

Report of Test

LLIA000738-001A

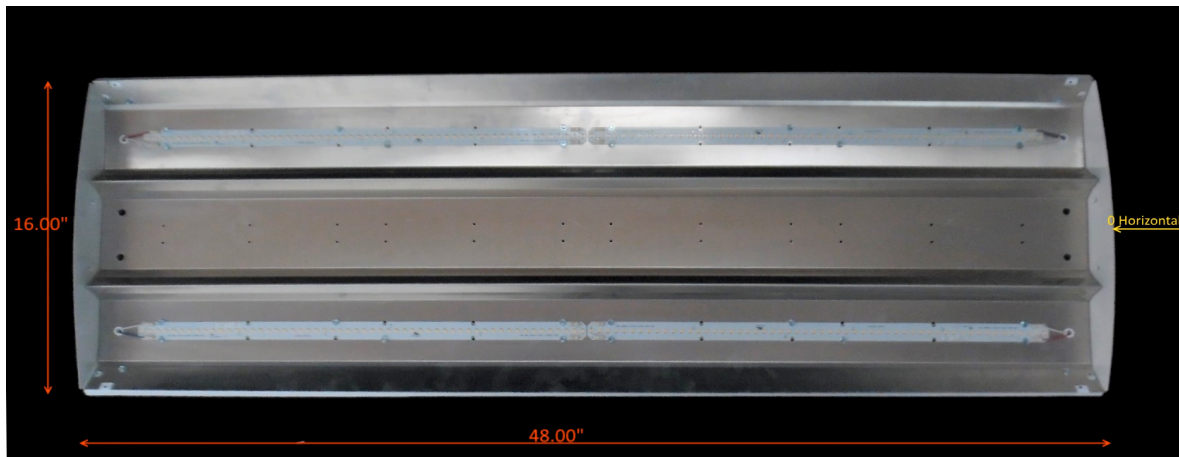
Catalog Number: FHBC48-LED97DMV35

White formed steel housing, silver matte aluminum reflector, no enclosure.

224 White LEDs, Four boards with 56 LEDs each.

One Philips Advance Xitanium XI095C275V054BSS1 LED driver.

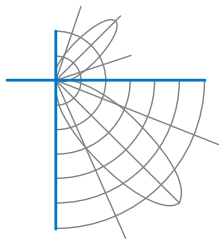
120.0Vac, 60.0Hz, 0.7945A, 94.87W, 0.995PF, 5.53%THD(i)



Performance Summary

Total Light Output	12991 lm
Luminaire Power	94.9 W
Luminous Efficacy	136.9 lm/W

PREPARED FOR : Mobern Lighting Co., 8200 Stayton Drive, Jessup, MD 20794, USA



Test Report No. LLIA000738-001A

Catalog Number: FHBC48-LED97DMV35

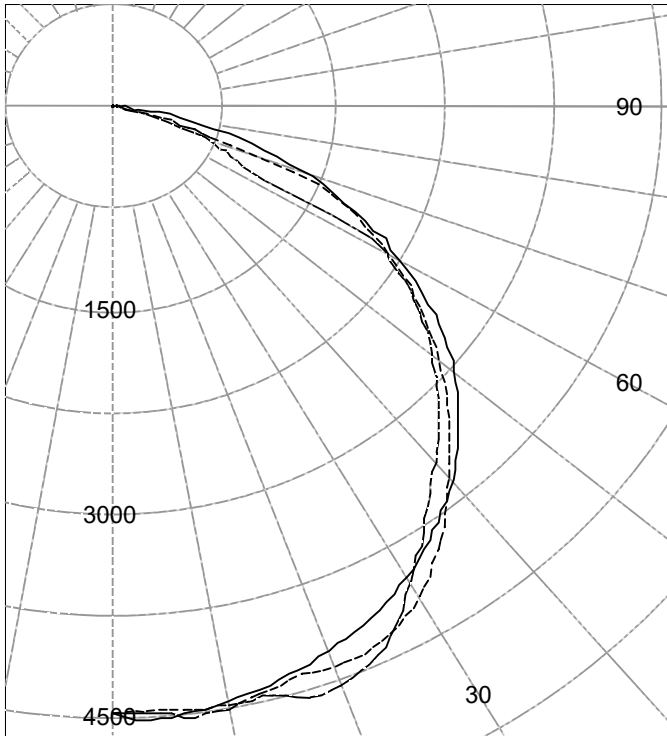
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120.0Vac, 60.0Hz, 0.7945A, 94.87W, 0.995PF, 5.53%THD(i)

