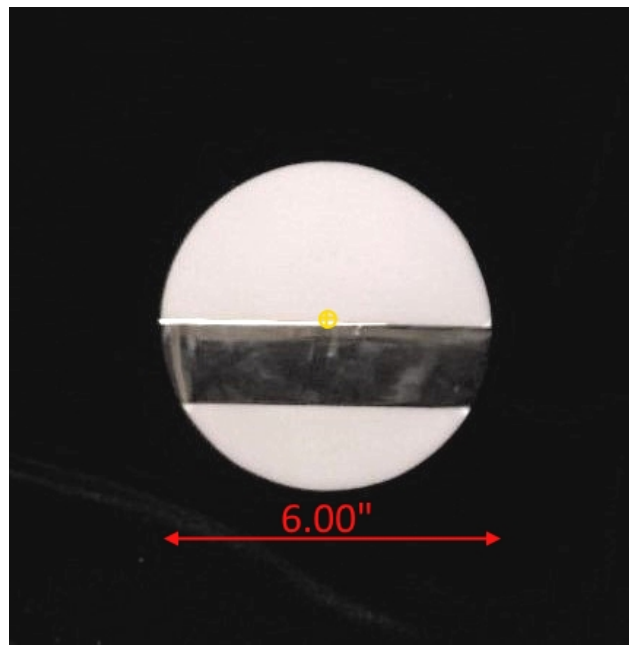




Report of Test

LLIA001067-003A

Catalog Number: 3-551 Aurora Sconce
Surface wall mounted, formed steel housing,
translucent white plastic enclosure.
24 white LEDs, one Harvard Engineering LEDENG-165-930 LED board
One ERP ESS015W-0350-42 dimmable LED driver.
120.0Vac, 60.00Hz, 0.0845A, 9.91W, 0.977PF, 17.3%THD(i)



Performance Summary

Total Light Output	454 lm
Luminaire Power	9.90 W
Luminous Efficacy	45.9 lm/W

PREPARED FOR : Oxygen Lighting, 201 Railhead Road, Fort Worth, TX 76106, USA

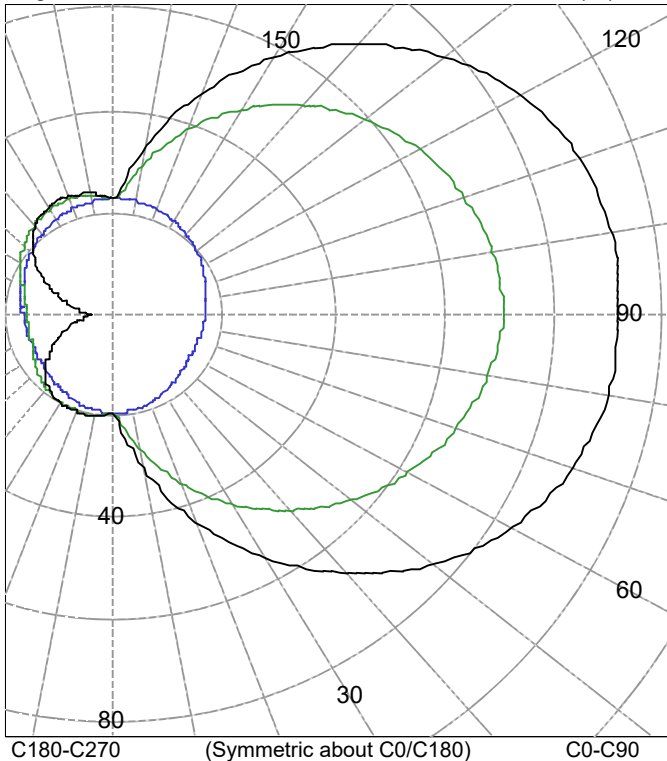


Test Report No. LLIA001067-003A

Catalog Number: 3-551 Aurora Sconce
Surface wall mounted, formed steel housing,
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24 white LEDs, one Harvard Engineering LEDENG-165-930 LED board
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120.0Vac, 60.00Hz, 0.0845A, 9.91W, 0.977PF, 17.3%THD(i)

Legend: C0/C180-Black, C45/C225-Green, C90/C270-Blue (cd)



AVERAGE LUMINANCE (cd/m²)

Gamma	C0	C45	C90
45.0	5435	3982	2868
55.0	5271	3986	2784
65.0	5120	3994	2748
75.0	5020	4016	2765
85.0	4941	4063	2823

INTENSITY SUMMARY (cd)

Gamma	C-Plane					Flux (lm)
	C0	C22.5	C45	C67.5	C90	
0.0	19.4	19.4	19.4	19.4	19.4	
5.0	24.5	24.1	22.8	20.9	19.4	2
10.0	30.8	29.7	26.8	22.9	19.2	
15.0	37.2	35.6	31.1	24.8	18.9	7
20.0	43.4	41.3	35.4	26.8	18.6	
25.0	49.5	46.7	39.4	28.7	18.3	13
30.0	55.3	52.0	43.2	30.6	17.9	
35.0	61.0	57.2	46.9	32.3	17.5	20
40.0	66.5	62.1	50.3	33.9	17.1	
45.0	71.6	66.7	53.6	35.4	16.8	26
50.0	76.4	70.9	56.7	36.8	16.5	
55.0	80.5	74.7	59.5	38.2	16.3	32
60.0	83.7	77.9	62.0	39.5	16.2	
65.0	86.5	80.6	64.2	40.6	16.1	37
70.0	88.8	82.8	66.1	41.6	16.1	
75.0	90.4	84.6	67.7	42.4	16.2	40
80.0	91.4	86.0	69.1	43.1	16.3	
85.0	91.7	87.2	70.2	43.8	16.5	42
90.0	91.6	87.9	70.8	44.3	16.7	

