



Report of Test

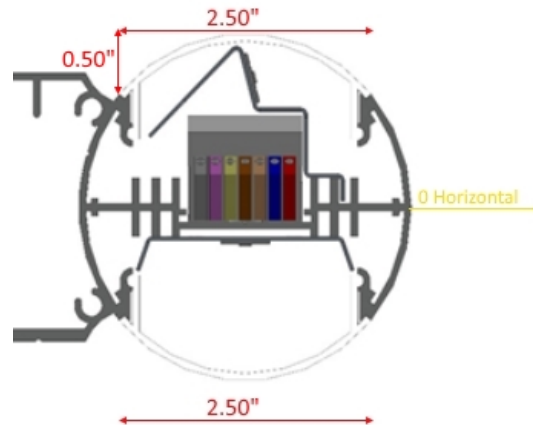
LLIA000956-002A-R01*

*This test report supersedes test report LLIA000956-002A

Catalog Number: AR300-IASY/D-XX-HO/HO-K40-80-4-W-LOH/LOH-FXXX-UNV

Wall mounted, extruded aluminum housing, formed white enamel upper and lower reflectors, frosted plastic upper and lower enclosures. 190 white LEDs, one upper PAL-Lighting LED board with 94 LEDs and one lower PAL-Lighting LED board with 96 LEDs.

One Osram Optotronic OTi 85/120-277/2A3 DIM L LED driver
120.0Vac, 60.00Hz, 0.4566A, 54.36W, 0.992PF, 10.5%THD(i)



Performance Summary

Total Light Output	6775 lm
Luminaire Power	54.3 W
Luminous Efficacy	124.8 lm/W

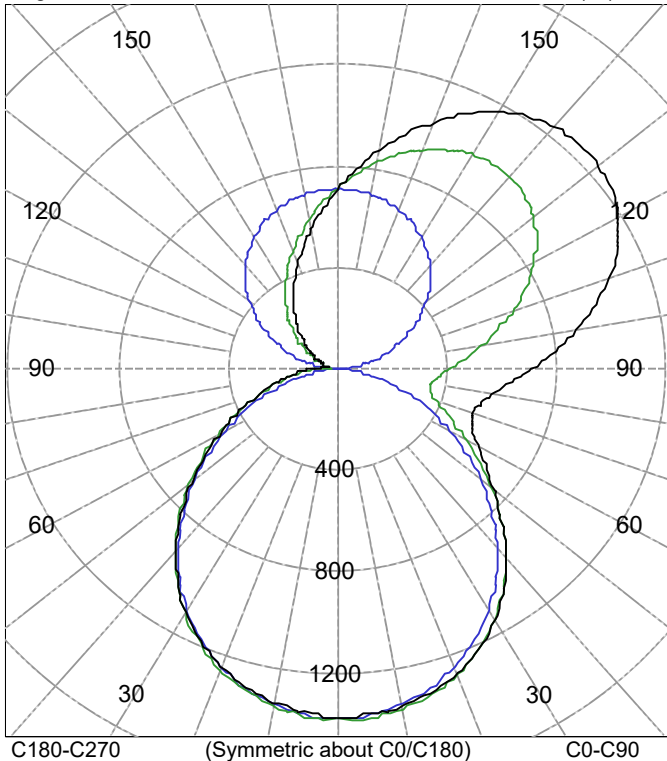
PREPARED FOR : Precision Architectural Lighting, 4830 Timber Creek Drive, Houston, TX 77017



Test Report No. LLIA000956-002A-R01

Catalog Number: AR300-IASY/D-XX-HO/HO-K40-80-4-W-LOH/LOH-FXXX-UNV
 Wall mounted, extruded aluminum housing, formed white enamel upper and lower reflectors, frosted plastic upper and lower enclosures. 190 white LEDs, one upper PAL-Lighting LED board with 94 LEDs and one lower PAL-Lighting LED board with 96 LEDs.
 One Osram Optotronic OTi 85/120-277/2A3 DIM L LED driver
 120.0Vac, 60.00Hz, 0.4566A, 54.36W, 0.992PF, 10.5%THD(i)

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



AVERAGE LUMINANCE (cd/m²)

Gamma	C0	C45	C90
45.0	12704	13262	14161
55.0	11328	11380	12470
65.0	11393	10199	10549
75.0	15045	11140	8231
85.0	27934	19744	5087

INTENSITY SUMMARY (cd)

Gamma	C-Plane					Flux (lm)
	C0	C22.5	C45	C67.5	C90	
0.0	1372	1372	1372	1372	1372	
5.0	1363	1372	1376	1361	1364	130
10.0	1347	1356	1357	1339	1341	
15.0	1319	1327	1324	1307	1304	369
20.0	1276	1283	1281	1249	1246	
25.0	1218	1225	1214	1183	1176	549
30.0	1144	1151	1138	1103	1094	
35.0	1056	1066	1049	1016	1002	641
40.0	954	964	950	912	898	
45.0	844	851	843	805	790	630
50.0	743	741	732	697	676	
55.0	654	646	619	587	567	538
60.0	584	568	525	482	458	
65.0	540	513	445	383	356	415
70.0	522	484	386	291	261	
75.0	534	482	352	218	173	307
80.0	572	509	346	167	97	
85.0	631	558	366	146	39	252
90.0	708	626	410	160	1	

