



Airport Apron Lighting

Musco's Industry-Leading
Total Light Control — TLC for LED® Technology



We Make It Happen®

Leading the Way in Apron Lighting

There's a lot to consider with airport apron lighting. Will glare affect pilots or air traffic controllers?

What about maintenance? Will it improve operations? Is it energy efficient?

As the use of LED continues to emerge, it's important to understand that different LED lighting produces vastly different results.

Musco has applied its more than 40 years of research and experience to take advantage of the LED light source in ways no other manufacturer can. The result is an LED system that's created new possibilities for airport lighting.



Improved Visibility

Custom optics provide greater light uniformity, improving visibility and efficiency of ground crews.



Reduced Glare

Patented glare reduction technology eliminates glare from impacting pilots and air traffic controllers.



Total Light Control

Superior light control preserves darkness in areas where light isn't intended.



Streamlined Maintenance

Remote electrical enclosures eliminate the need for lifts to service and removes weight from the poletop.



Longer Reliability

System solution with lighting, electrical, and structural components designed to work together for long-term reliability.



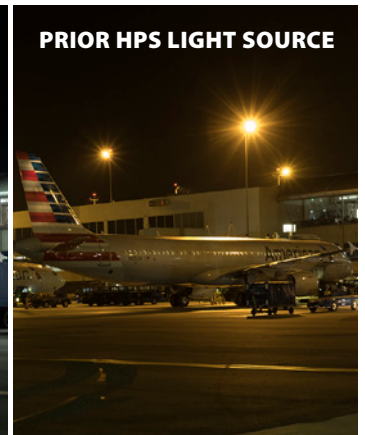
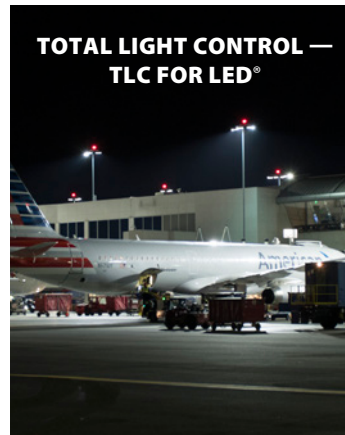
System Adaptability

Interfaces with new or existing facility management systems, along with adaptive controls based on gate usage.

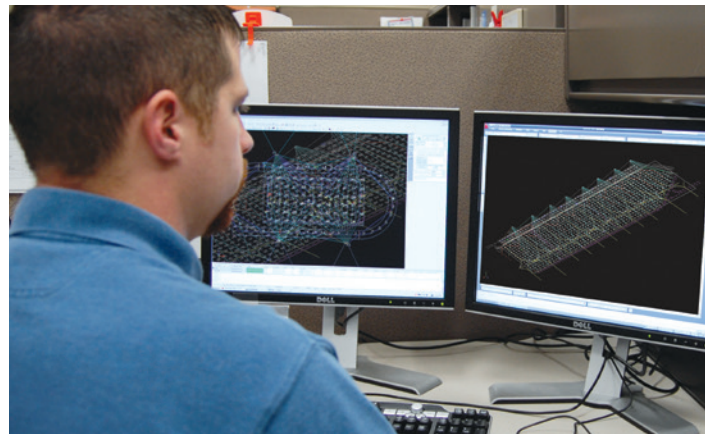


No Maintenance Costs

A comprehensive 10-year parts and labor warranty eliminates maintenance costs and headaches for the next decade.



Camera settings for both photos 1s at f/4, ISO 100, WB 4300



An Ideal New or Retrofit System Solution

Whether installed as a retrofit or foundation to poletop solution, Musco's LED apron system is factory aimed, wired, and tested for easy installation and trouble-free operation.

And for your peace of mind, both are backed by a long-term parts and labor warranty—supported by a 160-member service team—eliminating maintenance costs for 10 years.