ZONAL FLUX AND PERCENTAGES

Zone	Flux (lm)	% Lamp	% Luminaire
0-30	22	N / A	4.9
0-40	42	N / A	9.3
0-60	101	N / A	22.2
0-90	220	N / A	48.5
40-90	178	N / A	39.2
60-90	119	N / A	26.3
90-180	234	N / A	51.5
0-180	454	N / A	100.0

Total Light Output = 454 lm

Spacing Criterion: 0-180 3.6
Spacing Criterion: 90-270 1.4

Signed:

Authorized Signatory

Date of test 1-Feb-2019
Date of report 1-Feb-2019



Test Report No. LLIA001067-003A

Catalog Number: 3-551 Aurora Sconce
Surface wall mounted, formed steel housing,
translucent white plastic enclosure.

24 white LEDs, one Harvard Engineering LEDENG-165-930 LED board

One ERP ESS015W-0350-42 dimmable LED driver.

120.0Vac, 60.00Hz, 0.0845A, 9.91W, 0.977PF, 17.3%THD(i)

Intensity data (cd)

Gamma	C-Plane				
	C0	C22.5	C45	C67.5	C90
0.0	19.4	19.4	19.4	19.4	19.4
2.5	21.6	21.4	20.8	20.0	19.4
5.0	24.5	24.1	22.8	20.9	19.4
7.5	27.5	26.8	24.8	21.9	19.3
10.0	30.8	29.7	26.8	22.9	19.2
12.5	34.0	32.6	29.0	23.9	19.1
15.0	37.2	35.6	31.1	24.8	18.9
17.5	40.4	38.5	33.2	25.8	18.8
20.0	43.4	41.3	35.4	26.8	18.6
22.5	46.5	44.0	37.4	27.8	18.5
25.0	49.5	46.7	39.4	28.7	18.3
27.5	52.4	49.4	41.3	29.6	18.1
30.0	55.3	52.0	43.2	30.6	17.9
32.5	58.2	54.6	45.0	31.4	17.7
35.0	61.0	57.2	46.9	32.3	17.5
37.5	63.8	59.6	48.6	33.3	17.3
40.0	66.5	62.1	50.3	33.9	17.1
42.5	69.1	64.4	52.0	34.8	17.0
45.0	71.6	66.7	53.6	35.4	16.8
47.5	74.0	68.8	55.2	36.1	16.7
50.0	76.4	70.9	56.7	36.8	16.5
52.5	78.5	72.8	58.1	37.5	16.4
55.0	80.5	74.7	59.5	38.2	16.3
57.5	82.1	76.4	60.8	38.8	16.2
60.0	83.7	77.9	62.0	39.5	16.2
62.5	85.2	79.4	63.2	40.0	16.1
65.0	86.5	80.6	64.2	40.6	16.1
67.5	87.7	81.8	65.2	41.1	16.1
70.0	88.8	82.8	66.1	41.6	16.1
72.5	89.6	83.7	67.0	42.0	16.1
75.0	90.4	84.6	67.7	42.4	16.2
77.5	90.9	85.3	68.4	42.8	16.2
80.0	91.4	86.0	69.1	43.1	16.3
82.5	91.6	86.7	69.6	43.4	16.4
85.0	91.7	87.2	70.2	43.8	16.5
87.5	91.6	87.6	70.6	44.1	16.6
90.0	91.6	87.9	70.8	44.3	16.7



Test Report No. LLIA001067-003A

Catalog Number: 3-551 Aurora Sconce
Surface wall mounted, formed steel housing,
translucent white plastic enclosure.

24 white LEDs, one Harvard Engineering LEDENG-165-930 LED board

One ERP ESS015W-0350-42 dimmable LED driver.

120.0Vac, 60.00Hz, 0.0845A, 9.91W, 0.977PF, 17.3%THD(i)

Intensity data (cd)

Gamma	C-Plane				
	C0	C22.5	C45	C67.5	C90
90.0	91.6	87.9	70.8	44.3	16.7
92.5	91.8	87.8	70.8	44.3	16.7
95.0	92.1	87.7	70.6	44.3	16.7
97.5	92.2	87.5	70.4	44.2	16.9
100.0	92.1	87.1	70.0	44.0	17.0
102.5	91.9	86.6	69.6	43.9	17.2
105.0	91.4	86.0	69.1	43.7	17.4
107.5	90.9	85.4	68.5	43.6	17.5
110.0	90.1	84.7	67.9	43.3	17.7
112.5	89.2	83.9	67.1	43.0	17.9
115.0	88.2	82.9	66.3	42.7	18.1
117.5	87.0	81.7	65.4	42.4	18.4
120.0	85.7	80.4	64.4	41.9	18.6
122.5	84.3	78.9	63.3	41.5	18.8
125.0	82.6	77.3	62.2	41.0	19.0
127.5	80.8	75.6	60.9	40.5	19.3
130.0	78.7	73.7	59.6	39.9	19.5
132.5	76.6	71.7	58.2	39.3	19.7
135.0	74.2	69.6	56.7	38.6	19.9
137.5	71.8	67.4	55.2	37.9	20.2
140.0	69.3	65.1	53.6	37.2	20.4
142.5	66.7	62.7	51.9	36.4	20.7
145.0	63.9	60.2	50.2	35.5	20.9
147.5	61.1	57.6	48.3	34.6	21.2
150.0	58.2	55.1	46.5	33.7	21.4
152.5	55.3	52.4	44.5	32.8	21.6
155.0	52.4	49.7	42.5	31.8	21.8
157.5	49.2	46.9	40.4	30.9	22.0
160.0	46.2	44.1	38.3	29.8	22.1
162.5	43.1	41.3	36.2	28.8	22.3
165.0	39.9	38.4	34.0	27.8	22.4
167.5	36.8	35.5	31.8	26.8	22.5
170.0	33.5	32.5	29.7	25.8	22.6
172.5	30.4	29.6	27.6	24.7	22.6
175.0	27.3	26.9	25.5	23.7	22.7
177.5	24.4	24.2	23.5	22.9	22.7
180.0	22.7	22.7	22.7	22.7	22.7



Test Report No. LLIA001067-003A

Catalog Number: 3-551 Aurora Sconce
Surface wall mounted, formed steel housing,
translucent white plastic enclosure.