ZONAL FLUX AND PERCENTAGES

Zone	Flux (lm)	% Lamp	% Luminaire
0-30	1048	N / A	15.5
0-40	1689	N / A	24.9
0-60	2857	N / A	42.2
0-90	3832	N / A	56.6
40-90	2142	N / A	31.6
60-90	975	N / A	14.4
90-180	2944	N / A	43.4
0-180	6775	N / A	100.0

Total Light Output = 6,775 lm

Signed:

Authorized Signatory

Date of test

6-Mar-2018

Date of report

22-May-2018



Test Report No. LLIA000956-002A-R01

Catalog Number: AR300-IASY/D-XX-HO/HO-K40-80-4-W-LOH/LOH-FXXX-UNV

Wall mounted, extruded aluminum housing, formed white enamel upper and lower reflectors, frosted plastic upper and lower enclosures. 190 white LEDs, one upper PAL-Lighting LED board with 94 LEDs and one lower PAL-Lighting LED board with 96 LEDs.

One Osram Optotronic OTi 85/120-277/2A3 DIM L LED driver
120.0Vac, 60.00Hz, 0.4566A, 54.36W, 0.992PF, 10.5%THD(i)

Intensity data (cd)

Gamma	C-Plane				
	C0	C22.5	C45	C67.5	C90
0.0	1372	1372	1372	1372	1372
2.5	1366	1375	1379	1365	1371
5.0	1363	1372	1376	1361	1364
7.5	1357	1366	1368	1351	1354
10.0	1347	1356	1357	1339	1341
12.5	1335	1344	1342	1324	1326
15.0	1319	1327	1324	1307	1304
17.5	1299	1306	1305	1279	1275
20.0	1276	1283	1281	1249	1246
22.5	1249	1256	1250	1217	1212
25.0	1218	1225	1214	1183	1176
27.5	1183	1189	1178	1145	1137
30.0	1144	1151	1138	1103	1094
32.5	1102	1110	1095	1059	1053
35.0	1056	1066	1049	1016	1002
37.5	1007	1017	1001	966	950
40.0	954	964	950	912	898
42.5	900	908	897	859	844
45.0	844	851	843	805	790
47.5	792	793	789	751	733
50.0	743	741	732	697	676
52.5	697	692	674	641	620
55.0	654	646	619	587	567
57.5	616	605	570	534	511
60.0	584	568	525	482	458
62.5	559	537	483	432	406
65.0	540	513	445	383	356
67.5	528	495	413	335	307
70.0	522	484	386	291	261
72.5	524	479	366	252	216
75.0	534	482	352	218	173
77.5	550	492	345	189	133
80.0	572	509	346	167	97
82.5	600	531	353	152	66
85.0	631	558	366	146	39
87.5	668	590	386	149	17
90.0	708	626	410	160	1



Test Report No. LLIA000956-002A-R01

Catalog Number: AR300-IASY/D-XX-HO/HO-K40-80-4-W-LOH/LOH-FXXX-UNV

Wall mounted, extruded aluminum housing, formed white enamel upper and lower reflectors, frosted plastic upper and lower enclosures. 190 white LEDs, one upper PAL-Lighting LED board with 94 LEDs and one lower PAL-Lighting LED board with 96 LEDs.
One Osram Optotronic OTi 85/120-277/2A3 DIM L LED driver
120.0Vac, 60.00Hz, 0.4566A, 54.36W, 0.992PF, 10.5%THD(i)

Intensity data (cd)

Gamma	C-Plane				
	C0	C22.5	C45	C67.5	C90
90.0	708	626	410	160	1
92.5	751	664	437	177	17
95.0	795	703	467	199	35
97.5	840	743	499	225	56
100.0	885	783	533	255	80
102.5	931	824	569	286	105
105.0	974	865	606	320	133
107.5	1016	905	643	355	161
110.0	1055	943	680	391	191
112.5	1092	978	718	428	221
115.0	1125	1012	753	464	250
117.5	1155	1042	788	499	279
120.0	1181	1069	822	532	308
122.5	1202	1093	853	563	338
125.0	1220	1114	881	593	366
127.5	1233	1131	907	622	394
130.0	1242	1144	929	648	422
132.5	1246	1153	947	673	448
135.0	1247	1160	961	696	475
137.5	1244	1161	972	716	500
140.0	1236	1160	979	734	523
142.5	1224	1153	983	749	546
145.0	1208	1142	983	761	567
147.5	1186	1128	980	771	586
150.0	1163	1109	973	779	604
152.5	1134	1088	963	783	621
155.0	1104	1063	951	786	636
157.5	1071	1036	935	786	650
160.0	1035	1005	917	785	663
162.5	996	972	897	780	674
165.0	956	937	874	774	683
167.5	915	900	850	767	691
170.0	873	863	824	757	698
172.5	830	825	797	746	703
175.0	787	786	769	733	707
177.5	745	747	741	720	709
180.0	709	709	709	709	709



