

NetShelter SX Enclosure Guide Specifications

Quote response to indicate compliance or non-compliance for each of the following:

1.0 General Requirements

- 1.1 The unit shall be designed to provide a secure, managed environment for server and networking equipment.
- 1.2 The unit shall conform to EIA-310-E Standard for Cabinets, Racks, Panels and Associated Equipment and accommodate industry standard 19" rack mount equipment.
- 1.3 The unit shall be designed with four (4) vertical posts to allow rack mount equipment installation utilizing four (4) vertical mounting rails.
- 1.4 The unit shall be available with a vertical equipment mounting space of 24U, 42U and 48U (1U=1.75" or 44.45mm).

2.0 Physical Specifications

- 2.1 Enclosure dimensions, rack mounting compatibility and weight load ratings:

Internal Height	EIA-310	External Height	External Width	External Depth	Static Rating	Dynamic Rating
42U	19"	1991mm (78.40")	600mm (23.62")	1070mm (42.13")	1364kg (3000lbs)	1023kg (2250lbs)
42U	19"	1991mm (78.40")	750mm (29.53")	1070mm (42.13")	1364kg (3000lbs)	1023kg (2250lbs)
48U	19"	2258mm (88.90")	600mm (23.62")	1070mm (42.13")	1364kg (3000lbs)	1023kg (2250lbs)
48U	19"	2258mm (88.90")	750mm (29.53")	1070mm (42.13")	1364kg (3000lbs)	1023kg (2250lbs)
42U	19"	1991mm (78.40")	600mm (23.62")	1200mm (47.24")	1364kg (3000lbs)	1023kg (2250lbs)
48U	19"	2258mm (88.90")	600mm (23.62")	1200mm (47.24")	1364kg (3000lbs)	1023kg (2250lbs)
42U	19"	1991mm (78.40")	750mm (29.53")	1200mm (47.24")	1364kg (3000lbs)	1023kg (2250lbs)
48U	19"	2258mm (88.90")	750mm (29.53")	1200mm (47.24")	1364kg (3000lbs)	1023kg (2250lbs)
24U	19"	1198mm (47.19")	600mm (23.62")	1070mm (42.13")	1364kg (3000lbs)	1023kg (2250)lbs

- 2.2 The 42U unit shall have exterior maximum height to allow passage through a standard 2 Meter or 7 Ft. (84") doorway without tipping.
- 2.3 The 42U and 48U units shall support a static load (weight supported by the casters and leveling feet) of at least 1,364 kg. (3,000 lb) total installed equipment weight.
- 2.4 The 42U and 48U units shall support a dynamic load (rolling on the casters) of at least 1,023 kg. (2,250 lb) total installed equipment weight.
- 2.5 The units (42U, 48U) shall ship with a perforated front door, perforated split rear doors, four (4) half-height side panels, toolless roof, two (4) vertical frame posts, four (4) adjustable vertical mounting rails, minimum of two (2) and maximum of four (4) vertical PDU mount cable organizers, four (4) leveling feet and four (4) casters, baying and grounding hardware pre-installed by the manufacturer.

3.0 Equipment Access & Installation

- 3.1 The unit shall provide 42U or 48U of equipment vertical mounting space.
- 3.2 The vertical mounting rails shall be easily adjustable to allow different mounting depths.
 - 3.2.1 Each vertical mounting rail shall be marked on both sides with lines showing the top and bottom of each U and the number U space next to the middle hole. Each U consists of three square holes and is 1.75 inches (44.45 mm) high.
- 3.3 The unit shall include M6 caged nuts, bolts and cup washers, and caged nut tool for the mounting of equipment inside the unit.
- 3.4 Both the front and rear doors shall be designed with lift-off hinges allowing for quick and easy detachment without the use of tools.
 - 3.4.1 The front and rear doors shall open a minimum of 120 degrees to allow easy access to the interior.
 - 3.4.2 The front door of the unit shall be reversible so that it can be mounted on either side.
 - 3.4.3 Split rear doors are provided for increased service clearance.
 - 3.4.4 The front door of the unit shall be capable of being installed on the rear of the unit, and the rear doors shall be capable of being installed on the front of the unit.

- 3.5 The unit shall include half-height side panels that are removed without tools using easy finger latches for fast access to cabling and equipment.
 - 3.5.1 The side panels on the unit shall double as privacy panels when the units are bayed together.
 - 3.5.2 Side panels are flush with the frame so the overall width of the unit does not change with the side panels installed.
 - 3.5.3 Baying brackets must provide two set of mounting holes for standard enclosure spacing of 24" or 600mm.

