



July 10, 2019

**Attention: Krista Braaksma**  
WSEC State of Washington

Dear Krista,

**Reference: Proposed Energy Code Lighting Changes**

This letter is to summarize the attached Amendatory Section which has been modified as follows:

1. Section C405.2.2.2 Changed “artificial” to “electric” in reference to light. All light is real, some is just generated by the sun and other light is generated by electricity. (p.3)
2. Section C405.2.1.5 Corrected a typo changing “officers” to “offices” (p.4)
3. Section C405.2.4 suggest adding the word “general” in front of “lighting”. We need to separate general lighting from other lighting. For instance, in classrooms, the teaching wall is often perpendicular to the window wall and wallwashers will often times be in three different daylight zones. They must all be controlled together. (p.14)
4. Section C405.2.1.1 suggest adding the word “general” in front of “lighting” for the same reason as stated above. (p.15)
5. Section C405.2.1.1.4 the phrase “in a location with ready access was added to the calibration mechanism for daylight sensors. These sensors are typically either in the ceiling or in a light fixture in the ceiling. That generally means getting on a ladder to access it. Is that readily accessible? This is just a question. There really is not any other option for their location. (p.15)
6. Section C405.4.1 Exceptions – ASHRAE includes exceptions for lighting in pulpits and choir areas. Where we have an exception for plant growth lighting, in ASHRAE it is for “support of non-human life forms”. This is useful when designing animal research spaces where a separate night light is necessary in addition to general illumination. (p.39)
7. Section C405.4.2.2.1 - Added some minor wordsmithing to align with ASHRAE text. Under Equation 4-11 changed 500 to 1000 to align with ASHRAE. This is important for very small retail establishments. (p.42-43)
8. Table C405.4.2(1) Interior Lighting Power – Building Area Method – I’ve added two columns. The first represents the values recently approved by ASHRAE and also adopted by IECC for 2021. As most people are aware, these are based on revised models that more accurately represent what can be expected when using current technology LED fixtures and lamps. The second added column shows current WSEC 2015 values and is included for easy reference. (p.44-45)

Because of the work that has gone into developing the values from ASHRAE, we would like to recommend that they be incorporated into the next version of the Washington State Energy Code.

July 10, 2019

Attention

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**Reference: Proposed Energy Code Lighting Changes**

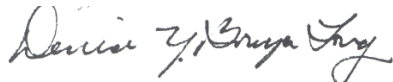
9. Table C405.4.2 (2) Interior Lighting Power Allowances Space-by-Space, Similar to table 1, two comms have been added with the same reasoning and recommendation. (p.46-54)

In addition, for this table, we have moved footnotes to the category descriptions, rather than having them in the values column. ASHRAE has a blanket allowance for decorative and other non-general lighting of 0.75 w/ft. rather than include this, we have amended footnote C to include externally illuminated signage and then added this footnote to Common Space by Space types and Building Specific Space-by-space types. Footnote N has been added to dining spaces (except penitentiaries)

Thank you for your consideration

Regards,

**Stantec Consulting Services Inc.**



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Attachment: Attachment

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EXCEPTION: Other merchandise categories are permitted to be included in Retail Areas 2 through 4, provided that justification documenting the need for additional lighting power based on visual inspection, contrast, or other critical display is *approved* by the code official.

[Statutory Authority: RCW 19.27A.025, 19.27A.160, and 19.27.074. WSR 16-03-072, § 51-11C-405052, filed 1/19/16, effective 7/1/16. Statutory Authority: RCW 19.27A.020, 19.27A.025 and chapters 19.27 and 34.05 RCW. WSR 13-04-056, § 51-11C-405052, filed 2/1/13, effective 7/1/13.]

