

# Report of Test

## LLIA000824-062A

Catalog Number: 3-653-14

Pendant mounted, formed steel canopy, spun aluminum housing, cast aluminum heatsink, translucent white plastic enclosure.

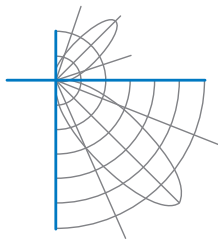
12 white LEDs, one Harvard Engineering LEDENG-163-930 LED board  
One L.T.F. DA6W150C2040LP010-0014 dimmable LED driver  
120.0Vac, 60.00Hz, 0.0588A, 6.61W, 0.936PF, 10.4%THD(i)



### Performance Summary

Total Light Output	383 lm
Luminaire Power	6.61 W
Luminous Efficacy	57.9 lm/W

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



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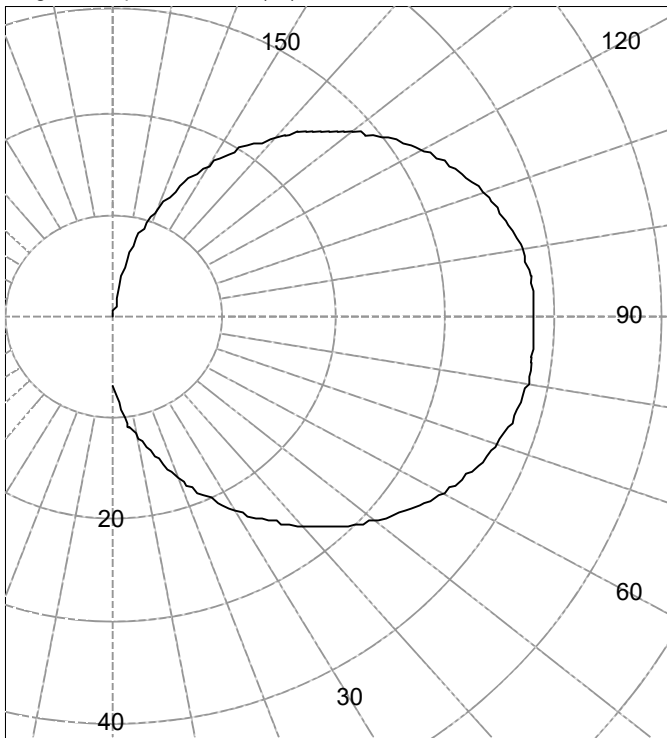
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Legend: All planes - Solid (cd)



(Rotational symmetry)

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

Gamma	C0
45.0	1261
55.0	1307
65.0	1348
75.0	1385
85.0	1420

**INTENSITY SUMMARY (cd)**

Gamma	All Planes	Flux (lm)	Gamma	C0	Flux (lm)
0	7.0		90	38.2	
5	10.0	1	95	38.2	42
10	11.8		100	37.7	
15	14.1	4	105	36.9	39
20	16.8		110	35.7	
25	19.5	9	115	34.3	34
30	22.1		120	32.6	
35	24.6	15	125	30.5	27
40	27.0		130	28.2	
45	29.2	23	135	25.7	20
50	31.2		140	23.0	
55	33.1	30	145	20.1	13
60	34.6		150	17.1	
65	35.9	36	155	14.1	7
70	37.0		160	11.0	
75	37.7	40	165	7.8	2
80	38.2		170	4.1	
85	38.3	42	175	0.1	0
90	38.2		180	0.0	

**ZONAL FLUX AND PERCENTAGES**

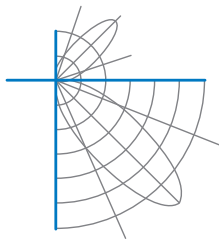
Zone	Flux (lm)	%Lamp	%Luminaire
0-30	14	N / A	3.7
0-40	30	N / A	7.8
0-60	82	N / A	21.4
0-90	199	N / A	52.0
40-90	170	N / A	44.3
60-90	117	N / A	30.6
90-180	184	N / A	48.0
0-180	383	N / A	100.0

Total Light Output = 383 lm

Signed:

Authorized Signatory

Date of test 13-Sep-2017  
Date of report 14-Sep-2017



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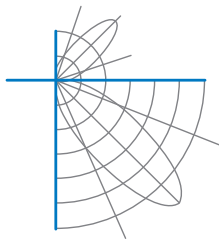
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**Intensity (cd) and Flux (lm) data**

