



Interior Lighting Compliance Certificate

Project Information

Energy Code: 2018 IECC
Project Title: Heartland Dental
Project Type: New Construction

Construction Site:
Market Street Center
Lee's Summit, MO 64082

Owner/Agent:
Heartland Dental
1200 Network Centre Drive
Effingham, IL 62401

Designer/Contractor:
Shepherd, Harvey & Associates
4855 River Green Parkway
Suite 400
Duluth, GA 30096

Additional Efficiency Package(s)

Credits: 1.0 Required 0.0 Proposed

Allowed Interior Lighting Power

| A Area Category | B Floor Area (ft ²) | C Allowed Watts / ft ² | D Allowed Watts (B X C) |
|---|---------------------------------------|---|-------------------------------|
| 1-Healthcare Facility:Exam/Treatment | 1290 | 1.68 | 2167 |
| 2-Healthcare Facility:Imaging | 53 | 1.06 | 56 |
| 3-Healthcare Facility:Lounge/Breakroom | 195 | 0.78 | 152 |
| 4-Healthcare Facility:Corridor/Transition <8 ft wide | 840 | 0.92 | 773 |
| 5-Common Space Types:Electrical/Mechanical | 63 | 0.43 | 27 |
| 6-Common Space Types:Laundry/Washing Area | 52 | 0.43 | 22 |
| 7-Common Space Types:Laboratory For Medical/Industrial/Research | 150 | 1.45 | 218 |
| 8-Common Space Types:Lobby - General | 388 | 1.00 | 388 |
| 9-Common Space Types:Restrooms | 180 | 0.85 | 153 |
| 10-Common Space Types:Office - Enclosed | 218 | 0.93 | 203 |
| 11-Common Space Types:Office - Open Plan | 215 | 0.81 | 174 |
| 12-Common Space Types:Storage >=50 - <=1000 sq.ft. | 58 | 0.46 | 27 |
| Total Allowed Watts = | | | 4360 |

Proposed Interior Lighting Power

| A Fixture ID : Description / Lamp / Wattage Per Lamp / Ballast | B Lamps/ Fixture | C # of Fixtures | D Fixture Watt. | E (C X D) |
|---|------------------------|-----------------------|-----------------------|--------------|
| <u>1-Healthcare Facility:Exam/Treatment</u> LED 1: F: 2x4: Other: | 1 | 15 | 52 | 780 |
| <u>2-Healthcare Facility:Imaging</u> LED 2: C: Downlight: Other: | 1 | 2 | 12 | 24 |
| <u>3-Healthcare Facility:Lounge/Breakroom</u> LED 1: F: 2x4: Other: | 1 | 3 | 52 | 156 |
| <u>4-Healthcare Facility:Corridor/Transition <8 ft wide</u> LED 2: C: Downlight: Other: LED 7: A: Sconce: Other: | 1 1 | 30 11 | 12 10 | 360 110 |
| <u>5-Common Space Types:Electrical/Mechanical</u> | | | | |

| A Fixture ID : Description / Lamp / Wattage Per Lamp / Ballast | B Lamps/ Fixture | C # of Fixtures | D Fixture Watt. | E (C X D) |
|--|------------------------|-----------------------|------------------------|--------------|
| LED 1: F: 2x4: Other: | 1 | 1 | 52 | 52 |
| <u>6-Common Space Types:Laundry/Washing Area</u> | | | | |
| LED 1: F: 2x4: Other: | 1 | 1 | 52 | 52 |
| <u>7-Common Space Types:Laboratory For Medical/Industrial/Research</u> | | | | |
| LED 1: F: 2x4: Other: | 1 | 2 | 52 | 104 |
| LED 6: G: Tape light: Other: | 1 | 28 | 2 | 42 |
| <u>8-Common Space Types:Lobby - General</u> | | | | |
| LED 2: C: Downlight: Other: | 1 | 10 | 12 | 120 |
| LED 5: D: Pendant: Other: | 1 | 2 | 30 | 60 |
| <u>9-Common Space Types:Restrooms</u> | | | | |
| LED 1: F: 2x4: Other: | 1 | 1 | 52 | 52 |
| LED 2: C: Downlight: Other: | 1 | 4 | 12 | 48 |
| <u>10-Common Space Types:Office - Enclosed</u> | | | | |
| LED 1: F: 2x4: Other: | 1 | 4 | 52 | 208 |
| LED 6: G: Tape light: Other: | 1 | 8 | 2 | 12 |
| <u>11-Common Space Types:Office - Open Plan</u> | | | | |
| LED 1: F: 2x4: Other: | 1 | 4 | 52 | 208 |
| LED 4: B: Pendant: Other: | 1 | 4 | 10 | 40 |
| <u>12-Common Space Types:Storage >=50 - <=1000 sq.ft.</u> | | | | |
| LED 2: C: Downlight: Other: | 1 | 4 | 12 | 48 |
| | | | Total Proposed Watts = | 2476 |