AMENDATORY SECTION (Amending WSR 16-03-072, filed 1/19/16, effective 7/1/16)

**WAC 51-11C-405053 Table C405.4.2(1)—Interior lighting power allowances—Building area method. Table C405.4.2(1)**

**Interior Lighting Power Allowances—Building Area Method**

( <b>Building Area Type</b>	<b>LPD (w/ft<sup>2</sup>)</b>
Automotive facility	0.64
Convention center	0.81
Court house	0.81
Dining: Bar lounge/leisure	0.79
Dining: Cafeteria/fast food	0.72
Dining: Family	0.71
Dormitory	0.46
Exercise center	0.67
Fire station	0.54
Gymnasium	0.75
Health care clinic	0.70
Hospital	0.84

( ( Building Area Type	LPD (w/ft <sup>2</sup> )
Hotel/motel	0.70
Library	0.94
Manufacturing facility	0.89
Motion picture theater	0.61
Multifamily	0.41
Museum	0.80
Office	0.66
Parking garage	0.16
Penitentiary	0.65
Performing arts theater	1.00
Police station	0.70
Post office	0.70
Religious building	0.80
Retail	1.01
School/university	0.70
Sports arena	0.62
Town hall	0.71
Transportation	0.56
Warehouse	0.40
Workshop	0.95 )

Building Area Type	Option 1: LPD (w/ft <sup>2</sup> )	Option 2: LPD (w/ft <sup>2</sup> )	Option 3: LPD (w/ft <sup>2</sup> )	ASHRAE Values	WSEC 2015
Automotive facility	0.60	0.60	0.60	0.75	0.64
Convention center	0.65	0.65	0.65	0.64	0.81
Court house	0.70	0.70	0.70	0.79	0.81
Dining: Bar lounge/leisure	0.79	0.70	0.70	0.80	0.79
Dining: Cafeteria/fast food	0.70	0.70	0.70	0.76	0.72
Dining: Family	0.70	0.70	0.70	0.71	0.71
Dormitory <sup>a,b</sup>	0.61	0.41	0.41	0.53	0.46
Exercise center	0.65	0.61	0.61	0.72	0.67
Fire station <sup>d</sup>	0.53	0.53	0.50	0.56	0.54
Gymnasium	0.65	0.65	0.65	0.76	0.75
Health care clinic	0.70	0.70	0.70	0.81	0.70
Hospital <sup>e</sup>	0.90	0.84	0.84	0.96	0.84
Hotel/motel <sup>a,b</sup>	0.70	0.67	0.67	0.56	0.70
Library	0.78	0.70	0.70	0.83	0.94
Manufacturing facility	0.89	0.60	0.60	0.82	0.89
Motion picture theater	0.61	0.60	0.60	0.44	0.61
Multifamily <sup>c</sup>	0.41	0.40	0.40	0.45	0.41
Museum	0.80	0.72	0.72	0.55	0.8
Office	0.65	0.66	0.65	0.64	0.66
Parking garage	0.14	0.13	0.13	0.18	0.16
Penitentiary	0.65	0.65	0.65	0.69	0.65

<u>Building Area Type</u>	<u>Option 1: LPD (w/ft<sup>2</sup>)</u>	<u>Option 2: LPD (w/ft<sup>2</sup>)</u>	<u>Option 3: LPD (w/ft<sup>2</sup>)</u>	<u>ASHRAE Values</u>	<u>WSEC 2015</u>
Performing arts theater	1.00	0.80	0.80	0.84	1.0
Personal service-salon, cleaners, laundromat	0.60	0.60	0.60		
Police station	0.70	0.68	0.68	0.66	0.7
Post office	0.67	0.63	0.63	0.65	0.7
Religious building	0.80	0.70	0.70	0.67	0.8
Retail	0.90	0.91	0.90	0.84	1.01
School/university	0.65	0.65	0.60	0.72	0.70
Sports arena	0.62	0.75	0.75	0.76	0.62
Town hall	0.71	0.70	0.70	0.69	0.71
Transportation	0.50	0.51	0.51	0.50	0.56
Warehouse	0.40	0.40	0.40	0.45	0.40
Workshop	0.90	0.90	0.90	0.91	0.95

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- <sup>a</sup> Where sleeping units are excluded from lighting power calculations by application of Section R404.1, neither the area of the sleeping units nor the wattage of lighting in the sleeping units is counted.
- <sup>b</sup> Where dwelling units are excluded from lighting power calculations by application of Section R404.1, neither the area of the dwelling units nor the wattage of lighting in the dwelling units is counted.
- <sup>c</sup> Dwelling units are excluded. Neither the area of the dwelling units nor the wattage of lighting in the dwelling units is counted.

