

Photometric Test Report

Relevant Standards

- ☒ IES LM-79-2008
- ☒ ANSI C82.77:2014

Prepared For

RAB Lighting Inc.

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Project Number

DLF2409113

Report Number

DLF2409113-9a

Test Date

2024/8/31

Issue Date

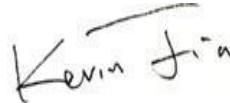
2024/9/2

Prepared By



Wangzun Zhu

Approved By



Kevin Jia

The results contained in this report pertain only to the tested sample.

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1.0 Test Summary

DLC Technical Requirements v5.1

Outdoor - Non-Cutoff and Semi-Cutoff Wall-Mounted Area Luminaires				
Requirement Category	Test Method	Requirements		Test value
Luminaire Output (lm) (Goniophotometer - Section 4.2 (0°-180° zones)	IES LM-79-2008	300		5134
Minimum Luminaire Efficacy (lm/W) (Goniophotometer - Section 4.2) (0°-180° zones)	IES LM-79-2008	Standard 105	Premium 120	132.3
Luminaire Output (lm) (Goniophotometer - Section 4.2) (0°-90° zones)	IES LM-79-2008	300		4851
Minimum Luminaire Efficacy (lm/W) (Goniophotometer - Section 4.2) (0°-90° zones)	IES LM-79-2008	Standard 105	Premium 120	125.0
Power (Input Wattage) (W) (Goniophotometer - Section 4.2)	IES LM-79-2008	Worst Case		38.8
Total Harmonic Distortion (A%) (THD & PF - section 4.3)	ANSI C82.77:2014	20.00%	120V	10.12%
		20.00%	277V	9.18%
Power Factor (THD & PF - section 4.3)	ANSI C82.77:2014	0.9	120V	0.995
		0.9	277V	0.981
Allowable CCTs* (K) (Integrating Sphere - Section 4.1)	IES LM-79-2008	7 step	5029±355	5136
		4 step	5029±220	
Minimum CRI (Integrating Sphere - Section 4.1)	IES LM-79-2008 CIE 13.3-1995	≥70		83
Minimum R9 (Integrating Sphere - Section 4.1)	IES LM-79-2008 CIE 13.3-1995	-		9
Minimum Rf (Integrating Sphere - Section 4.1)	ANSI/IES TM-30-18	≥70		83
Minimum Rg (Integrating Sphere - Section 4.1)	ANSI/IES TM-30-18	≥89		95
IES Rcs,h1 (Integrating Sphere - Section 4.1)	ANSI/IES TM-30-18	-18%≤IES Rcs,h1≤+23%		-12%
Zonal Lumen Requirement (80°-90°) (Goniophotometer - Section 4.2)	IES LM-79-2008	≤10%		4.28%
Input Voltage (V)				
(Goniophotometer - Section 4.2)	IES LM-79-2008	Worst Case		120
(Goniophotometer - Section 4.2)		Non-Worst Case		277
Input Current (A)				
(Goniophotometer - Section 4.2)	IES LM-79-2008	Worst Case		0.325
(Goniophotometer - Section 4.2)		Non-Worst Case		0.142
Power (Input Wattage - W)				
(Goniophotometer - Section 4.2)	IES LM-79-2008	Worst Case		38.8
(Goniophotometer - Section 4.2)		Non-Worst Case		38.7

2.0 Test List

Test Item	Test	Test Date	Model Number	Build Level	Sample No.
1	Integrating Sphere Test	2024/8/31	WPT @ 40W/5000K	N/A	I1
2	Goniophotometer Test	2024/8/31	WPT @ 40W/5000K	N/A	I1
3	THD and PF Test	2024/8/31	WPT @ 40W/5000K	N/A	I1

Remark(If any)

1、 This report shall not be used by the client to claim product endorsement by NVLAP, NIST or any agency of the US government.

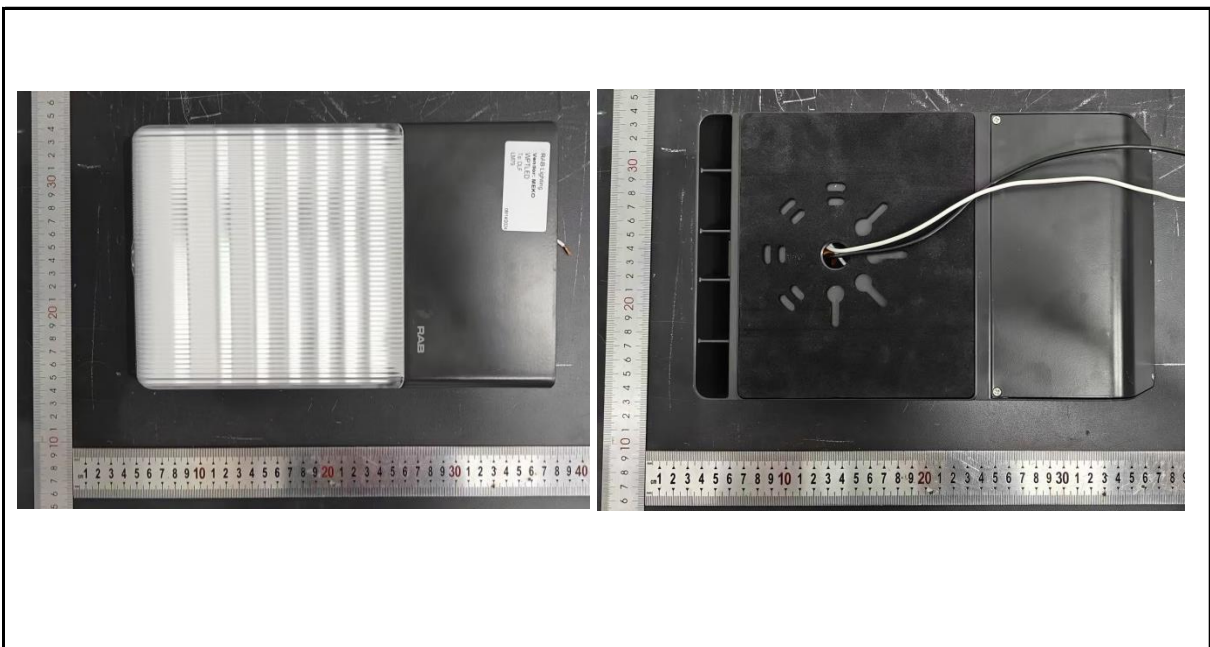
2、 The results reported herein have been performed in accordance with the laboratory's terms of accreditation. This report shall not be reproduced except in full without the written approval of the Laboratory. The results in this report apply to the test sample(s) mentioned above at the time of the testing period only and are not to be used to indicate applicability to other similar products. This report does not imply that the product(s) has met the criteria for certification.

3.0 Production Description

Luminaire Description: WPT @ 40W/5000K

Electrical Specification: 120V-277V,50/60HZ

Photos of Luminaire Characteristics



4.0 LM-79 Measurement and Test Results

4.1 Integrating Sphere Test

Model No.	WPT @ 40W/5000K	Sample ID.	I1
Operate time (Min.)	90	Stabilization time (Min.)	45
Temperature (°C)	25.1	Humidity (%RH)	57.0

Test Method

The samples were tested according to the IES LM-79-2008.

Photometric parameters were measured using an integrating sphere, a spectroradiometer and software. The ambient temperature condition inside the sphere was maintained at $25^{\circ}\text{C} \pm 1^{\circ}\text{C}$.

The sample measurements were made using a spectroradiometer connected by a fiber optic cable and detector through the detector port of the integrating sphere.

The voltage of an AC power supply (RMS voltage) or DC power supply (instantaneous voltage) applied to the device under test shall be regulated to within ± 0.2 percent under load.

The sample was measured using 4π geometry and operated at rated voltage and was stabilized before measurement. Chromaticity coordinates, correlated color temperature and color rendering index were calculated from the spectral radiant flux measurements taken at 1 nm intervals over the range of 380 to 780 nm.

