

# Case Study: Mattress Warehouse

## Intelligent BEAM Smoke Detector with Integral Self Test



In order to keep up with demand and meet customer orders in a timely fashion, one of the largest mattress retailers in the U.S. was required to expand its warehousing capabilities. The company completed construction of one such facility in New York in 2009.

Because of its large size and open floor plan, the three-story-high structure presented several challenges for the fire system contractor hired to design and install the fire system, AFA Protective Systems, Inc., of Syosset, N.Y. With 30-foot-high ceilings and about 260,000 square feet of open floor space, AFA decided against using typical spot detection early in their design process.

"To cover that amount of space at that height with spot detectors would not be an effective solution for the warehouse in terms of cost or performance," said Mike Eriksen, AFA's project manager for the job. "Our installers would be up on lifts wiring over a hundred standard smoke detectors, which would make installation very costly and more time consuming." In addition, in an actual fire situation, air buffer zones could prevent smoke from reaching detectors at that height in a timely manner.

So as part of the fire system design, AFA decided to use 20 System Sensor addressable reflected beam smoke detectors with an integral self test to cover the high-ceiling areas of the warehouse. "With a long range kit, these detectors can cover up to 328 feet. So we mounted the detectors back-to-back with the reflectors on the opposite ends of the room to cover the entire space," said Andy Karzen, the lead technician on the project. "We were also able to mount the detectors on poles from the rafters about 10 feet from the ceiling to ensure that smoke from fires could reach them quickly."

Other elements of the system included NOTIFIER® 3030 Panels, 400 pull stations, heat detection, duct smoke detection, and intelligent modules to enable elevator recall.

Although AFA noted that there is a learning curve involved in installing specialty detectors like reflected beam smoke detectors, the benefits for this application far outweighed any downside. Said Karzen, "It's important to mount the detectors at least 12 inches away from the ceiling and other obstructions — so look at the environment before you start mounting."

Because reflected beam detectors include the projector and receiver on a single end, only one end of the installation needs to be wired, which reduces installation time and costs. AFA expects ongoing service and maintenance of these devices to also keep costs in line for the mattress retailer — only 20 beam detectors must be maintained compared to hundreds of spot detectors that would be required to cover the same space..

Said Eriksen, "We've been installing these devices for over six years, and the only issues we've encountered are sometimes there's a need to realign devices if there's significant building movement. But there haven't been any alignment issues with this installation since setup, nor have there been any false alarms."

### Simply Better

The System Sensor Reflected Beam Smoke Detector series includes the most innovative beam smoke detectors in the industry. With only one device to install and align and the ability to protect large areas with a single device, these single-ended solutions save you time and money on open-area and high-ceiling installations. And when it comes to ongoing operations, these detectors offer easy-to-view status indications, integral test features, and remote testing accessories that enable time and cost savings on ongoing testing and maintenance.



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