[Statutory Authority: RCW 19.27A.025, 19.27A.160, and 19.27.074. WSR 16-03-072, § 51-11C-405053, filed 1/19/16, effective 7/1/16. Statutory Authority: RCW 19.27A.020, 19.27A.025 and chapters 19.27 and 34.05 RCW. WSR 13-04-056, § 51-11C-405053, filed 2/1/13, effective 7/1/13.]

AMENDATORY SECTION (Amending WSR 16-03-072, filed 1/19/16, effective 7/1/16)

**WAC 51-11C-405054 Table C405.4.2(2)—Interior lighting power allowances—Space-by-space method. Table C405.4.2(2)**

**Interior Lighting Power Allowances—Space-by-Space Method**

<b>( Common Space-by-Space Types<sup>a</sup></b>	<b>LPD<sup>d</sup> (w/ft<sup>2</sup>)</b>
Atrium—First 40 feet in height <sup>e</sup>	0.02 per ft. ht.
Atrium—Above 40 feet in height <sup>e</sup>	0.03 + 0.02 per ft. in total height
<b>Audience/seating area—Permanent</b>	
In an auditorium	0.50
In a convention center	0.66
In a gymnasium	0.34
In a motion picture theater	0.91
In a penitentiary	0.22
In a performing arts theater	1.94
In a religious building	1.22
In a sports arena	0.34
Otherwise	0.34
Banking activity area	0.81
Breakroom (see Lounge/breakroom)	
<b>Classroom/lecture hall/training room</b>	
In a penitentiary	1.07
Otherwise	1.00
Conference/meeting/multipurpose	0.98
Copy/print room	0.58
<b>Corridor</b>	
In a facility for the visually impaired (and not used primarily by the staff) <sup>b</sup>	0.74
In a hospital	0.63
In a manufacturing facility	0.33
Otherwise	0.53
Courtroom	1.38
Computer room	1.37
<b>Dining area</b>	
In a penitentiary	0.77
In a facility for the visually impaired (and not used primarily by the staff) <sup>b</sup>	1.52
In a bar/lounge or leisure dining	0.86
In a family dining area	0.71
Otherwise	0.52
Electrical/mechanical	0.76
Emergency vehicle garage	0.45

( Common Space-by-Space Types <sup>a</sup>	LPD <sup>d</sup> (w/ft <sup>2</sup> )
Food preparation	0.79
Guest room	0.38
Laboratory	
In or as a classroom	1.02
Otherwise	1.45
Laundry/washing area	0.48
Loading dock, interior	0.38
Lobby <sup>e</sup>	
In a facility for the visually impaired (and not used primarily by the staff) <sup>b</sup>	1.44
For an elevator	0.51
In a hotel	0.85
In a motion picture theater	0.42
In a performing arts theater	1.60
Otherwise	0.72
Locker room	0.60
Lounge/breakroom	
In a health care facility	0.74
Otherwise	0.58
Office <sup>f</sup>	
Enclosed	0.89
Open-plan	0.78
Parking area, interior	0.15
Pharmacy area	0.91
Restroom	
In a facility for the visually impaired (and not used primarily by the staff) <sup>b</sup>	0.97
Otherwise	0.78
Sales area	1.27
Seating area, general	0.43
Stairway (see space containing stairway)	
Stairwell	0.55
Storage room	0.50
Vehicular maintenance	0.54
Workshop	1.27