Test Report No. LLIA000956-002A-R01

Catalog Number: AR300-IASY/D-XX-HO/HO-K40-80-4-W-LOH/LOH-FXXX-UNV

Wall mounted, extruded aluminum housing, formed white enamel upper and lower reflectors, frosted plastic upper and lower enclosures. 190 white LEDs, one upper PAL-Lighting LED board with 94 LEDs and one lower PAL-Lighting LED board with 96 LEDs.
One Osram Optotronic OTi 85/120-277/2A3 DIM L LED driver
120.0Vac, 60.00Hz, 0.4566A, 54.36W, 0.992PF, 10.5%THD(i)

Intensity data (cd)

Gamma	C-Plane				
	C90	C112.5	C135	C157.5	C180
0.0	1372	1372	1372	1372	1372
2.5	1371	1363	1376	1371	1362
5.0	1364	1357	1368	1364	1355
7.5	1354	1346	1358	1355	1345
10.0	1341	1332	1345	1341	1332
12.5	1326	1315	1327	1324	1315
15.0	1304	1297	1307	1304	1296
17.5	1275	1267	1285	1281	1272
20.0	1246	1237	1259	1255	1246
22.5	1212	1204	1226	1225	1217
25.0	1176	1168	1189	1192	1184
27.5	1137	1129	1151	1156	1148
30.0	1094	1087	1110	1117	1108
32.5	1053	1042	1066	1075	1064
35.0	1002	999	1020	1030	1018
37.5	950	948	972	981	968
40.0	898	894	921	928	915
42.5	844	841	868	873	861
45.0	790	787	816	816	805
47.5	733	733	763	759	749
50.0	676	681	706	702	693
52.5	620	625	650	646	638
55.0	567	571	596	593	585
57.5	511	519	543	541	535
60.0	458	469	493	493	486
62.5	406	419	445	445	440
65.0	356	371	400	401	398
67.5	307	326	357	361	357
70.0	261	282	315	322	317
72.5	216	240	277	283	280
75.0	173	202	241	247	244
77.5	133	167	206	214	212
80.0	97	134	175	183	182
82.5	66	105	146	157	156
85.0	39	80	121	133	133
87.5	17	58	97	110	113
90.0	1	36	73	90	93



Test Report No. LLIA000956-002A-R01

Catalog Number: AR300-IASY/D-XX-HO/HO-K40-80-4-W-LOH/LOH-FXXX-UNV

Wall mounted, extruded aluminum housing, formed white enamel upper and lower reflectors, frosted plastic upper and lower enclosures. 190 white LEDs, one upper PAL-Lighting LED board with 94 LEDs and one lower PAL-Lighting LED board with 96 LEDs.

One Osram Optotronic OTi 85/120-277/2A3 DIM L LED driver
120.0Vac, 60.00Hz, 0.4566A, 54.36W, 0.992PF, 10.5%THD(i)

Intensity data (cd)

Gamma	C-Plane				
	C90	C112.5	C135	C157.5	C180
90.0	1	36	73	90	93
92.5	17	17	51	70	74
95.0	35	12	33	53	59
97.5	56	18	22	40	46
100.0	80	27	27	31	36
102.5	105	39	34	36	38
105.0	133	54	42	43	44
107.5	161	70	53	51	51
110.0	191	89	64	59	59
112.5	221	109	77	69	68
115.0	250	131	90	80	78
117.5	279	154	105	91	89
120.0	308	177	122	104	101
122.5	338	201	139	117	114
125.0	366	225	157	132	127
127.5	394	250	177	147	142
130.0	422	274	197	164	158
132.5	448	299	219	181	174
135.0	475	323	241	200	192
137.5	500	348	263	220	211
140.0	523	372	286	241	232
142.5	546	396	309	264	254
145.0	567	420	333	287	276
147.5	586	443	357	310	300
150.0	604	466	382	335	324
152.5	621	489	407	360	350
155.0	636	512	433	387	376
157.5	650	534	459	414	404
160.0	663	556	485	443	432
162.5	674	577	512	472	462
165.0	683	598	540	503	493
167.5	691	618	568	535	525
170.0	698	637	597	568	559
172.5	703	656	626	602	595
175.0	707	674	655	639	632
177.5	709	691	684	675	671
180.0	709	709	709	709	709



Test Number: LLIA000956-002A-R01

Catalog Number: AR300-IASY/D-XX-HO/HO-K40-80-4-W-LOH/LOH-FXXX-UNV

Wall mounted, extruded aluminum housing, formed white enamel upper and lower reflectors, frosted plastic upper and lower enclosures. 190 white LEDs, one upper PAL-Lighting LED board with 94 LEDs and one lower PAL-Lighting LED board with 96 LEDs.