4.0 Material Requirements

- 4.1 All weight bearing components shall be constructed from steel with a thickness no less than 0.9mm (20 gauge).
- 4.2 All sheet metal parts shall be painted using a powder coat paint process.
- 4.3 Plastic materials shall comply with Underwriters Laboratory Specification 94 with HB rating (UL94 V-1) or better.
- 4.4 All interior components of racks shall not have electroplated zinc coating to minimize zinc whiskers near active equipment.

5.0 Grounding Requirements

- 5.1 All enclosure components such as doors, side panels, roofs, etc. should be bonded directly to the frame.
- 5.2 Grounding points should be provided on frame to externally bond each unit to building ground.

6.0 Environmental and Safety Requirements

- 6.1 The unit shall have a minimum of IP 20 rating for protection against touch, ingress of foreign bodies, and ingress of water.
- 6.2 Manufacturer must certify products are RoHS and China RoHS compliant.
- 6.3 The enclosure shall both protect the user from mechanical hazards and generally meet the requirements for a mechanical enclosure (stability, mechanical strength, aperture sizes, etc.) as defined in IEC 60950 Third Edition.

7.0 Ventilation

- 8.2 The unit shall have ventilated front and rear doors to provide adequate airflow required by the major server manufacturers.
- 8.3 The unit shall have a minimum total ventilation area for the front door, split rear doors, and roof as specified below.

Internal Height	External Width	External Depth	Perforated Front Door	Perforated Rear Doors
42U	600mm (23.62")	1070mm (42.13")	5930 cm ² (919 in ²)	6689 cm ² (1036 in ²)
42U	750mm (29.53")	1070mm (42.13")	7889 cm ² (1222 in ²)	8669 cm ² (1343 in ²)
48U	600mm (23.62")	1070mm (42.13")	6758 cm ² (1047 in ²)	7626 cm ² (1182 in ²)
48U	750mm (29.53")	1070mm (42.13")	9004 cm ² (1395 in ²)	9892 cm ² (1533 in ²)
24U	600mm (23.62")	1070mm (42.13")	3458 cm ² (536 in ²)	3759 cm ² (583 in ²)

- 7.3 The unit shall provide the means to mount optional cooling accessories for high-density.
- 7.4 The manufacturer shall offer an optional toolless blanking panel kit to prevent the recirculation of hot exhaust air.
- 7.5 The manufacturer shall ensure all gaps are blocked to prevent recirculation of hot air.

8.0 Cable Access

8.1 Top cable management openings provided in the enclosure roof:

Internal Height	External Width	External Depth	Openings Located on Roof	Opening with Roof Removed
42U/48U	600mm (23.62")	1070mm (42.13")	Two 75mm (2.96") x 644mm (1.64"), One 240mm (9.45") x 92mm (3.61"), and Five 171mm (6.75") x 54mm (2.14") Rectangular Openings	567mm (22.31") x 892mm (35.10")
42U/48U	750mm (29.53")	1070mm (42.13")	Two 75mm (2.96") x 644mm (1.64"), One 240mm (9.45") x 92mm (3.62"), and Five 171mm (6.75") x 54mm (2.14") Rectangular Openings	717mm (28.20") x 892mm (35.10")
42U/48U	600mm (23.62")	1200mm (47.24")	Two 66mm (2.60") x 904mm (35.60") and One 240mm (9.45") x 252mm (9.92") Rectangular Openings	567mm (22.32") x 1023mm (40.28")
42U/48U	750mm (29.53")	1200mm (47.24")	Two 66mm (2.60") x 904mm (35.60") and One 240mm (9.45") x 252mm (9.92") Rectangular Openings	716mm (28.20) x 1023mm (40.28")
24U	600mm (23.62")	1070mm (42.13")	Three 60mm (2.36") Diameter Circular Openings	567mm (22.31") x 892mm (35.10")

8.1.1 Cable opening edges must be protected with plastic grommets or radiused edges.

8.2 Bottom cable management opening provided in the enclosure base:

Internal Height	External Width	External Depth	Main Base Opening
24U/42U/ 48U	600mm (23.62")	1070mm (42.13")	567mm (22.31") x 831mm (32.71")
42U/48U	750mm (29.53")	1070mm (42.13")	717mm (28.25") x 832mm (32.74")
42U/48U	600mm (23.62")	1200mm (47.24")	567mm (22.32") x 962mm (37.87")
42U/48U	750mm (29.53")	1200mm (47.24")	717mm (28.23") x 962mm (37.87")

8.3 Side cable management opening provided in the enclosure base; a minimum of two (2) and maximum of four (4) vertical PDU mount cable organizers.

