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Report No: L091503801

Date: 9/16/2015



NVLAP LAB CODE 200927-0

**Report No:** L091503801

**Report Prepared For:** LEDCONN  
 301 Thor Place

**Model Number:** X2436WNB-2835H

**Test:** Electrical and Photometric tests

**Standards Used:** Appropriate part or all test guidelines were used for test performed:  
*IESNA LM79: 2008* Approved Methods for Electrical and Photometric Measurements of Solid-State Lighting Products  
*ANSI NEMA ANSLG C78.377: 2008* Specification of the Chromaticity of Solid State Lighting Products  
*ANSI C82.77:2002:* Harmonic Emission Limits-Related Quality Requirements for Lighting Equipment

**Description of Sample:** Client submitted the sample. Catalog number is X2436WNB-2835H. Received in working and undamaged condition. No modifications were necessary.

**Testing Condition:** Fixture is tested with no special conditions.

**Sample Arrival Date:** 8/10/15

**Date of Tests:** 9/14/15 - 9/15/15

**Seasoning of Sample:** No seasoning was performed in accordance with IESNA LM-79.

**Equipment List**

Equipment Used	Model No	Stock No	Calibration Due Date
Chroma Programmable AC Source	61604	PS-AC02	--
Yokogawa Digital Power Meter	WT210	MT-EL06-S1	11/10/15
Xitron Power Analysis System	2503AH	MT-EL01	10/20/15
BK Precision DC Power Supply	1747	PSDC-04	01/08/16
Fluke Digital Thermometer	52k/J	MT-TP02-GC	01/05/16
LLI Type C Goniophotometer System	RMG-C-MKII	CD-LL04-GC	--
LLI 2M Sphere	2MR97	CD-SN03-S2	--
LLI Spectroradiometer	SPR-3000	MT-SC01-S2	Before Use

\*All Results in accordance to IESNA LM-79-2008: Approved Method for the Electrical and Photometric Testing of Solid-State Lighting.

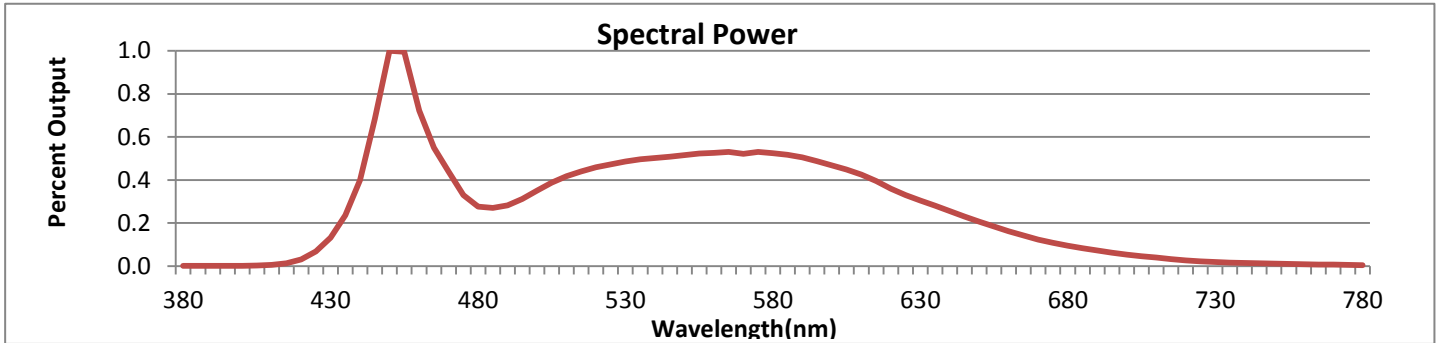
**Test Summary**

<b>Manufacturer:</b>	LEDCONN
<b>Model Number:</b>	X2436WNB-2835H
<b>Driver Model Number:</b>	N/A
<b>Total Lumens:</b>	2073.33
<b>Input Voltage (VDC):</b>	24.00
<b>Input Current (Amp):</b>	1.25
<b>Input Power (W):</b>	29.91
<b>Input Power Factor:</b>	1.00
<b>Current ATHD @ 120V(%):</b>	N/A
<b>Current ATHD @ 277V(%):</b>	N/A
<b>Efficacy:</b>	69
<b>Color Rendering Index (CRI):</b>	82
<b>Correlated Color Temperature (K):</b>	6050
<b>Chromaticity Coordinate x:</b>	0.3205
<b>Chromaticity Coordinate y:</b>	0.3403
<b>Ambient Temperature (°C):</b>	25.0
<b>Stabilization Time (Hours):</b>	0:30
<b>Total Operating Time (Hours):</b>	1:00
<b>Off State Power(W):</b>	0.00



