

COMcheck Software Version 3.4.2
Lighting Compliance Certificate

2003 IECC

Report Date: 01/18/08

Data filename: J:\2007 1920-2699\06 June 2260-2319\2273-00\Reports\802-portland (Lighting including Guestrooms).cck

Section 1: Project Information

Project Title: Residence Inn by Marriott

Construction Site:

Corner of Fore and Hancock Streets
 Portland, ME 04101

Owner/Agent:

Ara Aftandilian
 Norwich Partners LLC c/o: Summit
 Properties
 218 Boston Street
 Topsfield, MA, ME
 (978) 887-3640

Designer/Contractor:

James Ryan
 Group One
 21 West Third Street
 Boston, MA 02127
 617-268-7000
 jim@grouponeinc.com

Section 2: General Information

Building Use Description by:

Project Type: **New Construction**

Building Type

Hotel Function

Floor Area

131871

Section 3: Requirements Checklist

Interior Lighting:

- 1. Total actual watts must be less than or equal to total allowed watts.

Allowed Watts	Actual Watts	Complies
131871	62526	YES

- 2. Exit signs 5 Watts or less per side.

Exterior Lighting:

- 3. Efficacy greater than 45 lumens/W.

Exceptions:

Specialized lighting highlighting features of historic buildings; signage; safety or security lighting; low-voltage landscape lighting.

Controls, Switching, and Wiring:

- 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. Each space provided with a manual control to provide uniform light reduction by at least 50%.

Exceptions:

Only one luminaire in space;

An occupant-sensing device controls the area;

The area is a corridor, storeroom, restroom, public lobby or guest room;

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

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

Exceptions:

Areas with only one luminaire, corridors, storerooms, restrooms, or public lobbies.

9. Photocell/astronomical time switch on exterior lights.

Exceptions:

Lighting intended for 24 hour use.

10. 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 4: Compliance Statement

Compliance Statement: The proposed 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 2003 IECC, Chapter 8, requirements in COMcheck Version 3.4.2 and to comply with the mandatory requirements in the Requirements Checklist.

Paul Sullivan, President

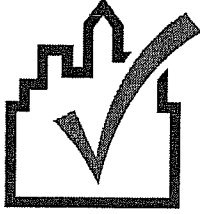
Name - Title

[Signature]

Signature

1-18-08

Date



COMcheck Software Version 3.4.2 Lighting Application Worksheet

2003 IECC

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Section 1: Allowed Lighting Power Calculation

A	B Floor Area	C Allowed Watts / ft ²	D Allowed Watts
Hotel Function	131871	1	131871
Total Allowed Watts =			131871

Section 2: Actual Lighting Power Calculation

A Fixture ID : Description / Lamp / Wattage Per Lamp / Ballast	B Lamps/ Fixture	C # of Fixtures	D Fixture Watt.	E (C X D)
Hotel Function (131871 sq.ft.)				
Linear Fluorescent 1: C010: 48" T8 32W / Electronic	2	3	64	192
Linear Fluorescent 2: C020: 48" T8 32W / Electronic	4	17	128	2176
Linear Fluorescent 3: C030: 24" T8 17W / Electronic	1	12	20	240
Incandescent 17: D010: Incandescent 75W	3	3	225	675
Incandescent 2: D020: Incandescent 100W	2	1	200	200
Incandescent 3: D030: Incandescent 100W	2	2	200	400
HID 5: D050: Metal Halide 150W / Electronic	1	13	150	1950
HID 6: D060: Metal Halide 150W / Electronic	1	4	150	600
Incandescent 6: D070: Incandescent 100W	2	1	200	200
Incandescent 7: D080: Incandescent 60W	2	5	120	600
Incandescent 8: D090: LED / Other	1	1	60	60
Incandescent 9: D110: LED / Other	1	12	31	372
Incandescent 10: D120: Incandescent 60W	1	6	60	360
Compact Fluorescent 1: D4: Twin Tube 40W / Electronic	1	251	40	10040
Compact Fluorescent 9: D62: GUESTROOM / Twin Tube 40W / Electronic	1	13	40	520
Incandescent 18: D64: GUESTROOM / Incandescent 60W	1	8	60	480
Compact Fluorescent 10: D64A: GUESTROOM / Twin Tube 18W / Electronic	1	3	18	54
Linear Fluorescent 15: D65: GUESTROOM / 36" T8 25W / Electronic	2	12	50	600
Linear Fluorescent 16: D65A: GUESTROOM / 24" T8 17W / Electronic	2	3	34	102
Incandescent 19: D75B: GUESTROOM / Incandescent 60W	1	13	60	780
Compact Fluorescent 2: D77A: Quad 2-pin 18W / Electronic	2	179	26	4654
Linear Fluorescent 4: F010: 48" T8 32W / Electronic	2	43	64	2752
Linear Fluorescent 5: F020: 48" T8 32W / Electronic	3	66	96	6336
Linear Fluorescent 6: F050: Other / Electronic	3	25	120	3000
Linear Fluorescent 7: F17: 24" T8 17W / Electronic	2	2	34	68
Linear Fluorescent 8: F18: 48" T8 32W / Electronic	2	6	64	384
HID 1: R030: Metal Halide 100W / Electronic	1	41	100	4100
Compact Fluorescent 3: R040: Quad 2-pin 26W / Electronic	2	65	52	3380
Compact Fluorescent 3 copy 1: R040D: Quad 2-pin 26W / Electronic	2	8	52	416
Compact Fluorescent 4: R050: Quad 2-pin 26W / Electronic	1	28	26	728
HID 2: R060: Metal Halide 150W / Electronic	1	37	150	5550
Compact Fluorescent 5: R070: Quad 2-pin 26W / Electronic	2	19	52	988
Incandescent 11: R080: Incandescent 75W	1	15	75	1125
Compact Fluorescent 6: R090: Quad 2-pin 13W / Electronic	1	10	13	130

