

## Quick Step Checklist - Code 33 Lighting

Project: \_\_\_\_\_ Date: \_\_\_\_\_

Completed by: \_\_\_\_\_ Fixture Make and Model: \_\_\_\_\_

**Instructions:** Complete this Checklist and include in all Code 33 prescriptive and custom applications. Fixture and installation must comply with all requirements to ensure a high quality, low glare system and to qualify for incentives

- Step 1: Each 4ft section must include two T8 or T5 standard output lamps or one (1) T8 or T5 high output lamps.**
  - Yes or No \_\_\_\_\_
- Step 2: Fixtures are specifically designed for pendant installation.**
  - Yes or No \_\_\_\_\_
- Step 3: Fixture efficiency must be greater than or equal to 80%.**  
*Also known as "luminaire efficiency"*
  - Write in efficiency; attach test report and fixture cut sheet to document this. \_\_\_\_\_
- Step 4: Ceiling must a flat unobstructed surface with a white finish.**
  - Yes or No \_\_\_\_\_
- Step 5: The fixture down light component must not exceed 30%**
  - Write in % down light; attach test report and fixture cut sheet to document this
    - *The % uplight and down light can be found in the "Zonal Lumen Summary" in fixture test reports and cut sheets. In the example shown in Figure 1, the down light component is 13.41% and the uplight is 69.62%.*

**Zonal Lumen Summary**

| Zone   | Lumens | %Lamp | %Fixture |
|--------|--------|-------|----------|
| 0-30   | 308    | 5.14  | 6.19     |
| 0-40   | 467    | 7.80  | 9.39     |
| 0-60   | 707    | 11.79 | 14.19    |
| 0-90   | 804    | 13.41 | 16.15    |
| 40-90  | 336    | 5.61  | 6.76     |
| 60-90  | 97     | 1.63  | 1.96     |
| 90-180 | 4177   | 69.62 | 83.85    |
| 0-180  | 4981   | 83.03 | 100.00   |

% "down light" can be found in "% Lamp" column and the "0-90" zone.  
In this example % "down light" is 13.41%.

**Figure 1**

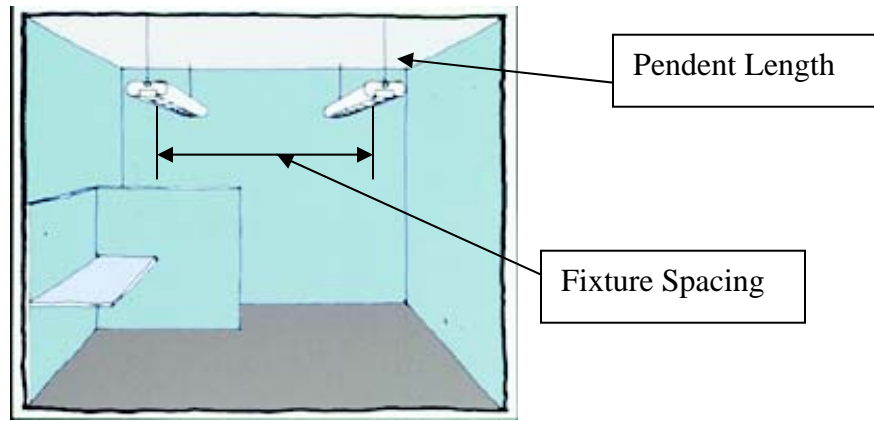
- **Step 6:** Fixtures with down light component must incorporate glare limiting features such as louvers or perforated shields. \_\_\_\_\_  
  - Yes or No
  
- **Step 7:** Pendant length must be at least 16 inches. \_\_\_\_\_  
  - Write in approximate pendant length.
  
- **Step 8:** System must be designed to achieve a Lighting Power Density approximately 20% below Code. see Table 2 below \_\_\_\_\_  
  - Write in LPD calculated specific to the space or check the applicable configuration in Table 1.