FIG. 1 LUMINAIRE

\*All Results in accordance to IESNA LM-79-2008: Approved Method for the Electrical and Photometric Testing of Solid-State Lighting.



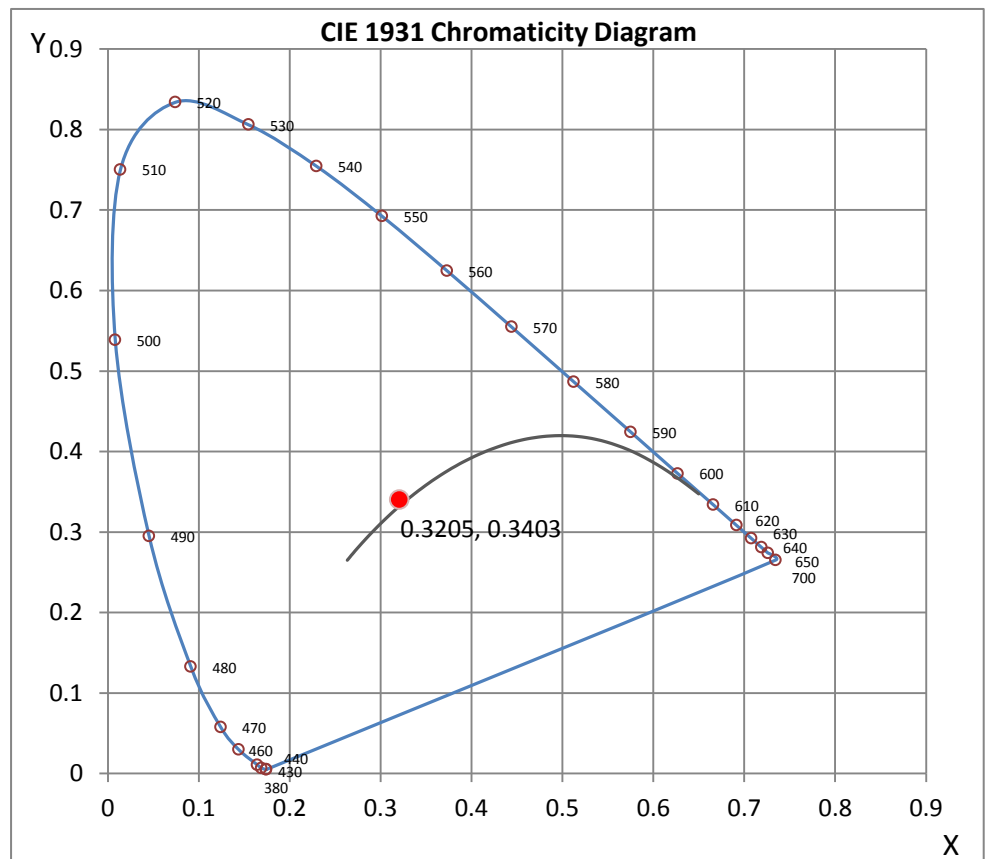
Wavelength	W/m <sup>2</sup> nm	440	0.3999	510	0.4175	580	0.5251	650	0.2066	720	0.0268
380	0.0008	450	1.0000	520	0.4590	590	0.5048	660	0.1617	730	0.0184
390	0.0009	460	0.7223	530	0.4856	600	0.4686	670	0.1235	740	0.0140
400	0.0016	470	0.4378	540	0.5028	610	0.4246	680	0.0945	750	0.0112
410	0.0052	480	0.2769	550	0.5153	620	0.3595	690	0.0721	760	0.0088
420	0.0304	490	0.2826	560	0.5260	630	0.3046	700	0.0538	770	0.0066
430	0.1315	500	0.3503	570	0.5220	640	0.2556	710	0.0392	780	0.0049

