

**Figure 5-23.** (EL19 through EL22) Layout for lighting in merchandise sales area.

Highlight window displays (fixture type A1 in Figure 5-23) to ten times the general merchandise lighting level to attract customers and to compete against potential high daylight levels. Window display lighting should be switched down to three times the general merchandise lighting level at night to help with eye adaptation when entering and exiting the store.

**EL21** *Perimeter Lighting in Merchandise Sales Areas (Climate Zones: all)*

Follow recommendation in EL2 for perimeter lighting LPD above the base power allowance. Use accent or wall-washers (fixture type A2 in Figure 5-23) to highlight key wall locations to general merchandise lighting levels. It is especially important to highlight the back wall to draw customers' attention all the way to the back of the store.

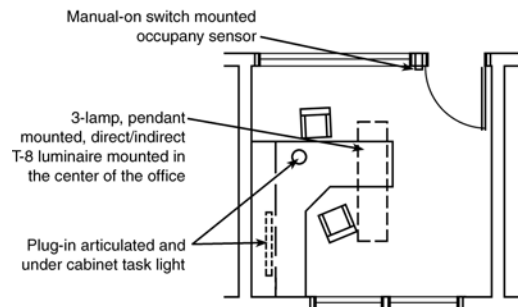
**EL22** *Casework Lighting in Merchandise Sales Areas (Climate Zones: all)*

Casework lighting is not included in the tabulation of LPDs as long as it is integrated into the casework and is installed by the casework manufacturer. Follow recommendation EL2 for external casework accent lighting LPD above the base power allowance. Use accent lighting (fixture type C1 in Figure 5-23) to highlight key merchandise to “feature display” light levels (three to ten times the general merchandise). Lighting for casework must remain sensitive to the overall energy goals of the space. Strong consideration for internal display lighting should be given to energy-efficient or low-energy solutions, including linear fluorescent, fiber optic, and linear LED sources.

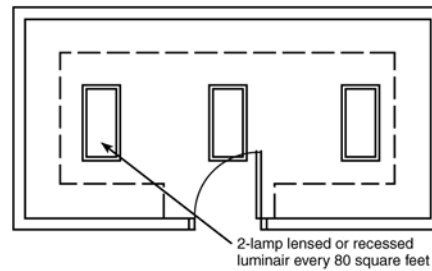
**EL23** *Offices (Climate Zones: all)*

The target lighting in private offices is 30 average maintained footcandles for ambient lighting with a total of at least 50 footcandles provided on the desktop by a combination of the ambient and supplemental task lighting.

Private office plans account for approximately 5% of the floor area in retail buildings and should be limited to 0.95 W/ft<sup>2</sup> including circulation. The layout in Figure 5-24 is about 1.1 W/ft<sup>2</sup>.



**Figure 5-24.** (EL23) Layout for office.

**EL24 Warehousing/Active Storage Areas (Climate Zones: all)****Figure 5-25.** (EL24) Layout for storage area.

The target lighting in storage areas is 20–25 average maintained footcandles. Storage areas account for approximately 20% of the floor area and should be limited to 0.65 W/ft<sup>2</sup> including circulation. Use occupancy sensors or timers where appropriate.

**EL25 Other Spaces (Climate Zones: all)**

Lighting in the remaining 5% of the floor space is composed of various functions including restrooms, electrical/mechanical rooms, break rooms, workshops, and others. Limit the connected load in these spaces to 1.0 W/ft<sup>2</sup>, which is equivalent to about one two-lamp high-performance T-8 luminaire every 64 ft<sup>2</sup>. Use occupancy sensors or timers where appropriate.

**References**

- NEEP. 2003. *Know-How Guide for Retail Lighting*. Lexington, MA: Northeast Energy Efficiency Partnerships. [www.designlights.org/downloads/retail\\_guide.pdf](http://www.designlights.org/downloads/retail_guide.pdf).
- IESNA. 1997. *EPRI Lighting Controls: Smart and Simple*. New York: Illuminating Engineering Society of North America.
- IESNA. 2001. *ANSI/IESNA RP-2-01, Recommended Practice on Lighting Merchandising Areas (A Store Lighting Guide)*.
- USGBC. 2005. LEED NC Indoor Environment Quality Credit 6.1, “Controllability of Systems: Lighting.” Washington, DC: U.S. Green Building Council.

*Exterior Lighting***Good Design Practice**

Exterior lighting should be turned off or reduced by at least 50% one hour after normal business hours in response to light pollution and light trespass concerns. Maintain lighting that is required for safety and security.

**EL26 Decorative Façade Lighting (Climate Zones: all)**

Limit exterior decorative façade lighting to 0.2 W/ft<sup>2</sup> of illuminated surface. This does not include lighting of walkways or entry areas of the building that may also light the building itself. Façade lighting can provide additional attention to the retailer and improve feelings of safety and security. Limit the lighting equipment mounting locations to the building and do not install floodlights onto nearby parking lot lighting standards. Use downward-facing accent and sign lighting to comply with light trespass and light pollution concerns.

**EL27 Sources (Climate Zones: all)**

- All general lighting luminaires should utilize pulse-start metal halide, CMH, fluorescent, or compact fluorescent amalgam lamps with electronic ballasts.
- Standard high-pressure sodium lamps are not recommended due to their reduced visibility and poor color-rendering characteristics.
- Incandescent lamps are not recommended.
- For colder climates, fluorescent and CFL luminaires must be specified with cold-temperature ballasts. Use CFL amalgam lamps.