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Report No: L091503802

Date: 9/16/2015



NVLAP LAB CODE 200927-0

Report No: L091503802

Report Prepared For: LEDCONN
 301 Thor Place

Model Number: X2436ZNB-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 X2436ZNB-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

Manufacturer:	LEDCONN
Model Number:	X2436ZNB-2835H
Driver Model Number:	N/A
Total Lumens:	2078.62
Input Voltage (VDC):	24.00
Input Current (Amp):	1.20
Input Power (W):	28.76
Input Power Factor:	1.00
Current ATHD @ 120V(%):	N/A
Current ATHD @ 277V(%):	N/A
Efficacy:	72
Color Rendering Index (CRI):	81
Correlated Color Temperature (K):	2868
Chromaticity Coordinate x:	0.4458
Chromaticity Coordinate y:	0.4056
Ambient Temperature (°C):	25.0
Stabilization Time (Hours):	0:30
Total Operating Time (Hours):	1:05
Off State Power(W):	0.00

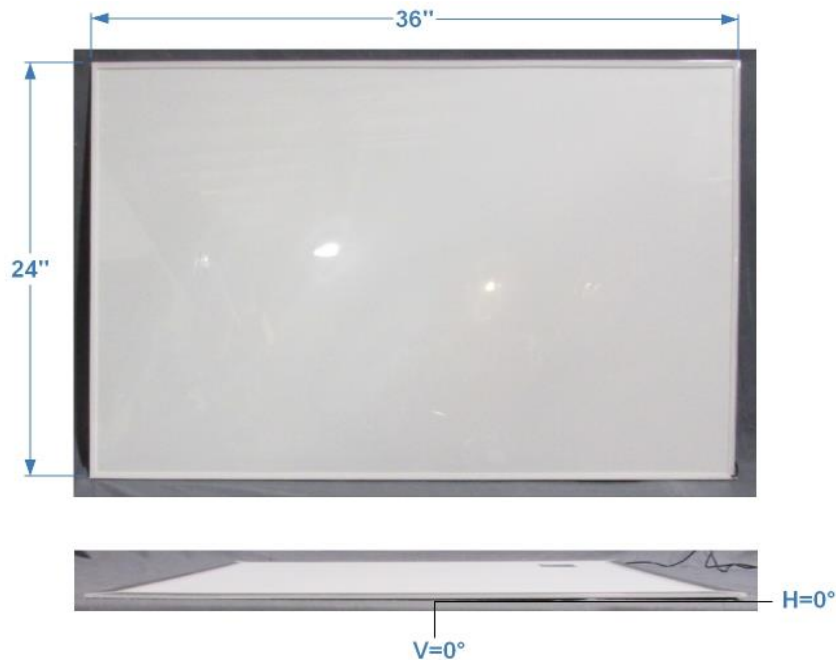
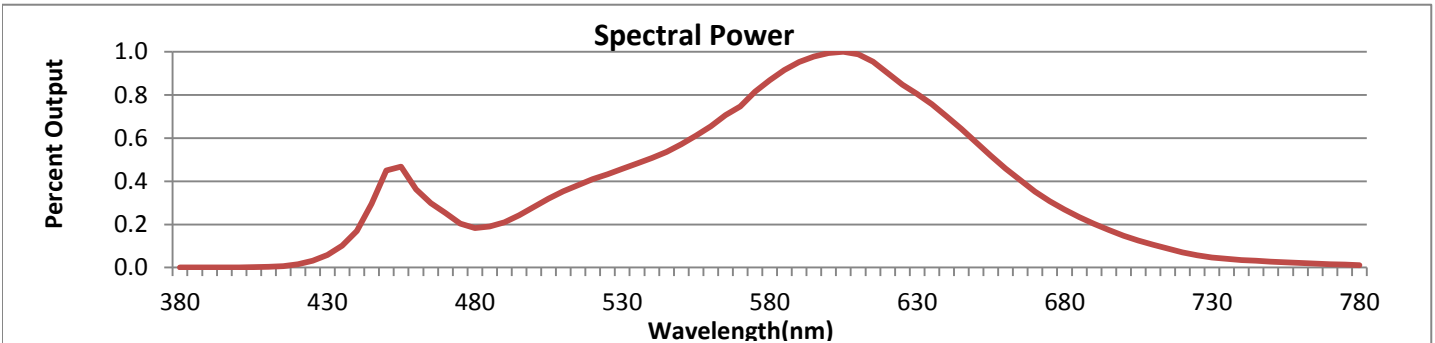


