

# Photometric Test Report

## Relevant Standards

- ☒ IES LM-79-2019
- ☒ ANSI C82.77-10:2014

## Prepared For

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## Project Number

**DLF2503101**

## Report Number

**DLF2503101-8a**

## Test Date

**2025/3/5**

## Issue Date

**2025/3/5**

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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-79-2019	300		1763
Minimum Luminaire Efficacy (lm/W) (Goniophotometer - Section 4.2) (0°-180° zones)	IES LM-79-2019	Standard 105	Premium 120	133.6
Luminaire Output (lm) (Goniophotometer - Section 4.2) (0°-90° zones)	IES LM-79-2019	300		1097
Minimum Luminaire Efficacy (lm/W) (Goniophotometer - Section 4.2) (0°-90° zones)	IES LM-79-2019	Standard 105	Premium 120	83.1
Power (Input Wattage) (W) (Goniophotometer - Section 4.2)	IES LM-79-2019	Worst Case		13.2
Total Harmonic Distortion (A%) (THD & PF - section 4.3)	ANSI C82.77-10:2014	20.00%	120V	5.46%
		20.00%	277V	10.99%
Power Factor (THD & PF - section 4.3)	ANSI C82.77-10:2014	0.9	120V	0.995
		0.9	277V	0.945
Allowable CCTs* (K) (Integrating Sphere - Section 4.1)	IES LM-79-2019	7 step	3985±275	3862
		4 step	3985±154	
Minimum CRI (Integrating Sphere - Section 4.1)	IES LM-79-2019 CIE 13.3-1995	≥70		86
Minimum R9 (Integrating Sphere - Section 4.1)	IES LM-79-2019 CIE 13.3-1995	-		23
Minimum Rf (Integrating Sphere - Section 4.1)	ANSI/IES TM-30-18	≥70		85
Minimum Rg (Integrating Sphere - Section 4.1)	ANSI/IES TM-30-18	≥89		96
IES Rcs,h1 (Integrating Sphere - Section 4.1)	ANSI/IES TM-30-18	-18%≤IES Rcs,h1≤+23%		-10%
Zonal Lumen Requirement (80°-90°) (Goniophotometer - Section 4.2)	IES LM-79-2019	≤10%		18.47%
Input Voltage (V)				
(Goniophotometer - Section 4.2)	IES LM-79-2019	Worst Case		277
(Goniophotometer - Section 4.2)		Non-Worst Case		120
Input Current (A)				
(Goniophotometer - Section 4.2)	IES LM-79-2019	Worst Case		0.050
(Goniophotometer - Section 4.2)		Non-Worst Case		0.110
Power (Input Wattage - W)				
(Goniophotometer - Section 4.2)	IES LM-79-2019	Worst Case		13.2
(Goniophotometer - Section 4.2)		Non-Worst Case		13.1

## 2.0 Test List

Test Item	Test	Test Date	Model Number	Build Level	Sample No.
1	Integrating Sphere Test	2025/3/5	ET @ 14W/4000K	N/A	DLF2503101-H1
2	Goniophotometer Test	2025/3/5	ET @ 14W/4000K	N/A	DLF2503101-H1
3	THD and PF Test	2025/3/5	ET @ 14W/4000K	N/A	DLF2503101-H1

### Remark(If any)

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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:** ET @ 14W/4000K

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

**Received Date:** 2025/3/4

### Photos of Luminaire Characteristics



## 4.0 LM-79 Measurement and Test Results

### 4.1 Integrating Sphere Test

Model No.	ET @ 14W/4000K	Sample ID.	DLF2503101-H1
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-79-2019.

Photometric parameters were measured using an integrating sphere, a spectroradiometer and software. The ambient temperature and relative humidity condition inside the sphere was maintained at  $25^{\circ}\text{C} \pm 1.2^{\circ}\text{C}$  and 10% - 65% RH.

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  $\pm 0.2$  percent under load.

The sample was measured using  $4\pi$  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	0.110	13.2	0.995
276.97	60	0.051	13.3	0.945

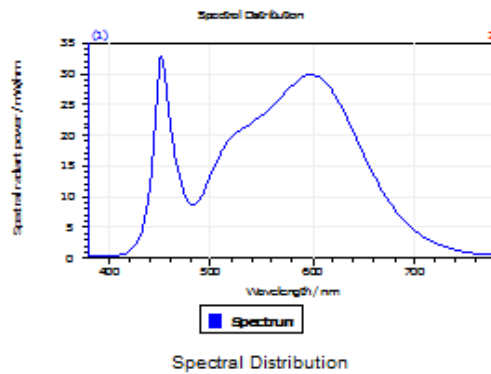
#### Test Result

CCT (K)	CRI	R9	Duv
3862	86	23	-0.00099

Rf	Rg	IES Rcs,h1
85	96	-10%

## 4.1 Integrating Sphere Test

### Results



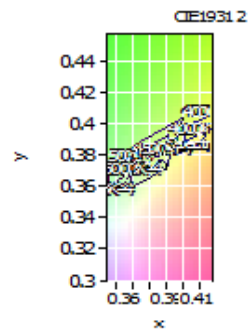
#### Spectral values

DominantWavelength 580.10 nm  
Purity 0.293  
PeakWavelength 451.74 nm  
Radiant Power 5.283 W  
Width50%:

#### Color Coordinates

Correlated Color Temperat 3862 K  
x: 0.3860 u: 0.2282 u': 0.2282  
y: 0.3780 v: 0.3353 v': 0.5029

