

### 5.7.1.2 LTG-3C: Indoor Lighting Power Allowance

#### ***Allowed Lighting Power***

The lighting power allowance is determined by calculating the maximum total watts of lighting that may be installed. There are three different prescriptive methods, plus the performance method, that may be used. These methods may not be mixed in the same building permit application, except as specifically allowed according to Section 146(b).

There are separate sections in LTG-3C for each of the different prescriptive compliance methods.

***Indoor Lighting Power Allowance for conditioned and unconditioned spaces shall be listed on separate pages. Check only one box as appropriate for Conditioned Space, or for Unconditioned Space for each page used.***

#### ***Complete Building Method***

This method may only be used when plans and specifications for the entire building or tenant space are included in the permit application. Also, the building or tenant space must involve only one type of use occupancy or mixed occupancy where one type of occupancy makes up 90 percent of the space. Lighting power determined according to the Complete Building Method may be traded only within a single building.

**A:** BUILDING CATEGORY is the occupancy type description listed in §146, Table 146-E.

**B:** WATTS PER SF is the listed alongside the occupancy description in Standards Table 146-E.

**C:** COMPLETE BUILDING AREA is the area of the entire building or tenant space.

**D:** ALLOWED WATTS is the product of the COMPLETE BUILDING AREA and WATTS PER SF.

The sum of the lighting power allowance is the lighting power allowance for the building.

#### ***Area Category Method – Part A***

This method may be used when different primary function areas of a building are included in the permit application. The total Area Category Method allowed watts includes wattage determined in Part A plus Part B of this form, if applicable.

**A:** AREA CATEGORY is taken from Table 146-F in the Standards for the primary function of the area. If the building has a mixture of areas, each function area must be listed separately.

**B:** WATTS PER SF for that building type is taken from Standards Table 146-F and entered here.

**C:** AREA (SF) is the floor area of the primary function area, which is calculated by multiplying the width times the depth, as measured from the center of the interior

bounding partitions. If the function area is bounded by exterior walls on one or more sides, the area is calculated by multiplying the width times the depth, as measured from the inside surface of the exterior walls to the center of the interior bounding partitions. If there are no partitions separating the boundary of the function areas on one or more sides, the boundary of the area is determined by a line separating the function areas where no bounding partitions exist.

**D:** ALLOWED WATTS is the product of the WATTS PER SF times the AREA (SF) separately determined for each row listed in Part A. This becomes the lighting power allowance for each Primary Function Area listed in Part A.

The sum of Additional Allowed Watts is taken from Area Category Method – Part B of this form, and entered into the bottom row of Part A.

The sum of the lighting power allowance for each primary function area, plus the total additional wattage allowances taken Part B of this form, is the Area Category Method lighting power allowance for the building.

### ***Area Category Method – Part B***

These are additional wattage allowances for ornamental chandeliers and sconces; specialized task work for an art, craft assemble or manufacturing operation; precision commercial and industrial work; and specialized task work for school labs, according to the footnotes at the bottom of Table 146-F. Only those primary function areas which have a corresponding footnote to the right of the allowed lighting power in Table 146-F may use these additional Area Category Method wattage allowances. Because these allowances are “use it or lose it,” only the smaller of what is allowed, or what is actually used, may be included in the total Area Category Method wattage allowance

**A:** PRIMARY FUNCTION is taken from Table 146-F in the Standards for the primary function for which the additional wattage is allowed according to the footnote for that Primary Function area.

**B:** SQUARE FEET (SF) is the square feet of the primary function area for which the additional wattage is allowed in Standards Table 146-F.

**C:** ADDITIONAL WATTS PER SQUARE FEET ALLOWED is the additional watts per square foot allowed according to the footnotes at the bottom of Table 146-F.

**D:** WATTAGE ALLOWANCE is the product of the SF in column B times the Additional. Watts per Square Feet Allowed listed in column C.

**E:** QUANTITY AND DESCRIPTION OF SPECIAL LUMINAIRE TYPES IN EACH PRIMARY FUNCTION AREA is the total number, description, and wattage of each of the following: Ornamental chandeliers, sconces; Specialized task light for an art, craft assemble or manufacturing operation; Precision commercial and industrial light; or, Specialized task work for school labs, for the Primary Function shown in column A.

