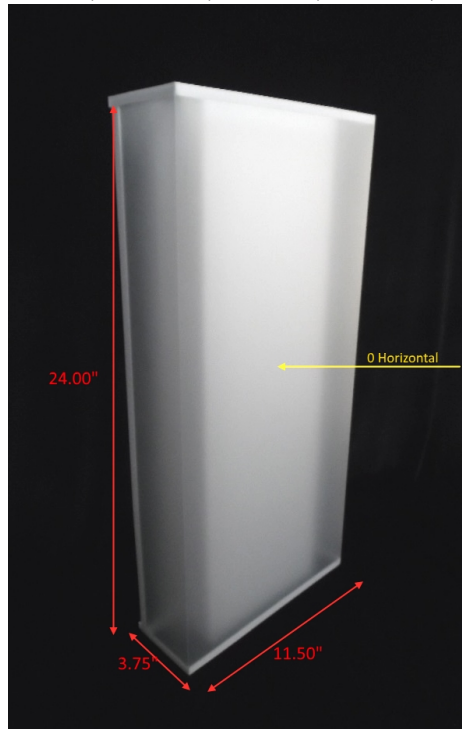


# Report of Test

## LLIA000901-035A

Catalog Number: W2093\_X F11/D61/L406

Wall mounted, formed white enamel aluminum housing, formed white enamel steel enclosure with white inner "lumenate" enclosure and translucent white plastic outer enclosure.  
96 white LEDs, two Samsung Electronics LT-M562C G2 3000K-S49 LED boards with 48 LEDs each.  
One Philips Advance Xitanium XI054C150V054BST1 LED driver.  
120.0Vac, 60.00Hz, 0.3340A, 39.19W, 0.977PF, 8.1%THD(i)



### Performance Summary

Total Light Output	2846 lm
Luminaire Power	39.2 W
Luminous Efficacy	72.6 lm/W

**PREPARED FOR : Lumetta, Inc, 33 Minnesota Avenue, Warwick, RI 02888, USA**

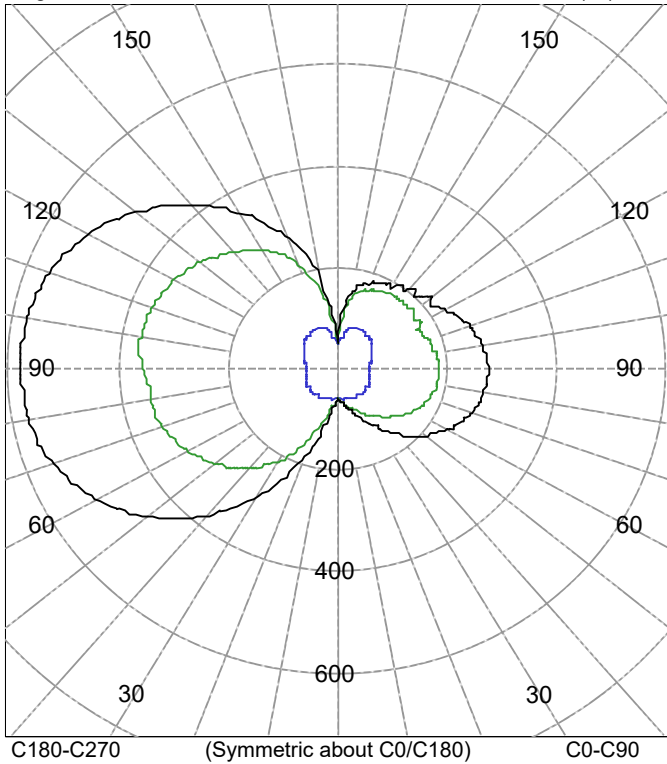


**Test Report No. LLIA000901-035A**

Catalog Number: W2093\_X F11/D61/L406

Wall mounted, formed white enamel aluminum housing, formed white enamel steel enclosure with white inner "lumenate" enclosure and translucent white plastic outer enclosure.  
96 white LEDs, two Samsung Electronics LT-M562C G2 3000K-S49 LED boards with 48 LEDs each.  
One Philips Advance Xitanium XI054C150V054BST1 LED driver.  
120.0Vac, 60.00Hz, 0.3340A, 39.19W, 0.977PF, 8.1%THD(i)