CRI01	84.8	CRI09	23.0
CRI02	91.1	CRI10	78.2
CRI03	95.1	CRI11	84.5
CRI04	85.2	CRI12	63.4
CRI05	84.8	CRI13	86.4
CRI06	87.5	CRI14	97.3
CRI07	87.7	CRI15	79.8
CRI08	69.7	CRI16	77.2
ResultsCRI	85.7		



PlanckDistance 9.9E-004

## 4.1 Integrating Sphere Test

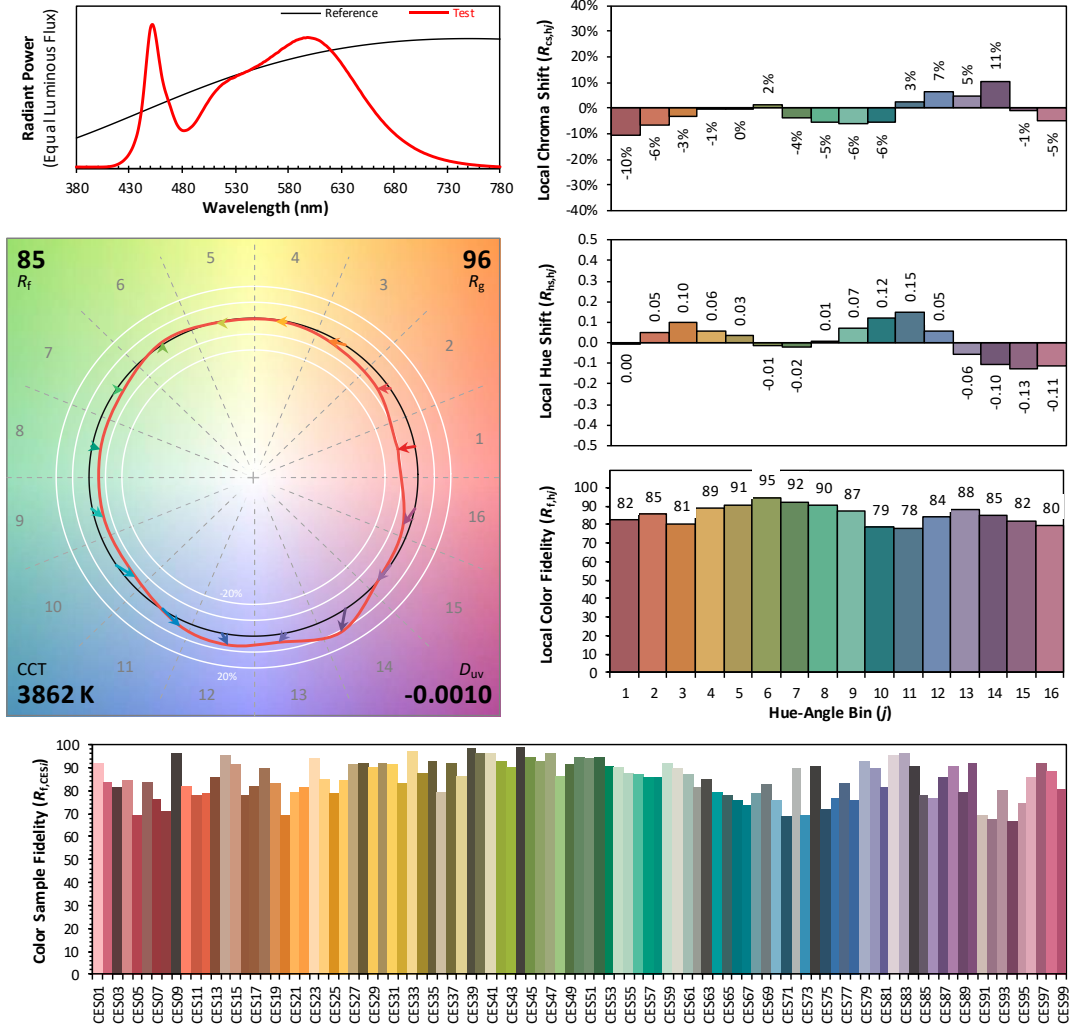
### IES TM-30-18 Color Rendition Report

Source: DLF2503101-8a

Manufacturer: RAB Lighting Inc.

Date: 2025/3/5

Model: ET @ 14W/4000K



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

$x$  0.3859  
 $y$  0.3780  
 $u'$  0.2282  
 $v'$  0.5029

CIE 13.3-1995  
(CRI)

$R_a$  86  
 $R_g$  25

#### 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	3.89E-04	485	8.84E-03	590	2.94E-02	695	5.28E-03
385	3.72E-04	490	9.81E-03	595	2.97E-02	700	4.52E-03
390	3.74E-04	495	1.15E-02	600	2.98E-02	705	3.90E-03
395	3.71E-04	500	1.35E-02	605	2.95E-02	710	3.37E-03
400	3.68E-04	505	1.55E-02	610	2.90E-02	715	2.89E-03
405	3.84E-04	510	1.72E-02	615	2.81E-02	720	2.48E-03
410	4.47E-04	515	1.86E-02	620	2.69E-02	725	2.14E-03
415	6.46E-04	520	1.95E-02	625	2.56E-02	730	1.84E-03
420	1.10E-03	525	2.04E-02	630	2.40E-02	735	1.58E-03
425	1.95E-03	530	2.08E-02	635	2.22E-02	740	1.35E-03
430	3.42E-03	535	2.15E-02	640	2.05E-02	745	1.17E-03
435	6.00E-03	540	2.20E-02	645	1.87E-02	750	9.99E-04
440	1.10E-02	545	2.26E-02	650	1.69E-02	755	8.67E-04
445	2.13E-02	550	2.32E-02	655	1.51E-02	760	7.51E-04
450	3.20E-02	555	2.39E-02	660	1.35E-02	765	6.52E-04
455	2.99E-02	560	2.47E-02	665	1.19E-02	770	5.55E-04
460	2.19E-02	565	2.55E-02	670	1.05E-02	775	4.79E-04
465	1.68E-02	570	2.64E-02	675	9.20E-03	780	4.19E-04
470	1.31E-02	575	2.73E-02	680	8.06E-03		
475	1.00E-02	580	2.81E-02	685	7.00E-03		
480	8.69E-03	585	2.89E-02	690	6.09E-03		