Test Result

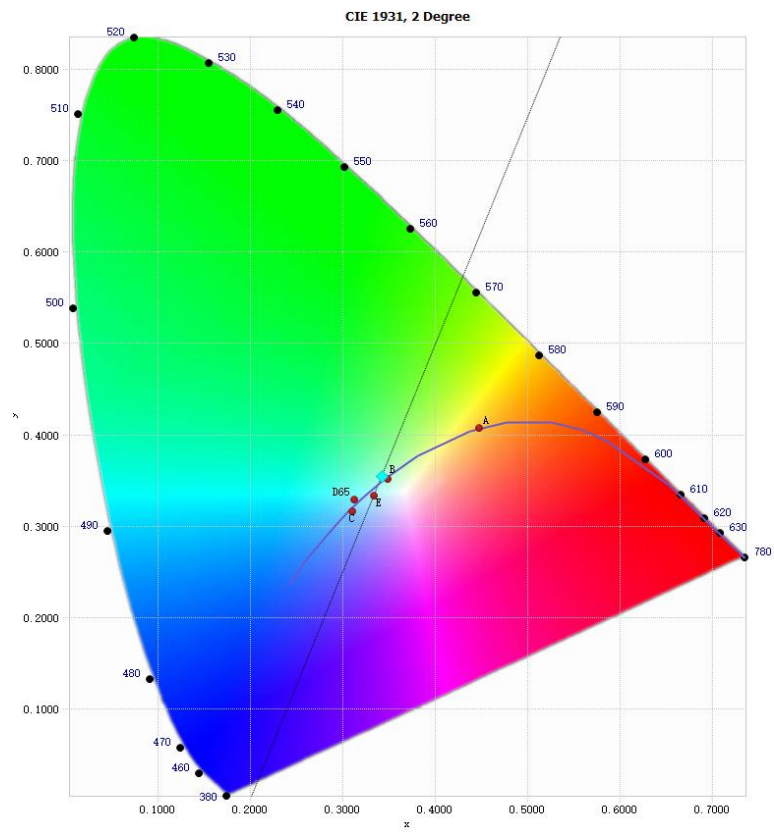
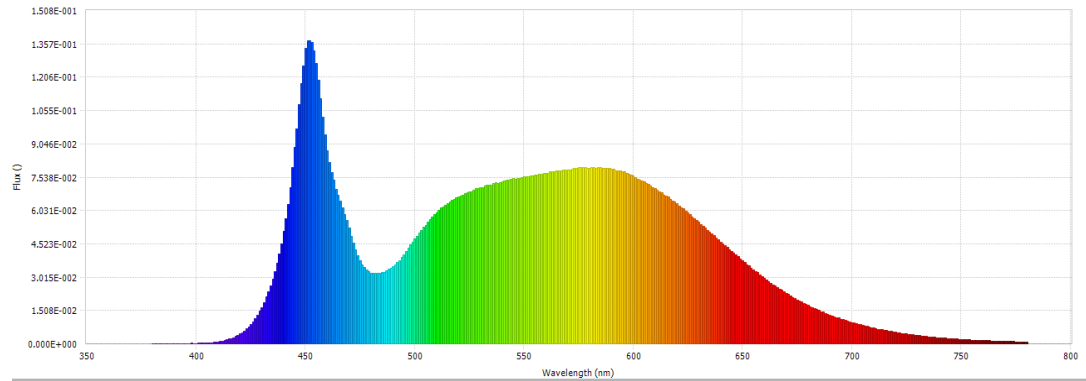
Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor
120.07	60	0.323	38.6	0.995
277.05	60	0.142	38.5	0.981

Test Result

CCT (K)	CRI	R9	Duv
5136	83	9	0.0027

Rf	Rg	IES Rcs,h1
83	95	-12%

4.1 Integrating Sphere Test



4.1 Integrating Sphere Test

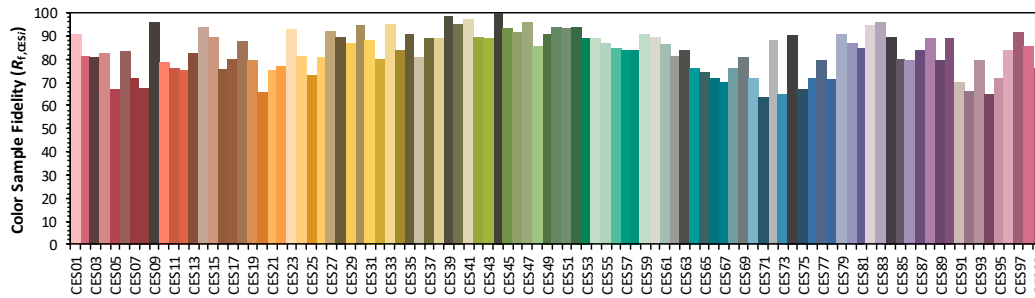
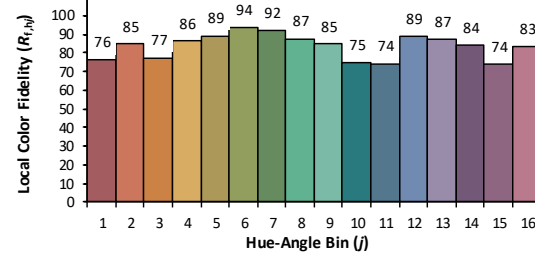
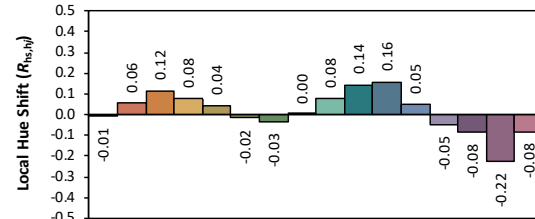
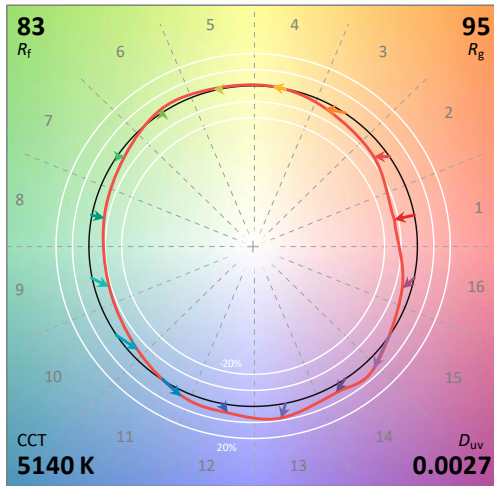
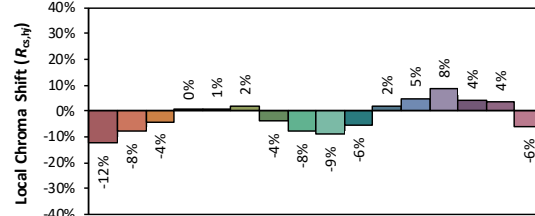
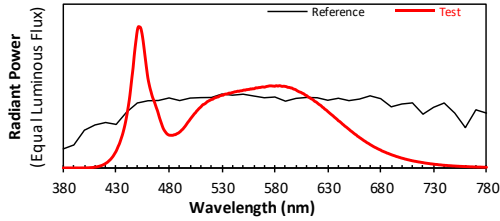
IES TM-30-18 Color Rendition Report

Source: DLF2409113-9a

Manufacturer: RAB Lighting Inc.

Date: 2024/8/31

Model: WPT @ 40W/5000K



Notes: This is a recommended method for displaying IES TM-30-18 information.

x 0.3417
 y 0.3542
 u' 0.2081
 v' 0.4854

CIE 13.3-1995
(CRI)

R_a 84
 R_g 15

4.1 Integrating Sphere Test

Spectral Distribution over Visible Wavelength							
WL (nm)	Radiant (Watts/nm)	WL (nm)	Radiant (Watts/nm)	WL (nm)	Radiant (Watts/nm)	WL (nm)	Radiant (Watts/nm)
380	1.09E-04	485	3.24E-02	590	7.92E-02	695	1.12E-02
385	1.22E-04	490	3.50E-02	595	7.77E-02	700	9.65E-03
390	8.91E-05	495	4.03E-02	600	7.58E-02	705	8.28E-03
395	1.12E-04	500	4.74E-02	605	7.32E-02	710	7.05E-03
400	1.60E-04	505	5.37E-02	610	7.03E-02	715	6.13E-03
405	4.05E-04	510	5.93E-02	615	6.69E-02	720	5.30E-03
410	8.91E-04	515	6.33E-02	620	6.33E-02	725	4.46E-03
415	2.09E-03	520	6.66E-02	625	5.91E-02	730	3.79E-03
420	4.46E-03	525	6.88E-02	630	5.49E-02	735	3.18E-03
425	8.79E-03	530	7.08E-02	635	5.07E-02	740	2.75E-03
430	1.64E-02	535	7.20E-02	640	4.59E-02	745	2.35E-03
435	2.94E-02	540	7.33E-02	645	4.18E-02	750	1.98E-03
440	5.08E-02	545	7.46E-02	650	3.77E-02	755	1.67E-03
445	8.87E-02	550	7.55E-02	655	3.35E-02	760	1.46E-03
450	1.34E-01	555	7.63E-02	660	2.96E-02	765	1.22E-03
455	1.27E-01	560	7.69E-02	665	2.61E-02	770	1.10E-03
460	8.73E-02	565	7.81E-02	670	2.28E-02	775	9.03E-04
465	6.71E-02	570	7.85E-02	675	1.99E-02	780	7.67E-04
470	5.23E-02	575	7.98E-02	680	1.75E-02		
475	3.75E-02	580	7.94E-02	685	1.51E-02		
480	3.20E-02	585	7.99E-02	690	1.30E-02		

4.0 LM-79 Measurement and Test Results

4.2 Goniophotometer Test

Model No.	WPT @ 40W/5000K	Sample ID.	I1
Operate time (Min.)	90	Stabilization time (Min.)	45
Temperature (°C)	25.3	Humidity (%RH)	54.0

Test Method

The samples were tested according to the IES LM-79-2008.

Photometric parameters were measured using a type C goniophotometer and software.

The ambient temperature shall be maintained at $25^{\circ}\text{C} \pm 1^{\circ}\text{C}$, measured at a point not more than 1 m from the sample and at the same height as the sample.

The voltage of an AC power supply (RMS voltage) or DC power supply (instantaneous voltage) applied to the device under test shall be regulated to within ± 0.2 percent under load.

The samples were operated at rated voltage and was stabilized before measurement. Luminous flux, luminaire efficacy, zonal lumen were calculated from the software taken at 0.5° vertical intervals and 10° horizontal intervals.