Gamma	Intensity	Flux	Gamma	Intensity	Flux
0.0	7.0		90.0	38.2	
2.5	8.2		92.5	38.3	
5.0	10.0	1	95.0	38.2	
7.5	11.1		97.5	38.0	42
10.0	11.8		100.0	37.7	
12.5	12.9		102.5	37.3	
15.0	14.1	4	105.0	36.9	
17.5	15.5		107.5	36.4	39
20.0	16.8		110.0	35.7	
22.5	18.2		112.5	35.1	
25.0	19.5	9	115.0	34.3	
27.5	20.8		117.5	33.5	34
30.0	22.1		120.0	32.6	
32.5	23.3		122.5	31.6	
35.0	24.6	15	125.0	30.5	
37.5	25.8		127.5	29.4	27
40.0	27.0		130.0	28.2	
42.5	28.1		132.5	27.0	
45.0	29.2	23	135.0	25.7	
47.5	30.2		137.5	24.4	20
50.0	31.2		140.0	23.0	
52.5	32.2		142.5	21.6	
55.0	33.1	30	145.0	20.1	
57.5	33.9		147.5	18.7	13
60.0	34.6		150.0	17.1	
62.5	35.3		152.5	15.6	
65.0	35.9	36	155.0	14.1	
67.5	36.5		157.5	12.5	7
70.0	37.0		160.0	11.0	
72.5	37.4		162.5	9.4	
75.0	37.7	40	165.0	7.8	
77.5	38.0		167.5	6.1	2
80.0	38.2		170.0	4.1	
82.5	38.3		172.5	1.3	
85.0	38.3	42	175.0	0.1	
87.5	38.2		177.5	0.0	0
90.0	38.2		180.0	0.0	



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**Coefficients Of Utilization - Zonal Cavity Method**

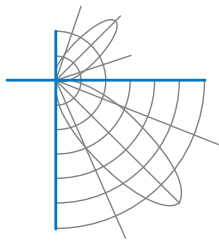
Effective Floor Cavity Reflectance 0.20

RC	80				70				50			30			10			0
	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	0
0	108	108	108	108	100	100	100	100	84	84	84	71	71	71	58	58	58	52
1	93	86	80	74	85	79	74	69	66	62	58	54	50	48	42	40	38	32
2	82	72	64	56	75	66	58	52	54	49	44	44	39	35	34	31	28	23
3	74	61	52	45	67	56	48	41	46	40	34	37	32	28	29	25	21	17
4	67	53	44	36	60	49	40	33	40	33	28	32	27	22	25	20	17	13
5	61	47	37	30	55	43	34	27	35	28	23	28	23	18	22	17	14	10
6	55	41	32	25	50	38	29	23	31	24	19	25	19	15	19	15	11	8
7	51	37	28	21	46	34	26	20	28	21	16	22	17	13	17	13	10	7
8	47	33	25	19	43	30	23	17	25	19	14	20	15	11	16	11	8	6
9	44	30	22	16	40	28	20	15	23	17	12	18	13	10	14	10	7	5
10	41	27	19	14	37	25	18	13	21	15	11	17	12	9	13	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.

**Circle of Light Plot**

Height(ft)	Illuminance at Nadir (fc)	Beam Width (across 50% Nadir Illum)	
		0-180	90-270
6.0	0.2	22.97	22.97
8.0	0.1	30.62	30.62
10.0	0.1	38.28	38.28
12.0	0.0	45.93	45.93
14.0	0.0	53.59	53.59
16.0	0.0	61.24	61.24



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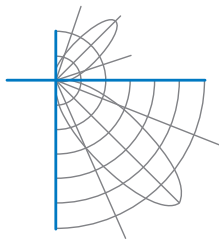
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**Test Distance**            9.5 m  
**Test Temperature**      25.0 °C

**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.

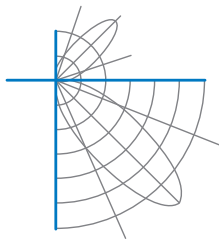
Prorating the performance of the sample for the use of other component combinations (such as lamp / LED / Ballast / driver), or for use in different environmental conditions than that tested, may produce erroneous results.

