

Cold Pool System

Due to greater capacity densities of data centers, increased heat generation is observed, resulting in a higher demand for more energy-efficient cooling systems. The majority of data centers provides sufficient cooling capacity but does not have the infrastructure to effectively deliver the cooling medium to high density areas. NETX offers CAB BOX system offers slide doors and roof, making it possible to deliver a data center in the "cold aisle" or "hot aisle" technology. Such solutions physically separate hot air from cold air, thus ensuring efficient cooling for IT equipment.

In "cold aisle" systems, cold air is flown through the access floor into a 120-cm-wide established between rows of cabinets. In the hot aisle system the heat generated by active devices is dissipation to the aisle's space and cold air is provided from the outside of CAB Box. CAB Box solution creating space where cold air is completely separated from hot air generated by active devices. Front and rear part of cabinet should have 80% perforation to provide the best airflow through cabinet. In the Box designed by NETX has possibility to install row heat exchanger. This solution allows for cooling devices with very high power density.



| FEATURES

- Surface finish: Degreasing, pickling, phosphoric, powder coating. The thickness of powder coating is 80µm-100µm, complying with ROHS.
- By adopting heavy duty nylon silent pulley and aluminum alloy hanger rail, the sliding door can be opened and closed easily. And the locks on the door are convenient for people managing the cold pool channel.
- The material of sliding door is double-deck cold-rolled sheet metal which makes sure a good intensity of the door; And the middle of the door is made up of clear tempering glass which allow the outside people checking the situation of inside channel.
- The support beam on the top of cold pool channel is used for placing tempering glass. The thickness of the support beam is 1.5mm.



| STANDARDS

- Comply with ANSI/EIARS-310-D, DIN41491
- PART1, IEC297-2, DIN41494
- PART7, GB/T3047.2-92 standard
- Compatible with metric ETSI and 19 inch international standard.

| MATERIALS

Cold-rolled steel sheet. Thickness for hanger rail 2.0 mm, support beam 1.5mm, sliding door 1.2 mm. Heavy duty nylon silent pulleys.

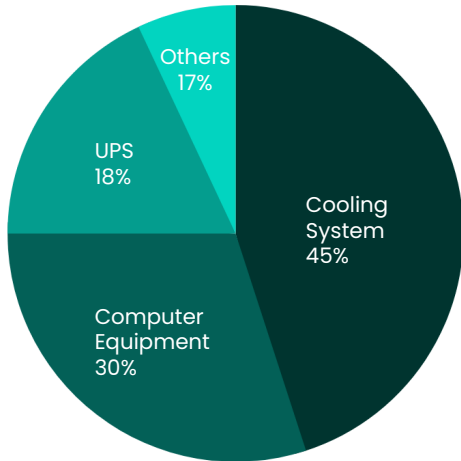
| APPLICATION

Mainly applied in data centers.



PRINCIPLE OF COLD POOL

| PREVIOUS SITUATION OF SERVER ROOM



| PREVIOUS PROBLEMS OF SERVER ROOM

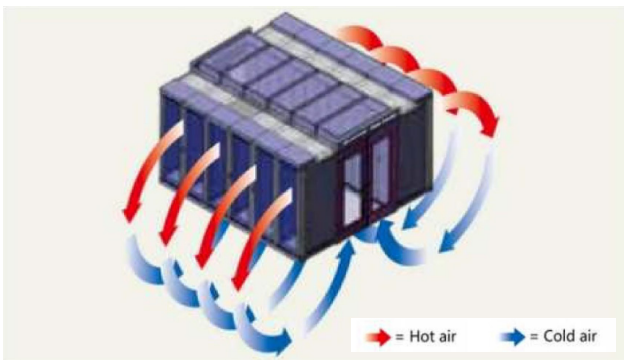
- Local overheating in server room.
- Large energy consumption
- Consumption rate: PUE > 2.5