Foundation to Poletop System

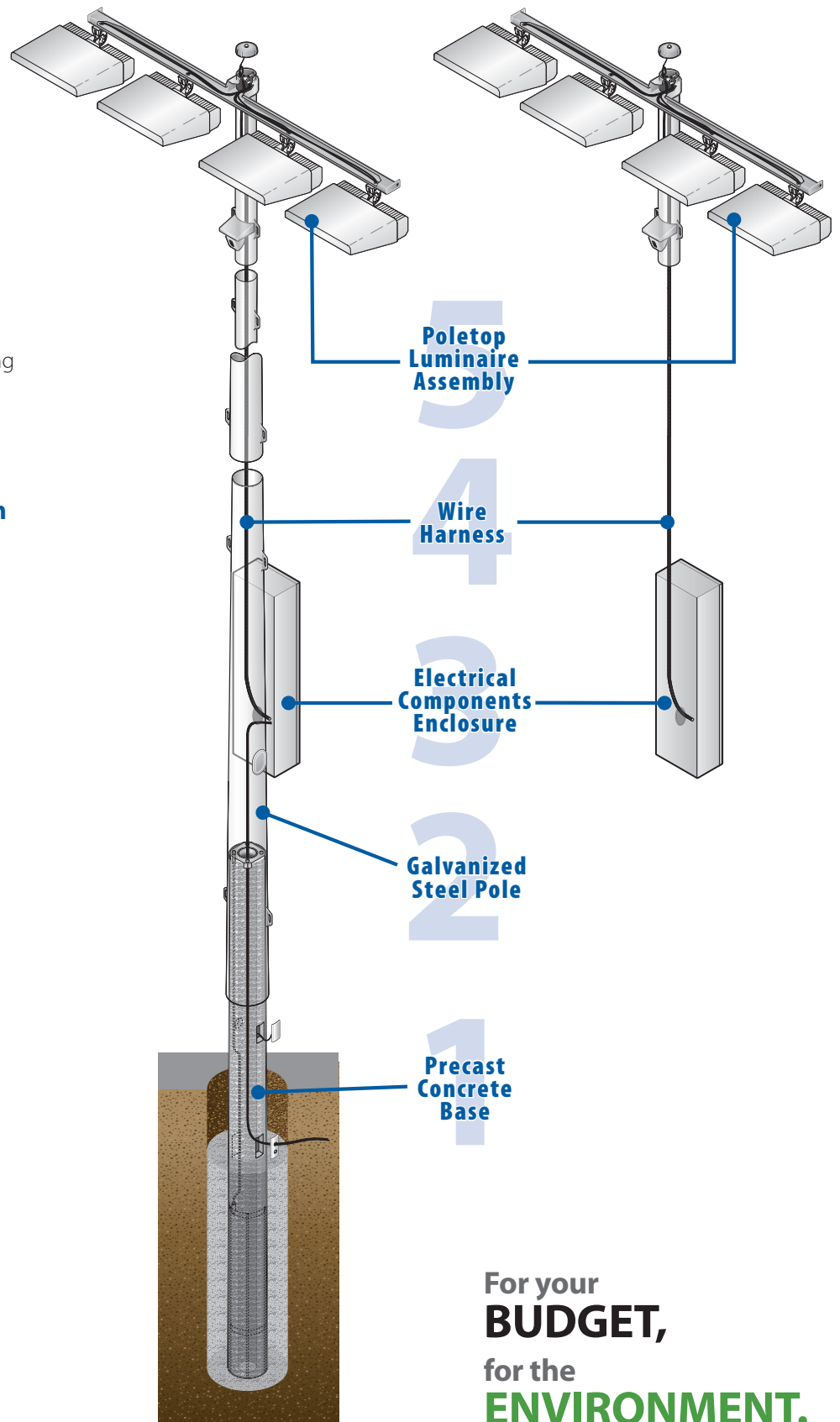
5 Easy Pieces™ from foundation to poletop includes lighting, electrical, and structural components designed to work together and a small structural footprint to maximize available area around the poles.

Retrofit System

New cross arms for structural integrity, new wire harnesses to ensure no exposed wiring and solid connections with quick-connect plug-ins, mounted to existing poles.

Foundation-to-Poletop Solution Light-Structure System™

Retrofit Solution



For your
BUDGET,
for the
ENVIRONMENT.