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	
0.0	55	55	55	55	55	
5.0	66	67	66	64	58	7
10.0	74	74	73	69	60	
15.0	84	83	78	71	60	27
20.0	97	94	85	74	61	
25.0	112	108	94	76	62	62
30.0	130	124	103	79	63	
35.0	149	141	113	83	64	107
40.0	168	158	123	86	65	
45.0	186	175	134	89	66	155
50.0	204	191	144	92	66	
55.0	220	206	154	94	65	203
60.0	234	220	162	96	65	
65.0	247	231	170	98	63	244
70.0	257	241	175	98	62	
75.0	265	248	180	98	60	272
80.0	270	253	182	97	58	
85.0	273	255	183	96	55	284
90.0	273	256	183	96	55	

**ZONAL FLUX AND PERCENTAGES**

Zone	Flux (lm)	% Lamp	% Luminaire
0-30	96	N / A	3.4
0-40	202	N / A	7.1
0-60	561	N / A	19.7
0-90	1361	N / A	47.8
40-90	1159	N / A	40.7
60-90	800	N / A	28.1
90-180	1485	N / A	52.2
0-180	2846	N / A	100.0

Total Light Output = 2,846 lm

Signed:

Authorized Signatory

Date of test

26-Jan-2018

Date of report

2-Feb-2018



**Test Report No. LLIA000901-035A**

Catalog Number: W2093\_X F11/D61/L406

Wall mounted, formed white enamel aluminum housing, formed white enamel steel enclosure with white inner "lumenate" enclosure and translucent white plastic outer enclosure. 96 white LEDs, two Samsung Electronics LT-M562C G2 3000K-S49 LED boards with 48 LEDs each. One Philips Advance Xitanium XI054C150V054BST1 LED driver. 120.0Vac, 60.00Hz, 0.3340A, 39.19W, 0.977PF, 8.1%THD(i)

**Intensity data (cd)**

Gamma	C-Plane				
	C0	C22.5	C45	C67.5	C90
0.0	55	55	55	55	55
2.5	62	62	60	58	56
5.0	66	67	66	64	58
7.5	70	70	70	67	59
10.0	74	74	73	69	60
12.5	78	78	75	70	60
15.0	84	83	78	71	60
17.5	90	88	82	72	61
20.0	97	94	85	74	61
22.5	104	101	89	75	62
25.0	112	108	94	76	62
27.5	121	116	98	78	63
30.0	130	124	103	79	63
32.5	140	132	108	81	64
35.0	149	141	113	83	64
37.5	158	149	118	84	65
40.0	168	158	123	86	65
42.5	177	166	129	88	65
45.0	186	175	134	89	66
47.5	195	183	139	90	66
50.0	204	191	144	92	66
52.5	212	199	149	93	65
55.0	220	206	154	94	65
57.5	227	213	158	95	65
60.0	234	220	162	96	65
62.5	241	226	166	97	64
65.0	247	231	170	98	63
67.5	252	236	173	98	63
70.0	257	241	175	98	62
72.5	262	245	178	98	61
75.0	265	248	180	98	60
77.5	268	251	181	98	59
80.0	270	253	182	97	58
82.5	272	254	183	97	57
85.0	273	255	183	96	55
87.5	273	255	183	96	55
90.0	273	256	183	96	55



**Test Report No. LLIA000901-035A**

Catalog Number: W2093\_X F11/D61/L406

Wall mounted, formed white enamel aluminum housing, formed white enamel steel enclosure with white inner "lumenate" enclosure and translucent white plastic outer enclosure. 96 white LEDs, two Samsung Electronics LT-M562C G2 3000K-S49 LED boards with 48 LEDs each. One Philips Advance Xitanium XI054C150V054BST1 LED driver. 120.0Vac, 60.00Hz, 0.3340A, 39.19W, 0.977PF, 8.1%THD(i)

**Intensity data (cd)**

Gamma	C-Plane				
	C0	C22.5	C45	C67.5	C90
90.0	273	256	183	96	55
92.5	273	255	183	96	55
95.0	272	255	183	97	57
97.5	270	252	181	97	59
100.0	267	250	180	97	60
102.5	264	247	179	98	62
105.0	261	244	177	98	63
107.5	257	241	175	101	65
110.0	252	237	173	103	66
112.5	247	232	170	105	68
115.0	242	227	167	107	69
117.5	236	222	164	109	71
120.0	229	216	173	109	72
122.5	222	209	176	113	74
125.0	214	205	171	118	76
127.5	211	219	174	119	78
130.0	224	212	179	120	79
132.5	214	202	173	122	80
135.0	204	206	177	122	82
137.5	211	206	176	123	83
140.0	206	196	176	124	84
142.5	194	203	176	122	85
145.0	202	193	176	124	86
147.5	190	197	175	122	87
150.0	196	187	173	120	87
152.5	184	189	172	118	88
155.0	184	188	171	118	88
157.5	182	184	169	118	88
160.0	177	178	165	117	88
162.5	177	171	161	116	86
165.0	171	167	157	112	81
167.5	164	161	151	106	75
170.0	153	151	141	99	71
172.5	138	136	126	87	65
175.0	117	115	103	75	59
177.5	79	77	69	59	53
180.0	50	50	50	50	50