One Osram Optotronic OTI 85/120-277/2A3 DIM L LED driver
120.0Vac, 60.00Hz, 0.4566A, 54.36W, 0.992PF, 10.5%THD(i)

Coefficients Of Utilization - Zonal Cavity Method

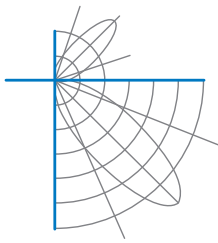
Effective Floor Cavity Reflectance 0.20

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	109	109	109	109	101	101	101	101	87	87	87	74	74	74	62	62	62	57
1	98	93	89	85	91	87	83	79	75	72	69	63	61	59	53	52	50	45
2	89	81	74	69	82	76	70	65	65	61	57	55	52	49	46	44	42	37
3	81	71	63	57	75	66	60	54	57	52	48	49	45	41	41	38	35	32
4	74	63	55	48	69	59	51	46	51	45	41	44	39	35	37	33	31	27
5	68	56	48	42	63	53	45	39	46	40	35	39	34	31	33	30	27	23
6	63	50	42	36	58	47	40	34	41	35	31	35	31	27	30	26	23	21
7	58	46	37	32	54	43	35	30	37	31	27	32	27	24	27	24	21	18
8	54	41	33	28	50	39	32	27	34	28	24	30	25	21	25	22	19	16
9	50	38	30	25	47	36	29	24	31	26	21	27	23	19	23	20	17	15
10	47	35	27	22	44	33	26	21	29	23	19	25	21	17	22	18	15	13

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	38.1	7.32	7.14
8.0	21.4	9.76	9.53
10.0	13.7	12.20	11.91
12.0	9.5	14.64	14.29
14.0	7.0	17.08	16.67
16.0	5.4	19.52	19.05

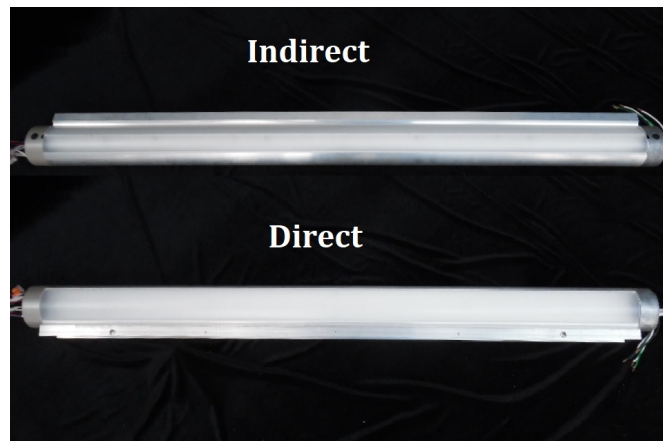


Test Report No. LLIA000956-002A-R01

Catalog Number: AR300-IASY/D-XX-HO/HO-K40-80-4-W-LOH/LOH-FXXX-UNV

Wall mounted, extruded aluminum housing, formed white enamel upper and lower reflectors, frosted plastic upper and lower enclosures. 190 white LEDs, one upper PAL-Lighting LED board with 94 LEDs and one lower PAL-Lighting LED board with 96 LEDs.

One Osram Optotronic OTi 85/120-277/2A3 DIM L LED driver
120.0Vac, 60.00Hz, 0.4566A, 54.36W, 0.992PF, 10.5%THD(i)





Test Report No. LLIA000956-002A-R01

Catalog Number: AR300-IASY/D-XX-HO/HO-K40-80-4-W-LOH/LOH-FXXX-UNV

Wall mounted, extruded aluminum housing, formed white enamel upper and lower reflectors, frosted plastic upper and lower enclosures. 190 white LEDs, one upper PAL-Lighting LED board with 94 LEDs and one lower PAL-Lighting LED board with 96 LEDs. One Osram Optotronic OTi 85/120-277/2A3 DIM L LED driver 120.0Vac, 60.00Hz, 0.4566A, 54.36W, 0.992PF, 10.5%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

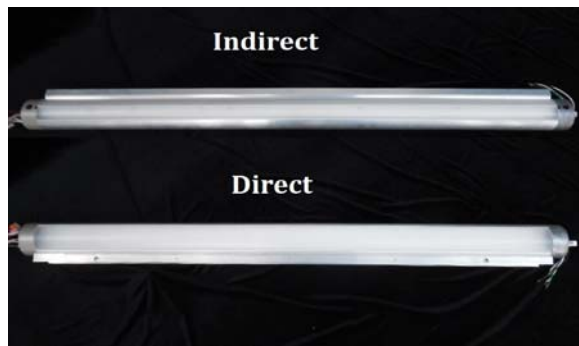
LLIA000956-002B-R01*

Integrating Sphere Report

Catalog Number: AR300-IASY/D-XX-HO/HO-K40-80-4-W-LOH/LOH-FXXX-UNV

Wall mounted, extruded aluminum housing, formed white enamel upper and lower reflectors, frosted plastic upper and lower enclosures. 190 white LEDs, one upper PAL-Lighting LED board with 94 LEDs and one lower PAL-Lighting LED board with 96 LEDs.