Incandescent 12: R100: Incandescent 75W	1	8	75	600
Incandescent 13: R101: Other	1	4	90	360
Incandescent 20: R27: GUESTROOM / Incandescent 35W	1	14	35	490
Incandescent 21: R29: GUESTROOM / Incandescent 50W	1	43	50	2150
Incandescent 14: RWH: EM LIGHT / Incandescent 60W	1	4	60	240
Linear Fluorescent 9: S1: 48" T8 32W / Electronic	2	21	64	1344
Incandescent 16: S2: Incandescent 150W	1	2	150	300
Incandescent 15: T010: Incandescent 75W	8	8	75	600
Linear Fluorescent 17: T03(ALT): BATHROOM / Other / Electronic	1	11	32	352
Linear Fluorescent 10: U010: Other / Electronic	1	6	13	78
Linear Fluorescent 11: U030: Other / Electronic	1	6	8	48
Compact Fluorescent 7: U040: Other / Electronic	1	8	3	24
Linear Fluorescent 12: U050: Other / Electronic	1	14	15	210
Compact Fluorescent 12: X020: EXIT SIGN / Other / Electronic	1	96	2	192
Compact Fluorescent 12 copy 1: X030: EXIT SIGN / Other / Electronic	1	2	2	4
Compact Fluorescent 14: X040: EXIT SIGN / Other / Electronic	1	4	2	8
Linear Fluorescent 14: Z010: EXTERIOR / Other / Electronic	2	2	80	160
Linear Fluorescent 15: Z020: EXTERIOR / Other / Electronic	2	4	78	312
HID 4: Z030: EXTERIOR / Metal Halide 100W / Electronic	1	1	100	100
Compact Fluorescent 12: Z050: EXTERIOR / Triple 4-pin 42W / Electronic	1	1	42	42
HID 3: Z250: EXTERIOR / Metal Halide 100W / Electronic	1	7	100	700

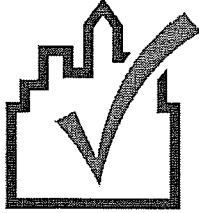
Total Actual Watts = 62526

Section 3: Compliance Calculation

If the Total Allowed Watts minus the Total Actual Watts is greater than or equal to zero, the building complies.

Total Allowed Watts = 131871
Total Actual Watts = 62526
Project Compliance = 69345

Lighting PASSES Design 53% better than code



COMcheck Software Version 3.5.2

Mechanical Compliance Certificate

2003 IECC

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Construction Site:

Corner of Fore and Hancock Streets
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Designer/Contractor:

James Ryan
Group One
21 West Third Street
Boston, MA 02127
617-268-7000
jim@grouponeinc.com

Section 2: General Information

Building Location (for weather data): **Portland, Maine**

Climate Zone: **15**

Heating Degree Days (base 65 degrees F): **7378**

Cooling Degree Days (base 65 degrees F): **268**

Section 3: Mechanical Systems List

Quantity System Type & Description

- | | |
|---|---|
| 1 | HVAC System 1: Water Loop Heat Pump, Cooling Capacity ≥ 760 kBtu/h, Water-Cooled Condenser / Single Zone w/ Perimeter System |
| 1 | Plant 1: Heating: Hot Water Boiler, Capacity ≥ 600 kBtu/h, Gas, with Waterloop Heat Pump |

Section 4: Requirements Checklist

Requirements Specific To: HVAC System 1 :

- 1. Equipment minimum efficiency: Heat Pump: 4.2 COP, 12.0 EER
- 2. Heat pump thermostat required when supplemental electric resistance heat is installed
- 3. Discharge dampers prohibited with fan motors > 25 hp
- 4. Integrated air economizer required
- 5. Loop temperature controlled with 20 degrees F deadband where neither cooling tower/fluid cooler nor boiler can operate
- 6. Closed-circuit cooling tower has: a) automatic bypass valve for condenser water loop or b) dampers that shut-off air flow through the cooling tower
- 7. Open-circuit cooling tower has automatic bypass valve for condenser water loop
- 8. Open-circuit cooling tower with heat exchanger must have automatic shut-off controls for cooling tower
- 9. Two-position valve on each heat pump having total heat pump system power > 10 hp

Requirements Specific To: Plant 1 :

- 1. Equipment minimum efficiency: Boiler Thermal Efficiency $\geq 75\%$ Et
- 2. Newly purchased heating equipment meets the efficiency requirements - used equipment must meet 80% Et @ maximum capacity
- 3. Loop temperature controlled with 20 degrees F deadband where neither cooling tower/fluid cooler nor boiler can operate
- 4. Two-position valve on each heat pump having total heat pump system power > 10 hp
- 5. Systems with multiple boilers have automatic controls capable of sequencing boiler operation