<b>Building Specific Space by Space Types<sup>a</sup></b>	
<b>Building Specific Space by Space Types</b>	<b>LPD<sup>d</sup> (w/ft<sup>2</sup>)</b>
Automotive—(See Vehicular maintenance, above)	
Convention center—Exhibit space	1.16
Dormitory living quarters	0.30
Facility for the visually impaired <sup>b</sup>	
In a chapel (and not used primarily by the staff) <sup>b</sup>	1.77
In a recreation room (and not used primarily by the staff) <sup>b</sup>	1.93
Fire stations—Sleeping quarters	0.18
Engine rooms	0.45
Gymnasium/fitness center	
In an exercise area	0.58
In a playing area	0.96
Health care facility	
In an exam/treatment room	1.33
In an imaging room	1.06
In a medical supply room	0.59
In a nursery	0.70
In a nurse's station	0.57
In an operating room	1.51
In a patient room	0.50
In a physical therapy room	0.73
In a recovery room	0.92
Library <sup>f</sup>	
In a reading area	0.74
In the stacks	1.37
Manufacturing facility	
In a detailed manufacturing area	1.03
In an equipment room	0.59
In an extra high bay area (greater than 50 foot floor to ceiling height)	0.84
In a high bay area (25–50 foot floor to ceiling height)	0.98
In a low bay (<25 foot floor to ceiling height)	0.95
Museum	



<b>Building Specific Space by Space Types<sup>a</sup></b>	
<b>Building Specific Space by Space Types</b>	<b>LPD<sup>d</sup> (w/ft<sup>2</sup>)</b>
In a general exhibition area	0.84
In a restoration room	0.82
Performing arts theater dressing/fitting room	0.32
Post office—Sorting area	0.75
Religious buildings	
In a fellowship hall	0.51
In a worship/pulpit/choir area	1.22
Retail facilities	
In a dressing/fitting room	0.57
In a mall concourse	0.88
Sports arena—Playing area	
For a Class 1 facility	2.41
For a Class 2 facility	1.54
For a Class 3 facility	0.96
For a Class 4 facility	0.58
Transportation	
In a baggage/carousel area	0.42
In an airport concourse	0.29
At a terminal ticket counter	0.64
Warehouse—Storage area	
For medium to bulky palletized items	0.46
For smaller, hand-carried items	0.76 )

<u>Common Space-by-Space Types<sup>a</sup></u>	<u>Option 1: LPD (w/ft<sup>2</sup>)</u>	<u>Option 2: LPD (w/ft<sup>2</sup>)</u>	<u>Option 3: LPD (w/ft<sup>2</sup>)</u>	<u>ASHRAE Values</u>	<u>WSEC 2015</u>
Atrium - First 40 feet in height (per foot)	0.48	0.02	0.48	0.48	0.02
Atrium - Above 40 feet in height (per foot)	0.70	0.02	0.70	0.6	0.02
<u>Audience/seating area - Permanent</u>					
<u>In an auditorium</u>	0.61	0.61	0.61	0.61	0.5
<u>In a convention center</u>	0.65	0.25	0.25		0.66
<u>In a gymnasium</u>	0.34	0.23	0.23	0.23	0.34
<u>In a motion picture theater</u>	0.82	0.27	0.27	0.27	0.91
<u>In a penitentiary</u>	0.67	0.44	0.67	0.67	0.22
<u>In a performing arts theater</u>	1.06	1.06	1.06	1.16	1.94
<u>In a religious building</u>	1.22	0.72	0.72	0.72	1.22

