

Photometric Test Report

Relevant Standards

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

Prepared For

RAB Lighting Inc.

Room 6A33, No.1388, Wuzhong road, Shanghai, China

Xiao Xiang, 15921313292, Gary.Xiao@rabweb.com

Prepared By

Deliver Co., Ltd.

Block 11, 78 Keling Road, SSTP, Suzhou, China

0512-66801950, kevin.jia@szdeliver.com

Project Number

DLF2409113

Report Number

DLF2409113-1a

Test Date

2024/8/31

Issue Date

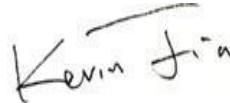
2024/9/2

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		2162
Minimum Luminaire Efficacy (lm/W) (Goniophotometer - Section 4.2) (0°-180° zones)	IES LM-79-2008	Standard 105	Premium 120	137.7
Luminaire Output (lm) (Goniophotometer - Section 4.2) (0°-90° zones)	IES LM-79-2008	300		2044
Minimum Luminaire Efficacy (lm/W) (Goniophotometer - Section 4.2) (0°-90° zones)	IES LM-79-2008	Standard 105	Premium 120	130.2
Power (Input Wattage) (W) (Goniophotometer - Section 4.2)	IES LM-79-2008	Worst Case		15.7
Total Harmonic Distortion (A%) (THD & PF - section 4.3)	ANSI C82.77:2014	20.00%	120V	14.07%
		20.00%	277V	15.57%
Power Factor (THD & PF - section 4.3)	ANSI C82.77:2014	0.9	120V	0.987
		0.9	277V	0.925
Allowable CCTs* (K) (Integrating Sphere - Section 4.1)	IES LM-79-2008	7 step	3045±175	3058
		4 step	3045±100	
Minimum CRI (Integrating Sphere - Section 4.1)	IES LM-79-2008 CIE 13.3-1995	≥70		82
Minimum R9 (Integrating Sphere - Section 4.1)	IES LM-79-2008 CIE 13.3-1995	-		5
Minimum Rf (Integrating Sphere - Section 4.1)	ANSI/IES TM-30-18	≥70		84
Minimum Rg (Integrating Sphere - Section 4.1)	ANSI/IES TM-30-18	≥89		98
IES Rcs,h1 (Integrating Sphere - Section 4.1)	ANSI/IES TM-30-18	-18%≤IES Rcs,h1≤+23%		-11%
Zonal Lumen Requirement (80°-90°) (Goniophotometer - Section 4.2)	IES LM-79-2008	≤10%		4.24%
Input Voltage (V)				
(Goniophotometer - Section 4.2)	IES LM-79-2008	Worst Case		277
(Goniophotometer - Section 4.2)		Non-Worst Case		120
Input Current (A)				
(Goniophotometer - Section 4.2)	IES LM-79-2008	Worst Case		0.061
(Goniophotometer - Section 4.2)		Non-Worst Case		0.121
Power (Input Wattage - W)				
(Goniophotometer - Section 4.2)	IES LM-79-2008	Worst Case		15.7
(Goniophotometer - Section 4.2)		Non-Worst Case		14.3

2.0 Test List

Test Item	Test	Test Date	Model Number	Build Level	Sample No.
1	Integrating Sphere Test	2024/8/31	WPT @ 15W/3000K	N/A	A1
2	Goniophotometer Test	2024/8/31	WPT @ 15W/3000K	N/A	A1
3	THD and PF Test	2024/8/31	WPT @ 15W/3000K	N/A	A1

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.

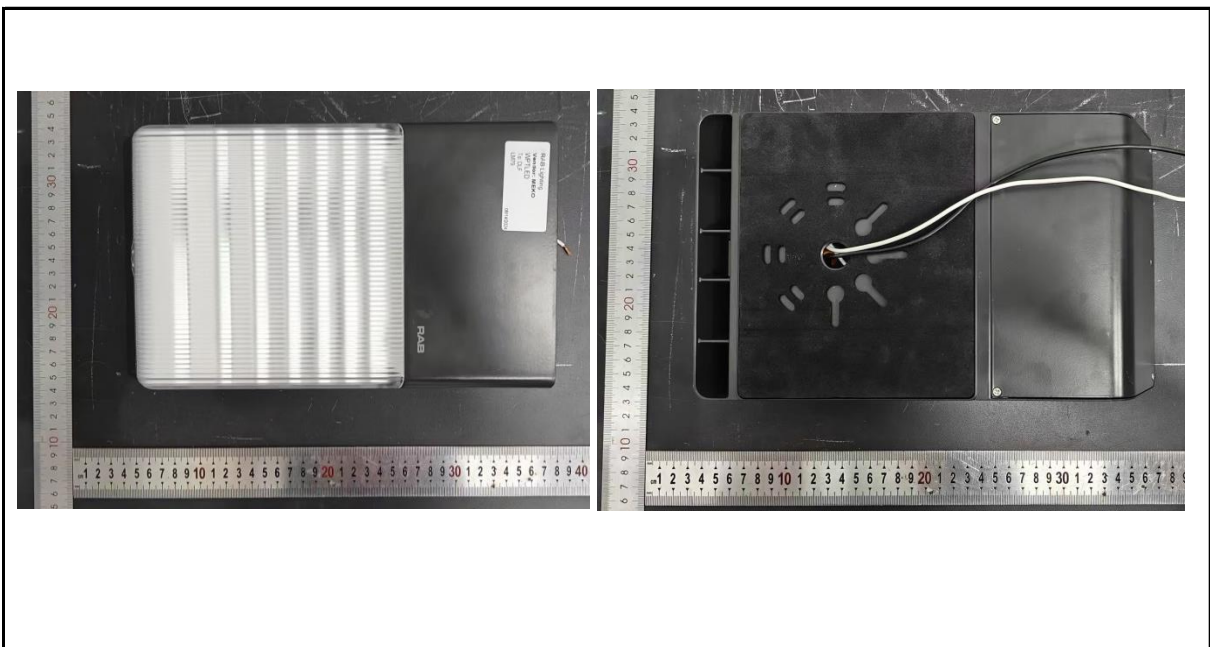
2、 The results reported herein have been performed in accordance with the laboratory's terms of accreditation. This report shall not be reproduced except in full without the written approval of the Laboratory. The results in this report apply to the test sample(s) mentioned above at the time of the testing 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 @ 15W/3000K

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 @ 15W/3000K	Sample ID.	A1
Opreate 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 paramters 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

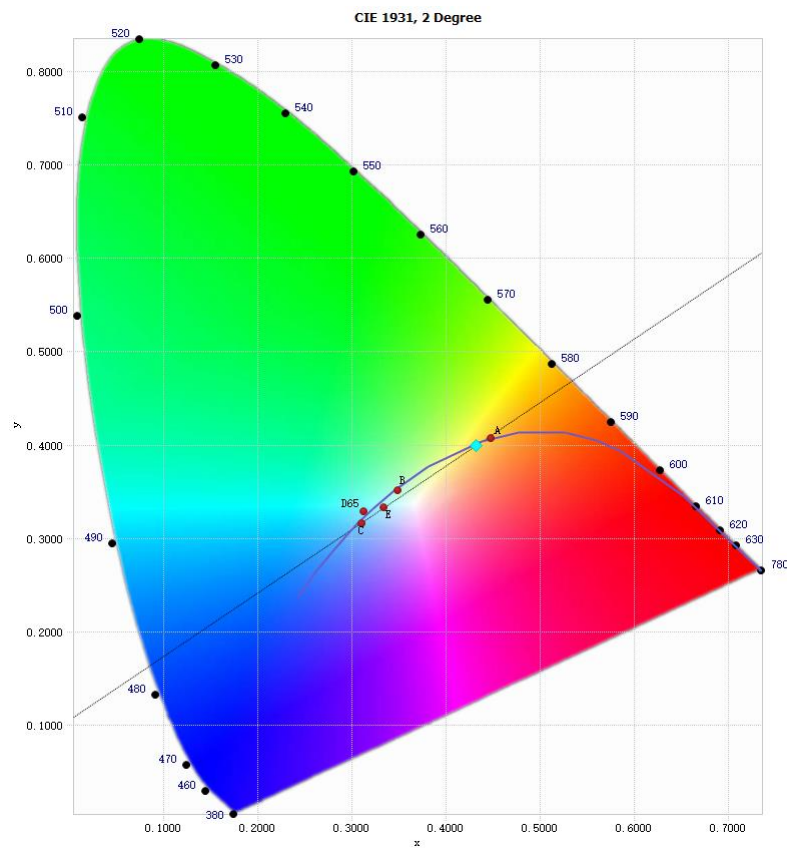
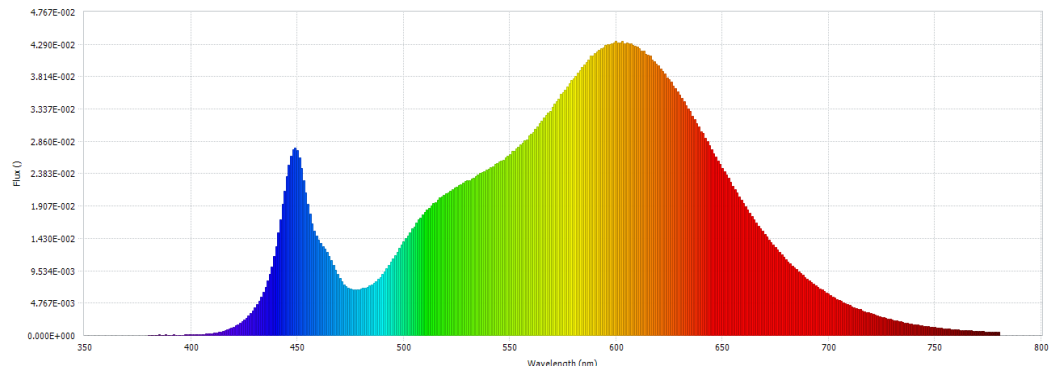
Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor
120.06	60	0.120	14.2	0.987
276.99	60	0.061	15.6	0.925