McCarran International Airport (LAS)

Las Vegas, Nevada, USA

The Challenge

As the eighth busiest airport in the U.S., McCarran International Airport (LAS) serves more than 47.4 million passengers each year. LAS is located just five miles from the iconic Las Vegas Strip and hosts more than 30 airlines that provide non-stop service to more than 130 destinations. The airport's existing high-pressure sodium (HPS) lighting created numerous problems such as high energy usage, constant repairs, poor color rendering, and disruptive glare for pilots, ground crews, and air traffic controllers.

The Solution

Musco's team of engineers designed a customized solution using its Total Light Control—TLC for LED® technology retrofitted onto the airport's existing poles. The new system is designed to improve energy efficiency, eliminate maintenance, enhance visibility, and provide a complete system solution for the retrofit application.

The Result



Easy Installation — The system was factory aimed, wired and tested to ensure quick installation without disrupting regular operations at the airport



Energy Efficiency — The airport cut energy consumption by 54 percent, representing a \$1.1 million savings over the next 10 years



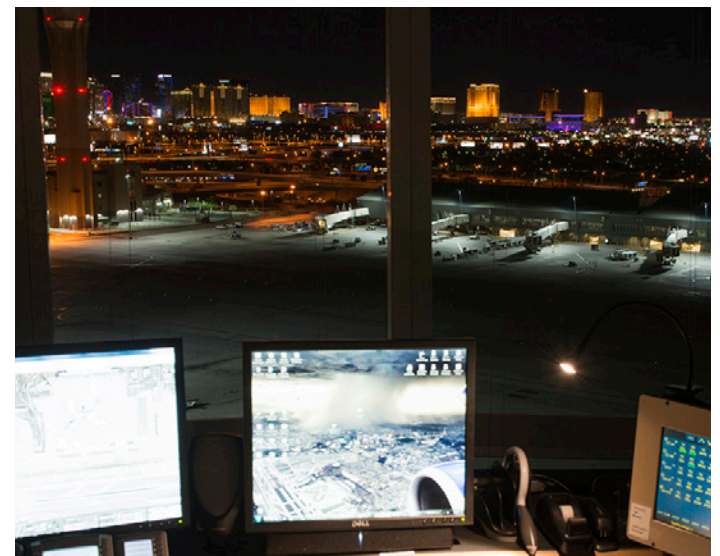
Visibility — The improved light quality and reduced glare help ground crews see packages and direct planes more effectively



System — The new system is custom designed to adapt to the airport's existing poles, including new mounting brackets, LED fixtures, and wire harnesses



Zero Maintenance — A 10-year parts and labor warranty eliminates maintenance costs and concerns over the next decade

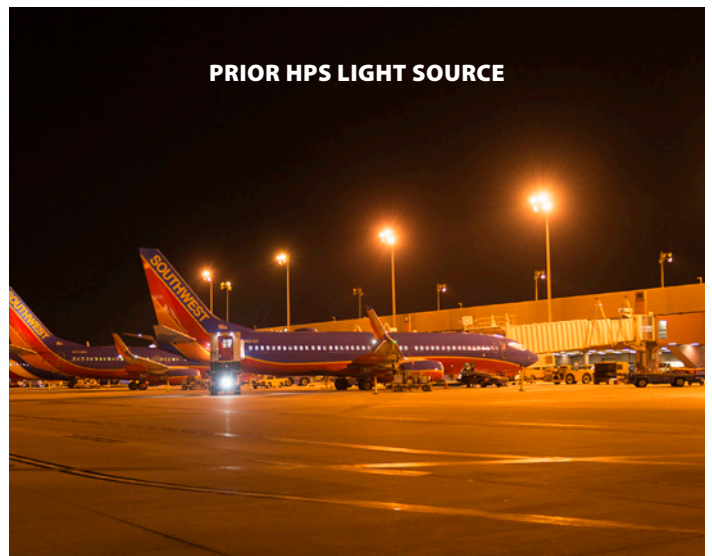


\$1,300,000
10-year operating savings



"The Musco team was great to work with from the beginning. They provided all of the engineering and backup documents we needed to ensure their system would exceed the design requirements. The new lights provided better light level coverage, reduced glare, and reduced wind loading on existing poles and foundations."

