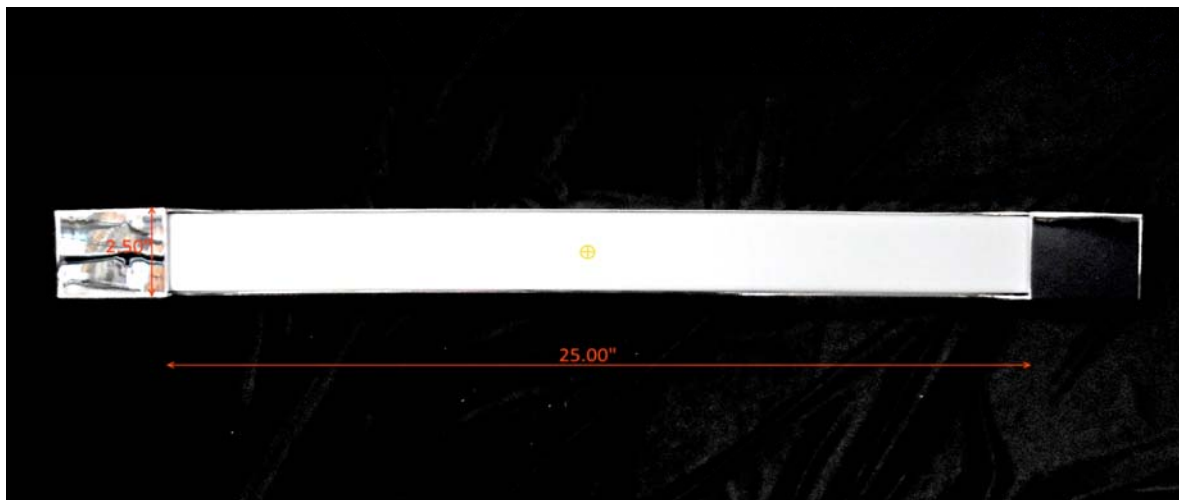




# Report of Test

## LLIA000802-005A

Catalog Number: 3-525-14 Apollo Vanity  
 Wall mounted, formed steel housing, formed white enamel  
 steel LED tray, translucent white plastic enclosure.  
 60 white LEDs, Two Harvard Engineering LEDENG-164-930 LED boards with 30 LEDs each  
 Two LTF DA12W350C1834D010-0014 dimming LED drivers.  
 120.0Vac, 60.00Hz, 0.2209A, 25.86W, 0.976PF, 8.9%THD(i)



### Performance Summary

Total Light Output	1751 lm
Luminaire Power	25.9 W
Luminous Efficacy	67.6 lm/W

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



**Test Report No. LLIA000802-005A**

Catalog Number: 3-525-14 Apollo Vanity

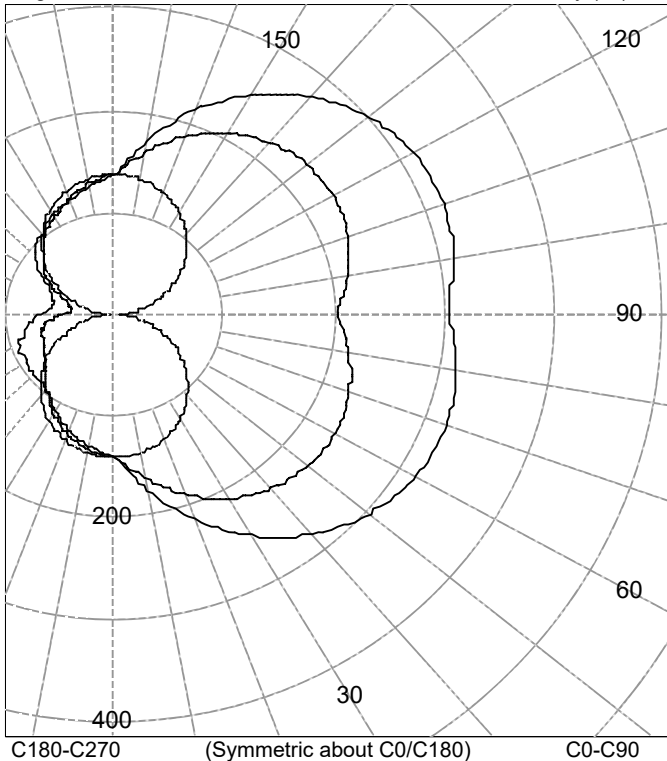
Wall mounted, formed steel housing, formed white enamel  
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120.0Vac, 60.00Hz, 0.2209A, 25.86W, 0.976PF, 8.9%THD(i)

Legend: C0/C180-Solid, C45/C225-Dashed, C90/C270-Grey (cd)



**INTENSITY SUMMARY (cd)**

Gamma	C-Plane					Flux (lm)
	C0	C22.5	C45	C67.5	C90	
0.0	140	140	140	140	140	
5.0	154	153	150	141	140	14
10.0	175	172	164	146	138	
15.0	195	190	176	150	135	43
20.0	215	208	188	154	131	
25.0	234	225	199	157	126	71
30.0	251	240	209	159	120	
35.0	267	254	217	159	112	97
40.0	282	266	223	159	104	
45.0	294	276	228	157	95	118
50.0	304	285	231	154	85	
55.0	312	291	233	150	75	133
60.0	317	295	233	145	64	
65.0	321	297	231	139	53	141
70.0	321	296	228	132	42	
75.0	320	294	223	124	32	141
80.0	316	290	217	116	21	
85.0	310	283	210	108	11	132
90.0	306	279	205	101	4	

**ZONAL FLUX AND PERCENTAGES**

Zone	Flux (lm)	% Lamp	% Luminaire
0-30	128	N / A	7.3
0-40	225	N / A	12.8
0-60	475	N / A	27.1
0-90	889	N / A	50.8
40-90	664	N / A	37.9
60-90	414	N / A	23.6
90-180	862	N / A	49.2
0-180	1751	N / A	100.0

Total Light Output = 1,751 lm

Signed:

Authorized Signatory

Date of test 11-Aug-2017

Date of report 11-Aug-2017



**Test Report No. LLIA000802-005A**

Catalog Number: 3-525-14 Apollo Vanity

Wall mounted, formed steel housing, formed white enamel  
steel LED tray, translucent white plastic enclosure.

60 white LEDs, Two Harvard Engineering LEDENG-164-930 LED boards with 30 LEDs each

Two LTF DA12W350C1834D010-0014 dimming LED drivers.

120.0Vac, 60.00Hz, 0.2209A, 25.86W, 0.976PF, 8.9%THD(i)

**Intensity data (cd)**

Gamma	C-Plane				
	C0	C22.5	C45	C67.5	C90
0.0	140	140	140	140	140
2.5	145	144	144	139	141
5.0	154	153	150	141	140
7.5	165	162	157	143	139
10.0	175	172	164	146	138
12.5	185	181	170	148	137
15.0	195	190	176	150	135
17.5	205	199	183	153	133
20.0	215	208	188	154	131
22.5	225	216	194	156	129
25.0	234	225	199	157	126
27.5	243	232	204	158	123
30.0	251	240	209	159	120
32.5	260	247	213	159	116
35.0	267	254	217	159	112
37.5	275	260	220	159	108
40.0	282	266	223	159	104
42.5	288	271	226	158	100
45.0	294	276	228	157	95
47.5	299	281	230	156	90
50.0	304	285	231	154	85
52.5	308	288	232	152	80
55.0	312	291	233	150	75
57.5	315	293	233	148	70
60.0	317	295	233	145	64
62.5	319	296	232	142	59
65.0	321	297	231	139	53
67.5	321	297	229	136	48
70.0	321	296	228	132	42
72.5	321	295	225	128	37
75.0	320	294	223	124	32
77.5	318	292	220	120	26
80.0	316	290	217	116	21
82.5	314	287	214	112	16
85.0	310	283	210	108	11
87.5	307	280	206	104	7
90.0	306	279	205	101	4



**Test Report No. LLIA000802-005A**

Catalog Number: 3-525-14 Apollo Vanity

Wall mounted, formed steel housing, formed white enamel  
steel LED tray, translucent white plastic enclosure.

60 white LEDs, Two Harvard Engineering LEDENG-164-930 LED boards with 30 LEDs each

Two LTF DA12W350C1834D010-0014 dimming LED drivers.

120.0Vac, 60.00Hz, 0.2209A, 25.86W, 0.976PF, 8.9%THD(i)

**Intensity data (cd)**

Gamma	C-Plane				
	C0	C22.5	C45	C67.5	C90
90.0	306	279	205	101	4
92.5	306	279	205	103	7
95.0	308	281	209	108	12
97.5	311	285	212	112	17
100.0	313	287	216	116	22
102.5	316	290	219	121	27
105.0	317	292	222	124	32
107.5	318	293	225	128	37
110.0	319	294	227	132	43
112.5	319	295	229	135	48
115.0	318	295	230	138	53
117.5	317	294	231	141	58
120.0	315	293	231	144	64
122.5	313	291	231	147	69
125.0	310	289	231	149	74
127.5	306	286	230	151	79
130.0	302	282	229	153	84
132.5	297	278	228	154	89
135.0	292	274	226	156	93
137.5	286	269	223	157	98
140.0	280	264	221	157	102
142.5	273	258	218	158	106
145.0	265	251	214	158	110
147.5	258	245	210	158	114
150.0	250	238	206	157	117
152.5	241	230	202	157	120
155.0	232	222	197	156	123
157.5	223	214	191	154	126
160.0	213	206	186	153	128
162.5	204	197	180	151	130
165.0	194	188	174	149	132
167.5	183	179	168	146	134
170.0	173	170	161	144	135
172.5	163	160	154	141	136
175.0	153	151	148	138	137
177.5	143	142	141	136	137
180.0	137	137	137	137	137



**Test Report No. LLIA000802-005A**

Catalog Number: 3-525-14 Apollo Vanity

Wall mounted, formed steel housing, formed white enamel  
steel LED tray, translucent white plastic enclosure.

60 white LEDs, Two Harvard Engineering LEDENG-164-930 LED boards with 30 LEDs each

Two LTF DA12W350C1834D010-0014 dimming LED drivers.

120.0Vac, 60.00Hz, 0.2209A, 25.86W, 0.976PF, 8.9%THD(i)

**Intensity data (cd)**

Gamma	C-Plane				
	C90	C112.5	C135	C157.5	C180
0.0	140	140	140	140	140
2.5	141	137	140	138	137
5.0	140	136	139	137	136
7.5	139	135	137	135	134
10.0	138	134	135	133	132
12.5	137	132	133	130	129
15.0	135	130	131	128	127
17.5	133	127	128	125	124
20.0	131	125	125	122	121
22.5	129	122	122	119	118
25.0	126	119	119	116	115
27.5	123	115	115	112	111
30.0	120	112	112	109	108
32.5	116	108	108	105	104
35.0	112	104	104	101	101
37.5	108	100	99	98	98
40.0	104	96	95	95	96
42.5	100	92	91	93	95
45.0	95	87	87	91	93
47.5	90	82	83	90	95
50.0	85	78	80	91	95
52.5	80	73	78	90	95
55.0	75	68	76	90	94
57.5	70	63	76	89	93
60.0	64	58	74	87	92
62.5	59	54	73	86	91
65.0	53	50	71	86	92
67.5	48	47	69	88	94
70.0	42	44	68	87	89
72.5	37	43	70	85	91
75.0	32	41	68	83	86
77.5	26	39	68	79	86
80.0	21	39	63	79	83
82.5	16	40	63	73	77
85.0	11	38	57	71	76
87.5	7	31	53	68	72
90.0	4	25	49	64	69



**Test Report No. LLIA000802-005A**

Catalog Number: 3-525-14 Apollo Vanity

Wall mounted, formed steel housing, formed white enamel  
steel LED tray, translucent white plastic enclosure.

60 white LEDs, Two Harvard Engineering LEDENG-164-930 LED boards with 30 LEDs each

Two LTF DA12W350C1834D010-0014 dimming LED drivers.

120.0Vac, 60.00Hz, 0.2209A, 25.86W, 0.976PF, 8.9%THD(i)

**Intensity data (cd)**

Gamma	C-Plane				
	C90	C112.5	C135	C157.5	C180
90.0	4	25	49	64	69
92.5	7	23	44	59	64
95.0	12	23	40	54	59
97.5	17	25	39	53	57
100.0	22	27	41	52	56
102.5	27	30	43	53	56
105.0	32	34	45	55	59
107.5	37	39	47	56	60
110.0	43	43	51	58	61
112.5	48	47	57	61	64
115.0	53	51	62	65	67
117.5	58	55	66	70	71
120.0	64	60	71	75	77
122.5	69	65	75	80	81
125.0	74	70	79	84	85
127.5	79	74	82	88	90
130.0	84	78	84	92	94
132.5	89	81	87	95	97
135.0	93	85	91	97	100
137.5	98	89	95	98	102
140.0	102	93	99	100	102
142.5	106	97	102	103	104
145.0	110	101	105	107	107
147.5	114	104	107	109	110
150.0	117	108	109	112	113
152.5	120	111	111	114	115
155.0	123	115	114	115	116
157.5	126	118	118	116	117
160.0	128	121	121	119	118
162.5	130	123	124	121	121
165.0	132	126	126	124	123
167.5	134	128	129	126	126
170.0	135	130	131	129	128
172.5	136	131	133	131	130
175.0	137	133	135	133	132
177.5	137	134	137	135	134
180.0	137	137	137	137	137



**Test Number: LLIA000802-005A**

Catalog Number: 3-525-14 Apollo Vanity

Wall mounted, formed steel housing, formed white enamel steel LED tray, translucent white plastic enclosure.

60 white LEDs, Two Harvard Engineering LEDENG-164-930 LED boards with 30 LEDs each

Two LTF DA12W350C1834D010-0014 dimming LED drivers.

120.0Vac, 60.00Hz, 0.2209A, 25.86W, 0.976PF, 8.9%THD(i)

**Coefficients Of Utilization - Zonal Cavity Method**

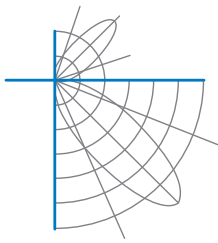
Effective Floor Cavity Reflectance 0.20

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	107	107	107	107	99	99	99	99	84	84	84	70	70	70	57	57	57	51
1	94	88	83	78	86	81	77	72	68	64	61	56	53	51	44	42	41	35
2	84	75	67	61	77	69	62	56	57	52	48	47	43	39	37	34	31	27
3	76	65	56	49	69	59	52	46	49	43	38	40	36	32	32	28	25	21
4	69	57	47	41	63	52	44	38	43	37	32	35	30	26	28	24	21	17
5	63	50	41	34	57	46	38	32	38	32	27	31	26	22	24	21	17	14
6	58	44	35	29	53	41	33	27	34	28	23	28	23	19	22	18	15	12
7	53	40	31	25	49	37	29	23	31	24	20	25	20	16	20	16	13	10
8	49	36	28	22	45	33	26	20	28	22	17	23	18	14	18	14	11	9
9	46	33	25	19	42	30	23	18	25	19	15	21	16	13	17	13	10	8
10	43	30	22	17	39	28	21	16	23	18	14	19	15	11	15	12	9	7

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	3.9	11.26	7.61
8.0	2.2	15.01	10.14
10.0	1.4	18.77	12.68
12.0	1.0	22.52	15.21
14.0	0.7	26.28	17.75
16.0	0.5	30.03	20.28



**Test Report No. LLIA000802-005A**

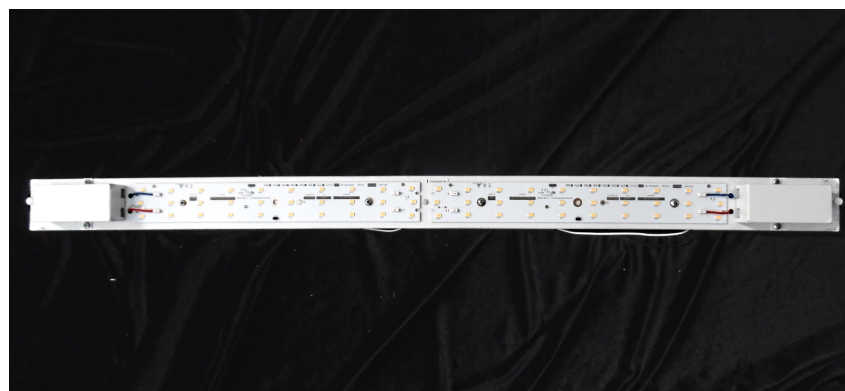
Catalog Number: 3-525-14 Apollo Vanity

Wall mounted, formed steel housing, formed white enamel  
steel LED tray, translucent white plastic enclosure.

60 white LEDs, Two Harvard Engineering LEDENG-164-930 LED boards with 30 LEDs each

Two LTF DA12W350C1834D010-0014 dimming LED drivers.

120.0Vac, 60.00Hz, 0.2209A, 25.86W, 0.976PF, 8.9%THD(i)







**Test Report No. LLIA000802-005A**

Catalog Number: 3-525-14 Apollo Vanity

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60 white LEDs, Two Harvard Engineering LEDENG-164-930 LED boards with 30 LEDs each  
Two LTF DA12W350C1834D010-0014 dimming LED drivers.  
120.0Vac, 60.00Hz, 0.2209A, 25.86W, 0.976PF, 8.9%THD(i)

**Test Distance** 9.5 m  
**Test Temperature** 24.8 °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

**LLIA000802-005B**

Integrating Sphere Report

Catalog Number: 3-525-14 Apollo Vanity

Wall mounted, formed steel housing, formed white enamel  
steel LED tray, translucent white plastic enclosure.

60 white LEDs, Two Harvard Engineering LEDENG-164-930 LED boards with 30 LEDs each  
Two LTF DA12W350C1834D010-0014 dimming LED drivers.



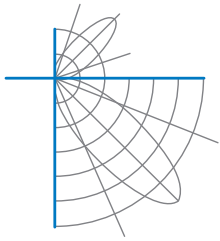
### Performance Summary

Voltage	120.0 Vac
Current	0.2208 A
Power	25.86 W
Frequency	60.00 Hz
Power Factor	0.976
Current THD	8.9 %

Total Luminous Flux	1768.9 lm
Efficacy	68.4 lm/W
Chromaticity (x,y)	(0.4319, 0.3976)
(u',v')	(0.2501, 0.5180)
Duv	-0.0019
CCT	3032 K
CRI (Ra)	93
R9	66

Prepared For:  
Oxygen Lighting  
201 Railhead Road  
Fort Worth, TX 76106, USA

Test date: 08/07/2017  
Report date: 08/11/2017



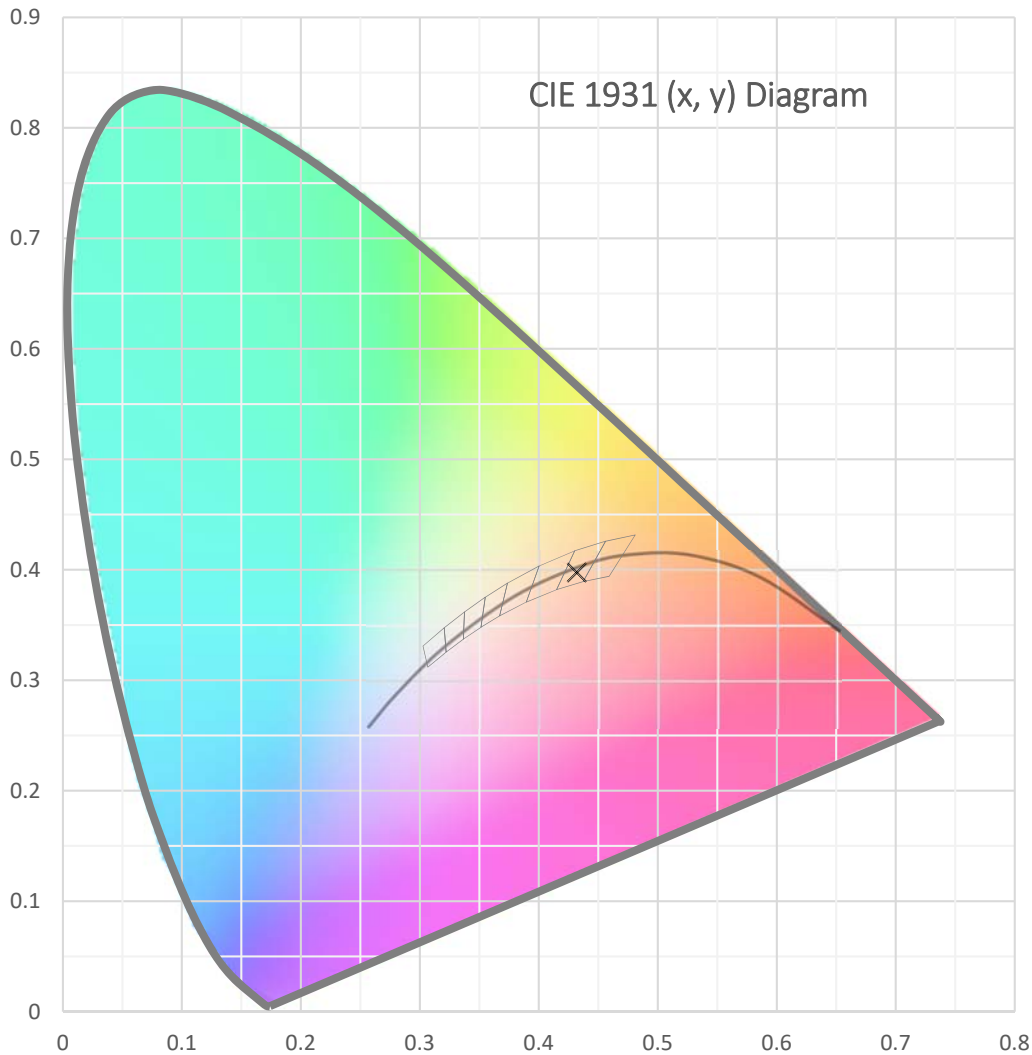
**Test Report Number: LLIA000802-005B**

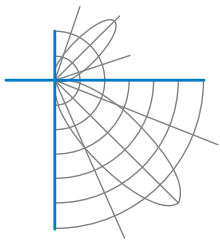
Catalog Number: 3-525-14 Apollo Vanity

Wall mounted, formed steel housing, formed white enamel  
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Two LTF DA12W350C1834D010-0014 dimming LED drivers.