**CRI & CCT**

x	0.3205
y	0.3403
u'	0.1990
v'	0.4754
CRI	81.90
CCT	6050
Duv	0.00513

**R Values**

R1	79.44
R2	87.90
R3	92.46
R4	80.08
R5	79.82
R6	82.10
R7	87.25
R8	66.52
R9	0.06
R10	70.46
R11	78.68
R12	56.43
R13	82.01
R14	95.75



\*All Results in accordance to IESNA LM-79-2008: Approved Method for the Electrical and Photometric Testing of Solid-State Lighting.

## Test Methods

### Photometric Measurements - Goniophotometer

A Custom Light Laboratory Type C Rotating Mirror Goniophotometer was used to measure candelas(intensity) at each angle of distribution as defined by IESNA for the appropriate fixture type.

Ambient temperature is set to 25°C and is measured from the center of the fixture, within 1ft from the outside of the fixture. Temperature is maintained at 25°C throughout the testing process and the sample is stabilized for at least 30mins and longer as necessary for the sample to achieve stabilization.

Electrical measurements are measured using the listed equipment.

### Spectral Measurements - Integrating Sphere

A Sensing Spectroradiometer SPR-3000, in conjunction with Light Laboratory 2 meter integrating sphere was used to measure chromaticity coordinates, correlated color temperature(CCT) and the color rendering index(CRI) for each sample.

Ambient temperature is set to 25°C and is measured from the center of the fixture, within 1ft from the outside of the fixture. Temperature is maintained at 25°C throughout the testing process and the sample is stabilized for at least 30mins and longer as necessary for the sample to achieve stabilization.

Electrical measurements are measured using the listed equipment.

### Disclaimers:

This report must not be used by the customer to claim product certification, approval or endorsement by NVLAP, NIST or any agency of Federal Government.

Report Prepared by : JEFF AHN

Test Report Released by:



Jeff Ahn  
Engineering Manager

Test Report Reviewed by:



Steve Kang  
Quality Assurance

*\*Attached are photometric data reports. Total number of pages: 9*



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# Photometric Test Report

**IES INDOOR REPORT**  
**PHOTOMETRIC FILENAME : L091503801.IES**

**DESCRIPTION INFORMATION (From Photometric File)**

IESNA:LM-63-2002  
 [TEST] L091503801  
 [TESTLAB] LIGHT LABORATORY, INC.  
 [ISSUE DATE] 9/16/2015  
 [MANUFAC] LEDCONN  
 [LUMCAT] X2436WNB-2835H  
 [LUMINAIRE] 2' x 3' LUXFIT LIGHT PANEL 6500K WHITE 2835H NO DIFFUSED  
 [BALLASTCAT] N/A  
 [LAMPPOSITION] 0,0  
 [LAMPCAT] N/A  
 [OTHER] INDICATING THE CANDELA VALUES ARE ABSOLUTE AND  
 [MORE] SHOULD NOT BE FACTORED FOR DIFFERENT LAMP RATINGS.  
 [POWER SUPPLY] 24VDC CONSTANT VOLTAGE SOURCE  
 [INPUT] 24VDC, 29.91W  
 [TEST PROCEDURE] IESNA:LM-79-08

**CHARACTERISTICS**

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	2073
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	69
Total Luminaire Watts	29.91
Ballast Factor	1.00
CIE Type	Direct
Spacing Criterion (0-180)	1.36
Spacing Criterion (90-270)	1.44
Spacing Criterion (Diagonal)	1.54
Basic Luminous Shape	Rectangular
Luminous Length (0-180)	2.92 ft
Luminous Width (90-270)	1.92 ft
Luminous Height	0.00 ft

**LUMINANCE DATA (cd/sq.m)**

Angle In Degrees	Average 0-Deg	Average 45-Deg	Average 90-Deg
45	1227	1302	1353
55	1239	1338	1423
65	1243	1368	1470
75	1127	1270	1420
85	910	996	1081