Test Result

CCT (K)	CRI	R9	Duv
3058	82	5	-0.0009

Rf	Rg	IES Rcs,h1
84	98	-11%

4.1 Integrating Sphere Test



4.1 Integrating Sphere Test

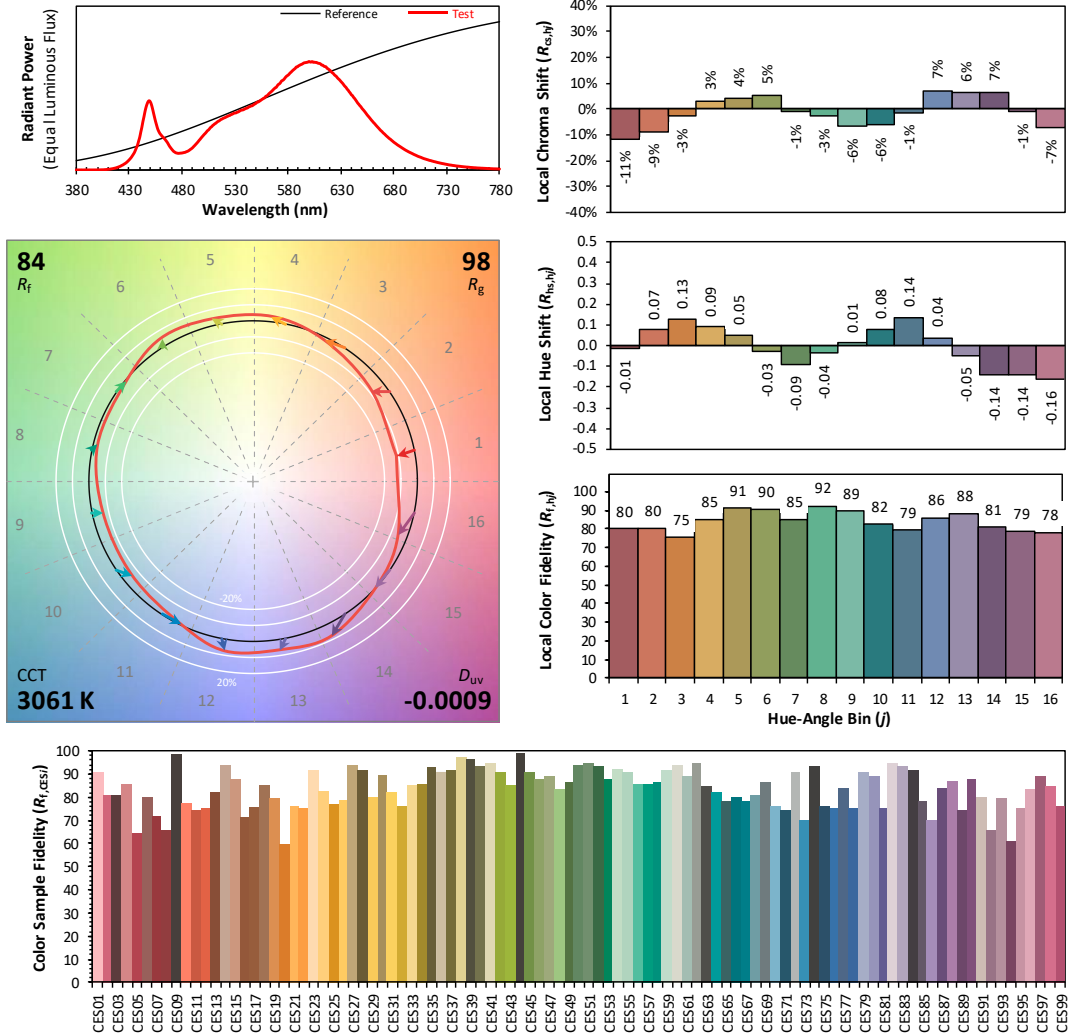
IES TM-30-18 Color Rendition Report

Source: DLF2409113-1a

Manufacturer: RAB Lighting Inc.

Date: 2024/8/31

Model: WPT @ 15W/3000K



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

x 0.4315
 y 0.4000
 u' 0.2488
 v' 0.5190

CIE 13.3-1995
(CRI)

R_a 83
 R_g 9

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	5.43E-05	485	7.46E-03	590	4.16E-02	695	7.11E-03
385	6.67E-05	490	8.95E-03	595	4.27E-02	700	6.08E-03
390	5.24E-05	495	1.12E-02	600	4.33E-02	705	5.18E-03
395	5.70E-05	500	1.38E-02	605	4.31E-02	710	4.40E-03
400	7.18E-05	505	1.60E-02	610	4.25E-02	715	3.78E-03
405	1.23E-04	510	1.81E-02	615	4.13E-02	720	3.20E-03
410	2.80E-04	515	1.96E-02	620	3.97E-02	725	2.70E-03
415	6.17E-04	520	2.09E-02	625	3.77E-02	730	2.28E-03
420	1.25E-03	525	2.18E-02	630	3.54E-02	735	1.92E-03
425	2.33E-03	530	2.28E-02	635	3.30E-02	740	1.61E-03
430	4.07E-03	535	2.37E-02	640	3.01E-02	745	1.37E-03
435	7.04E-03	540	2.45E-02	645	2.74E-02	750	1.18E-03
440	1.31E-02	545	2.56E-02	650	2.46E-02	755	9.81E-04
445	2.34E-02	550	2.67E-02	655	2.20E-02	760	8.24E-04
450	2.72E-02	555	2.81E-02	660	1.95E-02	765	7.08E-04
455	1.93E-02	560	2.96E-02	665	1.71E-02	770	5.87E-04
460	1.41E-02	565	3.15E-02	670	1.49E-02	775	5.03E-04
465	1.16E-02	570	3.36E-02	675	1.29E-02	780	4.28E-04
470	8.46E-03	575	3.58E-02	680	1.12E-02		
475	6.80E-03	580	3.78E-02	685	9.67E-03		
480	6.82E-03	585	3.99E-02	690	8.28E-03		

4.0 LM-79 Measurement and Test Results

4.2 Goniophotometer Test

Model No.	WPT @ 15W/3000K	Sample ID.	A1
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	277.02	60	0.061	15.7	0.925
NON-WORST CASE	120.04	60	0.121	14.3	0.987

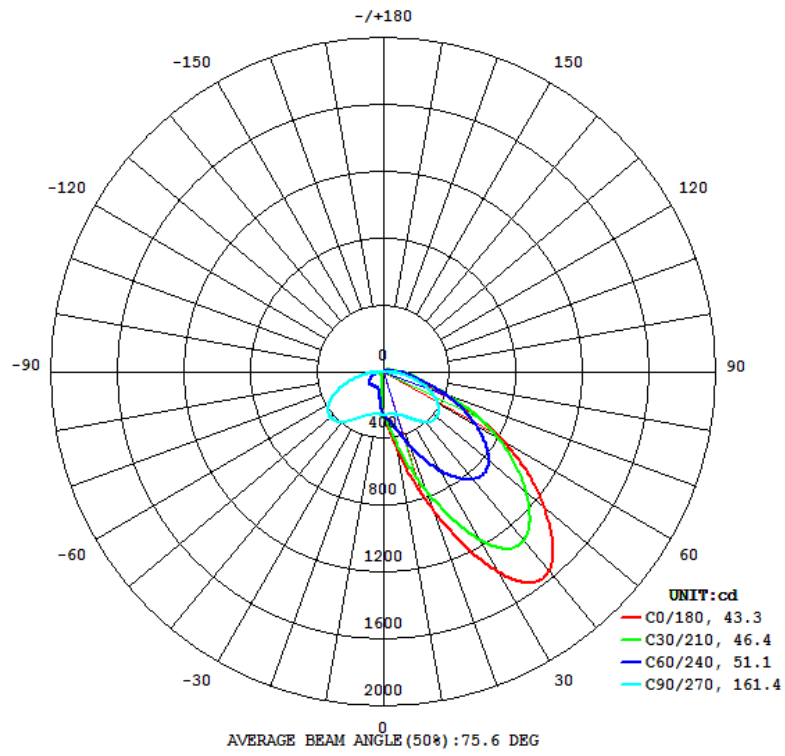
Test Result

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	2162	87.5	183.1	43.3	161.4	137.7
0° - 90° zones	2044	87.5	179.3	43.3	161.4	130.2