## 4.0 LM-79 Measurement and Test Results

### 4.2 Goniophotometer Test

Model No.	ET @ 14W/4000K	Sample ID.	DLF2503101-H1
Opreate 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-79-2019.

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

The ambient temperature shall be maintained at 25° C ± 1.2° C and 10% - 65% RH, 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.

Airflow for the instantaneous tangential velocity of any point on the DUT shall be less than an upper tolerance limit of 0.20 m/s.

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	277.03	60	0.050	13.2	0.945
NON-WORST CASE	120.01	60	0.110	13.1	0.995

#### Test Result

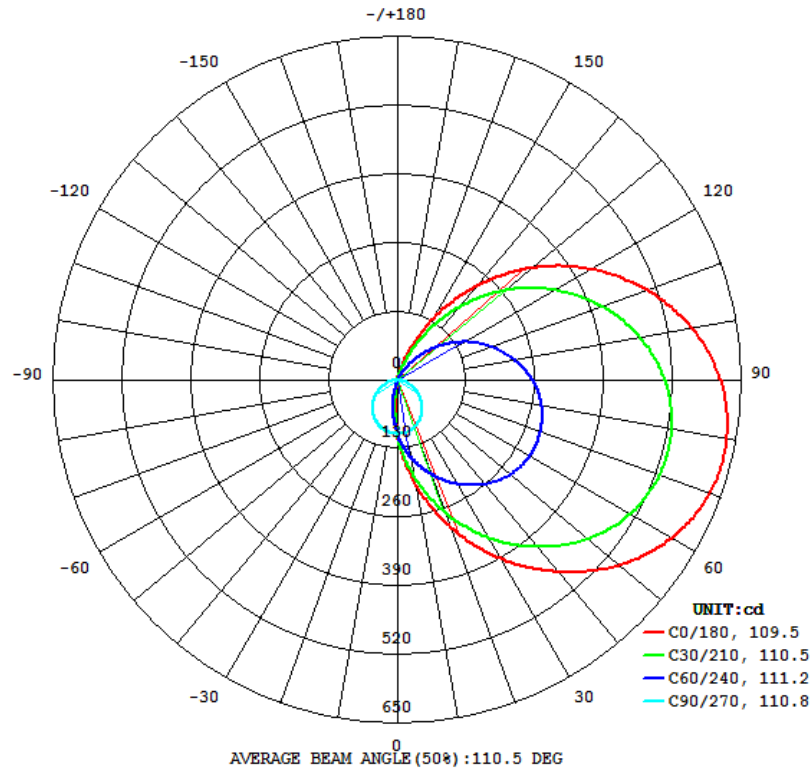
Result type	Flux (lm)	Field Angle(10%)		Beam Angle(50%)		Luminous Efficacy (lm/W)
		C0-180	C90-270	C0-180	C90-270	
0°-180° zones	1763	162.4	161.9	109.5	110.8	133.6
0°-90° zones	1097	94.3	161.9	67.7	110.8	83.1