IES INDOOR REPORT  
PHOTOMETRIC FILENAME : L091503801.IES

CANDELA TABULATION

	<u>0.0</u>	<u>22.5</u>	<u>45.0</u>	<u>67.5</u>	<u>90.0</u>
<b>0</b>	587.29	587.29	587.29	587.29	587.29
<b>5</b>	586.22	585.58	588.76	591.02	584.55
<b>10</b>	583.90	584.52	588.96	591.84	585.80
<b>15</b>	577.35	579.28	580.67	589.22	585.26
<b>20</b>	566.31	569.05	575.27	585.95	583.17
<b>25</b>	551.26	554.49	563.51	580.22	575.48
<b>30</b>	533.26	539.59	552.71	569.21	564.79
<b>35</b>	510.27	517.27	534.16	552.64	550.88
<b>40</b>	483.58	490.81	508.99	530.17	525.86
<b>45</b>	452.21	460.27	480.06	501.38	498.85
<b>50</b>	413.17	422.45	443.96	465.42	465.84
<b>55</b>	370.63	380.37	400.02	422.78	425.59
<b>60</b>	324.07	332.05	352.24	374.10	377.76
<b>65</b>	273.76	282.38	301.33	320.78	323.91
<b>70</b>	213.52	219.49	238.37	254.17	258.38
<b>75</b>	152.06	157.23	171.42	186.05	191.60
<b>80</b>	94.32	97.94	108.17	118.15	123.84
<b>85</b>	41.36	42.14	45.24	47.32	49.12
<b>90</b>	0.00	0.00	0.00	0.00	0.00

**IES INDOOR REPORT**  
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**ZONAL LUMEN SUMMARY**

Zone	Lumens	%Lamp	%Fixt
0-20	221.01	N.A.	10.70
0-30	482.23	N.A.	23.30
0-40	816.10	N.A.	39.40
0-60	1542.67	N.A.	74.40
0-80	2019.36	N.A.	97.40
0-90	2073.33	N.A.	100.00
10-90	2017.25	N.A.	97.30
20-40	595.10	N.A.	28.70
20-50	964.36	N.A.	46.50
40-70	1021.53	N.A.	49.30
60-80	476.69	N.A.	23.00
70-80	181.72	N.A.	8.80
80-90	53.98	N.A.	2.60
90-110	0.00	N.A.	0.00
90-120	0.00	N.A.	0.00
90-130	0.00	N.A.	0.00
90-150	0.00	N.A.	0.00
90-180	0.00	N.A.	0.00
110-180	0.00	N.A.	0.00
0-180	2073.33	N.A.	100.00

Total Luminaire Efficiency = N.A.%

**ZONAL LUMEN SUMMARY**

Zone	Lumens
0-10	56.09
10-20	164.92
20-30	261.23
30-40	333.87
40-50	369.27
50-60	357.30
60-70	294.96
70-80	181.72
80-90	53.98
90-100	0.00
100-110	0.00
110-120	0.00
120-130	0.00
130-140	0.00
140-150	0.00
150-160	0.00
160-170	0.00
170-180	0.00