<u>Common Space-by-Space Types<sup>a</sup></u>	<u>Option 1: LPD (w/ft<sup>2</sup>)</u>	<u>Option 2: LPD (w/ft<sup>2</sup>)</u>	<u>Option 3: LPD (w/ft<sup>2</sup>)</u>	<u>ASHRAE Values</u>	<u>WSEC 2015</u>
<u>In a sports arena</u>	0.33	0.33	0.33	0.33	0.34
<u>Otherwise</u>	0.23	0.23	0.23	0.23	0.34
<u>Banking activity area</u>	0.79	0.61	0.61	0.61	0.81
<u>Beauty salon, barber area</u>	1.00	1.00	1.00		
<u>Breakroom (see lounge/breakroom)</u>					
<u>Classroom/lecture hall/training room</u>					
<u>In a penitentiary</u>	1.38	1.07	1.38		1.07
<u>Otherwise</u>	0.84 <sup>m</sup>	0.84 <sup>m</sup>	0.74 <sup>m</sup>	0.89	1.0
<u>Computer room, data center</u>	1.33	1.00	1.00	0.94	1.37
<u>Conference/meeting/multipurpose</u>	0.97	0.97	0.97	0.97	0.98
<u>Copy/print room</u>	0.70	0.50	0.31	0.31	0.58
<u>Corridor</u>					
<u>In a facility for the visually impaired (and not used primarily by the staff)<sup>b</sup></u>	0.71	0.71	0.71	0.71	0.74
<u>In a hospital</u>	0.71	0.63	0.71	0.71	0.63
<u>In a manufacturing facility</u>	0.41	0.29	0.41		0.33
<u>Otherwise</u>	0.41	0.41	0.41	0.41 <sup>n</sup>	0.53
<u>Courtroom</u>	1.25	1.25	1.25	1.2	1.38
<u>Dining area</u>					
<u>In a penitentiary</u>	0.42	0.42	0.42	0.42	0.77
<u>In a facility for the visually impaired (and not used primarily by the staff)<sup>b</sup></u>	1.38	1.38	1.38	1.27	1.52
<u>In a bar/lounge or leisure dining</u>	0.86 <sup>n</sup>	0.86 <sup>n</sup>	0.86 <sup>n</sup>	0.86	0.86
<u>In cafeteria or fast food dining</u>	0.63	0.40	0.40	0.4	
<u>In a family dining area</u>	0.71 <sup>n</sup>	0.60 <sup>n</sup>	0.60 <sup>n</sup>	0.6	0.71
<u>Otherwise</u>	0.52	0.43	0.43	0.43	0.52
<u>Electrical/mechanical</u>	0.42	0.42	0.42	0.43	0.76
<u>Emergency vehicle garage</u>	0.52	0.52	0.52	0.52	0.45
<u>Food preparation</u>	1.29	0.92	1.29	1.09	0.79
<u>Guest room<sup>a,b</sup></u>	0.41	0.41	0.41	0.41	0.38
<u>Laboratory</u>					
<u>In or as a classroom</u>	1.17	1.02	1.17	1.11	1.02
<u>Otherwise</u>	1.70 <sup>o</sup>	1.45 <sup>o</sup>	1.70 <sup>o</sup>	1.33	1.45
<u>Laundry/washing area</u>	0.59	0.43	0.59	0.53	0.48
<u>Loading dock, interior</u>	0.38	0.38	0.38	0.88	0.38
<u>Lobby<sup>c</sup></u>					
<u>In a facility for the visually impaired (and not used primarily by the staff)<sup>b</sup></u>	2.49	1.44	2.49	1.69	1.44
<u>For an elevator</u>	0.71	0.51	0.71	0.65	0.51
<u>In a hotel</u>	0.51	0.51	0.51	0.51	0.85