Zonal Lumen Requirement (80°-90°)	BUG rating
18.47%	B0-U3-G2

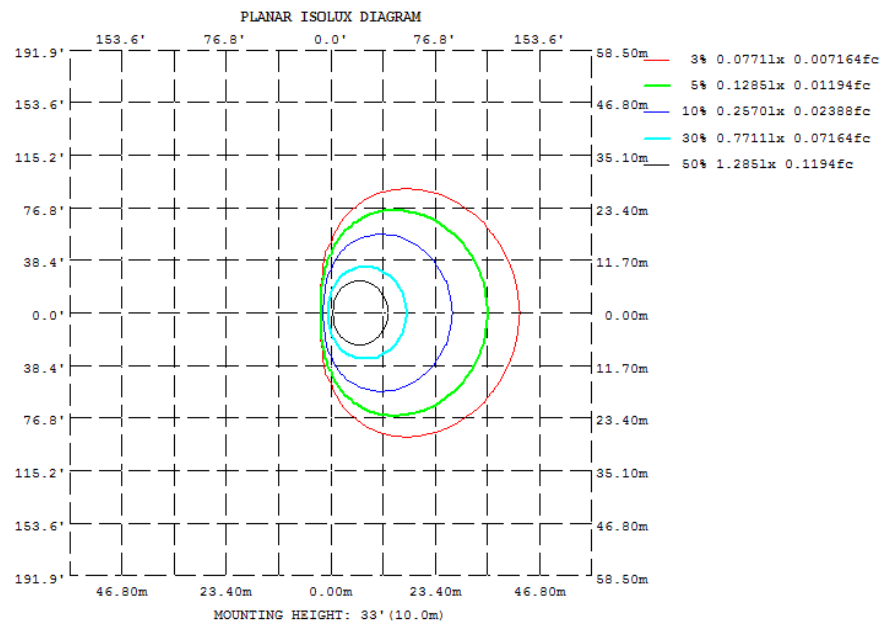


## 4.2 Goniophotometer Test

### Light Distrubtion Curve



### Isolux Plot



## 4.2 Goniophotometer Test

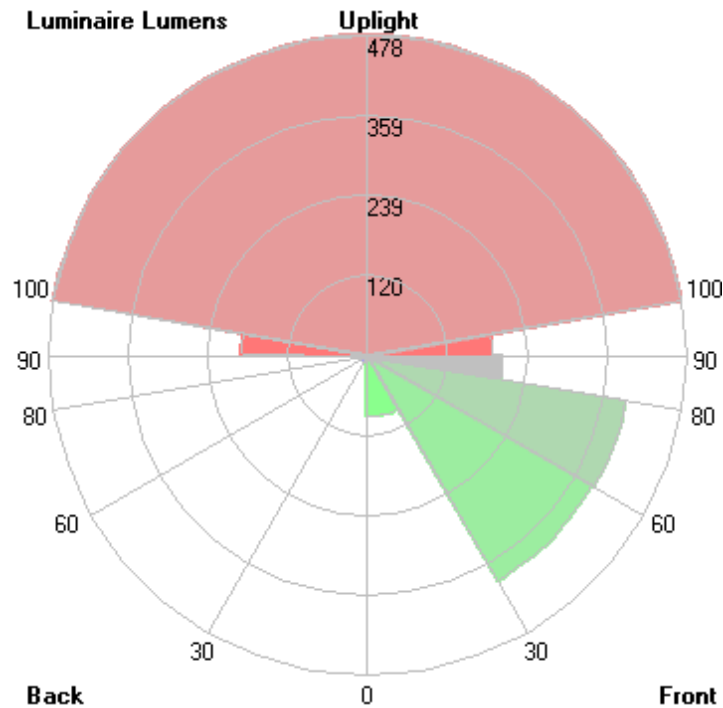
### Zonal Lumen Summary

γ	C0	C45	C90	C135	C180	C225	C270	C315
10	198.9	169.2	101.2	40.73	18.79	40.73	101.2	169.2
20	297.6	234.3	95.71	0.3715	0.3727	0.3715	95.71	234.3
30	390.7	293.6	86.69	0.2737	0.3495	0.2737	86.69	293.6
40	474.7	344.1	74.53	0.2809	0.3428	0.2809	74.53	344.1
50	545.3	383.1	60.02	0.3591	0.4117	0.3591	60.02	383.1
60	597.8	408.3	43.93	0.3632	0.4729	0.3632	43.93	408.3
70	627.6	418.7	27.25	0.3542	0.4524	0.3542	27.25	418.7
80	632.1	413.1	11.57	0.3474	0.3709	0.3474	11.57	413.1
90	611.0	392.5	1.511	0.3619	0.3869	0.3619	1.511	392.5
100	566.3	357.6	0.1388	0.4013	0.4741	0.4013	0.1388	357.6
110	501.7	310.7	0.1489	0.4063	0.5394	0.4063	0.1489	310.7
120	422.0	254.3	0.1638	0.3976	0.5522	0.3976	0.1638	254.3
130	331.6	190.9	0.1942	0.3924	0.5285	0.3924	0.1942	190.9
140	234.4	124.5	0.2347	0.3854	0.4955	0.3854	0.2347	124.5
150	136.4	59.00	0.2518	0.3330	0.3916	0.3330	0.2518	59.00
160	46.90	3.791	0.2579	0.2600	0.2416	0.2600	0.2579	3.791
170	0.1004	0.2059	0.2259	0.1781	0.1194	0.1781	0.2259	0.2059
180	0.1281	0.1844	0.1958	0.1735	0.1260	0.1735	0.1958	0.1844
DEG	LUMINOUS INTENSITY:cd							

	Zonal (lm)		Total (lm)	Percent
0-10	9.91	0 - 10	9.91	0.56%
10-20	31.64	0 - 20	41.55	2.36%
20-30	61.12	0 - 30	102.67	5.82%
30-40	96.49	0 - 40	199.16	11.29%
40-50	133.21	0 - 50	332.37	18.85%
50-60	166.59	0 - 60	498.96	28.29%
60-70	191.38	0 - 70	690.34	39.15%
70-80	203.95	0 - 80	894.29	50.71%
80-90	202.61	0 - 90	1096.90	62.20%
90-100	188.14	0 - 100	1285.04	72.87%
100-110	162.44	0 - 110	1447.48	82.08%
110-120	128.90	0 - 120	1576.38	89.39%
120-130	92.09	0 - 130	1668.47	94.61%
130-140	57.05	0 - 140	1725.52	97.85%
140-150	28.37	0 - 150	1753.89	99.46%
150-160	8.84	0 - 160	1762.73	99.96%
160-170	0.72	0 - 170	1763.45	100.00%
170-180	0.02	0 - 180	1763.47	100.00%

