COMcheck Software Version 4.0.6.0
Interior Lighting Compliance Certificate

Section 1: Project Information

Energy Code: **2012 North Carolina Energy Conservation Code**
Project Title: ALDI Inc. Store No.TBD
Project Type: Alteration

Construction Site:	Owner/Agent:	Designer/Contractor:
1315 Kildaire Farm Rd. Cary, NC 27511	ALDI Inc. 1985 Old Union Church Road Salisbury, NC 28146 704.642.0023	ms consultants inc 2221 Schrock Rd Columbus, OH 43229 614.898.7100

Section 2: Interior Lighting and Power Calculation

A Area Category	B Floor Area (ft2)	C Allowed Watts / ft2	D Allowed Watts (B x C)
101 Vestibule (Common Space Types:Corridor/Transition)	292	0.65	190
102 Sales (Retail:Supermarket Sales Area)	13798	1.3	17937
103 Womens (Common Space Types:Restroom)	110	0.84	92
104 Hall (Common Space Types:Corridor/Transition)	79	0.65	51
105 Mens (Common Space Types:Restroom)	111	0.84	93
106 Breakroom (Common Space Types:Locker Room)	488	0.78	381
107 Office (Office:Enclosed)	342	1.11	380
109 Backroom (Warehouse:Medium Bulky Material)	4733	0.63	2982
		Total Allowed Watts =	22106

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)
101 Vestibule (Common Space Types:Corridor/Transition 292 sq.ft.)				
LED: N4: LED Linear: Other:	1	8	72	576
102 Sales (Retail:Supermarket Sales Area 13798 sq.ft.)				
LED: N1/N3H: LED Linear: Other:	1	36	54	1944
LED: N2/N4/N6: LED Linear: Other:	1	145	72	10440
LED: N7: LED Spot: Other:	1	8	28	224
LED: N8: LED Dual Spot: Other:	1	17	54	918
103 Womens (Common Space Types:Restroom 110 sq.ft.)				
LED: L4: LED Troffer: Other:	1	2	44	88
104 Hall (Common Space Types:Corridor/Transition 79 sq.ft.)				
LED: L4: LED Troffer: Other:	1	2	44	88
105 Mens (Common Space Types:Restroom 111 sq.ft.)				
LED: L4: LED Troffer: Other:	1	2	44	88
106 Breakroom (Common Space Types:Locker Room 488 sq.ft.)				
LED: L4: LED Troffer: Other:	1	6	44	264
107 Office (Office:Enclosed 342 sq.ft.)				
LED: L4: LED Troffer: Other:	1	6	44	264
109 Backroom (Warehouse:Medium Bulky Material 4733 sq.ft.)				
LED: L1: LED Strip: Other:	1	11	88	968
LED: L10: LED Vaportight: Other:	1	7	63	441
LED: L7: LED Truck Dock Light: Other:	1	1	18	18

Total Proposed Watts = 16321

Section 4: Requirements Checklist

Interior Lighting PASSED

Lighting Wattage:

- [x] 1. Total proposed watts must be less than or equal to total allowed watts.

Allowed Watts	Proposed Watts	Complies
22106	16321	Passes

Controls, Switching, and Wiring:

- [x] 2. Separate lighting controls present for: Display/Accent Lighting, Case Lighting, lighting for nonvisual applications (e.g., such as plant growth and food warming), lighting equipment that is for sale or for demonstrations in lighting education.
- [ ] 3. Hotel and motel guest rooms and guest suites have a master control device at the main room entry that controls all permanently installed luminaires and switched receptacles.
- [ ] 4. Supplemental task lighting has a control device integral to the luminaires or be controlled by a wall-mounted control device provided the control device is readily accessible and located so that the occupant can see the controlled lighting..
- [x] 5. 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.

- [ ] 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.
- [x] 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.
- [x] An occupant-sensing device controls the area.
- [x] The area is a corridor, storeroom, restroom, public lobby or sleeping unit.
- [ ] Areas that use less than 0.6 Watts/sq.ft.