$$PUE = \frac{\text{Total Energy Consumption}}{\text{IT Energy Consumption}}$$

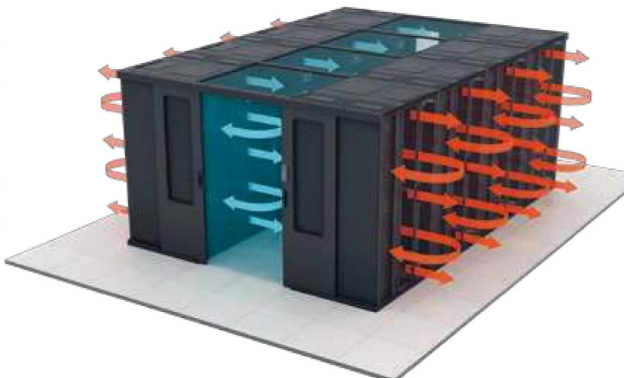
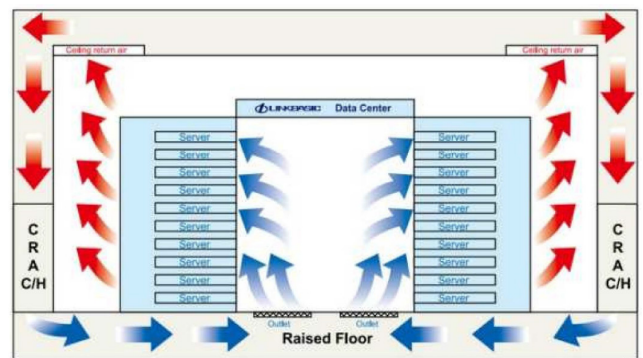
| COOLING SOLUTION FOR SERVER ROOM

How to reduce energy waste? The cold air should be avoid exchanging with the effluent hot air as soon as possible during the process of facility cooling. So the cold and heat channel should be build to make sure that the cold air in the cold channel will not exchange with the hot air before it passing the facilities. Cold Pool System is the best among the present data center consumption reducing solutions.

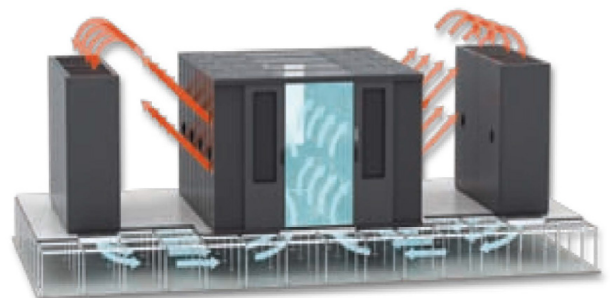
| SCHEMATIC DIAGRAM OF COLD POOL



| SECTION VIEW OF COLD POOL



Cold aisle technology in a box of cabinets with row heat exchange



Cold aisle technology using access floor



Heavy duty nylon silent pulley
(Other options available)



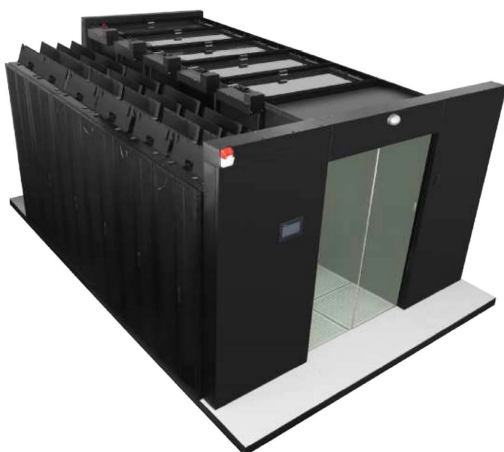
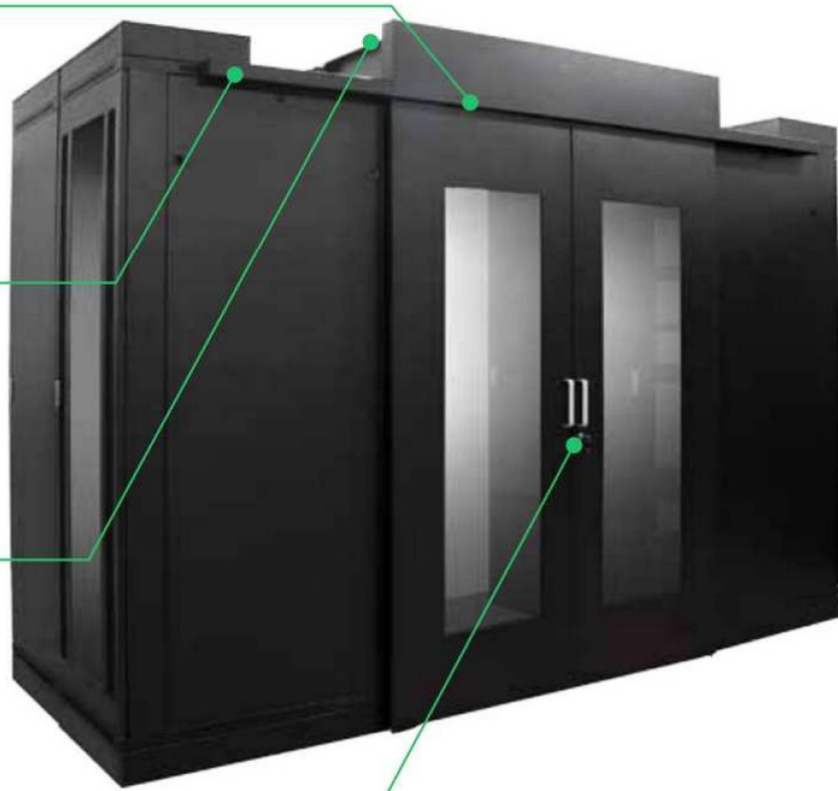
Aluminum alloy
hanger rail



