Thermal Guidelines for Mounting a Sun Fire™ E4900/4800 System in a Non-Sun Cabinet

In this book, Sun Fire™ E4900/4800 are referred to as *systems.* Also, any enclosure into which Sun Fire E4900/4800 systems would mount is referred to as *cabinet.*
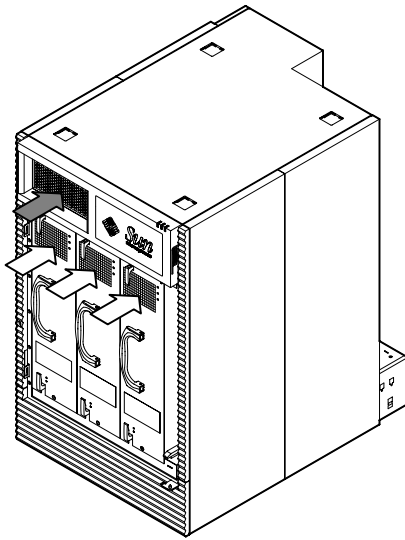
Disclaimer

These guidelines are intended to assist those who would install the Sun Fire E4900/4800 systems at the end users' site. These guidelines address cooling issues only.

It is the ultimate responsibility of the end user to ensure that the environment in which these systems are mounted meet the following:
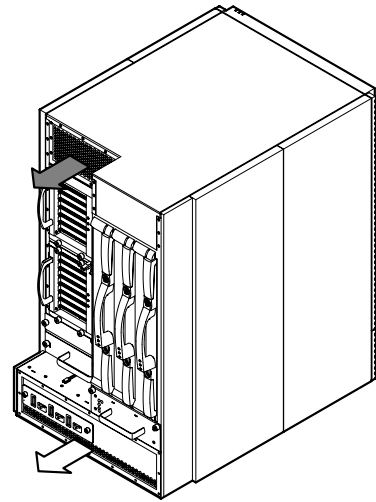
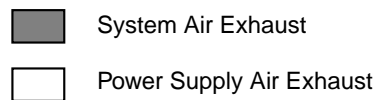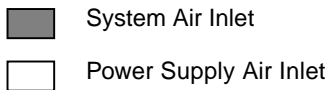■ All systems specifications
■ Safety requirements

Conditions

■ Any systems mounted in a rack with Sun systems must have front-to-back cooling (no side-to-side air flow).

■ The front of the cabinet should not be facing, nor be in the path of the exhaust air from any other systems or cabinets.

■ It is recommended that the cabinet allow 0.2 cubic meters per second (600 cubic feet per minute) of exhaust air out of the cabinet by way of the exhaust fans located at the top of the cabinet.

■ The cabinet must allow for airflow to enter from the front and exhaust to the rear. (See illustration.) Do not use a closed cabinet that prevents airflow into the front and out of the rear of the enclosure.

E4900/4800 - Front View

E4900/4800 - Rear View

| | System Air Inlet | | | System Air Exhaust |
| | Power Supply Air Inlet | | | Power Supply Air Exhaust |

- A cabinet front panel must be attached so that no gaps appear between panels and between the panel and the system. If the panels cannot completely fill in the area above the system, make sure the gap appears at the top of the cabinet, away from the system. Cabinet front panels prevent hot air that is expelled from the rear of the cabinet from reentering the system from the front.

- Multiple systems in the same cabinet must be mounted as close together as possible without air gaps in between to avoid exhaust air recirculating back into the front air intake.

- All systems must be mounted in the lowest possible locations within the rack to prevent the cabinet from tipping over.

Environmental Specifications

The following table shows the environmental specifications for the rackmounted systems.

TABLE 1 Sun Fire System Temperature, Humidity, and Altitude Limits

	Operating	Nonoperating
Temperature	5° C to 35° C (41° F to 95° F). Derate 2° C for every 1km altitude up to 3km.	-20° C to 60° C (-4 F to 140 F)
Humidity	20% to 80% RH, noncondensing	93% RH, noncondensing
Maximum altitude	10,000 feet (3,000 meters)	

The recommended optimal operating system environment is 21° C to 23° C (69.8° F -73.4° F), with ambient relative humidity levels of 45% to 50% RH.

Refer to the site planning guide for your product for more information on environmental specifications.

Verifying the Air Temperature

1. **Measure the system air inlet temperatures inside the cabinet and verify that it meets the recommended optimal operating conditions above.**

2. **Run the** showenv -ulwp temps **command from a system controller board (SSC0 or SSC1) to verify the system temperature readings.**

   This command will display information for slot, device, sensor, minimal, loWarn, value, hiWarn, maximum, units, age, and status. Compare component temperatures (listed under the value column) with the warning temperatures (listed under the hiWarn column).

   Component temperatures should be below warning temperature when operating in a normal computer lab environment as described in your system's site planning guide.

Accessing Sun Documentation

You can view, print, or purchase a broad selection of Sun documentation, including localized versions, at:

`http://www.sun.com/documentation`

Contacting Sun Technical Support

If you have technical questions about this product that are not answered in this document, go to:

`http://www.sun.com/service/contacting`

Sun Welcomes Your Comments

Sun is interested in improving its documentation and welcomes your comments and suggestions. You can submit your comments by going to:

`http://www.sun.com/hwdocs/feedback`

Please include the title and part number of your document with your feedback:

Thermal Guidelines for Mounting a Sun Fire E4900/4800 System in a Non-Sun Cabinet, part number 817-4126-10