

Report of Test

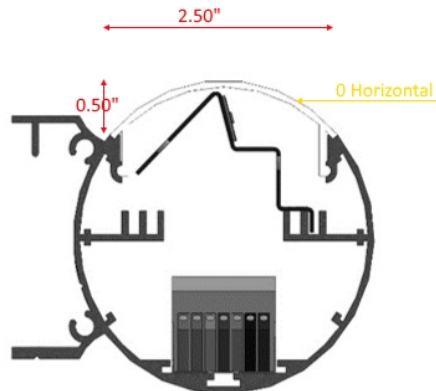
LLIA000938-005A

Catalog Number: AR300-IASY-XX-MO-K40-80-4-W-LOH-FXXX-UNV

Wall mounted extruded aluminum housing, formed white enamel
aluminum reflector, translucent white plastic enclosure.

96 white LEDs, one PAL-Lighting LED board with 96 LEDs

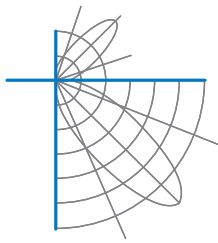
One Osram Optotronic OTi 30/120-277/1A0 DIM L (labeled 530) LED driver
120.0Vac, 60.00Hz, 0.1701A, 20.32W, 0.995PF, 5.2%THD(i)



Performance Summary

Total Light Output	2345 lm
Luminaire Power	20.3 W
Luminous Efficacy	115.5 lm/W

PREPARED FOR : Precision Architectural Lighting, 4830 Timber Creek Drive, Houston, TX 77017



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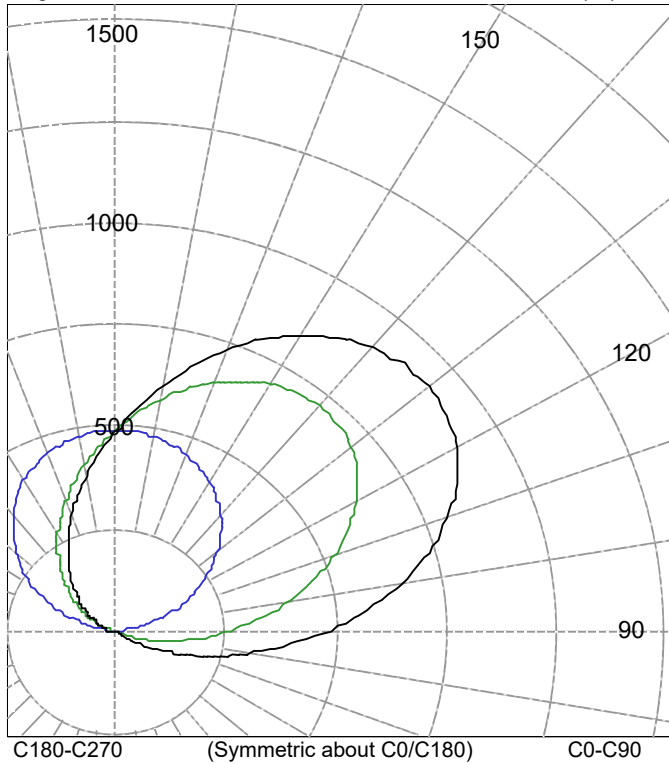
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Legend: C0/C180-Black, C45/C225-Green, C90/C270-Blue (cd)



INTENSITY SUMMARY (cd)

Gamma	C-Plane					Flux (lm)
	C0	C22.5	C45	C67.5	C90	
90.0	487	423	263	95	0	
95.0	574	507	331	142	25	183
100.0	659	589	396	193	57	
105.0	736	664	461	246	96	258
110.0	802	728	524	301	137	
115.0	856	781	581	351	180	316
120.0	895	822	629	396	221	
125.0	918	851	669	437	261	344
130.0	928	866	698	473	300	
135.0	923	869	715	506	336	336
140.0	906	859	719	530	369	
145.0	877	837	713	544	398	293
150.0	837	804	699	551	423	
155.0	788	762	677	553	444	224
160.0	732	713	648	549	462	
165.0	671	659	613	540	475	139
170.0	609	602	574	527	485	
175.0	547	546	534	509	490	47
180.0	492	492	492	492	492	

ZONAL FLUX AND PERCENTAGES

Zone	Flux (lm)	% Lamp	% Luminaire
180-150	410	N / A	17.5
180-140	704	N / A	30.0
180-120	1384	N / A	59.0
180-90	2140	N / A	91.3
140-90	1436	N / A	61.3
120-90	757	N / A	32.3
90-0	205	N / A	8.7
180-0	2345	N / A	100.0

