

Report of Test

LLIA000802-052A-R01*

*This test reports supersedes test report LLIA000802-052A

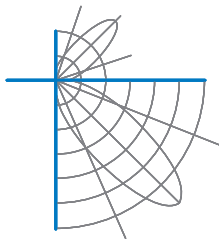
Catalog Number: 3-559-24 Zenith Vanity
Wall mounted, formed steel housing, formed white enamel
steel reflector, translucent white plastic enclosure
144 white LEDs, two Harvard Engineering LER7-568x17-930-72S-I LED boards with 72 LEDs each
Two LTF DA12W350C1834D010-0014 dimming LED drivers.
120.0Vac, 60.00Hz, 0.2500A, 29.40W, 0.980PF, 8.4%THD(i)



Performance Summary

Total Light Output	2223 lm
Luminaire Power	29.4 W
Luminous Efficacy	75.6 lm/W

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



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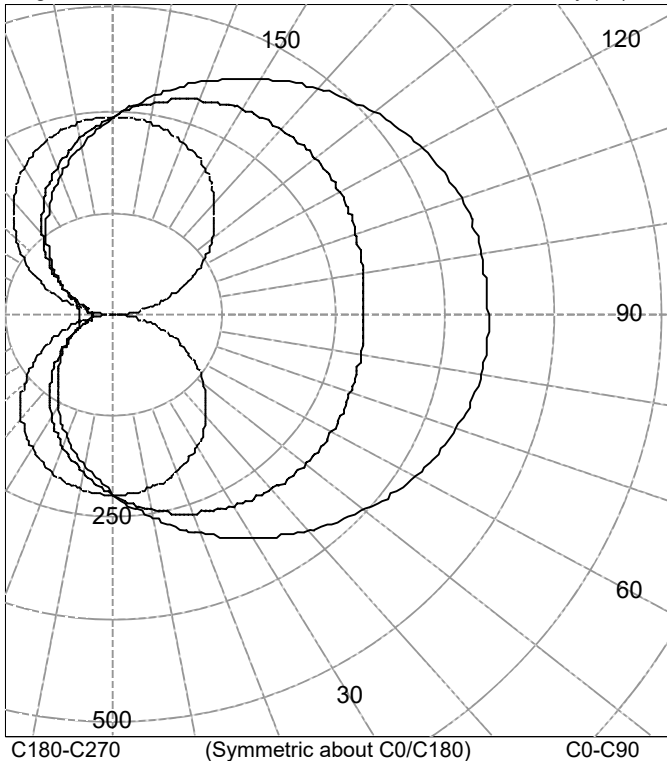
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120.0Vac, 60.00Hz, 0.2500A, 29.40W, 0.980PF, 8.4%THD(i)

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	222	222	222	222	222	
5.0	239	238	234	226	221	21
10.0	255	252	244	230	218	
15.0	271	266	253	232	214	62
20.0	287	280	260	232	207	
25.0	302	293	267	230	199	97
30.0	317	305	272	227	188	
35.0	332	317	276	222	177	126
40.0	347	328	280	216	163	
45.0	361	339	283	208	149	146
50.0	374	348	285	200	133	
55.0	386	357	286	192	117	157
60.0	397	365	287	183	100	
65.0	406	372	286	173	82	160
70.0	414	379	286	163	64	
75.0	420	384	285	153	47	158
80.0	424	387	285	146	29	
85.0	426	388	285	142	13	155
90.0	425	387	283	141	0	

ZONAL FLUX AND PERCENTAGES

Zone	Flux (lm)	% Lamp	% Luminaire
0-30	180	N / A	8.1
0-40	306	N / A	13.8
0-60	608	N / A	27.4
0-90	1081	N / A	48.6
40-90	775	N / A	34.8
60-90	472	N / A	21.3
90-180	1142	N / A	51.4
0-180	2223	N / A	100.0

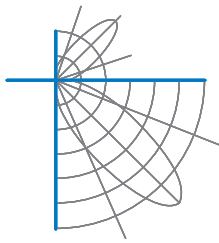
Total Light Output = 2,223 lm

Signed:

Authorized Signatory

Date of test 30-Sep-2017

Date of report 10-Oct-2017



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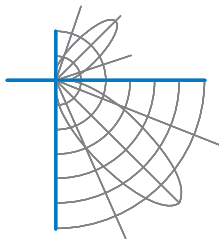
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Intensity data (cd)

