FORT COLLINS LIGHTING WATTAGE WORKSHEET ALLOWANCE SHEET



For new buildings and whenever 60% or more of the luminaries are added or replaced for a tenant finish, and to verify compliance to the Fort Collins Energy Code for allowable lighting, one must complete the attached worksheets. Find the applicable allowances recorded in tables 401.3.2a for building space method and for specific space method use tables 401.3.2b, c & d. Record these allowances with floor area to the allowance table. Sum up the Total Interior Lighting Power Allowance for this table. Keeping this allowance in mind, list every new light fixture and its individual wattage on the Proposed Interior Connected Lighting Power worksheet. Sum the proposed lighting and verify that this is equal or less than the Allowance. When the proposed is greater than the Allowance lighting fixtures must be removed or replaced with lower wattage fixtures. All tenant finish submittals must use the Specific Space method rather than the Building Space method, unless the tenant finish involves the entire structure. Along with a lighting plan, submit the completed Lighting Wattage worksheets for review and approval.

ILPA - BUILDING SPACE METHOD (Section 401.3.2(a) and Table 401.3.2a)

	(00000000000000000000000000000000000000			
Location	Building Space Activity (From Table 401.3.2a)	Area square feet	Allowed watts/sq.ft.	Total allowed watts
Total Interior Lighting Power Allowance (ILPA):				

Total Interior Lighting Tower Allowance (IEI A

ILPA - SPECIFIC SPACE METHOD (Section 401.3.2(b) and Tables 401.3.2b-d)

Room Number	Specific Space Activity (From Table 401.3.2b)	Area square feet	Allowed watts/sq.ft.	Total allowed watts
		L	/ <u>_ </u>	

Total Interior Lighting Power Allowance (ILPA):

FORT COLLINS LIGHTING WATTAGE WORKSHEET PROPOSED LIGHTING SHEET



PROPOSED INTERIOR CONNECTED LIGHTING POWER (CLP)

Fixture description (lamp/bulb type and quantity)	Number of fixtures	Watts per fixture	Proposed watts
		1	
	+		
	+		
	+		
	+		
	+		
	+		
	+		
	+		
	Fixture description (lamp/bulb type and quantity)	Fixture description (lamp/bulb type and quantity) Number of fixtures Indicate the second se	Fixture description (lamp/bulb type and quantity) Number of fixtures Fixture description (lamp/bulb type and quantity) Number of fixtures Numb

2

TABLE 401.3.2a Interior Lighting Power Allowance. W/ft²

1	IIICII	or Lighting P					
	Gross Lighted Area of Total Building						
Building Space Activity ^{a, b}							
	0 to	2,001 to	10,001 to	25,001 to	50,001 to	>250,000 ft ²	
	2,000 ft ²	10,000 ft ²	25,000 ft ²	50,000 ft ²	250,000 ft ²		
Food Service:							
Fast Food/Cafeteria	1.50 <u>1.40</u>	1.38 <u>1.28</u>	1.34 <u>1.24</u>	1.32 <u>1.22</u>	1.31 <u>1.21</u>	1.30 <u>1.20</u>	
Leisure Dining/Bar	2.20 <u>1.60</u>	1.91 <u>1.56</u>	1.71 <u>1.52</u>	1.56 <u>1.48</u>	1.46 <u>1.44</u>	1.40 <u>1.40</u>	
Offices	1.90 <u>1.50</u>	1.81 <u>1.44</u>	1.72 1.37	1.65 <u>1.32</u>	1.57 <u>1.26</u>	1.50 <u>1.21</u>	
Retail ^c	3.30 <u>2.70</u>	3.08 <u>2.52</u>	2.83 <u>2.32</u>	2.50 <u>2.05</u>	2.28 <u>1.87</u>	2.10 <u>1.72</u>	
Mall Concourse							
Multi-store Service	1.60 <u>0.69</u>	1.58 <u>0.68</u>	1.52 <u>0.65</u>	1.46 <u>0.63</u>	1.43 <u>0.61</u>	1.40 <u>0.60</u>	
Service Establishment	2.70 <u>2.31</u>	2.37 <u>2.03</u>	2.08 <u>1.78</u>	1.92 <u>1.65</u>	1.80 <u>1.54</u>	1.70 <u>1.46</u>	
Garages	0.30	0.28	0.24	0.22	0.21	0.20	
Schools:							
Preschool/Elementary	1.80 <u>1.33</u>	1.80 <u>1.33</u>	1.72 <u>1.27</u>	1.65 <u>1.22</u>	1.57 <u>1.16</u>	1.50 <u>1.11</u>	
Jr.High/High School	1.90 <u>1.40</u>	1.90 <u>1.40</u>	1.88 <u>1.39</u>	1.83 <u>1.35</u>	1.76 <u>1.30</u>	1.70 <u>1.26</u>	
Technical/Vocational	2.40 <u>1.77</u>	2.33 <u>1.72</u>	2.17 <u>1.60</u>	2.01 <u>1.49</u>	1.84 <u>1.36</u>	1.70 <u>1.26</u>	
Industrial/Manufacturing	<u>2.50</u>	<u>2.43</u>	<u>2.37</u>	<u>2.33</u>	<u>2.30</u>	<u>2.28</u>	
Warehouse/Storage	0.80	0.66	0.56	0.48	0.43	0.40	