Total Light Output = 2,345 lm

Signed:

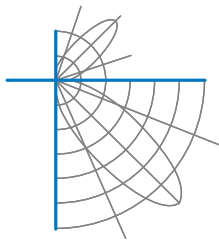
Authorized Signatory

Date of test

31-Jan-2018

Date of report

1-Feb-2018



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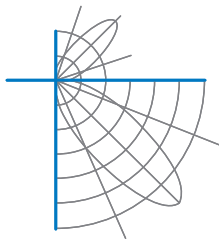
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Intensity data (cd)

Gamma	C-Plane				
	C0	C22.5	C45	C67.5	C90
0.0	0	0	0	0	0
2.5	0	0	0	0	0
5.0	0	0	0	0	0
7.5	0	0	0	0	0
10.0	0	0	0	0	0
12.5	0	0	0	0	0
15.0	0	0	0	0	0
17.5	0	0	0	0	0
20.0	0	0	0	0	0
22.5	0	0	0	0	0
25.0	0	0	0	0	0
27.5	0	0	0	0	0
30.0	0	0	0	0	0
32.5	0	0	0	0	0
35.0	0	0	0	0	0
37.5	0	0	0	0	0
40.0	0	0	0	0	0
42.5	3	0	0	0	0
45.0	9	4	0	0	0
47.5	16	9	0	0	0
50.0	25	16	0	0	0
52.5	36	24	0	0	0
55.0	49	34	7	0	0
57.5	64	47	12	0	0
60.0	82	62	19	0	0
62.5	103	79	27	0	0
65.0	126	98	37	0	0
67.5	152	120	50	0	0
70.0	180	145	64	4	0
72.5	211	173	81	8	0
75.0	245	203	100	13	0
77.5	281	235	122	20	0
80.0	319	270	147	30	0
82.5	359	306	173	42	0
85.0	401	344	202	57	0
87.5	443	383	232	75	0
90.0	487	423	263	95	0



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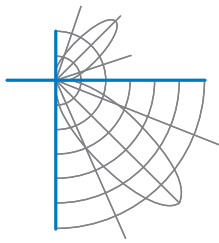
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Intensity data (cd)

Gamma	C-Plane				
	C0	C22.5	C45	C67.5	C90
90.0	487	423	263	95	0
92.5	531	464	296	118	12
95.0	574	507	331	142	25
97.5	617	548	364	167	41
100.0	659	589	396	193	57
102.5	699	628	429	219	76
105.0	736	664	461	246	96
107.5	771	698	493	273	117
110.0	802	728	524	301	137
112.5	831	756	553	327	158
115.0	856	781	581	351	180
117.5	877	803	606	374	200
120.0	895	822	629	396	221
122.5	908	838	650	417	241
125.0	918	851	669	437	261
127.5	925	860	685	456	280
130.0	928	866	698	473	300
132.5	927	869	708	490	318
135.0	923	869	715	506	336
137.5	916	866	718	519	353
140.0	906	859	719	530	369
142.5	893	849	717	538	384
145.0	877	837	713	544	398
147.5	858	821	707	548	411
150.0	837	804	699	551	423
152.5	813	784	689	553	434
155.0	788	762	677	553	444
157.5	761	738	663	552	453
160.0	732	713	648	549	462
162.5	702	686	631	546	469
165.0	671	659	613	540	475
167.5	641	631	594	534	480
170.0	609	602	574	527	485
172.5	578	574	554	518	488
175.0	547	546	534	509	490
177.5	516	518	513	499	492
180.0	492	492	492	492	492



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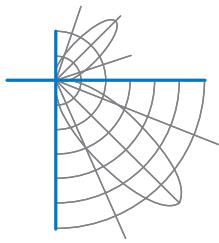
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Intensity data (cd)

Gamma	C-Plane				
	C90	C112.5	C135	C157.5	C180
0.0	0	0	0	0	0
2.5	0	0	0	0	0
5.0	0	0	0	0	0
7.5	0	0	0	0	0
10.0	0	0	0	0	0
12.5	0	0	0	0	0
15.0	0	0	0	0	0
17.5	0	0	0	0	0
20.0	0	0	0	0	0
22.5	0	0	0	0	0
25.0	0	0	0	0	0
27.5	0	0	0	0	0
30.0	0	0	0	0	0
32.5	0	0	0	0	0
35.0	0	0	0	0	0
37.5	0	0	0	0	0
40.0	0	0	0	0	0
42.5	0	0	0	0	0
45.0	0	0	0	0	0
47.5	0	0	0	0	0
50.0	0	0	0	0	0
52.5	0	0	0	0	0
55.0	0	0	0	0	0
57.5	0	0	0	0	0
60.0	0	0	0	0	0
62.5	0	0	0	0	0
65.0	0	0	0	0	0
67.5	0	0	0	0	0
70.0	0	0	0	0	0
72.5	0	0	0	0	0
75.0	0	0	0	0	0
77.5	0	0	0	0	0
80.0	0	0	0	0	0
82.5	0	0	0	4	5
85.0	0	0	3	6	8
87.5	0	0	5	8	10
90.0	0	0	7	11	12