Test Conditions

Condition	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor
WORST CASE	120.04	60	0.325	38.8	0.995
NON-WORST CASE	277.03	60	0.142	38.7	0.981

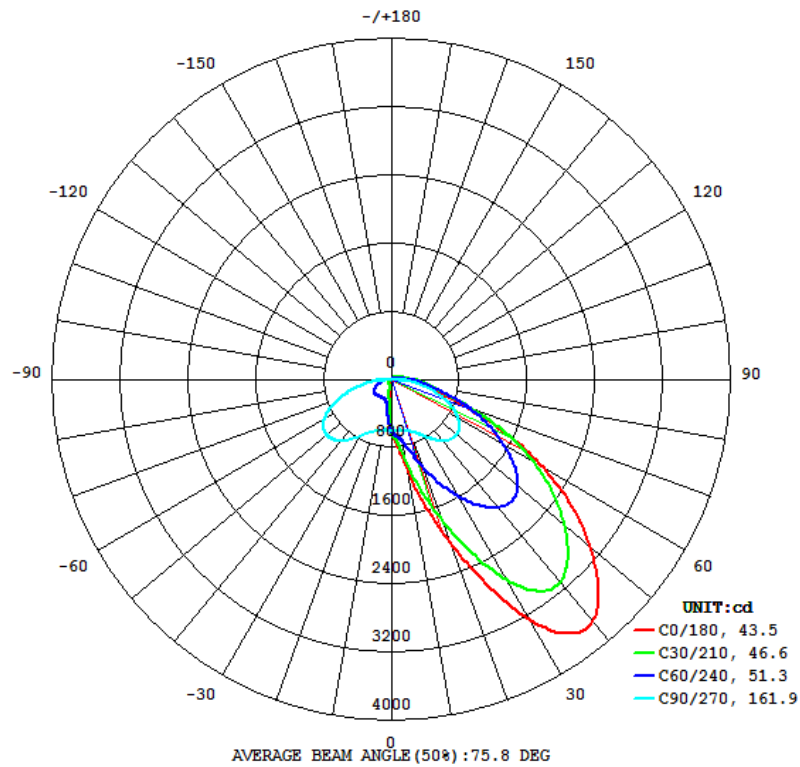
Test Result

Result type	Flux (lm)	Field Angle(10%)		Beam Angle(50%)		Luminous Efficacy (lm/W)
		C0-180	C90-270	C0-180	C90-270	
0° - 180° zones	5134	87.5	183.2	43.5	161.9	132.3
0° - 90° zones	4851	87.5	179.3	43.5	161.9	125.0

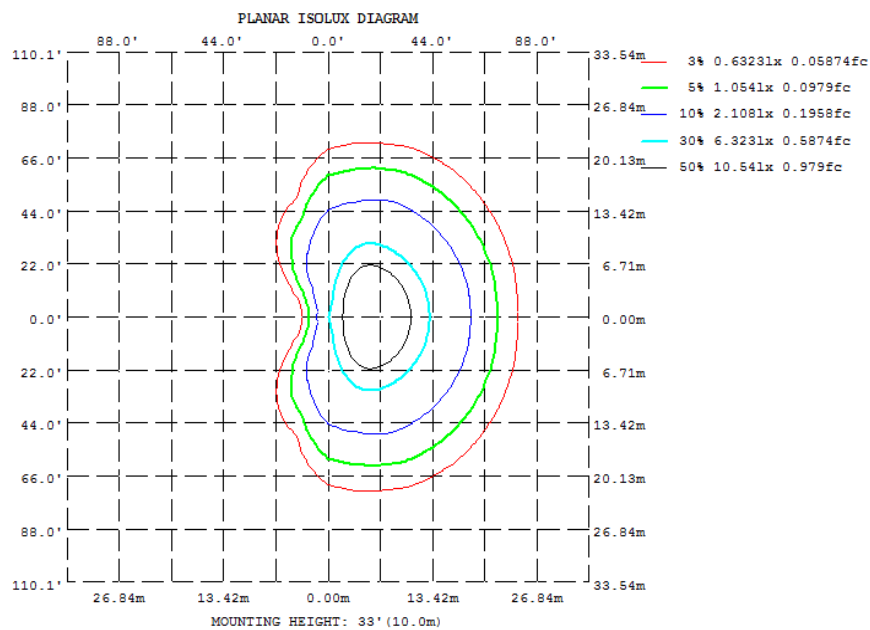
Zonal Lumen Requirement (80° - 90°)	BUG rating
4.28%	B1-U3-G2

4.2 Goniophotometer Test

Light Distrubtion Curve



Isolux Plot



4.2 Goniophotometer Test

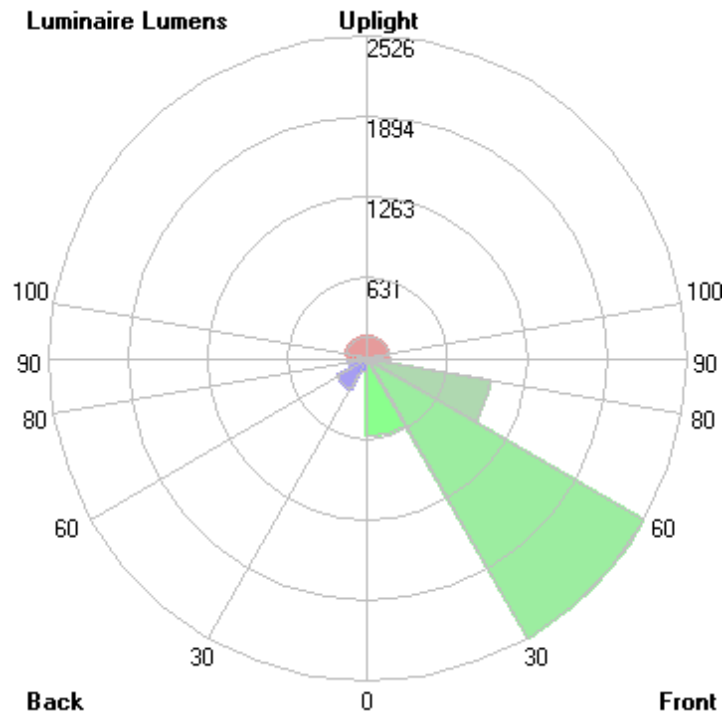
Zonal Lumen Summary

γ	C0	C45	C90	C135	C180	C225	C270	C315
10	1062	837.0	608.6	242.6	175.7	242.6	608.6	837.0
20	2034	1460	653.6	151.6	64.80	151.6	653.6	1460
30	3241	2189	770.4	132.6	32.49	132.6	770.4	2189
40	3693	2610	945.5	134.9	17.75	134.9	945.5	2610
50	3056	2331	1009	132.2	6.314	132.2	1009	2331
60	2060	1748	916.0	106.4	0.2661	106.4	916.0	1748
70	904.6	1023	669.9	70.79	0.1919	70.79	669.9	1023
80	442.6	494.4	337.0	42.32	0.2014	42.32	337.0	494.4
90	263.4	279.4	82.12	22.87	0.3170	22.87	82.12	279.4
100	169.8	167.2	25.48	13.63	0.9539	13.63	25.48	167.2
110	116.4	108.3	16.48	9.255	1.598	9.255	16.48	108.3
120	78.95	73.94	12.34	7.067	2.053	7.067	12.34	73.94
130	60.92	53.95	9.405	5.854	2.450	5.854	9.405	53.95
140	49.82	39.69	6.970	4.915	2.674	4.915	6.970	39.69
150	38.61	27.05	5.009	3.641	2.306	3.641	5.009	27.05
160	23.70	12.66	3.362	2.415	1.812	2.415	3.362	12.66
170	4.331	2.818	2.023	1.707	1.605	1.707	2.023	2.818
180	1.401	1.479	1.512	1.453	1.403	1.453	1.512	1.479
DEG	LUMINOUS INTENSITY:cd							

	Zonal (lm)		Total (lm)	Percent
0-10	53.91	0 - 10	53.91	1.05%
10-20	196.64	0 - 20	250.55	4.88%
20-30	461.74	0 - 30	712.29	13.87%
30-40	810.73	0 - 40	1523.02	29.67%
40-50	1013.46	0 - 50	2536.48	49.41%
50-60	974.13	0 - 60	3510.61	68.38%
60-70	729.86	0 - 70	4240.47	82.60%
70-80	402.87	0 - 80	4643.34	90.45%
80-90	207.84	0 - 90	4851.18	94.50%
90-100	111.73	0 - 100	4962.91	96.67%
100-110	67.13	0 - 110	5030.04	97.98%
110-120	41.78	0 - 120	5071.82	98.79%
120-130	26.92	0 - 130	5098.74	99.32%
130-140	17.57	0 - 140	5116.31	99.66%
140-150	10.66	0 - 150	5126.97	99.87%
150-160	5.15	0 - 160	5132.12	99.97%
160-170	1.40	0 - 170	5133.52	100.00%
170-180	0.17	0 - 180	5133.69	100.00%

