CASE STUDY / YERBA BUENA TUNNEL

Constructed in 1936, Yerba Buena Tunnel lies beneath Yerba Buena Island on I-80 in San Francisco and connects the eastern and western spans of the San Francisco-Oakland Bay Bridge. The structure is 76 feet wide, 58 feet high and 540 feet long and listed in the Guinness Book of World Records as the largest diameter bore tunnel in the world.

The Situation

VHO fluorescent fixtures installed in the tunnel 30 years earlier required time-consuming maintenance every two years, necessitating the expensive closure of traffic lanes inside the tunnel. Approximately 270,000 vehicles pass through the Yerba Buena Tunnel daily, bringing with them the dirt and pollution common to a tunnel environment.

The Challenge

The decision was made to install LED lighting in the Yerba Buena Tunnel. The challenge was to identify an LED luminaire that could provide high levels of visibility plus the reliability and long-term performance required of luminaires used in demanding tunnel environments. Selected luminaires also had to meet the Illuminating Engineering Society of North America (IESNA) latest recommended practices (RP).

The Solution

Acuity Brands® was in the process of developing a sustainable tunnel lighting solution that was code compliant and met the tunnel’s specific performance requirements. Holophane TunnelPass™

Acuity Brands Provides LED Solutions to Meet the Bay Bridge Tunnel’s Rigorous Demands

DETAILS

Project:
Yerba Buena Tunnel; San Francisco Bay, California

Lighting Specifier:
California Dept of Transportation (Caltrans)

Lighting Manufacturer:
Holophane®

Product:
TunnelPass LED

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acuity brands provides led solutions to meet the bay bridge tunnel’s rigorous demands
LED luminaires are designed to function long-term in environments with constant vibration, regular hose downs, pollution, high levels of humidity and corrosion.

TunnelPass LED luminaires feature borosilicate glass optics for durability, permanence and glare control, with an optimized thermal management system to maximize performance and ensure long life. The fixtures also include low copper 360 alloy castings and anodized pre-treat and paint finish with a 9,000 hour salt fog rating.

New 356-watt TunnelPass LED luminaires replaced VHO fluorescent fixtures inside the Yerba Buena Tunnel and represent the first LED luminaire applicable for tunnel environments.

"Acuity Brands has a long history of developing industry leading solutions for heavy infrastructure applications like the Yerba Buena Tunnel through brands like Holophane," said Rob Drago, Acuity Brands Vice President, Infrastructure. "This high profile project included rigorous standards and a strict timeline; we are extremely pleased with the outcome."

**The Result**

Crisp, white illumination provided by the TunnelPass LED system improves visibility within the tunnel to enhance driver safety. The LED luminaires are designed to operate over 100,000 hours and reduce maintenance by at least 50 percent to virtually eliminate expensive lane closures. The tunnel is illuminated 24 hours a day, seven days a week.

Acuity Brands is an industry leader in providing innovative lighting systems for specialized applications such as tunnels, underpasses, high-speed roadways, hazardous environments, port lighting and sign lighting.