Notes:

^aIf at least 10% of the building area is intended for multiple space activities, such as parking, retail, and storage in an office building, then calculate for each separate building type/space activity.

^bThe values in the categories are building-wide allowances which include the listed activity and directly related facilities such as conference rooms, lobbies, corridors, restrooms, etc.

^cIncludes general, merchandising, and display lighting.

Table 401.3.2b Unit Interior Lighting Power Allowance

Common Area/Activity ^a	UPD W/ft ²	UPD W/ft ²
Auditorium ^b	1.6 ^b	OID WILL
Corridor ^c	0.8	
Classroom/Lecture Hall	2.0	
Electrical/Mechanical Equipment Room	2.0	
General ^c	0.7	
Control Rooms ^c	1.5	
Food Service/Entertainment	1.5	
Fast Food/Cafeteria	1.3	
Leisure Dining ^{d,f}	2.5	1.6^{f}
Bar/Lounge	2.5	1.0
Kitchen	1.4	
Recreation/Lounge	0.7	
Stair	0.7	
Active Traffic	0.6	
Emergency Exit	0.4	
Toilet and Washroom	0.8	
Garage	0.0	
Auto and Pedestrian Circulation Area	0.3	
Parking Area	0.2	
Laboratory	2.3	
Library	2.3	
Audiovisual	1.1	
Stack Area ^g	1.1 1.5	1.1 ^g
Card File and Cataloging	1.5 1.6	1.5 1.5
Reading Area	1.0 1.9	1.5
Lobby (General)	1,7	1.5
Reception and Waiting	1.0	
Elevator Lobbies	0.8	
Atrium (Multi-Story)	0.0	
First 3 Floors	0.7	
Each Additional Floor	0.7	
Locker Room and Shower	0.8	
Locker Room and Shower	0.0	
Common Area/Activity ^a	UPD W/ft ²	UPD W/ft ²
Office Category 1	CID WILL	CID WILL
Enclosed offices, all open-plan offices w/o partitions or		
w/partitions* lower than 4.5 feet below the ceiling.		
Reading, typing, filing	1.8	<u>1.5</u>
Drafting	2.6	<u>1.9</u>
Accounting	2.1	1.6
Office Category 2		
Open-plan offices 900 ft ² or larger w/partitions* 3.5 to		
4.5 ft below the ceiling. Offices less than 900 ft ² shall		
use category 1°.		
Reading, typing, filing	1.9	<u>1.5</u>
Drafting	2.9	<u>2.0</u>
Accounting	2.4	1.8
Accounting	2.1	1.0

Office Category 3
Open-plan offices 900 ft² or larger w/ partitions* higher than 3.5 ft below the ceiling. Offices less than 900 ft² shall use category 1c.

Table 401.3.2b (continued) **Unit Interior Lighting Power Allowance**

Reading, typing, filing	2.2		1.7		
Drafting		3.4		<u>2.3</u>	
Accounting		2.7		1.9	
Common Activity Areas					
Conference /Meeting Room ^b		1.8		1.3 ^b	
Computer/Office Equipment ^g		2.1		1.1^{g}	
Filing, Inactive ^g		1.0^{g}			
Mail Room				1.8	
Shop (Non industrial)					
Machinery				2.5	
Electrical/Electronic				2.5	
Painting				1.6	
Carpentry				2.3	
Welding				1.2	
Industrial					
<u>General</u>				2.5	
<u>Inspection</u>				2.5 3.0	
Storage and Warehouse					
Inactive Storage ^g				0.3	0.4^{g}
Active Storage, Bulky				0.3	<u>0.6</u>
Active Storage, Fine				1.0	
Material Handling				1.0	
Unlisted Space				0.2	

^{*}Not less than 90% of all workstations shall be individually enclosed with partitions of at least the height described.

