IECC/SPS Chapter 363 Lighting Index Sheet

2015 International Energy Conservation Code / Wisconsin Commercial Building Code Division of Industry Services Wisconsin Department of Safety & Professional Services

Project 1	Name
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Energy Efficiency Worksheets (Check-mark as appropriate)

L-1	Index Sheet - Energy Conservation
L-2	Mandatory Controls - Locations and Types
L-3	Lighting Schedule
L-4	Interior Lighting Power Allowance
L-5	Exterior Lighting Summary Worksheet
L-6	Exterior Lighting Summary Worksheet
L-7	Installed Exterior Lighting Allowance Worksheet

Supplemental Information:

Worksheet L-2 or similar information is required on the drawings or on a separate form for all lighting energy submittals.

Worksheets L-3 to L-7 are optional. The information may be included on the drawings, or as part of COMcheck* calculations.

Additional worksheets may be added if needed.

original signature and seal of a Wisconsin Registered Architect, Professional Engineer, or Electrical Designer per SPS 361.31(1), or an original signature and credential identification number of the Master Electrician who designs and installs the system.

Per SPS 361.20(2), plans, specifications, and calculations require the

Please print name and telephone number of signer

Ink signature and either registration stamp or Master Electrician credential number

*COMcheck is a federal Department of Energy computer program that can be used to demonstrate energy conservation code compliance online. The program may be downloaded to individual computers. The most recent version of COMcheck must be used to demonstrate IECC compliance with lighting in Wisconsin.

COMcheck may be found at: http://www.energycodes.gov/comcheck

IECC/SPS 363 – Mandatory Lighting Controls

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Mandatory Controls and Locations

Mandatory Provisions Checklist	Automatic lighting shutoff controls are provided based on either a scheduling	Either a photosensor or an astronomical time switch controls exterior lighting
Control Exceptions Areas designated as security or emergency areas that are required to be continuously lighted Interior exit stairways, interior exit ramps and exit passageways Emergency egress lighting that is normally off.	device or an occupant sensor. Exception: Sleeping unit Exception: Space where patient care is directly provided Exception: Spaces where automatic lighting shutoff would endanger safety or security. Exception: Lighting for continuous operation	applications . All time switches retain programming & time setting during loss of power for a period of 10 hrs or more Exception: Lights must remain on for safety, security or eye adaptation reasons.
 Manual controls for lights shall be: Accessible to occupants Located where the controlled lights are visible, or shall identify the area served by the lights and indicate their status Exception: The control is located in a remote location for safety or security reasons. Exception: The control addresses stairways or corridors that are elements of means of egress Light reduction controls capable of reducing connected lighting by 50% installed. Exception: Spaces that have one luminaire with less than 100 watts Exception: Area controlled by occupancy sensor (recognized as another "approved method") Exception: Spaces that use less than 0.6 W/sf Exception: Corridors, equipment rooms, public lobbies, electrical or mechanical rooms. 	 Exception: Shop and laboratory classrooms Spaces not exceeding 25,000 sf and are not more than one floor, are independently programmed. Occupant override installed on automatic time switch control device which is accessible, located so the person using the device can see the lights controlled or is annunciated, manually operated, remains on for no more than 2 hrs, controls an area not exceeding 5,000 sf. Exception: Use of captive-key override permitted to exceed 2 hours for special occupancies Exception: Special occupancies shall not exceed 20,000 sf. Automatic time switch incorporates an automatic holiday scheduling feature. Daylight zones provided with independent controls. Exception: Space has 2 or fewer light fixtures. Exception: Space is less than 250 sf. Exception: Effective aperture too small. Exception: Spaces that use less than 0.6 	Display lighting has a dedicated control independent of the controls for other lighting with the room or space Case lighting has a dedicated control independent of the controls for other lighting with the room or space. Hotel and motel sleeping units & guest suites have master control device that is capable of automatically switching off all installed luminaires and switched receptacles within 20 minutes after all occupants leave the room unless exception met Task lighting has control device integral to lighting device or accessible wall mounted control Lighting for nonvisual applications shall be provided independent control Lighting that is for sale or for demonstration in lighting education to be controlled by independent control Exit signs do not exceed 5 W per side.
	Exception: Spaces that use less than 0.6 W/sf.	Exit signs do not exceed a w per side.

