COMcheck Software Version 4.0.5.5

Interior Lighting Compliance Certificate

Section 1: Project Information

Energy Code: 2009 IECC
Project Title: FIVE BELOW
Project Type: Alteration

Construction Site:	Owner/Agent:	Designer/Contractor:
FAYETTEVILLE PAVILION 110 Pavilion Parkway, Suite 110A Fayetteville, GA 30214	Mike Gollins, PE, CEM, LEED AP ArcVision, Inc. 1950 Craig Rd Suite 300 St. Louis, MO 63146 314.415.2400	Mike Gollins, PE, CEM, LEED AP ArcVision, Inc. 1950 Craig Rd Suite 300 St. Louis, MO 63146 314.415.2400

Section 2: Interior Lighting and Power Calculation

A Area Category	B Floor Area (ft2)	C Allowed Watts / ft2	D Allowed Watts (B x C)
Sales Floor (Retail)	7535	1.5	11783
Toilets/Office/Stock Room (Retail)	2949	1.2	3539
		Total Allowed Watts =	15279

Section 3: Interior Lighting Fixture Schedule

A Fixture ID : Description / Lamp / Wattage Per Lamp / Ballast	B Lamps/ Fixture	C # of Fixtures	D Fixture Watt.	E (C X D)
Sales Floor (Retail 7535 sq.ft.)				
LED: A1 - A1/NL: Strip Lights: LED Linear 53W:	2	108	106	11340
LED: F1: Rope Lights: LED MR 3.2W:	1	84	3	252
Track Lights: LTR/LT12: 104 LED FIX @17W EA: Wattage based on current limiting device capacity	0	0	1768	1768
LED: LB: Clip Lights: LED MR 3.2W:	1	6	12	72
LED: A1.1: Ovo Lights: LED Linear 53W:	2	2	54	108
Toilets/Office/Stock Room (Retail 2949 sq.ft.)				
LED: A: Strip Light: LED Linear 36W:	1	4	36	144
LED: A2 - A2/NL: Strip Light: LED Linear 36W:	2	14	72	1008
			Total Proposed Watts =	14692

Section 4: Requirements Checklist

Lighting Wattage:

☐ 1. Total proposed watts must be less than or equal to total allowed watts.

Allowed Watts	Proposed Watts	Complies
15279	14692	Passes

Controls, Switching, and Wiring:

☐ 2. Daylight zones under skylights more than 15 feet from the perimeter have lighting controls separate from daylight zones adjacent to vertical fenestration.

☐ 3. Daylight zones have individual lighting controls independent from that of the general area lighting.

Exceptions:

☐ Contiguous daylight zones spanning no more than two orientations are allowed to be controlled by a single controlling device.

☐ Daylight spaces enclosed by walls or ceiling height partitions and containing two or fewer light fixtures are not required to have a separate switch for general area lighting.

☐ 4. Independent controls for each space (switch/occupancy sensor).

Exceptions:

☐ Areas designated as security or emergency areas that must be continuously illuminated.

☐ Lighting in stairways or corridors that are elements of the means of egress.

☐ 5. Master switch at entry to hotel/motel guest room.

☐ 6. Individual dwelling units separately metered.

☐ 7. Medical task lighting or art/history display lighting claimed to be exempt from compliance has a control device independent of the control of the nonexempt lighting.

☐ 8. Each space required to have a manual control also allows for reducing the connected lighting load by at least 50 percent by either controlling all luminaires, dual switching of alternate rows of luminaires, alternate luminaires, or alternate lamps, switching the middle lamp luminaires independently of other lamps, or switching each luminaire or each lamp.

Exceptions:

☐ Only one luminaire in space.

☐ An occupant-sensing device controls the area.

☐ The area is a corridor, storeroom, restroom, public lobby or sleeping unit.

☐ Areas that use less than 0.6 Watts/sq.ft.

☐ 9. Automatic lighting shutoff control in buildings larger than 5,000 sq.ft.

Exceptions:

☐ Sleeping units, patient care areas; and spaces where automatic shutoff would endanger safety or security.

☐ 10. Photocell/astronomical time switch on exterior lights.

Exceptions:

☐ Lighting intended for 24 hour use.

☐ 11. Tandem wired one-lamp and three-lamp ballasted luminaires (No single-lamp ballasts).

Exceptions:

☐ Electronic high-frequency ballasts; Luminaires on emergency circuits or with no available pair.

Section 5: Compliance Statement

Compliance Statement: The proposed lighting alteration project represented in this document is consistent with the building plans, specifications and other calculations submitted with this permit application. The proposed lighting alteration project has been designed to meet the 2009 IECC, Chapter 5, requirements in COMcheck Version 4.0.5.5 and to comply with the mandatory requirements in the Requirements Checklist.

