

SDERC Lighting Display

DALI Dimming Ballasts and Controls: Digital Addressable Lighting Interface (DALI) Continuous Dimming Ballast and DALInet™ Lighting Management Software (LMS)
Location: Fixtures #3&4

Technology Description: Lighting Management Software that allows custom control of light levels and settings from a computer terminal or pre-programmed. The LMS is Windows based and can control one room or an entire campus. Energy and tenant building modules can be created to generate monthly billing statements. Presets for holidays and business schedules can be programmed and lamp and ballast failure reports can be generated. Optional individual user controls with pop-up workstation control screens are available. The site license supports an unlimited number of routers; individual workstation licenses are sold separately. The RT03 router has two full power networks that can be operated independently or bridged together; the router can address up to 128 ballasts (or other addressable device). Sixteen groups and scenes are available for each addressable device. The Advance ROVR ballast is a controllable programmed-start electronic ballast and is digitally addressable; it can be dimmed from 100% to 3% of light output. The Advance ballasts have short protection which some of the other DALI ballasts do not have. With ballasts that do not have short protection, if a lamp is replaced when power is on, and if a lamp pin is still in the socket and another lamp pin touches the metal housing the ballast is fried, requiring another expensive ballast, addressing it and commissioning it.

Display ballast is a 4 lamp ROVR IDA-4S32 and controls two fixtures with 2 F32T8 lamps in each. Lights can be dimmed from the computer kiosks. Ballast factor ranges from 0.88 to 0.03 and system wattage ranges from 116W to 25W. Additional power is required for the control system. 1, 2, and 3 lamps ballasts will be available in 2005 and T5HO systems are in development.

Applications: Comprehensive lighting management. Nonlighting systems, such as HVAC and window shades can also be incorporated.

Energy Savings: Savings come from programmed scenes and dimming capabilities and depend on light levels and schedules. Centralized control may provide substantial peak load shedding savings during periods of high electrical costs and utility stage alerts.

Costs: A ROVR ballast costs approximately 5 times more than a standard electronic ballast. The software and router costs approximately \$1200 (each RT03 router comes with DALInet™ Lighting Management Software).

Donated Product: SDREO would like to formally thank Andy Miller of Advance Ballasts (www.advancetransformer.com) for donating the DALI ballast and Greg Dreith of Starfield Controls (www.starfieldcorp.com) for donating the DALInet™ software and router. Andy Miller can be reached at (562) 461-2005 and andrew.c.miller@philips.com; Greg Dreith can be reached at (303) 427-1661 and gdreith@starfieldcorp.com.

Discussion: DALI systems can be a very good solution, but be aware of the high initial ballast, wiring, control, installation and commissioning costs. Also, like most other dimming electronic ballasts, DALI ballasts are also much less efficacious than extra efficient fixed output instant and program start ballasts. You can compare BEF (ballast efficacy factor, which is ballast factor x 100 / system watts) at full light output and through out the dimming range. The more a ballast dims the higher the percentage of wattage is required to properly provide lamp cathode heating. Whenever T8 dimming ballasts are considered, they should be compared against the best fixed output T8 systems, not generic ballasts with basic grade T8s and especially not compared to T12 systems.

Advance/Philips plans to introduce Equos in late 2005, which is a DALI system controlled by RF, so no control wires will be necessary, which can save considerable money on installation. This will use zigbee, which can also integrate data and other systems (www.zigbee.org).