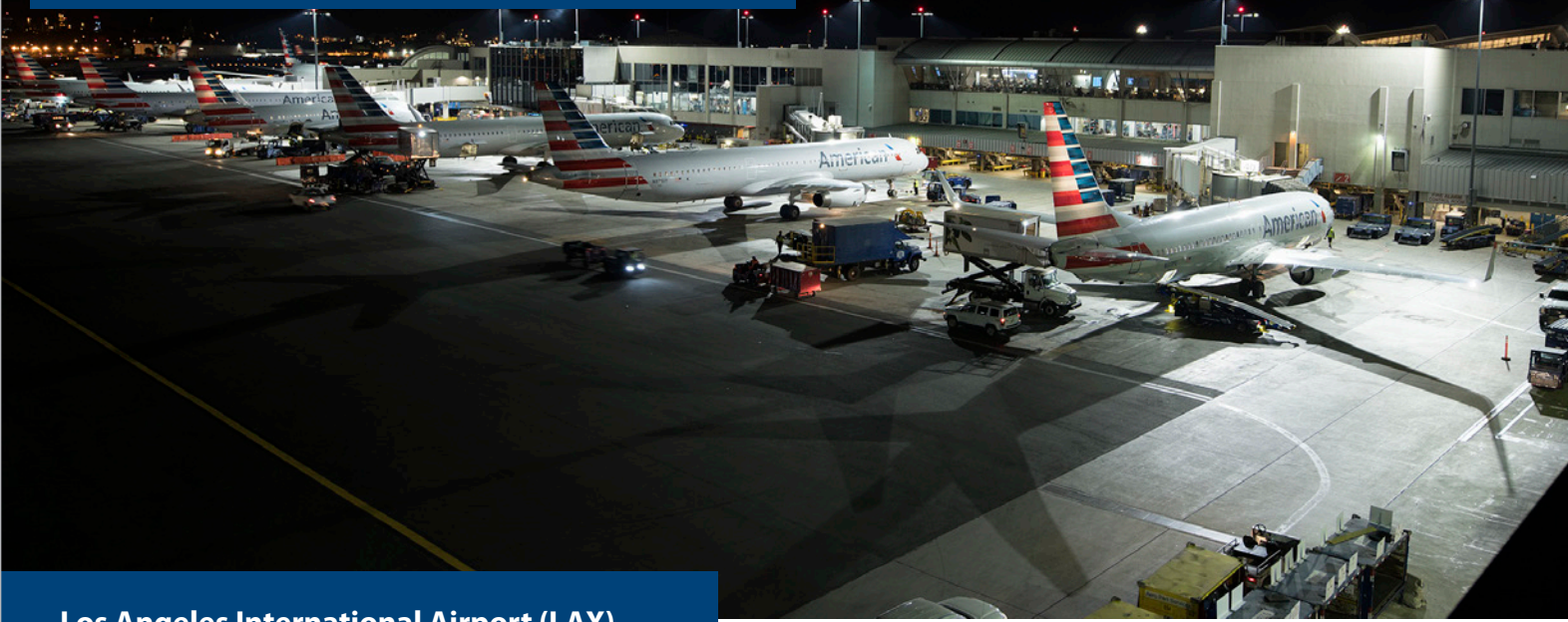
- Dustin Colwell, Engineer, Kimley-Horn and Associates, Inc.



Camera settings for both photos 1/3s at f/2.8, ISO 100, WB 4500

Los Angeles International Airport (LAX)

Los Angeles, California, USA



Los Angeles International Airport (LAX)

Musco's custom-designed retrofit LED system has dramatically enhanced operations for pilots, air traffic controllers, and ground crew while reducing energy consumption at Terminal 4 of LAX, the third-busiest airport in the world.

London Southend Airport (SEN)

Using Musco's foundation to poletop solution, Light-Structure System™, the airport was able to improve visibility, reduce glare, and eliminate maintenance. This energy efficient system vastly improves operations at SEN.



