



EDS APPLICATION NOTE

OFFICE CEILING LIGHTING

A customer wanted to reduce energy costs by upgrading the office floor's lighting to the new electronic dimming ballasts without effecting productivity. The floor area had large windows on each side and the floor layout was partitioned into cubicles, with several walled conference rooms against the windows. The floor's lighting was also to be connected to an energy management system.

The customer considered using just a wall dimmer to adjust the overall maximum light level, but wanted to achieve more responsive control to the available daylighting. Also considered was a step down switching control system, but such a system would not use the proportional control capabilities of the electronic dimming ballasts, and could create distractions at the steps.

The solution was the **PLC-MULTIPOINT EDS** sensor. The **EDS** works with electronic dimming ballasts such as the **ADVANCE MARK VII**. The sensor provides proportional control of the lighting level from 100% of the full ballast output down to 1%. The output of the **EDS** can be used to control up to 80 **ADVANCE MARK VII** electronic dimming ballasts.

The placement of the **EDS** sensor was critical to the ability to control lighting. The floor's lighting control was organized into four zones, with one sensor on each side of the building. Additional sensors were placed in the walled conference rooms. Separate low voltage wiring connected each ballast in a task zone to the sensor controlling that zone.



The lighting power circuitry was distributed from standard circuit panels and interlocked with the energy management system. The energy management system provided the OFF control of lighting during nightly sweep periods and permitted the dimming control during the day. The sensors were placed approximately 6 feet in from the windows, facing down upon an average task area. The easy mounting of the **EDS** sensor (it required only a 3/8 hole in a ceiling tile) and simple connection of the low voltage wiring to the **ADVANCE MARK VII** ballast allowed for a rapid retrofit of the lighting system.

All the sensors were individually adjusted to the response range desired for each zone. The southern, eastern and western perimeters had the greatest availability of ambient light, and were adjusted to provide the maximum response of the sensor. The northern exposure had less available light and the dynamic range of the sensor was reduced to provide more light from the ballast.

By combining the **EDS** sensor with the electronic dimming ballast, the customer was able to achieve dimming control that was barely noticed by the employees because the sensor's response to small incremental changes in the lighting level provided small changes in the ballast's output.