Mike Gollins, PE, CEM, LEED AP		April 7, 2017
Name - Title	Signature	Date

COMcheck Software Version 4.0.5.5

Mechanical Compliance Certificate

Section 1: Project Information

Energy Code: 2009 IECC
Project Title: FIVE BELOW
Project Type: Alteration

Construction Site:	Owner/Agent:	Designer/Contractor:
FAYETTEVILLE PAVILION 110 Pavilion Parkway, Suite 110A Fayetteville, GA 30214	Mike Gollins, PE, CEM, LEED AP ArcVision, Inc. 1950 Craig Rd Suite 300 St. Louis, MO 63146 314.415.2400	Mike Gollins, PE, CEM, LEED AP ArcVision, Inc. 1950 Craig Rd Suite 300 St. Louis, MO 63146 314.415.2400

Section 2: General Information

Building Location (for weather data): Fayetteville, Georgia
Climate Zone: 3a

Section 3: Mechanical Systems List

Quantity	System Type & Description
1	AC-1 (Single Zone) : Heating: 1 each - Central Furnace, Gas, Capacity = 180 kBtu/h Proposed Efficiency = 80.00% Et, Required Efficiency = 80.00% Et Cooling: 1 each - Single Package DX Unit, Capacity = 105 kBtu/h, Air-Cooled Condenser, Air Economizer Proposed Efficiency = 11.00 EER, Required Efficiency: 11.00 EER Fan System: FAN SYSTEM 1 | AC1 -- Compliance (Motor nameplate HP method) : Passes Fans: FAN 1 Supply, Constant Volume, 3500 CFM, 2.0 motor nameplate hp
10	EWH-1: Electric Storage Water Heater, Capacity: 10 gallons w/ Heat Trace Tape installed No minimum efficiency requirement applies

Section 4: Requirements Checklist

Requirements Specific To: AC-1 :

☐ 1. Equipment minimum efficiency: Central Furnace (Gas): 80.00 % Et (or 78% AFUE)

☐ 2. Equipment minimum efficiency: Single Package Unit: 11.00 EER

☐ 3. Integrated economizer is required for this location and system.

☐ 4. Cooling system provides a means to relieve excess outdoor air during economizer operation.

☐ 5. Hot gas bypass prohibited unless system has multiple steps of unloading or continuous capacity modulation.

☐ 6. Hot gas bypass limited to 50% of total cooling capacity

Requirements Specific To: EWH-1 :

☐ 1. Water heating equipment meets minimum efficiency requirements: No efficiency requirements for water heater with storage capacity less than 20 gallons.

☐ 2. First 8 ft of outlet piping is insulated

☐ 3. All heat traced or externally heated piping insulated

☐ 4. Hot water storage temperature controls that allow setpoint of 90°F for non-dwelling units and 110°F for dwelling units.

☐ 5. Automatic time control of heat tapes and recirculating systems present

☐ 6. Heat traps provided on inlet and outlet of storage tanks

Generic Requirements: Must be met by all systems to which the requirement is applicable:

☐ 1. Plant equipment and system capacity no greater than needed to meet loads

Exception(s):

☐ Standby equipment automatically off when primary system is operating

☐ Multiple units controlled to sequence operation as a function of load

☐ 2. Minimum one temperature control device per system

☐ 3. Minimum one humidity control device per installed humidification/dehumidification system

☐ 4. Load calculations per ASHRAE/ACCA Standard 183.

☐ 5. Automatic Controls: Setback to 55°F (heat) and 85°F (cool); 7-day clock, 2-hour occupant override, 10-hour backup

Exception(s):

☐ Continuously operating zones

☐ 6. Outside-air source for ventilation; system capable of reducing OSA to required minimum

☐ 7. R-8 supply and return air duct insulation in unconditioned spaces
R-6 supply and return air duct insulation outside the building
R-8 insulation between ducts and the building exterior when ducts are part of a building assembly

Exception(s):

☐ Ducts located within equipment

☐ Ducts with interior and exterior temperature difference not exceeding 15°F.

☐ 8. Mechanical fasteners and sealants used to connect ducts and air distribution equipment

☐ 9. Ducts sealed - longitudinal seams on rigid ducts; transverse seams on all ducts; UL 181A or 181B tapes and mastics

☐ 10. Hot water pipe insulation: 1.5 in. for pipes <=1.5 in. and 2 in. for pipes >1.5 in.
Chilled water/refrigerant/brine pipe insulation: 1.5 in. for pipes <=1.5 in. and 1.5 in. for pipes >1.5 in.
Steam pipe insulation: 1.5 in. for pipes <=1.5 in. and 3 in. for pipes >1.5 in.