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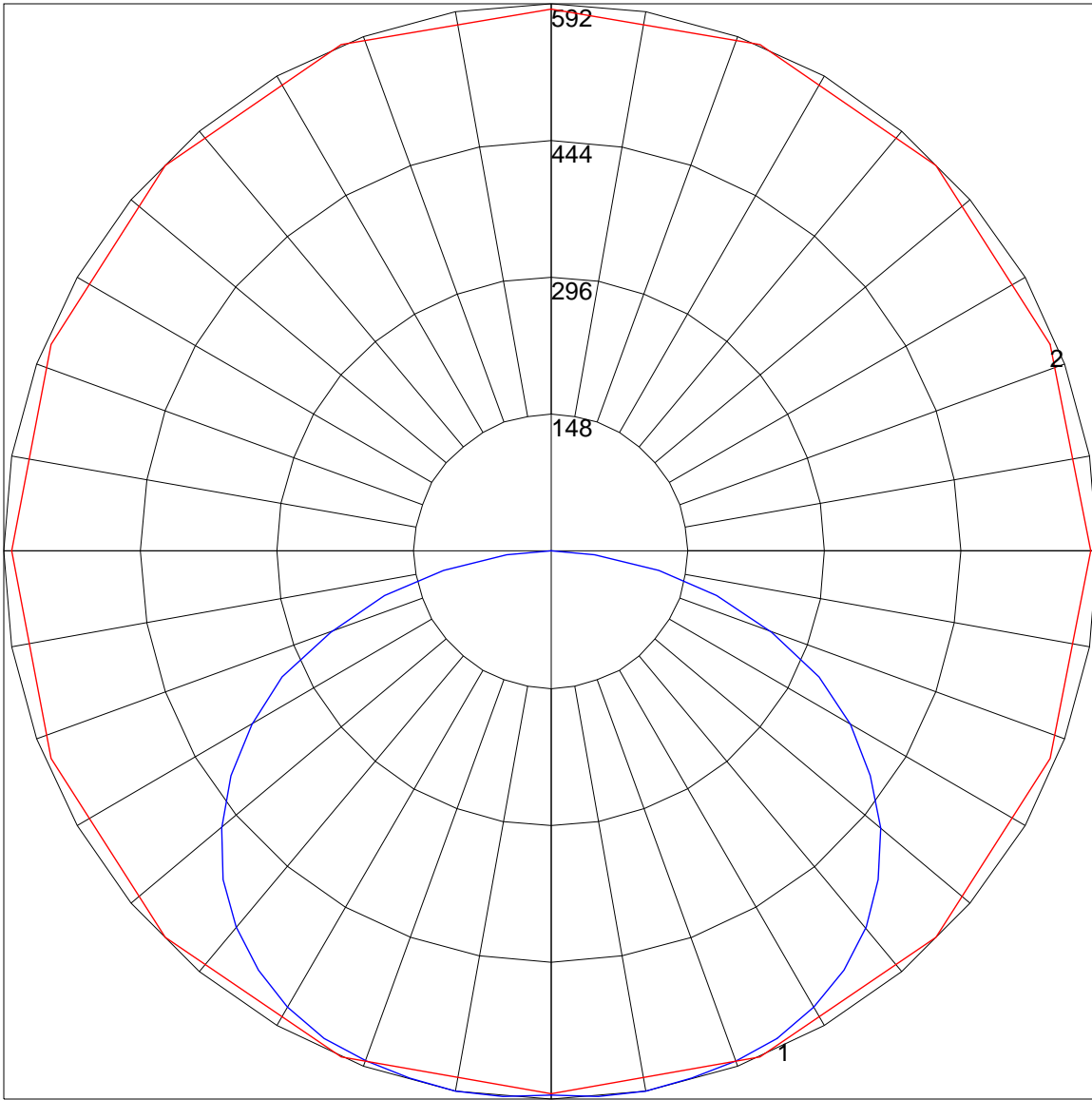
**COEFFICIENTS OF UTILIZATION - ZONAL CAVITY METHOD**

Effective Floor Cavity Reflectance 0.20

RC	80				70				50			30			10			0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	0
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100
1	108	103	98	94	105	100	96	92	96	93	89	92	89	87	88	86	84	82
2	97	88	81	75	95	87	80	74	83	77	72	80	75	71	76	73	69	67
3	88	77	68	61	86	75	67	61	72	65	60	69	64	59	67	62	58	55
4	80	68	58	51	78	66	58	51	64	56	50	61	55	49	59	53	49	46
5	74	60	51	44	71	59	50	43	57	49	43	55	48	42	53	47	42	40
6	68	54	44	38	66	53	44	37	51	43	37	49	42	37	48	41	36	34
7	63	49	39	33	61	48	39	33	46	38	33	45	38	32	43	37	32	30
8	58	44	35	29	57	43	35	29	42	34	29	41	34	29	40	33	28	27
9	54	40	32	26	53	40	32	26	39	31	26	37	31	26	36	30	26	24
10	51	37	29	24	49	37	29	23	36	28	23	35	28	23	34	28	23	21



POLAR GRAPH



Maximum Candela = 591.84 Located At Horizontal Angle = 67.5, Vertical Angle = 10  
# 1 - Vertical Plane Through Horizontal Angles (67.5 - 247.5) (Through Max. Cd.)  
# 2 - Horizontal Cone Through Vertical Angle (10) (Through Max. Cd.)