^aUse a weighted average UPD in rooms with multiple simultaneous activities, weighted in proportion to the area served.
^bA 1.5 power adjustment factor is applicable for multi-function spaces when a supplementary system having independent controls is installed that has installed power $\leq 33\%$ of the adjusted lighting power for that space.

eArea factor of 1.0 shall be used for these spaces.

^dUPD includes lighting power required for clean-up purposes.

Area factor shall not exceed 1.55 fuPD can be increased by 50% if at least 75% of connected lighting load is on dimmers.

EUPD can be increased by 50% if at least 75% of connected lighting load for that area is on occupancy sensors or time switch.

Table 401.3.2c Unit Interior Lighting Power Allowance

Specific Building Area/Activity ^a	UPD W/ft ²	UPD W/ft ²
Airport, Bus and Rail Station		
Baggage Area	1.0	0.8
Concourse/Mail Throughway	0.9	
Ticket Counter	2.5	<u>2.0</u>
Waiting and Lounge Area	1.2	
Bank		
Customer Area	1.1	
Banking Activity Area	2.8	2.2
Barber and Beauty Parlor	2.0	1.6
Church, Synagogue, chapel		
Worship/Congregational	2.5	
Preaching and Sermon/Choir	2.7	
Dormitory		
Bedroom	1.1	<u>1.0</u>
Bedroom w/study	1.4	1.3
Study Hall	1.8	1.5
Fire and Police Department	210	
Fire Engine Room	0.7	
Jail Cell	0.8	
Hospital/Nursing Home	···	
Corridor ^e	1.3	<u>1.3</u>
Dental Suite/Examination/Treatment	1.6	$\frac{2.0}{2.0}$
Emergency	2.3	<u>v</u>
Laboratory	1.9	<u>2.2</u>
Lounge/Waiting Room	0.9	<u>2.2</u>
Medical Supplies	2.4	<u>2.2</u>
Nursery	2.0	<u>2.2</u>
Nurse Station	2.1	
Occupational Therapy/Physical Therapy	1.6	
Patient Room	1.4	
Pharmacy	1. 7	<u>2.2</u>
Radiology	2.1	1.8
Surgical and OB Studies	2.1	1.0
General Area	2.1	
Operating Room	7 7	EXEMPT
Recovery	2.3	L/XL/MII I
Hotel/Conference Center	۵.3	
Banquet Room/Multi-purpose ^b	2.4	1.7 ^b
Bathroom/Powder Room	1.2	1.1
Guest Room	1.4	0.9
Public Area	1.2	1.0
Exhibition Hall	2.6	$\frac{1.0}{1.8^{b}}$
Conference/Meeting ^b	1.8	$\frac{1.8}{1.5^{b}}$
Lobby	1.9	1.5
Reception Desk	2.4	1.3
кесерион резк	۷.4	

Table 401.3.2c (continued) Unit Interior Lighting Power Allowance

Specific Building Area/Activity ^a	UPD W/ft ²	UPD W/ft ²
Laundry		
Washing	0.9	
Ironing and Sorting	1.3	
Museum and Gallery		
General Exhibition	1.9	
Inspection/Restoration	3.9	<u>3.0</u>
Storage (Artifacts) Inactive ^b	0.6	
Storage (Artifacts) Active ^b	0.7	
Post Office		
Lobby	1.1	
Sorting and mailing	2.1	
Service Station/Auto Repair	1.0	
Theater		
Performance Arts	1.5	
Motion Picture	1.0	
Lobby	1.5	

Retail Establishments – Merchandising and Circulation Area

(Applicable to all lighting, including accent and display lighting, installed in merchandising and circulation areas)