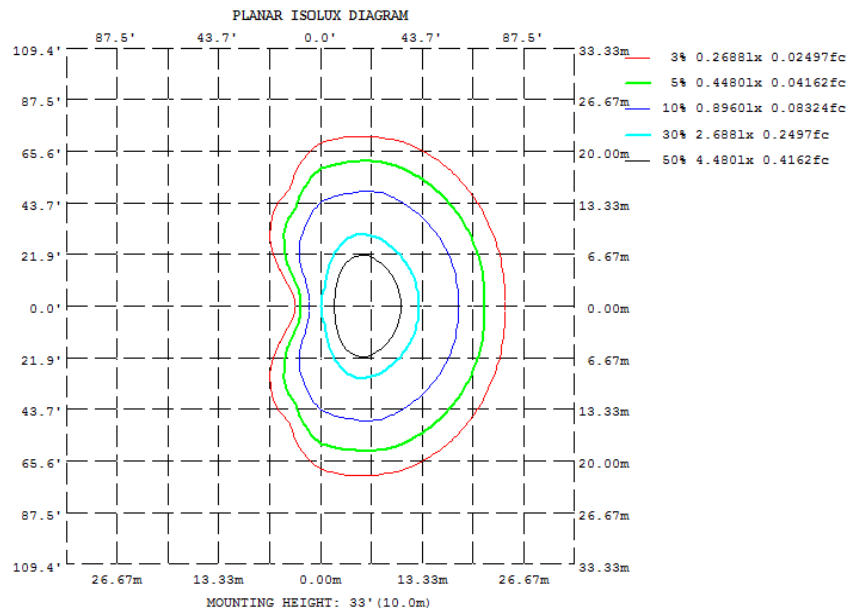
Zonal Lumen Requirement (80° - 90°)	BUG rating
4.24%	B0-U3-G1

4.2 Goniophotometer Test

Light Distrubtion Curve



Isolux Plot



4.2 Goniophotometer Test

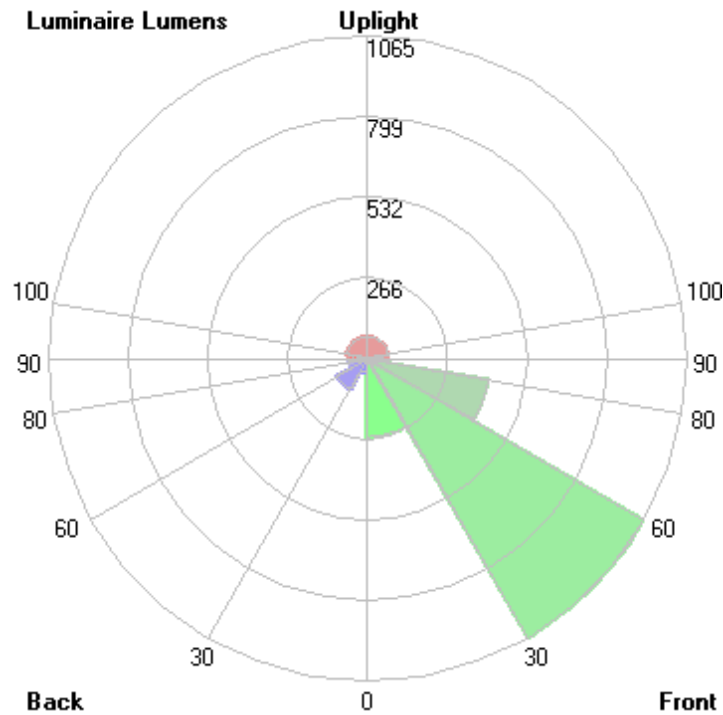
Zonal Lumen Summary

γ	C0	C45	C90	C135	C180	C225	C270	C315
10	456.4	360.5	260.8	105.7	76.09	105.7	260.8	360.5
20	878.4	629.8	276.7	65.70	27.96	65.70	276.7	629.8
30	1379	941.1	323.2	56.70	14.09	56.70	323.2	941.1
40	1554	1113	394.6	57.25	7.786	57.25	394.6	1113
50	1266	986.1	421.8	55.98	2.886	55.98	421.8	986.1
60	839.7	729.1	381.2	45.21	0.3168	45.21	381.2	729.1
70	371.4	423.3	278.6	29.96	0.0790	29.96	278.6	423.3
80	183.5	205.4	140.5	17.95	0.0843	17.95	140.5	205.4
90	109.1	116.0	34.95	9.728	0.1318	9.728	34.95	116.0
100	70.22	69.44	10.77	5.798	0.3933	5.798	10.77	69.44
110	48.31	45.12	6.946	3.926	0.6593	3.926	6.946	45.12
120	32.90	30.85	5.202	2.982	0.8473	2.982	5.202	30.85
130	25.38	22.48	3.968	2.459	1.017	2.459	3.968	22.48
140	20.73	16.50	2.939	2.064	1.114	2.064	2.939	16.50
150	16.02	11.14	2.106	1.530	0.9623	1.530	2.106	11.14
160	9.731	5.179	1.411	1.014	0.7579	1.014	1.411	5.179
170	1.734	1.148	0.8490	0.7168	0.6698	0.7168	0.8490	1.148
180	0.5902	0.6266	0.6409	0.6176	0.5893	0.6176	0.6409	0.6266
DEG	LUMINOUS INTENSITY:cd							

	Zonal (lm)		Total (lm)	Percent
0-10	23.29	0 - 10	23.29	1.08%
10-20	84.74	0 - 20	108.03	5.00%
20-30	198.11	0 - 30	306.14	14.16%
30-40	344.97	0 - 40	651.11	30.12%
40-50	428.07	0 - 50	1079.18	49.93%
50-60	407.54	0 - 60	1486.72	68.78%
60-70	303.10	0 - 70	1789.82	82.80%
70-80	167.39	0 - 80	1957.21	90.55%
80-90	86.62	0 - 90	2043.83	94.55%
90-100	46.53	0 - 100	2090.36	96.71%
100-110	27.98	0 - 110	2118.34	98.00%
110-120	17.44	0 - 120	2135.78	98.81%
120-130	11.24	0 - 130	2147.02	99.33%
130-140	7.33	0 - 140	2154.35	99.67%
140-150	4.43	0 - 150	2158.78	99.87%
150-160	2.13	0 - 160	2160.91	99.97%
160-170	0.57	0 - 170	2161.48	100.00%
170-180	0.07	0 - 180	2161.55	100.00%

