm |
| | **Shipping Dimensions** | 73 x 36 x 48 in /185.5 x 91.5 x 122 cm | 85 x 36 x 48 in/216 x 91.5 x 122 cm |
| | **Weight** | Configuration dependent | 1,000 lb/450 kg |
| | **Shipping Weight** | Configuration dependent, maximum payload 1,000 lb | 1,056 lb/550 kg (normal)<br>1,408 lb/640 kg (maximum) |

| | | | |
|---|---|---|---|
| **System Unit** | **ENVIRONMENTAL** | | |
| | **Temperature** | **Operating** (Tower, Rackmount) | 50° to 95°F/10° to 35°C |
| | | **NOTE**: Maximum operating temperature at sea level; reduce by 1.8°C per 1,000m (1.0°F per 1,000 ft) above sea level. | |
| | | **Non-operating** | 41° to 122°F/5° to 50°C |
| | | **Storage** (60 days) | –40° to –151°F/–40 to –66°C |
| | | **Rate of change** (operating) | 20°F/hr/11°C/hr |
| | **Relative Humidity** | **Operating** | 10% to 90% RH |
| | | **Non-operating** | 10% to 95% |
| | | **Storage** (60 days) | 10% to 95% |
| | **Maximum Wet Bulb Temperature** | **Operating** | 82°F/28°C |
| | | **Non-operating** | 90°F/32°C |
| | | **Storage** (60 days) | 115°F/46°C |
| | **Heat Dissipation** | **Typical configuration**:<br>AlphaServer DS20L, 833 MHz<br>425W Power Supply<br>Main logic board with 2 EV6 CPUs<br>2-GB main memory<br>1 IDE hard disk, 1 CD-ROM<br>2 PCI option cards<br>Input power = 275 Watts | Single Unit = 275W = 939 BTU/hr<br>Rack of 40 systems with 8 PDUs = ~11,000W = 37,550 BTU/hr |
| | **Air Flow and Quality** | **Intake location** | Front |
| | | **Exhaust location** | Rear |
| | | **Particle size** | N/A |
| | | **Concentration** | N/A |
| | **Altitude** | **Operating** | 10,000 ft/3,048m |
| | | **Non-operating** | 40,000 ft/12,192m |
| | | **NOTE**: Higher altitudes are possible if maximum operating temperature is reduced (see Temperature); other restrictions may apply such as maximum permissible altitude for hard drives. | |

**System Unit** *(continued)*

**ACOUSTICS** (Declared values per ISO 9296 and ISO 7779)

| | | | |
|---|---|---|---|
| **Acoustics** | **NOTE**: Current values for specific configurations are available from Compaq, note that 1 B = 10 dBA. | | |
| | | **$L_{WAd}$, B** | **$L_{pAm}$, dBA** (bystander position) |
| | **Idle** | 6.7 | 51 |
| | **Operating** | 6.7 | 51 |
| **Vibration** | **Operating** | 5-500 Hz at .1 G peak (limited by 0.02"/0.5mm double amplitude) | |
| | **Non-operating** | 1.03 Grms 5-300 Hz | |
| **Shock** | **Operating** | 10 G 10ms half-sine | |
| **ELECTRICAL** | | | |
| **Electrical** | **Nominal Voltage** (VAC) | 200 to 240 | |
| | **Voltage Range** (VAC) (temporary condition) | 180 to 250 | |
| | **Power Source Phase** | Single | |
| | **Nominal Frequency** (Hz) | 50/60 | |
| | **Frequency Range** (Hz) | 49 to 51/59 to 61 | |
| **RMS Current** (maximum steady state) | **Single power cord** | 2.3A | |
| | **Maximum VA** | 220 | |
| | **M-series Cabinet** (configuration dependent) | | |
| | **Nominal voltage** (VAC) | 220-240 | |
| | **Each power cord** | 24A | |
| **Power Cords** | **Rackmount** | 1 (14 ft 10 in/452 cm) | IEC 320 C13 to NEMA 5-15 (N. America) or IEC 320 C13 to IEC 320 C14 (other countries) |
| | **Cabinet** | 2 (10 ft 10 in/330 cm) | 200V non-removable NEMA L6-30P or 200-240V non-removable IEC 309 @ 32A |

| | | | |
|---|---|---|---|
| **System Unit** *(continued)* | **ELECTRICAL** *(continued)* | | |
| | **Regulatory** | **Agency Approvals** | Series EA2014 |
| | | | UL: Listed to UL1950 (3rd edition) |
| | | | CUL Listed: CAN/CSA-C22.2 No. 950-M95 |
| | | | FCC: Part 15.B Class A |
| | | | IC ICES-003 Class A |
| | | | CE: EN55022 :1998, EN55024 :1998, EN61000-3-3 :1995 |
| | | | VCCI V-3/97.04 Class A |
| | | | BSMI: CNS13438 Class A |
| | | | C-Tick: AS/NZS 3548:1995 Class A |
| | | **Reviewed to** | AS/NZ 3260:1993 Australian/New Zealand Standard |
| | | | EN 60950/A11: 1997 European Norm |
| | | | IEC950 (2nd edition, 4th amend) |

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