Legend: C0-Solid, C45-Dashed, C90-Grey (cd)



INTENSITY SUMMARY (cd)

Gamma	C-Plane					Flux (lm)
	C0	C22.5	C45	C67.5	C90	
0.0	4465	4465	4465	4465	4465	
5.0	4501	4441	4452	4458	4498	426
10.0	4450	4413	4479	4476	4496	
15.0	4371	4378	4409	4436	4492	1253
20.0	4269	4280	4386	4506	4531	
25.0	4148	4163	4339	4383	4380	1973
30.0	3995	4031	4170	4117	4034	
35.0	3812	3860	3885	3791	3701	2392
40.0	3591	3631	3556	3471	3409	
45.0	3330	3345	3233	3181	3132	2504
50.0	3027	3014	2895	2868	2831	
55.0	2671	2634	2548	2525	2503	2297
60.0	2260	2207	2170	2156	2135	
65.0	1822	1761	1762	1024	924	1548
70.0	1349	1309	850	701	672	
75.0	886	863	477	231	67	552
80.0	454	260	14	8	5	
85.0	122	13	9	6	3	47
90.0	0	7	6	4	0	

AVERAGE LUMINANCE (cd / m²)

Gamma	C0	C45	C90
45.0	9325	8733	8432
55.0	9141	8287	8106
65.0	8343	7493	3903
75.0	6426	3060	427
85.0	2290	129	41

ZONAL FLUX AND PERCENTAGES

Zone	Flux (lm)	% Lamp	% Luminaire
0-30	3652	N / A	28.1
0-40	6044	N / A	46.5
0-60	10844	N / A	83.5
0-90	12990	N / A	100.0
40-90	6947	N / A	53.5
60-90	2146	N / A	16.5
90-180	1	N / A	0.0
0-180	12991	N / A	100.0

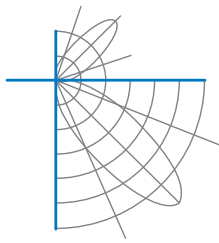
Total Light Output = 12,991 lm

Spacing Criterion: 0-180 1.3
Spacing Criterion: 90-270 1.3

Signed:

Michael L. Grather
Authorized Signatory

Date of test 27-Feb-2017
Date of report 28-Feb-2017



Test Report No. LLIA000738-001A

Catalog Number: FHBC48-LED97DMV35

White formed steel housing, silver matte aluminum reflector, no enclosure.

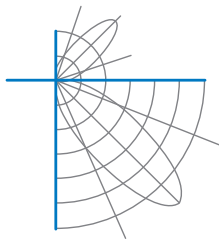
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120.0Vac, 60.0Hz, 0.7945A, 94.87W, 0.995PF, 5.53%THD(i)

Intensity data (cd)