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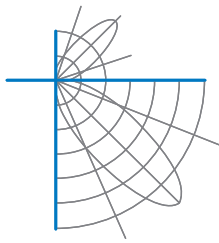
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Intensity data (cd)

Gamma	C-Plane				
	C90	C112.5	C135	C157.5	C180
90.0	0	0	7	11	12
92.5	12	5	9	14	15
95.0	25	8	12	16	18
97.5	41	12	15	20	21
100.0	57	19	20	23	25
102.5	76	27	24	27	29
105.0	96	36	30	32	33
107.5	117	48	37	37	38
110.0	137	61	45	43	43
112.5	158	75	54	50	49
115.0	180	89	63	57	56
117.5	200	105	73	65	63
120.0	221	122	84	73	71
122.5	241	139	96	82	79
125.0	261	155	108	92	88
127.5	280	172	121	103	98
130.0	300	190	136	114	109
132.5	318	207	150	126	120
135.0	336	224	166	139	132
137.5	353	241	182	152	144
140.0	369	258	198	167	158
142.5	384	275	214	183	173
145.0	398	291	231	199	189
147.5	411	307	248	216	205
150.0	423	324	266	233	222
152.5	434	339	283	251	240
155.0	444	355	301	269	259
157.5	453	370	319	288	278
160.0	462	385	337	308	297
162.5	469	400	356	328	318
165.0	475	414	375	349	340
167.5	480	428	394	370	362
170.0	485	441	414	393	386
172.5	488	454	433	417	410
175.0	490	467	454	441	437
177.5	492	479	474	467	464
180.0	492	492	492	492	492



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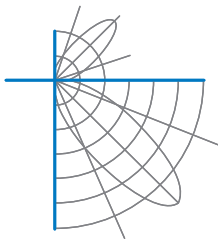
120.0Vac, 60.00Hz, 0.1701A, 20.32W, 0.995PF, 5.2%THD(i)

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	97	97	97	97	84	84	84	84	60	60	60	38	38	38	18	18	18	9
1	86	81	77	73	74	70	67	63	49	47	45	30	29	27	13	12	11	3
2	78	70	64	58	67	61	55	51	43	39	36	26	24	22	10	9	8	1
3	71	61	54	48	61	53	47	42	37	33	30	22	20	18	9	8	7	1
4	65	54	46	40	55	47	40	35	33	28	25	20	17	15	8	6	5	0
5	59	48	40	34	51	41	34	29	29	24	21	18	15	13	7	6	4	0
6	54	42	35	29	46	37	30	25	26	21	18	16	13	11	6	5	4	0
7	50	38	30	25	43	33	26	22	23	19	15	14	11	9	6	4	3	0
8	46	34	27	22	39	30	23	19	21	17	13	13	10	8	5	4	3	0
9	43	31	24	19	37	27	21	17	19	15	12	12	9	7	5	3	3	0
10	40	28	21	17	34	24	19	15	17	13	10	11	8	6	4	3	2	0

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.