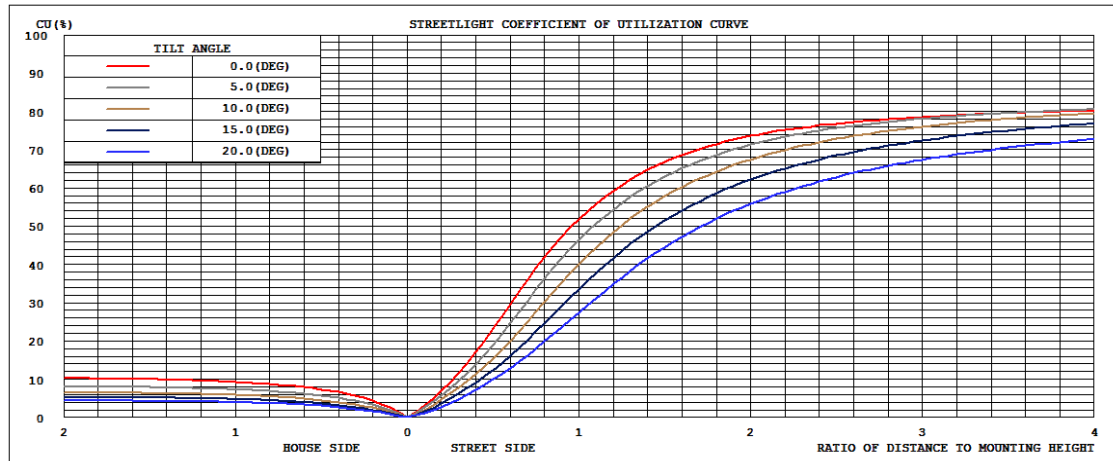
4.2 Goniophotometer Test

LCS/BUG

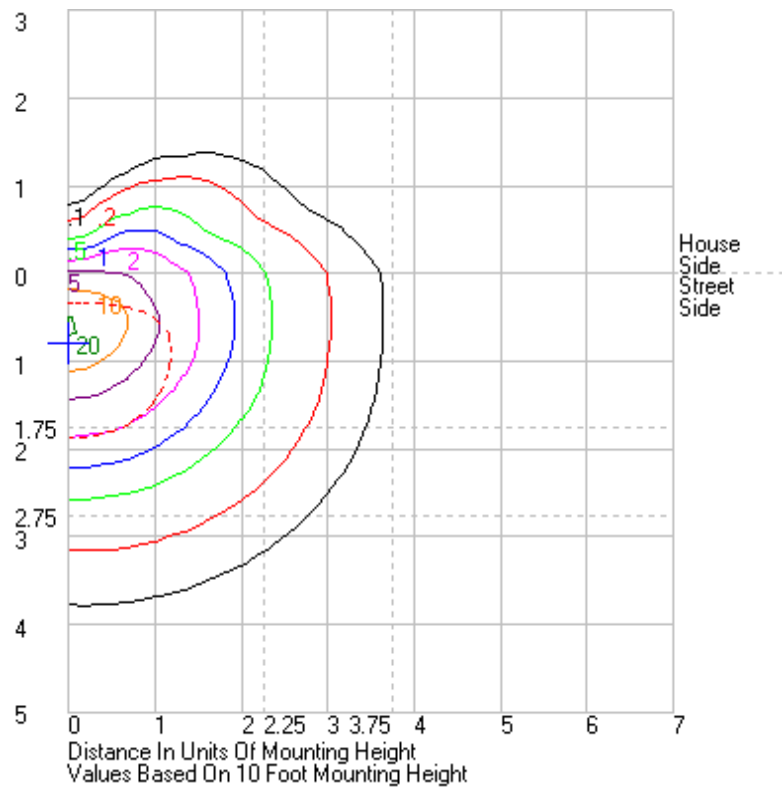


	Lumens	% Lamp	% Luminaire
FL - Front-Low (0-30)	604.0	N.A.	11.8
FM - Front-Medium (30-60)	2525.7	N.A.	49.2
FH - Front-High (60-80)	985.4	N.A.	19.2
FVH - Front-Very High (80-90)	178.1	N.A.	3.5
BL - Back-Low (0-30)	108.3	N.A.	2.1
BM - Back-Medium (30-60)	272.6	N.A.	5.3
BH - Back-High (60-80)	147.3	N.A.	2.9
BVH - Back-Very High (80-90)	29.7	N.A.	0.6
UL - Uplight-Low (90-100)	111.7	N.A.	2.2
UH - Uplight-High (100-180)	170.8	N.A.	3.3
Total	5133.6	N.A.	100.0
BUG Rating	B1-U3-G2		