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

**LLIA000824-062B**

Integrating Sphere Report

Catalog Number: 3-653-14

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### Performance Summary

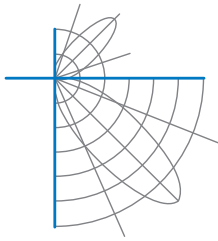
Voltage	120.0 Vac
Current	0.0588 A
Power	6.61 W
Frequency	60.00 Hz
Power Factor	0.936
Current THD	10.4 %

Total Luminous Flux	381.3 lm
Efficacy	57.7 lm/W
Chromaticity (x,y)	(0.4477, 0.4032)
(u',v')	(0.2579, 0.5227)
Duv	-0.0016
CCT	2820 K
CRI (Ra)	97
R9	84

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

Test date: 09/13/2017

Report date: 09/14/2017



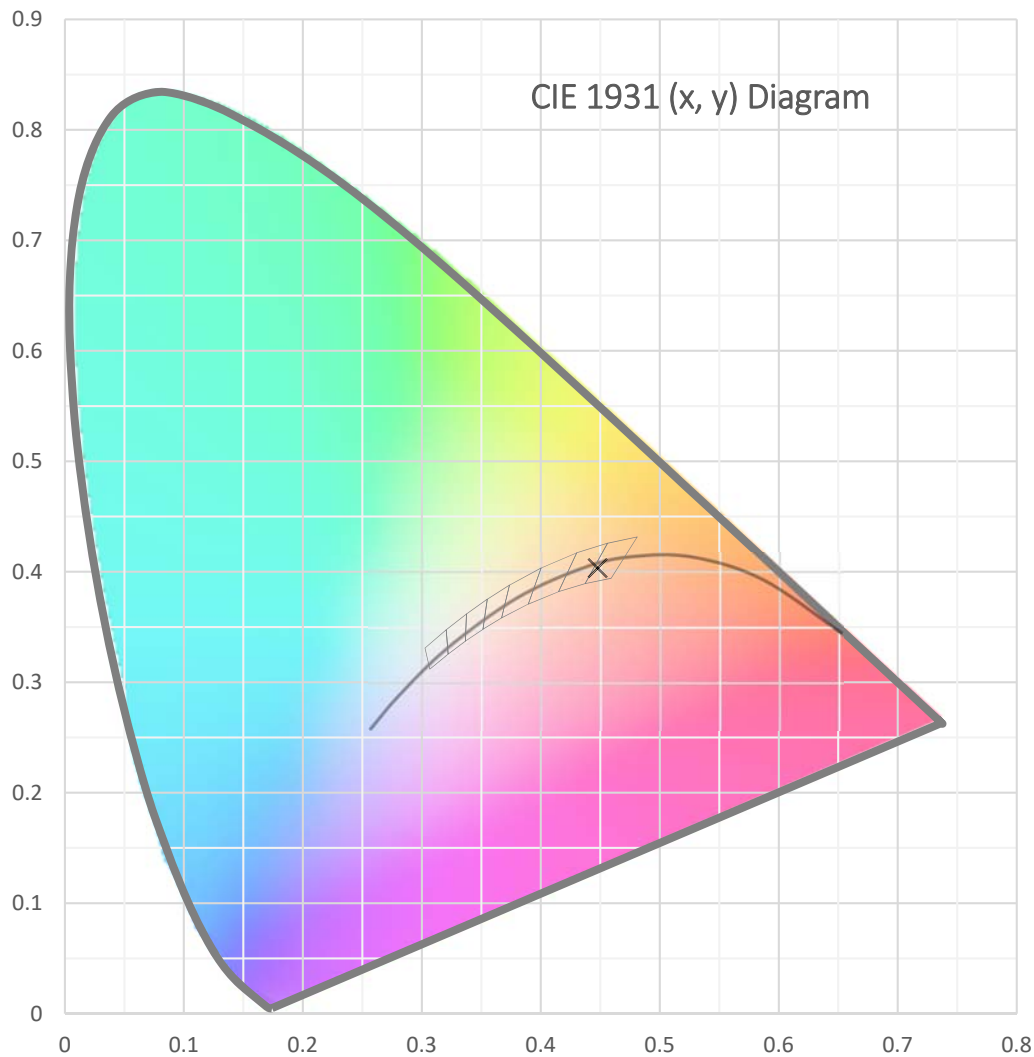
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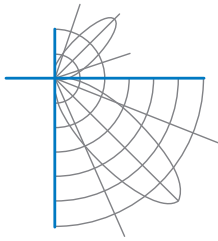
