

LIGHTING AND LIGHTING CONTROLS STANDARD

The purpose of this information is to establish a standard for all lighting and lighting controls used on projects for The University of Alabama in Huntsville. This standard shall be the basis of design and construction practices for all projects performed on campus. This standard covers all interior design as related to lighting levels, fixtures, controls and energy efficiency as well as exterior lighting (perimeter and parking).

Lighting systems design shall incorporate the most energy efficient and cost effective combination of natural light, lamps, ballasts, luminaries and control devices. Use of occupancy sensors, daylight control systems, building automation systems, relay control systems and other systems or devices that reduce lighting energy cost for return on investment by use of Life Cycle Cost Analysis. Incandescent lighting or magnetic ballasts shall NOT be used, except with written approval by Campus Architect's office.

Vacancy sensors with manual-on operation shall be used for all common areas, such as offices, conference rooms, copying rooms, file rooms, large storage areas, break areas and other similar spaces. Only manual operated lighting shall be used in all electrical rooms in order to maintain a safe working area. If bi-level lighting is used, 50% of lighting should be auto-on with the remaining luminaires being manual-on and auto-off.

Sensor mounting shall be either wall switch or ceiling mounted, depending on the space type, size and application. Sensor types shall be ultrasonic, passive infrared (PIR), or dual technology (passive infrared (PIR) and ultrasonic (US) depending on space type, size and application. Sensors tied to the HVAC system controls shall be used wherever capable and practical.

Daylighting controls should be used in large areas with sufficient natural light such as atriums, and areas with skylights.

Mounting of controls shall conform to the following unless exceptions are granted in writing by the owner:

- Small, personal restrooms shall be PIR technology, wall switch
- Break rooms and small private offices shall be mounted overhead, dual technology.
- Open areas such as open office areas, large restrooms, stairwells, and corridors shall be mounted overhead, ultrasonic technology. Conference rooms, Classrooms, and large, private offices shall be mounted overhead, dual technology, utilizing 0-10V dimming ballasts or dual switching where possible.
- Electrical and Mechanical Rooms shall be controlled by manual switching.
- Small Storage Rooms, Janitor Closets, etc. shall be controlled by a wall mounted digital time switch with time-out settings range from 5 minutes to 3 hours (minimum) and temporary override option of the preset timeout period.
- Laboratories shall be mounted overhead, dual technology.

- Computer Rooms shall be mounted overhead, dual technology.

Approved occupancy sensors:

- Watt Stopper
- Lutron
- Sensor Switch.

Lighting design for corridors, hallways, and designated paths of egress shall have provisions to decrease lighting to lowest illumination allowed by State and local codes in accordance with NFPA101 requirements utilizing occupancy sensors and after-hour timed schedules.

Lighting fixtures which have been standardized for campus use are as follows. NO SUBSTITUTION will be allowed, however, an alternate for approved substitute equal, as approved by Campus Architect, shall be included within bid documents to allow for competition pricing.

- Standard light fixtures for interior 2' x 4' and 2' x 2' recessed lighting shall be Ledalite, PureFX, ST.
- Standard light fixtures for parking lot and street lighting shall be Widelite, mini square Supra-Lyte, bronze finish for fixture and pole.
- Standard light fixtures for pedestrian and walkway lighting shall be Gardco Gullwing by Philips, G13, with natural aluminum paint finish for fixture and pole.

There shall be a dedicated panel board for lighting loads to be for submetered.

All ballasts shall be NEMA Premium. Program start ballasts shall be used when controlled by sensors. Ballasts shall be less than 10% harmonic distortion