Gamma	C-Plane				
	C0	C22.5	C45	C67.5	C90
0.0	222	222	222	222	222
2.5	230	230	229	224	222
5.0	239	238	234	226	221
7.5	247	245	239	228	220
10.0	255	252	244	230	218
12.5	263	259	248	231	216
15.0	271	266	253	232	214
17.5	278	273	257	232	211
20.0	287	280	260	232	207
22.5	294	286	263	231	203
25.0	302	293	267	230	199
27.5	310	299	270	228	194
30.0	317	305	272	227	188
32.5	325	311	274	224	183
35.0	332	317	276	222	177
37.5	340	323	278	219	170
40.0	347	328	280	216	163
42.5	354	333	282	212	156
45.0	361	339	283	208	149
47.5	367	344	284	204	141
50.0	374	348	285	200	133
52.5	380	353	286	196	125
55.0	386	357	286	192	117
57.5	391	361	287	187	108
60.0	397	365	287	183	100
62.5	402	369	287	178	91
65.0	406	372	286	173	82
67.5	410	376	286	168	73
70.0	414	379	286	163	64
72.5	417	381	285	158	55
75.0	420	384	285	153	47
77.5	422	386	285	149	38
80.0	424	387	285	146	29
82.5	425	388	285	144	21
85.0	426	388	285	142	13
87.5	426	388	284	141	5
90.0	425	387	283	141	0



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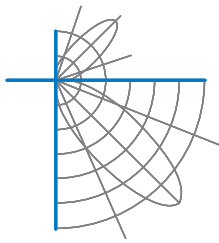
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Intensity data (cd)

Gamma	C-Plane				
	C0	C22.5	C45	C67.5	C90
90.0	425	387	283	141	0
92.5	425	387	284	142	6
95.0	424	387	285	144	14
97.5	425	388	286	146	24
100.0	425	388	287	150	33
102.5	424	388	289	154	42
105.0	423	388	290	159	52
107.5	422	386	291	164	61
110.0	420	385	293	170	71
112.5	417	383	294	176	81
115.0	414	381	295	181	91
117.5	410	378	296	187	100
120.0	406	376	297	192	110
122.5	402	373	298	198	119
125.0	397	369	298	203	128
127.5	392	366	299	208	137
130.0	386	362	299	213	146
132.5	381	358	299	218	155
135.0	375	354	298	222	163
137.5	369	349	298	227	171
140.0	362	345	297	231	179
142.5	355	340	296	235	186
145.0	348	335	294	238	193
147.5	342	329	293	242	200
150.0	335	324	291	244	206
152.5	327	318	289	247	212
155.0	320	312	286	248	217
157.5	312	306	283	250	222
160.0	305	300	280	251	226
162.5	297	293	277	251	230
165.0	289	286	273	251	234
167.5	281	279	269	251	237
170.0	274	272	265	250	239
172.5	266	265	260	248	241
175.0	258	258	255	247	242
177.5	249	251	250	244	243
180.0	243	243	243	243	243



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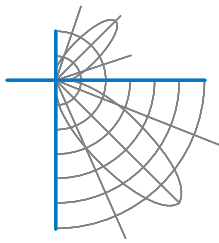
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Intensity data (cd)

Gamma	C-Plane				
	C90	C112.5	C135	C157.5	C180
0.0	222	222	222	222	222
2.5	222	217	217	215	212
5.0	221	214	211	208	205
7.5	220	210	205	201	197
10.0	218	205	199	193	190
12.5	216	201	193	186	182
15.0	214	196	186	178	174
17.5	211	190	179	171	166
20.0	207	184	172	163	159
22.5	203	178	165	156	151
25.0	199	172	157	148	144
27.5	194	165	150	141	137
30.0	188	159	143	133	129
32.5	183	151	135	126	122
35.0	177	144	128	118	115
37.5	170	136	120	111	108
40.0	163	129	113	104	101
42.5	156	121	105	97	95
45.0	149	113	98	91	89
47.5	141	105	91	84	83
50.0	133	97	83	79	78
52.5	125	89	77	73	72
55.0	117	82	70	67	67
57.5	108	74	64	62	62
60.0	100	66	58	57	57
62.5	91	59	52	52	53
65.0	82	52	47	48	49
67.5	73	45	42	43	44
70.0	64	38	37	40	43
72.5	55	32	33	38	42
75.0	47	27	30	37	41
77.5	38	22	28	36	40
80.0	29	17	27	36	40
82.5	21	14	26	36	39
85.0	13	13	26	35	39
87.5	5	12	26	36	39
90.0	0	11	26	36	40