Gamma	C-Plane				
	C0	C22.5	C45	C67.5	C90
0.0	4465	4465	4465	4465	4465
2.5	4514	4450	4454	4444	4483
5.0	4501	4441	4452	4458	4498
7.5	4479	4427	4470	4495	4526
10.0	4450	4413	4479	4476	4496
12.5	4414	4401	4449	4443	4465
15.0	4371	4378	4409	4436	4492
17.5	4322	4336	4378	4505	4563
20.0	4269	4280	4386	4506	4531
22.5	4212	4220	4386	4454	4469
25.0	4148	4163	4339	4383	4380
27.5	4076	4102	4266	4285	4231
30.0	3995	4031	4170	4117	4034
32.5	3907	3950	4040	3943	3877
35.0	3812	3860	3885	3791	3701
37.5	3707	3756	3719	3630	3546
40.0	3591	3631	3556	3471	3409
42.5	3465	3494	3398	3327	3274
45.0	3330	3345	3233	3181	3132
47.5	3183	3184	3064	3023	2984
50.0	3027	3014	2895	2868	2831
52.5	2860	2832	2724	2701	2672
55.0	2671	2634	2548	2525	2503
57.5	2463	2422	2365	2348	2326
60.0	2260	2207	2170	2156	2135
62.5	2047	1984	1967	1940	1363
65.0	1822	1761	1762	1024	924
67.5	1591	1530	1549	821	807
70.0	1349	1309	850	701	672
72.5	1121	1086	600	524	437
75.0	886	863	477	231	67
77.5	662	648	284	11	6
80.0	454	260	14	8	5
82.5	274	161	11	7	4
85.0	122	13	9	6	3
87.5	22	10	8	5	2
90.0	0	7	6	4	0



Test Report No. LLIA000738-001A

Catalog Number: FHBC48-LED97DMV35

White formed steel housing, silver matte aluminum reflector, no enclosure.

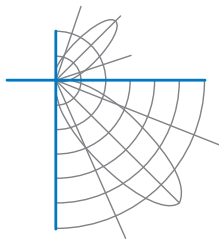
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One Philips Advance Xitanium XI095C275V054BSS1 LED driver.

120.0Vac, 60.0Hz, 0.7945A, 94.87W, 0.995PF, 5.53%THD(i)

Intensity data (cd)

Gamma	C-Plane				
	C0	C22.5	C45	C67.5	C90
90.0	0	7	6	4	0
92.5	0	2	3	0	0
95.0	0	0	0	0	0
97.5	0	0	0	0	0
100.0	0	0	0	0	0
102.5	0	0	0	0	0
105.0	0	0	0	0	0
107.5	0	0	0	0	0
110.0	0	0	0	0	0
112.5	0	0	0	0	0
115.0	0	0	0	0	0
117.5	0	0	0	0	0
120.0	0	0	0	0	0
122.5	0	0	0	0	0
125.0	0	0	0	0	0
127.5	0	0	0	0	0
130.0	0	0	0	0	0
132.5	0	0	0	0	0
135.0	0	0	0	0	0
137.5	0	0	0	0	0
140.0	0	0	0	0	0
142.5	0	0	0	0	0
145.0	0	0	0	0	0
147.5	0	0	0	0	0
150.0	0	0	0	0	0
152.5	0	0	0	0	0
155.0	0	0	0	0	0
157.5	0	0	0	0	0
160.0	0	0	0	0	0
162.5	0	0	0	0	0
165.0	0	0	0	0	0
167.5	0	0	0	0	0
170.0	0	0	0	0	0
172.5	0	0	0	0	0
175.0	0	0	0	0	0
177.5	0	0	0	0	0
180.0	0	0	0	0	0



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Coefficients Of Utilization - Zonal Cavity Method

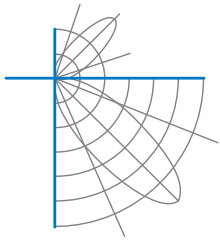
Effective Floor Cavity Reflectance 0.20

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	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100
1	110	105	101	98	107	103	100	96	99	96	93	95	93	90	91	90	88	86
2	100	92	86	81	98	90	85	80	87	82	78	84	80	76	81	77	74	72
3	91	81	73	67	89	80	72	67	77	71	65	74	69	64	71	67	63	61
4	84	72	63	57	81	71	63	57	68	61	56	66	60	55	64	59	54	52
5	77	64	55	49	75	63	55	49	61	54	48	59	53	48	57	52	47	45
6	71	58	49	43	69	57	49	42	55	48	42	53	47	42	52	46	41	39
7	66	52	44	38	64	52	43	37	50	43	37	49	42	37	47	41	37	35
8	61	48	39	33	60	47	39	33	46	38	33	44	38	33	43	37	33	31
9	57	44	36	30	56	43	35	30	42	35	30	41	34	30	40	34	29	28
10	53	40	32	27	52	40	32	27	39	32	27	38	31	27	37	31	27	25