9.0 Security

9.1 The unit shall include front door lock, rear door lock and side panel lock that are keyed the same; two keys included.

9.1.1 Replacement key lock cylinders from the handle manufacturer should be available to provide a minimum of 220 unique key combinations on front and rear doors.

9.2 The manufacturer shall provide optional products and accessories that allow the enclosure environment to be monitored for temperature, humidity, and electronic pass key door access.

9.3 The unit shall have mounting provisions for optional door alarm switch to monitor access to the enclosure doors.

10.0 Stabilization

- 10.1 The unit shall ship with provisions for stabilization in the field with pallet mounting brackets.
- 10.2 The manufacturer shall have optional stabilizer plate kit, consisting of a plate, and mounting hardware that can be attached to the enclosure frame, and that can be bolted to the floor.
- 10.3 The manufacturer shall have optional bolt down brackets, consisting of four (4) brackets and mounting hardware that attach to the enclosure frame on the front and rear (on the interior or exterior), and which must be anchored to the sub-floor for compliance with the local Uniform Building Code (UBC).
- 10.4 The manufacturer should supply structural calculations by a professionally registered engineering firm showing compliance with the local UBC for floor anchoring.
- 10.5 The unit shall have four (4) adjustable leveling feet to help provide a stable base in the event of an uneven floor surface and to prevent rolling.

11.0 Packaging

- 11.1 The unit shall ship on a wooden pallet. Optional packaging should be available for shipping racks with 1250 lbs and 2000 lbs of installed equipment.
- 11.2 The unit shall be bolted to the wooden pallet for stability during shipment.
- 11.3 The unit shall be protected by corrugated corners, which are stretch-wrapped to limit damage during handling.
- 11.4 The unit shall have a label which instructs customers to call a toll-free customer support number to resolve possible shipping damage issues.

12.0 Delivery & Installation

- 12.1 The unit shall be shipped fully assembled as one orderable SKU.
- 12.2 The manufacturer shall offer an inside-delivery shipping option which includes reasonable delivery to the inside of a customer's building and removal and disposal of shipping material and packaging.
- 12.3 The 42U unit shall roll through a standard 2 meter or seven (7) foot office doorway.

13.0 Warranty

- 13.1 The manufacturer shall warrant the unit to be free from defects in materials and workmanship for a minimum period of five years from the date of purchase. The manufacturer's obligation under this warranty shall be to repair or replace the unit, at its own sole option. This warranty shall not apply to equipment that has been damaged by accident, negligence, or misapplication or has been altered or modified in any way.
- 13.2 The manufacturer shall warrant all accessories and options to be free from defects in materials and workmanship for a minimum period of two years from the date of purchase. The manufacturer's obligation under this warranty shall be to repair or replace the equipment, at its own sole option. This warranty shall not apply to equipment that has been damaged by accident, negligence, or misapplication or has been altered or modified in any way.

14.0 Accessories

- 15.1 *RM LCD Monitor/Keyboard Drawer:* The manufacturer shall offer a 1U high, rack-mounted LCD monitor/keyboard drawer to maximize space in a data center environment.
- 15.2 *Cooling:* The manufacturer shall offer roof-mounted fan trays, door mounted fan trays, monitoring devices, and stand alone cooling units for maintaining a cool environment.
- 15.3 *Rack Power Distribution Units:* The manufacturer shall offer a variety of single-phase and three-phase rack mount power distribution units with current monitoring outlet switching, and remote management capabilities.
- 15.4 *Cable Management:* The manufacturer shall offer a variety of cable management accessories to neatly organize the routing of data and power cables within the enclosure.
- 15.5 *Shelving:* The manufacturer shall offer as optional accessories various fixed and sliding shelves with the ability to support up to 250 lbs of non-rack mount equipment.
- 15.6 *Uninterruptible Power Supplies:* The manufacturer shall offer various rack mounted uninterruptible power supplies (UPS), with user-replaceable and hot-swappable batteries, and with extended runtime options available.