Interior Lighting PASSES: Design 43% better than code

Interior Lighting Compliance Statement

Compliance Statement: The proposed interior lighting design represented in this document is consistent with the building plans, specifications, and other calculations submitted with this permit application. The proposed interior lighting systems have been designed to meet the 2018 IECC requirements in COMcheck Version 4.1.5.3 and to comply with any applicable mandatory requirements listed in the Inspection Checklist.

Richard Touch, Elec. Engr.

Name - Title

Richard Touch
Signature

07/07/22

Date



Inspection Checklist

Energy Code: 2018 IECC

Requirements: 0.0% were addressed directly in the COMcheck software

Text in the "Comments/Assumptions" column is provided by the user in the COMcheck Requirements screen. For each requirement, the user certifies that a code requirement will be met and how that is documented, or that an exception is being claimed. Where compliance is itemized in a separate table, a reference to that table is provided.

| Section # & Req.ID | Plan Review | Complies? | Comments/Assumptions |
|---------------------------|---|--|----------------------|
| C103.2 [PR4] ¹ | Plans, specifications, and/or calculations provide all information with which compliance can be determined for the interior lighting and electrical systems and equipment and document where exceptions to the standard are claimed. Information provided should include interior lighting power calculations, wattage of bulbs and ballasts, transformers and control devices. | <input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable | |
| C406 [PR9] ¹ | Plans, specifications, and/or calculations provide all information with which compliance can be determined for the additional energy efficiency package options. | <input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable | |

Additional Comments/Assumptions:

| | | | | | |
|---|----------------------|---|------------------------|---|---------------------|
| 1 | High Impact (Tier 1) | 2 | Medium Impact (Tier 2) | 3 | Low Impact (Tier 3) |
|---|----------------------|---|------------------------|---|---------------------|

| Section # & Req.ID | Rough-In Electrical Inspection | Complies? | Comments/Assumptions |
|---|--|--|----------------------|
| C405.2.2.2 [EL22] ¹ | Spaces required to have light-reduction controls have a manual control that allows the occupant to reduce the connected lighting load in a reasonably uniform illumination pattern ≥ 50 percent. | <input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable | |
| C405.2.1, C405.2.1.1 [EL18] ¹ | Occupancy sensors installed in classrooms/lecture/training rooms, conference/meeting/multipurpose rooms, copy/print rooms, lounges/breakrooms, enclosed offices, open plan office areas, restrooms, storage rooms, locker rooms, warehouse storage areas, and other spaces ≤ 300 sqft that are enclosed by floor-to-ceiling height partitions. Reference section language C405.2.1.2 for control function in warehouses and section C405.2.1.3 for open plan office spaces. | <input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable | |
| C405.2.1.2 [EL19] ¹ | Occupancy sensors control function in warehouses: In warehouses, the lighting in aisleways and open areas is controlled with occupant sensors that automatically reduce lighting power by 50% or more when the areas are unoccupied. The occupant sensors control lighting in each aisleway independently and do not control lighting beyond the aisleway being controlled by the sensor. | <input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable | |
| C405.2.1.3 [EL20] ¹ | Occupant sensor control function in open plan office areas: Occupant sensor controls in open office spaces ≥ 300 sq.ft. have controls 1) configured so that general lighting can be controlled separately in control zones with floor areas ≤ 600 sq.ft. within the space, 2) automatically turn off general lighting in all control zones within 20 minutes after all occupants have left the space, 3) are configured so that general lighting power in each control zone is reduced by $\geq 80\%$ of the full zone general lighting power within 20 minutes of all occupants leaving that control zone, and 4) are configured such that any daylight responsive control will activate space general lighting or control zone general lighting only when occupancy for the same area is detected. | <input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable | |
| C405.2.2, C405.2.2.1, C405.2.2.2 [EL21] ² | Each area not served by occupancy sensors (per C405.2.1) have time-switch controls and functions detailed in sections C405.2.2.1 and C405.2.2.2. | <input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable | |

| | | |
|------------------------|--------------------------|-----------------------|
| 1 High Impact (Tier 1) | 2 Medium Impact (Tier 2) | 3 Low Impact (Tier 3) |
|------------------------|--------------------------|-----------------------|

| Section # & Req.ID | Rough-In Electrical Inspection | Complies? | Comments/Assumptions |
|--|--|--|----------------------|
| C405.2.3, C405.2.3.1, C405.2.3.2 [EL23] ² | Daylight zones provided with individual controls that control the lights independent of general area lighting. See code section C405.2.3 Daylight-responsive controls for applicable spaces, C405.2.3.1 Daylight responsive control function and section C405.2.3.2 Sidelit zone. | <input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable | |
| C405.2.4 [EL26] ¹ | Separate lighting control devices for specific uses installed per approved lighting plans. | <input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable | |
| C405.2.4 [EL27] ¹ | Additional interior lighting power allowed for special functions per the approved lighting plans and is automatically controlled and separated from general lighting. | <input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable | |
| C405.3 [EL6] ¹ | Exit signs do not exceed 5 watts per face. | <input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable | |
| C405.6 [EL26] ² | Low-voltage dry-type distribution electric transformers meet the minimum efficiency requirements of Table C405.6. | <input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable | |
| C405.7 [EL27] ² | Electric motors meet the minimum efficiency requirements of Tables C405.7(1) through C405.7(4). Efficiency verified through certification under an approved certification program or the equipment efficiency ratings shall be provided by motor manufacturer (where certification programs do not exist). | <input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable | |
| C405.8.2, C405.8.2.1 [EL28] ² | Escalators and moving walks comply with ASME A17.1/CSA B44 and have automatic controls configured to reduce speed to the minimum permitted speed in accordance with ASME A17.1/CSA B44 or applicable local code when not conveying passengers. | <input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable | |
| C405.9 [EL29] ² | Total voltage drop across the combination of feeders and branch circuits ≤ 5%. | <input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable | |

Additional Comments/Assumptions:

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)

| Section # & Req.ID | Final Inspection | Complies? | Comments/Assumptions |
|--|---|--|--|
| C303.3, C408.2.5.2 [FI17] ³ | Furnished O&M instructions for systems and equipment to the building owner or designated representative. | <input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable | |
| C405.4.1 [FI18] ¹ | Interior installed lamp and fixture lighting power is consistent with what is shown on the approved lighting plans, demonstrating proposed watts are less than or equal to allowed watts. | <input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable | See the Interior Lighting fixture schedule for values. |
| C408.1.1 [FI57] ¹ | Building operations and maintenance documents will be provided to the owner. Documents will cover manufacturers' information, specifications, programming procedures and means of illustrating to owner how building, equipment and systems are intended to be installed, maintained, and operated. | <input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable | |
| C408.2.5.1 [FI16] ³ | Furnished as-built drawings for electric power systems within 90 days of system acceptance. | <input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable | |
| C408.3 [FI33] ¹ | Lighting systems have been tested to ensure proper calibration, adjustment, programming, and operation. | <input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable | |

Additional Comments/Assumptions:

| | | | | | |
|---|----------------------|---|------------------------|---|---------------------|
| 1 | High Impact (Tier 1) | 2 | Medium Impact (Tier 2) | 3 | Low Impact (Tier 3) |
|---|----------------------|---|------------------------|---|---------------------|