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	124.0	7.98	7.89
8.0	69.8	10.64	10.51
10.0	44.6	13.30	13.14
12.0	31.0	15.96	15.77
14.0	22.8	18.62	18.40
16.0	17.4	21.27	21.03



Test Report No. LLIA000738-001A

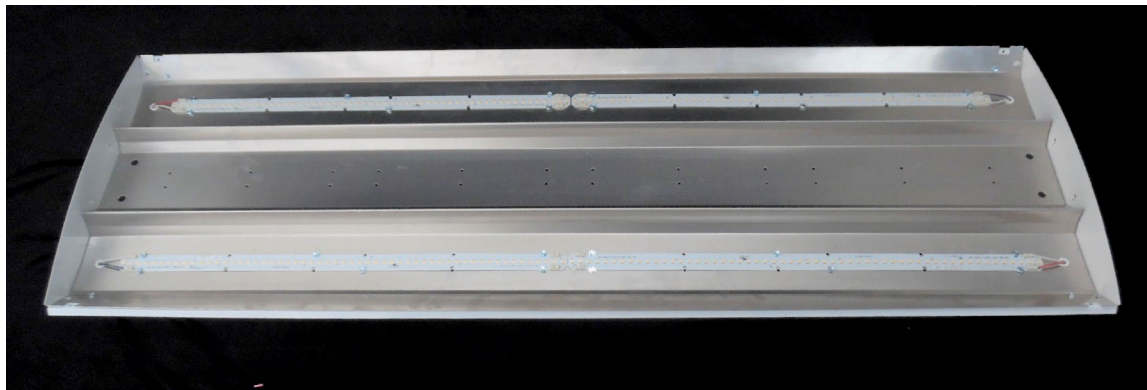
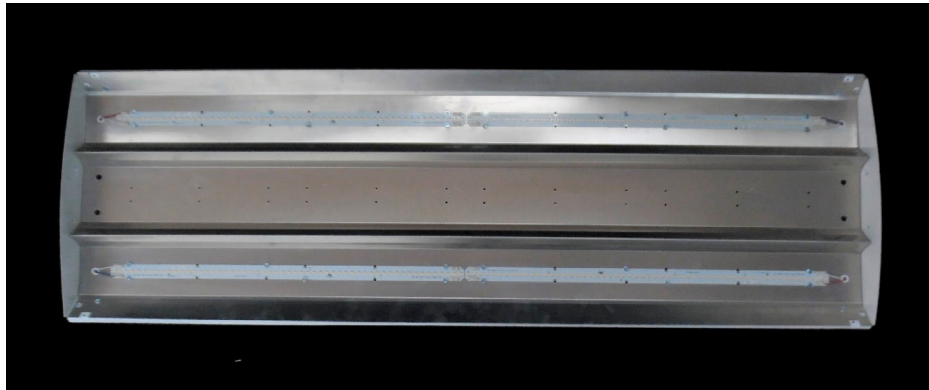
Catalog Number: FHBC48-LED97DMV35

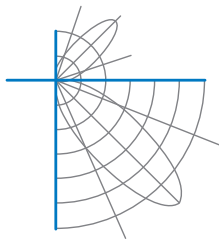
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Test Distance 9.5 m
Test Temperature 25.0 °C

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.

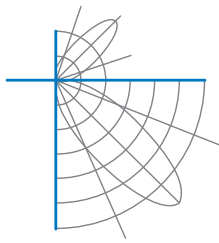
Prorating the performance of the sample for the use of other component combinations (such as lamp / LED / Ballast / driver), or for use in different environmental conditions than that tested, may produce erroneous results.