One Osram Optotronic OTi 85/120-277/2A3 DIM L LED driver



Performance Summary

Voltage	120.0 Vac
Current	0.4585 A
Power	54.28 W
Frequency	59.97 Hz
Power Factor	0.987
Current THD	10.6 %

Total Luminous Flux	6984.3 lm
Efficacy	128.7 lm/W
Chromaticity (x,y)	(0.3814, 0.3778)
(u',v')	(0.2253, 0.5022)
Duv	0.0002
CCT	3983 K
CRI (Ra)	84
R9	16
TM-30: Rf	83
TM-30: Rg	95

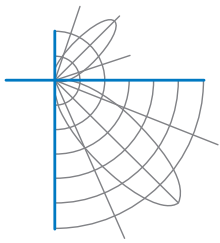
Prepared For:

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

*This test report supersedes test report LLIA000956-002B

Test date: 03/06/2018

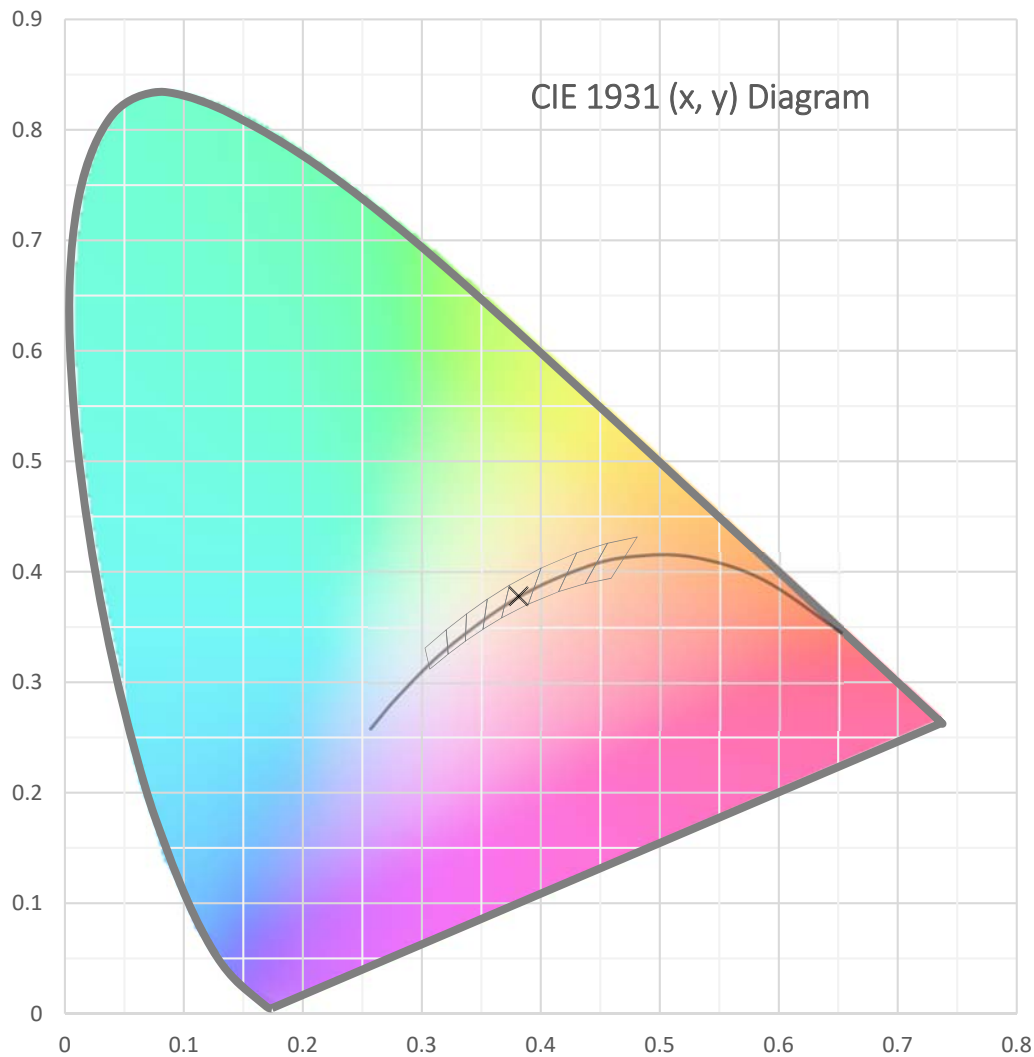
Report date: 05/22/2018

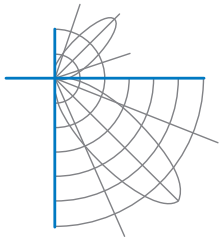


Test Report Number: LLIA000956-002B-R01

Catalog Number: AR300-IASY/D-XX-HO/HO-K40-80-4-W-LOH/LOH-FXXX-UNV

Wall mounted, extruded aluminum housing, formed white enamel upper and lower reflectors, frosted plastic upper and lower enclosures. 190 white LEDs, one upper PAL-Lighting LED board with 94 LEDs and one lower PAL-Lighting LED board with 96 LEDs.
One Osram Optotronic OTi 85/120-277/2A3 DIM L LED driver