Coefficients of Utilization



Isolines



4.2 Goniophotometer Test

	0	15	30	45	60	75	90	105	120	135	150	165	180	195	210	225	240	255	270	285	300	315	330	345	360
0	610.928	610.928	610.928	610.928	610.928	610.928	610.928	610.928	610.928	610.928	610.928	610.928	610.928	610.928	610.928	610.928	610.928	610.928	610.928	610.928	610.928	610.928	610.928	610.928	610.928
1	645.78	641.69	633.77	633.12	625.54	617.96	609.44	601.63	593.6	586.09	580.4	577.05	581.13	577.05	580.4	586.09	593.6	601.63	609.44	617.96	625.54	633.12	633.77	641.69	645.78
2	671.23	662.16	657.01	654.51	637.76	624.53	608.18	591.29	573.13	555.25	539.57	528.47	532.79	528.47	539.57	555.25	573.13	591.29	608.18	624.53	637.76	654.51	657.01	662.16	671.23
3	692.99	683.73	676.97	665.13	649.22	630.62	606.14	579.69	548.57	515.16	485.5	464.47	465.98	464.47	485.5	515.16	548.57	579.69	606.14	630.62	649.22	665.13	676.97	683.73	692.99
4	716.41	705.75	695.48	679.55	659.52	636.85	604.56	567.6	520.63	467.5	419.8	389.32	387.7	389.32	419.8	467.5	520.63	567.6	604.56	636.85	659.52	679.55	695.48	705.75	716.41
5	747.25	732.93	715.93	694.2	669.81	641.89	603.96	556.37	490.17	414.69	354.62	322.74	319.33	322.74	354.62	414.69	490.17	556.37	603.96	641.89	669.81	694.2	715.93	732.93	747.25
6	789.21	769.67	743.76	710.89	679.27	646.9	603.64	544.94	458.54	362.1	301.49	274.97	272.11	274.97	301.49	362.1	458.54	544.94	603.64	646.9	679.27	710.89	743.76	769.67	789.21
7	842.42	818.23	780.53	733.05	689.38	651.71	603.97	534.13	424.6	318.17	264.78	243.9	241.33	243.9	264.78	318.17	424.6	534.13	603.97	651.71	689.38	733.05	780.53	818.23	842.42
8	907.54	877.17	825.95	760.67	700.85	656.94	605.17	523.82	392.28	284.63	239.22	220.65	218.11	220.65	239.22	284.63	392.28	523.82	605.17	656.94	700.85	760.67	825.95	877.17	907.54
9	980.83	945.67	881.75	795.6	714.95	661.64	606.51	514.08	362.54	260.19	219.48	199.67	196.19	199.67	219.48	260.19	362.54	514.08	606.51	661.64	714.95	795.6	881.75	945.67	980.83
10	1061.98	1021.83	944.68	837.03	732.02	666.17	608.61	506.06	337	242.59	202.11	179.88	175.7	179.88	202.11	242.59	337	506.06	608.61	666.17	732.02	837.03	944.68	1021.83	1061.98
11	1149.47	1103.94	1014.45	885.17	753.98	670.51	611.14	498.98	316.18	229.14	185.57	161.76	157.87	161.76	185.57	229.14	316.18	498.98	611.14	670.51	753.98	885.17	1014.45	1103.94	1149.47
12	1240.23	1188.91	1088.65	938.08	779.54	674.95	614.23	492.59	299.99	217.65	170.07	144.85	140.04	144.85	170.07	217.65	299.99	492.59	614.23	674.95	779.54	938.08	1088.65	1188.91	1240.23
13	1328.67	1276.86	1166.28	996.33	808.89	680.21	617.58	487.17	287.63	207.19	155.86	129.16	124.03	129.16	155.86	207.19	287.63	487.17	617.58	680.21	808.89	996.33	1166.28	1276.86	1328.67
14	1417.02	1365.39	1246.68	1058.69	841.96	686.93	621.49	481.51	278.44	196.85	143.13	116.1	111.32	116.1	143.13	196.85	278.44	481.51	621.49	686.93	841.96	1058.69	1246.68	1365.39	1417.02
15	1508.82	1454.72	1326.25	1122.34	878.77	694.8	625.66	476.82	271.89	187.43	131.39	105.3	100.74	105.3	131.39	187.43	271.89	476.82	625.66	694.8	878.77	1122.34	1326.25	1454.72	1508.82
16	1609.23	1549.42	1408.05	1188.64	918.28	704.5	630.31	473.42	266.72	178.59	121.64	95.83	91.56	95.83	121.64	178.59	266.72	473.42	630.31	704.5	918.28	1188.64	1408.05	1549.42	1609.23
17	1710.89	1646.8	1490.83	1255.63	960.65	715.82	635.26	470.92	262.79	170.42	113.32	87.79	83.59	87.79	113.32	170.42	262.79	470.92	635.26	715.82	960.65	1255.63	1490.83	1646.8	1710.89
18	1814.79	1746.49	1579.14	1321.99	1004.97	728.75	640.93	469.33	259.6	163.18	106.28	80.83	76.51	80.83	106.28	163.18	259.6	469.33	640.93	728.75	1004.97	1321.99	1579.14	1746.49	1814.79
19	1921.9	1849.39	1668.24	1389.53	1051.12	743.49	646.99	468.83	256.91	156.97	100.2	74.59	70.27	74.59	100.2	156.97	256.91	468.83	646.99	743.49	1051.12	1389.53	1668.24	1849.39	1921.9
20	2034.49	1956.48	1758.66	1460.02	1098.86	760.26	653.56	468.65	254.55	151.61	94.93	69.1	64.8	69.1	94.93	151.61	254.55	468.65	653.56	760.26	1098.86	1460.02	1758.66	1956.48	2034.49
21	2148.18	2064.26	1851.97	1531.42	1146.67	778.46	660.66	469.95	252.44	147.22	90.48	64.51	59.9	64.51	90.48	147.22	252.44	469.95	660.66	778.46	1146.67	1531.42	1851.97	2064.26	2148.18
22	2265.12	2174.13	1945.47	1602.96	1195.35	798.03	668.75	471.87	250.6	143.66	86.57	60.22	55.54	60.22	86.57	143.66	250.6	471.87	668.75	798.03	1195.35	1602.96	1945.47	2174.13	2265.12
23	2386.25	2288.38	2042.25	1676.22	1244.67	819.3	677.71	474.85	249.17	140.85	83.2	56.25	51.54	56.25	83.2	140.85	249.17	474.85	677.71	819.3	1244.67	1676.22	2042.25	2288.38	2386.25
24	2507.66	2402.27	2138.52	1749.73	1294.07	841.23	687.14	478.64	247.99	138.47	80.38	52.88	47.98	52.88	80.38	138.47	247.99	478.64	687.14	841.23	1294.07	1749.73	2138.52	2402.27	2507.66
25	2631.44	2520.39	2236.98	1824.88	1342.47	864.16	698.02	482.4	247.18	136.6	77.85	49.79	44.76	49.79	77.85	136.6	247.18	482.4	698.02	864.16	1342.47	1824.88	2236.98	2520.39	2631.44
26	2758.07	2638.69	2336.53	1899.24	1390.89	888.36	710.12	486.97	246.76	135.3	75.66	47.03	41.85	47.03	75.66	135.3	246.76	486.97	710.12	888.36	1390.89	1899.24	2336.53	2638.69	2758.07
27	2884.01	2754.2	2432.43	1972.63	1439.85	913.54	723.26	492.07	246.76	134.27	73.81	44.57	39.17	44.57	73.81	134.27	246.76	492.07	723.26	913.54	1439.85	1972.63	2432.43	2754.2	2884.01
28	3007.31	2869.62	2528.02	2046.46	1489.81	939.33	738.06	497.55	247.07	133.47	72.18	42.31	36.77	42.31	72.18	133.47	247.07	497.55	738.06	939.33	1489.81	2046.46	2528.02	2869.62	3007.31
29	3125.92	2980.87	2620.64	2117.83	1539.38	965.84	753.53	503.5	247.73	132.91	70.79	40.3	34.53	40.3	70.79	132.91	247.73	503.5	753.53	965.84	1539.38	2117.83	2620.64	2980.87	3125.92
30	3240.58	3086.35	2708.16	2188.71	1589.23	991.41	770.39	509.29	248.71	132.55	69.55	38.48	32.49	38.48	69.55	132.55	248.71	509.29	770.39	991.41	1589.23	2188.71	2708.16	3086.35	3240.58
31	3347.57	3185.04	2790.16	2256.08	1637.36	1017.78	787.96	514.5	249.81	132.23	68.45	36.81	30.61	36.81	68.45	132.23	249.81	514.5	787.96	1017.78	1637.36	2256.08	2790.16	3185.04	3347.57
32	3439.24	3274.19	2865.8	2320.01	1683.98	1044.45	805.78	519.83	250.91	132.06	67.46	35.25	28.87	35.25	67.46	132.06	250.91	519.83	805.78	1044.45	1683.98	2320.01	2865.8	3274.19	3439.24
33	3522.94	3348.86	2933.75	2379.27	1728.46	1070.68	824.38	524.56	252.04	132.03	66.51	33.78	27.22	33.78	66.51	132.03	252.04	524.56	824.38	1070.68	1728.46	2379.27	2933.75	3348.86	3522.94
34	3589.14	3410.74	2989.2	2432.79	1770.68	1096.4	843.04	528.7	252.98	132.15	65.63	32.42	25.67	32.42	65.63	132.15	252.98	528.7	843.04	1096.4	1770.68	2432.79	2989.2	3410.74	3589.14
35	3639.86	3459.29	3034.12	2480.97	1810.33	1122.18	861.83	532.57	254.02	132.41	64.78	31.16	24.2	31.16	64.78	132.41	254.02	532.57	861.83	1122.18	1810.33	2480.97	3034.12	3459.29	3639.86
36	3676.87	3494.62	3068.97	2523.15	1847.94	1146.91	879.92	535.59	255.01	132.79	63.99	29.97	22.8	29.97	63.99	132.79	255.01	535.59	879.92	1146.91	1847.94	2523.15	3068.97	3494.62	3676.87
37	3699.07	3516.39	3089.84	2557.25	1881.14	1171.05	897.89	537.79	255.94	133.34	63.18	28.82	21.49	28.82	63.18	133.34	255.94	537.79	897.89	1171.05	1881.14	2557.25	3089.84	3516.39	3699.07
38	3709.53	3527.43	3101.43	2584.05	1911.17	1194.53	914.55	539.48	256.94	133.92	62.38	27.69	20.2	27.69	62.38	133.92	256.94	539.48	914.55	1194.53	1911.17	2584.05	3101.43	3527.43	3709.53
39	3708.45	3527.62	3103.85	2601.39	1938.97	1215.84	930.54	539.58	258.08	134.42	61.52	26.6	18.95	26.6	61.52	134.42	258.08	539.58	930.54	1215.84	1938.97	2601.39	3103.85	3527.62	3708.45
40	3692.66	3516.92	3098.36	2610.35	1960.58	1236.75	945.49	538.85	259.43	134.88	60.64	25.54	17.75	25.54	60.64	134.88	259.43	538.85	945.49	1236.75	1960.58	2610.35	3098.36	3516.92	3692.66
41	3666.2	3495																							