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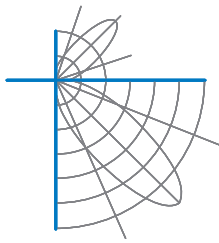
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Intensity data (cd)

Gamma	C-Plane				
	C90	C112.5	C135	C157.5	C180
90.0	0	11	26	36	40
92.5	6	12	26	36	40
95.0	14	14	27	36	40
97.5	24	16	28	37	41
100.0	33	20	29	38	42
102.5	42	25	30	39	43
105.0	52	31	33	40	44
107.5	61	37	38	42	45
110.0	71	44	43	46	48
112.5	81	52	49	51	52
115.0	91	60	55	56	57
117.5	100	68	61	61	62
120.0	110	76	67	66	67
122.5	119	85	74	72	73
125.0	128	93	81	78	78
127.5	137	101	89	84	84
130.0	146	110	97	91	90
132.5	155	119	104	98	97
135.0	163	127	112	105	104
137.5	171	136	120	113	111
140.0	179	144	128	120	118
142.5	186	152	136	128	126
145.0	193	160	144	135	133
147.5	200	168	152	143	141
150.0	206	176	160	151	148
152.5	212	183	168	159	156
155.0	217	190	176	166	164
157.5	222	197	183	174	172
160.0	226	204	191	182	180
162.5	230	210	198	190	188
165.0	234	216	205	198	196
167.5	237	221	212	206	204
170.0	239	226	219	214	212
172.5	241	231	226	221	220
175.0	242	235	232	229	228
177.5	243	239	238	237	236
180.0	243	243	243	243	243



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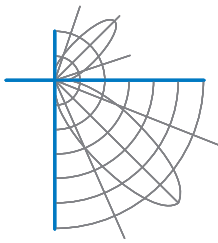
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Coefficients Of Utilization - Zonal Cavity Method																		
Effective Floor Cavity Reflectance 0.20																		
RC	80				70				50			30			10			0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	0
0	107	107	107	107	98	98	98	98	83	83	83	68	68	68	55	55	55	49
1	94	88	83	79	86	81	77	73	67	64	61	55	52	50	43	41	40	34
2	85	76	68	62	77	69	63	57	57	52	48	46	43	39	36	34	31	26
3	76	65	57	50	70	60	53	46	50	44	39	40	36	32	31	28	25	21
4	70	57	48	42	63	53	45	39	44	37	33	35	31	27	28	24	21	17
5	64	51	42	35	58	47	39	33	39	32	28	31	27	23	24	21	18	14
6	58	45	36	30	53	42	34	28	35	28	24	28	23	20	22	18	15	12
7	54	41	32	26	49	37	30	24	31	25	21	25	21	17	20	16	14	11
8	50	37	28	23	45	34	26	21	28	22	18	23	18	15	18	15	12	9
9	46	33	25	20	42	31	24	19	26	20	16	21	17	13	17	13	11	8
10	43	31	23	18	39	28	21	17	24	18	14	20	15	12	16	12	10	8

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	6.2	9.33	7.56
8.0	3.5	12.44	10.08
10.0	2.2	15.56	12.60
12.0	1.5	18.67	15.13
14.0	1.1	21.78	17.65
16.0	0.9	24.89	20.17



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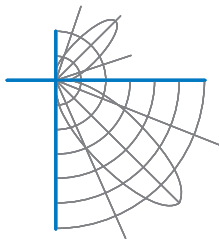
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Test Distance 9.5 m
Test Temperature 25.0 °C

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.

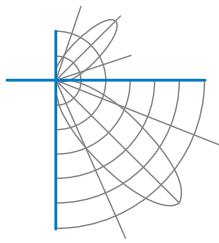
Prorating the performance of the sample for the use of other component combinations (such as lamp / LED / Ballast / driver), or for use in different environmental conditions than that tested, may produce erroneous results.