**F:** TOTAL DESIGN WATTS is the total wattage of all of the special luminaires installed in the primary function area, determined in accordance with §130(d and e) of the Standards, for the Primary Function shown in column A.

**G:** ALLOWED WATTS is the smaller of the Wattage Allowance in column D, or the Total Design Watts in column F, calculated separately for each row in Part B of this form.

The sum of the Additional Wattage Allowance is the sum of all of the row in column G. This total shall be entered into the bottom row of Area Category Method – Part A of this form

### ***Tailored Method***

This method may be used only on projects with primary function areas that do not use the Area Category Method, and cannot be used on buildings using the Complete Building Method. A separate set of LTG-4C forms shall be filled out for Conditioned and Unconditioned Spaces.

When the Tailored Method is used, the LTG-4C form, or a similar form, must be included in the compliance submittal. Enter into the Tailored Method section at the bottom of LTG-3C the number determined in Row 3 (Page 1 of 4) of LTG-4C.

### **5.7.1.3 LTG-4C: Tailored Method Worksheets**

The Tailored Method is the most detailed method of calculation for the Lighting Power Allowance. The Lighting Power Allowance is determined based on the individual needs of each task. This method is appropriate for buildings that have unusual lighting needs and in some cases, may increase the lighting power allowance to meet those needs. For a complete description of this method, refer to Section 5.2.2.

If there are both conditioned and unconditioned spaces in a building and the Tailored Method is used to determine the allowed lighting power for both types of spaces, separate tailored method worksheets (LTG-4C) must be filled out, one for conditioned spaces and one for unconditioned spaces. Each form must clearly indicate if it is used for conditioned or unconditioned spaces. Note that unconditioned spaces are all those areas that are not directly or indirectly conditioned. The conditioned and unconditioned allowances must be kept separated because when the performance method is used to show compliance for the entire building, the tailored LPD lighting for only the conditioned space must be entered for both the standards and proposed buildings. Inclusion of the unconditioned LPD would result in erroneous HVAC load calculations.

### ***LTG-4C: Page 1 of 4***

This form shall be submitted with all tailored method applications. It summarizes the results of the different parts of LTG-4C, and includes the lighting power allowance calculations for illuminance categories A through G (Standards Table 146-I).

### ***Tailored Method Summary***

1. LINE 1 is the BUILDING TOTAL ALLOWED WATTS for general lighting power for illuminance categories A through G. This value is the summation of all the individual allowed watts calculation in column G.
2. LINE 2 is the BUILDING TOTAL ALLOWED WATTS for display, floor, very valuable merchandise and ornamental/special effects lighting. This value is obtained from the total watts entries on LTG-4C, Page 2, and

Page 3. Each allotment is separately calculated and entered into the appropriate box on this form.

3. LINE 3 is the sum of lines 1, and 2. The TOTAL ALLOWED WATTS is the lighting power allowance using the Tailored Method. This number shall be inserted into the appropriate conditioned or unconditioned section at the top of LTG-1C (Page 4 of 4).

### ***Tailored LPD – Illuminance***

To complete the Tailored Allowed General Lighting Power in the lower portion of Page 1 of this form, complete the following steps.

**A:** ROOM NUMBER is the space designation and should correspond with the plans.

**B:** PRIMARY FUNCTION TYPE is one of the Primary Functions identified in Column 1 of Table 146-G of the Standards.

**C:** ILLUMINANCE CATEGORY is the illuminance category for the room or space. This is determined according to the letter identified in Column 2 of Table 146-G, or if IESNA HB is listed in Column 2, using the IES Handbook, Ninth Edition, 2000.

**C:** ROOM CAVITY RATIO is the room cavity ratio (RCR) of each room or space. A RCR of less than 3.5 may be assumed for any room and the “N” box shall be checked. The LTG-4C, Page 4 of 4, shall be used to calculate an RCR greater than or equal to 3.5 and the ‘Y’ box shall be checked.

**D:** FLOOR AREA is the actual floor area of the room or space from the plans. If the floor area extends all the way to a permanent full-height partition, the area is determined by measuring from the inside of the partitions that bound the task area.

**E:** ALLOWED LPD is the Light Power Density from Table 146-F in the Standards using the illuminance category (COLUMN B) and room cavity ratio (COLUMN C) for each room.

