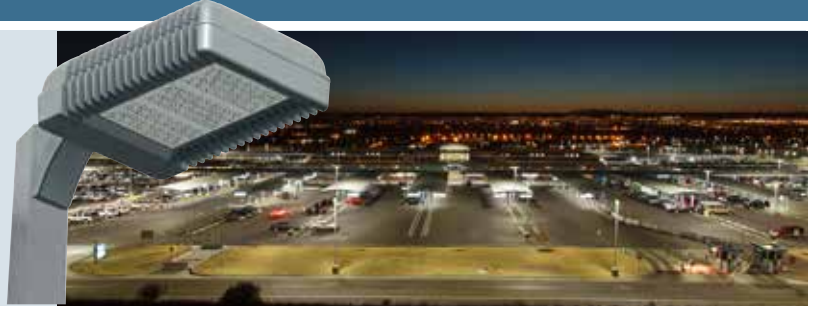


COMPANY: City of Albuquerque, ABQ
International Airport Sunport

LOCATION: Albuquerque, New Mexico

PRODUCT: Cimarron LED



Hubbell Lighting recently completed a very successful LED retrofit project at the Albuquerque International Sunport rental car parking area. Existing 400w metal halide lighting fixtures were replaced one-for-one with Hubbell Lighting Cimarron LED luminaires. Overall light levels increased by 235% the site is now saving 54% energy over the traditional lighting source. Airport car rental customers and employees now enjoy a safer more secure parking area.

What type and how long were the existing fixtures in place?

The existing fixtures were 400w metal halide mounted at 25 and 30 ft. The fixtures were installed in 2001, with 12 years of service.

What prompted the lighting change?

Energy-efficiency, performance and maintenance free features of LED luminaires. (See reverse side for energy and maintenance information)

What is the estimated energy savings?

Based on 10 cents a KWH the ABQ Sunport will save an estimated \$1,388 per month and \$16,655 per year on operating costs. This does not include savings on relamping of traditional lighting systems.

Did the LED fixtures provide the desired performance?

The LED lighting installed achieved superior results versus the traditional HID light sources previously installed. In addition to the exceptional uniformity and distribution, the LEDs provide a higher Kelvin value. With brighter performance, customers and employees commented they cannot believe the amount of light the LED luminaires produce and that they expected them to be higher wattage not lower.

What was the average installation time per fixture?

Approximately 40 minutes per luminaire, utilizing a two person crew. This included removal of the old luminaire head and installation of the new Cimarron LED luminaire.

THE RESULTS

BEFORE

400w metal halide luminaires, single and double configuration, mounted at 25 ft. and 30 ft. (Frontage road)



AFTER

Cimarron 90LED units, single and double configuration, mounted at 25 ft. and 30 ft. (Frontage road)



Comparing Lighting Technologies

The parking area lighting at the Albuquerque International Sunport is a prime example of the benefits of relighting with LED lighting. The parking area was lit with 400w metal halide fixtures mounted in single and double configurations at 25 and 30 feet. These fixtures were replaced with Cimarron 90LED 210w fixtures on the existing poles. The results included energy-savings of 54% over MH, improved overall uniformity and a safely illuminated parking area. Reference the HID/LED Comparison chart below for savings of LED systems compared to PSMH and HPS lighting systems.

HID/LED Comparison

HID SYSTEM	HID WATTAGE	HID LIFE HOURS ¹	LED WATTAGE ²	LED LIFE HOURS ³	SAVINGS
150w PSMH	185	15,000	70	60,000	63%
250w PSMH	283	15,000	140	60,000	51%
320w PSMH	361	20,000	210	60,000	42%
400w PSMH	459	20,000	210	60,000	54%
100w HPS	130	24,000	70	60,000	47%
250w HPS	295	24,000	140	60,000	53%
400w HPS	464	24,000	210	60,000	55%

NOTE: 1 Hours of life based on 50% mortality.

2 Actual wattage should be confirmed with site specific lighting calculations.

3 LED hours of life based on 70% of initial illumination.

HID/LED Energy & Maintenance Comparison

Annual Energy Costs		
Luminaire	400 MH HID Shoebox	Cimarron LED - 90
Cost Per KWH	\$0.10	
Operating Hrs / Day	12	
Fixture Qty	117	117
Input Watts per fixture	460	210
Annual Hours On per fixture	4380	4380
Annual KW	235,732	107,617
Annual Energy Costs	\$23,573.16	\$10,761.66
Annual operation savings with new LED system		\$12,811.50

Annual Maintenance Costs		
Expected Relamp & Maintenance Costs Per Luminaire (parts, labor, disposal, and lift rental per instance)	\$150	\$0
Lamp Life (rated hrs)	20,000	60,000
Expected Lamp Life In Years Given Annual Operating Hours	4.57	13.70
Percentage of Lamp Life Consumed Each Year	22%	7%
Annualized Maintenance Costs (per luminaire)	\$32.85	\$0.00
Annualized Maintenance Costs (entire site)	\$3,843.45	\$0.00
End Of Lamp Life Maintenance Cost (entire site)	\$17,550.00	\$0.00
Annual maintenance savings with new LED system		\$3,843.45

Annual Energy & Maintenance Summary		
Annualized Energy Costs (entire site)	\$23,573.16	\$10,761.66
Annualized Maintenance Costs (entire site)	\$3,843.45	\$0
Total Annualized Cost	\$27,416.61	\$10,761.66
Estimated annual savings		\$16,654.95