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

LLIA000802-052B-R01*

Integrating Sphere Report

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Performance Summary

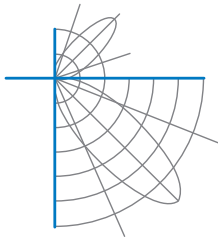
Voltage	120.0 Vac
Current	0.2499 A
Power	29.41 W
Frequency	60.00 Hz
Power Factor	0.981
Current THD	8.6 %

Total Luminous Flux	2235.9 lm
Efficacy	76.0 lm/W
Chromaticity (x,y)	(0.4467, 0.4098)
(u',v')	(0.2543, 0.5251)
Duv	0.0010
CCT	2889 K
CRI (Ra)	92
R9	62

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

*This test report supersedes test report LLIA000802-052B

Test date: 09/27/2017
Report date: 10/04/2017



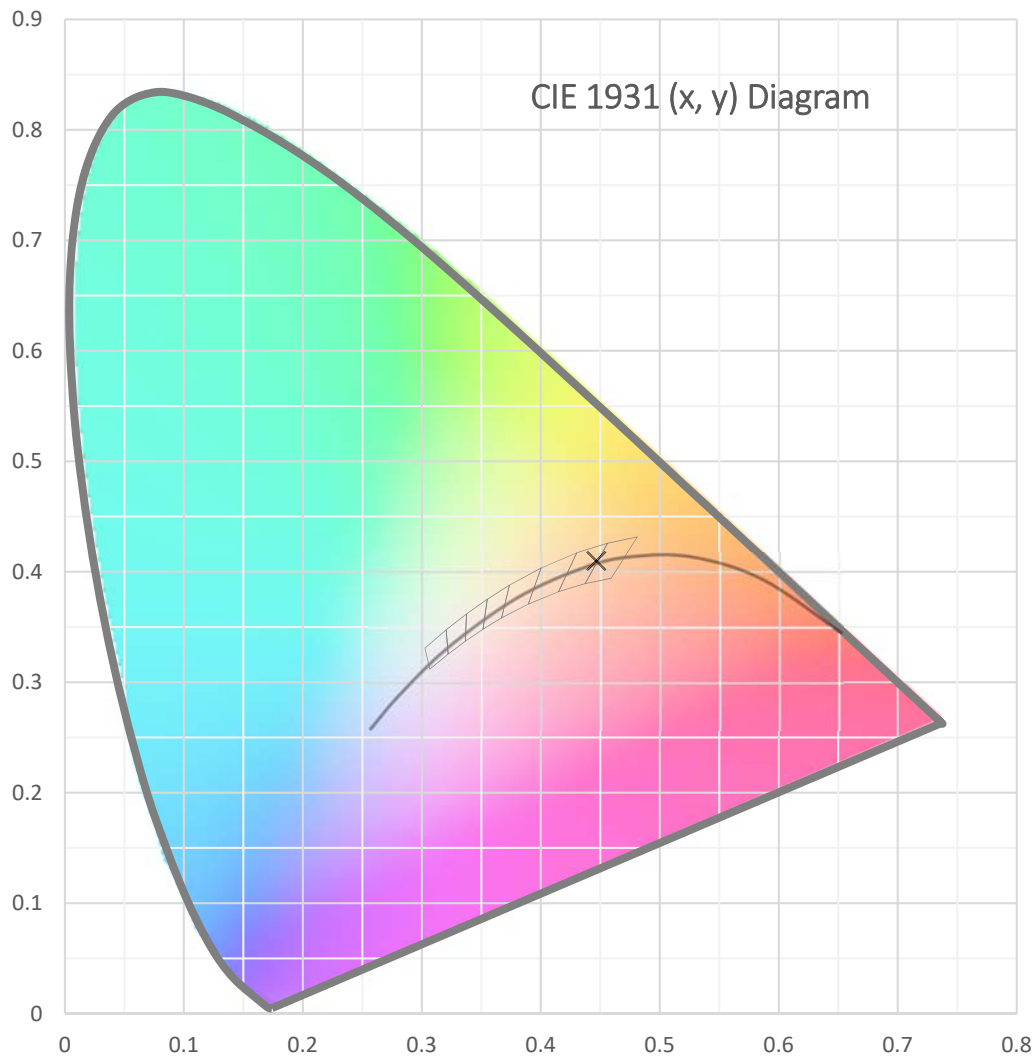
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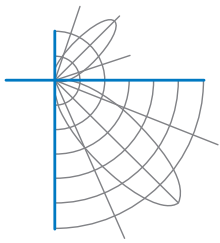
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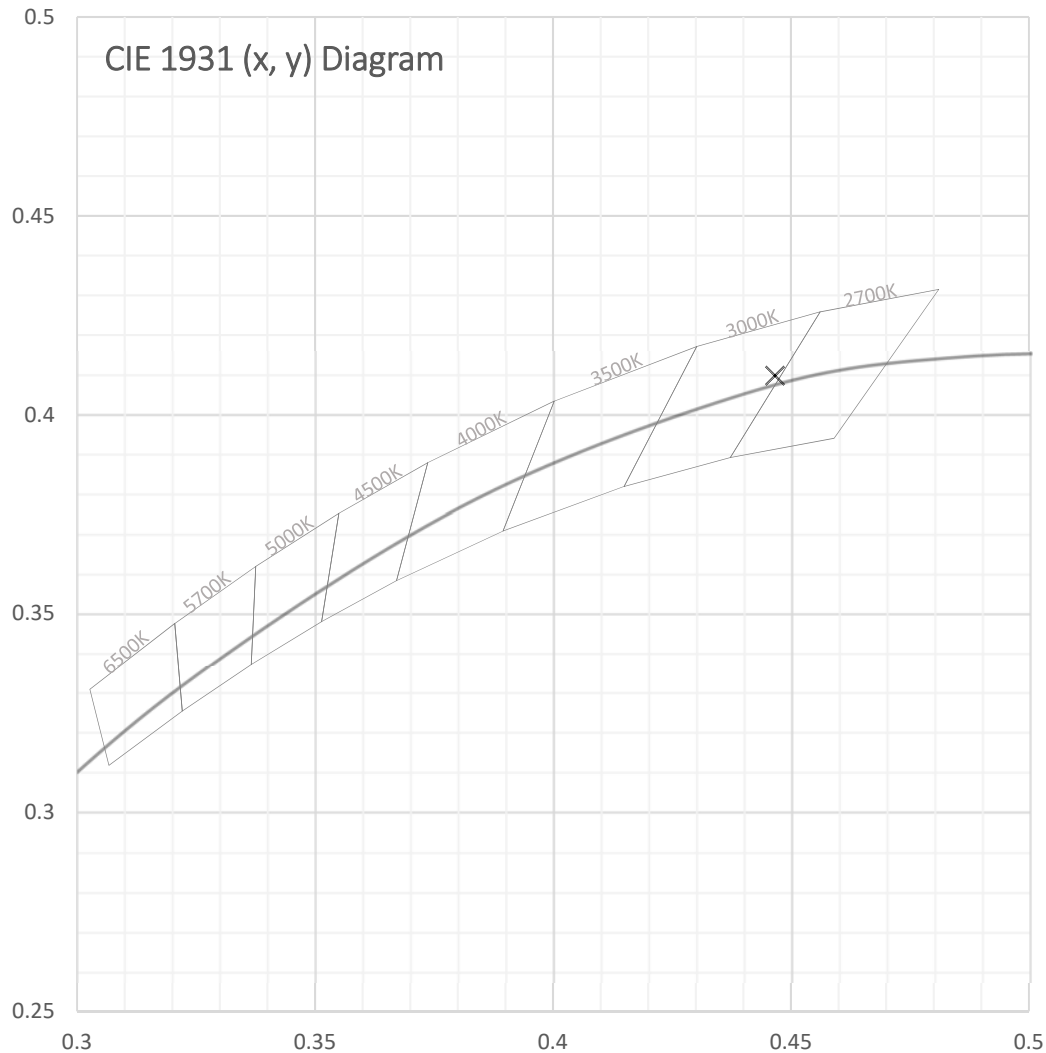
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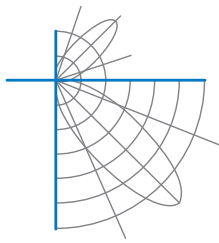
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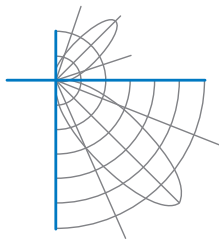
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Spectral Data

