

## CASE STUDY

### ULTRA RT6 Gimbal LED Recessed Downlight Kits and ULTRA LED Lamps

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# Kalamazoo Valley Museum

Kalamazoo, MI

#### Annual energy cost savings:

\$17,970.00\*

#### Annual kWh savings:

199,665 kWh

#### Equivalent CO<sub>2</sub> emissions

#### averted per year:

306,052 lbs of carbon dioxide (CO<sub>2</sub>)

\*based on \$0.09/kWh

## Goal:

To improve the light quality throughout the museum while reducing energy usage and maintenance costs.



#### The situation.

Kalamazoo, Michigan is well known thanks to its unique sounding name that has been featured in songs, poems and books. The townspeople are also proud of its museum, which started in 1881 as a simple collection of curiosities in the Kalamazoo Public Library's basement. The Kalamazoo Valley Museum, as it came to be called, remained there until 1996 when it transitioned to a 60,000 square foot facility at Kalamazoo Valley Community College. Today, the modern museum houses a large planetarium, state-of-the-art movie theatre, more than 56,000 historical artifacts and a variety of interactive science, weather and technology exhibits.

However, unlike the treasured artifacts found within the museum's walls, management staff quickly realized their existing halogen lighting might not stand the test of time. As years passed, the museum noted increasing lamp burnouts, which provided an inconsistent light quality and increased building maintenance costs. This was especially true in the entrance area which also serves as the museum's gathering place and displays a large, painted mural exhibit.

"At our museum, you can surround yourself with the sights and sounds of the past, experiment with science, make surprising things happen, and explore the mysteries of weather, the human body and Egyptian mummies," said Ron Cleveland, exhibits manager, Kalamazoo Valley Museum. "We realized that in order to properly display our fine exhibits though, we needed to improve the quality of our lighting."

#### The solution.

Kalamazoo Valley Museum's staff turned to North American lighting leader OSRAM SYLVANIA for their expertise to vastly improve the quality of light throughout the museum and help reduce maintenance and energy costs. OSRAM SYLVANIA recommended an array of energy-saving LED solutions including SYLVANIA ULTRA RT6 Gimbal LED Recessed Downlight Kits and ULTRA MR16, Omnidirectional A-Line and PAR38 LED lamps in order to meet the museum's lighting needs. These LED solutions were especially ideal because while delivering excellent color rendering and high-quality light to showcase the details of the exhibits, the LED solutions produce virtually no UV or infrared radiation that can damage or fade museum furnishings, art and other objects.

## The product.

The Kalamazoo Valley Museum's entrance and wall mural area, known by regulars as a focal point of the museum, often suffered from frequent lamp outages. The previous 250-watt halogen lamp fixtures were positioned in the ceiling directly in front of the mural. These recessed can fixtures attempted to direct the light produced using a bowl-shaped reflector at the bottom of the can. This design worked poorly at lighting the mural and the bowl-shaped reflectors caused heat to build up rapidly around the light source, resulting in lamps burning out.

To complement the unique fixture design and reduce the need for excessive lamp replacements, OSRAM SYLVANIA recommended SYLVANIA ULTRA RT6 Gimbal LED Recessed Downlight Kits. An ENERGY STAR qualified product, the ULTRA RT6 Gimbal kit fits into most six-inch recessed downlights with a 35 degree tilt head that creates high-performing white light optimized for retrofit applications. The ULTRA RT6 Gimbal kit is well suited for slanted ceilings and wall washing applications, making it an excellent light source for the museum's existing fixtures. Lasting 50,000 hours and reducing energy consumption up to 86 percent, the ULTRA RT6 Gimbal kit was an ideal energy-saving replacement for the museum's previous 250-watt halogen lamps. Highly efficient, the ULTRA RT6 Gimbal kit draws only 14-watts, reducing heat build-up and the need to replace burned out lamps. Available in 2700K and 3000K color temperatures, the ULTRA RT6 Gimbal kit emits up to 900 lumens and 64 lumens per watt (LPW).

To address specialty lighting requirements for museum exhibits and attractions, OSRAM SYLVANIA recommended a variety of SYLVANIA ULTRA MR16 LED 2700K lamps in the Egyptian and History exhibits and the 3000K lamps in the NASA and modern exhibits. ULTRA MR16 LED lamps are available in 25 and 36 degree beam angles that provide precise light distribution on museum exhibits and are dimmable to 10 percent, allowing museum curators added lighting customization for a variety of exhibit décors and displays. Highly energy-efficient, ULTRA MR16 six and eight-watt LED lamps offer energy savings up to 84 percent compared to halogen technologies. The lamps feature an intelligent temperature sensing capability that prevents overheating when used in recessed applications, further enhancing its reliability and longevity with a rated life of up to 35,000 hours.



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In addition, OSRAM SYLVANIA also recommended ULTRA Omnidirectional A-Line 14-watt LED lamps for added lighting effects within museum exhibits. The SYLVANIA ULTRA A-Line LED lamp is dimmable down to 10 percent, lasts up to 25,000 hours and 33 times longer than incandescent alternatives, and reduces energy consumption up to 82 percent compared to a 75-watt incandescent. Available in a warm 2700K color temperature, the ULTRA A-Line LED lamp makes an excellent incandescent replacement for an array of museum table and pendant luminaires.

The Kalamazoo Valley Museum improved its overhead and general lighting needs with energy saving and low maintenance SYLVANIA ULTRA PAR38 15, 18 and 20-watt LED lamps. Well suited for a variety of recessed, track and display lighting applications, ULTRA PAR38 lamps offer exceptional beam performance for precision accent lighting applications without compromising color quality. Highly energy-efficient, ULTRA PAR38 LED lamps last up to 20 times longer than halogen light sources, which help maintain lighting consistency throughout the museum and reduce maintenance costs.

## The green effect.

As a result of the LED lighting upgrade, the museum is saving approximately 199,665 kWh annually, resulting in 306,052 pounds of CO<sub>2</sub> emissions also reduced each year. These lighting solutions from OSRAM SYLVANIA are free of mercury and lead and compliant with the European Union's Restriction of Hazardous Substances (RoHS) directive.

## The bottom line.

The Kalamazoo Valley Museum is now enjoying beautiful long-life light and annual energy cost savings of \$17,970.00, thanks to the LED technology from OSRAM SYLVANIA. As a result, the museum is exploring other OSRAM SYLVANIA solutions for the facility. "We are very proud of our museum and the new lighting showcases the exhibits perfectly. Our LED lamps from OSRAM SYLVANIA not only outperform the previous technologies, but they will deliver significant savings we can utilize to develop new exhibits or bring artifacts to life in ways previously unexplored," said Cleveland.

## About OSRAM SYLVANIA Inc.

OSRAM SYLVANIA is a leader in lighting solutions that feature innovative design and energy savings technology. The company sells products for homes, businesses and vehicles primarily under the SYLVANIA brand name, and also under the OSRAM brand. Headquartered in Danvers, MA, OSRAM SYLVANIA is the North American operations of OSRAM GmbH.

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