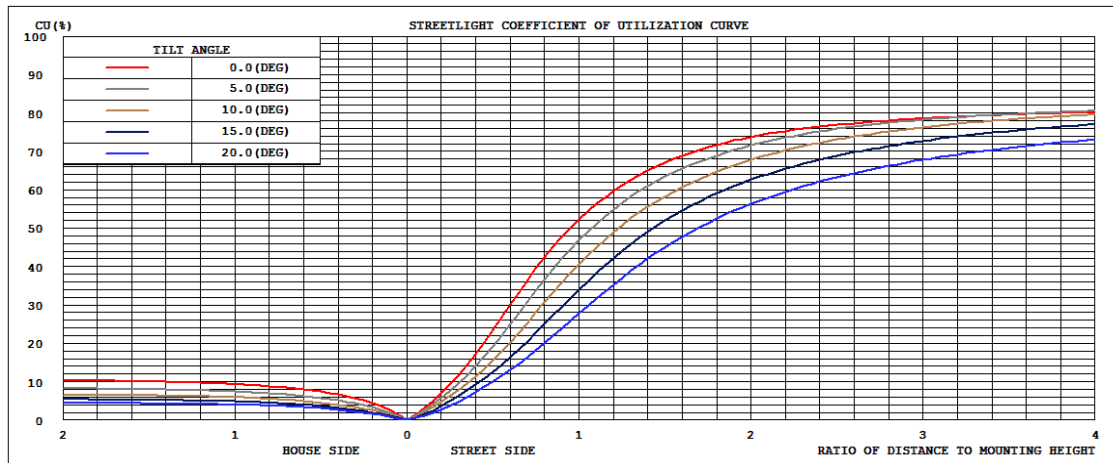
4.2 Goniophotometer Test

LCS/BUG

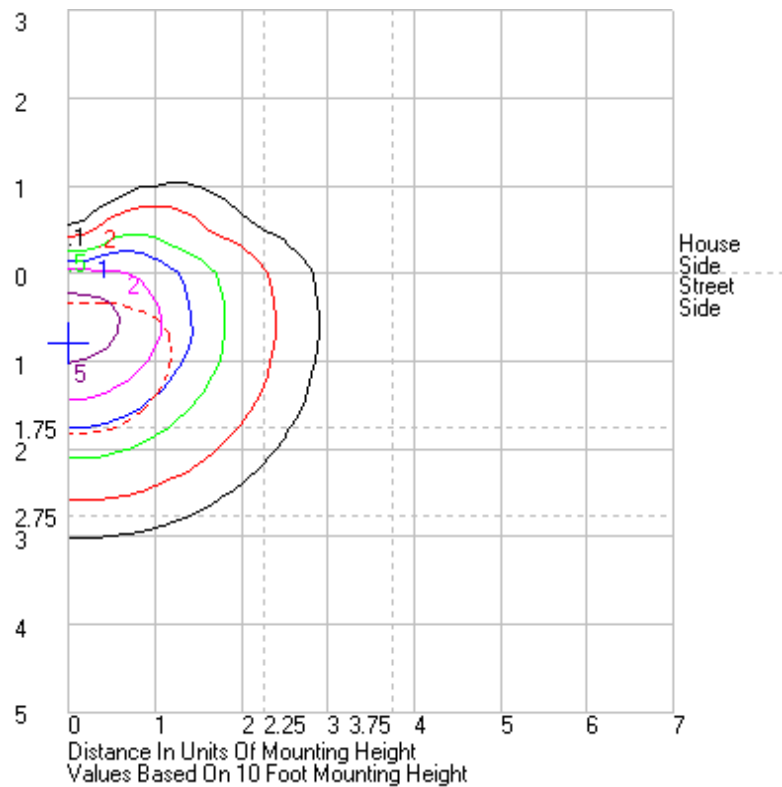


	Lumens	% Lamp	% Luminaire
FL - Front-Low (0-30)	259.3	N.A.	12.0
FM - Front-Medium (30-60)	1064.9	N.A.	49.3
FH - Front-High (60-80)	408.7	N.A.	18.9
FVH - Front-Very High (80-90)	74.1	N.A.	3.4
BL - Back-Low (0-30)	46.9	N.A.	2.2
BM - Back-Medium (30-60)	115.7	N.A.	5.4
BH - Back-High (60-80)	61.8	N.A.	2.9
BVH - Back-Very High (80-90)	12.5	N.A.	0.6
UL - Uplight-Low (90-100)	46.5	N.A.	2.2
UH - Uplight-High (100-180)	71.2	N.A.	3.3
Total	2161.6	N.A.	100.0
BUG Rating	B0-U3-G1		

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	262.346	262.346	262.346	262.346	262.346	262.346	262.346	262.346	262.346	262.346	262.346	262.346	262.346	262.346	262.346	262.346	262.346	262.346	262.346	262.346	262.346	262.346	262.346	262.346	262.346
1	275.49	273.76	272.65	270.74	267.99	265.01	261.83	258.37	255.29	252.68	250.54	249.22	250.54	252.68	255.29	258.37	261.83	265.01	267.99	270.74	272.65	273.76	275.49	275.49	275.49
2	285.57	283.9	281.7	278.43	273.54	267.86	261.29	254.59	247.78	241.22	235.23	231	232.06	231	235.23	241.22	247.78	254.59	261.29	267.86	273.54	278.43	281.7	283.9	285.57
3	294.55	292.47	289.5	284.89	278.3	270.23	260.59	250.08	238.57	225.8	213.82	205.89	205.86	205.89	213.82	225.8	238.57	250.08	260.59	270.23	278.3	284.89	289.5	292.47	294.55
4	305.08	301.7	297.21	290.69	282.65	272.5	259.87	245.38	227.51	206.55	187.41	175.16	175.23	175.16	187.41	206.55	227.51	245.38	259.87	272.5	282.65	290.69	297.21	301.7	305.08
5	318.75	314.03	306.38	296.9	286.55	274.8	259.53	240.91	215.47	184.85	159.94	145.76	144.43	145.76	159.94	184.85	215.47	240.91	259.53	274.8	286.55	296.9	306.38	314.03	318.75
6	337.17	330.48	318.91	304.27	290.43	277.08	259.45	236.43	202.62	162.92	135.11	121.11	119.19	121.11	135.11	162.92	202.62	236.43	259.45	277.08	290.43	304.27	318.91	330.48	337.17
7	360.94	351.92	335.53	314.34	294.75	279.22	259.42	232.26	188.68	143.18	116.07	106.27	104.88	106.27	116.07	143.18	188.68	232.26	259.42	279.22	294.75	314.34	335.53	351.92	360.94
8	389.11	378.08	355.73	326.87	299.82	281.11	259.67	228.14	174.96	125.89	104.13	95.86	94.38	95.86	104.13	125.89	174.96	228.14	259.67	281.11	299.82	326.87	355.73	378.08	389.11
9	421.62	407.68	380.18	342.4	306.25	282.83	260.19	224.35	161.8	114.08	95.26	86.78	85.19	86.78	95.26	114.08	161.8	224.35	260.19	282.83	306.25	342.4	380.18	407.68	421.62
10	456.42	440.54	407.37	360.51	314.23	284.44	260.85	220.9	150.41	105.72	87.71	78.16	76.09	78.16	87.71	105.72	150.41	220.9	260.85	284.44	314.23	360.51	407.37	440.54	456.42
11	493.69	476.03	437.32	381.26	323.88	286.18	261.77	218.01	140.74	99.48	80.54	69.97	67.67	69.97	80.54	99.48	140.74	218.01	261.77	286.18	323.88	381.26	437.32	476.03	493.69
12	531.61	512.37	469.32	404.61	335.25	288.2	262.76	215.43	132.14	94.41	73.81	62.81	60.29	62.81	73.81	94.41	132.14	215.43	262.76	288.2	335.25	404.61	469.32	512.37	531.61
13	571.07	550.14	502.31	429.36	348.19	290.57	263.97	213.09	126.09	89.78	67.6	56.42	53.9	56.42	67.6	89.78	126.09	213.09	263.97	290.57	348.19	429.36	502.31	550.14	571.07
14	611.3	589.98	536.63	456.16	362.74	293.56	265.34	210.92	121.62	85.42	62.18	50.46	48.36	50.46	62.18	85.42	121.62	210.92	265.34	293.56	362.74	456.16	536.63	589.98	611.3
15	652.68	631.21	571.15	483.17	378.54	297.18	266.73	209.09	118.21	81.31	57.18	45.63	43.65	45.63	57.18	81.31	118.21	209.09	266.73	297.18	378.54	483.17	571.15	631.21	652.68
16	695.51	666.83	606.67	511.6	395.92	301.59	268.31	207.7	115.73	77.43	52.74	41.48	39.54	41.48	52.74	77.43	115.73	207.7	268.31	301.59	395.92	511.6	606.67	666.83	695.51
17	739.05	708.17	642.09	540.69	414.09	306.58	270.16	206.39	113.85	73.86	49.06	37.98	36.08	37.98	49.06	73.86	113.85	206.39	270.16	306.58	414.09	540.69	642.09	708.17	739.05
18	784.98	751.24	678.76	569.84	433.06	312.44	272.13	205.7	112.26	70.66	45.97	34.9	33.04	34.9	45.97	70.66	112.26	205.7	272.13	312.44	433.06	569.84	678.76	751.24	784.98