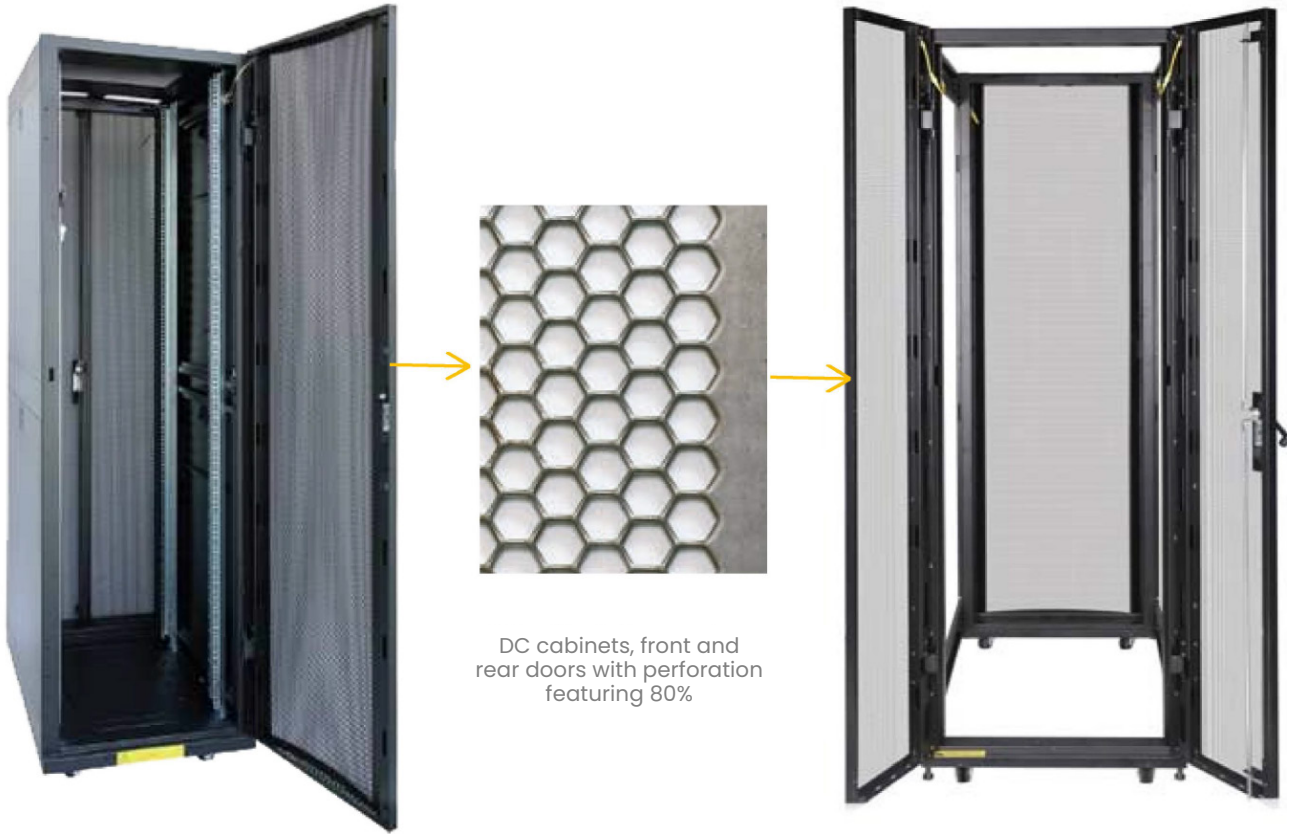
Support beam for
cold pool channel



Cold pool sliding
door



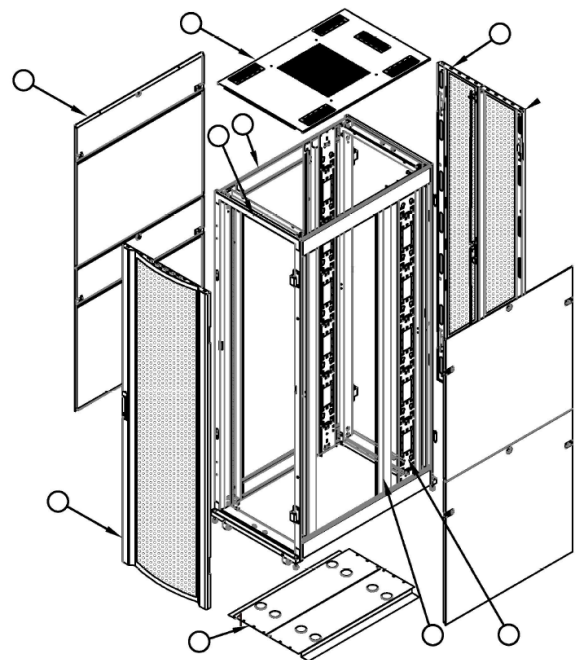
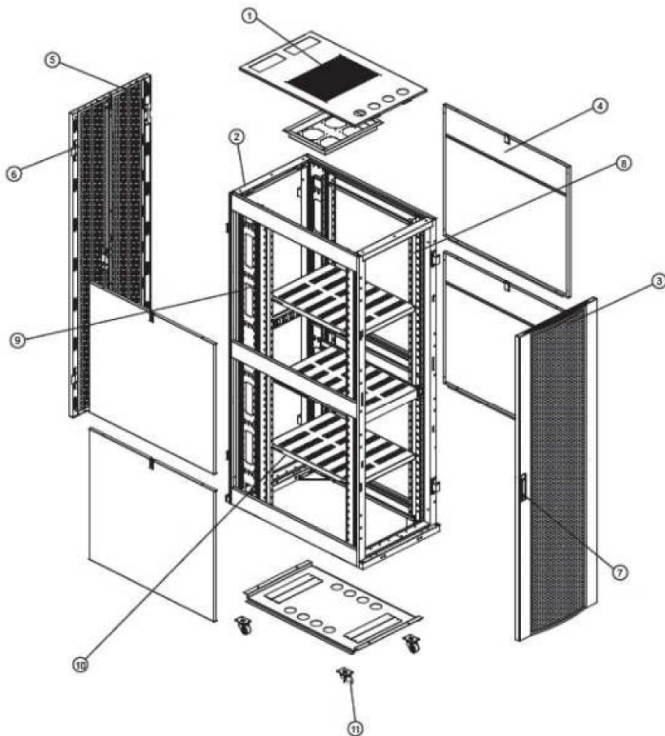
| RECOMMENDED CABINETS FOR CAB BOX



DC cabinets, front and rear doors with perforation featuring 80%

