

Interior Lighting Summary

LTG-SUM

2012 Washington State Energy Code Compliance Forms for Commercial Buildings including R2 & R3 over 3 stories and all R1

Revised Jan 2014

Project Info <i>Compliance forms do not require a password to use. Instructional and calculating cells are write-</i>	Project Address	Baxter Mini-Storage Bldg.	Date	9/7/2015
		3019 Ocean Beach Rd. Pacific Beach WA 98571	For Building Department Use	
	Applicant Name:	Mark Baxter		
	Applicant Address:	3019 Ocean Beach Rd. Pacific Beach WA 98571		
	Applicant Phone:	360-276-4182		

Project Description	<input type="checkbox"/> New Building <input type="checkbox"/> Addition <input checked="" type="checkbox"/> Alteration <input checked="" type="checkbox"/> Plans Included
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Lighting Compliance Path	<input checked="" type="radio"/> Lighting Power Density Calculations <input type="radio"/> Total Building Performance <i>(If Total Building Performance then only LGT-CHK is required.)</i>
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Lighting Power Allowance Method <i>Selection required to enable LPA forms</i>	<input checked="" type="radio"/> Building Area Method <input type="radio"/> Space-By-Space Method
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Interior Lighting System Description <i>Briefly describe lighting system type and features.</i>	Lighting system is very basic. Each storage unit has a single 14 Watt CFL light fixture centrally mounted at ceiling height. All interior lighting is manual controlled.
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Additions and Change of Space Use (C101.4.3 & C101.4.4)
<input type="checkbox"/> Addition area or Change of Space Use area complies with all applicable provisions as stand alone project <input type="checkbox"/> Addition area is combined with existing building lighting systems to demonstrate compliance with all applicable provisions per C101.4.3 <i>Provide Building Area Method (LTG-INT-BLD) or Space-By-Space Method (LTG-INT-SPACE) Compliance Form. Document maximum allowed and proposed (including existing if applicable) lighting wattage of Addition or Change of Use space. Provide applicable lighting controls per C405.2 and commissioning of lighting controls per C405.13.</i>

Alterations, Renovations and Repairs (C101.4.3.1)
<input type="checkbox"/> 60% or more of luminaires in space replaced <i>Provide Building Area Method (LTG-INT-BLD) or Space-By-Space Method (LTG-INT-SPACE) Compliance Form. Document maximum allowed wattage within the lighting retrofit space in Maximum Allowed Wattage table and proposed (including existing) lighting wattage in Proposed Wattage table. Retrofit and non-retrofit spaces shall be documented separately using multiple forms.</i>
<input type="checkbox"/> Less than 60% of luminaires in space replaced <i>Provide a separate Space-By-Space Method (LTG-INT-SPACE) Compliance Form for this retrofit area. Document existing total wattage within the lighting retrofit space in cell provided in the Maximum Allowed Wattage table. Document proposed (including existing) lighting wattage in the Proposed Wattage table.</i>
<input type="checkbox"/> Lamp and/or ballast replacement within existing luminaires only – existing total interior building wattage not increased
<input type="checkbox"/> New wiring installed to serve added fixtures and/or fixtures relocated to new circuit <i>Provide applicable manual lighting controls (C405.2.1), occupancy sensors (C405.2.2.2), daylight zone controls (C405.2.2.3), specific application controls (C405.2.3), and commissioning of lighting controls per C405.13</i>
<input type="checkbox"/> New or moved lighting panel <i>Provide all applicable lighting controls as noted for New Wiring, automatic time switch controls (C405.2.2.1), and commissioning of lighting controls per C405.13.</i>
<input type="checkbox"/> Space is reconfigured - luminaires unchanged or moved only <i>Provide all applicable lighting controls as noted for New Wiring and commissioning of lighting controls per C405.13.</i>
<input type="checkbox"/> No changes are being made to the interior lighting and space use not changed.