FIG. 1 LUMINAIRE

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



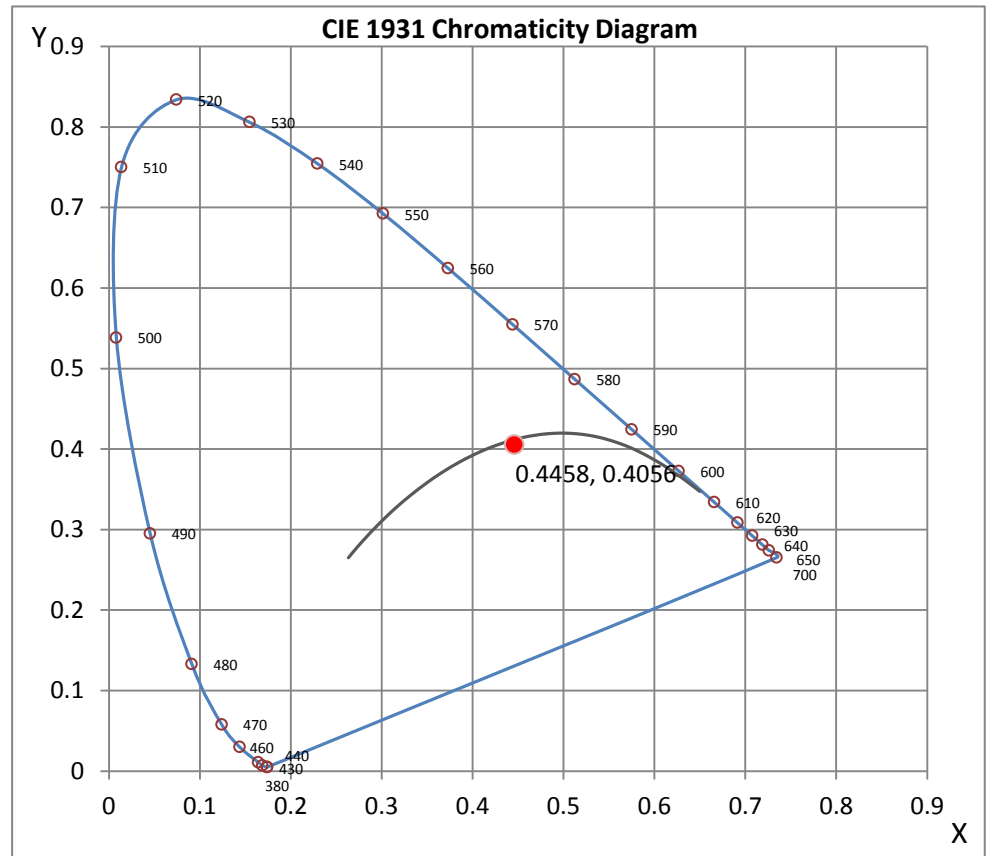
Wavelength	W/m ² nm	440	0.1702	510	0.3541	580	0.8688	650	0.5808	720	0.0702
380	0.0007	450	0.4499	520	0.4097	590	0.9537	660	0.4594	730	0.0472
390	0.0007	460	0.3627	530	0.4580	600	0.9941	670	0.3529	740	0.0349
400	0.0009	470	0.2531	540	0.5082	610	0.9886	680	0.2688	750	0.0274
410	0.0030	480	0.1837	550	0.5712	620	0.9010	690	0.2023	760	0.0208
420	0.0154	490	0.2098	560	0.6554	630	0.8054	700	0.1480	770	0.0154
430	0.0586	500	0.2814	570	0.7473	640	0.7015	710	0.1065	780	0.0111

