



Air Traffic Controllers

A Case Study on How Dimming Feature Improves Quality of Light



For most of the nation's workers, sufficient lighting is a critical element enabling them to do their jobs. For air traffic controllers, however, the absence of light is the element that helps enable their success. The six to eight individual air traffic controllers at a major airport on the west coast typically require near-total darkness in their tracking and training rooms to monitor information on their computer and radar screens. Working in up to 12-hour shifts, these employees track the movement and arrival of airplanes from between 5 and 60 miles out of the airport, where every dot and symbol on their screen is a meaningful piece of information and where any missed signal could have far-reaching impacts on people and property.

The facility's lighting requirements made for a unique situation for the team of lighting specialists who undertook an upgrade within the 3-room area in 2003. At one time, background lighting was not even a viable option for the rooms housing the air traffic controllers, until improvements to computer and radar screen technology finally enabled this opportunity. Once acceptable, the lighting system ultimately chosen for the tracking and training rooms — 2 x 4 and 2 x 2 fixtures containing 32W T8 fluorescent lamps driven by electronic ballasts — “was definitely energy-efficient, but its brightness was blinding,” said Eden Van Ballegooijen, Lighting Controls Specialist at Nevada Sales Agency, of the previously-installed system. “Employees spent most of their time in cave-like conditions to do their jobs, which is difficult enough, without then having to deal with the shock of fluorescent lighting coming on full blast when lights were ultimately switched on. We needed a lighting solution that would effectively “*split the difference*” for the air traffic controllers, providing more light during

work hours and less light when lights were actually turned on.”

The solution came in the form of a fluorescent dimming system involving Philips Advance Mark 10® *Powerline* dimming ballasts. Through their installation within 6 fixtures in the roughly 800 square feet of space involved in the main tracking room, workers had the ability to control lighting quantities and dim levels down to 5%. The employees have been extremely happy with the lighting system since the dimming capability was introduced. “Lights are still kept fairly dim in the room,” notes Van Ballegooijen, “but for both health and psychological reasons, the dimming feature keeps the lights at much better levels for them overall.” Since Philips Advance's Mark 10 *Powerline* dimming ballasts take their dimming signals directly from the power line, no additional control wiring is required, making installation a simple and cost-efficient process. They can operate with a wide variety of controls from over 20 controls manufacturers, including wall box dimmers, architectural dimmers, occupancy sensors, and others, and provide lamp ignition at any light setting, including the 5% dim level, making it unnecessary to ramp up to 100% light output when starting. Other features of the Mark 10 *Powerline* ballast include programmed-start operation for optimized lamp life in frequent starting conditions and operation above 40 kHz to minimize risk of interference problems.

With their new electronic dimming system now in place, working conditions for the airport's air traffic controllers have been significantly improved and specially targeted to their unique needs.

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Project Overview

End User:

Major west coast airport

Project Site:

Upgrade of lighting within 1-3 tracking and training rooms in air traffic control tower

Project Scope:

Upgrade of existing 32W T8 fluorescent lamps and standard electronic ballasts to a system involving 32W T8 fluorescent lamps driven by electronic dimming ballasts to improve lighting conditions and enable controllability of lighting by end users in dark tracking rooms

Project Timetable:

Completed in 2003

Products and Suppliers Used:

Philips Advance Mark 10 *Powerline* dimming electronic ballasts with support from Nevada Sales Agency

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