

Energy Code for the State of Oregon

Oregon has its own State Energy Code which is similar to, but more stringent than, ASHRAE 90.1-2004.

The following are highlights of the Oregon Energy Code which pertain to lighting controls.

INTERIOR LIGHTING.

LOCAL SHUTOFF CONTROL. At least one local shutoff control shall be provided for every 2,000 ft² of lit floor area and all spaces enclosed by walls or ceiling height partitions.

AUTOMATIC SHUTOFF CONTROLS. Buildings greater than 5,000 ft² and office occupancies over 2,000 ft² of contiguous floor area shall be equipped with separate automatic controls to shut off lighting during unoccupied periods. Automatic controls can be occupancy sensors, time switches or other devices capable of automatically shutting off lighting. All enclosed office areas less than 300 ft², all meeting and conference rooms and all school classrooms shall be equipped with occupancy sensors.

OCCUPANCY SENSORS. Occupancy sensors must turn off lights no later than 30 minutes after area is vacated. Fixtures controlled by occupancy sensors must have a wall-mounted manual override switch.

TIME SWITCHES. Automatic time switches shall have a minimum 7-day clock, be capable of being set for 7 different day types per week and have a holiday shutoff feature which turns all loads off for at least 24 hours. Automatic time switches shall have program backup capabilities of at least 10 hours if power is interrupted. Automatic time switches must have a manual override switch. Override switches must be accessible, must allow the operator to see effects of switching, cannot allow lighting to remain on longer than 2 hours after override is initiated, and cannot control an area more than 2,000 ft².

DAYLIGHTING CONTROLS. Classrooms and atriums with a window/exterior wall ratio more than 50% shall use automatic daylight sensing controls for all luminaires installed 15' inward and 5' to the side of windows. Classrooms or atriums that have skylights, monitors or other fixtures ceiling-level or higher shall use automatic daylight sensing controls for all luminaires within an area equal to the footprint of the ceiling plus the floor-to-ceiling height on all sides.

Automatic daylight sensing controls shall be capable of reducing the light output by at least 50% while maintaining a uniform illuminance, shall provide continuous dimming, shall control only luminaires within the daylit area, and shall have time-delay circuits to prevent light-level changes less than 3 minutes.

INTERIOR POWER ALLOWANCE. The interior lighting power allowance for a building shall be determined by either the tenant space/building area (building area times allowed power density for building type) or the space-by-space method (sum of individual space allowances as determined by building type).

Power density factors for the tenant space method are in Table 5a and power density factors for the space-by-space method are in Table 5b of the Oregon State Energy Code.

EXTERIOR LIGHTING.

GENERAL. All exterior lighting systems, including those attached to building exterior surfaces, mounted onto or in adjacent structures, attached to poles, or mounted on or into the ground shall be controlled by a timer, photocell or both. These switches shall be designed and programmed to extinguish lights when daylight is present. Clock switches shall be astronomic with separate programs for each day of the week and shall store energy to maintain timekeeping during power outages.

Motion sensors, if used, shall employ photoelectric switches to prevent operation during daytime.

No incandescent or mercury vapor lighting sources shall be used for exterior building lighting, except for uses in or around swimming pools or water features.

EXTERIOR POWER. Lighting power requirements for covered parking and storage garage areas shall be included in the interior power allowance calculation.

The above is a very brief guideline, as interpreted by Douglas Lighting Controls. Refer to the Oregon State Energy Code for details applicable to your lighting control project.

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