50	3055.72	2966.66	2670.02	2331.21	1955.35	1319.83	1009.15	469.63	270.9	132.2	47.79	14.68	6.31	14.68	47.79	132.2	270.9	469.63	1009.15	1319.83	1955.35	2331.21	2670.02	2966.66	3055.72
51	2969.64	2889.36	2606.29	2278.41	1930.05	1314.32	1006.46	459.65	270.29	130.74	46.26	13.87	5.44	13.87	46.26	130.74	270.29	459.65	1006.46	1314.32	1930.05	2278.41	2606.29	2889.36	2969.64
52	2882.3	2809.93	2540.53	2224	1899.75	1305.77	1002.86	449.65	269.03	129	44.67	12.95	4.65	12.95	44.67	129	269.03	449.65	1002.86	1305.77	1899.75	2224	2540.53	2809.93	2882.3
53	2791.89	2726.39	2475.03	2168.61	1864.71	1294.62	998.62	439.89	267.46	126.94	43.14	12.17	4.07	12.17	43.14	126.94	267.46	439.89	998.62	1294.62	1864.71	2168.61	2475.03	2726.39	2791.89
54	2699.17	2641.58	2407.09	2113.04	1825.26	1282.59	992.36	429.88	265.41	124.66	41.66	11.58	3.59	11.58	41.66	124.66	265.41	429.88	992.36	1282.59	1825.26	2113.04	2407.09	2641.58	2699.17
55	2600.23	2551.25	2335.01	2054.93	1782.27	1268.18	984.3	419.72	263.14	122.08	40.15	11	3.14	11	40.15	122.08	263.14	419.72	984.3	1268.18	1782.27	2054.93	2335.01	2551.25	2600.23
56	2494.31	2456.77	2260.17	1996.35	1736.89	1253.75	973.81	409.7	260.69	119.22	38.78	10.47	2.74	10.47	38.78	119.22	260.69	409.7	973.81	1253.75	1736.89	1996.35	2260.17	2456.77	2494.31
57	2388.39	2358.56	2182.3	1936.75	1689.11	1239.36	961.46	399.72	257.77	116.29	37.46	10.03	2.41	10.03	37.46	116.29	257.77	399.72	961.46	1239.36	1689.11	1936.75	2182.3	2358.56	2388.39
58	2279.44	2257.91	2100.75	1876.45	1641.36	1219.56	947.98	389.72	254.35	113.12	36.11	9.63	2.13	9.63	36.11	113.12	254.35	389.72	947.98	1219.56	1641.36	1876.45	2100.75	2257.91	2279.44
59	2169.47	2155.54	2016.34	1812.9	1590.85	1197.89	933.35	380.12	250.23	109.85	34.88	9.31	1.83	9.31	34.88	109.85	250.23	380.12	933.35	1197.89	1590.85	1812.9	2016.34	2155.54	2169.47
60	2060.1	2054.85	1932.58	1748.18	1538.27	1175.31	915.97	370.53	245.83	106.38	33.73	8.5	0.27	8.5	33.73	106.38	245.83	370.53	915.97	1175.31	1538.27	1748.18	1932.58	2054.85	2060.1
61	1950.12	1951.16	1845.95	1679.63	1485.13	1149.11	897.31	360.66	241	102.83	32.56	7.28	0.19	7.28	32.56	102.83	241	360.66	897.31	1149.11	1485.13	1679.63	1845.95	1951.16	1950.12
62	1839.82	1848.23	1759.27	1610.48	1430.02	1121.55	877.37	351.66	235.68	99.29	31.28	7.1	0.19	7.1	31.28	99.29	235.68	351.66	877.37	1121.55	1430.02	1610.48	1759.27	1848.23	1839.82
63	1725.39	1741.34	1670.75	1540.54	1375.56	1090.91	856.18	342.28	229.34	95.69	29.13	6.93	0.19	6.93	29.13	95.69	229.34	342.28	856.18	1090.91	1375.56	1540.54	1670.75	1741.34	1725.39
64	1605.71	1629.03	1580.67	1468.96	1321.28	1057.62	833.92	332.49	221.97	92.1	28.16	6.76	0.2	6.76	28.16	92.1	221.97	332.49	833.92	1057.62	1321.28	1468.96	1580.67	1629.03	1605.71
65	1484.1	1514.12	1486.78	1397.8	1266.45	1022.19	810.04	322.34	213.83	88.59	27.22	6.59	0.2	6.59	27.22	88.59	213.83	322.34	810.04	1022.19	1266.45	1397.8	1486.78	1514.12	1484.1
66	1357.72	1398.55	1390.31	1325.17	1209.38	982.65	784.24	312.27	205.06	84.47	26.27	6.42	0.2	6.42	26.27	84.47	205.06	312.27	784.24	982.65	1209.38	1325.17	1390.31	1398.55	1357.72
67	1233.84	1283.83	1293.69	1253.28	1151.56	940.9	757.49	302.7	196.41	80.65	25.38	6.26	0.2	6.26	25.38	80.65	196.41	302.7	757.49	940.9	1151.56	1253.28	1293.69	1283.83	1233.84
68	1114.51	1168.19	1195.99	1177.74	1090.91	897.41	729.26	292.81	187.62	77.29	24.46	6.09	0.2	6.09	24.46	77.29	187.62	292.81	729.26	897.41	1090.91	1177.74	1195.99	1168.19	1114.51
69	1002.89	1058.66	1098.46	1099.84	1030.89	853.06	700.67	282.86	179.08	74	23.58	5.92	0.19	5.92	23.58	74	179.08	282.86	700.67	853.06	1030.89	1099.84	1098.46	1058.66	1002.89
70	904.64	958.28	1004.84	1022.61	968.92	807.89	669.89	272.02	170.57	70.79	22.7	5.75	0.19	5.75	22.7	70.79	170.57	272.02	669.89	807.89	968.92	1022.61	1004.84	958.28	904.64
71	818.4	868.84	919.09	946.68	906.57	762.96	637.16	262.08	161.88	67.69	21.84	5.57	0.19	5.57	21.84	67.69	161.88	262.08	637.16	762.96	906.57	946.68	919.09	868.84	818.4
72	747.02	792.23	842.62	875.47	845.94	715.91	605.27	252.13	153.64	64.61	21.01	5.4	0.19	5.4	21.01	64.61	153.64	252.13	605.27	715.91	845.94	875.47	842.62	792.23	747.02
73	686.47	726.85	774.62	808.47	785.84	669.44	572.77	241.77	145.87	61.57	20.19	5.23	0.19	5.23	20.19	61.57	145.87	241.77	572.77	669.44	785.84	808.47	774.62	726.85	686.47
74	645.81	670.93	715.28	747.62	729.82	623.8	539.25	231.19	138.26	58.66	19.39	5.06	0.19	5.06	19.39	58.66	138.26	231.19	539.25	623.8	729.82	747.62	715.28	670.93	645.81
75	602.26	623.85	663.13	691.85	676.75	579.2	505.06	219.71	131.51	55.75	18.6	4.9	0.19	4.9	18.6	55.75	131.51	219.71	505.06	579.2	676.75	691.85	663.13	623.85	602.26
76	558.64	583.63	620.56	641.41	628.1	536.21	471.51	207.37	124.87	52.94	17.82	4.73	0.19	4.73	17.82	52.94	124.87	207.37	471.51	536.21	628.1	641.41	620.56	583.63	558.64
77	525.28	546.93	580.93	600.45	585.55	494.4	437.06	194.19	118.56	50.19	17.08	4.57	0.19	4.57	17.08	50.19	118.56	194.19	437.06	494.4	585.55	600.45	580.93	546.93	525.28
78	495.32	514.05	544.48	561.74	544.85	454.1	403.7	180.22	112.44	47.46	16.34	4.41	0.19	4.41	16.34	47.46	112.44	180.22	403.7	454.1	544.85	561.74	544.48	514.05	495.32
79	467.72	484.66	512.6	526.73	507.76	415.61	370.31	166.52	106.57	44.88	15.63	4.26	0.2	4.26	15.63	44.88	106.57	166.52	370.31	415.61	507.76	526.73	512.6	484.66	467.72
80	442.56	457.2	482.88	494.4	472.99	379.19	336.98	153.45	100.85	42.32	14.95	4.11	0.2	4.11	14.95	42.32	100.85	153.45	336.98	379.19	472.99	494.4	482.88	457.2	442.56
81	418.81	431.89	455.98	465.11	440.4	345.12	303.94	141.31	95.12	39.89	14.27	3.97	0.21	3.97	14.27	39.89	95.12	141.31	303.94	345.12	440.4	465.11	455.98	431.89	418.81
82	396.8	408.57	430.86	438.33	411.23	313.79	271.82	130.51	89.49	37.51	13.63	3.83	0.21	3.83	13.63	37.51	89.49	130.51	271.82	313.79	411.23	438.33	430.86	408.57	396.8
83	376.43	386.96	407.71	413.81	384.67	285.43	241.94	121.02	84.08	35.25	13.02	3.69	0.22	3.69	13.02	35.25	84.08	121.02	241.94	285.43	384.67	413.81	407.71	386.96	376.43
84	357.07	366.63	385.95	390.67	360.38	259.38	213.81	112.53	78.88	33.15	12.41	3.57	0.23	3.57	12.41	33.15	78.88	112.53	213.81	259.38	360.38	390.67	385.95	366.63	357.07
85	338.98	347.54	365.65	369.23	338.39	235.57	188.02	104.75	73.86	31.11	11.83	3.44	0.24	3.44	11.83	31.11	73.86	104.75	188.02	235.57	338.39	369.23	365.65	347.54	338.98
86	321.93	329.82	346.5	349.06	318.1	214.83	163.91	97.79	69.13	29.24	11.28	3.33	0.25	3.33	11.28	29.24	69.13	97.79	163.91	214.83	318.1	349.06	346.5	329.82	321.93
87	305.92	312.97	328.49	329.95	299.12	196.48	140.03	91.07	64.73	27.45	10.76	3.22	0.26	3.22	10.76	27.45	64.73	91.07	140.03	196.48	299.12	329.95	328.49	312.97	305.92
88	290.73	297.22	311.68	312.03	281.8	180.79	117.9	84.77	60.65	25.81	10.26	3.11	0.28	3.11	10.26	25.81	60.65	84.77	117.9	180.79	281.8	312.03	311.68	297.22	290.73
89	276.56	282.54	295.74	295.21	265.32	167.25	98.81	78.67	56.67	24.29	9.8	3.02	0.3	3.02	9.8	24.29	56.67	78.67	98.81	167.25	265.32	295.21	295.74	282.54	276.56
90	263.35	268.63	280.88	279.36	250.24	155.6	82.12	72.97	53.08	22.87	9.35	2.93	0.32	2.93	9.35	22.87	53.08	72.97	82.12	155.6	250.24	279.36	280.88	268.63	263.35
91	251.09	255.73	266.98	264.51	235.83	145.54	68.07	67.6	49.77	21.55	8.93	2.84	0.34	2.84	8.93	21.55	49.77	67.6	68.07	145.54	235.83	264.51	266.98	255.73	251.09
92	239.45	243.62	253.89	250.59	222.38	136.23	57.23	62.73	46.68	20.35	8.54	2.76	0.36	2.76	8.54	20.35	46.68	62.73	57.23	136.23	222.38	250.59	253.89	243.62	239.45
93	228.64	232.55	241.65	237.63	209.95	127.5	48.74	58.25	43.87	19.25	8.17	2.69	0.39	2.69	8.1										