Control Location (Name and/or Room #)	Space Controlled	Control Type (Occupancy Sensor, Duel Switches, Dimmer Switch, Photosensor, Time Clock, etc)	Control Purpose (Interior Lighting Control, Light Reduction, Automatic Shut-Off, Daylight Zone, Display, etc)

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Lighting Schedule

Α	В	C	D	Ε	F
Fixture ID	Luminaire Description including Fixture Type, Lamp, Wattage per lamp, Ballast*	Lamps/ Fixture	# of Fixture	Fixture Watts	D x E
			IOFAL	= Watts	

IECC/SPS 363 – Interior Lighting Power Allowance

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Interior Lighting Power Allowance IECC C405.4.2(1) based on the Building Area Method Note: If using ASHRAE 90.1-2013, allowable watts/sq ft will vary. Use ASHRAE 90.1 - Table Section 9.5.1 and revise as needed depending on use of Building Area Method or Space-by-Space Method.

Α	В	С	D
Building Area Type	Watts/ft ²	Area (sq. ft)	Allowed Watts
Automotive Facility	0.80		
Convention Center	1.01		
Court House	1.01		
Dining: Bar Lounge/Leisure	1.01		
Dining: Cafeteria/Fast Food	0.90		
Dining: Family	0.95		
Dormitory	0.57		
Exercise Center	0.84		
Fire station	0.67		
Gymnasium	0.94		
Healthcare-Clinic	0.90		
Hospital	1.05		
Hotel/Motel	0.87		
Library	1.19		
Manufacturing Facility	1.17		
Motion Picture Facility	0.76		
Multi-Family	0.51		
Museum	1.02		
Office	0.82		
Parking Garage	0.21		
Penitentiary	0.81		
Performing Acts Theater	1.39		
Policed station	0.87		
Post Office	0.87		
Religious Building	1.00		
Retail	1.26		
School/University	0.87		
Sports Arena	0.91		
Town Hall	0.89		
Transportation	0.70		
Warehouse	0.66		
Workshop	1.19		
	TOTALS		

Ft² Area

Watts

Total Allowed Interior Power Allowance _____ W > Proposed Interior Lighting _____ W

IECC/SPS 363 – Exterior Lighting Summary

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Exterior Lighting Power Allowance IECC C405.5.1

INDICATE LIGHTING ZONE	DESCRIPTION
□ 1	Developed areas of national parks, state parks, forest land, and rural areas.
2	Areas predominantly consisting of residential zoning, neighborhood business districts, light
	industrial with limited nighttime use and residential mixed use areas.
□ 3	All other areas
4	High-activity commercial districts in major metropolitan areas as designated by the local
	land use planning authority

TABLE C405.5.1(1) EXTERIOR LIGHTING ZONES

		Zone 1	Zone 2	Zone 3	Zone 4
Base Site Allowance (Base allowance may be used in tradable or nontradable surfaces.)		500 W	600 W	750 W	1300 W
		Unco	vered Parking Are	eas	
	Parking areas and drives	0.04 W/ft ²	0.06 W/ft ²	0.10 W/ft ²	0.13 W/ft ²
		В	uilding Grounds		
	Walkways less than	0.7 W/linear	0.7 W/linear	0.8 W/linear	1.0 W/linear
	10 feet wide	foot	foot	foot	foot
Tradable Surfaces (Lighting power densities for uncovered	Walkways 10 feet wide or greater, plaza areas special feature areas	0.14 W/ft ²	0.14 W/ft ²	0.16 W/ft ²	0.2 W/ft ²
parking areas, building	Stairways	0.75 W/ft^2	1.0 W/ft^2	1.0 W/ft^2	1.0 W/ft^2
grounds, building entrances and exits.	Pedestrian tunnels	0.15 W/ft^2	0.15 W/ft ²	0.2 W/ft ²	0.3 W/ft ²
canopies and overhangs	Building Entrances and Exits				
and outdoor sales areas may be traded.)	Main entries	20 W/linear foot of door width	20 W/linear foot of door width	30 W/linear foot of door width	30 W/linear foot of door width
	Other doors	20 W/linear foot of door width	20 W/linear foot of door width	20 W/linear foot of door width	20 W/linear foot of door width
	Entry canopies	0.25 W/ft^2	0.25 W/ft ²	0.4 W/ft ²	0.4 W/ft ²
	Sales Canopies				
	Free-standing and attached	0.6 W/ft ²	0.6 W/ft ²	0.8 W/ft ²	1.0 W/ft ²