CRI & CCT

x	0.4458
y	0.4056
u'	0.2556
v'	0.5233
CRI	81.10
CCT	2868
Duv	-0.00051

R Values

R1	79.46
R2	91.04
R3	95.16
R4	77.87
R5	79.45
R6	89.07
R7	80.80
R8	55.61
R9	2.52
R10	79.64
R11	76.54
R12	70.65
R13	82.22
R14	98.05



*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 : L091503802.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002
 [TEST] L091503802
 [TESTLAB] LIGHT LABORATORY, INC.
 [ISSUEDATE] 9/16/2015
 [MANUFAC] LEDCONN
 [LUMCAT] X2436ZNB-2835H
 [LUMINAIRE] 2' x 3' LUXFIT LIGHT PANEL 3000K 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, 28.76W
 [TEST PROCEDURE] IESNA:LM-79-08

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	2079
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	72
Total Luminaire Watts	28.76
Ballast Factor	1.00
CIE Type	Direct
Spacing Criterion (0-180)	1.36
Spacing Criterion (90-270)	1.46
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	1221	1306	1373
55	1239	1338	1422
65	1248	1373	1477
75	1128	1267	1419
85	918	980	1050

IES INDOOR REPORT
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CANDELA TABULATION

	<u>0.0</u>	<u>22.5</u>	<u>45.0</u>	<u>67.5</u>	<u>90.0</u>
0	588.52	588.52	588.52	588.52	588.52
5	589.93	588.39	590.18	590.05	579.19
10	582.54	585.86	587.92	593.39	587.50
15	576.90	578.17	584.51	591.37	588.12
20	565.09	569.50	577.43	588.10	584.53
25	550.07	555.35	567.13	580.18	579.42
30	531.89	539.54	553.02	570.37	570.65
35	508.97	519.30	534.12	554.25	554.29
40	483.46	493.02	511.91	531.89	532.78
45	450.26	461.01	481.38	503.18	506.09
50	412.52	424.44	445.04	466.27	468.96
55	370.40	380.66	400.20	422.94	425.11
60	325.24	335.33	353.52	375.35	379.51
65	274.99	284.49	302.59	322.60	325.47
70	215.95	223.00	239.22	254.93	259.23
75	152.25	158.21	171.01	185.31	191.41
80	94.99	98.46	107.11	116.19	121.54
85	41.72	41.76	44.51	46.13	47.72
90	0.00	0.00	0.00	0.00	0.00

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ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-20	221.42	N.A.	10.70
0-30	483.22	N.A.	23.20
0-40	818.02	N.A.	39.40
0-60	1546.68	N.A.	74.40
0-80	2025.25	N.A.	97.40
0-90	2078.62	N.A.	100.00
10-90	2022.47	N.A.	97.30
20-40	596.60	N.A.	28.70
20-50	967.23	N.A.	46.50
40-70	1025.31	N.A.	49.30
60-80	478.57	N.A.	23.00
70-80	181.92	N.A.	8.80
80-90	53.37	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	2078.62	N.A.	100.00

Total Luminaire Efficiency = N.A.%

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	56.15
10-20	165.27
20-30	261.80
30-40	334.80
40-50	370.63
50-60	358.03
60-70	296.65
70-80	181.92
80-90	53.37
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