<b>Common Space-by-Space Types<sup>a</sup></b>	<b>Option 1: LPD (w/ft<sup>2</sup>)</b>	<b>Option 2: LPD (w/ft<sup>2</sup>)</b>	<b>Option 3: LPD (w/ft<sup>2</sup>)</b>	<b>ASHRAE Values</b>	<b>WSEC 2015</b>
In a motion picture theater	0.23	0.23	0.23	0.23	0.42
In a performing arts theater	1.25	1.25	1.25	1.25	1.6
Otherwise	1.11	0.72	1.11	0.84	0.72
Locker room	0.52	0.86	0.52	0.52	0.6
Lounge/breakroom	0.67	0.58	0.42	0.42-0.59	0.58-0.74
Office					
Enclosed < 250	0.88 <sup>p</sup>	0.88 <sup>p</sup>	0.70 <sup>p</sup>	0.74	0.89
Enclosed > 250	0.79 <sup>p</sup>	0.79 <sup>p</sup>	0.70 <sup>p</sup>	0.65	0.89
Open plan	0.67 <sup>p</sup>	0.67 <sup>p</sup>	0.60 <sup>p</sup>	0.61	0.89
Parking area, interior	0.15	0.15	0.15	0.15	0.15
Parking facility, dedicated ramp	0.25	0.25	0.25		0.15
Pharmacy area	1.90	1.23	1.90	1.66	0.91
Restroom					
In a facility for the visually impaired (and not used primarily by the staff) <sup>b</sup>	1.26	0.96	1.26	1.26	0.97
Otherwise	0.78 <sup>q,r</sup>	0.75 <sup>q,r</sup>	0.63 <sup>q,r</sup>	0.63	0.78
Sales area	1.12	1.12	1.04	1.05	1.27
Sales area, grocery	1.05	1.05	1.05		
Seating area, general	0.23	0.23	0.23	0.23	0.43
Stairway (see space containing stairway)					
Stairwell	0.55 <sup>q,r</sup>	0.49 <sup>q,r</sup>	0.49 <sup>q,r</sup>	0.49	0.55
Storage room					
< 50 ft <sup>2</sup>	0.40	0.40	0.40		0.50
50-100 ft <sup>2</sup>	0.38	0.38	0.38		0.50
All other storage	0.38	0.38	0.38	0.38	0.50
Vehicular maintenance	0.60	0.54	0.60	0.60	0.54
Workshop	1.26	1.14	1.26	1.26	1.27

<b>Building Specific Space-by-Space Types<sup>a</sup></b>	<b>Option 1: LPD (w/ft<sup>2</sup>)</b>	<b>Option 2: LPD (w/ft<sup>2</sup>)</b>	<b>Option 3: LPD (w/ft<sup>2</sup>)</b>	<b>ASHRAE Values</b>	<b>WSEC 2015</b>
Automotive	0.60	0.54	0.60		0.54
Convention center - Exhibit space	0.50	0.50	0.50	0.61	1.16
Dormitory living quarters <sup>a,b</sup>	0.84	0.46	0.46	0.5	0.3
Facility for the visually impaired <sup>b</sup>					
In a chapel (and not used primarily by the staff) <sup>b</sup>	0.70	0.70	0.70	0.7	1.77
In a recreation room (and not used primarily by the staff) <sup>b</sup>	1.77	1.77	1.77	1.77	1.93
Fire stations <sup>e</sup>					
Engine rooms	0.45	0.45	0.45		0.18

