

# Energy Code for the City of Seattle

The city of Seattle has its own Energy Code, which is generally more stringent than the Washington State Energy Code that is based on ASHRAE 90.1. The following are highlights of the Seattle Energy Code which pertain to lighting controls.

## INTERIOR LIGHTING.

**GENERAL.** For any building, each space enclosed by walls or ceiling-height partitions shall have manual controls, for all lighting within that space, which must be readily accessible at entry/exit. Automatic controls can be provided in addition to manual controls. Daylighted zones shall have controls independent of general area lighting. Display or specialty lighting shall be controlled separately.

**DAYLIGHT ZONE CONTROLS.** Contiguous daylighted zones adjacent to vertical glazing may be controlled by one device provided they face the same direction. Daylighted zones under overhead glazing more than 15' from the perimeter must be controlled separately. Daylighted zones under overhead glazing that exceed 5000 ft<sup>2</sup> must have at least two independent photo control systems, each with a dedicated photo sensor.

Daylight zones shall have automatic controls which reduce lighting power in response to available daylight. Automatic controls can be a combination of dimming ballasts and daylight-sensing controls that can dim the lights continuously, or a combination of stepped switching and daylight-sensing automatic controls that can reduce the lighting incrementally. Single and double-lamp luminaires shall have three levels of automatic control (1/3-2/3). For three or more-lamp luminaires, the number of incremental levels must be equal to the number of lamps plus one.

**AREA CONTROLS.** The maximum lighting power controlled by a single switch or automatic control shall not exceed that provided by a 20A circuit loaded to 80%. Master controls may be installed provided the individual switches retain their capability to function independently. Circuit breakers may be not be used as the sole means of switching.

**AUTOMATIC SHUT OFF CONTROLS.** Buildings greater than 5000 ft<sup>2</sup> and all school classrooms shall have automatic controls to shut off lighting during unoccupied hours. Automatic controls can be occupancy sensors, time switches or other devices. All enclosed office areas less than 300 ft<sup>2</sup>, 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 and be capable of being set for 7 different day types per week, with a 24-hour holiday shutoff feature. 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 switch must be readily accessible and must allow operator to see all lights or areas controlled. Override switches cannot allow lighting to remain on longer than 2 hours after override is initiated and cannot control an area exceeding 5000 ft<sup>2</sup> or 5% of building footprint for footprints over 100,000 ft<sup>2</sup>, whichever is greater.

**INTERIOR POWER ALLOWANCE.** The interior power allowance for a building area shall be determined by multiplying the interior floor area by the allowed power density factor for how that area will be used. The lighting power allowance for each use area within the building shall be separately calculated and summed to obtain the interior power allowance for the building.

## EXTERIOR LIGHTING.

**GENERAL.** Exterior lighting, including signs, shall be capable of being automatically switched off during daylight hours and non-use nighttime hours by either a combination of timer and photocell or a timer with astronomic control. Automatic time switches shall also have program backup capabilities retaining programs and time settings for at least 10 hours if power is interrupted.

**EXTERIOR POWER ALLOWANCE.** The exterior lighting power allowance shall be the sum of the calculated allowances for (1) covered parking and (2) outdoor parking, outdoor areas and building exteriors. (1) and (2) shall be calculated separately with no trade offs. The lighting allowances for covered parking shall be 0.20 W/ft<sup>2</sup>. The lighting allowances for open parking and outdoor areas shall be 0.15 W/ft<sup>2</sup>. The lighting allowance for building exteriors shall be calculated either by multiplying the building facade area by 0.15 W/ft<sup>2</sup> or by multiplying the building perimeter in feet by 7.5 W/lineal ft.

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

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