19	830.13	794.79	716.61	599.74	452.79	318.88	274.37	205.27	111.04	68.12	43.31	32.23	30.32	32.23	43.31	68.12	111.04	205.27	274.37	318.88	452.79	599.74	716.61	794.79	830.13
20	878.4	840.43	755.63	629.81	473.11	326.21	276.68	205.3	109.98	65.7	41	29.88	27.96	29.88	41	65.7	109.98	205.3	276.68	326.21	473.11	629.81	755.63	840.43	878.4
21	927.5	886.34	795.04	660.32	493.71	334.05	279.44	205.6	109	63.5	39.04	27.78	25.84	27.78	39.04	63.5	109	205.6	279.44	334.05	493.71	660.32	795.04	886.34	927.5
22	977.16	933.07	835.26	691.44	514.49	342.4	282.39	206.25	108.21	61.89	37.32	25.92	23.92	25.92	37.32	61.89	108.21	206.25	282.39	342.4	514.49	691.44	835.26	933.07	977.16
23	1028.91	981.81	875.86	722.88	535.6	351.51	285.88	207.39	107.54	60.59	35.86	24.27	22.21	24.27	35.86	60.59	107.54	207.39	285.88	351.51	535.6	722.88	875.86	981.81	1028.91
24	1081.33	1030.45	916.93	754.37	556.49	360.8	289.58	208.71	106.99	59.56	34.6	22.8	20.69	22.8	34.6	59.56	106.99	208.71	289.58	360.8	556.49	754.37	916.93	1030.45	1081.33
25	1134.59	1079.84	958.76	786.07	577.87	370.52	293.83	210.24	106.53	58.73	33.49	21.48	19.3	21.48	33.49	58.73	106.53	210.24	293.83	370.52	577.87	786.07	958.76	1079.84	1134.59
26	1187.52	1129.63	1000.12	817.72	599.49	380.94	298.75	212.25	106.28	58.12	32.56	20.31	18.05	20.31	32.56	58.12	106.28	212.25	298.75	380.94	599.49	817.72	1000.12	1129.63	1187.52
27	1240.5	1178.52	1040.73	849.64	620.49	391.24	304.19	214.22	106.17	57.63	31.74	19.24	16.92	19.24	31.74	57.63	106.17	214.22	304.19	391.24	620.49	849.64	1040.73	1178.52	1240.5
28	1289.32	1227.29	1081.75	880.9	641.76	402.04	310.09	216.4	106.25	57.23	31.02	18.28	15.87	18.28	31.02	57.23	106.25	216.4	310.09	402.04	641.76	880.9	1081.75	1227.29	1289.32
29	1334.29	1273.51	1120.1	911.05	662.7	413.12	316.38	218.92	106.45	56.94	30.41	17.41	14.93	17.41	30.41	56.94	106.45	218.92	316.38	413.12	662.7	911.05	1120.1	1273.51	1334.29
30	1379.27	1313.94	1157.08	941.11	683.62	424.21	323.22	220.91	106.78	56.7	29.85	16.62	14.09	16.62	29.85	56.7	106.78	220.91	323.22	424.21	683.62	941.11	1157.08	1313.94	1379.27
31	1422.62	1352.98	1191.86	969.24	703.64	435.29	330.35	223.25	107.14	56.51	29.37	15.9	13.29	15.9	29.37	56.51	107.14	223.25	330.35	435.29	703.64	969.24	1191.86	1352.98	1422.62
32	1460.81	1388.81	1223.27	996.13	723.4	446.21	337.85	225.35	107.59	56.41	28.93	15.23	12.49	15.23	28.93	56.41	107.59	225.35	337.85	446.21	723.4	996.13	1223.27	1388.81	1460.81
33	1494.13	1419.11	1251.44	1020.72	742.2	457.17	345.41	227.16	107.98	56.35	28.53	14.62	11.8	14.62	28.53	56.35	107.98	227.16	345.41	457.17	742.2	1020.72	1251.44	1419.11	1494.13
34	1520.46	1444.11	1274.36	1042.82	760.15	467.98	353.07	228.92	108.34	56.33	28.15	14.05	11.15	14.05	28.15	56.33	108.34	228.92	353.07	467.98	760.15	1042.82	1274.36	1444.11	1520.46
35	1539.84	1463.04	1293.03	1063.01	776.71	478.65	360.73	230.44	108.74	56.41	27.8	13.5	10.52	13.5	27.8	56.41	108.74	230.44	360.73	478.65	776.71	1063.01	1293.03	1463.04	1539.84
36	1553.97	1476.12	1306.53	1079.88	792.19	488.82	367.98	231.45	109.04	56.51	27.46	13.01	9.94	13.01	27.46	56.51	109.04	231.45	367.98	488.82	792.19	1079.88	1306.53	1476.12	1553.97
37	1562.55	1484.08	1314.57	1094.24	806.08	498.8	375.08	232.38	109.3	56.67	27.11	12.52	9.37	12.52	27.11	56.67	109.3	232.38	375.08	498.8	806.08	1094.24	1314.57	1484.08	1562.55
38	1565.31	1487.72	1318.63	1104.39	818.56	508.25	382.06	232.67	109.61	56.89	26.75	12.04	8.82	12.04	26.75	56.89	109.61	232.67	382.06	508.25	818.56	1104.39	1318.63	1487.72	1565.31
39	1562	1485.94	1318.45	1110.74	829.17	516.99	388.39	232.5	109.91	57.1	26.38	11.57	8.3	11.57	26.38	57.1	109.91	232.5	388.39	516.99	829.17	1110.74	1318.45	1485.94	1562
40	1553.92	1480.01	1314.6	1113.38	838.57	525.35	394.55	232.05	110.32	57.25	26.02	11.13	7.79	11.13	26.02	57.25	110.32	232.05	394.55	525.35	838.57	1113.38	1314.6	1480.01	1553.92
41	1540.09	1469.33	1307.88	1112.66	846.43	532.83	400.48	231.01	110.77	57.39	25.64	10.68	7.28	10.68	25.64	57.39	110.77	231.01	400.48	532.83	846.43	1112.66	1307.88	1469.33	1540.09
42	1521.98	1454.34	1299.45	1108.4	852.54	539.68</																			