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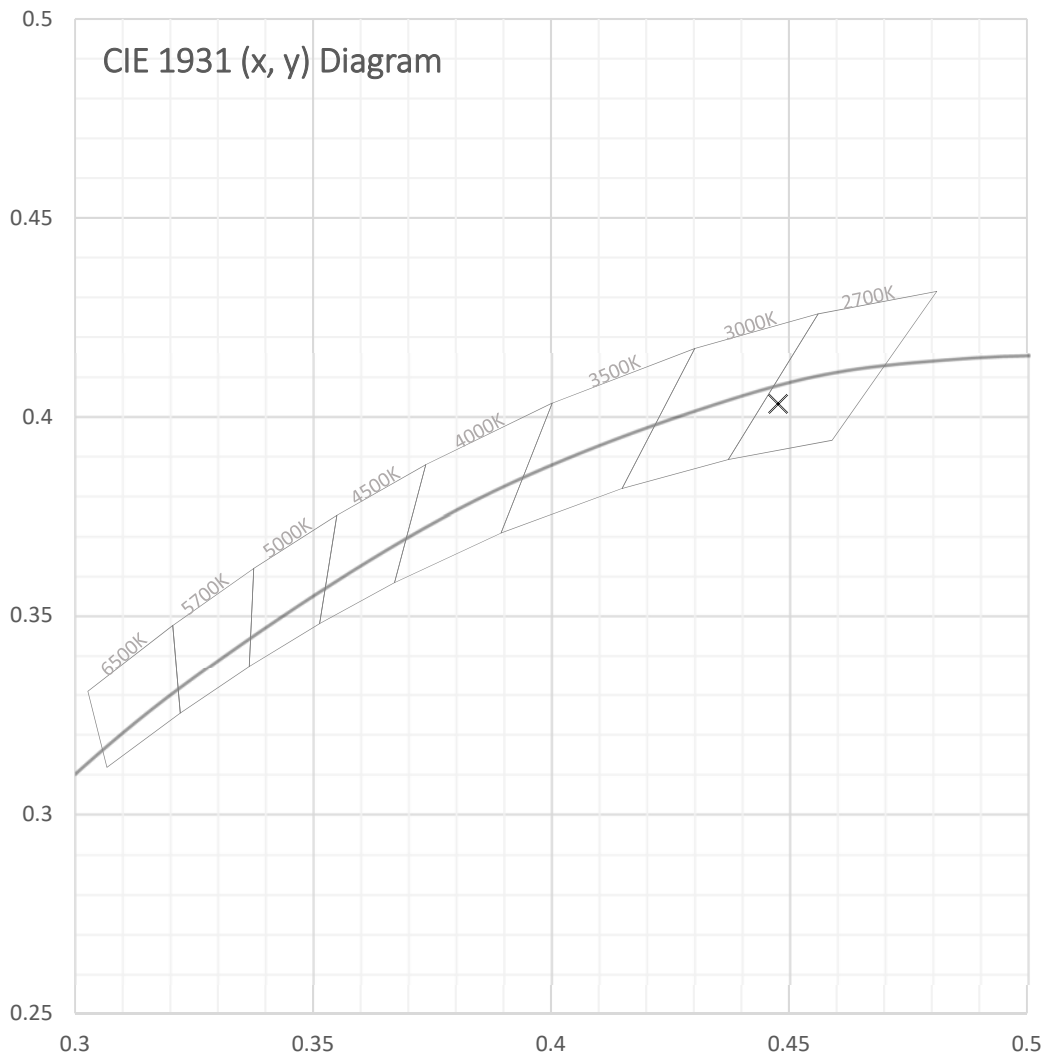
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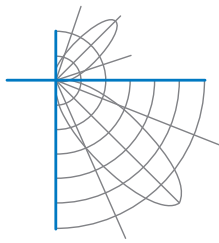
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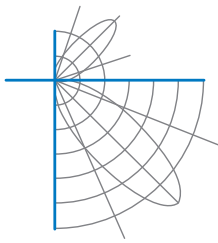
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<b>Spectral Data</b>	Total Radiant Flux	1.448 W
	Total Luminous Flux	381.3 Lm
	Chromaticity CIE 1931 (x, y)	(0.4477, 0.4032)
	Chromaticity CIE 1976 (u', v')	(0.2579, 0.5227)
	Correlated Color Temperature (CCT)	2820 K
	Color Rendering Index (Ra)	97
	R1	98
	R2	98
	R3	96
	R4	97
	R5	98
	R6	97
	R7	96
	R8	93
	R9	84
	R10	94
	R11	97
	R12	86
	R13	99
	R14	97
	Distance from Planckian Locus (Duv)	-0.0016
	Scotopic/Photopic Ratio *	1.362