Total Radiant Flux	7.957 W
Total Luminous Flux	2235.9 Lm
Chromaticity CIE 1931 (x, y)	(0.4467, 0.4098)
Chromaticity CIE 1976 (u', v')	(0.2543, 0.5251)
Correlated Color Temperature (CCT)	2889 K
Color Rendering Index (Ra)	92
R1	93
R2	95
R3	96
R4	93
R5	92
R6	94
R7	94
R8	84
R9	62
R10	87
R11	93
R12	80
R13	93
R14	97
Distance from Planckian Locus (Duv)	0.0010
Scotopic/Photopic Ratio *	1.343

Electrical Data

Voltage	120.0 Vac
Current	0.2499 A
Power	29.41 W
Frequency	60.00 Hz
Power Factor	0.981
Current THD	8.6 %



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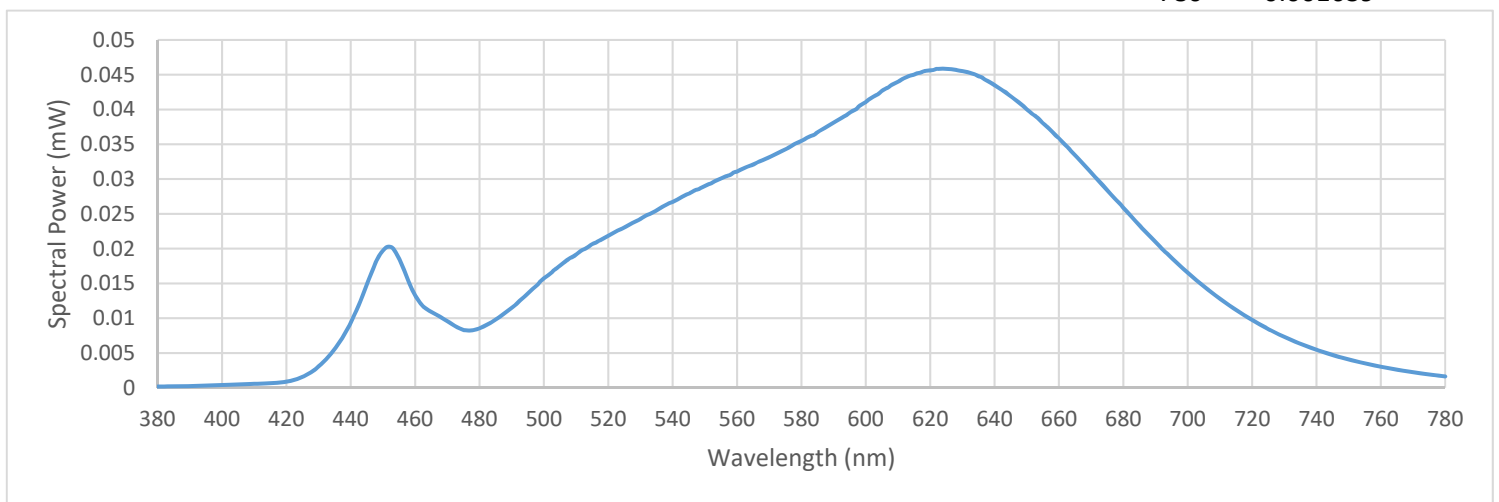
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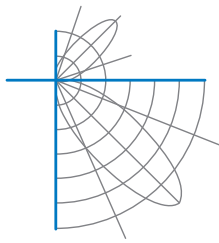
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Summary Spectral Power Distribution (wavelength - nm, spectral power - mW)

380	0.000187	480	0.008551	580	0.035483	680	0.025870
385	0.000201	485	0.009807	585	0.036745	685	0.023381
390	0.000253	490	0.011494	590	0.038129	690	0.020972
395	0.000309	495	0.013544	595	0.039544	695	0.018624
400	0.000391	500	0.015722	600	0.041080	700	0.016565
405	0.000473	505	0.017574	605	0.042678	705	0.014590
410	0.000569	510	0.019147	610	0.043979	710	0.012785
415	0.000659	515	0.020661	615	0.045017	715	0.011195
420	0.000871	520	0.021873	620	0.045627	720	0.009744
425	0.001562	525	0.023035	625	0.045840	725	0.008442
430	0.003081	530	0.024275	630	0.045521	730	0.007338
435	0.005581	535	0.025483	635	0.044786	735	0.006326
440	0.009363	540	0.026710	640	0.043501	740	0.005456
445	0.014854	545	0.027897	645	0.041876	745	0.004720
450	0.019715	550	0.029003	650	0.040018	750	0.004073
455	0.018576	555	0.030072	655	0.038037	755	0.003504
460	0.013345	560	0.031083	660	0.035887	760	0.003041
465	0.010890	565	0.032066	665	0.033419	765	0.002606
470	0.009568	570	0.033123	670	0.030916	770	0.002233
475	0.008308	575	0.034239	675	0.028400	775	0.001916
						780	0.001639





Test Report Number: LLIA000802-052B-R01*

Catalog Number: 3-557-24 Zenith Vanity

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

144 white LEDs, two Harvard Engineering LER7-568x17-930-72S-I LED boards with 72 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 π geometry

Test Temperature: 25.1 °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.