- [x] 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.

- [x] 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.

- [x] 12. Lighting controls are tested to ensure that control devices, components, equipment, and systems are calibrated, adjusted and operate in accordance with approved plans and specifications. Sequences of operation shall be functionally tested to ensure they operate in accordance with approved plans and specifications.

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 2012 North Carolina Energy Conservation Code, Chapter 8, requirements in COM*check* Version 4.0.6.0 and to comply with the mandatory requirements in the Requirements Checklist.

Daniel E. Dowler - PE | Daniel E Dowler | 02/07/2019
Name - Title | Signature | Date

COMcheck Software Version 4.0.6.0
Exterior Lighting Compliance Certificate

Section 1: Project Information

Energy Code: **2012 North Carolina Energy Conservation Code**
Project Title: ALDI Inc. Store No.TBD
Project Type: Alteration
Exterior Lighting Zone: 2 (Neighborhood business district)

Construction Site:	Owner/Agent:	Designer/Contractor:
1315 Kildaire Farm Rd. Cary, NC 27511	ALDI Inc. 1985 Old Union Church Road Salisbury, NC 28146 704.642.0023	ms consultants inc 2221 Schrock Rd Columbus, OH 43229 614.898.7100

Section 2: Exterior Lighting Area/Surface Power Calculation

A Exterior Area/Surface	B Quantity	C Allowed Watts / Unit	D Tradable Wattage	E Allowed Watts (B x C)	F Proposed Watts
Entry canopy	411 ft2	0.25	Yes	103	0
Main entry	16 ft of door width	20	Yes	320	430
Other door (not main entry)	18 ft of door width	20	Yes	360	126
			Total Tradable Watts* =	783	556
			Total Allowed Watts =	783	
			Total Allowed Supplemental Watts** =	600	

* Wattage tradeoffs are only allowed between tradable areas/surfaces.
** A supplemental allowance equal to 600 watts may be applied toward compliance of both non-tradable and tradable areas/surfaces.

Section 3: Exterior 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)
Entry canopy (411 ft2): Tradable Wattage				
Main entry (16 ft of door width): Tradable Wattage				
LED: L23: LED Sconce: Other:	1	5	[illegible]	215
LED copy 1: L24: LED Sconce: Other:	1	5	[illegible]	215
Other door (not main entry) (18 ft of door width): Tradable Wattage				
LED: L21: LED WALL PACK: Other:	1	3	42	126
		Total Tradable Proposed Watts =		556

Section 4: Requirements Checklist

Lighting Wattage:

- [x] 1. Within each non-tradable area/surface, total proposed watts must be less than or equal to total allowed watts. Across all tradable areas/surfaces, total proposed watts must be less than or equal to total allowed watts.

Compliance: Passes.

Controls, Switching, and Wiring:

- [x] 2. All exemption claims are associated with fixtures that have a control device independent of the control of the nonexempt lighting.
- [x] 3. Lighting not designated for dusk-to-dawn operation is controlled by either a a photosensor (with time switch), or an astronomical time switch.

- [x] 4. Lighting designated for dusk-to-dawn operation is controlled by an astronomical time switch or photosensor.
- [x] 5. All time switches are capable of retaining programming and the time setting during loss of power for a period of at least 10 hours.
- [x] 6. Lighting controls are tested to ensure that control devices, components, equipment, and systems are calibrated, adjusted and operate in accordance with approved plans and specifications. Sequences of operation shall be functionally tested to ensure they operate in accordance with approved plans and specifications.

Exterior Lighting Efficacy and Application:

- [x] 7. All exterior building grounds luminaires that operate at greater than 100W have minimum efficacy of 60 lumen/watt.

