NELSON
Mission Critical

ntms30

Closed, compact and very cool.

The Mission Critical Solution that cools like nobody else's business.

Introducing the **Nelson ntms30**

by Nelson Mission Critical

NAISSUS
Thermal Management Solutions Inc.

environment

The Nelson **ntms30** high efficiency Closed Loop Enclosure System manages the temperature of servers and processors in high-density data-room configurations, enabling greater processing density.

This revolutionary, high-performance enclosure system is specifically designed for high-density data processing applications. And is the first of its kind to focus on cooling the servers instead of the whole room. Now greatly improved PUE (Power Usage Effectiveness) and significantly reduced Data Center cooling costs are possible while utilizing over 50% less floor space than plenum cooling.

Having the ability to cool your cabinets – and not the WHOLE room – completely transforms how your data center is now capable of operating. You now have the power to consume up to 40% less energy, operate more servers in the same space while allowing full time SNMP environmental monitoring, laser-based smoke detection and fire suppression systems. Whether building a new data center or retrofitting existing centers, Nelson Mission Critical outperforms.

Using the **Naissus Closed Loop Cooling System®** to deliver a measured stream of cooling air to all servers mounted inside the cabinet, Nelson Mission Critical is the shape of things to come.

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Using a closed-loop cooling system to route cool air from the base of the enclosure through a built-in plenum duct, an exhaust-free, measured stream of cooling air is delivered to all servers mounted inside.

Sealed from the outside environment, external temperatures and cooled by an integrated thermal-management system, the Nelson Mission Critical solution creates the quietest virtual data center in a cabinet.

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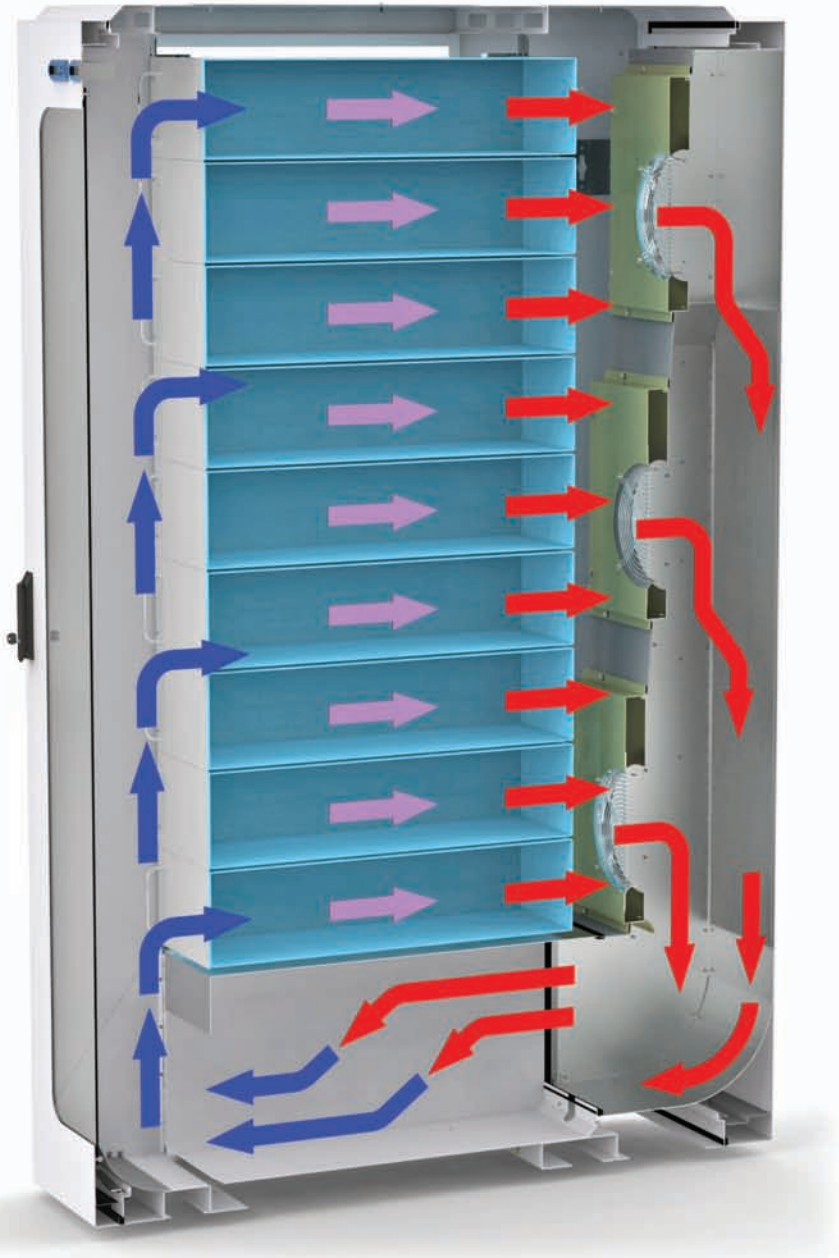

