



# ELECTRICAL ENERGY CERTIFICATION FORM

Project Name: \_\_\_\_\_

Street Address: \_\_\_\_\_

Building type or space activity: \_\_\_\_\_

**Complete Section A or Section B based on the standard and applicability. To determine applicability, see the scoping provisions of Section 2 of ASHRAE standards or Section C401 of VECC (VECC is IECC with Virginia amendments). All provisions are mandatory unless noted as prescriptive.**

## SECTION A

Based on ANSI/ASHRAE/IESNA Standard 90.1 2010

### LIGHTING

- (Prescriptive)** New and replaced lighting systems comply with the lighting power density of Section 9, except as exempted in 9.1.2.
- (Prescriptive)** New control devices as a direct replacement of existing control devices comply with the requirements of 9.4.1.2(b), (9.1.2).
- (Prescriptive)** Installed interior lighting power includes all power used by the luminaries, including lamps, ballasts, transformers, and control devices, except as exempted in 9.2.2.3, (9.1.3). Such power does not exceed allowance provided in 9.5 or 9.6, (9.2.2.3).
- (Prescriptive)** Luminaire wattage incorporated into the installed interior lighting power is determined in accordance with 9.1.4 (a) through (e).
- Exterior lighting power allowances for all exterior building applications comply with 9.4.3.

### INTERIOR LIGHTING CONTROL

- Each area enclosed by ceiling-height partitions has at least one manual control for lighting serving that area. Control devices are readily accessible and located so the occupants can see the controlled lighting. Control devices comply with 9.4.1.2 (a) (b) and (c).
- Interior lighting in buildings are equipped with an automatic control device to shut off building lighting in all spaces, except as exempted in 9.4.1.1. The automatic control device functions on:
  - A scheduled basis per 9.4.1.1 (a);
  - An occupancy sensor per 9.4.1.1 (b); or
  - A signal from another control or alarm system per 9.4.1.1 (c).

### POWER/VOLTAGE DROP

- Feeder and branch circuit conductors are sized for a maximum voltage drop of 2% and 3% respectively at design load, (8.4.1.1) and (8.4.1.2).
- Equipment installed in new and existing building and, during alteration complies with (8.1.3), (8.1.4) and (8.1.5).

### EXTERIOR LIGHTING CONTROL (except as exempted in 9.1)

- Lighting, all façade and landscape lightings are controlled by automatic device, (9.4.1.7).
- All lighting (including signage), other than facade and landscape, are controlled by automatic devices that reduce lighting power by at least 30%. (9.4.1.7).
- All time switches retain programming and time settings during loss of power for a period of at least 10 hours, (9.4.1.7).

### ADDITIONAL CONTROL

- Control for display/accent lighting, case lighting, hotel and motel guest room lighting, task lighting, nonvisual lighting, demonstration lighting and stairwell lighting are provided in accordance with 9.4.1.6.

### PARKING GARAGE LIGHTING CONTROL

- Lighting for parking garage is controlled in accordance with 9.4.1.3.
- Lamps for general lighting in primary sidelighted area, in combined primary sidelighted area in an enclosed space 250 sq-ft or more, are separately controlled by multilevel photocontrol in accordance with 9.4.1.4.
- When the total daylight area under skylights plus rooftop monitors in an enclosed space exceeds 900 sq-ft, the lamps for general lighting in the daylight area is controlled by a multilevel photocontrol in accordance with 9.4.1.5.

### **EXIT SIGNS**

- Internally illuminated exit signs do not exceed 5-watts per face, (9.4.2).

### **TRANSFORMER**

- Low voltage dry-type distribution transformers comply with 8.1.2

### **RECEPTACLES**

- At least 50% of all 125v, 15A and 20A receptacles including those installed in modular partition in private

offices, open offices and computer classrooms are controlled by an automatic control device in accordance with 8.4.2.

### **COPLIANCE PATH (Prescriptive)**

- Building Area Method of calculating interior lighting power allowance is in accordance with 9.5. Space-by-Space Method of calculating interior lighting power allowance is in accordance with 9.6.

## **SECTION B**

Based on Virginia Energy Conservation Code 2012

### **INTERIOR LIGHTING CONTROL**

- Lighting within dwelling units contain 75% or more of high-efficiency lamps in the permanently installed luminaires, other than low voltage lighting, C405.1 Exception.
- Each area enclosed by ceiling-height partitions has at least one manual control for lighting serving that area. Control location complies with C405.2.1.1.
- Light reduction to at least 50% is accomplished per C405.2.1.2, except as exempted, by means of:
  - Controlling of all luminaires or lamps;
  - Dual switching of alternate rows of luminaires, alternate luminaires or alternate lamps;
  - Switching of middle lamp of luminaires independently of the outer lamps; or
  - Switching each luminaire or each lamp.
- Each area that is required to have a manual control has also additional control. The additional control functions on:
  - An automatic time switch control device, (C405.2.2.1).
  - An occupancy sensor, (C405.2.2.2).
  - A daylight zone control, (C405.2.2.3).
- Specific application controls are per C405.2.3.

### **ENERGY CONSUMPTION**

- Buildings having individual dwelling units are provided with provisions to determine the electrical energy consumed by each tenant by separately metering individual dwelling units, (C405.7).

### **LIGHTING (Prescriptive)**

- Total connected lighting power calculated under C405.5.1 is not greater than the interior power calculated under C405.5.2, (C405.5).
- Total connected interior lighting power is the sum of all interior lighting equipment (in watts) per C405.5.1.1 through C405.5.1.4, (C405.5.1).

- The line-voltage lighting track and plug-in busway are per C405.5.1.4.
- The interior lighting power is calculated utilizing C405.5.2 and Table C405.5.2(1) or Table C405.5.2(2).
- All exterior lighting other than low-voltage landscape lighting complies with section C405.6.1 and C405.6.2.

### **EXTERIOR LIGHTING CONTROL**

- Lighting designated for dusk-to-down operation is controlled by an astronomical time switch or a photosensor, (C405.2.4).
- Lighting not designated for dusk-to-dawn operation is controlled by a combination of a photosensor and a time switch, or an astronomical time switch, (C405.2.4).
- All time switches retain programming and time settings during loss of power for a period of at least 10 hours, (C405.2.4).

### **TANDEM WIRING**

- Fluorescent luminaires equipped with one, three or odd-numbered lamp configurations, that are recess-mounted within 10-feet center-to-center of each other are tandem wired, (C405.3-1).
- Fluorescent luminaires equipped with one, three or any other odd-numbered lamp configuration, that are pendant or surface-mounted within 1-foot edge-to-edge of each other are tandem wired, (C405.3 - 2).
- Internally illuminated exist signs do not exceed 5-watts per face, (C405.4).

**LIGHTING FIXTURES IN OPEN PARKING GARAGE**

All lighting fixtures within portions of above ground, open-side structures shall be full cut-off as defined by Article 20, Part 3 and required by Article 14, Part 9 of the Fairfax County Zoning Ordinance.

**CERTIFICATION**

I further hereby certify that the project referenced herein complies with all the applicable requirements of ANSI/ASHRAE/IESNA Standard 90.1, 2010 – or - 2012 VECC, and Article 20, Part 3 and Article 14, Part 9 of the Fairfax County Zoning Ordinance.

Name: \_\_\_\_\_

Address: \_\_\_\_\_

Occupation: \_\_\_\_\_ Date: \_\_\_\_\_