**F:** ALLOWED WATTS is the product of the Floor Area (Column D) times Light Power Density (Column E). The sum of all rows in Column G shall be entered as the Page Total at the bottom of the page. If more than one page of LTG-4C is needed, add all of the page totals together to determine Building Total. The Building total for all rooms or spaces shall be entered in line 1 at the top of LTG-4C, Page 1 of 4.

### ***LTG-4C: Page 2 of 4***

#### ***Display Lighting: Walls***

On the top half of LTG-4C (Page 2 of 4) is a table with calculations used to determine how many watts are allowed for wall display lighting. The total allowed watts is the smaller of the allotted watts or the design watts.

Wall display lighting must be mounted within 10 feet of the wall it is illuminating. Note: Display lighting is provided to create contrast to the general lighting system. Ceiling mounted fluorescent fixtures do not qualify as wall display lighting.

However, fluorescent fixtures which are integrated into wall shelves do qualify as display lighting.

Check the box at the top of the table to document that qualifying wall display lighting systems are mounted within 10 feet to the wall that the display lighting is illuminating.

**A: LUMINAIRE DESCRIPTION** is a description of the type of luminaire, such as track, ceiling mounted PAR, or built in cabinet. .

**B: MOUNTING HEIGHT** is the fixture mounting height for wall display lighting, measured from the floor to the bottom of the fixture. Section 5.2.2 contains a discussion on how to determine the mounting height.

**C: MOUNTING HEIGHT ADJUSTMENT FACTORS** are the mounting height adjustment factors for display luminaires. Select the proper factor from Standards Table 146-H and show in this column. Note: Mounting heights  $\leq 11'6"$  must use 1.0 in this column.

**D: WALL DISPLAY LENGTH** is the wall length of the display from the plans. This length must be totaled at the bottom of the column. Note: How to determine the length of display walls is described in Section 146(c)3B(i).

**E: WALL DISPLAY POWER** is the lighting power allowance from Standards Table 146-G for wall display luminaires.

**F: ALLOTTED WATTS** is the product of the mounting height adjustment factor (COLUMN C) times the lighted display wall length (COLUMN D) times lighting power allowance density (COLUMN E).

**G: LUMINAIRE CODE** is the luminaire name (consistent with LTG-1C and LTG-2C) that is illuminating the display. If more than one luminaire type is used to illuminate the display, each type must be listed separately. Multiple lines on this form may be used for this list.

**H: LUMINAIRE QUANTITY** is the number of identical luminaires used to illuminate the wall display. If track lighting is used the actual length of track is entered in this column.

**I: WATTS PER LUMINAIRE** is the total wattage of each luminaire type (including ballasts for fluorescent or high intensity discharge fixtures). See §130(d or e) for how to determine the watts of these types of luminaires. Note: If line-voltage track lighting is used here, then LTG 5-C must also be filled out and submitted. If individual incandescent fixtures are used, it is the maximum relamping rated wattage, not the wattage of the bulb that is used.

**J: DESIGN WATTS** is the product of the quantity of luminaires (COLUMN H) times the watts per luminaire (COLUMN I). If more than one luminaire type is used to illuminate the task or activity, the subtotal for all the luminaires illuminating the task should be indicated in this column on a separate line of the form.

**K: ALLOWED WATTS** is the lesser of either the allotted watts (COLUMN F) or the design watts (COLUMN J).

The sum of the allowed watts in COLUMN K is entered on Line 2, Page 1 of the LTG-4C. Add all of the rows together and enter as Total Watts. Transfer this number to the Wall Display cell in row 2 at the top of LTG-4C (Page 1 of 4).

**Display Lighting - Floors**

On the bottom half of LTG-4C (Page 2 of 4) is a table with calculations to determine how many watts are allowed for floor display lighting. The total allowed watts is the smaller of the allotted watts or the design watts.

Floor display lighting must be mounted more than 2 feet from a wall. Note: Display lighting is provided to create contrast to the general lighting system. There are no fluorescent fixtures which qualify as floor display lighting. Complete the bottom portion of Page 2 of this LTG-4C, using the following steps.