**Test Report No. LLIA000901-035A**

Catalog Number: W2093\_X F11/D61/L406

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**Intensity data (cd)**

Gamma	C-Plane				
	C90	C112.5	C135	C157.5	C180
0.0	55	55	55	55	55
2.5	56	59	62	64	64
5.0	58	65	69	70	70
7.5	59	69	74	82	82
10.0	60	72	84	100	100
12.5	60	75	98	121	120
15.0	60	78	112	149	144
17.5	61	82	125	181	167
20.0	61	85	145	212	192
22.5	62	87	163	245	217
25.0	62	90	179	273	242
27.5	63	93	195	300	267
30.0	63	95	208	328	291
32.5	64	97	222	353	314
35.0	64	100	233	378	337
37.5	65	102	244	399	359
40.0	65	103	255	420	379
42.5	65	105	265	439	399
45.0	66	107	274	459	418
47.5	66	108	282	476	436
50.0	66	109	291	494	453
52.5	65	110	299	510	468
55.0	65	111	306	524	483
57.5	65	112	313	538	497
60.0	65	112	320	551	510
62.5	64	113	325	562	521
65.0	63	113	329	573	532
67.5	63	113	334	583	542
70.0	62	113	337	592	550
72.5	61	112	340	598	557
75.0	60	112	343	606	563
77.5	59	111	345	610	568
80.0	58	111	346	613	571
82.5	57	110	347	614	573
85.0	55	109	346	615	575
87.5	55	108	349	612	576
90.0	55	108	355	611	578



**Test Report No. LLIA000901-035A**

Catalog Number: W2093\_X F11/D61/L406

Wall mounted, formed white enamel aluminum housing, formed white enamel steel enclosure with white inner "lumenate" enclosure and translucent white plastic outer enclosure. 96 white LEDs, two Samsung Electronics LT-M562C G2 3000K-S49 LED boards with 48 LEDs each. One Philips Advance Xitanium XI054C150V054BST1 LED driver. 120.0Vac, 60.00Hz, 0.3340A, 39.19W, 0.977PF, 8.1%THD(i)

**Intensity data (cd)**

Gamma	C-Plane				
	C90	C112.5	C135	C157.5	C180
90.0	55	108	355	611	578
92.5	55	109	359	606	578
95.0	57	111	364	603	576
97.5	59	113	363	602	576
100.0	60	115	364	601	574
102.5	62	116	363	599	571
105.0	63	118	362	593	568
107.5	65	120	361	590	562
110.0	66	122	358	583	557
112.5	68	124	356	578	551
115.0	69	125	353	569	544
117.5	71	127	349	560	535
120.0	72	129	346	552	526
122.5	74	130	341	540	517
125.0	76	132	336	529	504
127.5	78	134	332	518	493
130.0	79	135	326	504	481
132.5	80	137	321	491	466
135.0	82	138	313	476	452
137.5	83	140	306	463	436
140.0	84	141	301	448	421
142.5	85	142	293	432	405
145.0	86	143	284	416	387
147.5	87	144	276	402	372
150.0	87	145	270	383	354
152.5	88	146	260	365	336
155.0	88	145	249	344	317
157.5	88	143	239	324	301
160.0	88	140	222	301	277
162.5	86	134	209	274	259
165.0	81	125	187	246	238
167.5	75	114	160	215	216
170.0	71	100	139	168	175
172.5	65	84	117	133	134
175.0	59	68	86	100	106
177.5	53	55	61	67	69
180.0	50	50	50	50	50



**Test Number: LLIA000901-035A**

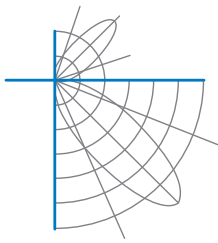
Catalog Number: W2093\_X F11/D61/L406

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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	
0	107	107	107	107	98	98	98	98	82	82	82	68	68	68	54	54	54	48
1	92	86	80	75	84	78	73	68	64	60	57	52	49	46	40	38	36	30
2	82	72	64	57	74	66	58	52	53	48	43	42	38	34	32	29	26	21
3	74	62	52	45	66	56	48	41	46	39	34	36	31	27	27	23	20	16
4	67	53	44	37	60	49	40	34	39	33	28	31	26	22	23	19	16	12
5	61	47	37	30	55	43	34	28	35	28	23	27	22	18	20	16	13	9
6	55	42	32	26	50	38	29	23	31	24	19	24	19	15	18	14	11	8
7	51	37	28	22	46	34	26	20	28	21	16	22	17	13	16	12	9	6
8	47	33	25	19	43	30	23	17	25	19	14	20	15	11	15	11	8	5
9	44	30	22	16	40	28	20	15	23	17	12	18	13	10	13	10	7	5
10	41	28	20	14	37	25	18	13	21	15	11	16	12	8	12	9	6	4

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.