50	1265.56	1238.03	1122.82	986.09	830.35	559.06	421.78	201.63	113.87	55.98	20.58	6.51	2.89	6.51	20.58	55.98	113.87	201.63	421.78	559.06	830.35	986.09	1122.82	1238.03	1265.56
51	1227.96	1204.11	1094.55	963.1	818.16	556.69	421.07	197.37	113.42	55.39	19.91	6.15	2.5	6.15	19.91	55.39	113.42	197.37	421.07	556.69	818.16	963.1	1094.55	1204.11	1227.96
52	1188.99	1169.24	1065.68	938.97	803.76	552.94	419.4	192.9	112.82	54.67	19.25	5.75	2.16	5.75	19.25	54.67	112.82	192.9	419.4	552.94	803.76	938.97	1065.68	1169.24	1188.99
53	1149.53	1133.51	1036.62	914.73	788.39	548.61	417.04	188.45	112.09	53.86	18.59	5.41	1.91	5.41	18.59	53.86	112.09	188.45	417.04	548.61	788.39	914.73	1036.62	1133.51	1149.53
54	1108.48	1095.92	1007.1	889.94	771.48	543.25	413.84	184.15	111.26	52.86	17.95	5.13	1.71	5.13	17.95	52.86	111.26	184.15	413.84	543.25	771.48	889.94	1007.1	1095.92	1108.48
55	1065.67	1057.19	975.58	864.86	753.25	536.47	409.91	179.59	110.29	51.8	17.31	4.9	1.51	4.9	17.31	51.8	110.29	179.59	409.91	536.47	753.25	864.86	975.58	1057.19	1065.67
56	1021.08	1016.01	942.99	838.86	733.74	528.78	405.61	175.31	109.18	50.64	16.71	4.67	1.34	4.67	16.71	50.64	109.18	175.31	405.61	528.78	733.74	838.86	942.99	1016.01	1021.08
57	975.8	974.24	909.03	812.61	713.16	520.17	400.85	171.08	107.88	49.38	16.13	4.48	1.2	4.48	16.13	49.38	107.88	171.08	400.85	520.17	713.16	812.61	909.03	974.24	975.8
58	930.16	931.75	874.23	785.38	692.09	510.83	394.93	166.65	106.53	48.05	15.57	4.3	1.08	4.3	15.57	48.05	106.53	166.65	394.93	510.83	692.09	785.38	874.23	931.75	930.16
59	884.6	888.95	838.25	757.34	670.32	501.3	388.32	162.39	104.96	46.66	15.02	4.16	1	4.16	15.02	46.66	104.96	162.39	388.32	501.3	670.32	757.34	838.25	888.95	884.6
60	839.72	846.46	802.61	729.14	647.87	491.36	381.21	158.17	103.07	45.21	14.52	3.92	0.32	3.92	14.52	45.21	103.07	158.17	381.21	491.36	647.87	729.14	802.61	846.46	839.72
61	794.79	803.59	766.14	700.34	624.53	480.44	373.71	153.84	100.84	43.72	14.03	3.21	0.08	3.21	14.03	43.72	100.84	153.84	373.71	480.44	624.53	700.34	766.14	803.59	794.79
62	750.07	760.89	730.11	671.01	600.88	468.8	365.8	149.46	98.4	42.18	13.5	3.06	0.08	3.06	13.5	42.18	98.4	149.46	365.8	468.8	600.88	671.01	730.11	760.89	750.07
63	701.96	716.44	693.37	641.49	576.65	456.07	357.05	145.16	95.7	40.65	12.67	2.98	0.08	2.98	12.67	40.65	95.7	145.16	357.05	456.07	576.65	641.49	693.37	716.44	701.96
64	654.27	670.91	655.7	612.02	552.25	441.97	347.5	140.85	92.64	39.13	12.1	2.91	0.08	2.91	12.1	39.13	92.64	140.85	347.5	441.97	552.25	612.02	655.7	670.91	654.27
65	604.47	624.06	616.72	581.69	527.79	427.08	337.79	136.6	89.35	37.63	11.62	2.83	0.08	2.83	11.62	37.63	89.35	136.6	337.79	427.08	527.79	581.69	616.72	624.06	604.47
66	554.63	576.18	576.15	550.81	503.12	411.07	327.12	132.11	85.75	35.89	11.23	2.76	0.08	2.76	11.23	35.89	85.75	132.11	327.12	411.07	503.12	550.81	576.15	576.18	554.63
67	504.44	526.95	534.53	519.68	478.3	394.03	315.86	127.72	82.16	34.19	10.84	2.69	0.08	2.69	10.84	34.19	82.16	127.72	315.86	394.03	478.3	519.68	534.53	526.95	504.44
68	455.64	479.31	493.09	487.82	453.37	375.86	304.12	123.28	78.53	32.74	10.45	2.61	0.08	2.61	10.45	32.74	78.53	123.28	304.12	375.86	453.37	487.82	493.09	479.31	455.64
69	410.9	434.82	452.96	455.58	428.02	356.95	291.66	118.94	74.99	31.33	10.07	2.54	0.08	2.54	10.07	31.33	74.99	118.94	291.66	356.95	428.02	455.58	452.96	434.82	410.9
70	371.36	394.18	414.74	423.35	402.4	337.76	278.58	114.68	71.43	29.96	9.7	2.47	0.08	2.47	9.7	29.96	71.43	114.68	278.58	337.76	402.4	423.35	414.74	394.18	371.36
71	337.43	358.35	379.74	392.26	376.59	318.12	265.33	110.06	67.68	28.64	9.33	2.39	0.08	2.39	9.33	28.64	67.68	110.06	265.33	318.12	376.59	392.26	379.74	358.35	337.43
72	308.51	327.61	348.88	363.03	351.27	299.26	251.61	105.49	64.33	27.35	8.97	2.32	0.08	2.32	8.97	27.35	64.33	105.49	251.61	299.26	351.27	363.03	348.88	327.61	308.51
73	284.47	301	321.02	335.15	326.45	279.94	237.42	101.09	61.1	26.07	8.62	2.24	0.08	2.24	8.62	26.07	61.1	101.09	237.42	279.94	326.45	335.15	321.02	301	284.47
74	263.96	278.52	297.01	310.29	303.11	260.95	223.45	96.43	58.07	24.84	8.27	2.17	0.08	2.17	8.27	24.84	58.07	96.43	223.45	260.95	303.11	310.29	297.01	278.52	263.96
75	246.38	258.74	275.74	287.4	281.18	242.07	209.49	91.58	55.15	23.61	7.93	2.1	0.08	2.1	7.93	23.61	55.15	91.58	209.49	242.07	281.18	287.4	275.74	258.74	246.38
76	231.2	241.92	257.23	267.28	260.94	223.85	195.58	86.42	52.37	22.43	7.61	2.03	0.08	2.03	7.61	22.43	52.37	86.42	195.58	223.85	260.94	267.28	257.23	241.92	231.2
77	217.55	226.87	240.85	249.38	242.68	206.47	181.85	80.94	49.75	21.27	7.3	1.96	0.08	1.96	7.3	21.27	49.75	80.94	181.85	206.47	242.68	249.38	240.85	226.87	217.55
78	205.3	213.31	225.99	233.03	225.78	189.4	168.09	75.3	47.15	20.13	6.99	1.89	0.08	1.89	6.99	20.13	47.15	75.3	168.09	189.4	225.78	233.03	225.99	213.31	205.3
79	194.03	201.08	212.78	218.66	210.38	173.69	154.22	69.74	44.71	19.03	6.69	1.82	0.08	1.82	6.69	19.03	44.71	69.74	154.22	173.69	210.38	218.66	212.78	201.08	194.03
80	183.52	189.74	200.54	205.38	195.97	158.48	140.54	64.57	42.29	17.95	6.39	1.76	0.08	1.76	6.39	17.95	42.29	64.57	140.54	158.48	195.97	205.38	200.54	189.74	183.52
81	173.76	179.41	189.34	193.31	182.67	144.37	127.13	59.7	39.94	16.92	6.1	1.7	0.09	1.7	6.1	16.92	39.94	59.7	127.13	144.37	182.67	193.31	189.34	179.41	173.76
82	164.63	169.76	179.03	182.33	170.72	130.68	113.99	55.17	37.62	15.92	5.83	1.64	0.09	1.64	5.83	15.92	37.62	55.17	113.99	130.68	170.72	182.33	179.03	169.76	164.63
83	156.13	160.81	169.41	172.07	159.96	118.71	101.87	51.14	35.35	14.99	5.56	1.58	0.09	1.58	5.56	14.99	35.35	51.14	101.87	118.71	159.96	172.07	169.41	160.81	156.13
84	148.09	152.45	160.47	162.52	150.21	107.65	90.27	47.51	33.2	14.09	5.31	1.53	0.1	1.53	5.31	14.09	33.2	47.51	90.27	107.65	162.52	160.47	152.45	148.09	
85	140.5	144.4	152.08	153.6	140.85	97.85	79.47	44.23	31.1	13.24	5.06	1.47	0.1	1.47	5.06	13.24	31.1	44.23	79.47	97.85	140.85	153.6	152.08	144.4	140.5
86	133.41	136.81	143.97	145.04	132.29	89.18	69.27	41.23	29.16	12.46	4.83	1.42	0.1	1.42	4.83	12.46	29.16	41.23	69.27	89.18	132.29	145.04	143.97	136.81	133.41
87	126.73	129.84	136.32	137	124.51	81.61	59.8	38.4	27.26	11.69	4.6	1.37	0.11	1.37	4.6	11.69	27.26	38.4	59.8	81.61	124.51	137	136.32	129.84	126.73
88	120.46	123.36	129.31	129.56	117.22	75.06	50.68	35.71	25.56	10.98	4.39	1.33	0.11	1.33	4.39	10.98	25.56	35.71	50.68	75.06	117.22	129.56	129.31	123.36	120.46
89	114.56	117.22	122.77	122.56	110.43	69.5	42.22	33.18	23.9	10.33	4.19	1.29	0.12	1.29	4.19	10.33	23.9	33.18	42.22	69.5	110.43	122.56	122.77	117.22	114.56
90	109.05	111.51	116.6	115.98	104.06	64.88	34.95	30.77	22.4	9.73	4	1.25	0.13	1.25	4	9.73	22.4	30.77	34.95	64.88	104.06	115.98	116.6	111.51	109.05
91	103.93	106.14	110.79	109.81	98.15	60.54	29.04	28.52	21.01	9.18	3.82	1.21	0.14	1.21	3.82	9.18	21.01	28.52	29.04	60.54	98.15	109.81	110.79	106.14	103.93
92	99.12	101.15	105.36	103.99	92.54	56.59	24.23	26.41	19.72	8.65	3.65	1.18	0.15	1.18	3.65	8.65	19.72	26.41	24.23	56.59	92.54	103.99	105.36	101.15	99.12
93	94.63	96.52	100.35	98.66	87.34	53.12	20.62	24.49	18.53	8.18	3.49	1.15	0.16	1.15	3.49	8.18	18.53	24.49	20.62	53.12	87.34	98.66	100.35	96.52	94.63
94	90.46	92.12	95.56	93.5	82.42	49.94	17.92	22.73	17.4	7.75	3.35	1.12	0.18	1.12	3.35	7.75	17.4	22.73	17.92	49.94	82.42	93.5	95.56	92.12	90.46
95	86.43	88.05																							