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

LLIA000738-001B

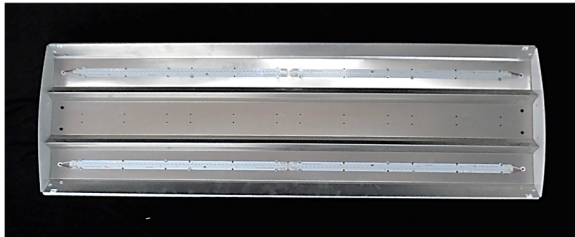
Integrating Sphere Report

Catalog Number: FHBC48-LED97DMV35

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One Philips Advance Xitanium XI095C275V054BSS1 LED driver.



Performance Summary

Voltage	120.0 Vac
Current	0.7913 A
Power	94.67 W
Frequency	60.00 Hz
Power Factor	0.997
Current THD	5.6 %

Total Luminous Flux	12880.5 lm
Efficacy	136.1 lm/W
Chromaticity (x,y)	(0.3990, 0.3825)
(u',v')	(0.2350, 0.5068)
Duv	-0.0022
CCT	3575 K
CRI (Ra)	85
R9	15

Prepared For:

Mobern Lighting Co.

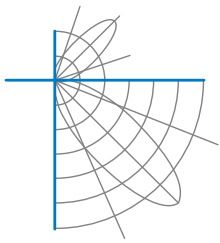
8200 Stayton Drive

Suite 300

Jessup, MD 20794, USA

Test date: 02/27/2017

Report date: 02/28/2017



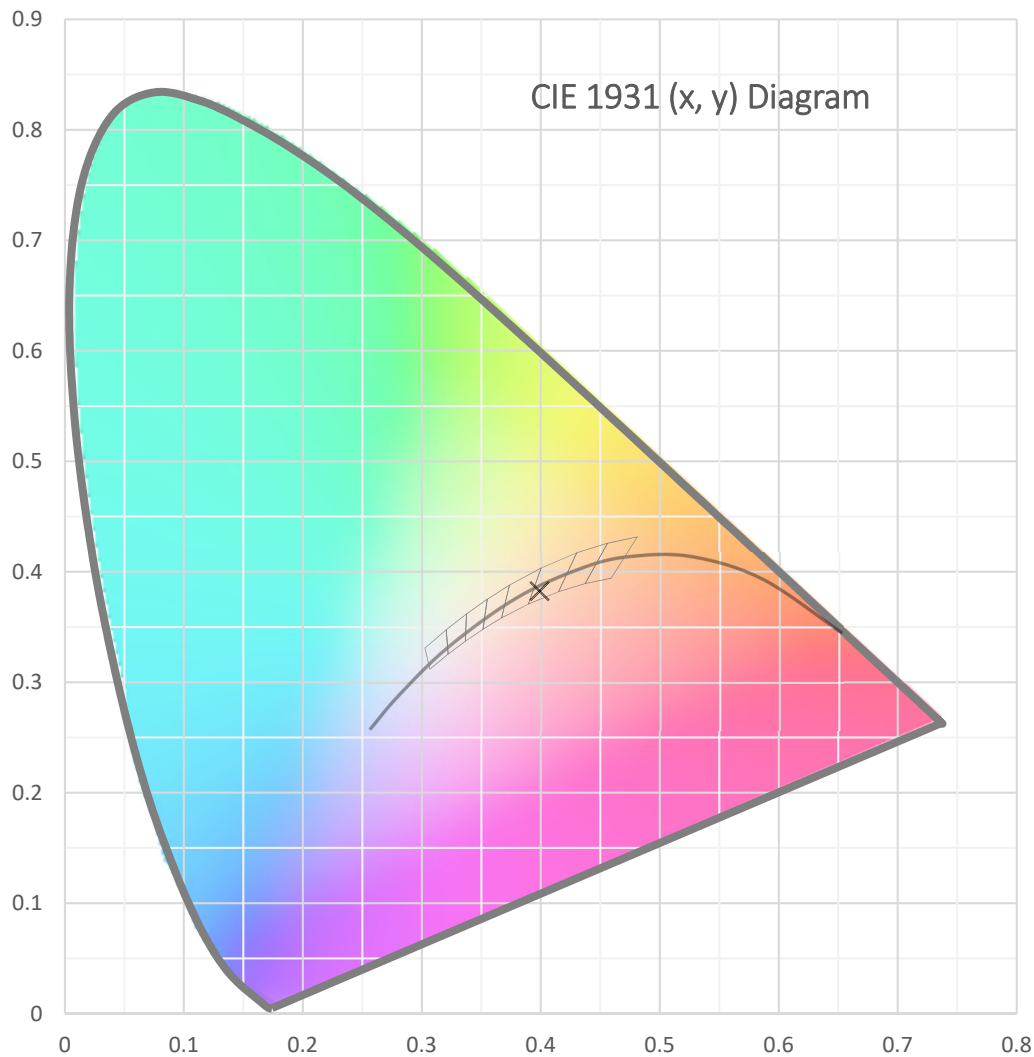
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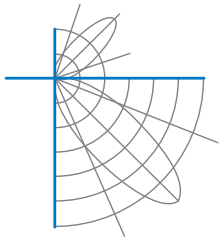
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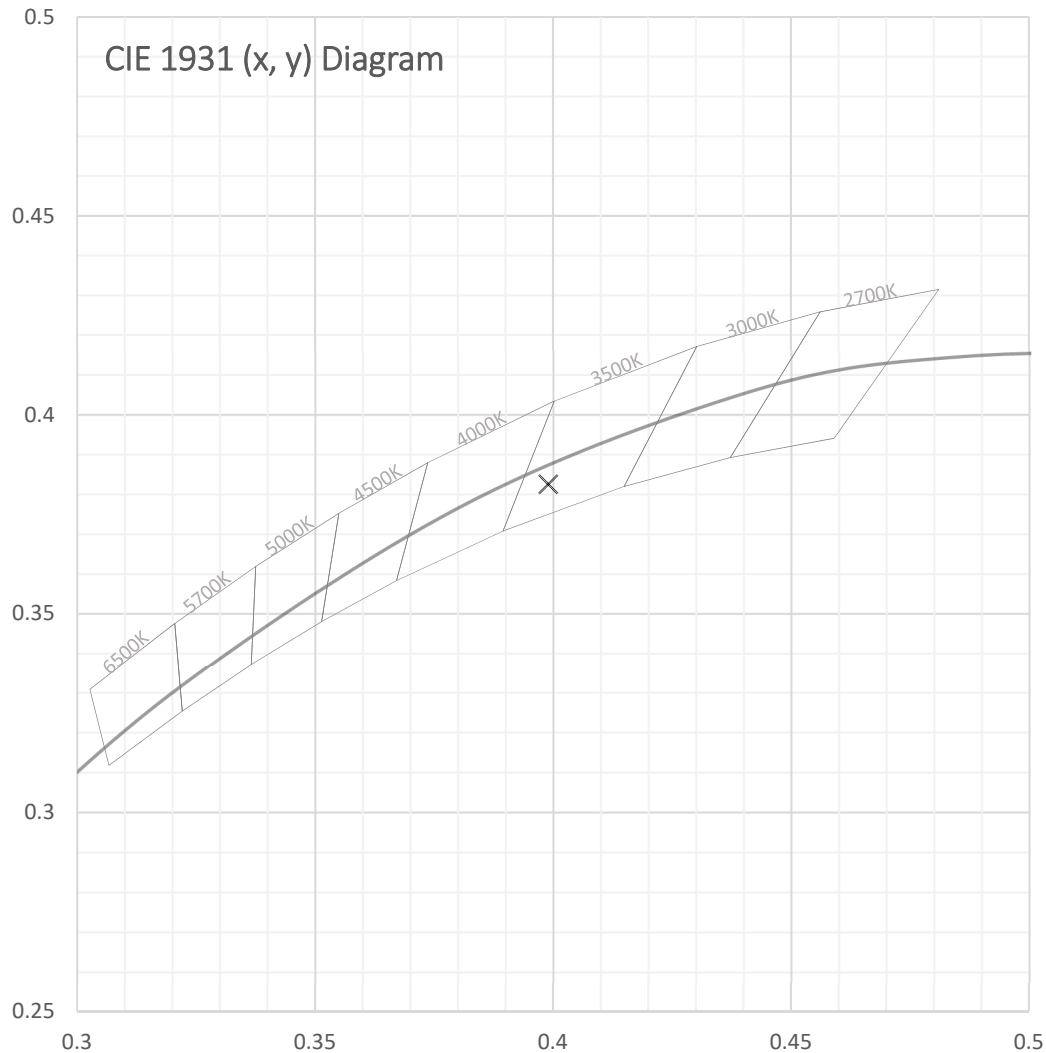
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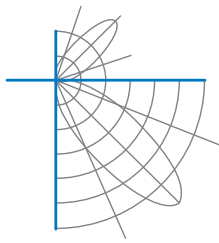
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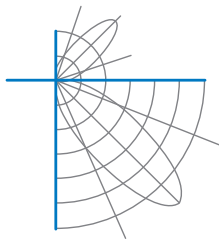
One Philips Advance Xitanium XI095C275V054BSS1 LED driver.