XNET 7 SERIES

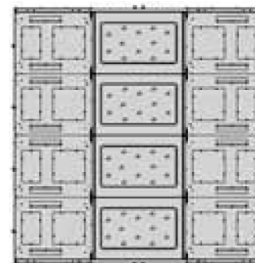
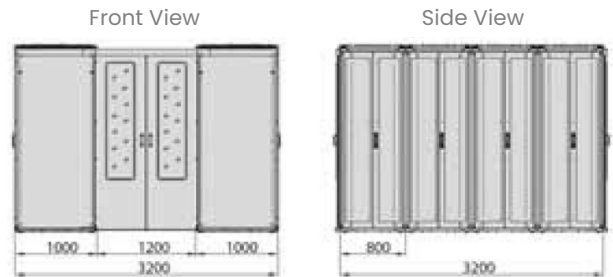
XNET 4 SERIES



| STRUCTURE

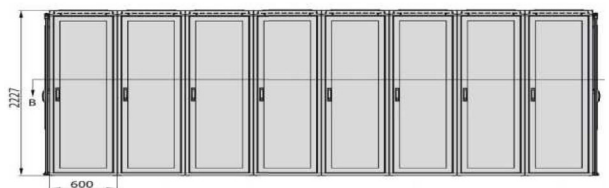
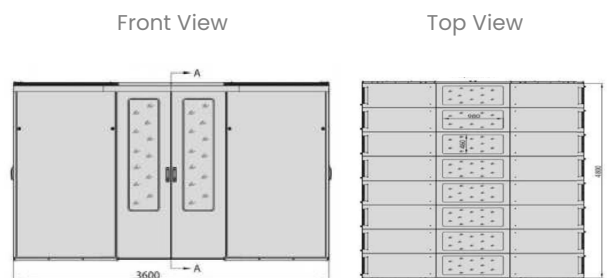
Sample of assembled Cabinets