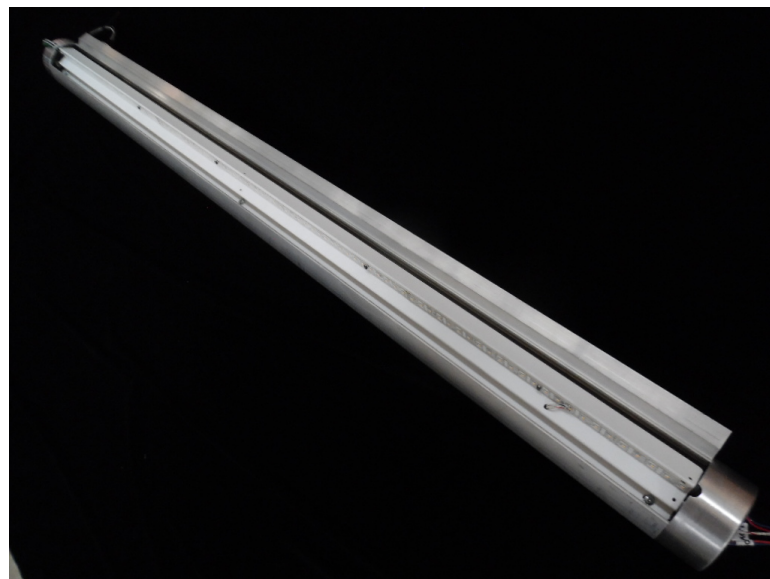
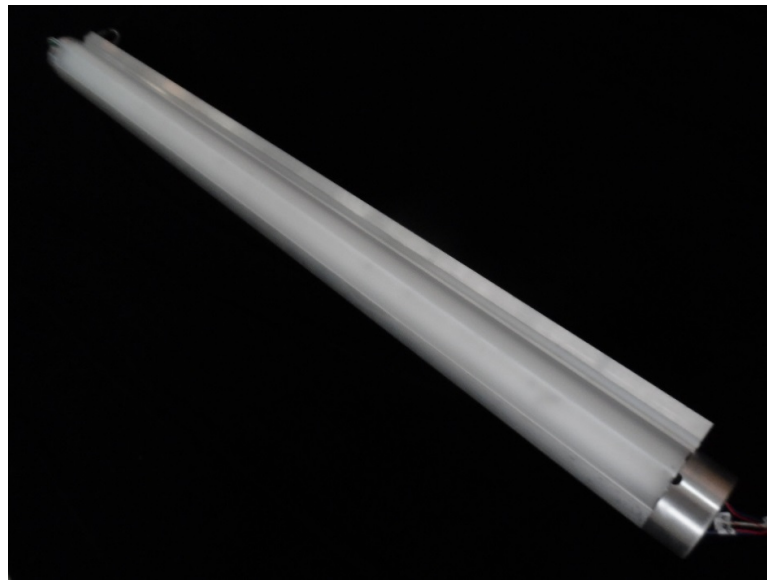
Test Report No. LLIA000938-005A

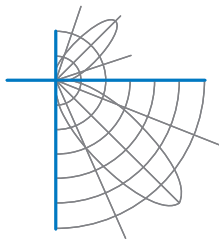
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Test Distance 9.5 m
Test Temperature 25.3 °C

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.

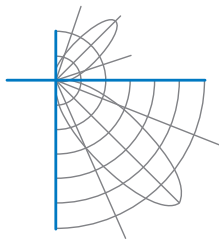
Prorating the performance of the sample for the use of other component combinations (such as lamp / LED / Ballast / driver), or for use in different environmental conditions than that tested, may produce erroneous results.

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

LLIA000938-005B

Integrating Sphere Report

Catalog Number: AR300-IASY-XX-MO-K40-80-4-W-LOH-FXXX-UNV

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96 white LEDs, one PAL-Lighting LED board with 96 LEDs

One Osram Optotronic OTi 30/120-277/1A0 DIM L (labeled 530) LED driver



Performance Summary

Voltage	120.0 Vac
Current	0.1703 A
Power	20.33 W
Frequency	59.97 Hz
Power Factor	0.995
Current THD	5.3 %

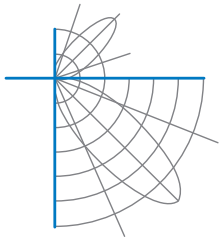
Total Luminous Flux	2443.0 lm
Efficacy	120.2 lm/W
Chromaticity (x,y)	(0.3822, 0.3772)
(u',v')	(0.2261, 0.5020)
Duv	-0.0003
CCT	3957 K
CRI (Ra)	84
R9	19
TM-30: Rf	83
TM-30: Rg	95

Prepared For:

Precision Architectural Lighting
4830 Timber Creek Drive
Houston, TX 77017, USA

Test date: 01/31/2018

Report date: 02/01/2018



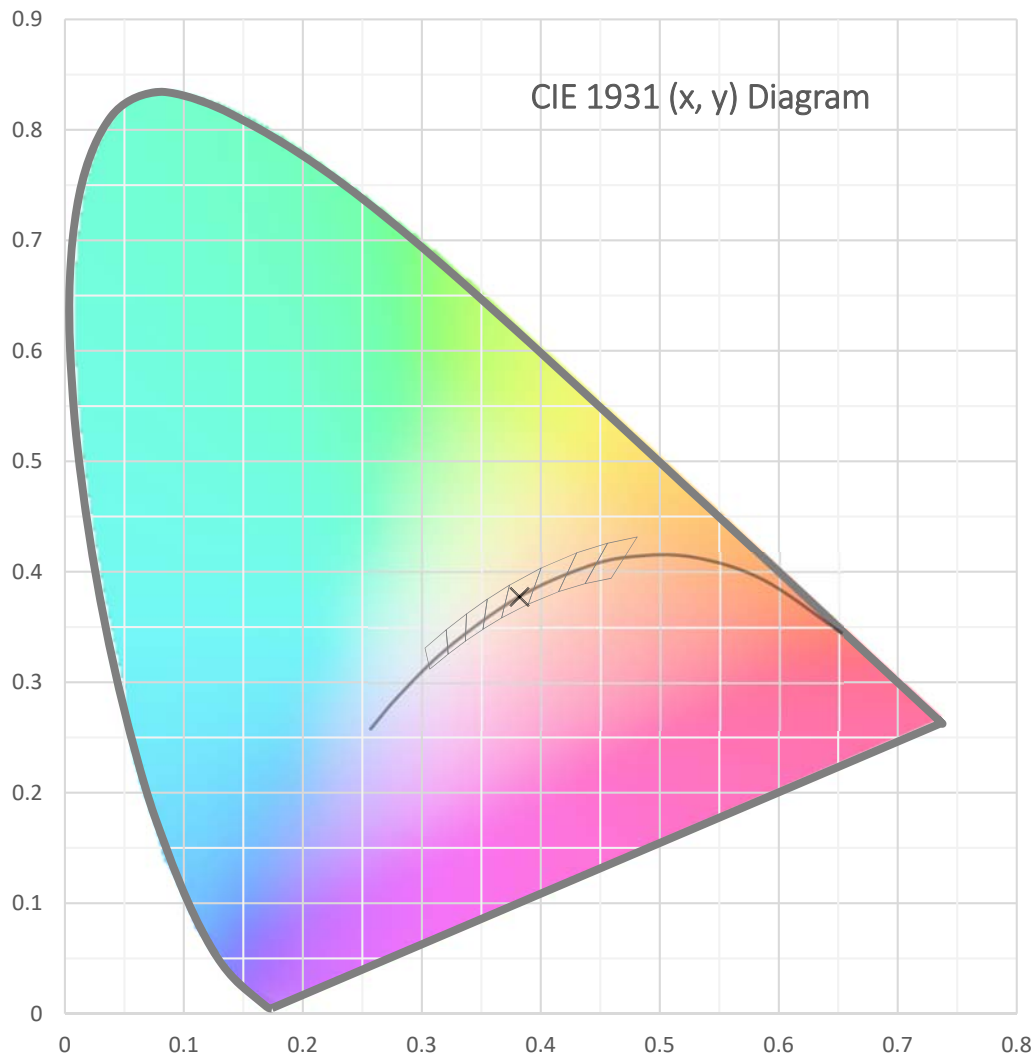
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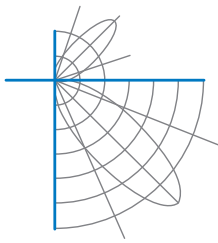
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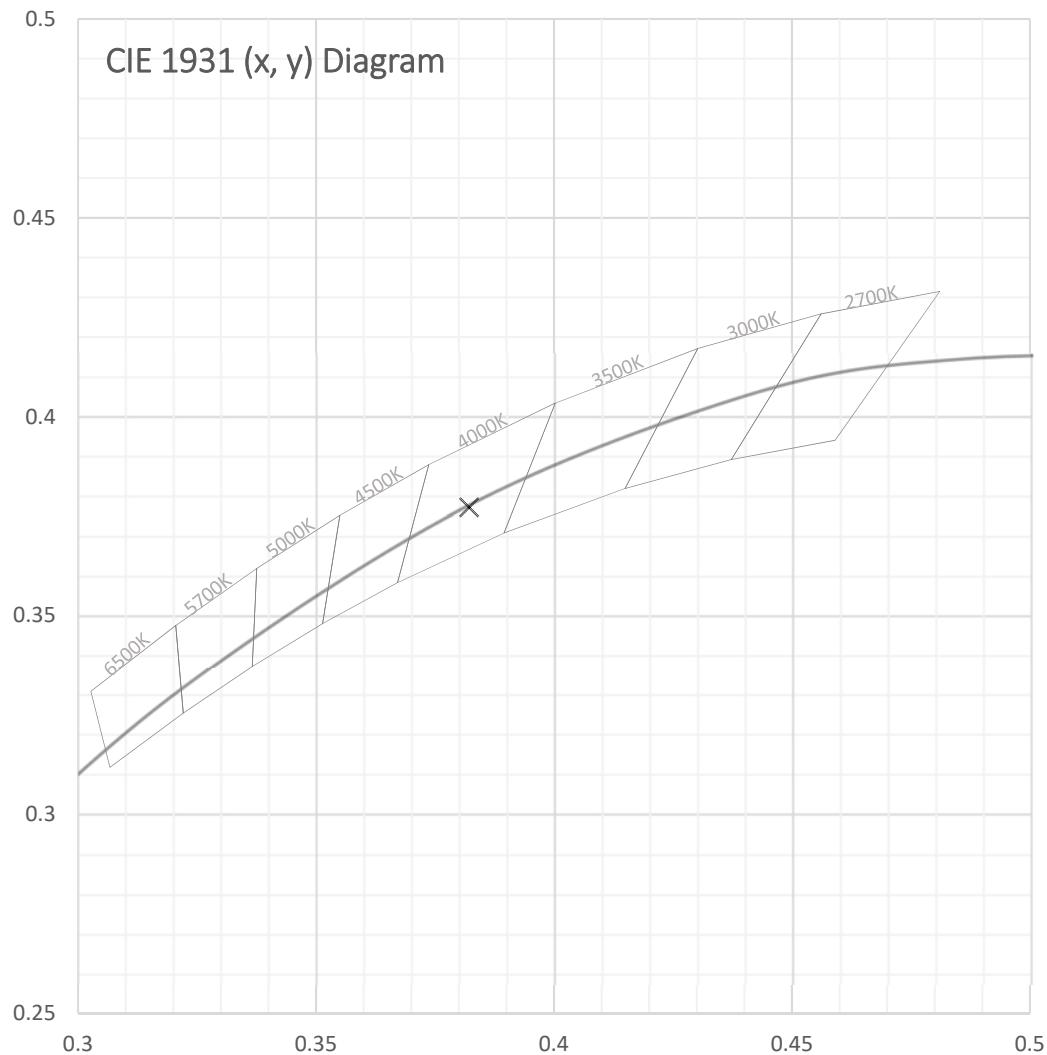
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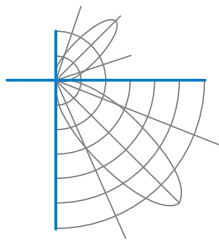
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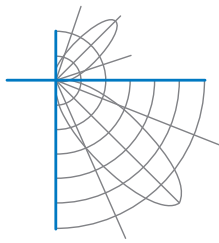
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Spectral Data

