## LIGHTING CHALLENGE 137

# Lighting the Port of Miami Tunnel





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 Steven Dusseault, P.E. CEI Resident Engineer Florida Department of Transportation for the Port of Miami Tunnel project





## **Project Summary**

**Challenge:** Support drivers' visual perceptions – both day and night – from the point of entry to the point of exit. **Solution:** Kenall LuxTran<sup>™</sup> tunnel luminaires for the threshold/transition zones, interior zone and passageway. **Benefit:** Excellent lighting performance that meets demanding specifications approved by the Florida Department of Transportation.



## LuxTran<sup>™</sup> Meets Demanding Specification for Port of Miami Tunnel Lighting

Port of Miami Tunnel, Miami, FL



"The lighting provided for the Port of Miami Tunnel has met all of the performance requirements of the demanding specification prepared by the project designer and approved by the Florida Department of Transportation."

Steven Dusseault, P.E.
CEI Resident Engineer,
Florida Dept. of Transportation,
Port of Miami Tunnel project

The much-anticipated Port of Miami Tunnel is now officially open for business. Costing in excess of \$1 billion, the tunnel is funded through a public-private partnership where no tolls are charged, a first in the United States.

The tunnel project is part of a larger initiative to increase access to the port by providing alternate routes for inbound and outbound cargo truck and cruise-related tour bus traffic.

The port tunnel design and operation incorporate layers of best practices culled from tunnels around the world, like the installation of fire prevention boards, security cameras and ventilation system jet fans.

However, some of the tunnel system components are specific to the tunnel's location in South Florida, like hurricaneproofing gates.

After four years of work, the twin tunnel allows port traffic to bypass the streets

of downtown Miami. The tunnel is about 4,200 feet long and 120 feet below Biscayne Bay. It has two dedicated lanes in each direction connecting Miami International Airport and Interstate 95 directly to the Port of Miami.

Before the tunnel, the only way into the port was through Port Boulevard, which caused heavy traffic for cargo trucks and cruise ship passengers. The tunnel will alleviate congestion of the nearly 16,000 vehicles that travel to and from the seaport through downtown streets each weekday

Designed to support the visual perception of drivers, effective tunnel lighting systems must address a variety of design concerns, including traffic density and speed, spatial and visual adaptation, contrast between potential obstacles and their background, and glare.

Given the complex nature of tunnel lighting, one of the greatest challenges is the ability to support drivers' visual perceptions – both day and night – from the point of entry to the point of exit.

Along with 374 100W, 250W, and 400W Kenall LuxTran<sup>™</sup> LTD2424, ceiling-mounted high pressure sodium fixtures that were used to supplement the threshold/transition zones, there are also 998 Kenall custom-designed 5' fixtures with F35T5 lamping for the interior zone and passageway lighting along the upper sidewalls of the tunnel, most of which remain on during daytime hours.

The tunnel lighting control system automatically adjusts the amount of lighting needed, at a given time, based on ambient light levels just outside of the tunnel portals.

In addition, all of the luminaires were designed with custom mounting kits for easy installation.



 $\mathsf{LuxTran}^{\mathsf{T}}$  safely guides drivers throughout the Port of Miami tunnel.

#### LuxTran<sup>™</sup> Features:

- One-piece stainless steel housing with passivated welds for corrosion resistance
- Custom mounting kits for ease of installation
- Meets ANSI certifications
- UL certified IP66 per IEC 60598

#### **Benefits for Port of Miami:**

- Durable construction to last decades
- Safely guides drivers throughout the tunnel both daytime and nighttime
- Performance requirements of a demanding specification met
- Ease of maintenance with removable gear tray and tool-less access

"The lighting provided for the Port of Miami Tunnel has met all of the performance requirements of the demanding specification prepared by the project designer and approved by the Florida Department of Transportation," said Steven Dusseault, P.E. CEI Resident Engineer on behalf of the Florida Department of Transportation for the Port of Miami Tunnel project. "Testing of the systems has shown the excellent lighting performance and is expected to provide years of service to travelers to the Port of Miami," Dusseault continued.

#### For more information, please visit us on the web at www.kenall.com



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