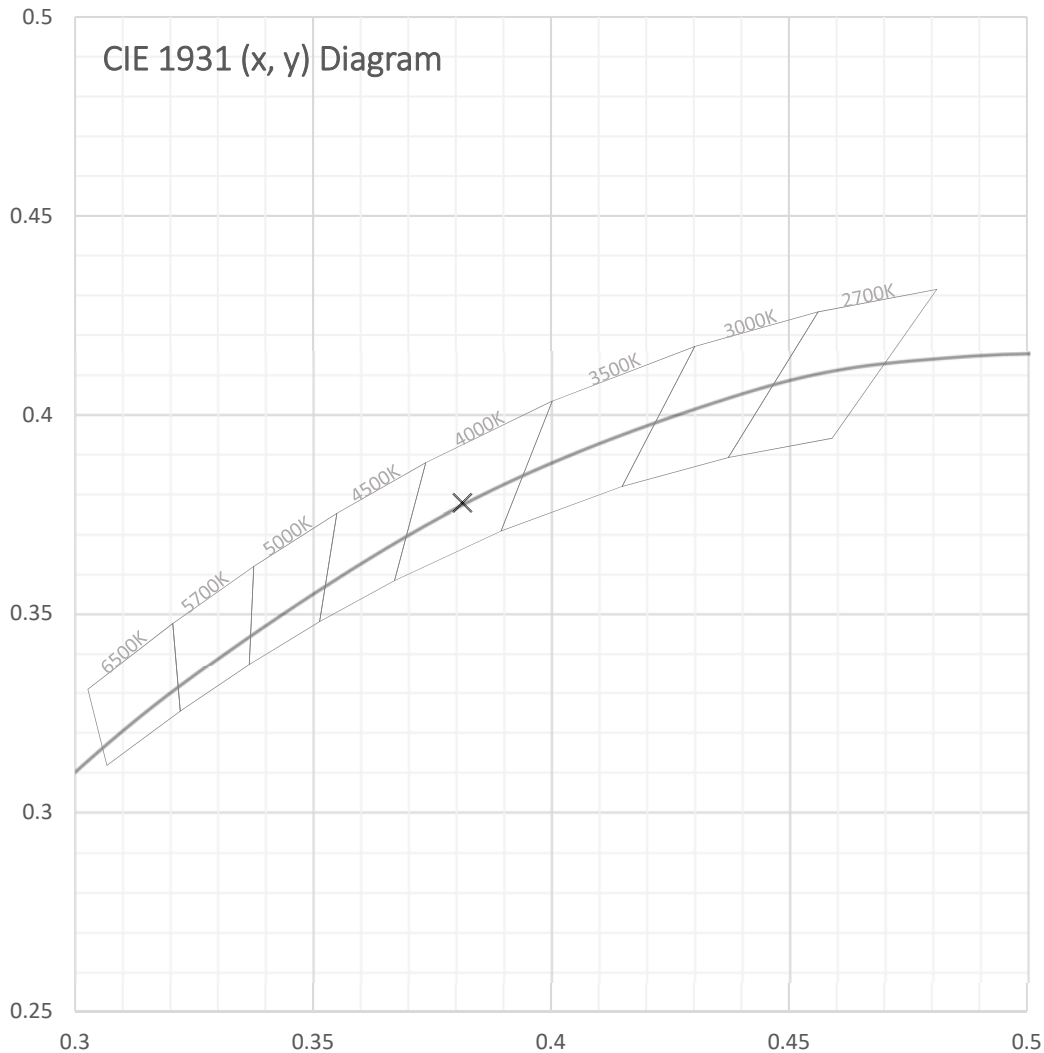




Test Report Number: LLIA000956-002B-R01

Catalog Number: AR300-IASY/D-XX-HO/HO-K40-80-4-W-LOH/LOH-FXXX-UNV

Wall mounted, extruded aluminum housing, formed white enamel upper and lower reflectors, frosted plastic upper and lower enclosures. 190 white LEDs, one upper PAL-Lighting LED board with 94 LEDs and one lower PAL-Lighting LED board with 96 LEDs. One Osram Optotronic OTi 85/120-277/2A3 DIM L LED driver





Test Report Number: LLIA000956-002B-R01

Catalog Number: AR300-IASY/D-XX-HO/HO-K40-80-4-W-LOH/LOH-FXXX-UNV

Wall mounted, extruded aluminum housing, formed white enamel upper and lower reflectors, frosted plastic upper and lower enclosures. 190 white LEDs, one upper PAL-Lighting LED board with 94 LEDs and one lower PAL-Lighting LED board with 96 LEDs. One Osram Optotronic OTi 85/120-277/2A3 DIM L LED driver

Spectral Data	Total Radiant Flux	21.69 W
	Total Luminous Flux	6984.3 Lm
	Chromaticity CIE 1931 (x, y)	(0.3814, 0.3778)
	Chromaticity CIE 1976 (u', v')	(0.2253, 0.5022)
	Correlated Color Temperature (CCT)	3983 K
	Color Rendering Index (Ra)	84
	R1	82
	R2	90
	R3	95
	R4	82
	R5	82
	R6	86
	R7	87
	R8	67
	R9	16
	R10	76
	R11	81
	R12	61
	R13	84
	R14	97
	TM-30: Rf	83
	TM-30: Rg	95
	Distance from Planckian Locus (Duv)	0.0002
	Scotopic/Photopic Ratio *	1.694

Electrical Data

Voltage	120.0 Vac
Current	0.4585 A
Power	54.28 W
Frequency	59.97 Hz
Power Factor	0.987
Current THD	10.6 %