Reduces floor space, power consumption & maintenance costs

per enclosure

up to 30kW

Today's Data Challenges are Real – Overcome Them With Nelson Mission Critical

As smaller, more powerful servers are compacted into higher density configurations, data rooms and A/C systems have to be expanded in order to provide sufficient cooling air. Today's ever smaller and more powerful servers leave data center managers struggling to improve PUE. As thermal density increases, traditional raised floor plenum cooling systems tend to rapidly decline in efficiency.

Despite costly floor space and A/C additions, data rooms still continue to struggle with uneven cooling and re-circulating heat exhaust from other racks. Nelson Mission Critical's integrated, closed-loop cooling system delivers significant savings in floor space, power consumption and maintenance costs. The servers are completely sealed from re-circulated exhaust.

With scalable enclosure systems, you can deploy a low-mid power solution (8 to 12kW) and enable migration to high capacity (up to 30kW per enclosure) systems to support increased server density. All of this can be accomplished without removing, repositioning or replacing the original enclosure frame. This allows you to maximize ROI by extending the life of Data Center assets and to reduce operating costs by greatly improving the Data Center's PUE.

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Shown here;
Lytron's LCS50 15kW CDU
(Chilled Distribution Unit)

Nelson Mission Critical is a net 36 Rack Mount Unit, 19" EIA enclosure system with an integral Closed Loop Cooling System that relies on a supply of low pressure Chilled Water that's channeled through a Heat Exchanger. Mounted in the base of the enclosure, this high efficiency Heat Exchanger acts as a "sink" of sorts, absorbing the heat energy generated by the servers and any other equipment operating within the cabinet.

The warm air is removed from the Servers by a series of three independently controlled, variable speed Cooling Fans installed within compartments in the Rear Door assembly. When not operating under a full load, the fans allow for greater economy of operation.

The on-board Server fans pull the cooling air through the Server Chassis drawing heat out of the Servers where it is collected by the fans creating a continuous cooling loop.