104	60.41	61.09	61.93	58.05	48.73	28.23	8.74	11.98	9.93	4.89	2.4	1.04	0.5	1.04	2.4	4.89	9.93	11.98	8.74	28.23	48.73	58.05	61.93	61.09	60.41
105	58.17	58.8	59.57	55.63	46.45	26.79	8.36	11.34	9.44	4.7	2.34	1.04	0.53	1.04	2.34	4.7	9.44	11.34	8.36	26.79	46.45	55.63	59.57	58.8	58.17
106	56.1	56.67	57.28	53.34	44.24	25.41	8.02	10.76	8.97	4.52	2.28	1.04	0.55	1.04	2.28	4.52	8.97	10.76	8.02	25.41	44.24	53.34	57.28	56.67	56.1
107	54.07	54.59	55.1	51.16	42.15	24.14	7.71	10.21	8.54	4.35	2.23	1.04	0.58	1.04	2.23	4.35	8.54	10.21	7.71	24.14	42.15	51.16	55.1	54.59	54.07
108	52.11	52.58	53.05	49.04	40.13	22.93	7.43	9.7	8.14	4.2	2.18	1.04	0.61	1.04	2.18	4.2	8.14	9.7	7.43	22.93	40.13	49.04	53.05	52.58	52.11
109	50.17	50.66	51.06	47.04	38.21	21.8	7.18	9.23	7.76	4.06	2.14	1.04	0.63	1.04	2.14	4.06	7.76	9.23	7.18	21.8	38.21	47.04	51.06	50.66	50.17
110	48.31	48.76	49.13	45.12	36.42	20.74	6.95	8.8	7.43	3.93	2.1	1.04	0.66	1.04	2.1	3.93	7.43	8.8	6.95	20.74	36.42	45.12	49.13	48.76	48.31
111	46.47	46.89	47.22	43.26	34.71	19.75	6.73	8.39	7.1	3.8	2.06	1.05	0.68	1.05	2.06	3.8	7.1	8.39	6.73	19.75	34.71	43.26	47.22	46.89	46.47
112	44.62	45.08	45.41	41.5	33.16	18.82	6.52	8.02	6.8	3.69	2.02	1.05	0.71	1.05	2.02	3.69	6.8	8.02	6.52	18.82	33.16	41.5	45.41	45.08	44.62
113	42.8	43.29	43.64	39.86	31.69	17.94	6.33	7.66	6.51	3.58	1.99	1.06	0.73	1.06	1.99	3.58	6.51	7.66	6.33	17.94	31.69	39.86	43.64	43.29	42.8
114	41.06	41.57	42	38.3	30.32	17.12	6.14	7.33	6.24	3.47	1.95	1.06	0.74	1.06	1.95	3.47	6.24	7.33	6.14	17.12	30.32	38.3	42	41.57	41.06
115	39.37	39.97	40.43	36.87	29.04	16.33	5.97	7.03	5.98	3.38	1.92	1.05	0.75	1.05	1.92	3.38	5.98	7.03	5.97	16.33	29.04	36.87	40.43	39.97	39.37
116	37.83	38.48	38.97	35.49	27.83	15.61	5.8	6.74	5.74	3.28	1.89	1.06	0.76	1.06	1.89	3.28	5.74	6.74	5.8	15.61	27.83	35.49	38.97	38.48	37.83
117	36.41	37.1	37.61	34.24	26.71	14.92	5.64	6.48	5.51	3.2	1.87	1.06	0.78	1.06	1.87	3.2	5.51	6.48	5.64	14.92	26.71	34.24	37.61	37.1	36.41
118	35.12	35.83	36.35	33.04	25.66	14.28	5.49	6.22	5.3	3.12	1.85	1.07	0.8	1.07	1.85	3.12	5.3	6.22	5.49	14.28	25.66	33.04	36.35	35.83	35.12
119	33.96	34.68	35.16	31.92	24.66	13.68	5.34	5.99	5.1	3.05	1.83	1.08	0.83	1.08	1.83	3.05	5.1	5.99	5.34	13.68	24.66	31.92	35.16	34.68	33.96
120	32.9	33.6	34.07	30.85	23.72	13.12	5.2	5.76	4.91	2.98	1.81	1.08	0.85	1.08	1.81	2.98	4.91	5.76	5.2	13.12	23.72	30.85	34.07	33.6	32.9
121	31.9	32.61	33.01	29.84	22.83	12.59	5.07	5.55	4.74	2.92	1.79	1.09	0.87	1.09	1.79	2.92	4.74	5.55	5.07	12.59	22.83	29.84	33.01	32.61	31.9
122	30.98	31.68	32.02	28.87	21.99	12.08	4.93	5.35	4.57	2.86	1.78	1.1	0.9	1.1	1.78	2.86	4.57	5.35	4.93	12.08	21.99	28.87	32.02	31.68	30.98
123	30.11	30.8	31.09	27.94	21.19	11.59	4.81	5.16	4.41	2.8	1.77	1.11	0.92	1.11	1.77	2.8	4.41	5.16	4.81	11.59	21.19	27.94	31.09	30.8	30.11
124	29.32	29.96	30.19	27.06	20.45	11.13	4.68	4.98	4.27	2.75	1.76	1.12	0.94	1.12	1.76	2.75	4.27	4.98	4.68	11.13	20.45	27.06	30.19	29.96	29.32
125	28.56	29.19	29.34	26.22	19.72	10.7	4.56	4.81	4.13	2.69	1.74	1.12	0.96	1.12	1.74	2.69	4.13	4.81	4.56	10.7	19.72	26.22	29.34	29.19	28.56
126	27.86	28.46	28.52	25.41	19.04	10.28	4.44	4.65	3.99	2.64	1.73	1.13	0.97	1.13	1.73	2.64	3.99	4.65	4.44	10.28	19.04	25.41	28.52	28.46	27.86
127	27.19	27.75	27.72	24.63	18.37	9.88	4.32	4.49	3.87	2.59	1.72	1.13	0.98	1.13	1.72	2.59	3.87	4.49	4.32	9.88	18.37	24.63	27.72	27.75	27.19
128	26.56	27.09	26.97	23.89	17.75	9.49	4.2	4.34	3.74	2.54	1.7	1.13	1	1.13	1.7	2.54	3.74	4.34	4.2	9.49	17.75	23.89	26.97	27.09	26.56
129	25.96	26.45	26.24	23.18	17.14	9.12	4.08	4.2	3.63	2.5	1.69	1.13	1.01	1.13	1.69	2.5	3.63	4.2	4.08	9.12	17.14	23.18	26.24	26.45	25.96
130	25.38	25.83	25.52	22.48	16.56	8.77	3.97	4.06	3.52	2.46	1.67	1.14	1.02	1.14	1.67	2.46	3.52	4.06	3.97	8.77	16.56	22.48	25.52	25.83	25.38
131	24.84	25.23	24.85	21.81	15.99	8.44	3.85	3.93	3.42	2.42	1.66	1.14	1.03	1.14	1.66	2.42	3.42	3.93	3.85	8.44	15.99	21.81	24.85	25.23	24.84
132	24.32	24.66	24.19	21.17	15.46	8.11	3.74	3.8	3.32	2.38	1.65	1.14	1.04	1.14	1.65	2.38	3.32	3.8	3.74	8.11	15.46	21.17	24.19	24.66	24.32
133	23.83	24.11	23.55	20.54	14.93	7.79	3.63	3.68	3.22	2.34	1.63	1.14	1.05	1.14	1.63	2.34	3.22	3.68	3.63	7.79	14.93	20.54	23.55	24.11	23.83
134	23.35	23.58	22.93	19.93	14.42	7.5	3.52	3.56	3.13	2.3	1.62	1.14	1.06	1.14	1.62	2.3	3.13	3.56	3.52	7.5	14.42	19.93	22.93	23.58	23.35
135	22.89	23.06	22.32	19.32	13.93	7.22	3.42	3.45	3.05	2.26	1.61	1.14	1.07	1.14	1.61	2.26	3.05	3.45	3.42	7.22	13.93	19.32	22.32	23.06	22.89
136	22.45	22.56	21.74	18.74	13.46	6.94	3.32	3.34	2.96	2.23	1.59	1.14	1.09	1.14	1.59	2.23	2.96	3.34	3.32	6.94	13.46	18.74	21.74	22.56	22.45
137	22.01	22.06	21.16	18.17	12.99	6.67	3.22	3.23	2.88	2.19	1.58	1.14	1.1	1.14	1.58	2.19	2.88	3.23	3.22	6.67	12.99	18.17	21.16	22.06	22.01
138	21.57	21.58	20.6	17.6	12.53	6.4	3.12	3.13	2.79	2.15	1.56	1.13	1.11	1.13	1.56	2.15	2.79	3.13	3.12	6.4	12.53	17.6	20.6	21.58	21.57
139	21.15	21.09	20.04	17.05	12.08	6.14	3.03	3.02	2.71	2.11	1.54	1.13	1.11	1.13	1.54	2.11	2.71	3.02	3.03	6.14	12.08	17.05	20.04	21.09	21.15
140	20.73	20.62	19.49	16.5	11.64	5.89	2.94	2.93	2.63	2.06	1.52	1.12	1.11	1.12	1.52	2.06	2.63	2.93	2.94	5.89	11.64	16.5	19.49	20.62	20.73
141	20.3	20.15	18.95	15.96	11.2	5.63	2.85	2.83	2.55	2.02	1.49	1.11	1.11	1.11	1.49	2.02	2.55	2.83	2.85	5.63	11.2	15.96	18.95	20.15	20.3
142	19.88	19.67	18.4	15.43	10.77	5.37	2.77	2.73	2.47	1.97	1.47	1.1	1.1	1.1	1.47	1.97	2.47	2.73	2.77	5.37	10.77	15.43	18.4	19.67	19.88
143	19.44	19.18	17.86	14.9	10.33	5.11	2.68	2.64	2.39	1.92	1.44	1.09	1.1	1.09	1.44	1.92	2.39	2.64	2.68	5.11	10.33	14.9	17.86	19.18	19.44
144	18.99	18.69	17.32	14.37	9.9	4.86	2.6	2.55	2.31	1.87	1.41	1.07	1.08	1.07	1.41	1.87	2.31	2.55	2.6	4.86	9.9	14.37	17.32	18.69	18.99
145	18.54	18.2	16.78	13.85	9.46	4.62	2.51	2.46	2.23	1.82	1.38	1.05	1.07	1.05	1.38	1.82	2.23	2.46	2.51	4.62	9.46	13.85	16.78	18.2	18.54
146	18.06	17.71	16.24	13.32	9.03	4.38	2.43	2.37	2.15	1.76	1.34	1.03	1.04	1.03	1.34	1.76	2.15	2.37	2.43	4.38	9.03	13.32	16.24	17.71	18.06
147	17.57	17.18	15.69	12.8	8.6	4.16	2.34	2.28	2.07	1.7	1.3	1	1.02	1	1.3	1.7	2.07	2.28	2.34	4.16	8.6	12.8	15.69	17.18	17.57
148	17.07	16.65	15.13	12.27	8.17	3.93	2.26	2.19	1.99	1.64	1.26	0.98	1	0.98	1.26	1.64	1.99	2.19	2.26	3.93	8.17	12.27	15.13	16.65	17.07
149	16.55	16.12	14.57	11.72	7.75	3.71	2.18	2.11	1.91	1.58	1.22	0.95	0.98	0.95	1.22	1.58	1.91	2.11	2.18	3.71	7.75	11.72	14.57	16.12	16.55
150	16.02	15.56	14.01	11.14	7.34	3.5	2.11	2.03	1.84	1.53	1.18	0.94	0.96	0.94	1.18	1.53	1.84	2.03	2.11	3.5	7.34	11.14	14.01	15.56	16.02
151	15.46	14.99	13.43	10.56	6.9	3.29	2.03	1.95	1.77	1.48	1.15	0.92	0.95	0.92	1.15	1.48	1.77	1.95	2.03	3.29	6.9	10.56	13.43	14.99	15.46
152	14.88	14.4	12.83	10	6.45	3.08	1.96	1.88	1.7	1.42	1.12	0.9	0.94	0.9	1.12	1.42	1.7	1.88	1.96	3.08	6.45	10	12.83	14.4	14.88
153	14.29	13.8	12.24	9.44	5.99	2.88	1.89	1.81	1.63	1.37	1.08	0.88													

