



Cabinet and Rack Installation

- [Cabinet and Rack Requirements, on page 1](#)

Cabinet and Rack Requirements

This section provides the Cisco MDS 9000 Series switches requirements for the following types of cabinets and racks in an external ambient air temperature range of 0 to 40°C. If you are selecting an enclosed cabinet, we recommend that you choose one of these thermally validated types:

- Standard perforated cabinets
- Solid-walled cabinets with a roof fan tray (bottom-to-top cooling)

General Requirements for Cabinets and Racks

A cabinet or rack must belong to one of the following types:

- Standard 19-in. four-post EIA cabinet or rack, with mounting posts that conform to English universal hole spacing per section 1 of ANSI/EIA-310-D-1992. See [Requirements Specific to Perforated Cabinets](#) and [Requirements Specific to Solid-Walled Cabinets](#).
- Standard two-post telco rack, with mounting posts that conform to English universal hole spacing per section 1 of ANSI/EIA-310-D-1992.

The cabinet or rack must also meet the following requirements:

- The minimum vertical rack space per chassis should be 1 RU, equal to 1.75 in. (4.4 cm).
- The width between the inside edges of the mounting posts must be at least 17.75 in. (45.1 cm). This is the distance between the two front posts of the four-post EIA racks.
- The minimum rack-load ratings per RU are listed in the following table:

Rack Type	
EIA (4 post)	7.5 lb (3.4 kg)
Telco (2 post)	15 lb (6.8 kg)

For four-post EIA cabinets (perforated or solid-walled):

- The distance between the front door and front mounting posts should be a minimum of 3 in. (7.6 cm) to allow for the bend radius of FC port fibre-optic patch cables.
- The distance between the outside face of the front mounting post and the outside face of the back mounting post should be 26 to 32 in. (66 to 81 cm) to allow for installation with the Cisco rack mounting kit.
- The distance between the rear of the chassis and the perforated rear door of the cabinet (required for airflow in the cabinet, if used) should be a minimum of 3.0 in. (7.6 cm).
- No clearance is required between the chassis and the sides of the rack or cabinet (no side airflow).
- The amount of clearance required for interface cables is 3 in. (7.6 cm) minimum and module handles is 1 in. (25 mm) minimum.

Requirements Specific to Perforated Cabinets

In addition to the requirements listed in the [General Requirements for Cabinets and Racks](#) section, perforated cabinets with front-to-back airflow must meet the following requirements:

- The front and rear doors must have at least a 60 percent open area perforation pattern, with at least 15 sq. in. (96.7 sq cm) of open area per rack unit of door height.
- We recommend that the roof be perforated with at least 20 percent open area.
- We recommend an open or perforated cabinet floor to enhance cooling but it is not required.

Reference Perforated Cabinet

A perforated cabinet that conforms to the above requirements is available from Rittal Corporation:

```
Rittal Corporation
One Rittal Place
Springfield, OH 45504
Phone: (800) 477-4000
Cabinet P/N: Rittal 9969427
Cabinet description: PS-DK/OEM Cabinet Assembly, 1998 x 600 x 1000 (H x W x D)
(42U)
```

Requirements Specific to Solid-Walled Cabinets

In addition to the requirements listed in the [General Requirements for Cabinets and Racks](#) section, solid-walled cabinets must meet the following requirements:

- A roof-mounted fan tray and an air-cooling scheme in which the fan tray pulls air in at the bottom of the cabinet and sends it out from the top, with a minimum airflow of 849.5 m³/h exiting the cabinet roof through the fan tray, to be available.
- Nonperforated (solid and sealed) front and back doors and side panels to be present so that air travels predictably from bottom to top.
- The overall cabinet depth to be 36 to 42 in. (91.4 to 106.7 cm) to allow the doors to close and to facilitate adequate airflow.

- A minimum of 150 sq. in. (968 sq. cm) of open area to be available at the floor air intake of the cabinet.
- The lowest piece of equipment to be installed at a minimum of 1 RU (1.75 in. or 4.4 cm) above the floor openings to prevent blockage of the floor intake.