**A: LUMINAIRE DESCRIPTION** is a description of the type of luminaire, such as track or ceiling mounted PAR.

**B: MOUNTING HEIGHT** is the fixture mounting height, measured from the floor to the bottom of the fixture. Section 5.2.2 contains a discussion on how to determine the mounting height.

**C: MOUNTING HEIGHT ADJUSTMENT FACTOR** is the mounting height factor taken from Table 146-H. Note: Mounting heights  $\leq 11'6"$  must use 1.0 in this column. Select the proper factor from Standards Table 146-H and show in this column.

**D: FLOOR AREA** is the area of the primary function of that space. Note: Floor area using the Complete Building or Area Category Methods cannot use the Tailored Method. This area must be totaled at the bottom of the column.

**E: FLOOR DISPLAY POWER** is the lighting power allowance from Standards Table 146-G for floor display luminaires.

**F: ALLOTTED WATTS** is the product of the mounting height adjustment factor (COLUMN C) times the floor area (COLUMN D) times floor display power (COLUMN E).

**G: LUMINAIRE CODE** is the luminaire name (consistent with LTG-1C and LTG-2C) that is illuminating the display. If more than one luminaire type is used to illuminate the display, each type must be listed separately. Multiple lines on this form may be used for this list.

**H: LUMINAIRE QUANTITLY** is the number of identical luminaires used to illuminate the display. If track lighting is used, and the plans do not indicate the number of fixtures to be used on the track, the actual length of track is entered in this column.

**I: WATTS PER LUMINAIRE** is the watts per luminaire as determined according to Section 130(c or d) as applicable. Note: If line-voltage track lighting is used here, then LTG 5-C must also be filled out. If individual incandescent fixtures are used, it is the maximum relamping rated wattage, not the wattage of the bulb that is used.

**J: DESIGN WATTS** is the product of the quantity of luminaires (COLUMN H) times the watts per luminaire (COLUMN I). If more than one luminaire type is used to illuminate the task or activity, the subtotal for all the luminaires illuminating the task should be indicated in this column on a separate line of the form.

**K: ALLOWED WATTS** is the lesser of either the allotted watts (COLUMN F) or the design watts (COLUMN J).

**Add all of the rows together and enter as Total Watts. Transfer this number to the Floor Display cell in row 2 at the top of LTG-4C (Page 1 of 4).LTG-4C: Page 3 of 4**

On the top half of LTG-4C (Page 3 of 4) are calculations to determine how many watts are allowed for ornamental and special effects lighting. The total allowed watts is the smaller of the allotted watts or the design watts.

Ornamental and Special Effects Lighting includes chandeliers, sconces, lanterns, neon and cold cathode, light emitting diodes (LEDs), theatrical projectors, moving lights and light color panels (used decoratively, not as display lighting). Qualifying ornamental/special effects lighting is described in Section 146(c)3B(iii) of the Standards. If allowed in Standards Table 146-G column 5, use this form to compute the power allowance. If there is a zero for a Primary Function are listed in column 5 of Table 146-G, then no Ornamental/Special Effects lighting is allowed.

**A: LIGHTING DESCRIPTION** is a description of the type of ornamental/special effects lighting consistent with Section 146(c)3B(iii) of the Standards.

**B: FLOOR AREA** is the area of the primary function for the space containing the ornamental or special effects lighting.

**C: ORNAMENTAL/SPECIAL EFFECT LPD** is the lighting power allowance density from COLUMN 5 of Standards Table 146-G.

**D: ALLOTTED WATTS** is the product of the area (COLUMN B) and the lighting power density (COLUMN C).

**E: LUMINAIRE CODE** the luminaire name (consistent with LTG-1C and LTG-2C). Multiple lines on this form may be used to list multiple luminaires.

**F: QUANTITY** is the number of identical luminaires used for ornamental or special effects lighting..

**G: WATTS PER LUMINAIRE** is the watts per luminaire as determined according to Section 130(c or d) as applicable.

**H: DESIGN WATTS** is the product of the quantity of luminaires (COLUMN F) times the watts per luminaire (COLUMN G). If more than one luminaire type is used to illuminate the task or activity, the subtotal for all the luminaires illuminating the task should be indicated in this column on a separate line of the form.

