2019 California Building Energy Efficiency Standards Title 24 Quick Reference Guide Non-Residential Lighting Controls



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NON-RESIDENTIAL LIGHTING CONTROLS

Section 130.1 MANDITORY INDOOR LIGHTING CONTROLS Nonresidential, high-rise residential and hotel/ motel buildings shall comply with the applicable requirements of Section 130.1 (a)-(f), in addition to the applicable requirements of Sections 110.9 and 130.0.

Section 130.1(a) Manual Area Controls	Be readily accessible; and located in the same enclosed area with the lighting it controls; and provide separate control of general, floor/wall/window/case display, ornamental, and special effects lighting.			Section 130.1(d) Daylighting	Automatically adjust the power of the installed lighting up and down as incoming daylighting changes. Daylighting controls shall provide separate control for luminaires in each type of daylit zone. Lighting in skylit zone and sidelit zone is considered skylit zone.		
Exceptions	Public restrooms having two or more stalls, parking areas, stairwells and corridors may use a manual control not accessible to unauthorized personnel	Malls, auditorium, retail/showroom sales, Comm/Industrial storage areas, psychiatric and secure areas in healthcare facilities and other areas where placement of a man- ual switch poses a health or safety hazard. Switch can be within site of the lights being controlled or have a visual indicator.	In healthcare facilities, restrooms, bathing rooms intended for a single occupant, the lighting control may be located outside but directly adjacent to the door	Exceptions	 Glazing in room is <24 ft² Primary/Skylight lighting <120W 	Glazing with over	hang above may be exempt. retail merchandise/wholesale
				Daylighting Requirements	Continuous dimming or Multi-leve Combined illuminance not less that illuminance.	an designed output, lighting s • Parking structures	ylighting is >150% of designed hall be reduced by minimum of 65% s, when daylighting is >150% of at the farthest end of the daylighting
ection 130.1(b) ulti-level Controls	watts per ft ² . The lighting would re	the enclosed area is >100 ft ² . or large equire multi-level that allow the level ps shall meet the uniformity requirem	f lighting to be adjusted up or				
cceptions	Spaces with only one luminaire with no more than two lamps.	Classrooms <0.7 Wft ² with a control step between 30-70%	Healthcare facilitiesRestrooms	Section 130.5(d) Plug Load Control	Plug load control required in office spaces/kitchens, lobbies, conference rooms, copy rooms and Motel/ Hotel guest rooms within 30 minutes of vacancy. Plug load can be all split wire controlled or complete receptacle within 6 ft of each uncontrolled receptacle.		
ection 130.1(c) hut-OFF Controls	other control capable of automati	power. be controlled with occupant sensors, a cally shutting OFF all the lighting who mental and each floor (other than stai ns, single tenant retail, industrial.	en unoccupied. Separate	Exceptions	 Healthcare exempt. Refrigerators/Water Dispensers. Located >6 ft. above floor for clocks. Network copiers, fax, A/V and data equipment other than PC. Remodels required if complete replacement of electrical distribution system. 		
xceptions	 Continuous use 24/365 Egress lighting, <!--= 0.1 W ft<sup-->2. 	Electrical equip roomsHealthcare facilities	 Emergency lighting which only operates when normal power is absent 	Section 110.12 Demand Response	Nonresidential buildings > 10,000 ft ² shall be capable of automatically reducing lighting power, per Table 130.1-A, in response to a Demand Response Signal a minimum of 15% below total lighting power. Shall be Open ADR 2.0 a/b Virtual End Node (VEN) OR capable of responding to a certified Open ADR 2.0b VEN.		
ccupancy Sensors-Required	 Offices <250 ft². Multipurpose rooms >1000 ft². Restrooms 	 Classrooms Conference Rooms 20 min max timeout 	 If Multi-level control is required (>100 ft². & >0.5 W ft².) must be partial on (50%-70%) or 	Exceptions	 Health or life safety statute or regulation. Spaces < 0.5 W are not controlled and do not count toward 10,000 ft² 		
	Stairwells	• 20 min max time-out	• Library book stack aisles.	Section 130.2 Outdoor Lighting Controls	Shall be independently controlled from other electrical loads. Part night controls must have sunrise/ sunset prediction via photocell and time measurement and have the ability to reduce or turn off outdoor luminaires at night.		
ccupancy sensors-Full ON to artial OFF >50% and Auto OFF	Aisle ways/open areas in warehouses		Single entry >10ft Multiple entry >20ft.		 Daylighting controls Photocell Astronomical time-switch control Other control capable of automatically shutting off the lights during daylight. 	Motion sensing controls • Reduce lighting by 50-90% and off	0 0 ,
ccupancy sensors-Full ON - artial OFF 20-50%	Parking garages	 Residential high-rise stairwells and common area guest room corridors 				 Reduce lighting to dim/off >15min after vacancy. 1500 W maximum per sensor. Fixtures <24 ft above grade and 	and off. • Two nighttime periods • May have override <2hr. • Maybe in conjunction w/
utomatic Time Switch	 May include manual on mode. Automatic holiday "shut-off" 	 Required to have manual override Maximum 2-hour after hours override 	 Malls, auditoriums, single tenant retail, industrial and captive key card areas may exceed 2-hour override requirement. 	Exceptions	Health or life safety statute or reg may have a longer time out period lighting level.	wall packsotion sensors.regulation - OFF• <40W not required to have motion controls.	
Countdown Timer Switch	• 30 minutes off max.	• Closets <70 ft ²	• Server aisles in server rooms		Nonresidential buildings other than healthcare facilities, high-rise residential buildings and hotel/mo- tel building shall comply. Required testing to meet the requirements of Part 6 for Automatic shutoff, Daylighting, Demand Response and Outdoor lighting controls prior to final occupancy permit. Health- care facilities shall comply with the requirements of alifornia's Office of Statewide Health Planning and		
				Section 130.4 (a-c) Acceptance Testing			

Development (OSHPD).

Lighting Product Lines

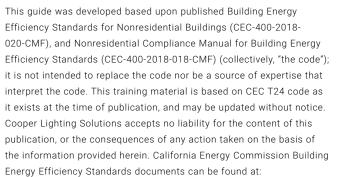
Ametrix AtLite Corelite Ephesus Fail-Safe Halo Halo Commercial Invue io Iris Lumark Lumière McGraw-Edison Metalux MWS Neo-Ray Portfolio RSA Shaper Streetworks Sure-Lites

Controls Product Lines

Fifth Light Technology Greengate iLight (International Only) iLumin Zero 88

Connected Lighting Systems

HALO Home WaveLinx Trellix



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Cooper Lighting Solutions 1121 Highway 74 South Peachtree City, GA 30269 P: 770-486-4800 www.cooperlighting.com

Canada Sales 5925 McLaughlin Road Mississauga, Ontario L5R 1B8 P: 1-800-863-1354 © 2020 Cooper Lighting Solutions All Rights Reserved Printed in USA Publication No. BR518103EN October 29, 2020 9:01 AM Cooper Lighting Solutions is a registered trademark.

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