

Spartan Stores

Grand Rapids, Michigan

Fueling business growth through Kanepi advanced technology

The tenth largest grocery distributor in the U.S., Spartan Stores distributes more than 40,000 private-label and national brand products in Michigan, Indiana and Ohio from three warehouse facilities in Michigan—the warehouse in Plymouth covers 325,000 square feet and in Grand Rapids, one warehouse has 750,000 square feet and the other has 250,000.

Maintaining efficiency in warehousing operations means tracking how quickly items move and adjusting floorplans accordingly. Product picking often requires selectors to spend time walking, so it makes sense to locate popular items close to the loading dock and move items picked less frequently further away. Ideally, a change in the floorplan would bring a complementary change in the lighting grid.



Challenges—For most warehousing operations, 75 percent of the overall energy bill comes from lighting, and Spartan Stores is no exception.

As warehousing operations evolved over the years, the original lighting grid got out of sync with the floor layout. Turning off lighting actually meant turning off multiple rows, instead of an aisle. Consequently, lighting fixtures were on 24 hours a day. To reduce energy usage, the company considered dimming by aisle, but that meant rewiring the entire building, an approach that was not only cost-prohibitive, it lacked the flexibility to accommodate future change.

For Spartan Stores, investing in a wireless control system for lighting that would reduce energy costs aligned with its overall strategy for growth in their distribution business: utilizing new technologies to create a more efficient, high-performance, and forward-looking grocery distribution operation.

Other criteria for the lighting system were equally important—intuitive, easy to use, with the ability to quickly adapt to a changing floorplan.

Another challenge was the sophisticated wireless data and voice communications systems used in warehouse operations. There could be no interference with these systems. *(more on page 2)*

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Solution—The Kanepi Innovations team introduced Spartan Stores to the wireless infrastructure that would give them the flexibility and adaptability they needed.

The first step was to ensure that Kanepi network did not disrupt data or voice communications. Tests were developed by the Kanepi Innovations team and conducted in the warehouse under conditions that were so extreme, they would not occur in actual practice. According to Ray Webb, energy specialist for Spartan Stores, Kanepi passed with ease; even with mesh network transmission at saturation levels, there was no interference. “It was tested under a live scenario, and it gave us a high level of confidence that we weren’t going to have issues in the field.”

Spartan Stores began installation in their grocery warehousing operations, where they were running nearly three shifts. Existing metal halide lighting fixtures and traditional switches were replaced with more efficient fluorescent fixtures and the Kanepi wireless mesh network, which not only reduces energy costs, but also provides complete building control through the web-based interface.

“It’s not the wireless system that was used in the past,” said Webb. “It’s not a transmitter-to-point-to-point system. It’s different. You have the flexibility to do all kinds of things that you wouldn’t even dream of with a hardwire system.”

With multiple strategies to conserve energy, including zone control, multi-level switching, scheduling protocols and more, Kanepi reduces energy consumption. It is a dynamic, self-healing system, so it’s always reliable, and there’s no rewiring or down time during moves, adds or changes.

Kanepi also provides data that can be used to map out the flow of activity within the building—an information feedback loop that allows further reductions in energy usage.

Results—At the Spartan Stores warehouses, the combination of Kanepi and energy-efficient light fixtures has reduced lighting energy usage by 72 percent, and Ray Webb is looking forward to developing new strategies to do even more.

“We’re going to go back in, and identify where we think we can save more energy. But the real premier application, we think, is going to be over at the general merchandise warehouse because it provides more opportunities for control.

“We focused in on the lighting to begin with, but I think because of the flexibility, we’ll be looking at other applications and saying ‘Hey, look, we could do this’ or ‘We could do that.’ We’re very confident that we have a system that’s going to do everything we want and then some. We think we’re on the cutting edge.”

“With Kanepi, every single fixture has the ability to act on its own or in a group with others. You program exactly what you want.”

Ray Webb—Energy Specialist,
Spartan Stores

Lighting can be controlled by fixture or by zone.