**I: COLUMN I** - is the lesser of either the allotted watts (COLUMN D) or the design watts (COLUMN H).

**Add all of the rows together and enter as Total Watts. Transfer this number to the Ornamental/Special Effects Display cell in row 2 at the top of LTG-4C (Page 1 of 4).Very Valuable Merchandise Display Cases**

On the bottom half of LTG-4C (Page 3 of 4), this table is a series of calculations to determine how many watts are allowed for very valuable merchandise or other very valuable display lighting. The total allowed watts is the smaller of the allotted function area watts, allotted display case area watts, or the design watts.

Very valuable merchandise display cases that contain jewelry and other valuable merchandise are allotted an increase in the Lighting Power Allowance Density, as described in §146(c)3Biv. These displays may include jewelry, coins, fine china or crystal, precious stones, silver or other precious metal, small art objects and

artifacts, or other valuable collections that require inspection of fine detail from outside a locked case.

**A:** LUMINAIRE NAME is the name of the luminaire or location as specified on the plans.

**B:** FLOOR AREA is the area of the primary function area for that space.

**C:** VALUABLE DISPLAY POWER is 1.0 W/ft<sup>2</sup> according to §146(c)3Biva. This number has already been entered into Column C.

**D:** FUNCTION AREA WATTS is the product of the floor area (COLUMN B) and the lighting power density (COLUMN C).

**E:** DISPLAY CASE AREA is the area of the display case.

**F:** 16 W/ft<sup>2</sup> is from §146(c)3Bivb.

**G:** DISPLAY CASE AREA WATTS is the product of the area (COLUMN E) and the lighting power density (COLUMN F = 16 W/ft<sup>2</sup>).

**H:** LUMINAIRE CODE is the luminaire code (consistent with LTG-1C and LTG-2C). Multiple lines on this form may be used to list multiple luminaires.

**I:** QUANTITY is the quantity of identical luminaires used for very valuable display lighting.

**J:** WATTS PER LUMINAIRE is the total wattage of each luminaire type determined according to §130(cord) as appropriate.

**K:** DESIGN WATTS is the product of the quantity of luminaires (COLUMN I) times the watts per luminaire (COLUMN J). If more than one luminaire type is used to illuminate the task or activity, the subtotal for all the luminaires illuminating the task should be indicated in this column on a separate line of the form.

**L:** ALLOWED WATTS is the lesser of the allotted watts for the space area (COLUMN D), the allotted watts for the very valuable display area (Column G), or the design watts (COLUMN K).

Add all of the rows together and enter as Total Watts. Transfer this number to the Very Valuable Merchandise cell in row 2 at the top of LTG-4C (Page 1 of 4). As with all applications in illuminance category G, the allowed lighting watts for feature displays may not exceed the actual installed wattage. This prevents unused display lighting allotments from being used in other areas of the store.

#### ***LTG-4C: Page 4 of 4***

#### ***Room Cavity Ratio Worksheet (>3.5)***

Form LTG-4C (Page 4 of 4) is a form than must be filled out and submitted whenever the Tailored Method is used for compliance with the Standards. A separate form must be completed for conditioned and unconditioned spaces.

Rooms in a building, which are relatively large generally, have a high RCR. If the RCR is greater than or equal to 3.5, a higher LPD is allowed. If the RCR is less than 3.5, it does not need to be included on this form.

The form has two sections: **Rectangular Spaces** is for rooms with four 90° walls, and **Non-rectangular Spaces** is for all other room types (including oblique four walled and circular rooms).

### ***Rectangular Spaces***

**A:** ROOM NUMBER, this column should list each room's number, and should correspond with the plans.

**B:** TASK/ACTIVITY DESCRIPTION for the room should be listed in this column. If the room has multiple tasks or activities, use the dominant activity for the room in this column.

**C:** ROOM LENGTH is the length (L) of the room, measured in linear feet, from the interior surfaces of opposing walls. The length is typically the longest distance between two parallel walls in the room.

**D:** ROOM WIDTH is the width (W) of the room, measured in linear feet, from the interior surfaces of opposing walls. The width is typically the smallest distance between two parallel walls in the room.

**E:** ROOM CAVITY HEIGHT is the vertical distance, measured in linear feet, from the work plane to the center line of the lighting fixture. This measurement is called the room cavity height (H).