Sample server box consisting of 8 XNET 7 SERIES 42U cabinets, 800x1000 mm



Top View

Sample server box consisting of 8 XNET 7 SERIES 42U cabinets, 800x1000 mm



Side View

Slide door system for CAB Box Aisle

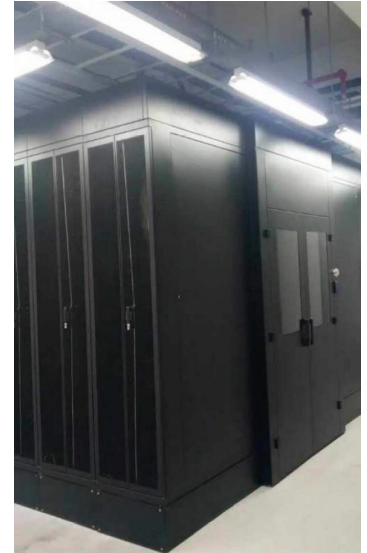
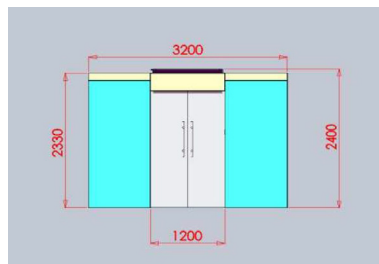
A CAB Box can be accessed through a double-wing sliding door. Mounted on one or both sides of the Data Box aisle, they ensure safety and physical separation of cold/hot air flows. Slide door is available in three versions: without lock, with mechanical lock, and with mechanical lock+ electronic access control. The door is fitted with glass panes for improved control over CAB Box interior events

| MATERIAL

Sheet steel powder painted, mineral safety glass

| SCOPE OF DELIVERY

Two-wing sliding door, top guide, two bottom guides, two side panels of the cabinet, fixing accessories.



CAB Box aisle roof

Available in modular design . Roof modules are available in two widths , matching the width of server cabinets and row heat exchangers or management cabinets. The roof modules are fixed directly to the top plate of the cabinet.

| MATERIAL

Sheet steel powder painted, mineral safety glass

| SCOPE OF DELIVERY

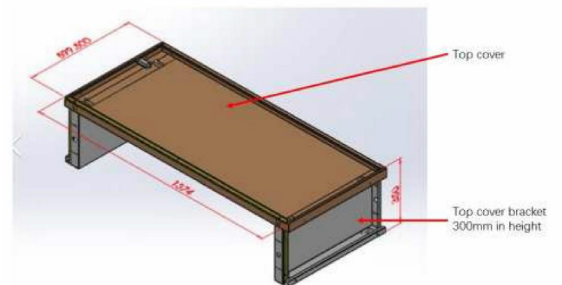
Roof module with fixing accessories.

The selected number of roof modules (N) will be automatically provided with the following mounting accessories:

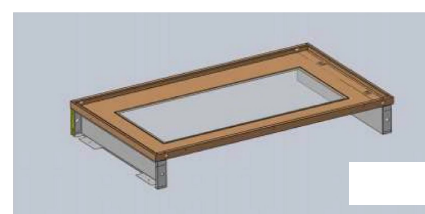
- (N-1) middle mounting profiles for interconnecting the roof modules.
- 2 side mounting profiles for aisle roof



Metal Roof with bracket



Glass Roof with bracket



ORDERING

Part NO	Description
149FH-2426	42U 600 mm width sliding door with lock
149FH-2476	47U 600 mm width sliding door with lock

Roof Options
Manual sliding door
Electrically opened top cover (Steel)
Electrically opened top cover (Aluminum)
Electrically opened top cover (Aluminum), with auto close function

Door Options
Manual single door
Manual sliding door without lock
Automatic sliding door

Part NO	Description
149FD-A612	600x1200 cold pool glass roof and mounting bracket with tempered glass
149FD-A812	800x1200 cold pool glass roof and mounting bracket with tempered glass
149FD-A613	600x1200 cold pool metal roof and mounting bracket
149FD-A813	800x1200 cold pool metal roof and mounting bracket

Part NO	Description
149CFQ01	Baying kit for racks
149FD-A812	600x1200 cold pool glass roof and mounting bracket with tempered glass top
149FD-A613	600x1200 cold pool metal roof and mounting bracket
149FD-A813	800x1200 cold pool metal roof and mounting bracket