Interior Lighting Summary - Building Area Method LTG-INT-BLD

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Lighting Alterations, Renovations & Building Additions <input type="radio"/> Less than 60% <input type="radio"/> 60% or more <input type="radio"/> Stand alone <input type="radio"/> Addition Notes: a. Lighting fixtures in a building addition may comply as a stand alone project, or they may be combined with the overall existing bldg lighting to demonstrate compliance. Refer to C101.4.3. b. For retrofits and building additions, provide Building Area types and gross interior areas in the Maximum Allowed Lighting table. If a building addition will comply as combined with the overall existing building, include all applicable existing Building Area types and gross interior areas. c. Document new fixtures and all existing to remain fixtures in the Proposed Lighting table. d. If less than 60% of existing fixtures will be replaced, use LTG-INT-SPACE form.	For Building Department Use

Maximum Allowed Lighting Wattage

Building Area*	Location (plan #, room #, or ALL)	Area Description	Allowed Watts per ft ²	Gross Interior Area in ft ²	Watts Allowed (watts/ft ² x area)
Warehouse	Addendum	Storage units	0.50	3585	1793
Total				3585	

* Select Table C405.5.2(1) Building Area from drop down menu.

Proposed Lighting Wattage

Building Area*	Location (plan #, room #)	Fixture Description**	Number of Fixtures	Watts/Fixture	Watts Proposed
Warehouse	Addendum	1 Lamp, CFL 14 W	22	14	308

* Select Table C405.5.2(1) Building Area from drop down menu.

** Include existing to remain lighting and exempt lighting equipment per notes below.

Compliance by Building Area

Building Area	Warnings	Total Allowed Watts	Total Proposed Watts	Interior Lighting Power Allowance
Warehouse	Confirm all fixtures are reported under proposed lighting - low watts relative to maximum allowed.	1793	308	COMPLIES

Total

1793	308
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Notes:

1. Proposed Wattage for each Building Area type shall not exceed the Allowed Wattage for that Building Area type. Trading wattage between Building Area types is not allowed under the Building Area Method compliance path.
2. Proposed fixtures must be listed in the building area in which they occur. Include ALL proposed lighting fixtures.
3. For proposed Fixture Description, indicate fixture type, lamp type (e.g. T-8), number of lamps in the fixture, and ballast type (if included). For track lighting, list the length of the track (in feet) in addition to the fixture, lamp, and ballast information.
4. For proposed Watts/Fixture, use manufacturer's listed maximum input wattage of the fixture (not simply the lamp wattage) and other criteria as specified in Section C405.5.1. For line voltage track lighting, list the greater of actual luminaire wattage or length of track multiplied by 50, or as applicable, the wattage of current limiting devices or of the transformer. For low voltage track lighting list the transformer rated wattage.
5. For lighting equipment eligible for exemption per C405.5.1, note exception number and leave Watts/Fixture blank.
6. Document existing to remain fixtures in Proposed Lighting table in the same manner as new fixtures. Identify as existing in fixture description.

Exterior Lighting Summary

LTG-EXT

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	3019 Ocean Beach Rd. Pacific Beach WA 98571	For Building Department Use
	Applicant Name: Mark Baxter	
	Applicant Addr: 3019 Ocean Beach Rd. Pacific Beach WA 98571	
	Applicant Phone: 360-276-4182	

Project Description	<input checked="" type="checkbox"/> New Building <input type="checkbox"/> Addition <input checked="" type="checkbox"/> Alteration <input type="checkbox"/> Plans Included
Lighting Zone <i>As specified by jurisdiction. Zone selection required to enable LTG-EXT form</i>	<input type="radio"/> Zone 1 <input checked="" type="radio"/> Zone 2 <input type="radio"/> Zone 3 <input type="radio"/> Zone 4
Compliance Option	<input checked="" type="radio"/> Lighting Power Density Calculations <input type="radio"/> Total Building Performance
Building Grounds <i>Applies to luminaires > 100 Watts</i>	<input type="checkbox"/> Efficacy > 60 lumens/W <input type="checkbox"/> Controlled by motion sensor <input type="checkbox"/> Exemption (list) _____
Exterior Lighting Alterations	<input type="checkbox"/> No changes are being made to the existing exterior lighting <input type="checkbox"/> New wiring installed to serve added fixtures and/or fixtures relocated to new circuit <i>Provide applicable exterior lighting controls per C405.2.4 and commissioning per</i>