Exception(s):

☐ Piping within HVAC equipment.

☐ Fluid temperatures between 55 and 105°F.

☐ Fluid not heated or cooled with renewable energy.

☐ Piping within room fan-coil (with AHRI440 rating) and unit ventilators (with AHRI840 rating).

☐ Runouts <4 ft in length.

☐ 11. Operation and maintenance manual provided to building owner

☐ 12. Thermostatic controls have 5°F deadband

Exception(s):

☐ Thermostats requiring manual changeover between heating and cooling

☐ Special occupancy or special applications where wide temperature ranges are not acceptable and are approved by the authority having jurisdiction.

☐ 13. Balancing devices provided in accordance with IMC 603.17

☐ 14. Demand control ventilation (DCV) present for high design occupancy areas (>40 person/1000 ft2 in spaces >500 ft2) and served by systems with any one of 1) an air-side economizer, 2) automatic modulating control of the outdoor air damper, or 3) a design outdoor airflow greater than 3000 cfm.

Exception(s):

☐ Systems with heat recovery.

☐ Multiple-zone systems without DDC of individual zones communicating with a central control panel.

☐ Systems with a design outdoor airflow less than 1200 cfm.

☐ Spaces where the supply airflow rate minus any makeup or outgoing transfer air requirement is less than 1200 cfm.

☐ 15. Motorized, automatic shutoff dampers required on exhaust and outdoor air supply openings

Exception(s):

☐ Gravity dampers acceptable in buildings <3 stories

☐ 16. Automatic controls for freeze protection systems present

☐ 17. Exhaust air heat recovery included for systems 5,000 cfm or greater with more than 70% outside air fraction or specifically exempted

Exception(s):

☐ Hazardous exhaust systems, commercial kitchen and clothes dryer exhaust systems that the International Mechanical Code prohibits the use of energy recovery systems.

☐ Systems serving spaces that are heated and not cooled to less than 60°F.

☐ Where more than 60 percent of the outdoor heating energy is provided from site-recovered or site solar energy.

☐ Heating systems in climates with less than 3600 HDD.

☐ Cooling systems in climates with a 1 percent cooling design wet-bulb temperature less than 64°F.

☐ Systems requiring dehumidification that employ energy recovery in series with the cooling coil.

☐ Laboratory fume hood exhaust systems that have either a variable air volume system capable of reducing exhaust and makeup air volume to 50 percent or less of design values or, a separate make up air supply meeting the following makeup air requirements: a) at least 75 percent of exhaust flow rate, b) heated to no more than 2°F below room setpoint temperature, c) cooled to no lower than 3°F above room setpoint temperature, d) no humidification added, e) no simultaneous heating and cooling.

Section 5: Compliance Statement

Compliance Statement: The proposed mechanical alteration project represented in this document is consistent with the building plans, specifications and other calculations submitted with this permit application. The proposed mechanical alteration project has been designed to meet the 2009 IECC, Chapter 5, requirements in COMcheck Version 4.0.5.5 and to comply with the mandatory requirements in the Requirements Checklist.

Mike Gollins, PE, CEM, LEED AP		April 7, 2017
Name - Title	Signature	Date

Section 6: Post Construction Compliance Statement

☐ HVAC record drawings of the actual installation, system capacities, calibration information, and performance data for each equipment provided to the owner.

☐ HVAC O&M documents for all mechanical equipment and system provided to the owner by the mechanical contractor.

☐ Written HVAC balancing and operations report provided to the owner.

The above post construction requirements have been completed.

Principal Mechanical Designer-Name	Signature	Date

Order Plans @ WWW.LDILine.com

1 ENERGY COMPLIANCE

CONSULTANTS

GEORGIA
REGISTERED
No. PE030569
PROFESSIONAL
ENGINEER
MICHAEL J. GOLLINS

04.07.17 Date:
12.31.18 Expires:

Professional Certification.
I certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Georgia, license number 30569, expiration date December 31, 2018.

ARCHITECTURAL SEAL

DATE ISSUE

△	DATE	REVISION	NAME
	04/07/17	PERMIT / OWNER	

PROJECT NAME / LOCATION

five BELOW

FAYETTEVILLE PAVILION
110 PAVILION PARKWAY, SPACE 110A
FAYETTEVILLE, GA 30214

PROJECT INFORMATION

DATE: APRIL 07, 2017

PROJECT NO. 170238

DELIVERY TYPE: V-BOX

DRAWN:
CHECKED:

SHEET TITLE / NUMBER

ENERGY COMPLIANCE

MEP1.0