24 white LEDs, one Harvard Engineering LEDENG-165-930 LED board

One ERP ESS015W-0350-42 dimmable LED driver.

120.0Vac, 60.00Hz, 0.0845A, 9.91W, 0.977PF, 17.3%THD(i)

Intensity data (cd)

Gamma	C-Plane				
	C90	C112.5	C135	C157.5	C180
0.0	19.4	19.4	19.4	19.4	19.4
2.5	19.4	19.4	19.4	19.4	19.4
5.0	19.4	19.5	19.7	19.8	19.8
7.5	19.3	19.6	19.9	20.2	20.2
10.0	19.2	19.6	20.2	20.4	20.4
12.5	19.1	19.7	20.3	20.4	20.4
15.0	18.9	19.7	20.3	20.3	20.3
17.5	18.8	19.7	20.2	20.3	20.4
20.0	18.6	19.7	20.1	20.2	20.3
22.5	18.5	19.7	20.0	20.2	20.3
25.0	18.3	19.6	20.0	20.1	20.2
27.5	18.1	19.4	19.9	20.0	20.1
30.0	17.9	19.3	19.8	19.8	19.9
32.5	17.7	19.1	19.7	19.6	19.6
35.0	17.5	19.0	19.5	19.4	19.4
37.5	17.3	18.8	19.3	19.1	19.1
40.0	17.1	18.7	19.1	18.8	18.8
42.5	17.0	18.6	18.9	18.4	18.3
45.0	16.8	18.4	18.6	18.0	17.7
47.5	16.7	18.3	18.3	17.5	17.1
50.0	16.5	18.2	18.0	17.0	16.3
52.5	16.4	18.1	17.7	16.4	15.5
55.0	16.3	18.0	17.5	15.7	14.7
57.5	16.2	17.9	17.2	15.1	13.9
60.0	16.2	17.9	16.9	14.4	13.1
62.5	16.1	17.9	16.7	13.7	12.2
65.0	16.1	17.8	16.4	13.1	11.4
67.5	16.1	17.7	16.3	12.5	10.6
70.0	16.1	17.7	16.1	11.9	9.8
72.5	16.1	17.7	15.9	11.4	9.0
75.0	16.2	17.8	15.8	10.9	8.2
77.5	16.2	17.8	15.8	10.5	7.4
80.0	16.3	17.8	15.8	10.2	6.6
82.5	16.4	18.0	15.7	9.9	5.8
85.0	16.5	18.1	15.7	9.8	5.1
87.5	16.6	18.3	15.8	9.6	4.4
90.0	16.7	18.4	15.9	9.7	4.0



Test Report No. LLIA001067-003A

Catalog Number: 3-551 Aurora Sconce
Surface wall mounted, formed steel housing,
translucent white plastic enclosure.

24 white LEDs, one Harvard Engineering LEDENG-165-930 LED board

One ERP ESS015W-0350-42 dimmable LED driver.

120.0Vac, 60.00Hz, 0.0845A, 9.91W, 0.977PF, 17.3%THD(i)

Intensity data (cd)

Gamma	C-Plane				
	C90	C112.5	C135	C157.5	C180
90.0	16.7	18.4	15.9	9.7	4.0
92.5	16.7	18.5	16.0	9.8	4.4
95.0	16.7	18.6	16.1	10.1	5.4
97.5	16.9	18.7	16.3	10.5	6.3
100.0	17.0	18.8	16.5	11.0	7.3
102.5	17.2	19.0	16.8	11.5	8.2
105.0	17.4	19.2	17.1	12.2	9.2
107.5	17.5	19.4	17.5	12.9	10.2
110.0	17.7	19.6	17.8	13.6	11.2
112.5	17.9	19.9	18.3	14.4	12.3
115.0	18.1	20.1	18.7	15.2	13.3
117.5	18.4	20.3	19.2	16.1	14.4
120.0	18.6	20.5	19.6	17.0	15.4
122.5	18.8	20.8	20.0	17.9	16.5
125.0	19.0	21.0	20.5	18.7	17.5
127.5	19.3	21.2	20.9	19.5	18.5
130.0	19.5	21.5	21.3	20.3	19.5
132.5	19.7	21.7	21.7	21.0	20.4
135.0	19.9	21.9	22.1	21.6	21.2
137.5	20.2	22.2	22.5	22.1	21.9
140.0	20.4	22.4	22.8	22.6	22.5
142.5	20.7	22.6	23.0	23.0	23.0
145.0	20.9	22.9	23.3	23.4	23.4
147.5	21.2	23.1	23.5	23.7	23.8
150.0	21.4	23.3	23.7	24.0	24.1
152.5	21.6	23.4	23.8	24.2	24.4
155.0	21.8	23.4	24.0	24.4	24.5
157.5	22.0	23.5	24.0	24.5	24.7
160.0	22.1	23.5	24.1	24.5	24.7
162.5	22.3	23.5	24.1	24.4	24.6
165.0	22.4	23.4	24.1	24.4	24.5
167.5	22.5	23.4	24.0	24.3	24.4
170.0	22.6	23.2	23.8	24.1	24.3
172.5	22.6	23.1	23.6	23.9	24.0
175.0	22.7	23.0	23.2	23.5	23.5
177.5	22.7	22.9	22.9	23.0	23.1
180.0	22.7	22.7	22.7	22.7	22.7



Test Number: LLIA001067-003A

Catalog Number: 3-551 Aurora Sconce

Surface wall mounted, formed steel housing,
translucent white plastic enclosure.