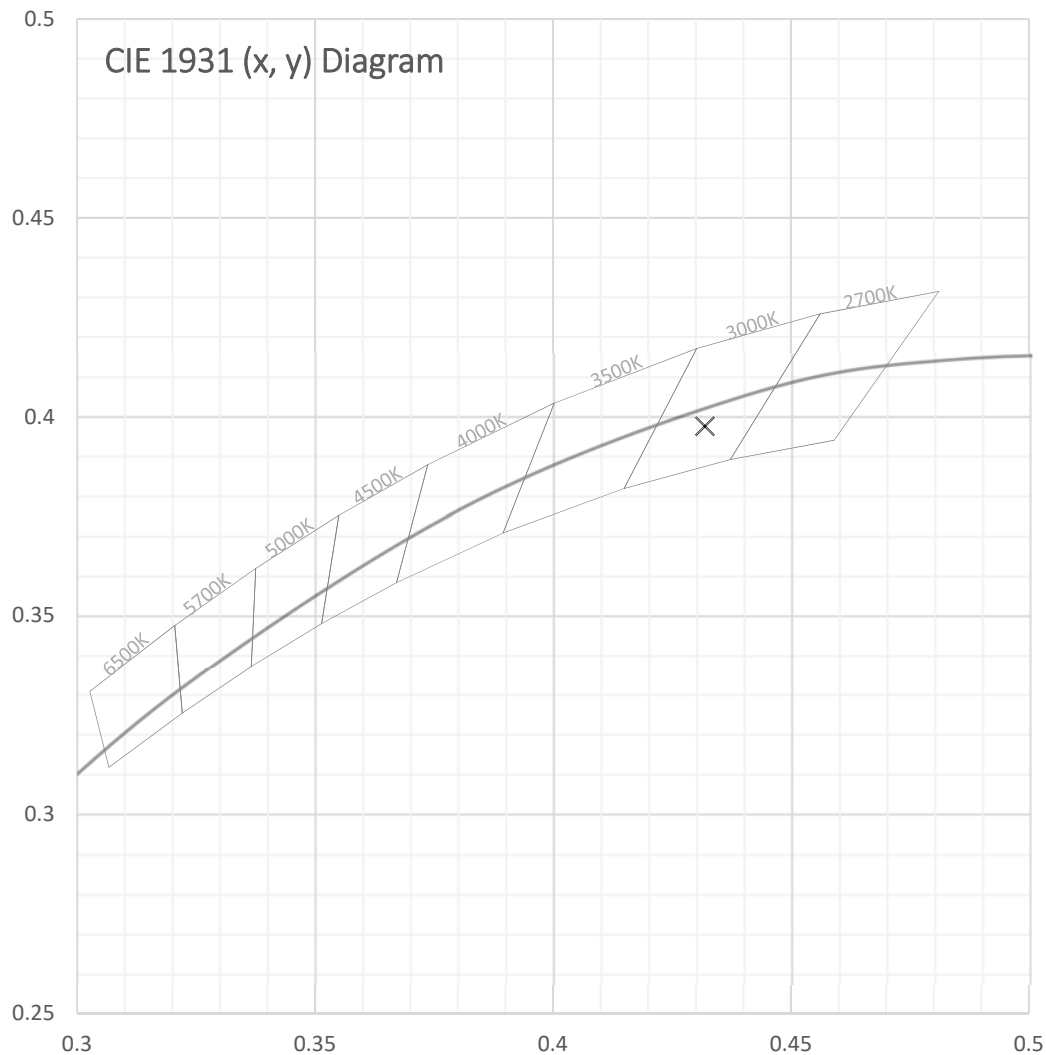
**Test Report Number: LLIA000802-005B**

Catalog Number: 3-525-14 Apollo Vanity

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**Test Report Number: LLIA000802-005B**

Catalog Number: 3-525-14 Apollo Vanity

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Two LTF DA12W350C1834D010-0014 dimming LED drivers.

**Spectral Data**

Total Radiant Flux	6.292 W
Total Luminous Flux	1768.9 Lm
Chromaticity CIE 1931 (x, y)	(0.4319, 0.3976)
Chromaticity CIE 1976 (u', v')	(0.2501, 0.5180)
Correlated Color Temperature (CCT)	3032 K
Color Rendering Index (Ra)	93
R1	94
R2	96
R3	96
R4	93
R5	93
R6	94
R7	93
R8	85
R9	66
R10	89
R11	94
R12	83
R13	94
R14	97
Distance from Planckian Locus (Duv)	-0.0019
Scotopic/Photopic Ratio *	1.421

**Electrical Data**

Voltage	120.0 Vac
Current	0.2208 A
Power	25.86 W
Frequency	60.00 Hz
Power Factor	0.976
Current THD	8.9 %



**Test Report Number: LLIA000802-005B**

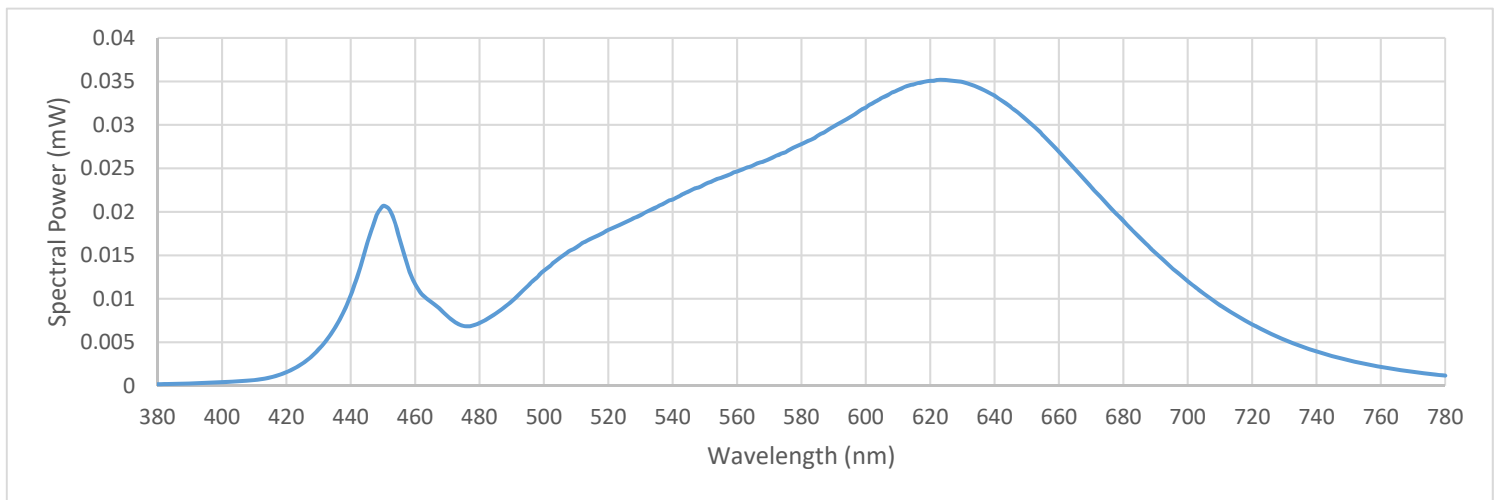
Catalog Number: 3-525-14 Apollo Vanity

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60 white LEDs, Two Harvard Engineering LEDENG-164-930 LED boards with 30 LEDs each  
Two LTF DA12W350C1834D010-0014 dimming LED drivers.

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

380	0.000184	480	0.007208	580	0.027797	680	0.018965
385	0.000207	485	0.008300	585	0.028747	685	0.017098
390	0.000258	490	0.009705	590	0.029837	690	0.015297
395	0.000330	495	0.011463	595	0.030883	695	0.013574
400	0.000414	500	0.013235	600	0.031993	700	0.012053
405	0.000509	505	0.014720	605	0.033121	705	0.010612
410	0.000651	510	0.015904	610	0.034016	710	0.009255
415	0.000962	515	0.016996	615	0.034666	715	0.008118
420	0.001562	520	0.017933	620	0.035066	720	0.007048
425	0.002572	525	0.018756	625	0.035138	725	0.006111
430	0.004194	530	0.019599	630	0.034940	730	0.005312
435	0.006618	535	0.020529	635	0.034305	735	0.004569
440	0.010420	540	0.021413	640	0.033367	740	0.003940
445	0.016216	545	0.022349	645	0.032019	745	0.003399
450	0.020676	550	0.023171	650	0.030547	750	0.002926
455	0.017085	555	0.023915	655	0.028816	755	0.002514
460	0.011707	560	0.024645	660	0.026944	760	0.002178
465	0.009628	565	0.025344	665	0.024885	765	0.001865
470	0.008033	570	0.026054	670	0.022857	770	0.001594
475	0.006870	575	0.026844	675	0.020880	775	0.001370
						780	0.001173





**Test Report Number: LLIA000802-005B**

Catalog Number: 3-525-14 Apollo Vanity

Wall mounted, formed steel housing, formed white enamel  
steel LED tray, translucent white plastic enclosure.

60 white LEDs, Two Harvard Engineering LEDENG-164-930 LED boards with 30 LEDs each

Two LTF DA12W350C1834D010-0014 dimming LED drivers.

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:	24.6 °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
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.