**F:** ROOM CAVITY RATIO (RCR) is 5 multiplied by the product of the room cavity height H (from COLUMN E) and the sum of the room length and width (L from COLUMN C plus W from COLUMN D), all divided by the room area L (from COLUMN C) times room width (W from COLUMN D). This quantity is the RCR and shall be entered in COLUMN D of Page 1 of LTG-4C.

### ***Non-rectangular Spaces***

**A:** ROOM NUMBER, this column should list each room's number, and should correspond with the plans.

**B:** TASK/ACTIVITY DESCRIPTION for the room should be listed in this column. If the room has multiple tasks or activities, use the dominant activity for the room in this column.

**C:** ROOM AREA is the interior area (A) of the room in square feet. This should be determined by whatever means appropriate for the shape of the room.

**D:** ROOM PERIMETER is the room perimeter (P) measured in feet along the interior surfaces of the walls that define the boundaries of the room. For rooms with angled walls, this is the sum of the interior lengths of each wall in the room. For circular rooms, this is the interior radius of the room multiplied by 2 and pi (3.413).

**E:** ROOM CAVITY HEIGHT is the vertical distance, measured in linear feet, from the work plane to the center line of the lighting fixture. This measurement is called the room cavity height (H).

**F:** ROOM CAVITY RATIO (RCR) is 2.5 multiplied by the product of the room cavity height H (from COLUMN E) and room perimeter P (from COLUMN D), all divided by the room area A (from COLUMN C). This quantity is the RCR and shall be entered in COLUMN D of Page 1 of LTG-4C.

#### 5.7.1.4 LTG-5C: Line Voltage Track Lighting Worksheet

LTG-5C shall be used to calculate and document all line voltage track and busway lighting. (Line voltage track typically operates around 120 volts or greater). Completing this form and entering the results on page 2 of LTG-1C will calculate the installed lighting power for line voltage track lighting.

To determine luminaire wattage incorporated into the installed lighting power for line voltage track lighting, use one of the two Methods described in 5.4.3 of the Nonresidential Manual.

There are four different methods available for determining track and busway lighting input wattage as follows:

##### ***Method 1 – Volt-Ampere (VA) Rating of the Branch Circuit(s) Feeding the Tracks or Busway, or the Wattage of Integral Current Limiters***

Note: The Standards do not allow the VA rating to be devalued by 20%, even though the California Electric Code does require circuits to be loaded to no more than 80% of their capacity. The energy Standards are not the same as the Electric Code

If using this method to determine track or busway lighting power, check the box to the left of “Method 1.” Also check one of the two following boxes to indicate if the method is being used to determine wattage for track or busway rated for more than 20 amperes, or for 20 amperes or less.

**A:** BRANCH CIRCUIT NAME OR ID is the name or number that identifies the branch circuit feeding the track. This column must be filled for all branch circuits feeding track lighting systems.

**B:** VOLT-AMPERE RATING list the volt-ampere rating of the branch circuit identified in column A. Fill out this column only when you are using the VA of the branch circuit to determine the wattage of the track(s). If integral current limiters are used to determine the wattage of the tracks, do not use this method. The total of column B shall be entered in the appropriate space provided on Page 2 of the LTG-5C.

##### ***Method 2 – Use the Higher of: 45 watts per linear foot of track or the maximum relamping rated wattage of all luminaires.***

If using this method to determine track or busway lighting power, check the box to the left of “Method 2.”

**A:** TRACK NUMBER OF NAME is the name or number that identifies the track lighting and should correspond to the plans.

**B:** LINEAR FEET OF TRACK is the length of track measured in linear feet.

**C:** WATTS PER LINEAR FEET is 45 W/lf. This number is required for using Method 2.

**D:** WATTS CALCULATED by multiplying the linear feet (column B) by the assumed watts per linear feet (column C).

**E:** TOTAL RATED WATTAGE is the rated wattage of each luminaire (track head) that will be installed on the line voltage track identified in column A according to §130(c or d) . Luminaire wattage for incandescent track heads is based upon the

rating of the track head, not the wattage of the bulb that is screwed into the track head. The Wattage of incandescent track heads shall be the maximum relamping rated wattage as listed on a permanent pre-printed factory-installed label according to §130(c)1. Luminaire wattage for fluorescent and high intensity discharge (HID) track heads shall be the operating input wattage of the rated lamp/ballast combination according to §130(c)2. Luminaire wattage for low-voltage track heads (when mounted on line-voltage track) shall be the maximum rated wattage of the transformer on each track head according to §130(c)5. Add up the wattage for every luminaire that will be installed on the identified track and enter the total amount as the rated wattage.

