

2022 TITLE-24 CHANGES

ARC Engineering Electrical Memo

As the California Energy Commission (CEC) continues to encourage building decarbonization, it has published its periodically updated Energy Code for 2022. All projects that are submitted for plancheck on or after January 1, 2023 must comply with the 2022 Energy Code.

SECTION 110.12(C): DEMAND RESPONSIVE LIGHTING

Buildings having a total installed lighting power of greater than or equal to 4,000W (no longer 10,000sqft) shall be capable of automatically reducing power by demand response (DR).

- DR controls shall control general lighting subject to the requirements of section 130.1(b) and may control additional lighting.

Building Level Controls	
01	
Mandatory Demand Response	
§110.12(c)	
Required > 10,000 SF 4,000W	
Not Required ≤ 10,000 SF 4,000W	

SECTION 130.1(D): DAYLIGHT

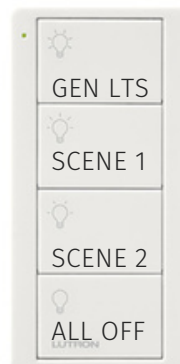
General lighting luminaires in the skylit zones, primary daylight zones, and now **secondary daylight zones**, shall have automatic daylighting controls if total wattage per each zone is >120W.

- Luminaires in each zone need to be controlled separately.
- Linear LEDs and similar fixtures may be treated as linear lamps in 4ft increments or smaller and controlled separately based on its designated zone.

When daylight illuminance is >150% of the designed illuminance available at full power, the general lighting power in that daylight zone shall be reduced to 10% (no longer 35%).

SECTION 130.1(A)3: AREA CONTROLS

Scene controllers may be used to controls general and display lighting if at least one scene turns on general lighting only and the control station can turn off all lights.



T24 CHANGES: MAIN HIGHLIGHTS

110.12 Demand Response

- T24 now uses 4,000W of general lighting (no longer 10,000sqft) to determine if demand response is required.

130.1(d) Secondary Daylight

- Now general lighting luminaires in the secondary daylight zone (in addition to the skylit and primary daylight zones) shall have automatic daylighting controls.

130.1(c) Occupancy Sensors in Open Office

- Open offices that are greater than 250sqft must be broken up into occupancy sensor controlled zones; each zone must be no more than 600sqft.

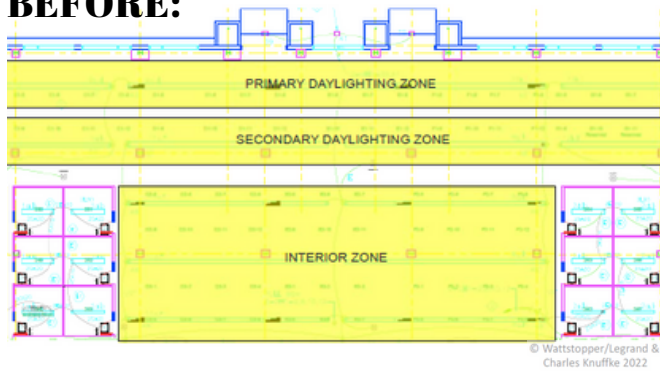
140.10 New Prescriptive Requirement for Photovoltaic and Battery Storage Systems

- Mandates the installation of PVs for many commercial buildings.
- Mandates the installation of battery storage systems.

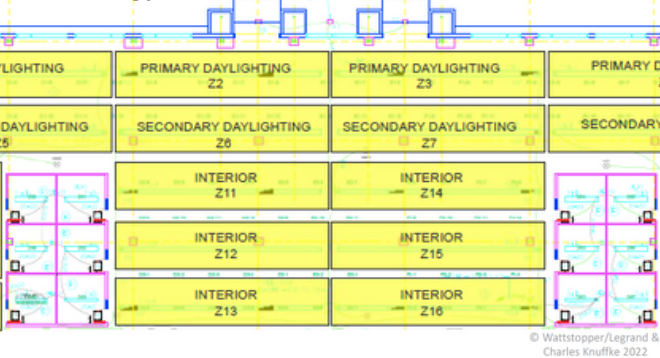
NEW SUBSECTION ADDED -

130.1(C)6D: OCCUPANCY SENSORS IN OPEN OFFICES GREATER THAN 250SQFT

BEFORE:



AFTER:



In office spaces larger than 250sqft, the general lighting shall be controlled with occupancy sensors.

- The lighting space must be separated into control zones that are **less than or equal to 600sqft**
- Sensors can turn their zone lighting on to any level upon occupancy.
- When a zone becomes unoccupied, sensors shall uniformly reduce their lighting levels to no more than 20% of full power (or completely off) within a 20min time frame.
 - When occupancy is detected in any control zone within the office space, the lighting levels in unoccupied zones shall turn on to no more than 20% of their full power.
- When the entire office space becomes unoccupied, sensors shall turn off all lighting within the space.

NEW SECTION ADDED - FOR ARCHITECTURAL COORDINATION

140.10(A) PRESCRIPTIVE PV & 140.10(B) PRESCRIPTIVE BATTERY STORAGE

All newly constructed building types specified in table 140.10-A shall have newly installed PV system meeting the minimum qualification requirements of Reference Joint Appendix JA11.

- The PV size in KWdc shall not be less than either:
 - The total of all available Solar Access Roof Areas (SARA) x 14W/sqft, or
 - PV system size per equation 140.10-A.

All buildings that are required by section 140.10(a) to have a PV system shall also have a battery storage system meeting the minimum Reference Joint Appendix JA12 requirements.

- Use equations 140.10-B & 140.10-C to determine the battery storage system capacity minimums.

Table 140.10-A – PV Capacity Factors

Climate Zone	Factor A – Minimum PV Capacity (W/ft ² of conditioned floor area)		
	1, 3, 5, 16	2, 4, 6 -14	15
Grocery	2.62	2.91	3.53
High-Rise Multifamily	1.82	2.21	2.77
Office, Financial Institutions, Unleased Tenant Space	2.59	3.13	3.80
Retail	2.62	2.91	3.53
School	1.27	1.63	2.46
Warehouse	0.39	0.44	0.58
Auditorium, Convention Center, Hotel/Motel, Library, Medical Office Building/Clinic, Restaurant, Theater	0.39	0.44	0.58

Table 140.10-B – Battery Storage Capacity Factors

Storage-to-PV Ratio	Factor B – Energy Capacity	Factor C – Power Capacity
	Wh/W	W/W
Grocery	1.03	0.26
High-Rise Multifamily	1.03	0.26
Office, Financial Institutions, Unleased Tenant Space	1.68	0.42
Retail	1.03	0.26
School	1.87	0.46
Warehouse	0.93	0.23
Auditorium, Convention Center, Hotel/Motel, Library, Medical Office Building/Clinic, Restaurant, Theater	0.93	0.23