Exceptions:

- [ ] Lighting that has been claimed as exempt and is identified as such in Section 3 table above.
- [ ] Lighting that is specifically designated as required by a health or life safety statue, ordinance, or regulation.
- [ ] Emergency lighting that is automatically off during normal building operation.
- [ ] Lighting that is controlled by motion sensor.

- [x] 8. Exterior lighting fixtures are fully shielded fixtures unless a lighting plan is submitted showing that the use of alternative fixtures would provide greater energy efficiency.

Exceptions:

- [x] Luminaires with an output of 150 Watts or less, or the equivalent light output.
- [ ] Luminaires intended to illuminate the facade of buildings or to illuminate other objects including but not limited to flagpoles, landscape and water features, statuary and works of art.
- [ ] Luminaires for historic lighting on the premises of an historic building as defined in the or within a designated historic district.
- [ ] Outdoor sports facility lighting of the participant sport area.
- [ ] Emergency exit discharge lighting.
- [ ] Sign illumination, function lighting, low voltage landscape lighting.
- [ ] Temporary lighting for emergency, repair, construction, special events or similar activities.

Section 5: Compliance Statement

Compliance Statement: The proposed exterior lighting design represented in this document is consistent with the building plans, specifications and other calculations submitted with this permit application. The proposed lighting system has been designed to meet the 2012 North Carolina Energy Conservation Code requirements in COM*check* Version 4.0.6.0 and to comply with the mandatory requirements in the Requirements Checklist.

Daniel E. Dowler - PE | Daniel E Dowler | 02/07/2019
Name - Title | Signature | Date

COMcheck Software Version 4.0.6.0
Mechanical Compliance Certificate

Section 1: Project Information

Energy Code: **2012 North Carolina Energy Conservation Code**
Project Title: ALDI Inc. Store No.TBD
Project Type: Alteration

Construction Site:	Owner/Agent:	Designer/Contractor:
1315 Kildaire Farm Rd. Cary, NC 27511	ALDI Inc. 1985 Old Union Church Road Salisbury, NC 28146 704.642.0023	ms consultants inc 2221 Schrock Rd Columbus, OH 43229 614.898.7100

Section 2: General Information

Building Location (for weather data): Cary, North Carolina
Climate Zone: 4a

Section 3: Mechanical Systems List

Quantity System Type & Description

1 RTU-1 (Single Zone) :
Heating: 1 each - Central Furnace, Gas, Capacity = 405 kBtu/h
Proposed Efficiency = 80.00% Ec, Required Efficiency = 80.00% Ec
Cooling: 1 each - Single Package DX Unit, Capacity = 287 kBtu/h, Air-Cooled Condenser, No Economizer
Economizer exception: Open Case Refrigeration
Proposed Efficiency = 11.20 EER, Required Efficiency: 9.80 EER + 9.5 IPLV
Fan System: RTU-1 | SALES -- Compliance (Brake HP method) : Passes

Fans:
FAN 1 Supply, Single-Zone VAV, 8400 CFM, 10.0 motor nameplate hp, 5.8 design brake hp (7.4 max. BHP)

1 RTU-2 (Single Zone) :
Heating: 1 each - Central Furnace, Gas, Capacity = 65 kBtu/h
Proposed Efficiency = 80.00% Et, Required Efficiency = 80.00% Et
Cooling: 1 each - Single Package DX Unit, Capacity = 24 kBtu/h, Air-Cooled Condenser, Air Economizer
Proposed Efficiency = 13.00 SEER, Required Efficiency: 13.00 SEER
Fan System: RTU-1 | SALES -- Compliance (Brake HP method) : Passes

Fans:
FAN 1 Supply, Single-Zone VAV, 8400 CFM, 10.0 motor nameplate hp, 5.8 design brake hp (7.4 max. BHP)

Section 4: Requirements Checklist

Requirements Specific To: RTU-1 :