158	11.1	10.58	8.8	6.53	3.83	1.97	1.55	1.46	1.31	1.11	0.9	0.78	0.8	0.78	0.9	1.11	1.31	1.46	1.55	1.97	3.83	6.53	8.8	10.58	11.1
159	10.42	9.61	8.11	5.84	3.44	1.82	1.48	1.39	1.25	1.06	0.87	0.76	0.77	0.76	0.87	1.06	1.25	1.39	1.48	1.82	3.44	5.84	8.11	9.61	10.42
160	9.73	8.62	7.43	5.18	3.09	1.68	1.41	1.33	1.19	1.01	0.84	0.74	0.76	0.74	0.84	1.01	1.19	1.33	1.41	1.68	3.09	5.18	7.43	8.62	9.73
161	9.03	7.86	6.76	4.45	2.74	1.56	1.34	1.26	1.13	0.97	0.81	0.73	0.74	0.73	0.81	0.97	1.13	1.26	1.34	1.56	2.74	4.45	6.76	7.86	9.03
162	8.34	7.19	5.99	3.81	2.43	1.44	1.28	1.2	1.08	0.93	0.78	0.71	0.72	0.71	0.78	0.93	1.08	1.2	1.28	1.44	2.43	3.81	5.99	7.19	8.34
163	7.65	6.54	5.1	3.27	2.15	1.35	1.22	1.14	1.03	0.89	0.76	0.7	0.71	0.7	0.76	0.89	1.03	1.14	1.22	1.35	2.15	3.27	5.1	6.54	7.65
164	6.78	5.61	4.19	2.84	1.9	1.26	1.16	1.09	0.98	0.86	0.74	0.69	0.7	0.69	0.74	0.86	0.98	1.09	1.16	1.26	1.9	2.84	4.19	5.61	6.78
165	5.73	4.63	3.36	2.45	1.68	1.18	1.1	1.03	0.94	0.83	0.72	0.69	0.69	0.69	0.72	0.83	0.94	1.03	1.1	1.18	1.68	2.45	3.36	4.63	5.73
166	4.69	3.66	2.73	2.11	1.49	1.1	1.04	0.99	0.9	0.8	0.71	0.68	0.68	0.68	0.71	0.8	0.9	0.99	1.04	1.1	1.49	2.11	2.73	3.66	4.69
167	3.58	2.87	2.24	1.83	1.32	1.03	0.99	0.94	0.86	0.77	0.69	0.68	0.68	0.68	0.69	0.77	0.86	0.94	0.99	1.03	1.32	1.83	2.24	2.87	3.58
168	2.78	2.28	1.87	1.58	1.17	0.97	0.94	0.9	0.83	0.75	0.68	0.67	0.67	0.67	0.68	0.75	0.83	0.9	0.94	0.97	1.17	1.58	1.87	2.28	2.78
169	2.17	1.81	1.6	1.35	1.05	0.91	0.89	0.86	0.8	0.73	0.67	0.67	0.67	0.67	0.67	0.73	0.8	0.86	0.89	0.91	1.05	1.35	1.6	1.81	2.17
170	1.73	1.53	1.35	1.15	0.95	0.86	0.85	0.82	0.77	0.72	0.67	0.67	0.67	0.67	0.67	0.72	0.77	0.82	0.85	0.86	0.95	1.15	1.35	1.53	1.73
171	1.5	1.29	1.13	0.99	0.86	0.81	0.81	0.78	0.75	0.7	0.66	0.67	0.67	0.67	0.66	0.7	0.75	0.78	0.81	0.81	0.86	0.99	1.13	1.29	1.5
172	1.26	1.01	0.95	0.87	0.8	0.77	0.77	0.75	0.72	0.69	0.66	0.67	0.67	0.67	0.66	0.69	0.72	0.75	0.77	0.77	0.8	0.87	0.95	1.01	1.26
173	0.97	0.82	0.81	0.78	0.74	0.73	0.74	0.73	0.7	0.68	0.65	0.67	0.67	0.67	0.65	0.68	0.7	0.73	0.74	0.73	0.74	0.78	0.81	0.82	0.97
174	0.55	0.72	0.73	0.71	0.69	0.7	0.71	0.7	0.69	0.67	0.65	0.67	0.66	0.67	0.65	0.67	0.69	0.7	0.71	0.7	0.69	0.71	0.73	0.72	0.55
175	0.53	0.65	0.67	0.66	0.66	0.68	0.69	0.68	0.67	0.66	0.65	0.67	0.65	0.67	0.65	0.66	0.67	0.68	0.69	0.68	0.66	0.66	0.67	0.65	0.53
176	0.54	0.6	0.62	0.63	0.64	0.66	0.66	0.66	0.66	0.65	0.64	0.66	0.64	0.66	0.64	0.65	0.66	0.66	0.66	0.66	0.64	0.63	0.62	0.6	0.54
177	0.55	0.6	0.6	0.62	0.63	0.64	0.65	0.65	0.64	0.64	0.63	0.65	0.63	0.65	0.63	0.64	0.64	0.65	0.65	0.64	0.63	0.62	0.6	0.6	0.55
178	0.56	0.6	0.6	0.62	0.63	0.64	0.64	0.64	0.63	0.63	0.62	0.64	0.62	0.64	0.62	0.63	0.63	0.64	0.64	0.64	0.63	0.62	0.6	0.6	0.56
179	0.57	0.61	0.61	0.62	0.63	0.64	0.64	0.64	0.63	0.62	0.62	0.63	0.6	0.63	0.62	0.62	0.63	0.64	0.64	0.64	0.63	0.62	0.61	0.61	0.57
180	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59

4.0 LM-79 Measurement and Test Results

4.3 THD and PF Test

Model No.	WPT @ 15W/3000K	Sample ID.	A1
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
120.06	60	0.120	14.2	0.987	14.07%
276.99	60	0.061	15.6	0.925	15.57%

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*****