Spectral Data

Total Radiant Flux	40.00 W
Total Luminous Flux	12880.5 Lm
Chromaticity CIE 1931 (x, y)	(0.3990, 0.3825)
Chromaticity CIE 1976 (u', v')	(0.2350, 0.5068)
Correlated Color Temperature (CCT)	3575 K
Color Rendering Index (Ra)	85
R1	83
R2	92
R3	96
R4	83
R5	84
R6	89
R7	85
R8	65
R9	15
R10	81
R11	83
R12	72
R13	86
R14	98
Distance from Planckian Locus (Duv)	-0.0022
Scotopic/Photopic Ratio *	1.585

Electrical Data

Voltage	120.0 Vac
Current	0.7913 A
Power	94.67 W
Frequency	60.00 Hz
Power Factor	0.997
Current THD	5.6 %



Test Report Number: LLIA000738-001B

Catalog Number: FHBC48-LED97DMV35

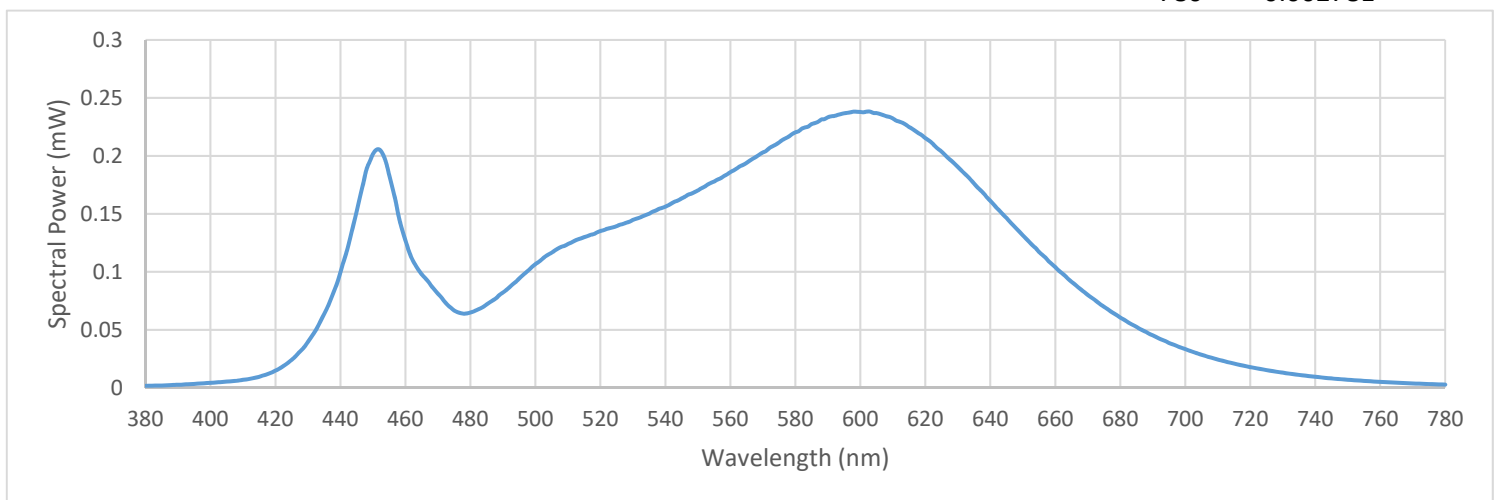
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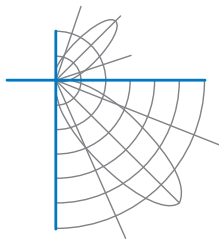
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Summary Spectral Power Distribution (wavelength - nm, spectral power - mW)