Total Radiant Flux	7.617 W
Total Luminous Flux	2443.0 Lm
Chromaticity CIE 1931 (x, y)	(0.3822, 0.3772)
Chromaticity CIE 1976 (u', v')	(0.2261, 0.5020)
Correlated Color Temperature (CCT)	3957 K
Color Rendering Index (Ra)	84
R1	83
R2	91
R3	95
R4	82
R5	83
R6	86
R7	87
R8	68
R9	19
R10	77
R11	81
R12	62
R13	85
R14	98
TM-30: Rf	83
TM-30: Rg	95
Distance from Planckian Locus (Duv)	-0.0003
Scotopic/Photopic Ratio *	1.694

Electrical Data

Voltage	120.0 Vac
Current	0.1703 A
Power	20.33 W
Frequency	59.97 Hz
Power Factor	0.995
Current THD	5.3 %



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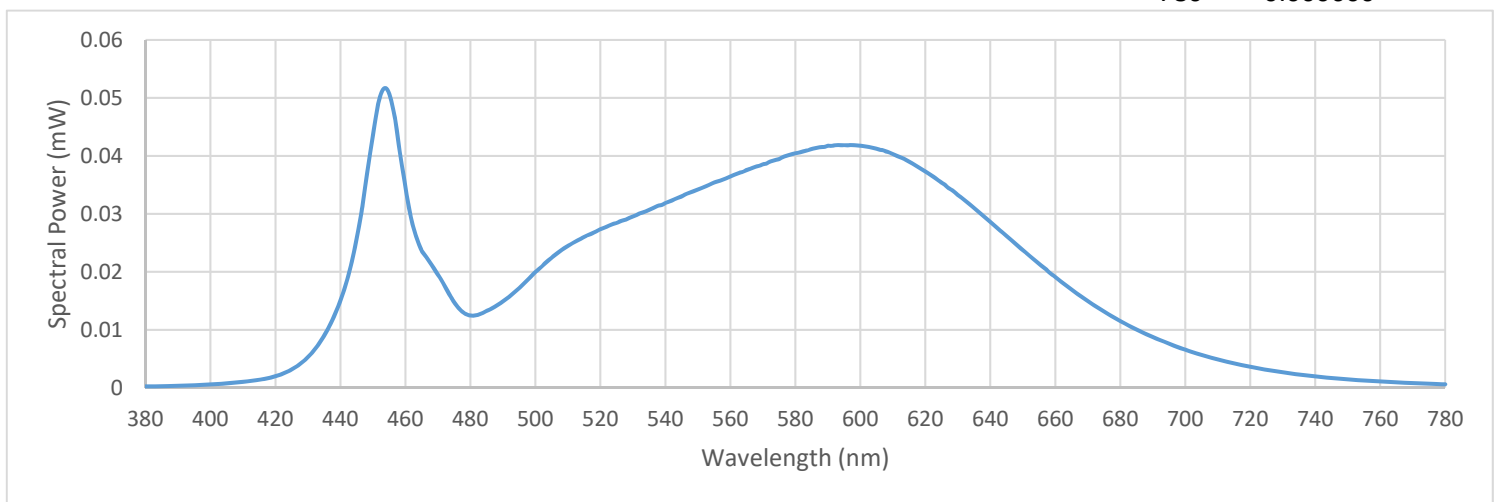
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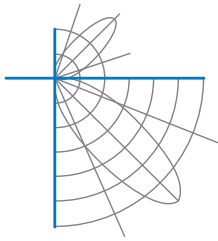
96 white LEDs, one PAL-Lighting LED board with 96 LEDs

One Osram Optotronic OTi 30/120-277/1A0 DIM L (labeled 530) LED driver

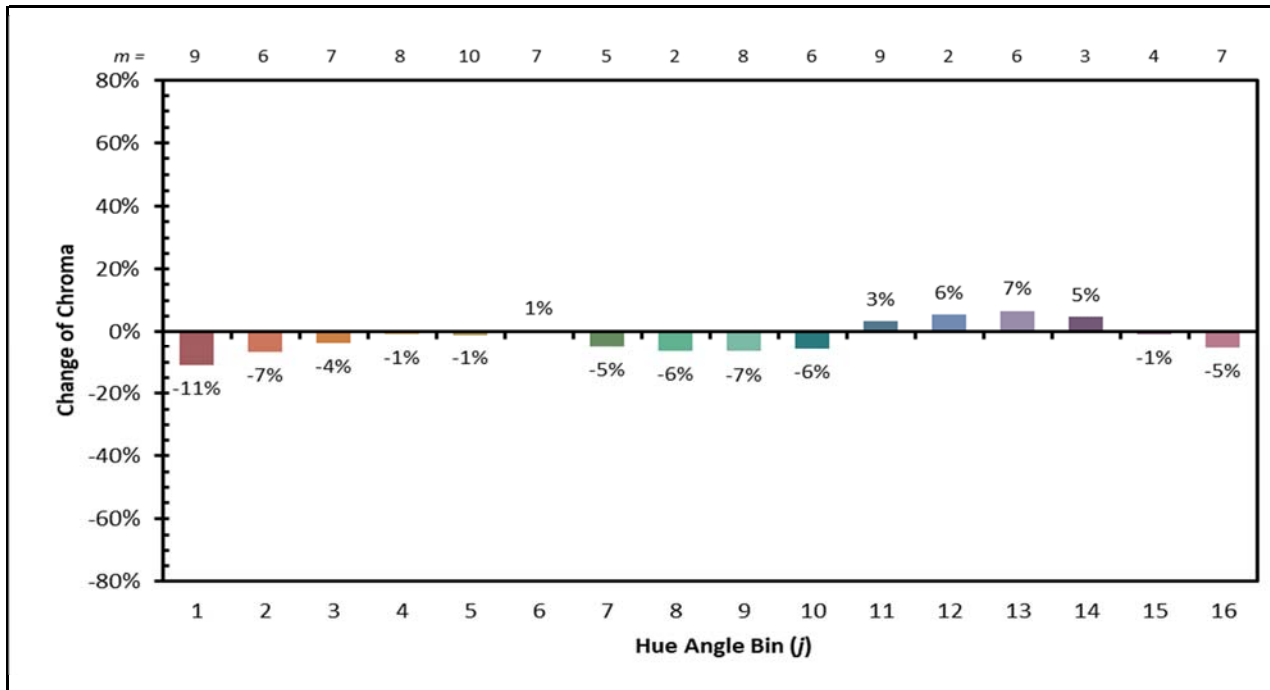
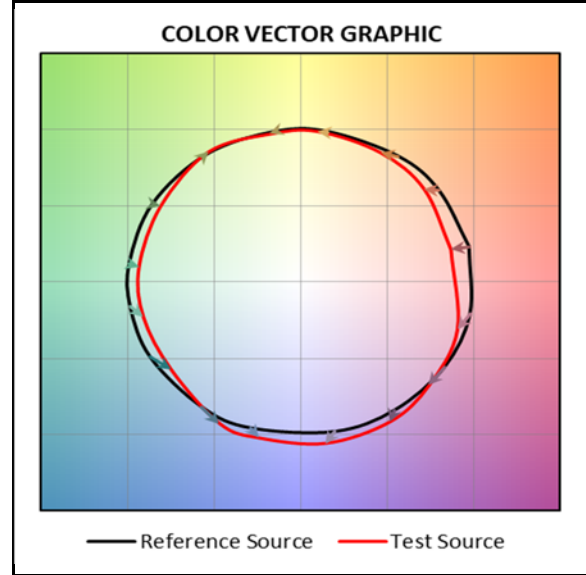
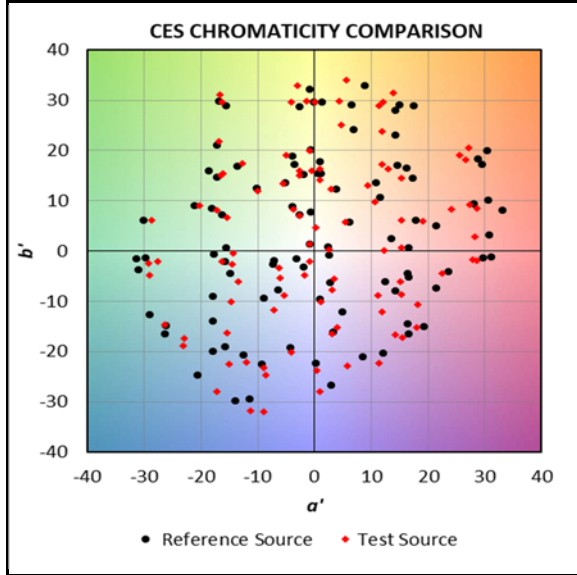
Summary Spectral Power Distribution (wavelength - nm, spectral power - mW)

