



## Research proves 9355 UPS yields perfect result for lab environment

**Product:**

Eaton® 9355 UPS

**Location:**

Boulder, Colo.

**Market Served:**

Biopharmaceutical

*"The best part about the UPS is that I don't have to think about it. It's a watchdog we don't have to feed."*

- David Fry, Research Associate

**Background**

Established in 1998, Array BioPharma Inc. is committed to the discovery, development and commercialization of targeted small molecule drugs. With a proprietary drug development pipeline primarily focused on the treatment of debilitating and life-threatening diseases, the biopharmaceutical company specializes in medications to treat cancer and inflammatory disease.

Employing more than 375 personnel — complemented by the professional contributions of nearly 300 scientists and physicians — Array also collaborates with leading pharmaceutical and biotechnology companies to discover and develop drug candidates across a broad range of therapeutic areas.

**Challenge**

Within its 154,000-square-foot Boulder, Colo., facility, Array relies on a variety of sensitive equipment to test and develop new medications. Among them is an x-ray diffractometer (XRD), a measuring device that analyzes the structure of a material from the scattering pattern produced when a beam of radiation or particles interacts with it. The machine is used by Array's chemists to check the crystallite levels in pharmaceutical powders.

"We're talking about a \$100,000 instrument," explains David Fry, one of the company's research associates. "Not only are the x-ray tubes very expensive, but the machine needs to be carefully powered up and down in manner that keeps them from blowing up."

The researcher is speaking from experience: In early 2007, unstable power wreaked havoc with the sensitive device, taking it out of commission for nearly three weeks. During that period, chemists were unable to test the crystal form of their compounds and ultimately faced having to outsource samples to another lab.

"That sort of defeated the purpose of our having the XRD," notes Fry, pointing out that Array deployed the device in-house in order to eliminate the expense and time required to send out samples. "Results can take as long as two weeks that way, compared to our ability to have the results here in 20 minutes."

Inconvenience wasn't even the worst consequence Array faced after the power outage. "Having three weeks of downtime cost the company an awful lot of money and productivity," Fry acknowledges. "That's when we knew we needed to put in a UPS."

So the biopharmaceutical firm turned its research focus to identifying the best power protection solution for the XRD machine, quickly honing in on two prerequisites. Of utmost importance was an uninterruptible power system capable of providing continuous, clean power to the highly sensitive XRD device, according to Fry. Generator compatibility was another key factor, as was a solution offering sufficient backup time to carry the load until Array's generator could completely power up.

"If there is a power outage, I need to know that the UPS will keep the XRD powered for double the amount of time it takes the generator to come online," Fry says.



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## Solution

Array discovered the perfect Rx in the three-phase, 15 kVA Eaton 9355 UPS. Available in models ranging from 10 to 30 kVA, the 9355 completely isolates the XRD from utility power with a true, double conversion online design. By safeguarding against all nine of the most common power problems — including outages, sags, surges, spikes, brownouts, line noise, frequency variation, switching transients and harmonic distortion — the 9355 delivers the highest level of reliability available.

“The best part about the UPS is that I don’t have to think about it,” says Fry. “It’s a watchdog we don’t have to feed.”

That continuous availability is critical to Array’s facility, which Fry says generally endures at least one major thunderstorm-inspired outage each year, as well as occasional summer brownouts. “But you just never know,” he points out. “We could have a heavy snowstorm wreak havoc with our equipment, or any number of other factors. The UPS brings real peace of mind.”

Protection is further enhanced in the 9355 by Eaton’s exclusive ABM technology, which significantly extends the battery life of the UPS. The innovative three-stage charging technique features prolonged rest periods between charge phases, as well as temperature-compensated charging, both of which optimize recharge time and ensure the batteries will perform as expected when Array needs them most.

Adding to the 9355’s exceptional level of reliability is a high 0.9 output power factor, which enables the unit to power more equipment than competitive UPSs of equivalent VA rating that have lower power factors. Even more, with a sleek tower configuration that includes internal batteries, the 9355 delivers a high power density per square foot. In fact, the space-saving package occupies half the footprint of previous generation systems, another advantage that proved valuable for Array. Measuring just 12 inches wide and 33 inches deep *including* the batteries, the 9355 doesn’t occupy much space within the lab.

“We were able to stuff it way into a corner,” says Fry. “We needed to maintain the surface area of the floor.”

Furthermore, the unit’s flexible installation options complemented the lab environment, which houses equipment that must be cooled by water and thus includes drains in the floor.

“We were able to put the UPS on rails and keep it off the floor, in case water ever leaks,” Fry explains.

Array also appreciates the runtime capabilities afforded by the 9355, whose internal batteries deliver three times more runtime than competitive equivalents. Beyond that, users have the ability to easily bolster runtime by adding Extended Battery Modules (EBMs). In fact, the unit is delivering twice the runtime initially desired by Fry — four times the amount required for him to manually power down the XRD

“If there was a problem with the generator coming on, then I have plenty of time to go in there and power it down myself,” Fry confirms.

Indeed, the 9355’s generator-friendly design was another key selling point for Array. With total input harmonic distortion (THD) remaining below 5 percent without compromising overall efficiency, the UPS provides a maximum transfer of power between source and protected load, enabling exceptional compatibility with generators.

## Implementation

Because the 9355’s small footprint supports more location options, the unit was quickly and easily installed within the lab. An Eaton certified customer service engineer (CSE) performed the start-up of the UPS, as well as walked Fry through its various operating parameters.

“The service technician showed how to get information from the front panel,” notes Fry, adding that he values the ease with which he can access pertinent information. “We really don’t have to do anything with the unit.”

## Result

Thanks to the deployment of the 9355 UPS, Array BioPharma has the ability to stay focused on the development of potentially life-saving drugs, rather than worrying about the uptime of its critical testing systems. With the 9355 in place, the organization is now able to:

- Provide continuous access to the XRD machine, enabling scientists to complete necessary tests and procedures
- Preserve productivity while safeguarding against costly downtime
- Ensure the XRD will remain up and running until Array’s generator kicks on, thanks to the 9355’s runtime capabilities
- Easily accommodate the requirements of Array’s lab environment with flexible installation options



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