Type 2 Fine merchandising, such as fine apparel and accessories, china, crystal, and silver art galleries and where the detailed display and examination of merchandise is important. Type 3 Mass merchandising, such as general apparel, variety goods, stationary, books, sporting goods, hobby materials, cameras, gifts, and luggage, displayed in warehouse type of building, where general display and examination of merchandise is adequate. Type 4 General merchandising, such as general apparel, variety goods, stationary, books, sporting goods, hobby materials, cameras, gifts, and luggage, displayed in a department store type of building, where general display and examination of merchandise is adequate. Type 5 Food and miscellaneous such as bakeries, hardware and houseware, grocery stores, appliance and furniture stores, where pleasant appearance is important. Type 6 Service establishments, where functional performance is important. 2.4 Mall Concourse Retail Support Areas Tailoring 2.1 Examples 1.4	Type 1	Jewelry merchandising, where minute examination of displayed merchandise is critical.	5.6	<u>5.6</u>
stationary, books, sporting goods, hobby materials, cameras, gifts, and luggage, displayed in warehouse type of building, where general display and examination of merchandise is adequate. Type 4 General merchandising, such as general apparel, variety goods, stationary, books, sporting goods, hobby materials, cameras, gifts, and luggage, displayed in a department store type of building, where general display and examination of merchandise is adequate. Type 5 Food and miscellaneous such as bakeries, hardware and houseware, grocery stores, appliance and furniture stores, where pleasant appearance is important. Type 6 Service establishments, where functional performance is important. 2.8 Mall Concourse Retail Support Areas Tailoring 2.1	Type 2	crystal, and silver art galleries and where the detailed display and	3.2	<u>2.9</u>
stationary, books, sporting goods, hobby materials, cameras, gifts, and luggage, displayed in a department store type of building, where general display and examination of merchandise is adequate. Type 5 Food and miscellaneous such as bakeries, hardware and houseware, grocery stores, appliance and furniture stores, where pleasant appearance is important. Type 6 Service establishments, where functional performance is important. 2.8 Mall Concourse Retail Support Areas Tailoring 2.1	Type 3	stationary, books, sporting goods, hobby materials, cameras, gifts, and luggage, displayed in warehouse type of building, where general	3.3	<u>2.7</u>
grocery stores, appliance and furniture stores, where pleasant appearance is important. Type 6 Service establishments, where functional performance is important. 2.8 Mall Concourse Retail Support Areas Tailoring 2.1	Type 4	stationary, books, sporting goods, hobby materials, cameras, gifts, and luggage, displayed in a department store type of building, where	3.1	2.3
Mall Concourse 1.4 Retail Support Areas Tailoring 2.1	Type 5	grocery stores, appliance and furniture stores, where pleasant	2.8	<u>2.4</u>
Retail Support Areas Tailoring 2.1	Type 6	Service establishments, where functional performance is important.	2.7	<u>2.6</u>
Tailoring 2.1		reas	1.4	
<u> </u>			2.1	
Lirescing/Hitting Rooms		g/Fitting Rooms	1.4	

^aUse a weighted average UPD in rooms with multiple simultaneous activities, weighted in proportion to the area served.

^bA 1.5 power adjustment factor is applicable for multi-function spaces when a supplementary system having independent controls is installed that has installed power ≤33% of the adjusted lighting power for that space.

^cArea factor of 1.0 shall be used for these spaces.

^dUPD includes lighting power required for clean-up purposes.

^eArea factor shall not exceed 1.55.

Table 401.3.2d Unit Interior Lighting Power Allowance

Indoor Athletic Area/Activity ^{c,f}	UPD W/ft ²
Seating Area, All Sports	0.4
Badminton	
Club	0.5
Tournament	0.8
Basketball/Volleyball	
Intramural	0.8
College	1.3
Professional	1.9
Bowling	
Approach Area	0.5
Lanes	1.1
Boxing or Wrestling (platform)	
Amateur	2.4
Professional	4.8
Gymnasium	
General Exercising and Recreational Only	1.0
Handball/Racquetball/Squash	
Club	1.3
Tournament	2.6
Hockey, ice	
Amateur	1.3
College or Professional	2.6
Skating Rink	
Recreational	0.6
Exhibition or Professional	2.6
Swimming	
Recreational	0.9
Exhibition	1.5
Underwater	1.0
Tennis	
Recreational (Class III)	1.3
Club or College (Class II)	1.9
Professional (Class I)	2.6
Tennis, table	
Club	1.0
Tournament	1.6

^aUse a weighted average UPD in rooms with multiple simultaneous activities, weighted in proportion to the area served.

^fConsider as 10 ft beyond playing boundaries but less than or equal to the total floor area of the sports space minus spectator seating area.

^bA 1.5 power adjustment factor is applicable for multi-function spaces when a supplementary system having independent controls is installed that has installed power < 33% of the adjusted lighting power for that space.

^cArea factor of 1.0 shall be used for these spaces.

dUPD includes lighting power required for clean-up purpose.

^eArea factor shall not exceed 1.55.