**F: WATTS INSTALLED** is the larger of column D or column E. This is the installed lighting power for the track listed in column A. Add up all of the numbers in column F and list the total at the bottom. Enter this number in the space provided in Page 2 of the LTG-5C.

***Method 3 – Use the Higher of: 12.5 watts per linear foot of track or the VA rating of the integral current limiter.***

If using this method to determine track or busway lighting power, check the box to the left of “Method 3.” Also, check the box to indicate that the integral current limiter has been certified to the Energy Commission.

This method may be used only for Track Lighting Integral Current Limiters which have been certified to the Energy Commission, and listed on the Energy Commission database of certified devices. Devices which have not been certified to the Energy Commission and other assembly of controls shall not qualify as Track Lighting Integral Current Limiters.

**A: TRACK NUMBER OF NAME** is the name or number that identifies the track lighting and should correspond to the plans.

**B: LINEAR FEET OF TRACK** is the length of track measured in linear feet.

**C: WATTS PER LINEAR FEET** is 12.5 W/lf. This number is required for using Method 3.

**D: WATTS CALCULATED** by multiplying the linear feet (column B) by the assumed watts per linear feet (column C).

**E: VA RATING** is the volt-ampere rating of the integral current limiter controlling the track or busway as specified in §130(d)3Biii

**F: WATTS INSTALLED** is the larger of column D or column E. This is the installed lighting power for the track listed in column A. Add up all of the numbers in column F and list the total at the bottom. Enter this number in the space provided at the bottom of the page.

***Method 4 – Dedicated Track Lighting Over Current Protection Panel.***

If using this method to determine track or busway lighting power, check the box to the left of “Method 3.” Also, all five of the following boxes shall be checked to document that the supplemental overcurrent protection panel complies with all of the required provisions in the Standards.

**A: NAME OR ID** is the description of the track lighting that corresponds to the plans.

**B: VOLTAGE OF THE BRANCH** is the total voltage of the branch described in column A.

**C: LIST OF AMPERAGE RATING** is the complete list of each device installed the panel for the branch described in column A.

**D: SUM OF THE AMPERE RATING** is the sum of the listed values from column C.

**E: WATTS INSTALLED** is the product of the voltage of the branch (column B) and the sum of the ampere ratings (column D). The total from column E should be entered on the appropriate space at the bottom of the form.

At the bottom of Page 2 of the LTG-5C, the total track/busway wattage is totaled for each of the compliance methods utilized, and this number shall be entered on the LTG-2C.

### 5.7.2 Installation Certificate

A new two-page form, LTG-INST, the Installation Certificate has been included in the Nonresidential Compliance Manual. This form includes general information about the project, a declaration statement, the responsible person's name and signature, and a table to identify all applicable construction documents for the scope of responsibility for the Installation Certificate.

§10-103(a)3 requires, for all buildings, the person with overall responsibility for construction or the person(s) responsible for the installation of features, materials, components or manufactured devices regulated by the Standards or the Appliance Efficiency Regulations shall submit Installation Certificate(s).

For all buildings, a copy of the Installation Certificate(s) shall be posted, or made available with the building permit(s) issued for the building, and shall be made available to the enforcement agency for all applicable inspections.

### 5.7.3 Certificate of Acceptance

Acceptance tests, LTG-2A, are used to verify that lighting controls were installed and calibrated correctly. These tests require that a responsible party certify that controls are installed and calibrated properly. This responsible party is typically the contractor who installed the lighting controls. To verify that they are calibrated properly, the responsible party must conduct a test and make modifications to the control until it passes the test. The test results must be recorded on acceptance test forms and are part of the building documentation. These forms must be filled out before the enforcement agency grants a certificate of occupancy.

The Standards have acceptance test requirements for:

- Manual daylighting controls
- Automatic daylighting controls.
- Occupancy sensors.
- Automatic time-switch controls.

A detailed description of each acceptance test can be found in Chapter 10 of this manual, Acceptance Requirements and in the Reference Nonresidential Joint Appendix NA7.6.