Tradable Maximum Allowed Lighting Wattage Base Site Allowance: **600**

Tradable Surfaces	Surface Description	Allowed Watts per ft ² or per lf	Area (ft ²), perimeter (lf) or # of items	Allowed Watts x ft ² (or x lf)
Grounds Walkways >10' wide	West Perimeter	0.14 W/ft ²	1254	176
Grounds Walkways >10' wide	East Perimeter	0.14 W/ft ²	1254	176
Grounds Walkways >10' wide	North Perimeter	0.14 W/ft ²	643	90
Grounds Walkways >10' wide	South Perimeter	0.14 W/ft ²	643	90

Total Allowed Tradable Watts: **531**

Tradable Proposed Lighting Wattage *(Use mfg listed maximum input wattage for luminaire.)*

Tradable Surface	Fixture Description	Number of Fixtures	Watts/Fixture	Watts Proposed
Grounds Walkways >10' wide	Ext. CFL Security Light	2	42	84
Grounds Walkways >10' wide	Ext. LED Wall Light	8	10	80

Total proposed tradable watts may not exceed the sum of total allowed tradable watts plus the base site allowance. Any base site allowance not needed to make tradable watts comply can be applied to individual non-tradable categories.

Total Proposed Tradable Watts: **164**

Non-Tradable Maximum Allowed Lighting Wattage

Base Site Allowance Remaining: **600**

Non-Tradable Surfaces	Surface Description	Allowed Watts per ft ² or per lf	Area (ft ²), perimeter (lf) or # of items	Allowed Watts x ft ² (or x lf)

Non-Tradable Proposed Lighting Wattage

Non-Tradable Surface	Fixture Description	Number of Fixtures	Watts/Fixture	Watts Proposed

Non-tradable proposed watts may not exceed allowed watts for any individual surface unless the total excess watts for all non-tradable surfaces are less than the remaining site allowance.

Total excess Non-Tradable watts: **0**

Site Allowance Balance: **600**

Exterior Lighting

COMPLIES WITH SITE ALLOWANCE

Lighting, Motor, and Transformer Permit Documents Checklist LTG-CHK

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The following information is necessary to check a permit application for compliance with the lighting, motor, and transformer requirements in the Washington State Energy Code, Commercial Provisions.

Applicability (yes,no,na)	Code Section	Component	Compliance information required in permit documents	Location in Documents	Building Department Notes
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LIGHTING CONTROLS (Section C405.2)

Yes	C405.2.1.1	Manual interior lighting controls	Indicate on plans the manual control type & locations served;	Addendum	
	C405.2.1.2		Indicate of plans the 50% lighting load reduction method provided or identify exception taken		
Yes	C405.2.2.1	Automatic time switch controls and override switching	Indicate lighting system automatic shut-off capability - identify lighting zone areas served on plans;		
			Indicate locations of override switches on plans and the areas served, include area sq. ft.;		
			Indicate locations where automatic shutoff is provided by other methods (occupancy sensor, daylight controls, etc)	Addendum	
NA	C405.2.2.2	Occupancy sensors	Indicate on plans the locations served by occupancy sensors		
NA	C405.2.2.3	Daylight zones - Vertical fenestration and skylights	Indicate vertical fenestration primary and secondary daylight zone areas on plans, include sq. ft.;		
			Indicate skylight daylight zone areas on plans, include sq. ft.		
NA	C405.2.2.3.2	Daylight zone controls	Indicate on plans the locations served by daylight zone controls;		
			Indicate in plans the lighting load reduction (dimming) method - stepped or continuous dimming		
Yes	C405.2.3	Specific application lighting controls - General	Indicate on plans the locations served by specific application lighting controls	Addendum	
NA	C405.2.3 - Items 1&2	Display and accent lighting	Indicate lighting control method for display and accent lighting, and display case lighting;		
			Indicate these fixtures are controlled independently from both general area lighting and other lighting applications within the same space		
NA	C405.2.3 - Item 3	Hotel/motel guest rooms	Provide a lighting control device at each guest room entry for all permanently installed fixtures in guest room;		
			Indicated whether lighting control is manual or automatic		
Yes	C405.2.3 - Item 4	Supplemental task lighting	Provide automatic shut-off vacancy controls for supplemental task lighting, including under-shelf or under-cabinet lighting	Addendum	
NA	C405.2.3 - Item 5	Lighting for non-visual applications	Identify eligible non-visual applications and method of lighting control;		
			Indicate these fixtures are controlled independently from both general area lighting and other lighting applications within the same space		
NA	C405.2.3 - Item 6	Lighting equipment for sale or demonstration	Indicate lighting control method for lighting equipment for sale or demonstration;		
			Indicate these fixtures are controlled independently from both general area lighting and other lighting applications within the same space		
Yes	C405.2.3 - Item 7	Means of egress lighting	If egress lighting power density is greater than 0.05W/ft ² , indicate method of automatic shut-off during unoccupied periods;		
			Identify on plans the egress fixtures that function as both normal and emergency means of egress illumination		
NA	C405.10 C405.11	Cooler and freezer lighting	Provide vacancy device or timer to turn off fixtures within 15 minutes of unoccupancy for cooler and freezer lighting fixtures with lamp efficacy less than 40 lumens per watt		
Yes	C405.2.4	Exterior lighting controls	Indicate on exterior lighting plans the automatic lighting control method and locations served	Addendum	
NA	C405.6.1	Exterior building grounds lighting controls	Provide motion sensor controls for building grounds fixtures rated at greater than 100 watts with lamp efficacy less than 60 lumens, or identify exception taken		
NA	C408.3	Lighting system functional testing	Identify applicable commissioning documentation requirements per Section C408 or eligibility for exception;		
			Provide written procedures for functional testing of all automatic controls and describe the expected system response;		
			Identify in construction documents the party responsible for functional testing of automatic lighting controls		