**Electrical Data**

Voltage	120.0 Vac
Current	0.0588 A
Power	6.61 W
Frequency	60.00 Hz
Power Factor	0.936
Current THD	10.4 %



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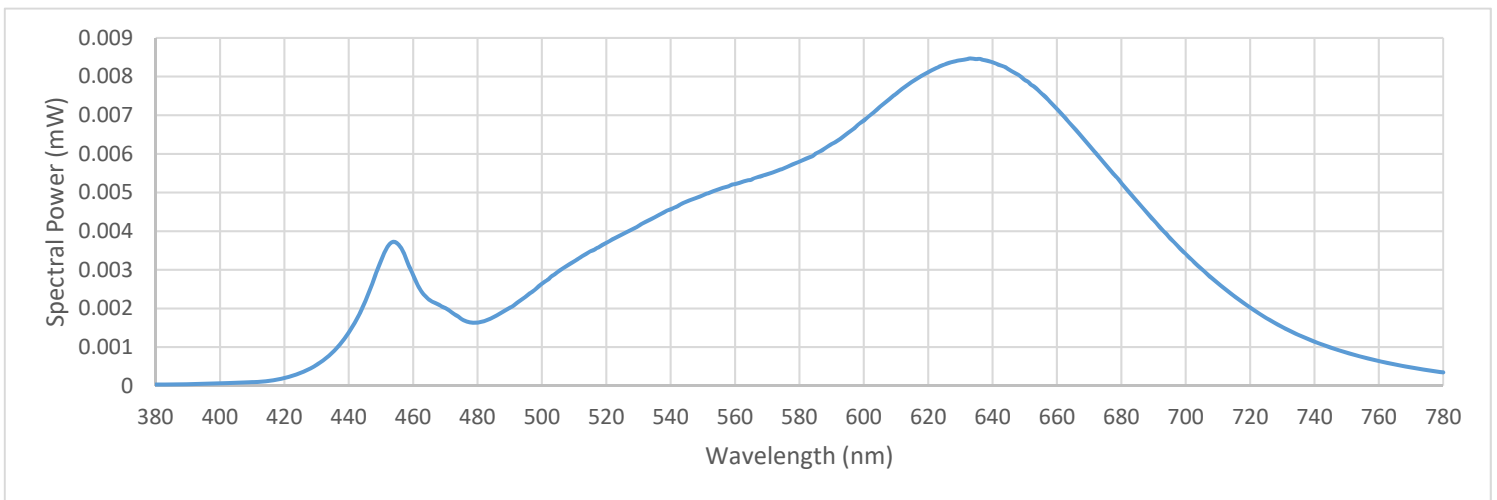
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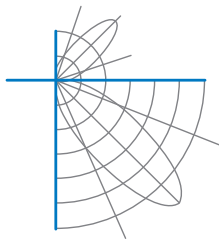
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Summary Spectral Power Distribution (wavelength - nm, spectral power - mW)

380	0.000033	480	0.001633	580	0.005798	680	0.005244
385	0.000035	485	0.001778	585	0.006003	685	0.004766
390	0.000041	490	0.002019	590	0.006256	690	0.004288
395	0.000051	495	0.002309	595	0.006536	695	0.003827
400	0.000063	500	0.002639	600	0.006860	700	0.003416
405	0.000077	505	0.002950	605	0.007222	705	0.003020
410	0.000093	510	0.003214	610	0.007552	710	0.002649
415	0.000123	515	0.003478	615	0.007861	715	0.002325
420	0.000202	520	0.003697	620	0.008112	720	0.002025
425	0.000332	525	0.003919	625	0.008307	725	0.001752
430	0.000543	530	0.004134	630	0.008424	730	0.001525
435	0.000870	535	0.004355	635	0.008453	735	0.001315
440	0.001375	540	0.004564	640	0.008368	740	0.001138
445	0.002165	545	0.004768	645	0.008185	745	0.000990
450	0.003238	550	0.004929	650	0.007913	750	0.000857
455	0.003688	555	0.005086	655	0.007577	755	0.000741
460	0.002867	560	0.005219	660	0.007171	760	0.000642
465	0.002226	565	0.005330	665	0.006699	765	0.000551
470	0.002008	570	0.005471	670	0.006220	770	0.000472
475	0.001728	575	0.005616	675	0.005734	775	0.000405
						780	0.000346





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**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:** 25.7 °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

**Significance:** The laboratory has not participated in the selection of samples to be tested.  
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**Notes:** The measurements and other derived quantities contained in this report  
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