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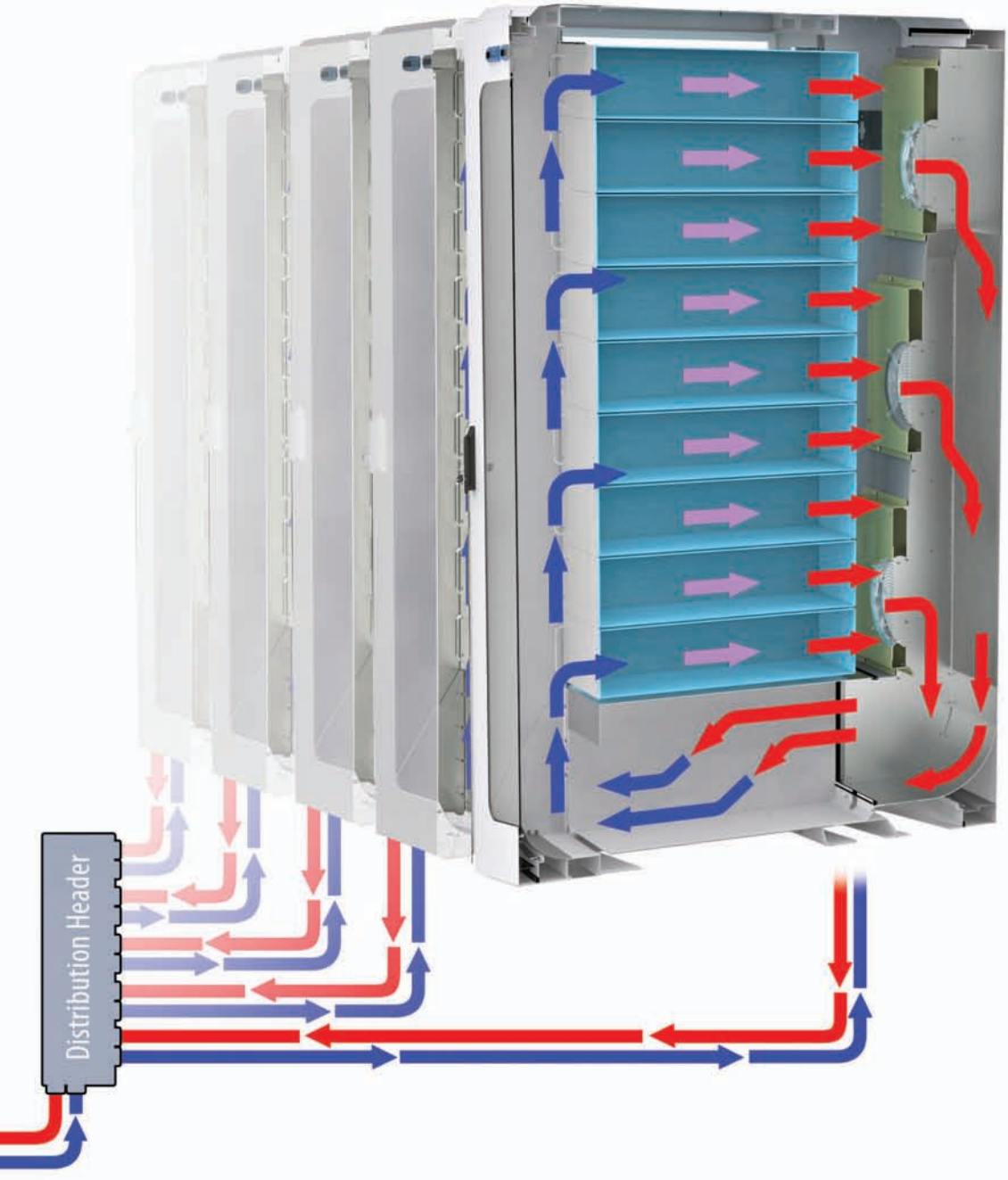


tell me more

specs & accessories

Nelson Mission Critical – A Data-Center Triumph With Its Secure, Efficient Performance

Optional Accessories – Secure Features for Optimizing System Performance

Smoke Detection and Fire Suppression Systems

- Fully integrated FM200 system or 3M Novec 1230 system
- Automatic-release primary gas cylinder
- VESDA laser smoke detector
- Optional 2RU, rack or top mounted

24/7 Fully Integrated Monitoring Package Available *For*

- Built-in monitoring for server inlet and outlet air temperature
- Variable speed fans and power supplies
- Humidity
- Smoke and fire detection
- Weak-leak detection
- Door-open alarm

Performance Based on Lab Server Tests

		Imperial Units	SI Units
Inputs	Heat Load	102500 BTU/h	30.0kW
	Water Temp	55°F	12.7°C
	Water Flow	14 gpm	0.88 l/s
Results	Cold Air Supply	73°F	23.0°C
	Hot Air Return	109°F	42.8°C
	Air ▲T	35.7°F	19.8°C
	Water Temp Rise	13.7°F	7.6°C
	Water Pressure Drop	10 psi	48.3 kPa
Background	Air Flow	2500 cfm	1.18 m3/s
	Fan Power	2278 BTU/h	1175.0 W

Energy Consumption Snapshot

Data centers are the second largest consumers of electrical energy in North America. And given accelerating technology adoption curves, total energy consumption by data centers will continue to increase — as will its impact on your operational costs.

In 2006, servers and data centers in the US consumed 1.5% of the country's electricity, which is twice the amount used in the year 2000. This amount is expected to double again by 2011. (Source:www.energystar.gov)

For each kilowatt consumed by critical load, one additional kilowatt is needed to cool a server room.

The power needed for a rack of high-density blade servers can be between 1 0 and 15 times higher than the power needed for a rack of traditional IT equipment.

Global data center floor space will have a compound annual growth rate of 5 to 7% over the next 5 to 10 years.

Half of all existing data centers have insufficient power and cooling capacity to meet the demands of high-density equipment.