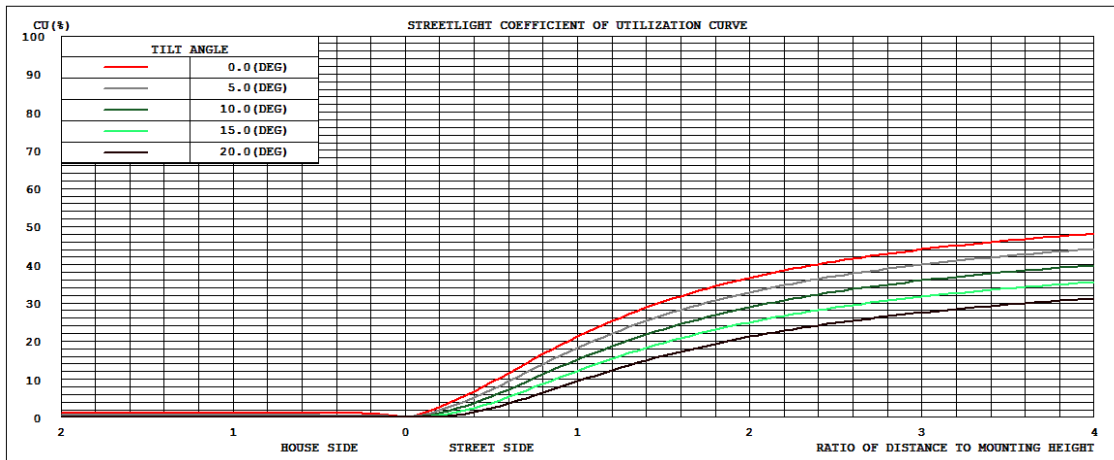
## 4.2 Goniophotometer Test

LCS/BUG

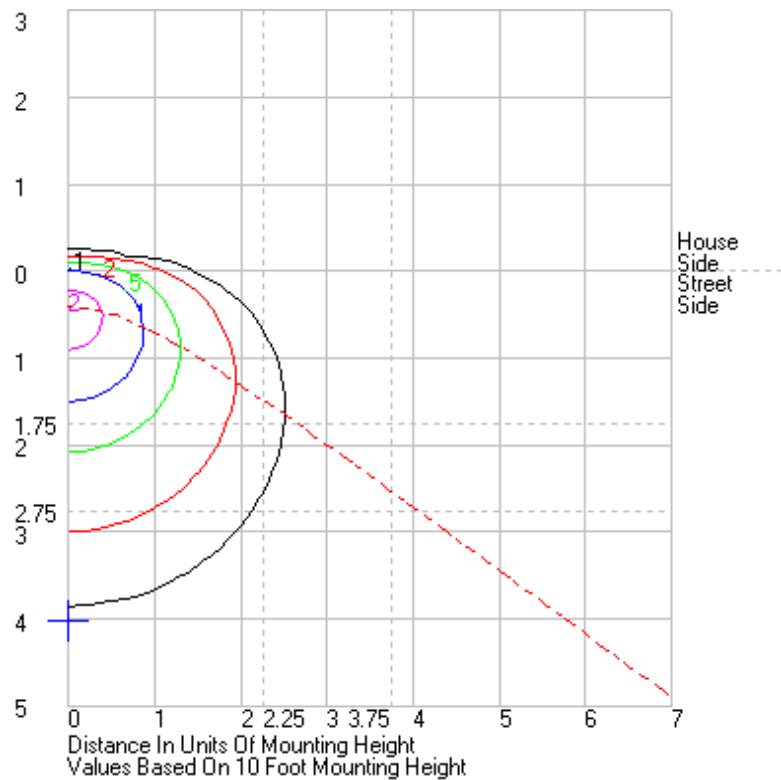


	Lumens	% Lamp	% Luminaire
FL - Front-Low (0-30)	92.1	N.A.	5.2
FM - Front-Medium (30-60)	389.0	N.A.	22.1
FH - Front-High (60-80)	392.7	N.A.	22.3
FVH - Front-Very High (80-90)	202.2	N.A.	11.5
BL - Back-Low (0-30)	10.6	N.A.	0.6
BM - Back-Medium (30-60)	7.3	N.A.	0.4
BH - Back-High (60-80)	2.6	N.A.	0.1
BVH - Back-Very High (80-90)	0.4	N.A.	0.0
UL - Uplight-Low (90-100)	188.1	N.A.	10.7
UH - Uplight-High (100-180)	478.4	N.A.	27.1
<b>Total</b>	<b>1763.4</b>	<b>N.A.</b>	<b>100.0</b>
<b>BUG Rating</b>	<b>B0-U3-G2</b>		