<b>Building Specific Space-by-Space Types<sup>a</sup></b>	<b>Option 1: LPD (w/ft<sup>3</sup>)</b>	<b>Option 2: LPD (w/ft<sup>3</sup>)</b>	<b>Option 3: LPD (w/ft<sup>3</sup>)</b>	<b>ASHRAE Values</b>	<b>WSEC 2015</b>
Sleeping quarters	<u>0.20</u>	<u>0.18</u>	<u>0.20</u>	<u>0.23</u>	<u>0.45</u>
Gymnasium/fitness center					
In an exercise area	<u>0.90</u>	<u>0.50</u>	<u>0.90</u>	<u>0.90</u>	<u>0.58</u>
In a playing area	<u>0.85</u>	<u>0.82</u>	<u>0.85</u>	<u>0.85</u>	<u>0.96</u>
Health care facility					
In an exam/treatment room	<u>1.40</u>	<u>1.33</u>	<u>1.40</u>	<u>1.4</u>	<u>1.33</u>
In an imaging room	<u>0.85</u>	<u>0.85</u>	<u>0.85</u>	<u>0.94</u>	<u>1.06</u>
In a medical supply room	<u>0.64</u>	<u>0.54</u>	<u>0.62</u>	<u>0.62</u>	<u>0.59</u>
In a nursery	<u>1.37</u>	<u>0.94</u>	<u>1.37</u>	<u>0.92</u>	<u>0.70</u>
In a nurse's station	<u>1.11</u>	<u>0.75</u>	<u>1.11</u>	<u>1.17</u>	<u>0.57</u>
In an operating room	<u>2.26</u>	<u>1.90</u>	<u>2.26</u>	<u>2.26</u>	<u>1.51</u>
In a patient room <sup>b</sup>	<u>1.15</u>	<u>0.68</u>	<u>0.68</u>	<u>0.68</u>	<u>0.50</u>
In a physical therapy room	<u>0.91</u>	<u>0.85</u>	<u>0.91</u>	<u>0.91</u>	<u>0.73</u>
In a recovery room	<u>1.25</u>	<u>0.92</u>	<u>1.25</u>	<u>1.25</u>	<u>0.92</u>
Library					
In a reading area	<u>0.96</u>	<u>0.80</u>	<u>0.96</u>	<u>0.96</u>	<u>0.74</u>
In the stacks	<u>1.16</u>	<u>1.16</u>	<u>1.16</u>	<u>1.18</u>	<u>1.37</u>
Manufacturing facility					
In a detailed manufacturing area	<u>0.80</u>	<u>0.80</u>	<u>0.80</u>	<u>0.8</u>	<u>1.03</u>
In an equipment room	<u>0.76</u>	<u>0.65</u>	<u>0.76</u>	<u>0.76</u>	<u>0.59</u>
In an extra high bay area (greater than 50-foot floor-to-ceiling height)	<u>1.42</u>	<u>0.84</u>	<u>1.42</u>	<u>1.42</u>	<u>0.84</u>
In a high bay area (25 - 50-foot floor-to-ceiling height)	<u>1.24</u>	<u>0.75</u>	<u>1.24</u>	<u>1.24</u>	<u>0.98</u>
In a low bay (< 25-foot floor-to-ceiling height)	<u>0.86</u>	<u>0.86</u>	<u>0.86</u>	<u>0.86</u>	<u>0.95</u>
Museum					
In a general exhibition area	<u>0.84</u>	<u>0.31</u>	<u>0.31</u>	<u>0.31</u>	<u>0.84</u>
In a restoration room	<u>1.10</u>	<u>1.10</u>	<u>1.10</u>	<u>1.1</u>	<u>0.82</u>
Performing arts theater dressing/fitting room	<u>0.41</u>	<u>0.41</u>	<u>0.41</u>	<u>0.41</u>	<u>0.32</u>
Post office - Sorting area	<u>0.76</u>	<u>0.68</u>	<u>0.76</u>	<u>0.76</u>	<u>0.75</u>
Religious buildings					
In a fellowship hall	<u>0.54</u>	<u>0.51</u>	<u>0.54</u>	<u>0.54</u>	<u>0.51</u>

<b>Building Specific Space-by-Space Types<sup>a</sup></b>	<b>Option 1: LPD (w/ft<sup>2</sup>)</b>	<b>Option 2: LPD (w/ft<sup>2</sup>)</b>	<b>Option 3: LPD (w/ft<sup>2</sup>)</b>	<b>ASHRAE Values</b>	<b>WSEC 2015</b>
<u>In a worship/pulpit/choir area</u>	0.85	0.85	0.84	0.85	1.22
<u>Retail facilities</u>					
<u>In a dressing/fitting room</u>	0.51	0.50	0.51	0.51	0.57
<u>In a mall concourse</u>	1.03	0.88	1.03	0.82	0.88
<u>Sports arena - Playing area</u>					
<u>For a Class 1 facility<sup>i</sup></u>	2.94	2.41	2.94	2.94	2.41
<u>For a Class 2 facility<sup>j</sup></u>	2.01	2.01	2.01	2.01	1.54
<u>For a Class 3 facility<sup>k</sup></u>	1.30	0.96	1.30	1.3	0.96
<u>For a Class 4 facility<sup>l</sup></u>	0.86	0.72	0.86	0.86	0.58
<u>Transportation</u>					
<u>In a baggage/carousel area</u>	0.39	0.39	0.39	0.39	0.42
<u>In an airport concourse</u>	0.25	0.25	0.25	0.25	0.29
<u>At a terminal ticket counter</u>	0.51	0.51	0.51	0.51	0.64
<u>Warehouse - Storage area</u>					
<u>For medium to bulky palletized items</u>	0.33	0.33	0.33	0.33	0.46
<u>For smaller, hand-carried items</u>	0.69	0.69	0.69	0.69	0.76

For SI: 1 foot = 304.8 mm, 1 watt per square foot = 11 W/m<sup>2</sup>.