Height(ft)	Illuminance at Nadir (fc)	Beam Width (across 50% Nadir Illum)	
		0-180	90-270
6.0	1.5	25.85	10.63
8.0	0.9	34.47	14.17
10.0	0.5	43.09	17.71
12.0	0.4	51.71	21.26
14.0	0.3	60.32	24.80
16.0	0.2	68.94	28.34



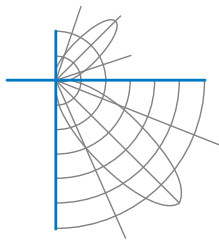
**Test Report No. LLIA000901-035A**

Catalog Number: W2093\_X F11/D61/L406

Wall mounted, formed white enamel aluminum housing, formed white enamel steel enclosure with white inner "lumenate" enclosure and translucent white plastic outer enclosure.  
96 white LEDs, two Samsung Electronics LT-M562C G2 3000K-S49 LED boards with 48 LEDs each.  
One Philips Advance Xitanium XI054C150V054BST1 LED driver.  
120.0Vac, 60.00Hz, 0.3340A, 39.19W, 0.977PF, 8.1%THD(i)







**Test Report No. LLIA000901-035A**

Catalog Number: W2093\_X F11/D61/L406

Wall mounted, formed white enamel aluminum housing, formed white enamel steel enclosure with white inner "lumenate" enclosure and translucent white plastic outer enclosure. 96 white LEDs, two Samsung Electronics LT-M562C G2 3000K-S49 LED boards with 48 LEDs each. One Philips Advance Xitanium XI054C150V054BST1 LED driver. 120.0Vac, 60.00Hz, 0.3340A, 39.19W, 0.977PF, 8.1%THD(i)

**Test Distance** 9.5 m  
**Test Temperature** 25.4 °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.

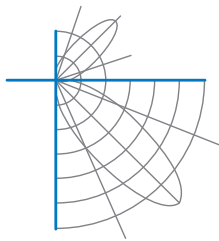
Prorating the performance of the sample for the use of other component combinations (such as lamp / LED / Ballast / driver), or for use in different environmental conditions than that tested, may produce erroneous results.

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

LLIA000901-035B

Integrating Sphere Report

Catalog Number: W2093\_X F11/D61/L406

Wall mounted, formed white enamel aluminum housing, formed white enamel steel enclosure with white inner "lumenate" enclosure and translucent white plastic outer enclosure. 96 white LEDs, two Samsung Electronics LT-M562C G2 3000K-S49 LED boards with 48 LEDs each.

One Philips Advance Xitanium XI054C150V054BST1 LED driver.



### Performance Summary

Voltage	120.0 Vac
Current	0.3301 A
Power	39.24 W
Frequency	59.97 Hz
Power Factor	0.991
Current THD	8.0 %

Total Luminous Flux	3017.4 lm
Efficacy	76.9 lm/W
Chromaticity (x,y)	(0.4311, 0.4007)
(u',v')	(0.2483, 0.5192)
Duv	-0.0005
CCT	3072 K
CRI (Ra)	84
R9	11
TM-30: Rf	85
TM-30: Rg	97

Prepared For:

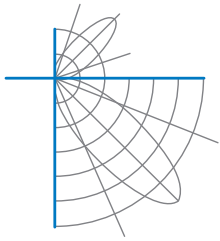
Lumetta, Inc

33 Minnesota Avenue

Warwick, RI 02888, USA

Test date: 01/26/2018

Report date: 02/02/2018

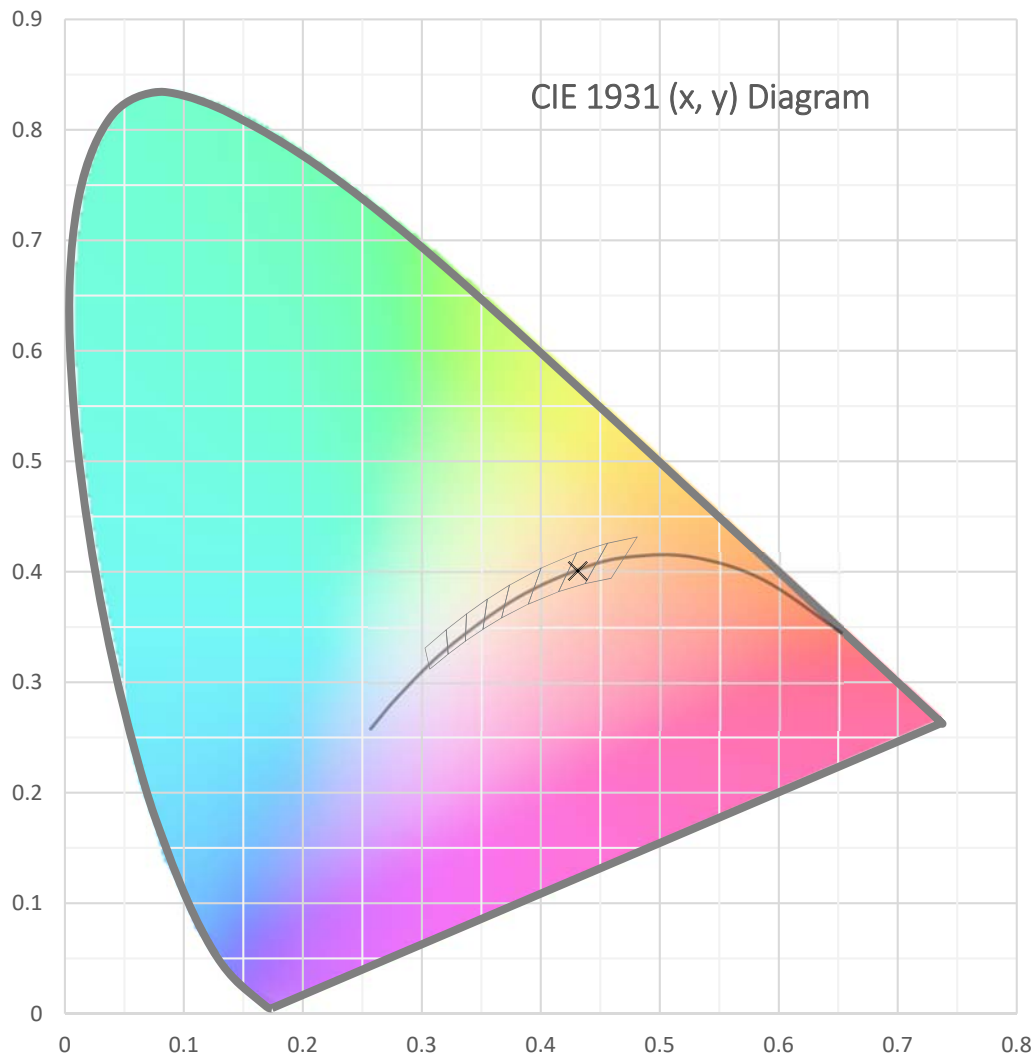


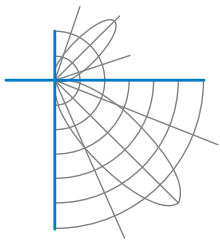
**Test Report Number: LLIA000901-035B**

Catalog Number: W2093\_X F11/D61/L406

Wall mounted, formed white enamel aluminum housing, formed white enamel steel enclosure with white inner "lumenate" enclosure and translucent white plastic outer enclosure. 96 white LEDs, two Samsung Electronics LT-M562C G2 3000K-S49 LED boards with 48 LEDs each.

One Philips Advance Xitanium XI054C150V054BST1 LED driver.

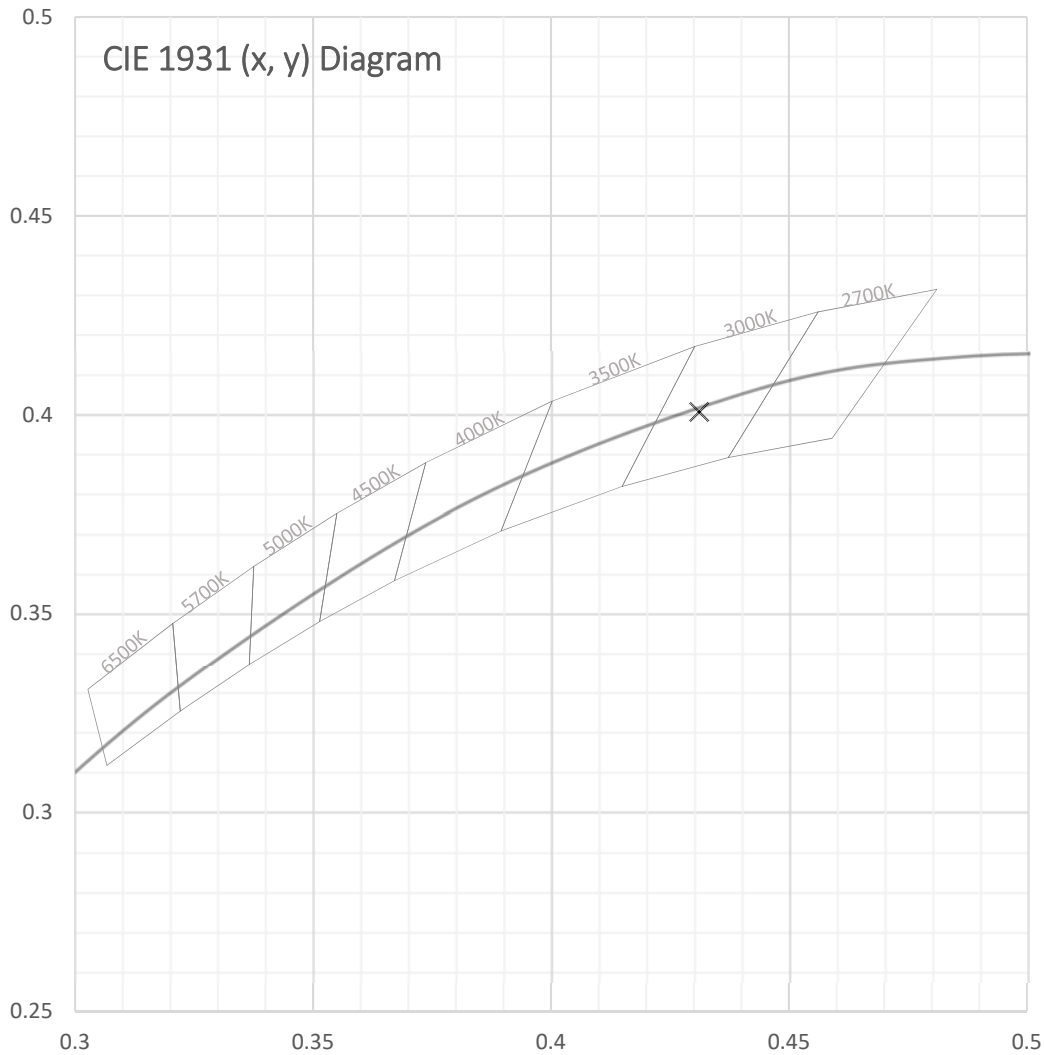




**Test Report Number: LLIA000901-035B**

Catalog Number: W2093\_X F11/D61/L406

Wall mounted, formed white enamel aluminum housing, formed white enamel steel enclosure with white inner "lumenate" enclosure and translucent white plastic outer enclosure. 96 white LEDs, two Samsung Electronics LT-M562C G2 3000K-S49 LED boards with 48 LEDs each. One Philips Advance Xitanium XI054C150V054BST1 LED driver.





**Test Report Number: LLIA000901-035B**

Catalog Number: W2093\_X F11/D61/L406

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**Spectral Data**

Total Radiant Flux	9.434 W
Total Luminous Flux	3017.4 Lm
Chromaticity CIE 1931 (x, y)	(0.4311, 0.4007)
Chromaticity CIE 1976 (u', v')	(0.2483, 0.5192)
Correlated Color Temperature (CCT)	3072 K
Color Rendering Index (Ra)	84
R1	83
R2	92
R3	96
R4	83
R5	83
R6	91
R7	84
R8	61
R9	11
R10	82
R11	83
R12	77
R13	85
R14	99
TM-30: Rf	85
TM-30: Rg	97
Distance from Planckian Locus (Duv)	-0.0005
Scotopic/Photopic Ratio *	1.392

**Electrical Data**

Voltage	120.0 Vac
Current	0.3301 A
Power	39.24 W
Frequency	59.97 Hz
Power Factor	0.991
Current THD	8.0 %