## 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	102.58	102.58	102.58	102.58	102.58	102.58	102.58	102.58	102.58	102.58	102.58	102.58	102.58	102.58	102.58	102.58	102.58	102.58	102.58	102.58	102.58	102.58	102.58	102.58	
1	111.47	111.08	110.36	109.18	107.39	105.28	102.98	100.58	98.246	96.168	94.359	93.28	93.148	93.28	94.359	96.168	98.246	100.58	102.98	105.28	107.39	109.18	110.36	111.08	111.47
2	120.82	120.18	118.49	115.75	112.1	107.68	102.92	98.136	93.638	89.697	86.59	84.602	84.006	84.602	86.59	89.697	93.638	98.136	102.92	107.68	112.1	115.75	118.49	120.18	120.82
3	130.27	129.24	126.54	122.31	116.61	109.99	102.84	95.74	89.09	83.343	78.896	76.016	75.28	76.016	78.896	83.343	89.09	95.74	102.84	109.99	116.61	122.31	126.54	129.24	130.27
4	139.74	138.58	134.81	128.96	121.27	112.29	102.73	93.245	84.493	76.974	71.254	67.63	66.533	67.63	71.254	76.974	84.493	93.245	102.73	112.29	121.27	128.96	134.81	138.58	139.74
5	149.83	147.93	143.16	135.61	125.81	114.52	102.56	90.795	79.991	70.773	63.831	59.791	58.059	59.791	63.831	70.773	79.991	90.795	102.56	114.52	125.81	135.61	143.16	147.93	149.83
6	159.69	157.32	151.63	142.43	130.35	116.76	102.35	88.279	75.435	64.597	56.285	51.56	49.748	51.56	56.285	64.597	75.435	88.279	102.35	116.76	130.35	142.43	151.63	157.32	159.69
7	169.41	166.84	159.93	149.15	135.01	118.99	102.13	85.742	70.898	58.529	49.17	43.361	41.432	43.361	49.17	58.529	70.898	85.742	102.13	118.99	135.01	149.15	159.93	166.84	169.41
8	179.38	176.14	168.27	155.81	139.52	121.12	101.85	83.199	66.46	52.542	42.103	35.671	33.6	35.671	42.103	52.542	66.46	83.199	101.85	121.12	139.52	155.81	168.27	176.14	179.38
9	189.11	185.71	176.68	162.48	144.13	123.24	101.55	80.654	61.967	46.555	35.141	28.067	25.814	28.067	35.141	46.555	61.967	80.654	101.55	123.24	144.13	162.48	176.68	185.71	189.11
10	198.93	195.19	185.08	169.16	148.72	125.28	101.19	78.103	57.576	40.729	28.285	20.89	18.794	20.89	28.285	40.729	57.576	78.103	101.19	125.28	148.72	169.16	185.08	195.19	198.93
11	208.93	204.63	193.34	175.79	153.12	127.32	100.8	75.506	53.177	34.959	21.619	14.056	11.774	14.056	21.619	34.959	53.177	75.506	100.8	127.32	153.12	175.79	193.34	204.63	208.93
12	218.8	214.12	201.8	182.46	157.58	129.31	100.38	72.932	48.848	29.32	15.525	7.743	5.858	7.743	15.525	29.32	48.848	72.932	100.38	129.31	157.58	182.46	201.8	214.12	218.8
13	228.63	223.67	210.06	189.1	161.9	131.23	99.914	70.326	44.508	23.778	9.768	4.052	2.446	4.052	9.768	23.778	44.508	70.326	99.914	131.23	161.9	189.1	210.06	223.67	228.63
14	238.62	233.23	218.43	195.7	166.33	133.23	99.419	67.716	40.254	18.446	5.451	1.151	0.582	1.151	5.451	18.446	40.254	67.716	99.419	133.23	166.33	195.7	218.43	233.23	238.62
15	248.57	242.69	226.77	202.09	170.59	135.09	98.887	65.111	36.008	13.432	2.554	0.252	0.336	0.252	2.554	13.432	36.008	65.111	98.887	135.09	170.59	202.09	226.77	242.69	248.57
16	258.36	252.14	235.12	208.63	174.9	136.85	98.339	62.493	31.82	8.769	0.632	0.243	0.345	0.243	0.632	8.769	31.82	62.493	98.339	136.85	174.9	208.63	235.12	252.14	258.36
17	268.19	261.61	243.44	215.11	179.17	138.63	97.751	59.859	27.673	5.475	0.275	0.247	0.352	0.247	0.275	5.475	27.673	59.859	97.751	138.63	179.17	215.11	243.44	261.61	268.19
18	278.09	270.93	251.76	221.53	183.31	140.35	97.082	57.247	23.63	2.967	0.277	0.251	0.359	0.251	0.277	2.967	23.63	57.247	97.082	140.35	183.31	221.53	251.76	270.93	278.09
19	287.65	280.2	259.8	227.92	187.46	142.11	96.419	54.625	19.579	1.12	0.281	0.256	0.366	0.256	0.281	1.12	19.579	54.625	96.419	142.11	187.46	227.92	259.8	280.2	287.65
20	297.56	289.56	267.96	234.27	191.48	143.87	95.708	51.953	15.72	0.372	0.284	0.26	0.373	0.26	0.284	0.372	15.72	51.953	95.708	143.87	191.48	234.27	267.96	289.56	297.56
