



# Fact Sheet

## Title 24, Part 6 Nonresidential Lighting Controls for Credit

*Credits are available when lighting controls not mandated by the Standards are installed to achieve additional reduction in lighting power.*

### Reduction Of Wattage Through Controls

The Standards incentivize the installation of controls that exceed the mandatory minimum requirements (Section 130.1-130.5). The wattage of the installed general lights can be adjusted using a Power Adjustment factor (PAF) resulting in reduced total wattage.

A PAF is an adjustment, or credit, to the actual installed lighting power in a space. Indoor lighting power of permanently installed general lighting in the function areas listed in the table below are allowed to be reduced by multiplying the controlled watts by the applicable PAF. Hence with a PAF, some of the installed lighting power in a space is not counted toward the building's total installed lighting load when performing compliance calculations. These allowances allow more flexibility when designing compliant spaces. Qualifying power adjustment factors may be used to help meet prescriptive lighting power requirements, or, when using the performance compliance method, to tradeoff lighting performance beyond minimum levels with other measures.

To qualify for the reduction of lighting power through installation of specific lighting controls:

- All mandatory requirements shall be met (§130.1 through §130.5 of the Standards).
- PAFs are only available for permanently installed non-residential general lighting.
- At least half of the light output of the controlled luminaire must be within the applicable area.
- Only one PAF may be used for each qualifying luminaire unless noted otherwise.

The following lighting controls installed in the spaces described in the table below are eligible to receive Power Adjustment factor (PAF) credits.

1. **Partial-On Occupant Sensing Control:** PAF credits are allowed for Partial-On occupant sensing controls installed in any enclosed area  $\leq 250$  ft<sup>2</sup>, any size

classrooms, conference or waiting rooms. See table below for details. For this credit, the control should be capable of automatically deactivating all lights within 30 minutes of being unoccupied. The number of control steps shall be in accordance with Table 130.1-A of the standards.

2. **Occupant Sensing Controls:** Reduction in general lighting wattage is allowed when occupant sensing controls are installed in large open plan offices with area greater than 250 ft<sup>2</sup>. See table for details.

To qualify for this credit, the installed occupancy sensors in the control should not get triggered by movements outside of the control area.

PAF credit for this control depends on how much area is controlled by one occupant sensor.

For example, if one occupant sensor controls general lighting of 120 Watts in 4 workstations covering an area of 200 ft<sup>2</sup>, the lighting power can be reduced to  $120W \times 0.3 = 36$  W.

3. **Manual or Multi-scene Programmable Dimming System** installed in Hotels/motels, restaurants, auditoriums or theaters are allowed PAF credit. These controls must be capable of being manually operated. See table below for details.
4. **Demand Responsive Control** installed in buildings with area less than 10,000 ft<sup>2</sup> qualifies for PAF credit. PAF for demand responsive control can be combined with PAF for other controls.  
  
Non-habitable spaces or spaces with lighting power less than 0.5 W/ft<sup>2</sup> cannot be used for calculating total lighting power of the building. Lighting reduction shall be in accordance with Table 130.1-A.
5. **Combined Manual Dimming plus Partial-On Occupant Sensing** control installed in any enclosed area  $\leq 250$  ft<sup>2</sup>, any size classrooms, conference or waiting rooms are allowed PAF credits. See table for details. The dimming control system should be capable of being manually operated to qualify for this credit.



## Documentation

**Lighting Controls Credit Worksheet (NRCC-LTI-02-E)** for lighting controls. Conditioned and non-conditioned spaces must be accounted for separately. Power adjustment factors based on Table 140.6-A.

### **LIGHTING POWER DENSITY ADJUSTMENT FACTORS (PAF) (Table 140.6 A in the Standards)**

- A. To qualify for any of the Power Adjustment Factors in this table, the installation shall comply with the applicable requirements in Section 140.6(a)2
- B. Only one PAF may be used for each qualifying luminaire unless combined below.
- C. Lighting controls that are required for compliance with Part 6 shall not be eligible for a PAF

Type Of Control	Type Of Area		Factor
1. Partial-ON Occupant Sensing Control	Any area $\leq$ 250 square feet enclosed by floor-to-ceiling partitions; any size classroom, conference or waiting room.		0.2
2. Occupant Sensing Controls in Large Open Plan Offices	In open plan offices > 250 square feet: One sensor controlling an area that is:	No larger than 125 square feet	0.4
		From 126 to 250 square feet	0.3
		From 251 to 500 square feet	0.2
3. Dimming System	Hotels/motels, restaurants, auditoriums, theaters	Manual Dimming	0.1
		Multiscene Programmable	0.2
4. Demand Responsive Control	All building types less than 10,000 square feet. Luminaires that qualify for other PAFs in this table may also qualify for this demand responsive control PAF		0.05
5. Combined Manual Dimming plus Partial-ON Occupant Sensing Control	Any area $\leq$ 250 square feet enclosed by floor-to-ceiling partitions; any size classroom, conference or waiting room		0.25