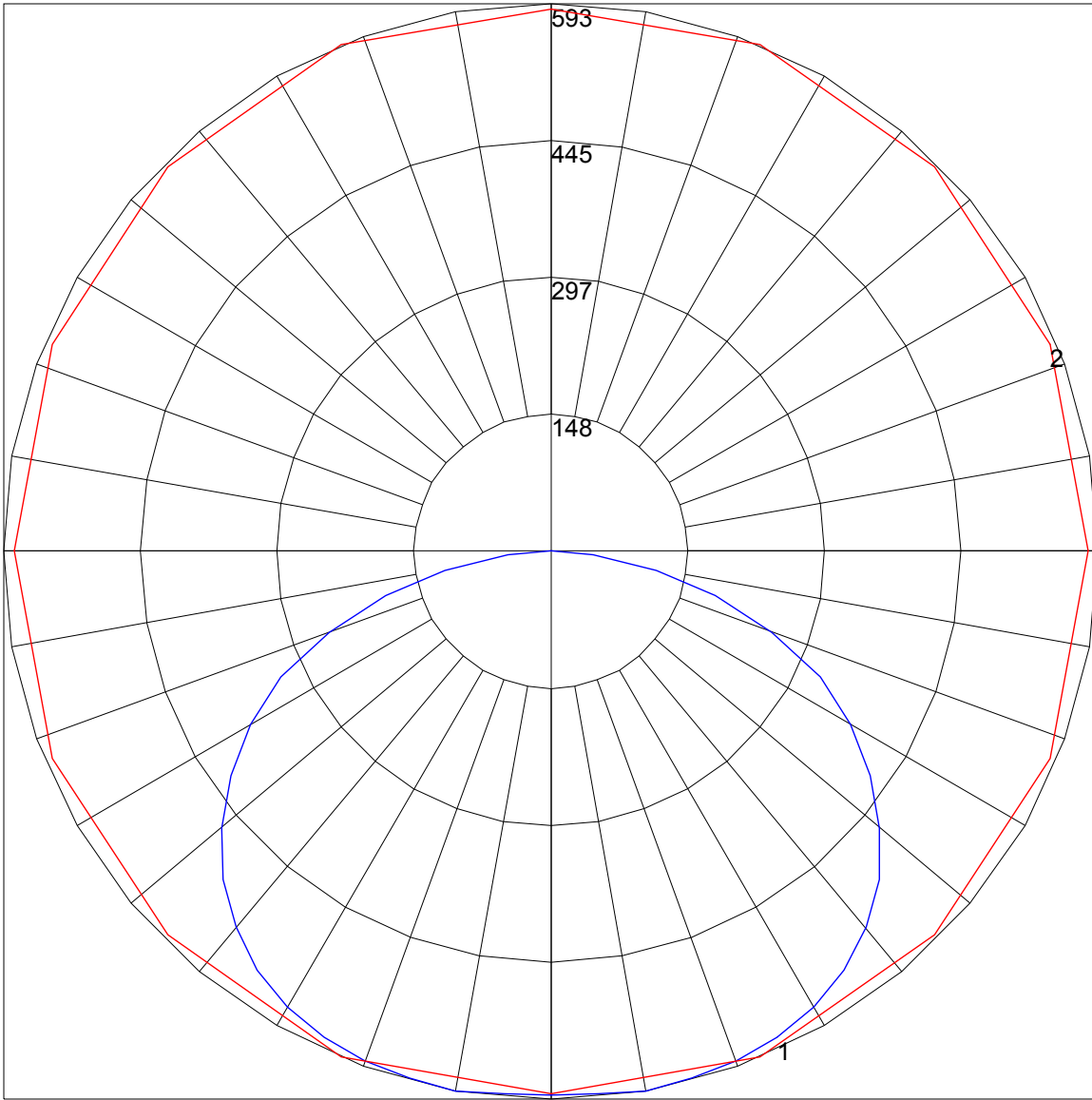
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COEFFICIENTS OF UTILIZATION - ZONAL CAVITY METHOD

Effective Floor Cavity Reflectance 0.20

RC	80				70				50			30			10			0
	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	86	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	57	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	48	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	26
9	54	40	32	26	53	40	32	26	39	31	26	37	31	26	36	30	26	24
10	51	37	29	23	49	37	29	23	36	28	23	35	28	23	34	28	23	21

POLAR GRAPH



Maximum Candela = 593.39 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.)