21	307	298.8	275.99	240.49	195.46	145.39	94.98	49.32	12.145	0.317	0.286	0.262	0.376	0.262	0.286	0.317	12.145	49.32	94.98	145.39	195.46	240.49	275.99	298.8	307
22	316.52	307.81	284.01	246.61	199.49	146.95	94.187	46.664	8.852	0.314	0.285	0.263	0.377	0.263	0.285	0.314	8.852	46.664	94.187	146.95	199.49	246.61	284.01	307.81	316.52
23	326.22	317.1	291.97	252.73	203.37	148.37	93.366	44.005	6.33	0.31	0.283	0.263	0.378	0.263	0.283	0.31	6.33	44.005	93.366	148.37	203.37	252.73	291.97	317.1	326.22
24	335.74	326.03	299.82	258.73	207.13	149.8	92.52	41.372	4.229	0.305	0.28	0.262	0.375	0.262	0.28	0.305	4.229	41.372	92.52	149.8	207.13	258.73	299.82	326.03	335.74
25	345.23	335.07	307.73	264.85	210.9	151.2	91.644	38.696	2.47	0.299	0.276	0.262	0.374	0.262	0.276	0.299	2.47	38.696	91.644	151.2	210.9	264.85	307.73	335.07	345.23
26	354.4	343.96	315.5	270.76	214.65	152.46	90.686	36.027	1.239	0.293	0.272	0.26	0.37	0.26	0.272	0.293	1.239	36.027	90.686	152.46	214.65	270.76	315.5	343.96	354.4
27	363.65	352.67	322.94	276.54	218.35	153.75	89.798	33.405	0.54	0.287	0.268	0.259	0.365	0.259	0.268	0.287	0.54	33.405	89.798	153.75	218.35	276.54	322.94	352.67	363.65
28	372.85	361.58	330.56	282.34	221.83	154.96	88.771	30.764	0.306	0.281	0.264	0.256	0.359	0.256	0.264	0.281	0.306	30.764	88.771	154.96	221.83	282.34	330.56	361.58	372.85
29	381.76	370.14	338.02	287.96	225.34	156.08	87.733	28.16	0.295	0.277	0.261	0.255	0.353	0.255	0.261	0.277	0.295	28.16	87.733	156.08	225.34	287.96	338.02	370.14	381.76
30	390.7	378.66	345.53	293.6	228.74	157.13	86.689	25.556	0.291	0.274	0.26	0.255	0.349	0.255	0.26	0.274	0.291	25.556	86.689	157.13	228.74	293.6	345.53	378.66	390.7
31	399.51	387.16	352.52	298.99	231.97	158.2	85.586	22.997	0.289	0.272	0.26	0.257	0.348	0.257	0.26	0.272	0.289	22.997	85.586	158.2	231.97	298.99	352.52	387.16	399.51
32	408.54	395.52	359.79	304.44	235.25	159.2	84.474	20.456	0.287	0.272	0.261	0.26	0.347	0.26	0.261	0.272	0.287	20.456	84.474	159.2	235.25	304.44	359.79	395.52	408.54
33	417.1	403.91	366.95	309.88	238.53	160.07	83.346	17.924	0.286	0.271	0.263	0.263	0.344	0.263	0.263	0.271	0.286	17.924	83.346	160.07	238.53	309.88	366.95	403.91	417.1
34	425.7	411.96	373.91	314.99	241.5	160.88	82.193	15.538	0.284	0.271	0.265	0.266	0.342	0.266	0.265	0.271	0.284	15.538	82.193	160.88	241.5	314.99	373.91	411.96	425.7
35	434.29	420.09	380.93	320.07	244.49	161.77	80.946	13.288	0.283	0.271	0.267	0.27	0.34	0.27	0.267	0.271	0.283	13.288	80.946	161.77	244.49	320.07	380.93	420.09	434.29
36	442.48	428	387.58	325.18	247.5	162.5	79.715	11.221	0.281	0.272	0.269	0.274	0.339	0.274	0.269	0.272	0.281	11.221	79.715	162.5	247.5	325.18	387.58	428	442.48
37	450.95	435.89	394.15	330.1	250.31	163.2	78.433	9.234	0.28	0.273	0.273	0.28	0.339	0.28	0.273	0.273	0.28	9.234	78.433	163.2	250.31	330.1	394.15	435.89	450.95
38	459.02	443.62	400.69	334.84	252.97	163.76	77.164	7.579	0.28	0.275	0.277	0.285	0.339	0.285	0.277	0.275	0.28	7.579	77.164	163.76	252.97	334.84	400.69	443.62	459.02
39	466.95	451.16	407.02	339.46	255.7	164.26	75.863	6.071	0.281	0.277	0.283	0.292	0.34	0.292	0.283	0.277	0.281	6.071	75.863	164.26	255.7	339.46	407.02	451.16	466.95
40	474.71	458.64	413.46	344.07	258.28	164.77	74.533	4.679	0.282	0.281	0.289	0.301	0.343	0.301	0.289	0.281	0.282	4.679	74.533	164.77	258.28	344.07	413.46	458.64	474.71
41	482.52	466.02	419.46	348.61	260.76	165.17	73.14	3.488	0.283	0.285	0.296	0.309	0.346	0.309	0.296	0.285	0.283	3.488	73.14	165.17	260.76	348.61	419.46	466.02	482.52
42	490.22	473.2	425.51	353.05	263.09	165.62	71.774	2.482	0.285	0.29	0.304	0.319	0.35	0.319	0.304	0.29	0.285	2.482	71.774	165.62	263.09	353.05	425.51	473.2	490.22
43																									