104	145.59	146.68	148.99	139.35	116.82	67.84	20.73	28.48	23.54	11.5	5.67	2.47	1.22	2.47	5.67	11.5	23.54	28.48	20.73	67.84	116.82	139.35	148.99	146.68	145.59
105	140.36	141.12	143.13	133.66	111.34	64.35	19.84	26.96	22.36	11.06	5.52	2.46	1.28	2.46	5.52	11.06	22.36	26.96	19.84	64.35	111.34	133.66	143.13	141.12	140.36
106	135.29	136.02	137.38	128.08	106.06	61.02	19.04	25.55	21.27	10.64	5.39	2.46	1.34	2.46	5.39	10.64	21.27	25.55	19.04	61.02	106.06	128.08	137.38	136.02	135.29
107	130.26	131.04	132.2	122.86	101.06	57.97	18.32	24.26	20.26	10.25	5.27	2.47	1.41	2.47	5.27	10.25	20.26	24.26	18.32	57.97	101.06	122.86	132.2	131.04	130.26
108	125.57	126.14	127.24	117.78	96.18	55.07	17.65	23.06	19.31	9.9	5.16	2.47	1.47	2.47	5.16	9.9	19.31	23.06	17.65	55.07	96.18	117.78	127.24	126.14	125.57
109	120.94	121.53	122.45	112.98	91.59	52.39	17.05	21.95	18.43	9.56	5.05	2.48	1.54	2.48	5.05	9.56	18.43	21.95	17.05	52.39	91.59	112.98	122.45	121.53	120.94
110	116.42	116.97	117.75	108.27	87.29	49.86	16.48	20.91	17.6	9.26	4.96	2.49	1.6	2.49	4.96	9.26	17.6	20.91	16.48	49.86	87.29	108.27	117.75	116.97	116.42
111	111.88	112.49	113.2	103.85	83.24	47.46	15.96	19.94	16.83	8.97	4.87	2.5	1.66	2.5	4.87	8.97	16.83	19.94	15.96	47.46	83.24	103.85	113.2	112.49	111.88
112	107.46	108.12	108.86	99.62	79.51	45.23	15.47	19.06	16.11	8.7	4.79	2.51	1.72	2.51	4.79	8.7	16.11	19.06	15.47	45.23	79.51	99.62	108.86	108.12	107.46
113	102.98	103.82	104.62	95.62	75.94	43.14	15.01	18.22	15.42	8.45	4.71	2.52	1.76	2.52	4.71	8.45	15.42	18.22	15.01	43.14	75.94	95.62	104.62	103.82	102.98
114	98.74	99.73	100.62	91.88	72.66	41.14	14.56	17.44	14.77	8.2	4.63	2.52	1.79	2.52	4.63	8.2	14.77	17.44	14.56	41.14	72.66	91.88	100.62	99.73	98.74
115	94.7	95.84	96.87	88.39	69.61	39.3	14.15	16.7	14.17	7.97	4.55	2.52	1.81	2.52	4.55	7.97	14.17	16.7	14.15	39.3	69.61	88.39	96.87	95.84	94.7
116	90.96	92.19	93.33	85.1	67.15	37.54	13.77	16.01	13.6	7.76	4.49	2.53	1.85	2.53	4.49	7.76	13.6	16.01	13.77	37.54	67.15	85.1	93.33	92.19	90.96
117	87.53	88.87	90.07	82.04	64.31	35.91	13.39	15.37	13.08	7.57	4.43	2.54	1.9	2.54	4.43	7.57	13.08	15.37	13.39	35.91	64.31	82.04	90.07	88.87	87.53
118	84.36	85.83	87.04	79.22	61.54	34.39	13.03	14.77	12.58	7.38	4.38	2.56	1.95	2.56	4.38	7.38	12.58	14.77	13.03	34.39	61.54	79.22	87.04	85.83	84.36
119	81.53	83.04	84.18	76.49	59.13	32.93	12.68	14.2	12.09	7.21	4.34	2.57	2	2.57	4.34	7.21	12.09	14.2	12.68	32.93	59.13	76.49	84.18	83.04	81.53
120	78.95	80.46	81.51	73.94	56.92	31.58	12.34	13.68	11.65	7.07	4.3	2.59	2.05	2.59	4.3	7.07	11.65	13.68	12.34	31.58	56.92	73.94	81.51	80.46	78.95
121	76.59	78.08	79.02	71.52	54.8	30.3	12.02	13.18	11.24	6.93	4.27	2.62	2.11	2.62	4.27	6.93	11.24	13.18	12.02	30.3	54.8	71.52	79.02	78.08	76.59
122	74.32	75.83	76.62	69.18	52.79	29.08	11.71	12.69	10.84	6.79	4.23	2.64	2.17	2.64	4.23	6.79	10.84	12.69	11.71	29.08	52.79	69.18	76.62	75.83	74.32
123	72.25	73.72	74.39	66.95	50.88	27.94	11.4	12.24	10.47	6.66	4.21	2.66	2.22	2.66	4.21	6.66	10.47	12.24	11.4	27.94	50.88	66.95	74.39	73.72	72.25
124	70.31	71.76	72.3	65.16	49.08	26.84	11.11	11.82	10.12	6.53	4.18	2.68	2.27	2.68	4.18	6.53	10.12	11.82	11.11	26.84	49.08	65.16	72.3	71.76	70.31
125	68.52	69.88	70.22	62.97	47.37	25.78	10.81	11.41	9.79	6.4	4.15	2.69	2.31	2.69	4.15	6.4	9.79	11.41	10.81	25.78	47.37	62.97	70.22	69.88	68.52
126	66.79	68.12	68.26	60.95	45.72	24.79	10.52	11.03	9.47	6.28	4.12	2.7	2.35	2.7	4.12	6.28	9.47	11.03	10.52	24.79	45.72	60.95	68.26	68.12	66.79
127	65.16	66.45	66.38	59.12	44.16	23.83	10.24	10.65	9.17	6.16	4.09	2.71	2.37	2.71	4.09	6.16	9.17	10.65	10.24	23.83	44.16	59.12	66.38	66.45	65.16
128	63.49	64.83	64.6	57.34	42.66	22.91	9.96	10.3	8.88	6.06	4.06	2.71	2.4	2.71	4.06	6.06	8.88	10.3	9.96	22.91	42.66	57.34	64.6	64.83	63.49
129	62.21	63.32	62.87	55.61	41.21	22.03	9.68	9.96	8.61	5.95	4.02	2.71	2.42	2.71	4.02	5.95	8.61	9.96	9.68	22.03	41.21	55.61	62.87	63.32	62.21
130	60.92	61.86	61.17	53.95	39.82	21.18	9.4	9.62	8.35	5.85	3.99	2.72	2.45	2.72	3.99	5.85	8.35	9.62	9.4	21.18	39.82	53.95	61.17	61.86	60.92
131	59.63	60.46	59.56	52.39	38.49	20.38	9.14	9.31	8.11	5.76	3.96	2.72	2.48	2.72	3.96	5.76	8.11	9.31	9.14	20.38	38.49	52.39	59.56	60.46	59.63
132	58.38	59.07	57.99	50.81	37.19	19.6	8.87	9.01	7.88	5.66	3.93	2.73	2.51	2.73	3.93	5.66	7.88	9.01	8.87	19.6	37.19	50.81	57.99	59.07	58.38
133	57.19	57.77	56.47	49.31	35.96	18.85	8.6	8.72	7.65	5.56	3.89	2.72	2.53	2.72	3.89	5.56	7.65	8.72	8.6	18.85	35.96	49.31	56.47	57.77	57.19
134	56.06	56.5	54.99	47.85	34.75	18.13	8.35	8.44	7.44	5.48	3.86	2.72	2.56	2.72	3.86	5.48	7.44	8.44	8.35	18.13	34.75	47.85	54.99	56.5	56.06
135	54.96	55.26	53.53	46.43	33.56	17.44	8.1	8.18	7.23	5.39	3.83	2.72	2.58	2.72	3.83	5.39	7.23	8.18	8.1	17.44	33.56	46.43	53.53	55.26	54.96
136	53.89	54.06	52.14	45.02	32.42	16.77	7.86	7.92	7.04	5.3	3.8	2.72	2.61	2.72	3.8	5.3	7.04	7.92	7.86	16.77	32.42	45.02	52.14	54.06	53.89
137	52.84	52.87	50.76	43.64	31.3	16.12	7.63	7.67	6.85	5.21	3.76	2.72	2.64	2.72	3.76	5.21	6.85	7.67	7.63	16.12	31.3	43.64	50.76	52.87	52.84
138	51.82	51.72	49.42	42.3	30.2	15.48	7.4	7.41	6.65	5.12	3.72	2.71	2.65	2.71	3.72	5.12	6.65	7.41	7.4	15.48	30.2	42.3	49.42	51.72	51.82
139	50.82	50.59	48.09	40.98	29.13	14.86	7.18	7.17	6.46	5.02	3.68	2.7	2.67	2.7	3.68	5.02	6.46	7.17	7.18	14.86	29.13	40.98	48.09	50.59	50.82
140	49.82	49.45	46.78	39.69	28.08	14.26	6.97	6.94	6.26	4.91	3.62	2.68	2.67	2.68	3.62	4.91	6.26	6.94	6.97	14.26	28.08	39.69	46.78	49.45	49.82
141	48.81	48.31	45.48	38.41	27.04	13.66	6.77	6.71	6.07	4.8	3.56	2.64	2.65	2.64	3.56	4.8	6.07	6.71	6.77	13.66	27.04	38.41	45.48	48.31	48.81
142	47.78	47.16	44.18	37.12	25.99	13.06	6.57	6.49	5.88	4.69	3.5	2.62	2.64	2.62	3.5	4.69	5.88	6.49	6.57	13.06	25.99	37.12	44.18	47.16	47.78
143	46.75	46.04	42.89	35.87	24.96	12.45	6.37	6.27	5.69	4.58	3.44	2.59	2.63	2.59	3.44	4.58	5.69	6.27	6.37	12.45	24.96	35.87	42.89	46.04	46.75
144	45.68	44.88	41.62	34.6	23.95	11.85	6.17	6.06	5.5	4.45	3.36	2.55	2.59	2.55	3.36	4.45	5.5	6.06	6.17	11.85	23.95	34.6	41.62	44.88	45.68
145	44.6	43.72	40.33	33.35	22.92	11.25	5.98	5.84	5.31	4.32	3.28	2.5	2.55	2.5	3.28	4.32	5.31	5.84	5.98	11.25	22.92	33.35	40.33	43.72	44.6
146	43.47	42.51	39.04	32.1	21.88	10.67	5.77	5.63	5.12	4.19	3.19	2.44	2.5	2.44	3.19	4.19	5.12	5.63	5.77	10.67	21.88	32.1	39.04	42.51	43.47
147	42.31	41.3	37.73	30.86	20.86	10.11	5.57	5.42	4.92	4.05	3.1	2.39	2.45	2.39	3.1	4.05	4.92	5.42	5.57	10.11	20.86	30.86	37.73	41.3	42.31
148	41.13	40.04	36.41	29.62	19.84	9.56	5.38	5.22	4.73	3.91	3	2.33	2.39	2.33	3	3.91	4.73	5.22	5.38	9.56	19.84	29.62	36.41	40.04	41.13
149	39.89	38.75	35.08	28.36	18.83	9.03	5.19	5.02	4.54	3.77	2.9	2.27	2.34	2.27	2.9	3.77	4.54	5.02	5.19	9.03	18.83	28.36	35.08	38.75	39.89
150	38.61	37.44	33.73	27.05	17.81	8.51	5.01	4.83	4.37	3.64	2.82	2.23	2.31	2.23	2.82	3.64	4.37	4.83	5.01	8.51	17.81	27.05	33.73	37.44	38.61
151	37.29	36.08	32.35	25.65	16.79	8	4.83	4.65	4.2	3.52	2.74	2.19	2.28	2.19	2.74	3.52	4.2	4.65	4.83	8	16.79	25.65	32.35	36.08	37.29
152	35.93	34.69	30.95	24.26																					