24 white LEDs, one Harvard Engineering LEDENG-165-930 LED board

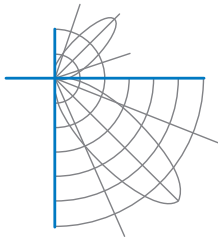
One ERP ESS015W-0350-42 dimmable LED driver.

120.0Vac, 60.00Hz, 0.0845A, 9.91W, 0.977PF, 17.3%THD(i)

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	
0	107	107	107	107	98	98	98	98	82	82	82	68	68	68	55	55	55	48
1	93	87	81	76	85	79	74	70	65	62	58	53	50	47	41	39	37	31
2	83	73	65	58	75	67	60	54	55	49	45	44	40	36	34	31	28	23
3	74	63	54	47	67	57	49	43	47	41	36	37	33	29	28	25	22	17
4	67	55	45	38	61	50	42	35	41	34	29	32	27	23	25	21	18	14
5	61	48	39	32	56	44	36	29	36	29	24	29	23	19	22	18	15	11
6	56	43	34	27	51	39	31	25	32	25	21	25	20	16	19	15	12	9
7	52	38	29	23	47	35	27	21	29	22	18	23	18	14	17	14	11	8
8	48	34	26	20	43	32	24	18	26	20	15	21	16	12	16	12	9	7
9	45	31	23	18	40	29	21	16	24	18	13	19	14	11	15	11	8	6
10	41	28	21	15	38	26	19	14	22	16	12	17	13	10	13	10	7	5

For absolute test reports, CUs are expressed as a percentage of total lumen output. Calculations were based on published IES procedures, and are based on the zonal cavity method. Basic assumptions: 1) Room surfaces are lambertian reflectors. 2) Incident flux on each surface is uniformly distributed. 3) The room is spectrally neutral. When luminaires are not evenly distributed throughout the room, or do not exhibit lateral symmetry, CU values may differ from actual performance.

Circle of Light Plot			
Height(ft)	Illuminance at Nadir (fc)	Beam Width (across 50% Nadir Illum)	
		0-180	90-270
6.0	0.5	15.33	8.35
8.0	0.3	20.44	11.14
10.0	0.2	25.55	13.92
12.0	0.1	30.66	16.70
14.0	0.1	35.77	19.49
16.0	0.1	40.88	22.27



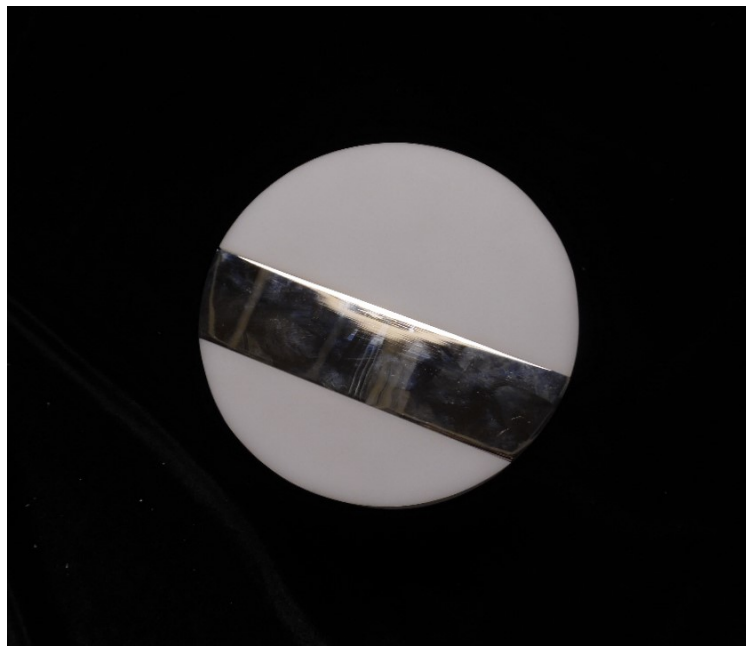
Test Report No. LLIA001067-003A

Catalog Number: 3-551 Aurora Sconce
Surface wall mounted, formed steel housing,
translucent white plastic enclosure.

24 white LEDs, one Harvard Engineering LEDENG-165-930 LED board

One ERP ESS015W-0350-42 dimmable LED driver.

120.0Vac, 60.00Hz, 0.0845A, 9.91W, 0.977PF, 17.3%THD(i)





Test Report No. LLIA001067-003A

Catalog Number: 3-551 Aurora Sconce
Surface wall mounted, formed steel housing,
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24 white LEDs, one Harvard Engineering LEDENG-165-930 LED board
One ERP ESS015W-0350-42 dimmable LED driver.
120.0Vac, 60.00Hz, 0.0845A, 9.91W, 0.977PF, 17.3%THD(i)

Test Distance 9.5 m
Test Temperature 25.0 °C

Notes

The laboratory has not participated in the selection of samples to be tested. All testing is performed on the understanding that the significance of the report is limited to the extent that the test sample is representative of production units.