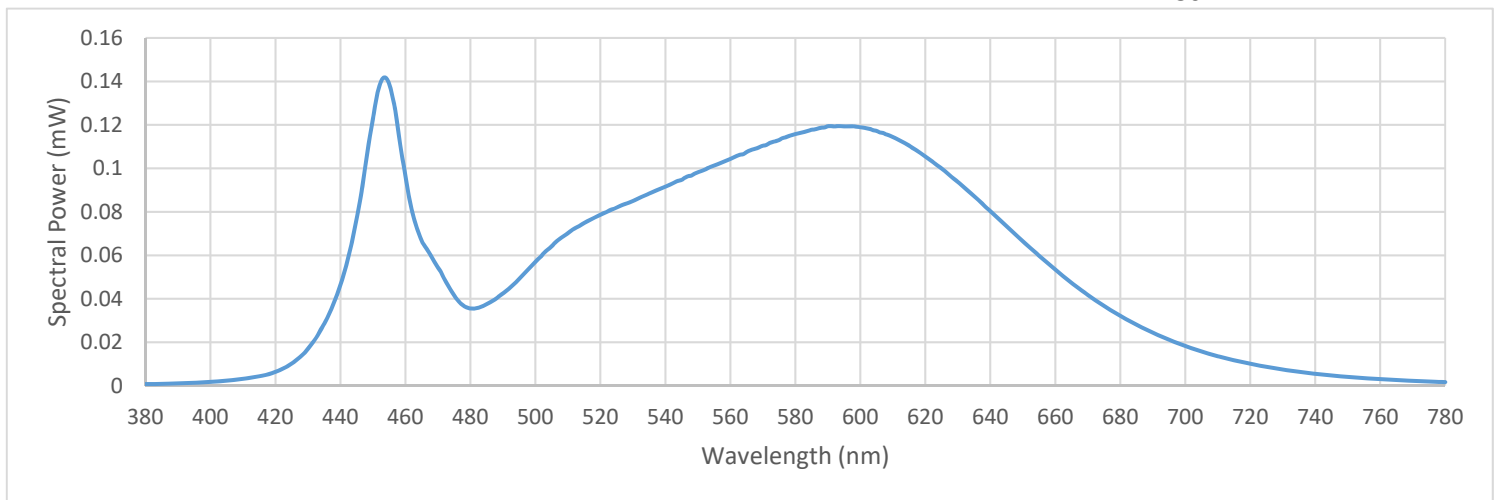
Test Report Number: LLIA000956-002B-R01

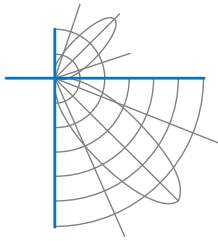
Catalog Number: AR300-IASY/D-XX-HO/HO-K40-80-4-W-LOH/LOH-FXXX-UNV

Wall mounted, extruded aluminum housing, formed white enamel upper and lower reflectors, frosted plastic upper and lower enclosures. 190 white LEDs, one upper PAL-Lighting LED board with 94 LEDs and one lower PAL-Lighting LED board with 96 LEDs. One Osram Optotronic OTi 85/120-277/2A3 DIM L LED driver