INTERIOR LIGHTING POWER & EFFICACY (Sections C405.5, C405.10, C405.11)

Lighting, Motor, and Transformer Permit Documents Checklist **LTG-CHK**

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The following information is necessary to check a permit application for compliance with the lighting, motor, and transformer requirements in the Washington State Energy Code, Commercial Provisions.

Applicability (yes,no,na)	Code Section	Component	Compliance information required in permit documents	Location in Documents	Building Department Notes
Yes	C405.5.1 C405.5.1.1 C405.5.1.2 C405.5.1.3 C405.5.1.4	Total connected interior lighting power	Provide fixture schedule with fixture types, lamps, ballasts, and rated watts per fixture;	Addendum	
			Identify spaces eligible for lighting power exemption on plans and in compliance forms;		
			Identify lighting equipment eligible for exemption in fixture schedule and in compliance forms;		
			Indicate that exempt lighting equipment is in addition to general area lighting and is controlled independently		
Yes	C405.4	Exit signs	Provide exit sign types and rated watts per fixture in fixture schedule (maximum 5 watts per fixture)		
NA	C405.10 C405.11	Cooler and freezer lighting	For lighting in walk-in coolers and freezers, and refrigerated warehouse coolers and freezers, provide rated lamp efficacy (in lumens per watt) in fixture schedule		
Lighting Power Calculation - Indicate compliance path taken					
Yes	C405.5.2	Building Area Method	Complete required compliance forms – proposed wattage per building area does not exceed maximum allowed wattage per building area. Identify locations of building areas on plans		
NA	C405.5.2	Space-By-Space Method	Complete required compliance forms – total proposed wattage does not exceed maximum allowed wattage. Identify locations of space types on plans, including retail display areas as applicable		
EXTERIOR LIGHTING POWER & EFFICACY (Section C405.6)					
Yes	C405.6.2	Total connected exterior lighting power	Provide fixture schedule with fixture types, lamps, ballasts, and rated watts per fixture;	Addendum	
			Identify exterior applications eligible for lighting power exemption on plans and in compliance forms;		
			Indicate that exempt exterior lighting is controlled independently from non-exempt exterior lighting		
Yes	Table C405.6.2(1)	Exterior lighting zone	Indicate building exterior lighting zone as defined by the AHJ		
NA	C405.6.1	Exterior building grounds lighting	For building grounds fixtures rated at greater than 100 watts, provide rated lamp efficacy (in lumens per watt) in fixture schedule		
Yes	C405.6.2	Exterior lighting power calculations	Complete required compliance form – proposed wattage for exterior lighting plus base site allowed does not exceed maximum allowed		
MOTORS & TRANSFORMERS (Sections C405.8, C405.9)					
NA	C405.8	Electric Motors	For motors not part of an HVAC system, provide electric motor schedule on electrical plans with hp, rpm, and rated efficiency		
NA	C405.9	Transformers	Provide distribution transformer schedule on electrical plans with transformer size and efficiency		

If "no" is selected for any question, provide explanation: