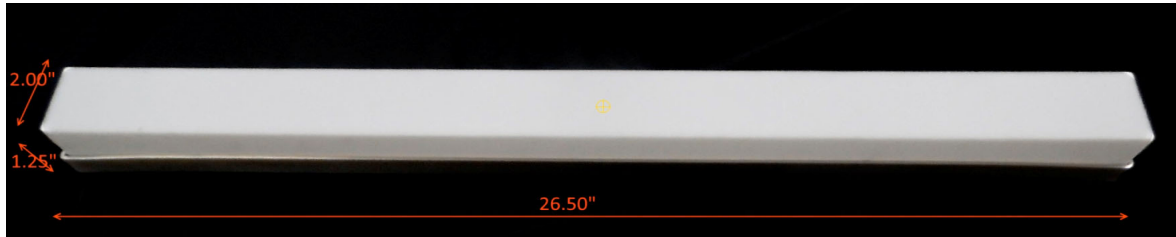




# Report of Test

## LLIA000824-001A

Catalog Number: 3-571-24 Adagio Vanity  
Wall mounted, formed steel housing with white enamel steel reflector,  
translucent white plastic enclosure.  
72 white LEDs, One Harvard Engineering LEDENG-157-30-NL LED board  
One LTF DA12W350C1834D010-0014 dimming LED driver.  
120.0Vac, 60.00Hz, 0.1268A, 14.94W, 0.982PF, 7.7%THD(i)



### Performance Summary

Total Light Output	1180 lm
Luminaire Power	14.9 W
Luminous Efficacy	79.2 lm/W

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



**Test Report No. LLIA000824-001A**

Catalog Number: 3-571-24 Adagio Vanity

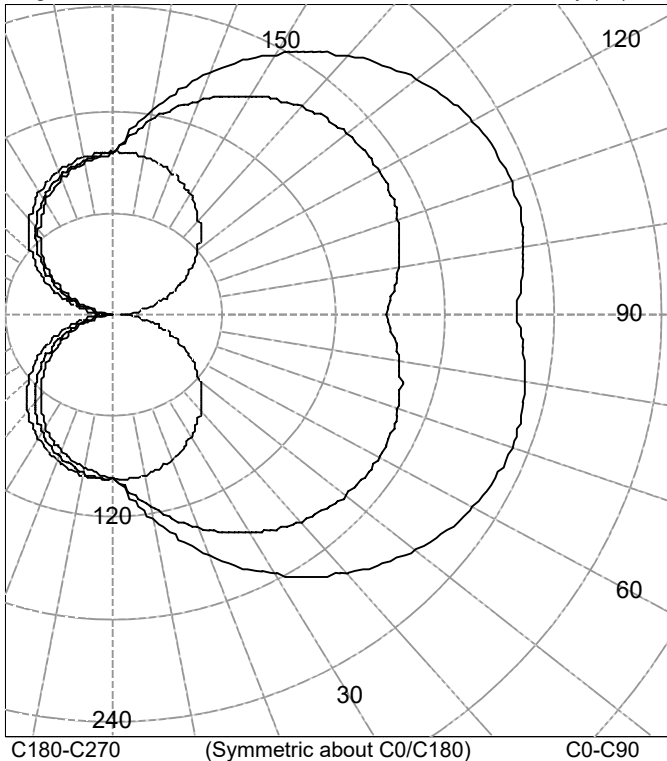
Wall mounted, formed steel housing with white enamel steel reflector,  
translucent white plastic enclosure.

72 white LEDs, One Harvard Engineering LEDENG-157-30-NL LED board

One LTF DA12W350C1834D010-0014 dimming LED driver.

120.0Vac, 60.00Hz, 0.1268A, 14.94W, 0.982PF, 7.7%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	97	97	97	97	97	
5.0	109	108	106	98	97	10
10.0	123	121	116	103	96	
15.0	138	134	125	107	94	30
20.0	152	147	134	110	92	
25.0	165	159	142	112	88	50
30.0	177	170	149	114	84	
35.0	189	180	155	114	79	69
40.0	199	189	159	114	73	
45.0	208	196	163	113	67	82
50.0	216	203	166	112	61	
55.0	222	208	167	109	54	91
60.0	227	211	167	106	47	
65.0	230	213	167	102	39	92
70.0	231	214	165	97	32	
75.0	230	213	162	92	24	88
80.0	228	210	158	87	17	
85.0	224	206	153	81	10	79
90.0	220	201	149	76	4	

**AVERAGE LUMINANCE (cd/m<sup>2</sup>)**

Gamma	C0	C45	C90
45.0	5268	4910	4112
55.0	5488	5035	3931
65.0	5708	5183	3701
75.0	5942	5378	3408
85.0	6209	5635	2902

**ZONAL FLUX AND PERCENTAGES**

Zone	Flux (lm)	% Lamp	% Luminaire
0-30	90	N / A	7.6
0-40	159	N / A	13.5
0-60	332	N / A	28.1
0-90	590	N / A	50.0
40-90	432	N / A	36.6
60-90	259	N / A	21.9
90-180	590	N / A	50.0
0-180	1180	N / A	100.0

Total Light Output = 1,180 lm

Signed:

Authorized Signatory

Date of test

11-Jul-2017

Date of report

11-Jul-2017



**Test Report No. LLIA000824-001A**

Catalog Number: 3-571-24 Adagio Vanity

Wall mounted, formed steel housing with white enamel steel reflector,  
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72 white LEDs, One Harvard Engineering LEDENG-157-30-NL LED board

One LTF DA12W350C1834D010-0014 dimming LED driver.

120.0Vac, 60.00Hz, 0.1268A, 14.94W, 0.982PF, 7.7%THD(i)

**Intensity data (cd)**

Gamma	C-Plane				
	C0	C22.5	C45	C67.5	C90
0.0	97	97	97	97	97
2.5	101	101	101	96	98
5.0	109	108	106	98	97
7.5	116	115	111	101	97
10.0	123	121	116	103	96
12.5	131	128	121	105	95
15.0	138	134	125	107	94
17.5	145	141	130	108	93
20.0	152	147	134	110	92
22.5	158	153	138	111	90
25.0	165	159	142	112	88
27.5	171	164	145	113	86
30.0	177	170	149	114	84
32.5	183	175	152	114	82
35.0	189	180	155	114	79
37.5	194	184	157	114	76
40.0	199	189	159	114	73
42.5	204	193	161	114	71
45.0	208	196	163	113	67
47.5	212	200	165	113	64
50.0	216	203	166	112	61
52.5	219	206	166	111	57
55.0	222	208	167	109	54
57.5	225	210	167	108	50
60.0	227	211	167	106	47
62.5	228	213	167	104	43
65.0	230	213	167	102	39
67.5	230	214	166	100	35
70.0	231	214	165	97	32
72.5	231	213	164	95	28
75.0	230	213	162	92	24
77.5	229	211	160	90	21
80.0	228	210	158	87	17
82.5	226	208	156	84	14
85.0	224	206	153	81	10
87.5	222	203	151	78	7
90.0	220	201	149	76	4



**Test Report No. LLIA000824-001A**

Catalog Number: 3-571-24 Adagio Vanity

Wall mounted, formed steel housing with white enamel steel reflector,  
translucent white plastic enclosure.

72 white LEDs, One Harvard Engineering LEDENG-157-30-NL LED board

One LTF DA12W350C1834D010-0014 dimming LED driver.

120.0Vac, 60.00Hz, 0.1268A, 14.94W, 0.982PF, 7.7%THD(i)

**Intensity data (cd)**

Gamma	C-Plane				
	C0	C22.5	C45	C67.5	C90
90.0	220	201	149	76	4
92.5	221	203	150	78	7
95.0	223	205	153	81	10
97.5	225	207	155	84	14
100.0	227	209	158	87	17
102.5	229	211	160	90	21
105.0	230	212	162	92	24
107.5	230	213	164	95	28
110.0	230	213	165	98	31
112.5	230	213	166	100	35
115.0	229	213	167	102	39
117.5	228	212	167	104	42
120.0	226	211	168	106	46
122.5	224	210	168	108	49
125.0	222	208	167	109	53
127.5	219	205	167	111	56
130.0	216	203	166	112	60
132.5	212	200	165	113	63
135.0	208	197	163	114	66
137.5	204	193	162	114	69
140.0	199	189	160	115	72
142.5	194	185	158	115	75
145.0	189	180	155	115	78
147.5	183	175	152	114	80
150.0	177	170	149	114	82
152.5	171	165	146	113	84
155.0	165	159	142	112	86
157.5	158	153	138	111	88
160.0	152	147	134	110	90
162.5	145	141	130	109	91
165.0	138	135	125	107	93
167.5	130	128	121	105	94
170.0	123	121	116	103	94
172.5	116	115	111	101	95
175.0	109	108	106	98	95
177.5	101	101	101	96	96
180.0	95	95	95	95	95



**Test Report No. LLIA000824-001A**

Catalog Number: 3-571-24 Adagio Vanity

Wall mounted, formed steel housing with white enamel steel reflector,  
translucent white plastic enclosure.

72 white LEDs, One Harvard Engineering LEDENG-157-30-NL LED board

One LTF DA12W350C1834D010-0014 dimming LED driver.

120.0Vac, 60.00Hz, 0.1268A, 14.94W, 0.982PF, 7.7%THD(i)

**Intensity data (cd)**

Gamma	C-Plane				
	C90	C112.5	C135	C157.5	C180
0.0	97	97	97	97	97
2.5	98	95	98	96	96
5.0	97	95	97	96	95
7.5	97	94	96	94	94
10.0	96	93	95	93	92
12.5	95	92	94	92	91
15.0	94	91	92	90	89
17.5	93	90	90	88	87
20.0	92	88	89	86	85
22.5	90	86	86	84	83
25.0	88	84	84	82	80
27.5	86	82	82	79	78
30.0	84	80	79	76	75
32.5	82	77	76	73	72
35.0	79	75	74	70	69
37.5	76	72	71	67	66
40.0	73	69	67	64	63
42.5	71	66	64	61	60
45.0	67	63	61	57	56
47.5	64	60	57	54	53
50.0	61	56	54	50	49
52.5	57	53	50	47	45
55.0	54	49	46	43	42
57.5	50	46	43	39	38
60.0	47	42	39	36	34
62.5	43	39	35	32	31
65.0	39	35	31	28	27
67.5	35	31	28	25	23
70.0	32	28	24	21	20
72.5	28	24	20	17	16
75.0	24	20	17	14	12
77.5	21	17	13	10	9
80.0	17	13	10	7	5
82.5	14	10	6	4	2
85.0	10	7	3	1	0
87.5	7	4	3	1	0
90.0	4	4	3	1	0



**Test Report No. LLIA000824-001A**

Catalog Number: 3-571-24 Adagio Vanity

Wall mounted, formed steel housing with white enamel steel reflector,  
translucent white plastic enclosure.

72 white LEDs, One Harvard Engineering LEDENG-157-30-NL LED board

One LTF DA12W350C1834D010-0014 dimming LED driver.

120.0Vac, 60.00Hz, 0.1268A, 14.94W, 0.982PF, 7.7%THD(i)

**Intensity data (cd)**

Gamma	C-Plane				
	C90	C112.5	C135	C157.5	C180
90.0	4	4	3	1	0
92.5	7	4	3	1	0
95.0	10	7	4	2	0
97.5	14	10	7	5	3
100.0	17	14	10	8	7
102.5	21	17	14	11	10
105.0	24	21	17	15	13
107.5	28	24	21	18	17
110.0	31	28	25	22	21
112.5	35	31	28	25	24
115.0	39	35	32	29	28
117.5	42	38	35	33	32
120.0	46	42	39	36	36
122.5	49	45	43	40	39
125.0	53	49	46	44	43
127.5	56	52	50	47	47
130.0	60	56	53	51	50
132.5	63	59	57	54	54
135.0	66	62	60	58	57
137.5	69	65	63	61	61
140.0	72	68	66	64	64
142.5	75	71	69	67	67
145.0	78	73	72	70	70
147.5	80	76	75	73	73
150.0	82	78	77	75	75
152.5	84	80	80	78	78
155.0	86	82	82	80	80
157.5	88	84	84	83	82
160.0	90	86	86	85	84
162.5	91	88	88	87	86
165.0	93	89	90	88	88
167.5	94	90	91	90	90
170.0	94	91	92	91	91
172.5	95	92	93	92	92
175.0	95	93	94	93	93
177.5	96	93	95	94	94
180.0	95	95	95	95	95



**Test Number: LLIA000824-001A**

Catalog Number: 3-571-24 Adagio Vanity

Wall mounted, formed steel housing with white enamel steel reflector,  
translucent white plastic enclosure.

72 white LEDs, One Harvard Engineering LEDENG-157-30-NL LED board

One LTF DA12W350C1834D010-0014 dimming LED driver.

120.0Vac, 60.00Hz, 0.1268A, 14.94W, 0.982PF, 7.7%THD(i)

**Coefficients Of Utilization - Zonal Cavity Method**

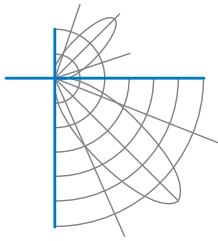
Effective Floor Cavity Reflectance 0.20

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	83	83	83	69	69	69	56	56	56	50
1	95	89	84	79	87	82	77	73	68	65	62	56	53	51	44	43	41	35
2	85	76	68	62	77	69	63	57	58	53	48	47	43	40	37	34	32	27
3	77	65	57	50	70	60	52	46	50	44	39	41	36	32	32	29	26	21
4	69	57	48	41	63	53	45	38	44	37	33	36	31	27	28	24	21	17
5	63	50	41	35	58	46	38	32	39	32	27	31	27	23	25	21	18	15
6	58	45	36	30	53	41	33	28	35	28	23	28	23	19	22	18	15	12
7	54	40	32	26	49	37	29	24	31	25	20	25	21	17	20	16	13	11
8	50	36	28	22	45	34	26	21	28	22	18	23	18	15	18	15	12	9
9	46	33	25	20	42	31	23	18	26	20	16	21	16	13	17	13	10	8
10	43	30	23	17	39	28	21	16	24	18	14	19	15	12	16	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	2.7	11.38	7.69
8.0	1.5	15.18	10.26
10.0	1.0	18.97	12.82
12.0	0.7	22.77	15.39
14.0	0.5	26.56	17.95
16.0	0.4	30.36	20.52



**Test Report No. LLIA000824-001A**

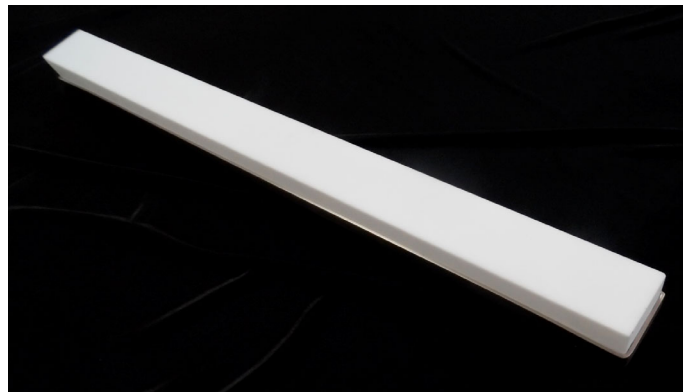
Catalog Number: 3-571-24 Adagio Vanity

Wall mounted, formed steel housing with white enamel steel reflector,  
translucent white plastic enclosure.

72 white LEDs, One Harvard Engineering LEDENG-157-30-NL LED board

One LTF DA12W350C1834D010-0014 dimming LED driver.

120.0Vac, 60.00Hz, 0.1268A, 14.94W, 0.982PF, 7.7%THD(i)







**Test Report No. LLIA000824-001A**

Catalog Number: 3-571-24 Adagio Vanity

Wall mounted, formed steel housing with white enamel steel reflector,  
translucent white plastic enclosure.

72 white LEDs, One Harvard Engineering LEDENG-157-30-NL LED board  
One LTF DA12W350C1834D010-0014 dimming LED driver.  
120.0Vac, 60.00Hz, 0.1268A, 14.94W, 0.982PF, 7.7%THD(i)

**Test Distance**            9.5 m  
**Test Temperature**      24.9 °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

**LLIA000824-001B**

Integrating Sphere Report

Catalog Number: 3-571-24 Adagio Vanity

Wall mounted, formed steel housing with white enamel steel reflector,  
translucent white plastic enclosure.

72 white LEDs, One Harvard Engineering LEDENG-157-30-NL LED board  
One LTF DA12W350C1834D010-0014 dimming LED driver.



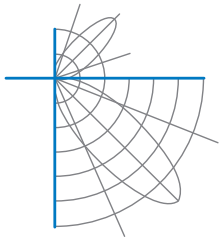
### Performance Summary

Voltage	120.0 Vac
Current	0.1272 A
Power	14.99 W
Frequency	60.00 Hz
Power Factor	0.982
Current THD	7.8 %

Total Luminous Flux	1193.1 lm
Efficacy	79.6 lm/W
Chromaticity (x,y)	(0.4389, 0.4054)
(u',v')	(0.2512, 0.5222)
Duv	0.0003
CCT	2978 K
CRI (Ra)	92
R9	62

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

Test date: 07/10/2017  
Report date: 07/11/2017



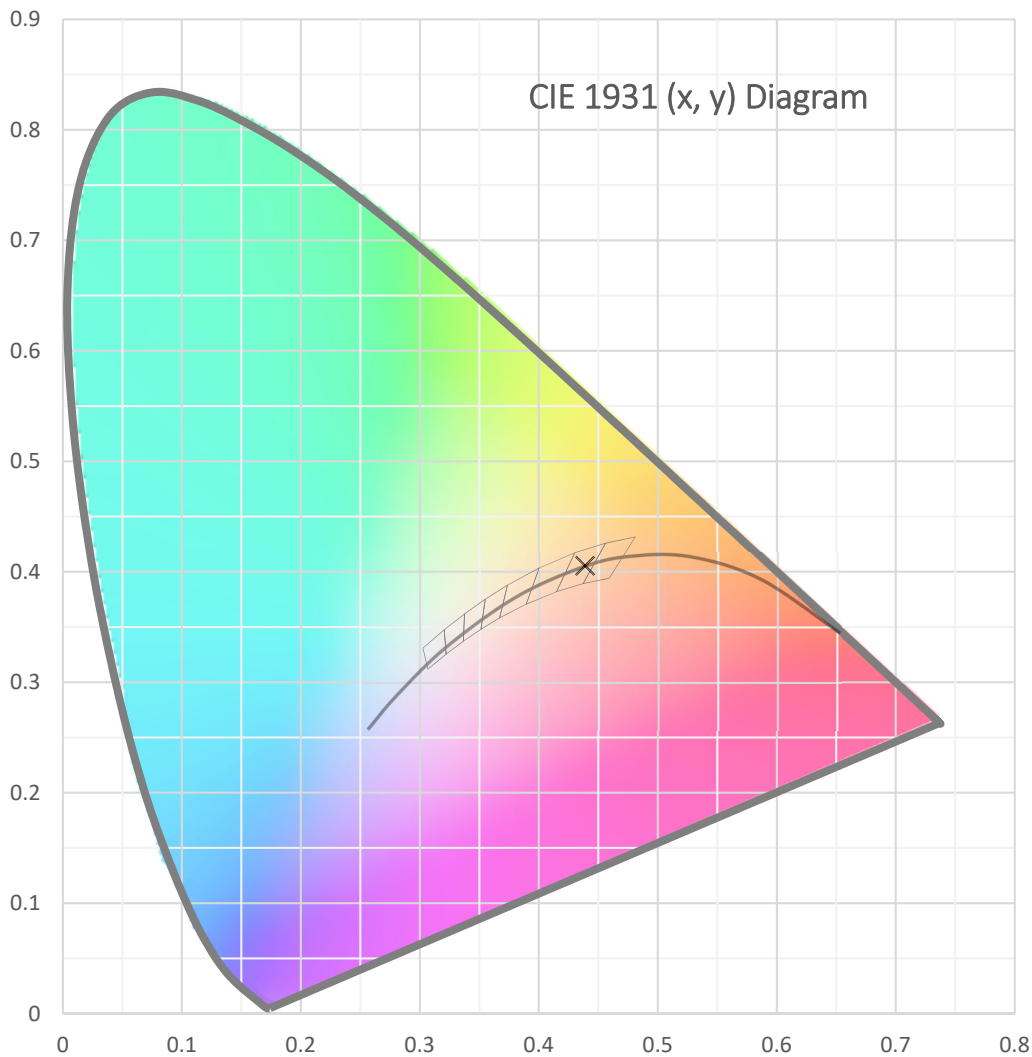
**Test Report Number: LLIA000824-001B**

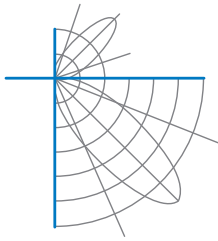
Catalog Number: 3-571-24 Adagio Vanity

Wall mounted, formed steel housing with white enamel steel reflector,  
translucent white plastic enclosure.

72 white LEDs, One Harvard Engineering LEDENG-157-30-NL LED board

One LTF DA12W350C1834D010-0014 dimming LED driver.





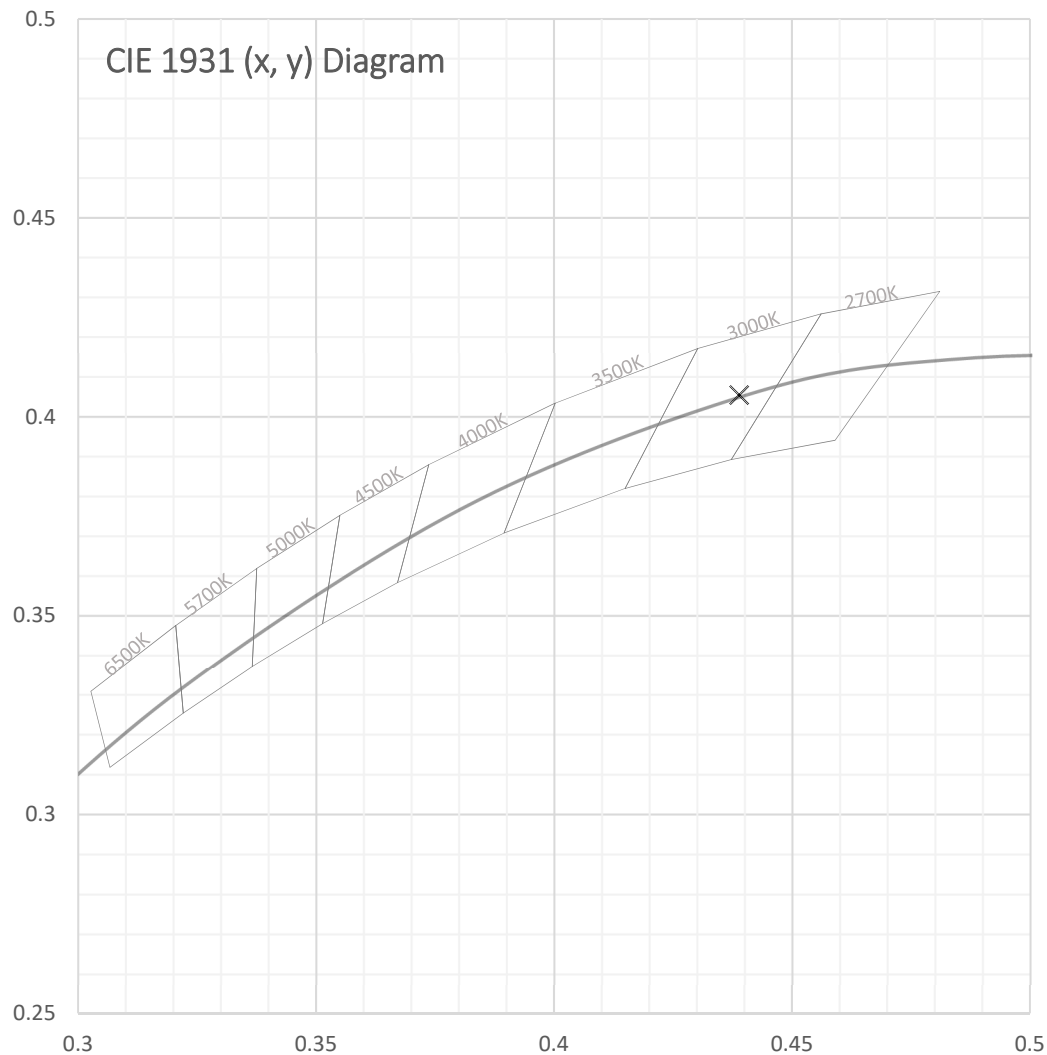
**Test Report Number: LLIA000824-001B**

Catalog Number: 3-571-24 Adagio Vanity

Wall mounted, formed steel housing with white enamel steel reflector,  
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72 white LEDs, One Harvard Engineering LEDENG-157-30-NL LED board

One LTF DA12W350C1834D010-0014 dimming LED driver.





**Test Report Number: LLIA000824-001B**

Catalog Number: 3-571-24 Adagio Vanity

Wall mounted, formed steel housing with white enamel steel reflector,  
translucent white plastic enclosure.

72 white LEDs, One Harvard Engineering LEDENG-157-30-NL LED board  
One LTF DA12W350C1834D010-0014 dimming LED driver.

**Spectral Data**

Total Radiant Flux	4.193 W
Total Luminous Flux	1193.1 Lm
Chromaticity CIE 1931 (x, y)	(0.4389, 0.4054)
Chromaticity CIE 1976 (u', v')	(0.2512, 0.5222)
Correlated Color Temperature (CCT)	2978 K
Color Rendering Index (Ra)	92
R1	92
R2	95
R3	95
R4	93
R5	92
R6	93
R7	93
R8	84
R9	62
R10	86
R11	93
R12	80
R13	93
R14	97
Distance from Planckian Locus (Duv)	0.0003
Scotopic/Photopic Ratio *	1.380

**Electrical Data**

Voltage	120.0 Vac
Current	0.1272 A
Power	14.99 W
Frequency	60.00 Hz
Power Factor	0.982
Current THD	7.8 %



