



BLACKIRON Data has been designing, building and maintaining data centers across Canada for over 15 years, providing colocation services to small-medium business, enterprise and the government.

Background

For hosting providers, the data center is the backbone of its business. When BLACKIRON Data, a Canadian hosting, colocation and data center design company of 15 years, set out to build a flagship facility in the prime market of Toronto they knew they wanted to turn heads. BLACKIRON turned to Emerson Network Power to provide the cooling technology for their highly efficient, environmentally-friendly, Tier III and LEED® Silver certified data center.

Case Summary

Location: Toronto, ON

Emerson Network Power Technologies / Services:

- Liebert® DSE™ High-Efficiency Precision Cooling Systems
 - Liebert DSE room-based cooling units
 - Liebert EconoPhase™ pumped refrigerant economizers
 - Liebert MC™ Condensers
 - Liebert iCOM™ thermal management system controls

Critical Need:

BLACKIRON wanted to be an industry leader by developing a certified, environmentally-friendly, enterprise-class data center that could maintain high availability and generate cost savings for their customers. To do this, it was especially important that BLACKIRON find a cooling solution that could provide optimum efficiency and energy use without sacrificing performance. In addition, BLACKIRON also wanted to avoid using chilled water to minimize its impact on the environment.

Challenge:

Prestigious third-party certifications, optimum efficiency and high availability don't appear overnight. To reach such goals, it takes the right infrastructure provider and solutions. BLACKIRON needed the best in cooling infrastructure to ensure the new data center met their expectations while containing costs and preserving capital.

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Vice President of Data Center and Managed Services
at BLACKIRON Data



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The Situation

When BLACKIRON Data, a leading hosting and co-location provider in Canada, set out to build a new flagship data center in the Toronto area they didn't want to keep with the status quo. The new data center needed to be cutting-edge and highly certified to generate exposure and traction in the market; it would be the first of its class in the country.

“It was very important that we achieved both LEED® Silver and Uptime Institute certifications,” says Ron Ethier, Vice President of Data Center and Managed Services at BLACKIRON Data, “Those two certifications really let our customers know that they're getting a state-of-the-art, environmentally friendly, efficient, and reliable data center; the certifications speak for themselves.”

Striving for such high standards meant that selecting the right cooling solution was critical. “We needed a cooling solution that would allow a moderate initial capital investment, with the ability to add capacity as the IT needs grew”, continued Ethier. At the same time, we wanted to avoid a water-based solution, and we needed extremely high levels of efficiency. The trick was balancing all that against our guarantee of 100% availability.”

The Solution

Ethier had an existing relationship with Emerson Network Power and reached out to his representative for help selecting a cooling solution. Having used Liebert® systems in the past, he was confident they could provide high-quality, high-efficiency cooling solutions. Ethier's Emerson Network Power representative introduced him to the new Liebert DSE™ high-efficiency cooling system – which, at the time, was still in development. “When he first told me about the Liebert DSE, I was intrigued. But I wanted to see it in action and learn more about it,” said Ethier.

Emerson Network Power officials invited Ethier and the BLACKIRON team to their Columbus, Ohio headquarters to see the product. There, Ethier was able to see the product in operation and interact with the team that engineered it. “I really got a good sense of the system. At the end of the demonstration I was confident that the Liebert DSE would fit our needs. More importantly, though, I was sure that I'd have the full support of Emerson Network Power” said Ethier.

The Toronto facility uses seven 40-ton Liebert DSE cooling systems units to regulate heat in the 50,000 square feet data center, with power density at 15kW per rack. “We believe that we're using a superior product for our data center cooling needs,” noted Ethier. “It has allowed us to pursue and successfully achieve a large number of certifications, but it also helped us preserve capital as we built the facility. We didn't have to start out paying for cooling units that aren't yet needed – we'll just add more units later, as we expand.”

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At the Toronto facility, the Liebert DSE utilizes a pumped refrigerant economizer that leverages cooler outside air to reduce or eliminate compressor usage. In cooler months, this means that BLACKIRON sees low power usage and low energy expenses. “The Liebert DSE allows us to cool a large space without relying on chiller plants and chilled water – which means we’re not wasting the water associated with those things. That’s a key part of keeping the Toronto site environmentally responsible,” said Ethier. Even during warmer months when the Liebert® DSE™ operates in full compressor mode to cool the data center, the system is still more energy efficient than other cooling options. Each system features variable speed fans, staged evaporator coils and tandem digital scroll compressors to ensure that cooling is highly efficient and effective, no matter the season.

Liebert iCOM™ thermal management system controls ensure that each system component works together intelligently, for maximum effectiveness and efficiency. “We were able to easily tie the Liebert iCOM controls to an open-source management solution,” says Ethier. “So our visibility to the system operation is simplified. We’re a multi-tenant environment, so the load can shift quickly, all over the data center. The Liebert DSE system is able to adjust to these rapid changes because of the Liebert iCOM control. It maximizes energy efficiency and helps us deliver performance and availability to our customers – we don’t even need an engineer on the floor.”

BLACKIRON customers are feeling the benefits, too. “We’re seeing the kind of high efficiency numbers we expected to and that means operational savings for us,” said Ethier, “Our energy bills are lower so we’re happy to pass these savings on to our customers. And with the reliability of these units, we’re able to uphold our 100% availability promise, too.”



Liebert iCOM Controls



Liebert DSE with Liebert iCOM Controls

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The Results

BLACKIRON has successfully achieved a number of certifications for their Toronto_DC3 facility, including Uptime Institute Tier III certification, PCI DSS, CSAE 3416 Type 2, SSAE 16 SOC Type 2 and ISAE 3402 Type 2 certification and the environmental LEED® Silver certification. These certifications prove that the BLACKIRON facility is not just one-of-a-kind, but the best in the Toronto market.

“Having the certifications means a lot. Right away, customers know we’re a co-location provider they can trust,” says Ethier. “Having a presence this impressive in one of Canada’s biggest, most active markets means a lot of good things for our business.”

“We never saw this investment as a risk,” continued Ethier “Even though we were using a new solution it was based on a combination of proven, existing technologies. Regardless of that, we knew that we had the backing of Emerson Network Power in the unlikely event that we needed support. So far, we’re operating at the high levels of efficiency and availability we expected. We’re heading into the future confident that our data center can maintain world-class performance without issue. And that says a lot.”

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