

# Crossroads LED Arena Retrofit Installation

## CASE STUDY

### Background

Rabobank Arena, Theater and Convention Center is a multipurpose facility that is home to concerts and community events in Bakersfield, California. Crossroads LED is an LED engineering and manufacturing company that provides LED lighting solutions to the entertainment, industrial, commercial and architectural lighting markets.

### Project

Rabobank Arena needed to significantly reduce their overall energy usage as well as the lighting maintenance costs while increasing the overall illumination level and still maintaining the esthetic qualities of their facility. Additionally this project had to conform to the LED rebate program.

### Participating Companies



### Challenges

Rabobank Arena's original lighting platform had over 200 fixtures utilizing 150W, 300W and 500W incandescent bulbs that required a never-ending maintenance cycle, and significantly contributed to the HVAC loads. The incandescent lamps were yielding an efficacy of less than 10lm/W while a new LED lighting solution needed to bring the efficacy levels to at least 100lm/W.

Rabobank Arena's LED solution requirements were to:

- significantly reduce the lighting energy consumption, maintenance man hours and operational costs
- utilize the current fixture housings and dimming controls;
- increase the overall illumination levels of the theatre
- meet all regulatory requirements
- qualify for the local utility LED rebate program.
- be validated by the California Lighting Technology Center at UC Davis

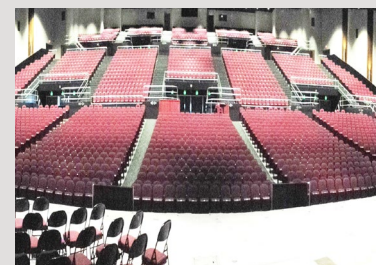
### Solution

Crossroads LED combined their patented design with the Bridgelux RS/Vero® Series 29 LED array to produce a retrofit solution that exceeded the local utility's requirements and Rabobank Arena and Theatre's expectations.

The Crossroads LED RT-ES4 Series, 45W, 6000lm retrofit luminaires provided a system efficacy of 133lm/W and incorporated interchangeable lenses to maximize illumination levels.

Additionally, the Crossroads LEDs proprietary thermal management system maintained low LED die temperatures while ensuring maximum light output and performance.

### Final Installation



### Bridgelux Array and Final Fixture



### Fast Facts

**Client:**

[Rabobank Arena](#)

**Location:**

Bakersfield, California

**Manufacturer:**

[Crossroads LED](#)

**LED technology:** [Bridgelux](#)

### Benefits

The local utility company confirmed that the retrofit luminaires reduced the lighting energy requirements of the facility from 58,000 watts (150,114.20 kWh) to just 7,000 watts (18,274 kWh), an 85% reduction in the lighting energy requirements when compared to the original lighting platform while nearly doubling the illumination levels within the facility.

The savings of over 51,000 watts (133,210 kWh) also eliminated the expensive man-hours previously required to maintain the fixtures and qualified the installation for the utility's LED Lighting Rebate Program