



Sun Fire™ T2000 Server Site Planning Guide

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Sun Fire T2000 Server Site Planning Guide

This guide provides the specifications and site requirements you need when planning the installation of the Sun Fire™ T2000 server.

For safety and compliance information, refer to the *Sun Fire T2000 Server Safety and Compliance Manual* and the *Important Safety Information for Sun Hardware Systems* document (816-7190) that came with your system.

Physical Specifications

These are the physical specifications for the Sun Fire T2000 server.

Measure	U.S.	Metric
Width	17.3 inches	440 mm
Depth	24.3 inches	617 mm
Height (2 rack units)	3.5 inches	89 mm
Weight, approximate (without PCI cards and rack mounts)	40 lbs	18 kg

Clearance for Service Access

These are the minimum clearances needed for servicing the Sun Fire T2000 server.

Description	Specification
Clearance, front of system	36 in (91 cm)
Clearance, rear of system	36 in (91 cm)

Environmental Specifications

These are the environmental specifications for the Sun Fire T2000 server.

Specification	Operating	Non-operating
Operating Temperature:		
• Sea level to 3000 ft (900m)	• 41°F to 95°F (5°C to 35°C)	-40 to 60°C
• Above 3000 ft (900m)	• Decrease maximum temperature as altitude increases, 1.6°F/1000 ft (1°C/300m)	-40 to 60°C
Humidity	20 to 80% RH, non-condensing, 27°C wet bulb, IEC 60068-2-3&56	98% RH 38°C, non-condensing, IEC 60068-2-3&56
Altitude	0-3,000 meters (0-10,000 feet) IEC 60068-2-13	0 - 12,000 meters (0-40,000 feet) IEC 60068-2-13
Vibration	0.2 Gs, Swept sine 5-500-5Hz, 1 octave/min, all axes, IEC 60068-2-13	1.0 Gs, Swept sine 5-500-5Hz, 1 octave/min, all axes, IEC 60068-2-13
Shock	5 Gs peak 11 milliseconds, half-sine pulse, IEC 60068-2-27	30 Gs peak 11 milliseconds, half-sine pulse, IEC 60068-2-27

Power Source Requirements

The Sun Fire T2000 server has two autoranging power supplies. To ensure redundant operation of the power supplies, the two power cords should be connected to separate AC circuits.

These are the electrical limits and ranges for the Sun Fire T2000 server.

Description	Specification
Operating input voltage range	100 to 240 VAC, 50-60 Hz
Maximum operating input current	4.5 A at 100 to 120 VAC 2.25 A at 200 to 240 VAC
Maximum operating input power	450 W
Maximum heat dissipation	1,365 BTU/hr.

Acoustic Noise Emissions

These are the acoustic noise emissions of a Sun Fire T2000 server.

Description	Mode	Specification
LwAd (1 B = 10 dB)	Operating acoustic noise	7.7 B
	Idling acoustic noise	7.7 B
LpAm (bystander positions)	Operating acoustic noise	62 dB
	Idling acoustic noise	62 dB

Declared noise emissions are in accordance with ISO 9296 standards.

Agency Compliance Specifications

The Sun Fire T2000 server complies with the following specifications.

Category	Relevant Standards
Safety	UL/CSA-60950-1, EN60950-1, IEC60950-1 CB Scheme with all country deviations, IEC825-1, 2, CFR21 part 1040, CNS14336, GB4943
Ergonomics	EK1-ITB-2000
RFI/EMI	EN55022 Class A 47 CFR 15B Class A ICES-003 Class A VCCI Class A AS/NZ 3548 Class A CNS 13438 Class A KSC 5858 Class A GB9254 Class A EN61000-3-2 GB17625.1 EN61000-3-3
Immunity	EN55024 IEC 61000-4-2 IEC 61000-4-3 IEC 61000-4-4 IEC 61000-4-5 IEC 61000-4-6 IEC 61000-4-8 IEC 61000-4-11
Telecommunications	EN300-386
Regulatory Markings	CE, FCC, ICES-003, C-tick, VCCI, GOST-R, BSMI, MIC, UL/cUL, UL/DEMKO/GS, UL/S-mark, CCC

Recommended Operating Environment

Your environmental control system must provide intake air for the server which complies with the limits specified in [“Environmental Specifications” on page 2](#).

To avoid overheating, *do not* direct warmed air:

- Toward the front air intake of the server
- Toward the server access panels

Note – When you receive your system, place it in the environment in which you will install it. Leave it in its shipping crate at its final destination for 24 hours. This resting period prevents thermal shock and condensation.

The system has been tested to meet all functional requirements when operating in the operating environmental limits presented in [“Environmental Specifications” on page 2](#). Operating computer equipment in extremes of temperature or humidity increases the failure rate of hardware components. To minimize the chance of component failure, use the server within the optimal temperature and humidity ranges.

Electrical Power

Good practice is to connect each power supply to a separate circuit, which enables the system to remain operational if one of the circuits fails. Consult your local electrical codes for any additional requirements.

Ambient Temperature

An ambient temperature range of 21°C (69.8°F) to 23°C (73.4°F) is optimal for system reliability. At 22°C (71.6°F) it is easy to maintain safe relative humidity levels. Operating in this temperature range provides a buffer if the environmental support systems fail.

Ambient Relative Humidity

Ambient relative humidity levels between 45% and 50% are the most suitable for data processing operations in order to:

- Prevent corrosion
- Provide an operating time buffer in the event of environmental control system failure
- Help avoid failures caused by the intermittent interference from static discharges that occur when relative humidity is too low

Electrostatic discharge (ESD) is easily generated and less easily dissipated in areas where the relative humidity is below 35%, and becomes critical when levels drop below 30%.

Airflow Considerations

- Ensure unobstructed airflow through the chassis.
- Inlet air enters at the front of the server and exits from the back.
- Ventilation openings such as cabinet doors, for both the inlet and exhaust of the server should provide a minimum open area of 235 cm² (34.3 in²) each. This equates to a 60% open area perforation pattern across the front and rear area of the server (440 mm x 89 mm; 17.3 in x 3.5 in). The impact of other open area characteristics that are more restrictive should be evaluated by the user.
- Front and rear clearance of the server should allow a minimum of 5 mm (0.2 in) at the front of the system and 80 mm (3.1 in) at the rear of the server when mounted. These clearance values are based on the above inlet and exhaust impedance (available open area) and assume a uniform distribution of the open area across the inlet and exhaust areas. Clearance values greater than these are recommended for improved cooling performance.
- Care should be taken to prevent recirculation of exhaust air within a rack or cabinet.
- Cables should be managed to minimize interfering with the server exhaust vent.
- Air temperature rise through the system is approximately 10°C (18°F).