



# EDGE “Driving” Industry Automation

## **WANTED:**

**Energy efficiency.**

**Cost effectiveness.**

**Streamlined operations.**

**Climate controlled.**

An international automobile manufacturer, with operations in Southern California, was looking to bring IT processing closer to the factory floor as it implemented advanced automation.

Constructing a completely new facility with IT integrated next to manufacturing equipment was out of the question, so the automobile company looked to do the next best thing – find a location for the equipment in its existing space.

However, manufacturing environments can be punishing to IT equipment, especially if its not protected properly and cooled constantly.

## **Opportunity**

The manufacturer’s automation and robotics on the factory floor required sensors and networking equipment to ensure uptime, efficiency and – perhaps most importantly – centralization of control. It had already tried putting a data center on the factory floor using a Rittal competitor’s equipment.

However, the data center used an AC unit with a filtration system that drew air from the surrounding environment. That meant IT equipment wasn’t being protected at a NEMA-rated level. With warm air and debris coming in, the manufacturer was forced to change filters once per shift and was witnessing higher rates of data center failure. The “solution” was becoming too expensive.





The LCP Rack DX has a cooling output of 12 kW and is capable of cooling up to two server racks. It is inverter-controlled, allowing IT-compatible cooling, and can regulate the server inlet air temperature. The external unit dissipates thermal energy directly to the exterior air, thereby preventing the server rack installation location from heating up.

Additionally, this system directs all the cold air to the IT equipment inlets, supplying evenly cooled air to the complete height of the enclosure, avoiding temperature gradients (meaning no hot air is returned outside of the enclosure). It's ideal for handling large thermal loads and power density challenges in uncontrolled environments.

With solid roofs on both the cooling unit and the enclosure, and solid rear and side walls, the LCP Rack DX was a reliable

closed-loop solution to deliver significant energy savings from improved thermal efficiency.

The manufacturer has two scheduled production shutdowns per year – one during the summer months and one near the year-end holidays – to implement solutions. Three months prior to the 2018 summer shutdown, Rittal spec'd the LCP Rack DX and had it ready to go. Once the shutdown came, installation took three days.

## Conclusion

The implementation of the LCP Rack DX has resulted in energy and space efficiency, greater reliability, design flexibility and is future proofed – a marked improvement over what the manufacturer had been using. It provides a stable environment with proper cooling and reduces downtime due to enclosure-related issues.

An additional benefit is the LCP Rack DX allowed the expansion of the manufacturer's system due to its flexibility and expandability. The manufacturer immediately began planning future installations. A second unit was installed during the 2018 year-end shutdown and a third unit is waiting to be installed during this summer.

## LCP Rack DX Benefits

- **Space Saving:** Replaces room-based climate control and operates only in enclosure configuration.
- **Reliability:** Designed to operate year-round in changing environmental conditions.
- **Energy Efficiency:** All air is contained and controlled, lowers the energy requirements
- **Future-Proof:** Can handle broad range of thermal loads now and in the future.
- **Design Flexibility:** Can operate with any aisle and row orientation

The manufacturer reached out to Rittal looking for a way that would allow its IT equipment to sit within a harsh environment and not be cost prohibitive.

## Solution

Rittal needed to provide a solution that not only ensured contaminants were kept out, but regulated temperature to ensure operations were running smoothly. That meant using the LCP Rack DX, due to its minimal power consumption and optimum use of indirect free cooling – an ideal cooling solution for small to medium IT installations.