**Test Report Number: LLIA000824-001B**

Catalog Number: 3-571-24 Adagio Vanity

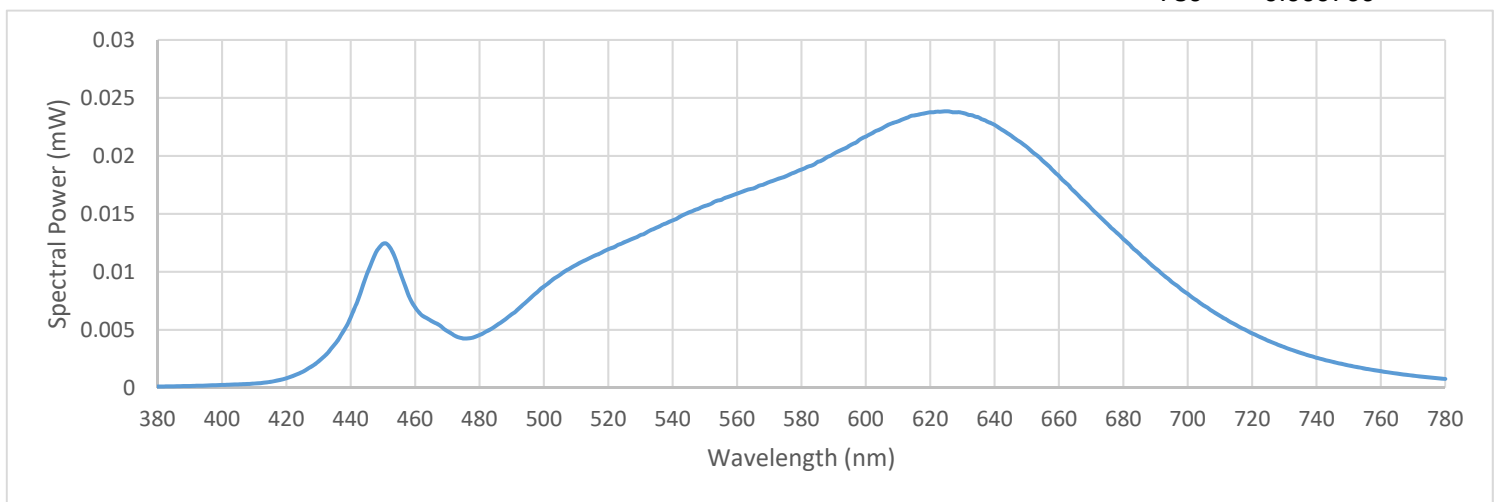
Wall mounted, formed steel housing with white enamel steel reflector,  
translucent white plastic enclosure.

72 white LEDs, One Harvard Engineering LEDENG-157-30-NL LED board

One LTF DA12W350C1834D010-0014 dimming LED driver.

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

380	0.000112	480	0.004552	580	0.018815	680	0.012829
385	0.000124	485	0.005328	585	0.019475	685	0.011562
390	0.000156	490	0.006337	590	0.020173	690	0.010306
395	0.000197	495	0.007525	595	0.020887	695	0.009131
400	0.000244	500	0.008734	600	0.021667	700	0.008105
405	0.000292	505	0.009739	605	0.022369	705	0.007095
410	0.000365	510	0.010591	610	0.022973	710	0.006209
415	0.000508	515	0.011295	615	0.023488	715	0.005421
420	0.000823	520	0.011947	620	0.023764	720	0.004693
425	0.001374	525	0.012554	625	0.023850	725	0.004055
430	0.002284	530	0.013173	630	0.023711	730	0.003510
435	0.003741	535	0.013807	635	0.023321	735	0.003019
440	0.006083	540	0.014433	640	0.022675	740	0.002590
445	0.009792	545	0.015118	645	0.021776	745	0.002242
450	0.012416	550	0.015680	650	0.020780	750	0.001927
455	0.010222	555	0.016199	655	0.019570	755	0.001654
460	0.006934	560	0.016742	660	0.018269	760	0.001430
465	0.005777	565	0.017187	665	0.016877	765	0.001224
470	0.004887	570	0.017742	670	0.015489	770	0.001044
475	0.004252	575	0.018222	675	0.014146	775	0.000894
						780	0.000766





**Test Report Number: LLIA000824-001B**

Catalog Number: 3-571-24 Adagio Vanity

Wall mounted, formed steel housing with white enamel steel reflector,  
translucent white plastic enclosure.

72 white LEDs, One Harvard Engineering LEDENG-157-30-NL LED board  
One LTF DA12W350C1834D010-0014 dimming 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:** 25.0 °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

**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.