- [x] 1. Equipment minimum efficiency: Central Furnace (Gas): 80.00 % Ec
- [x] 2. Equipment minimum efficiency: Single Package Unit: 9.80 EER + 9.5 IPLV
- [x] 3. Integrated economizer is required for this location and system
- [x] 4. Hot gas bypass prohibited unless system has multiple steps of unloading or continuous capacity modulation
- [x] 5. Hot gas bypass limited to 25% of total cooling capacity

Requirements Specific To: RTU-2 :

- [x] 1. Equipment minimum efficiency: Central Furnace (Gas): 80.00 % Et (or [illegible])
- [x] 2. Equipment minimum efficiency: Single Package Unit: 13.00 SEER

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

- [x] 1. 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

- [x] 2. Minimum one temperature control device per system
- [x] 3. Minimum one humidity control device per installed humidification/dehumidification system
- [x] 4. Load calculations per ASHRAE/ACCA Standard 183.
- [x] 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

- [x] 6. Outside-air source for ventilation; system capable of reducing OSA to required minimum
- [x] 7. R-5 supply and return air duct insulation in unconditioned spaces
R-8 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.

- [x] 8. Mechanical fasteners and sealants used to connect ducts and air distribution equipment
- [x] 9. Ducts sealed - longitudinal seams on rigid ducts; transverse seams on all ducts; UL 181A or 181B tapes and mastics
- [x] 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.

- [x] 11. Operation and maintenance manual provided to building owner
- [x] 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.

- [x] 13. Balancing devices provided in accordance with IMC 603.17
- [x] 14. Ventilation systems in buildings over 10,000 ft2 of conditioned area have demand controls. DCV systems are capable of reducing outside supply air to at least 50% below design ventilation rates. In all buildings, spaces larger than 500 ft2 with a maximum occupant load of 40 or more people per 1,000 ft2 of floor area control ventilation supply air flow by monitoring indoor air quality conditions.

Exception(s):

- [ ] Systems with heat recovery.
- [ ] Building spaces where the primary ventilation needs are for process loads, including laboratories and hospital.
- [ ] Individual units with less than 65 kBtu/h of cooling capacity.

- [x] 15. Motorized, automatic shutoff dampers required on exhaust and outdoor air supply openings

Exception(s):

- [ ] Gravity dampers acceptable in buildings <3 stories

- [x] 16. Automatic controls for freeze protection systems present
- [x] 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 2012 North Carolina Energy Conservation Code, Chapter 8, requirements in COM*check* Version 4.0.6.0 and to comply with the mandatory requirements in the Requirements Checklist.

Daniel E. Dowler - PE | Daniel E Dowler | 02/07/2019
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

Issued:		Date:
A	Client Review Set	02/15/19
B	Bid Set	03/08/19
C		
D		

Revisions:		Date:
1		
2		
3		
4		
5		
6		
7		
8		

DO NOT SCALE PLANS

Copying, Printing, Software and other processes required to produce these prints can stretch or shrink the actual paper or layout. Therefore, scaling of this drawing may be inaccurate. Contact ms consultants with any need for additional dimensions or clarifications.

ms consultants, inc.
engineers, architects, planners
920 Main Campus Drive
Suite 430
Raleigh, NC 27606-5213
(919)-772-5565
fax: (919)-779-2308

DRAWN BY: JMM

REVIEWED BY: KFF

Seal

ENGINEER FIRM LICENSE #C-3239
PROFESSIONAL OF RECORD:
DANIEL E. DOWLER No. 042448
EXP. DATE: 12/31/2019

ALDI Inc.
1985 Old Union Church Road
Salisbury, NC 28146
(704) 642-0023
(704) 642-0078 fax

ALDI Inc. Store #: 59
Cary, NC
1315 Kildaire Farm Rd
Cary, NC 27511
Wake County
Project Name & Location:

COMcheck
Drawing Name:

Prototype Rls.	Project No.
Type: V7.1	40452-25
Scale: As Noted	G-005 Drawing No.

Plot Date: 3/7/2019