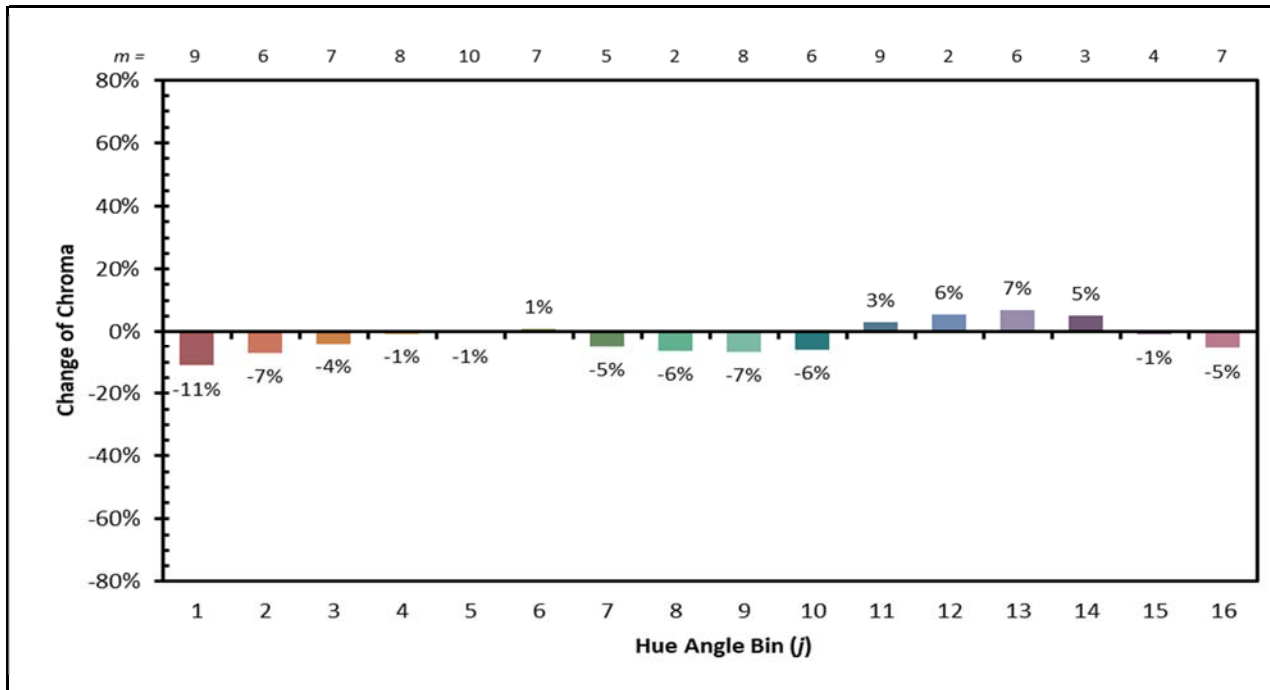
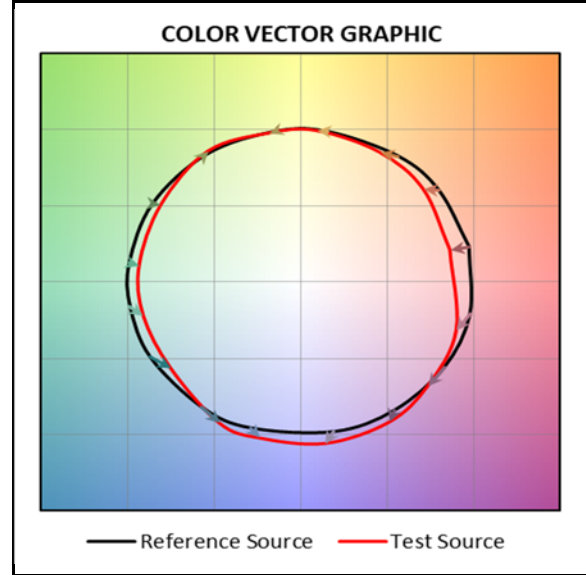
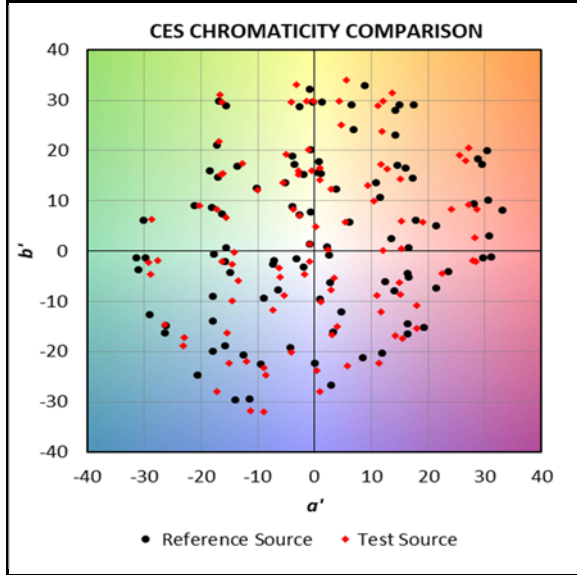
Summary Spectral Power Distribution (wavelength - nm, spectral power - mW)

380	0.000772	480	0.035610	580	0.115809	680	0.032195
385	0.000839	485	0.037620	585	0.117778	685	0.028111
390	0.001043	490	0.042462	590	0.119388	690	0.024412
395	0.001370	495	0.049154	595	0.119344	695	0.021118
400	0.001811	500	0.057179	600	0.118957	700	0.018332
405	0.002386	505	0.064090	605	0.117229	705	0.015770
410	0.003169	510	0.070184	610	0.114346	710	0.013592
415	0.004302	515	0.074819	615	0.110496	715	0.011752
420	0.006424	520	0.078708	620	0.105403	720	0.010099
425	0.010145	525	0.081904	625	0.099916	725	0.008693
430	0.017136	530	0.085030	630	0.093745	730	0.007470
435	0.028502	535	0.088406	635	0.087249	735	0.006414
440	0.046305	540	0.091502	640	0.080376	740	0.005490
445	0.077290	545	0.094702	645	0.073432	745	0.004728
450	0.122822	550	0.098181	650	0.066494	750	0.004069
455	0.138900	555	0.101347	655	0.059787	755	0.003527
460	0.096772	560	0.104326	660	0.053500	760	0.003056
465	0.066648	565	0.107505	665	0.047337	765	0.002629
470	0.054446	570	0.110421	670	0.041786	770	0.002267
475	0.041528	575	0.113058	675	0.036764	775	0.001958
						780	0.001694





IES TM-30 Summary





Test Report Number: LLIA000956-002B-R01

Catalog Number: AR300-IASY/D-XX-HO/HO-K40-80-4-W-LOH/LOH-FXXX-UNV

Wall mounted, extruded aluminum housing, formed white enamel upper and lower reflectors, frosted plastic upper and lower enclosures. 190 white LEDs, one upper PAL-Lighting LED board with 94 LEDs and one lower PAL-Lighting LED board with 96 LEDs. One Osram Optotronic OTi 85/120-277/2A3 DIM L LED driver

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

Test Temperature: 26.0 °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.