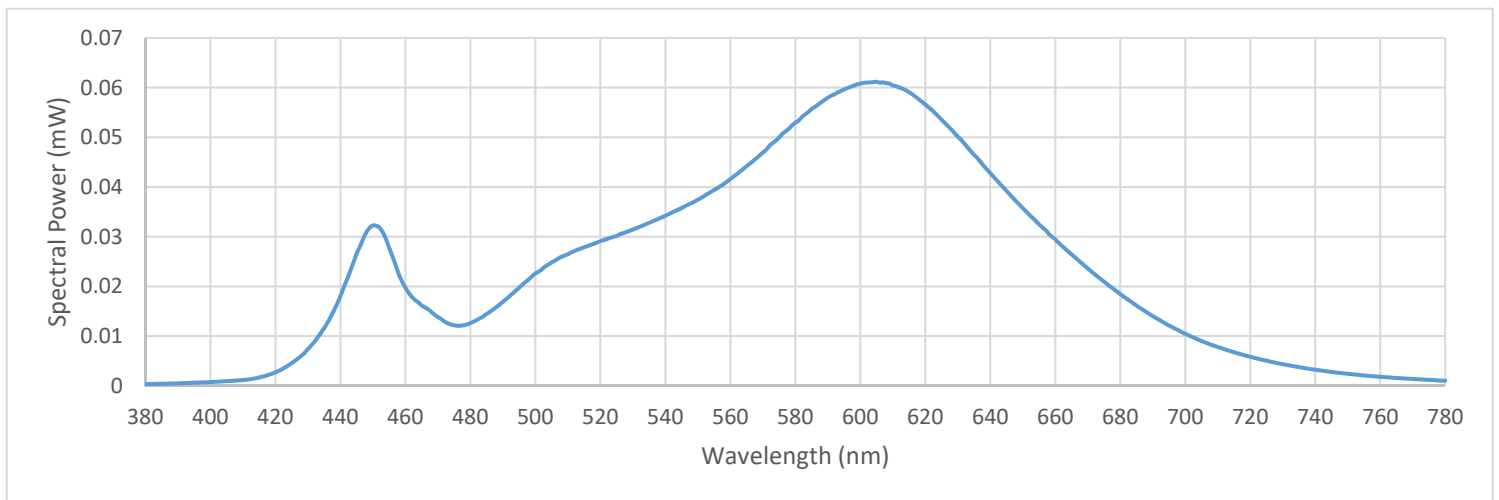
**Test Report Number: LLIA000901-035B**

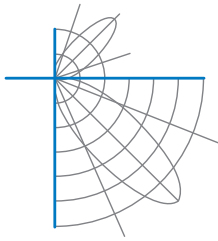
Catalog Number: W2093\_X F11/D61/L406

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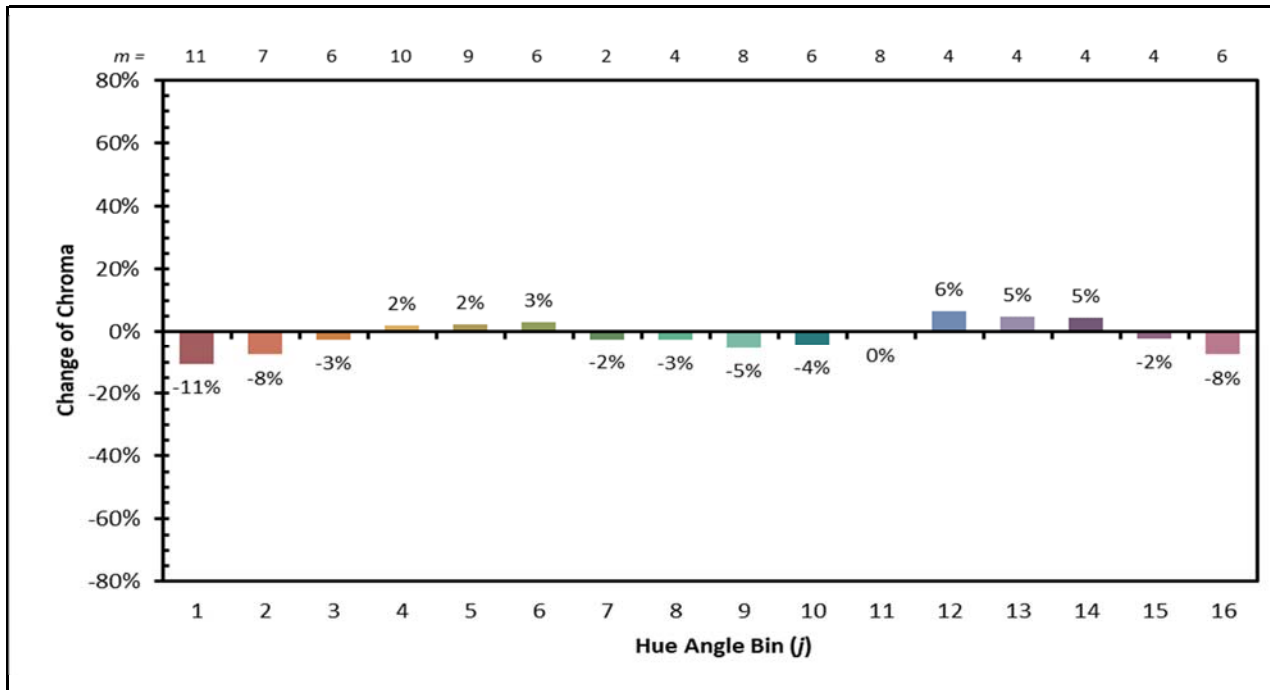
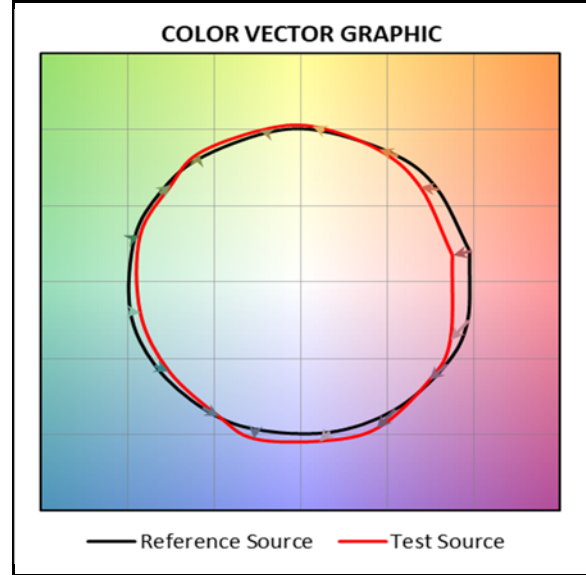
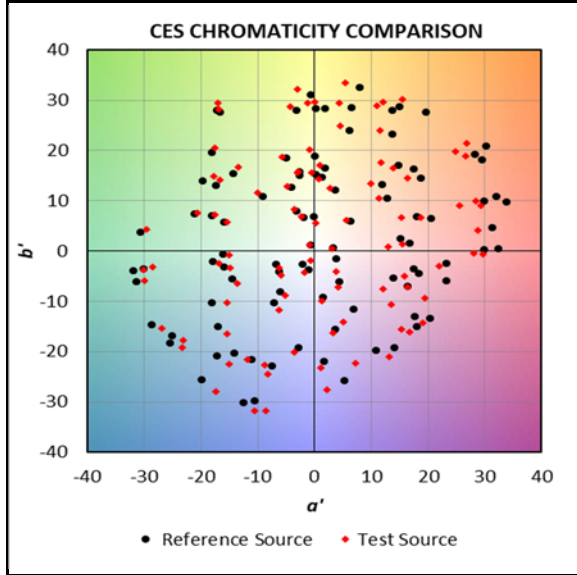
Summary Spectral Power Distribution (wavelength - nm, spectral power - mW)

380	0.000354	480	0.012629	580	0.052937	680	0.018433
385	0.000396	485	0.014486	585	0.055715	685	0.016154
390	0.000495	490	0.016911	590	0.058014	690	0.014027
395	0.000610	495	0.019753	595	0.059621	695	0.012097
400	0.000752	500	0.022592	600	0.060784	700	0.010482
405	0.000920	505	0.024818	605	0.061161	705	0.009020
410	0.001158	510	0.026469	610	0.060457	710	0.007775
415	0.001660	515	0.027878	615	0.059111	715	0.006734
420	0.002719	520	0.029142	620	0.056551	720	0.005814
425	0.004529	525	0.030143	625	0.053549	725	0.005017
430	0.007405	530	0.031440	630	0.050127	730	0.004351
435	0.011662	535	0.032799	635	0.046503	735	0.003745
440	0.018012	540	0.034211	640	0.042803	740	0.003228
445	0.026624	545	0.035741	645	0.039239	745	0.002792
450	0.032274	550	0.037448	650	0.035748	750	0.002403
455	0.027744	555	0.039375	655	0.032478	755	0.002082
460	0.019786	560	0.041626	660	0.029469	760	0.001806
465	0.016149	565	0.044189	665	0.026423	765	0.001558
470	0.013830	570	0.046952	670	0.023585	770	0.001351
475	0.012173	575	0.049941	675	0.020984	775	0.001173
						780	0.001019





IES TM-30 Summary





**Test Report Number: LLIA000901-035B**

Catalog Number: W2093\_X F11/D61/L406

Wall mounted, formed white enamel aluminum housing, formed white enamel steel enclosure with white inner "lumenate" enclosure and translucent white plastic outer enclosure. 96 white LEDs, two Samsung Electronics LT-M562C G2 3000K-S49 LED boards with 48 LEDs each. One Philips Advance Xitanium XI054C150V054BST1 LED driver.

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

**Test Temperature:** 24.7 °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.