**Table 1**

**Code 33 LDP Estimator**

*Note: The following typical fixture configurations and layouts have been determined to yield an approximate LPD of no more than 1.1 W per sq ft. Other fixture configurations and layouts may be eligible for incentives and should follow the "Six Step Guide".*

| Type of System                   | Row Spacing for       |                       |
|----------------------------------|-----------------------|-----------------------|
|                                  | 16-20" Pendant Length | 21-30" Pendant Length |
| <b>T8 Systems</b>                |                       |                       |
| 1F32T8 lamp per 4 ft. of Fixture | 7-11 ft.              | 9-12 ft.              |
| 2F32T8 per 4 ft. Section         | 9-12 ft.              | 10-13 ft.             |
| 1F32SuperT8 per 4 ft. Section    | 7-11 ft.              | 9-12 ft.              |
| 2F32SuperT8 per 4 ft. Section    | 9-12 ft.              | 10-13 ft.             |
| <b>T5 Systems</b>                |                       |                       |
| 1F28T5 per 4 ft. Section         | 8-10 ft.              | 9-13 ft.              |
| 2F28T5 per 4 ft. Section         | 10-12 ft.             | 11-13 ft.             |
| 1F54T5HO per 4 ft. Section       | 11-12 ft.             | 11-14 ft.             |



**Table 2**

**LIGHTING POWER DENSITY TABLE**

| Lighting Power Densities Using the Building Area Method |                     |                      |
|---|---------------------|----------------------|
| Building Type<br>(A)                                    | NH. Energy Code (B) | Program Accepted (C) |

| Lighting Power Densities Using the Space-by-Space Method |                    |                      |
|--|--------------------|----------------------|
| Space Type<br>(A)  | NH Energy Code (B) | Program Accepted (C) |

|                             |     |     |
|-----------------------------|-----|-----|
| Automotive Facility         | 1.5 | 1.2 |
| Convention Center           | 1.4 | 1.1 |
| Court House                 | 1.4 | 1.1 |
| Dining: Bar Lounge/Leisure  | 1.5 | 1.2 |
| Dining: Cafeteria/Fast Food | 1.8 | 1.4 |
| Dining: Family              | 1.9 | 1.5 |
| Dormitory                   | 1.5 | 1.2 |
| Exercise Center             | 1.4 | 1.1 |
| Gymnasium                   | 1.7 | 1.4 |
| Hospital/Health Care        | 1.6 | 1.3 |
| Hotel                       | 1.7 | 1.4 |
| Library                     | 1.5 | 1.2 |
| Manufacturing Facility      | 2.2 | 1.8 |
| Motel                       | 2.0 | 1.6 |
| Motion Picture Theater      | 1.6 | 1.3 |
| Multi-Family                | 1.0 | 0.8 |
| Museum                      | 1.6 | 1.3 |
| Office                      | 1.3 | 1.0 |
| Parking Garage              | 0.3 | 0.2 |
| Penitentiary                | 1.2 | 1.0 |
| Performing Arts Theater     | 1.5 | 1.2 |
| Police/Fire Station         | 1.3 | 1.0 |
| Post Office                 | 1.6 | 1.3 |
| Religious Building          | 2.2 | 1.8 |
| Retail                      | 1.9 | 1.5 |
| School/University           | 1.5 | 1.2 |
| Sports Arena                | 1.5 | 1.2 |
| Town Hall                   | 1.4 | 1.1 |
| Transportation              | 1.2 | 1.0 |
| Warehouse                   | 1.2 | 1.0 |
| Workshop                    | 1.7 | 1.4 |

|                                 |     |     |
|---------------------------------|-----|-----|
| Active Storage                  | 1.3 | 1.0 |
| Atrium – First Three Floors     | 1.3 | 1.0 |
| Atrium – Each Additional Floor  | 0.2 | 0.2 |
| Audience/Sitting Area           | 0.5 | 0.4 |
| Classroom/Lecture/Training      | 1.6 | 1.3 |
| Conference/Meeting/Multipurpose | 1.5 | 1.2 |
| Corridor/Transition             | 0.7 | 0.6 |
| Dining Area                     | 1.4 | 1.1 |
| Electrical/Mechanical           | 1.3 | 1.0 |
| Food Preparation                | 2.2 | 1.8 |
| Inactive Storage                | 0.3 | 0.2 |
| Lobby                           | 1.8 | 1.4 |
| Lounge/Recreation               | 1.4 | 1.1 |
| Office – Enclosed               | 1.5 | 1.2 |
| Office – Open Plan              | 1.3 | 1.0 |
| Restrooms                       | 1.0 | 0.8 |
| Stairs – Active                 | 0.9 | 0.7 |

Note: The presented list includes the most common space types. Please consult the New Hampshire Energy Code for more space types of and the allowed lighting power densities. For these spaces, determine the program accepted lighting power density by multiplying the code allowed lighting power density by 0.8.