Tested in accordance with the applicable sections of publications: IES LM-79-08 (Sec. 12), IES LM-16-93, IES LM-58-13, CIE 13.3:1995, CIE 15:2004, ANSI C78.377:2015, ANSI C82.77-10:2014.

The luminous intensity values, and other derived quantities, contained in this report are based on the absolute data, as measured.

Prorating the performance of the sample for the use of other component combinations (such as lamp / LED / Ballast / driver), or for use in different environmental conditions than that tested, may produce erroneous results.

This report is free of erasures and corrections.

Photometric intensity values are reported using the CIE Gamma coordinate system as defined in CIE publication number 121.

This report may contain data that are not covered by the NVLAP accreditation. Quantities marked with * are not covered.

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



Report of Test

LLIA001067-003B

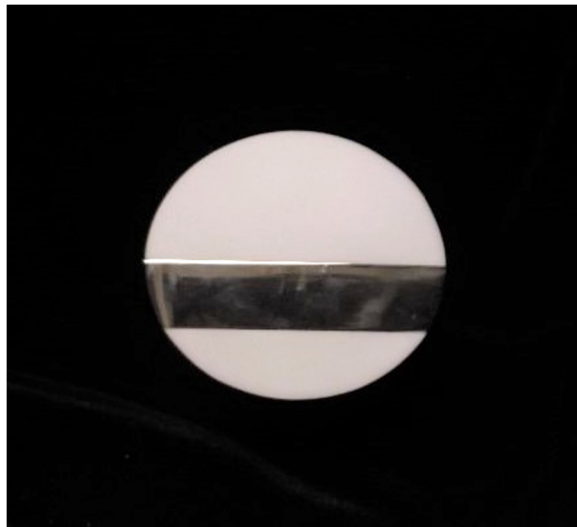
Integrating Sphere Report

Catalog Number: 3-551 Aurora Sconce

Surface wall mounted, formed steel housing,
translucent white plastic enclosure.

24 white LEDs, one Harvard Engineering LEDENG-165-930 LED board

One ERP ESS015W-0350-42 dimmable LED driver.



Performance Summary

Voltage	120.0 Vac
Current	0.0845 A
Power	9.91 W
Frequency	59.99 Hz
Power Factor	0.977
Current THD	17.3 %
Total Luminous Flux	449.5 lm
Efficacy	45.4 lm/W
Chromaticity (x,y)	(0.4457, 0.4048)
(u',v')	(0.2559, 0.5230)
Duv	-0.0008
CCT	2864 K
CRI (Ra)	97
R9	86
TM-30: Rf	94
TM-30: Rg	102

Prepared For:

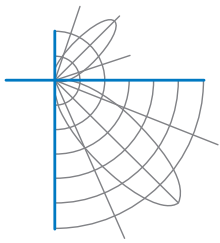
Oxygen Lighting

201 Railhead Road

Fort Worth, TX 76106, USA

Test date: 01/23/2019

Report date: 02/01/2019



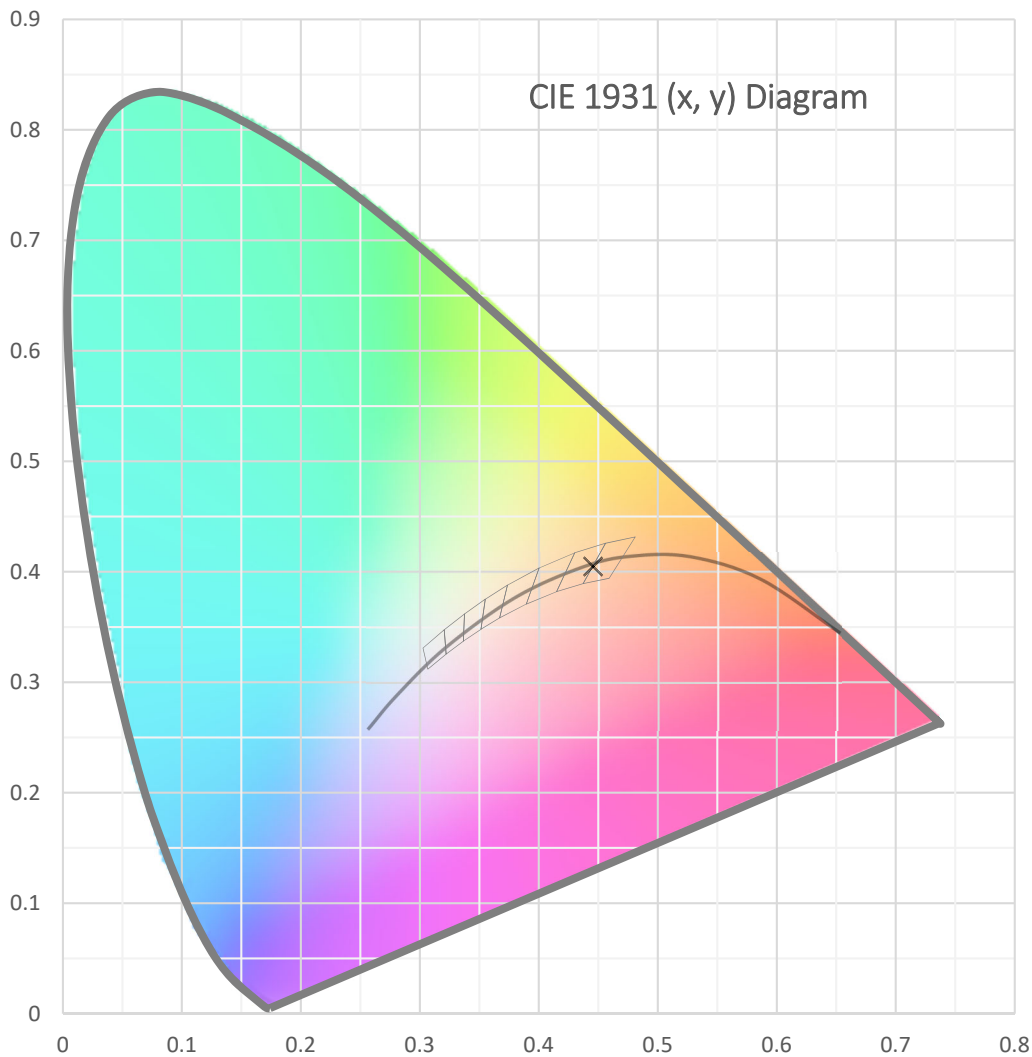
Test Report Number: LLIA001067-003B

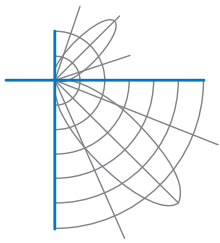
Catalog Number: 3-551 Aurora Sconce

Surface wall mounted, formed steel housing,
translucent white plastic enclosure.

24 white LEDs, one Harvard Engineering LEDENG-165-930 LED board

One ERP ESS015W-0350-42 dimmable LED driver.





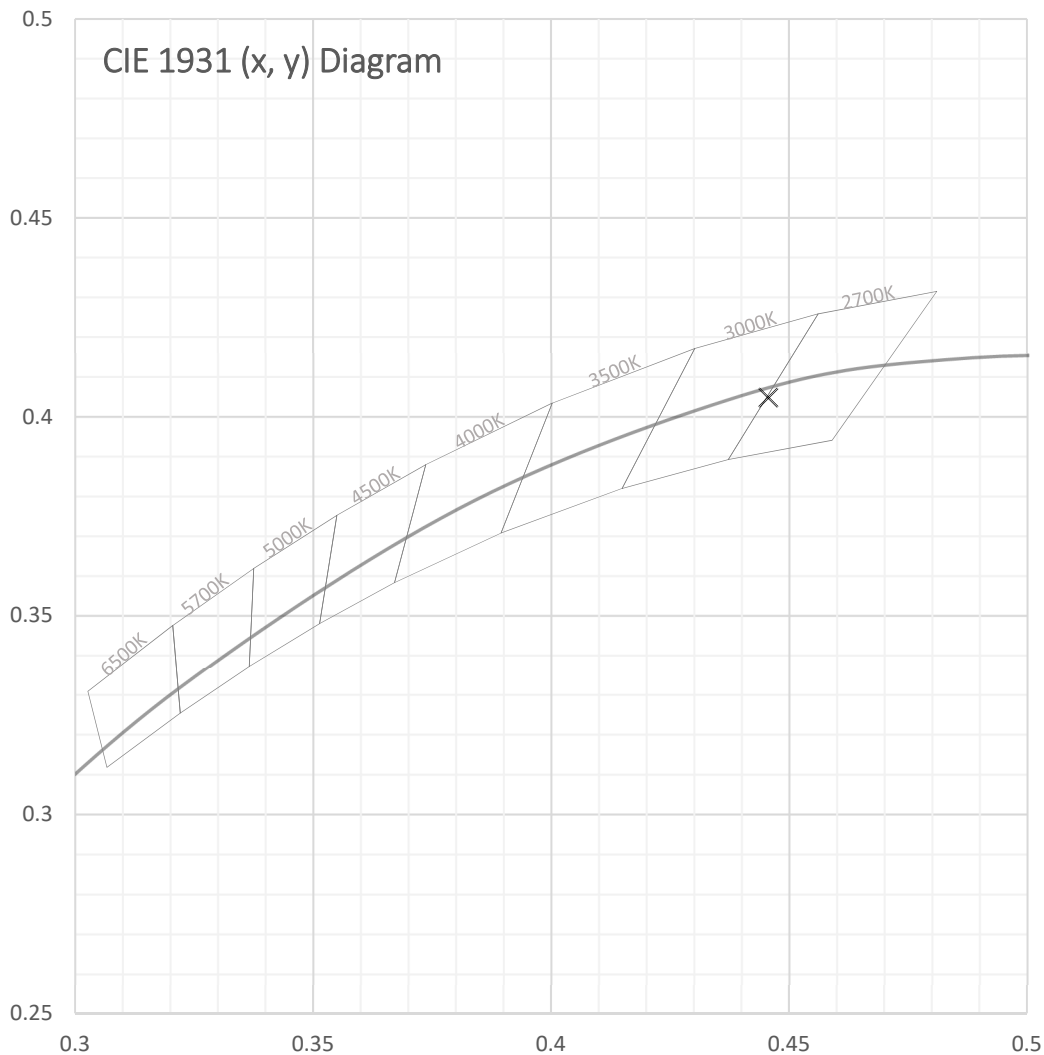
Test Report Number: LLIA001067-003B

Catalog Number: 3-551 Aurora Sconce

Surface wall mounted, formed steel housing,
translucent white plastic enclosure.

24 white LEDs, one Harvard Engineering LEDENG-165-930 LED board

One ERP ESS015W-0350-42 dimmable LED driver.





Test Report Number: LLIA001067-003B

Catalog Number: 3-551 Aurora Sconce

Surface wall mounted, formed steel housing,
translucent white plastic enclosure.