380	0.001719	480	0.064875	580	0.220294	680	0.060571
385	0.001981	485	0.071860	585	0.227439	685	0.052538
390	0.002567	490	0.082160	590	0.233286	690	0.045213
395	0.003366	495	0.094146	595	0.236723	695	0.038664
400	0.004249	500	0.106607	600	0.237839	700	0.033361
405	0.005329	505	0.116466	605	0.236859	705	0.028510
410	0.006837	510	0.123911	610	0.232252	710	0.024322
415	0.009467	515	0.129889	615	0.224965	715	0.020889
420	0.014810	520	0.135153	620	0.215315	720	0.017821
425	0.024196	525	0.139388	625	0.203675	725	0.015244
430	0.039626	530	0.144775	630	0.190479	730	0.013077
435	0.063700	535	0.150127	635	0.176123	735	0.011106
440	0.099436	540	0.156217	640	0.161213	740	0.009458
445	0.152267	545	0.163291	645	0.146350	745	0.008092
450	0.201496	550	0.170145	650	0.131539	750	0.006901
455	0.183513	555	0.177880	655	0.117155	755	0.005913
460	0.127268	560	0.185919	660	0.104017	760	0.005104
465	0.097903	565	0.194002	665	0.091382	765	0.004374
470	0.081132	570	0.202970	670	0.080089	770	0.003742
475	0.066643	575	0.211614	675	0.069858	775	0.003231
						780	0.002781





Test Report Number: LLIA000738-001B

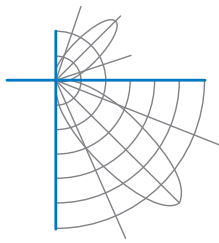
Catalog Number: FHBC48-LED97DMV35

White formed steel housing, silver matte aluminum reflector, no enclosure.

224 White LEDs, Four boards with 56 LEDs each.

One Philips Advance Xitanium XI095C275V054BSS1 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:	25.3 °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
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.



Report of Test

LLIA000738-001C

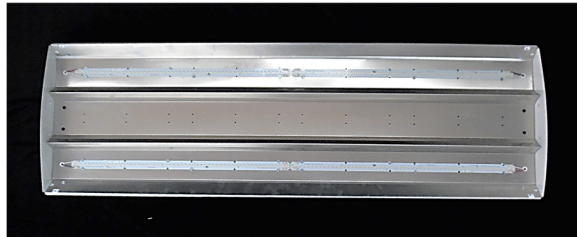
Electrical Test Report

Catalog Number: FHBC48-LED97DMV35

White formed steel housing, silver matte aluminum reflector, no enclosure.

224 White LEDs, Four boards with 56 LEDs each.

One Philips Advance Xitanium XI095C275V054BSS1 LED driver.



Performance Summary

Voltage	277.0 Vac
Current	0.3458 A
Power	93.49 W
Frequency	60.00 Hz
Power Factor	0.976
Current THD	8.3 %

Ambient Temperature: 25.1 °C

Prepared For:
Mobern Lighting Co.
8200 Stayton Drive
Suite 300
Jessup, MD 20794, USA

Tested in accordance with the applicable sections of C82.77-10-2014. 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. 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.

Test date: 02/27/2017

Report date: 02/28/2017

Electrical Report Template V1-2