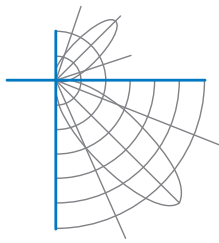
380	0.000244	480	0.012476	580	0.040438	680	0.011510
385	0.000269	485	0.013259	585	0.041201	685	0.010070
390	0.000327	490	0.014898	590	0.041742	690	0.008737
395	0.000431	495	0.017179	595	0.041857	695	0.007582
400	0.000581	500	0.019971	600	0.041767	700	0.006572
405	0.000769	505	0.022427	605	0.041248	705	0.005651
410	0.001009	510	0.024455	610	0.040307	710	0.004862
415	0.001362	515	0.026025	615	0.039030	715	0.004205
420	0.001990	520	0.027344	620	0.037306	720	0.003610
425	0.003132	525	0.028423	625	0.035378	725	0.003104
430	0.005312	530	0.029558	630	0.033258	730	0.002668
435	0.009062	535	0.030688	635	0.031041	735	0.002290
440	0.015062	540	0.031871	640	0.028599	740	0.001957
445	0.025850	545	0.033000	645	0.026196	745	0.001686
450	0.043567	550	0.034211	650	0.023754	750	0.001451
455	0.050751	555	0.035406	655	0.021337	755	0.001251
460	0.034707	560	0.036442	660	0.019144	760	0.001086
465	0.023650	565	0.037559	665	0.016922	765	0.000933
470	0.019509	570	0.038548	670	0.014945	770	0.000803
475	0.014738	575	0.039455	675	0.013163	775	0.000691
						780	0.000600





IES TM-30 Summary





Test Report Number: LLIA000938-005B

Catalog Number: AR300-IASY-XX-MO-K40-80-4-W-LOH-FXXX-UNV

Wall mounted extruded aluminum housing, formed white enamel
aluminum reflector, translucent white plastic enclosure.

96 white LEDs, one PAL-Lighting LED board with 96 LEDs

One Osram Optotronic OTi 30/120-277/1A0 DIM L (labeled 530) 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: 25.1 °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.