TABLE C405.5.1(2) INDIVIDUAL LIGHTING POWER ALLOWANCES FOR BUILDING EXTERIORS

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TABLE C405.5.1(2) Continued

	Outdoor Sales					
Tradable Surfaces	Open areas (including vehicle sales lots)	0.25 W/ft ²	0.25 W/ft ²	0.5 W/ft^2	0.7 W/ft^2	
	Street frontage for vehicle sales lots in addition to "open area" allowance	No allowance	10 W/linear foot	10 W/linear foot	30 W/linear foot	
	Building facades	No allowance	0.075 W/ft ² of gross above- grade wall area	0.113 W/ft ² of gross above- grade wall area	0.15 W/ft ² of gross above- grade wall area	
Non-Tradable Surfaces (Lighting power density calculations for the following applications can be used only for the specific application and cannot be traded between surfaces or with other exterior lighting. The following allowances are in addition to any allowance otherwise permitted in the "Tradable Surfaces" section of this table.)	Automated teller machines (ATM) and night depositories	270 W per location plus 90 W per additional ATM per location	270 W per location plus 90 W per additional ATM per location	270 W per location plus 90 W per additional ATM per location	270 W per location plus 90 W per additional ATM per location	
	Entrances and gatehouse inspection stations at guarded facilities	0.75 W/ft ² of covered and uncovered area	0.75 W/ft ² of covered and uncovered area	0.75 W/ft ² of covered and uncovered area	0.75 W/ft ² of covered and uncovered area	
	Loading areas for law enforcement, fire, ambulance and other emergency service vehicles	0.5 W/ft ² of covered and uncovered area	0.5 W/ft ² of covered and uncovered area	0.5 W/ft ² of covered and uncovered area	0.5 W/ft ² of covered and uncovered area	
	Drive-up windows/doors	400 W per drive-through	400 W per drive-through	400 W per drive-through	400 W per drive-through	
	Parking near 24- hour retail entrances	800 W per main entry	800 W per main entry	800 W per main entry	800 W per main entry	

Tradable Exterior Lighting Power Allowance IECC C405.5.1(2)

Α	В	С	D
Tradable Surfaces	Allowance	Area or Linear Feet in	Total
Area Description	[Table	Proposed Design	(B X C)
	C405.5.1(2)]		
		Total Watts	

IECC/SPS 363 – Exterior Lighting Summary

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Non-Tradable Exterior Lighting Power Allowance IECC C405.5.1(2)

Α	В	С	D
Non-Tradable Surfaces Area Description	Allowance [Table C405.5.1(2)]	Area or Linear Feet in Proposed Design	Total (B X C)
		Total Wattage	

Tradable Installed Exterior Lighting Power IECC C405.5.1

Α	В	С	D
Fixture Type	Number of Luminaires Installed	Watts per Luminaire (including ballast)	Installed Watts (B X C)
		Total Watts	

Total Allowed Exterior Power Allowance	W > Proposed Exterior Lighting	W

Forms for use with ASHRAE 90.1-2013 as allowed by IECC C401.2 Item 1, may be substituted for the forms indicated above.