- <sup>a</sup> In cases where both a common space type and a building area specific space type are listed, the building area specific space type shall apply.
- <sup>b</sup> A ( " ) facility for the visually impaired ( " ) is a facility that is licensed or will be licensed by local or state authorities for senior long-term care, adult daycare, senior support or people with special visual needs.
- <sup>c</sup> For spaces in which lighting is specified to be installed in addition to, and controlled separately from, the general lighting for the purpose of highlighting art or exhibits, provided that the additional lighting power shall not exceed 0.5 W/ft<sup>2</sup> of such spaces.
- <sup>d</sup> ( ( The watts per square foot may be increased by 2 percent per foot of ceiling height above 20 feet, unless specifically directed otherwise by subsequent footnotes. ) ) Reserved.
- <sup>e</sup> ( ( Footnote d may not be used for these occupancy types. ) ) Reserved.
- <sup>f</sup> ( ( The watts per square foot may be increased by 2 percent per foot of ceiling height above 9 feet. Footnote d may not be used for these occupancy types. ) ) Reserved.

- Ⓢ Where sleeping units are excluded from lighting power calculations by application of Section R404.1, neither the area of the sleeping units nor the wattage of lighting in the sleeping units is counted.
- ⓑ Where dwelling units are excluded from lighting power calculations by application of Section R404.1, neither the area of the dwelling units nor the wattage of lighting in the dwelling units is counted.
- ⓐ Class I facilities consist of professional facilities; and semiprofessional, collegiate or club facilities with seating for 5,000 or more spectators.
- ⓓ Class II facilities consist of collegiate and semiprofessional facilities with seating for fewer than 5,000 spectators; club facilities with seating between 2,000 and 5,000 spectators; and amateur league and high school facilities with seating for more than 2,000 spectators.
- Ⓚ Class III facilities consist of club, amateur league and high school facilities with seating for 2,000 or fewer spectators.
- Ⓛ Class IV facilities consist of elementary school and recreational facilities; and amateur league and high school facilities without provisions for spectators.
- Ⓜ For classrooms, additional lighting power allowance of 4.50 W/lineal foot of white or chalk boards for directional lighting dedicated to white or chalk boards.
- Ⓝ Additional lighting power allowance of 0.30 W/ft<sup>2</sup> for ornamental lighting. Qualifying ornamental lighting includes luminaires such as chandeliers, sconces, lanterns, neon and cold cathode, light emitting diodes, theatrical projectors, moving lights and light color panels when any of those lights are used in a decorative manner that does not serve as display lighting or general lighting.
- Ⓞ For scientific laboratories, additional lighting power allowance of 0.35 W/ft<sup>2</sup> for specialized task work - lighting that provides for small-scale, cognitive or fast performance visual tasks, lighting required for operating specialized equipment associated with pharmaceutical/laboratorial activities.
- Ⓟ For offices, additional lighting power allowance of 0.20 W/ft<sup>2</sup> for portable lighting, which includes under shelf or furniture-mounted supplemental task lighting qualifies when controlled by a time clock or an occupancy sensor.
- Ⓠ Additional lighting power allowance of 0.15 W/ft<sup>2</sup> for decorative lighting. Primary function shall be decorative and not to provide general lighting.
- Ⓡ Additional lighting power allowance of 0.20 W/ft<sup>2</sup> for accent, display and feature lighting - luminaires shall be adjustable or directional.

[Statutory Authority: RCW 19.27A.025, 19.27A.160, and 19.27.074. WSR 16-03-072, § 51-11C-405054, filed 1/19/16, effective 7/1/16. Statutory Authority: RCW 19.27A.020, 19.27A.025 and chapters 19.27 and 34.05 RCW. WSR 13-04-056, § 51-11C-405054, filed 2/1/13, effective 7/1/13.]