158	26.96	25.61	21.41	16.08	9.33	4.82	3.68	3.48	3.12	2.64	2.15	1.85	1.91	1.85	2.15	2.64	3.12	3.48	3.68	4.82	9.33	16.08	21.41	25.61	26.96
159	25.35	23.99	19.91	14.44	8.39	4.45	3.52	3.31	2.97	2.52	2.06	1.8	1.85	1.8	2.06	2.52	2.97	3.31	3.52	4.45	8.39	14.44	19.91	23.99	25.35
160	23.7	21.85	18.36	12.66	7.5	4.1	3.36	3.16	2.83	2.41	1.99	1.77	1.81	1.77	1.99	2.41	2.83	3.16	3.36	4.1	7.5	12.66	18.36	21.85	23.7
161	22.04	19.54	16.61	10.86	6.68	3.79	3.21	3.01	2.7	2.31	1.93	1.73	1.77	1.73	1.93	2.31	2.7	3.01	3.21	3.79	6.68	10.86	16.61	19.54	22.04
162	20.37	17.7	14.65	9.3	5.95	3.51	3.05	2.86	2.57	2.21	1.87	1.71	1.73	1.71	1.87	2.21	2.57	2.86	3.05	3.51	5.95	9.3	14.65	17.7	20.37
163	18.72	15.87	12.6	7.99	5.27	3.27	2.9	2.73	2.45	2.13	1.81	1.68	1.7	1.68	1.81	2.13	2.45	2.73	2.9	3.27	5.27	7.99	12.6	15.87	18.72
164	16.9	13.85	10.24	6.9	4.66	3.05	2.76	2.59	2.34	2.04	1.77	1.66	1.67	1.66	1.77	2.04	2.34	2.59	2.76	3.05	4.66	6.9	10.24	13.85	16.9
165	14.64	11.38	8.22	6.02	4.12	2.86	2.62	2.47	2.23	1.97	1.72	1.64	1.65	1.64	1.72	1.97	2.23	2.47	2.62	2.86	4.12	6.02	8.22	11.38	14.64
166	11.57	8.87	6.66	5.21	3.65	2.67	2.49	2.35	2.14	1.9	1.68	1.63	1.63	1.63	1.68	1.9	2.14	2.35	2.49	2.67	3.65	5.21	6.66	8.87	11.57
167	8.87	6.95	5.57	4.49	3.24	2.5	2.36	2.24	2.05	1.84	1.65	1.62	1.62	1.62	1.65	1.84	2.05	2.24	2.36	2.5	3.24	4.49	5.57	6.95	8.87
168	6.9	5.62	4.64	3.86	2.88	2.34	2.24	2.13	1.97	1.79	1.63	1.61	1.61	1.61	1.63	1.79	1.97	2.13	2.24	2.34	2.88	3.86	4.64	5.62	6.9
169	5.61	4.54	3.96	3.31	2.57	2.19	2.13	2.04	1.9	1.75	1.61	1.61	1.61	1.61	1.61	1.75	1.9	2.04	2.13	2.19	2.57	3.31	3.96	4.54	5.61
170	4.33	3.77	3.31	2.82	2.31	2.06	2.02	1.95	1.84	1.71	1.59	1.6	1.61	1.6	1.59	1.71	1.84	1.95	2.02	2.06	2.31	2.82	3.31	3.77	4.33
171	3.74	3.19	2.77	2.42	2.1	1.94	1.93	1.87	1.78	1.67	1.58	1.6	1.6	1.6	1.58	1.67	1.78	1.87	1.93	1.94	2.1	2.42	2.77	3.19	3.74
172	3.17	2.49	2.31	2.12	1.93	1.84	1.83	1.8	1.72	1.64	1.56	1.6	1.6	1.6	1.56	1.64	1.72	1.8	1.83	1.84	1.93	2.12	2.31	2.49	3.17
173	2.46	2	1.97	1.89	1.78	1.75	1.75	1.73	1.67	1.61	1.55	1.6	1.59	1.6	1.55	1.61	1.67	1.73	1.75	1.75	1.78	1.89	1.97	2	2.46
174	1.32	1.73	1.75	1.72	1.67	1.67	1.68	1.67	1.63	1.58	1.54	1.59	1.58	1.59	1.54	1.58	1.63	1.67	1.68	1.67	1.67	1.72	1.75	1.73	1.32
175	1.26	1.56	1.6	1.59	1.58	1.61	1.63	1.62	1.59	1.56	1.53	1.58	1.56	1.58	1.53	1.56	1.59	1.62	1.63	1.61	1.58	1.59	1.6	1.56	1.26
176	1.28	1.42	1.49	1.5	1.52	1.56	1.58	1.57	1.56	1.53	1.52	1.57	1.54	1.57	1.52	1.53	1.56	1.57	1.58	1.56	1.52	1.5	1.49	1.42	1.28
177	1.3	1.41	1.42	1.45	1.49	1.52	1.53	1.53	1.52	1.5	1.49	1.54	1.51	1.54	1.49	1.5	1.52	1.53	1.53	1.52	1.49	1.45	1.42	1.41	1.3
178	1.32	1.41	1.42	1.45	1.48	1.5	1.51	1.51	1.5	1.48	1.47	1.52	1.47	1.52	1.47	1.48	1.5	1.51	1.51	1.5	1.48	1.45	1.42	1.41	1.32
179	1.36	1.43	1.44	1.47	1.49	1.5	1.51	1.5	1.49	1.47	1.46	1.49	1.44	1.49	1.46	1.47	1.49	1.5	1.51	1.5	1.49	1.47	1.44	1.43	1.36
180	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4

4.0 LM-79 Measurement and Test Results

4.3 THD and PF Test

Model No.	WPT @ 40W/5000K	Sample ID.	I1
Temperature (°C)	25.1	Humidity (%RH)	57.0

Test Method

The samples were tested according to the ANSI C82.77:2014.

The total harmonic distortion shall be measured to the 40th order.

The ambient temperature condition was maintained at $25^{\circ}\text{C} \pm 1^{\circ}\text{C}$. The sample measurements were made using a digital power meter and power supply. The sample was operated at rated voltage and was stabilized before measurement. The total harmonic distortion were calculated.

Test Results

Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	THD
120.07	60	0.323	38.6	0.995	10.12%
277.05	60	0.142	38.5	0.981	9.18%

5.0 Equipment Information

Test Equipment			
Equipment ID	Equipment Name	Last Calibration Date	Calibration Due Date
DLF107	Integrating Sphere System	2023/12/24	2024/12/23
DLF108	Auxiliary Lamp	2023/12/24	2024/12/23
DLF122	Measurement Standard Lamp Standard Lamp Type: 220 V, 0.4720 A, Tungsten, Omni-derectional	2023/12/24	2024/12/23
DLF116	AC Power Source	2023/12/16	2024/12/15
DLF516	Power Meter	2023/12/16	2024/12/15
DLF112	Temperature Recorder	2023/12/28	2024/12/27
DLF114	Temperature & Humidity Datalogger	2023/12/28	2024/12/27
DLF101	Goniophotometer	2023/12/24	2024/12/23
DLF511	AC Power Source	2023/12/16	2024/12/15
DLF512	AC Power Source	2023/12/16	2024/12/15
DLF513	AC Power Source	2023/12/16	2024/12/15
DLF507	DC Power Source	2023/12/16	2024/12/15
DLF111	Temperature & Humidity Datalogger	2023/12/28	2024/12/27
DLF119	Power Meter	2023/12/16	2024/12/15
DLF031	Temperature data logger	2024/6/20	2025/6/19
DLF073	Power Analyzer	2024/6/20	2025/6/19
DLF003	Temperature & Humidity Datalogger	2024/6/20	2025/6/19

***** End of Test Report*****