Specifications

- Height: 2133.6 mm (84.0in)
- Total Rack Height: 44RU (82.25in)
- Usable height: 36RU (68.2in)
- Depth: 1372.4mm (54.0in)
- Width: 762.0mm (30.0in)

Structural

- Empty weight: 850lbs
- Shipping weight: 900lbs
- Static load: 2000lbs
- Four 44RU EIA vertical mounting rails, numbered from 1 to 44 spaces

Heat exchanger

- 8 - 16gpm heat-exchange cooling core supplied with 3/4" id high-pressure hose and optional 3/4" flange NFP connections

Front Door

- Non-reversible aluminum assembly combined with a full View-Thru™ Lexan® panel
- Electrical, spring-loaded auto door releases

Rear Door

- Non-reversible, aluminum door weldment
- Electrical, spring-loaded auto door releases
- Integral fan door/plenum duct

Top Panel

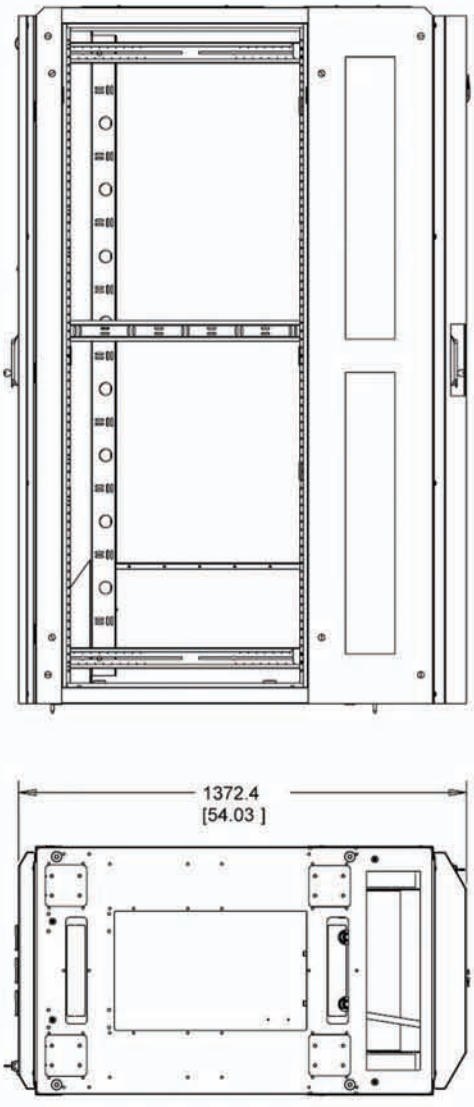
- Standard sealed top with brush cable entries

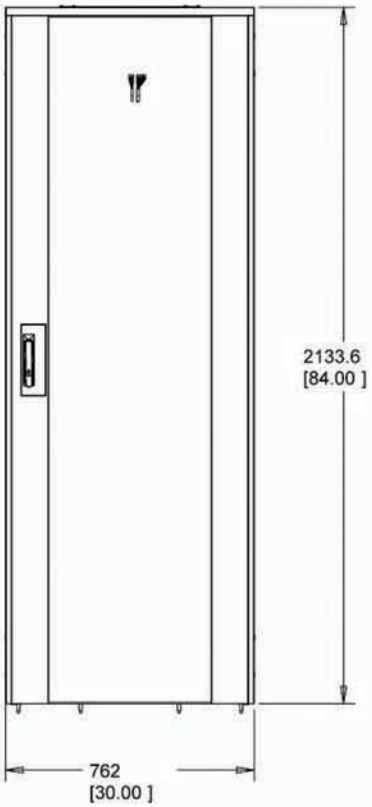
Side Panel

- 18 AWG cold-rolled steel
- Two lift handles per panel; Bolt-On

Cooling Components- Rear-mounted fan trays

- 3 EC Backed Curved Impellers/Fans
- Operating Point 0 % at 20deg C 100% at 40 degC
- 230VAC (200 – 270) Nominal voltage, 2.9A current draw
- Individual fan thermal speed control





About Nelson Industrial

Now in their fourth decade, this high end precision metal fabricator has a storied history of accomplishments. Throughout each of its five divisions, the Nelson team consistently distinguishes itself. From access doors, architectural metals, automotive, contract manufacturing and storage products, Nelson is experienced in tackling the kind of challenges others may decline. Diverse skills, creativity and modern equipment – just the tip of what others call the Nelson difference.

A pioneering company accustomed to delivering uncommon results, Nelson Industrial announces their sixth division; **Nelson Mission Critical**.

Sales Inquiries

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Mission Critical

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