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Spectral Data

Total Radiant Flux	1.709 W
Total Luminous Flux	449.5 Lm
Chromaticity CIE 1931 (x, y)	(0.4457, 0.4048)
Chromaticity CIE 1976 (u', v')	(0.2559, 0.5230)
Correlated Color Temperature (CCT)	2864 K
Color Rendering Index (Ra)	97
R1	99
R2	98
R3	94
R4	97
R5	98
R6	97
R7	97
R8	94
R9	86
R10	93
R11	96
R12	87
R13	98
R14	96
TM-30: Rf	94
TM-30: Rg	102
Distance from Planckian Locus (Duv)	-0.0008
Scotopic/Photopic Ratio *	1.370

Electrical Data

Voltage	120.0 Vac
Current	0.0845 A
Power	9.91 W
Frequency	59.99 Hz
Power Factor	0.977
Current THD	17.3 %



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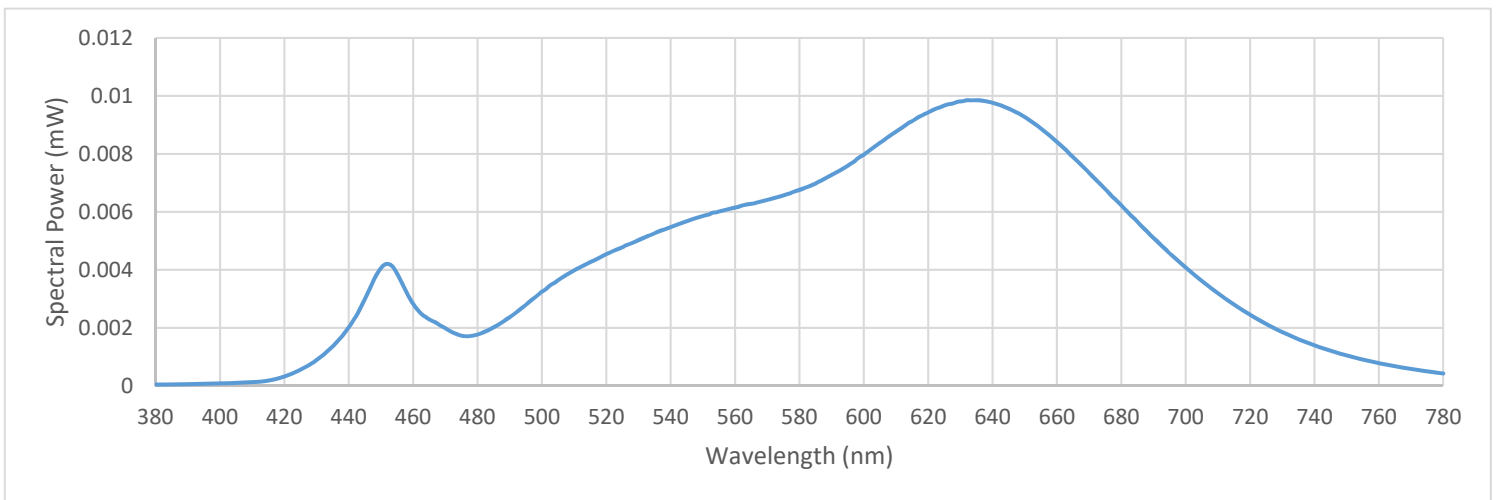
Surface wall mounted, formed steel housing,
translucent white plastic enclosure.

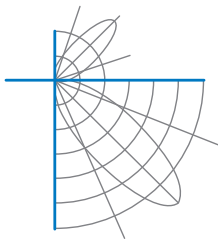
24 white LEDs, one Harvard Engineering LEDENG-165-930 LED board