London Southend Airport (SEN)

Southend-on-Sea, Essex, UK

Project Installations: Airports

Bagram Airbase

Bagram, Afghanistan

Baltimore- Washington International Airport

Baltimore, Maryland, USA

Boston Logan International Airport

Boston, Massachusetts, USA

Bradley Air National Guard Base

East Granby, Connecticut, USA

Bristol Airport

Bristol, Southwest, U.K.

Cape Town International Airport

Western Cape, South Africa

Denver International Airport

Denver, Colorado, USA

Des Moines International Airport

Des Moines, Iowa, USA

Detroit Metropolitan Wayne County Airport

Detroit, Michigan, USA

Don Mueang International Airport

Bangkok, Thailand

Ellsworth Air Force Base

Ellsworth Air Force Base, South Dakota, USA

Fresno Yosemite International Airport

Fresno, California, USA

Fuzhou Changle International Airport

Fuzhou, Fujian, China

Gladstone Airport

Gladstone, Queensland, Australia

Grantley Adams International Airport

Seawell, Christi Church, Barbados

Greenville- Spartanburg International Airport

Greer, South Carolina, USA

Hill Air Force Base

Hill Air Force Base, Utah, USA

John Wayne Airport

Santa Ana, California, USA

Joint Base Pearl Harbor- Hickam

Honolulu, Hawaii, USA

L.F. Wade International Airport

St. George's GE CX, Bermuda

London Southend Airport

Southend-on-Sea, Essex, U.K.

Los Angeles International Airport Terminal 4

Louisville International Airport

Louisville, Kentucky, USA

McCarran International Airport

Las Vegas, Nevada, USA

Midland International Air & Space Port

Midland, Texas, USA

Nantes Atlantique Airport

Nantes, France

Nashville International Airport

Nashville, Tennessee, USA

Nellis Air Force Base

Nellis Air Force Base, Nevada, USA

Phoenix-Mesa Gateway Airport

Mesa, Arizona, USA

Pittsburgh International Airport

Pittsburgh, Pennsylvania, USA

Portland International Airport

Portland, Oregon, USA

Reno Nevada Air National Guard

Reno, Nevada, USA

Rockford International Airport

Rockford, Illinois, USA

Roman Tmetuchl International Airport

Airai, Palau

San Diego International Airport

San Diego, California, USA

San Jose

International Airport - Signature Apron

San Jose, California, USA

Savannah/Hilton Head International Airport

Savannah, Georgia, USA

Seattle-Tacoma International Airport

Seattle, Washington, USA

Sky Harbor International Airport

Phoenix, Arizona, USA

Vancouver International Airport

Vancouver, British Columbia, Canada

Williston Basin International Airport

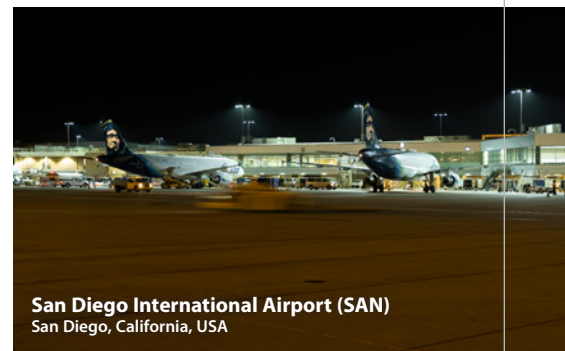
Williston, North Dakota, USA

Xiamen Gaoqi International Airport

Xiamen, Fujian, China



Vancouver International Airport (YVR)
British Columbia, Canada



San Diego International Airport (SAN)
San Diego, California, USA



Bristol Airport (BRS)
Bristol, UK



"The design, efficiency, and coverage of the lighting system easily met and exceeded our expectations. The product is exceptionally reliable and vivid. Our tenants routinely express their gratitude for the superb end result of the project."

- Justin Millican, Deputy Director of Airports and Security Coordinator, Midland International Air & Space Port



"The switch to LED for the high-mast ramp lights at GEG was driven by the desire to cut utility and maintenance costs. The reduced glare for pilots and air traffic control, and improved light quality on the ramp were great added benefits. The Musco Lighting design and installation process was easy and efficient."

- Ryan H. Sheehan, A.A.E., Director of Operations and Maintenance Spokane Airports



We Make It Happen®

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