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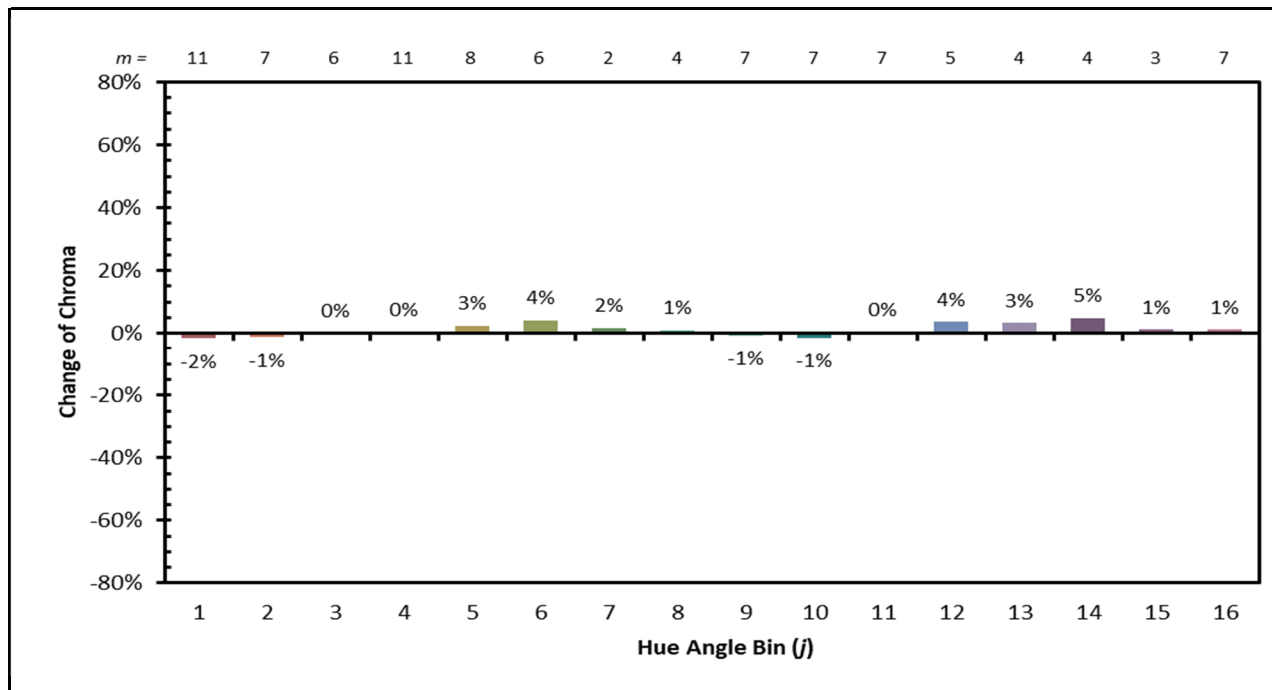
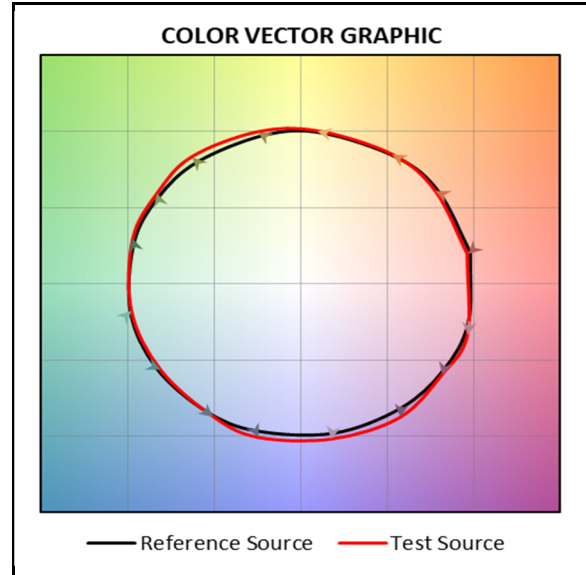
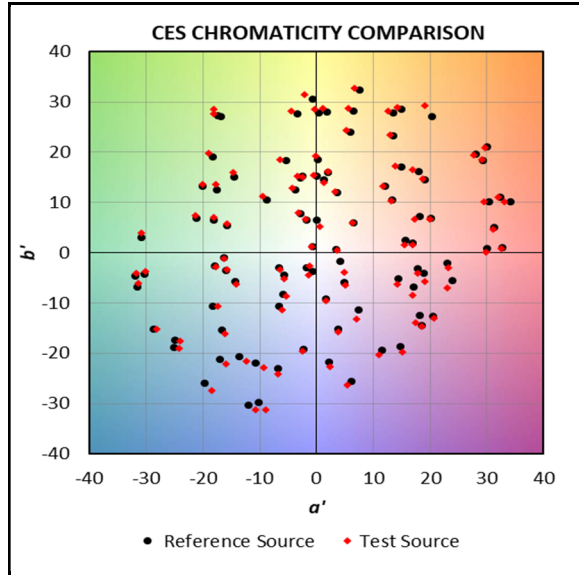
Summary Spectral Power Distribution (wavelength - nm, spectral power - mW)

380	0.000044	480	0.001767	580	0.006750	680	0.006216
385	0.000047	485	0.002014	585	0.006979	685	0.005668
390	0.000056	490	0.002367	590	0.007270	690	0.005099
395	0.000067	495	0.002786	595	0.007587	695	0.004561
400	0.000083	500	0.003245	600	0.007971	700	0.004086
405	0.000100	505	0.003641	605	0.008382	705	0.003617
410	0.000126	510	0.003976	610	0.008775	710	0.003187
415	0.000179	515	0.004265	615	0.009125	715	0.002804
420	0.000322	520	0.004540	620	0.009427	720	0.002451
425	0.000555	525	0.004774	625	0.009664	725	0.002132
430	0.000891	530	0.005026	630	0.009808	730	0.001854
435	0.001361	535	0.005258	635	0.009844	735	0.001608
440	0.002015	540	0.005474	640	0.009761	740	0.001390
445	0.002995	545	0.005680	645	0.009557	745	0.001210
450	0.004063	550	0.005860	650	0.009263	750	0.001046
455	0.003873	555	0.006012	655	0.008878	755	0.000905
460	0.002836	560	0.006150	660	0.008417	760	0.000785
465	0.002289	565	0.006275	665	0.007891	765	0.000674
470	0.001984	570	0.006412	670	0.007343	770	0.000578
475	0.001726	575	0.006567	675	0.006792	775	0.000495
						780	0.000425





IES TM-30 Summary





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Surface wall mounted, formed steel housing,
translucent white plastic enclosure.

24 white LEDs, one Harvard Engineering LEDENG-165-930 LED board

One ERP ESS015W-0350-42 dimmable LED driver.

Test Equipment Configuration: LightLab International Allentown 2m Integrating Sphere
Measurements acquired using a Labsphere CDS 2600 spectroradiometer
Testing was performed using 4 π geometry

Test Temperature: 25.6 °C

Test Procedure: Tested in accordance with the applicable sections of:
LM-79-08, LM-78-07, LM-58-13, ANSI_ANSLG C78.377-2015,
ANSI C82-77-10:2014, TM-30-15

Significance: The laboratory has not participated in the selection of samples to be tested.
All testing is performed on the understanding that the significance of the report
is limited to the extent that the test sample is representative of production units.

Notes: The measurements and other derived quantities contained in this report
are based on the absolute data as measured.

Prorating the performance of the sample for the use of other component
combinations (such as lamp / LED / Ballast / driver), or for use in different
environmental conditions than that tested, may produce erroneous results.

This report is free of erasures and corrections

This report may contain data that are not covered by the NVLAP accreditation.
Quantities marked with * are not covered.