50	545.32	525.16	468.54	383.09	278.65	166.13	60.024	0.288	0.326	0.359	0.397	0.424	0.412	0.424	0.397	0.359	0.326	0.288	60.024	166.13	278.65	383.09	468.54	525.16	545.32
51	551.51	530.85	473.19	386.21	280.11	165.91	58.489	0.289	0.33	0.365	0.405	0.434	0.419	0.434	0.405	0.365	0.33	0.289	58.489	165.91	280.11	386.21	473.19	530.85	551.51
52	557.46	536.43	477.68	389.25	281.5	165.62	56.931	0.289	0.332	0.37	0.411	0.442	0.427	0.442	0.411	0.37	0.332	0.289	56.931	165.62	281.5	389.25	477.68	536.43	557.46
53	563.21	541.81	482	392.18	282.91	165.32	55.316	0.288	0.333	0.373	0.417	0.448	0.434	0.448	0.417	0.373	0.333	0.288	55.316	165.32	282.91	392.18	482	541.81	563.21
54	568.92	546.89	486.03	394.73	283.97	164.87	53.725	0.287	0.333	0.375	0.42	0.453	0.44	0.453	0.42	0.375	0.333	0.287	53.725	164.87	283.97	394.73	486.03	546.89	568.92
55	574.35	552	490.29	397.51	285.03	164.44	52.149	0.284	0.332	0.375	0.422	0.455	0.446	0.455	0.422	0.375	0.332	0.284	52.149	164.44	285.03	397.51	490.29	552	574.35
56	579	556.74	494.06	399.99	286.03	163.86	50.503	0.281	0.329	0.373	0.421	0.456	0.452	0.456	0.421	0.373	0.329	0.281	50.503	163.86	286.03	399.99	494.06	556.74	579
57	584.27	561.29	497.66	402.2	286.88	163.23	48.886	0.278	0.326	0.371	0.421	0.456	0.457	0.456	0.421	0.371	0.326	0.278	48.886	163.23	286.88	402.2	497.66	561.29	584.27
58	588.99	565.61	501.09	404.36	287.67	162.62	47.246	0.274	0.323	0.369	0.419	0.456	0.461	0.456	0.419	0.369	0.323	0.274	47.246	162.62	287.67	404.36	501.09	565.61	588.99
59	593.45	569.93	504.59	406.44	288.17	161.9	45.595	0.271	0.319	0.366	0.417	0.456	0.467	0.456	0.417	0.366	0.319	0.271	45.595	161.9	288.17	406.44	504.59	569.93	593.45
60	597.77	573.81	507.36	408.31	288.73	161.08	43.93	0.266	0.316	0.363	0.416	0.456	0.473	0.456	0.416	0.363	0.316	0.266	43.93	161.08	288.73	408.31	507.36	573.81	597.77
61	601.63	577.4	510.44	410.15	289.18	160.32	42.298	0.263	0.313	0.36	0.414	0.456	0.478	0.456	0.414	0.36	0.313	0.263	42.298	160.32	289.18	410.15	510.44	577.4	601.63
62	605.48	581.16	513.06	411.52	289.48	159.35	40.618	0.259	0.31	0.357	0.412	0.456	0.48	0.456	0.412	0.357	0.31	0.259	40.618	159.35	289.48	411.52	513.06	581.16	605.48
63	609.45	584.22	515.45	412.92	289.7	158.44	38.967	0.256	0.307	0.355	0.41	0.455	0.483	0.455	0.41	0.355	0.307	0.256	38.967	158.44	289.7	412.92	515.45	584.22	609.45
64	612.35	587.52	517.87	414.25	289.84	157.4	37.299	0.253	0.305	0.354	0.407	0.454	0.484	0.454	0.407	0.354	0.305	0.253	37.299	157.4	289.84	414.25	517.87	587.52	612.35
65	615.62	590.3	519.79	415.37	289.68	156.41	35.605	0.25	0.303	0.353	0.404	0.451	0.486	0.451	0.404	0.353	0.303	0.25	35.605	156.41	289.68	415.37	519.79	590.3	615.62
66	618.71	592.91	521.47	416.3	289.56	155.3	33.931	0.248	0.301	0.353	0.402	0.448	0.485	0.448	0.402	0.353	0.301	0.248	33.931	155.3	289.56	416.3	521.47	592.91	618.71
67	621.44	595.14	523.23	417.18	289.43	154.11	32.274	0.245	0.3	0.353	0.399	0.443	0.48	0.443	0.399	0.353	0.3	0.245	32.274	154.11	289.43	417.18	523.23	595.14	621.44
68	623.73	597.41	524.92	417.83	289.1	152.9	30.589	0.242	0.298	0.354	0.397	0.437	0.473	0.437	0.397	0.354	0.298	0.242	30.589	152.9	289.1	417.83	524.92	597.41	623.73
69	625.73	599.38	526.01	418.33	288.61	151.61	28.923	0.24	0.297	0.354	0.394	0.43	0.463	0.43	0.394	0.354	0.297	0.24	28.923	151.61	288.61	418.33	526.01	599.38	625.73
70	627.57	601.11	527.1	418.66	288.13	150.31	27.251	0.238	0.296	0.354	0.393	0.424	0.452	0.424	0.393	0.354	0.296	0.238	27.251	150.31	288.13	418.66	527.1	601.11	627.57
71	629.07	602.47	528.05	418.73	287.55	148.91	25.59	0.235	0.294	0.354	0.391	0.418	0.441	0.418	0.391	0.354	0.294	0.235	25.59	148.91	287.55	418.73	528.05	602.47	629.07
72	630.77	603.52	528.78	418.74	286.76	147.44	23.913	0.233	0.293	0.353	0.391	0.414	0.429	0.414	0.391	0.353	0.293	0.233	23.913	147.44	286.76	418.74	528.78	603.52	630.77
73	631.67	604.66	529.14	418.73	285.9	145.96	22.287	0.231	0.293	0.352	0.39	0.41	0.418	0.41	0.39	0.352	0.293	0.231	22.287	145.96	285.9	418.73	529.14	604.66	631.67
74	632.58	605.24	529.51	418.38	284.98	144.41	20.66	0.228	0.292	0.351	0.39	0.408	0.407	0.408	0.39	0.351	0.292	0.228	20.66	144.41	284.98	418.38	529.51	605.24	632.58
75	633.17	605.7	529.43	417.96	283.84	142.84	19.046	0.226	0.291	0.351	0.39	0.407	0.396	0.407	0.39	0.351	0.291	0.226	19.046	142.84	283.84	417.96	529.43	605.7	633.17
76	633.85	605.8	529.31	417.23	282.73	141.25	17.499	0.223	0.289	0.351	0.391	0.408	0.39	0.408	0.391	0.351	0.289	0.223	17.499	141.25	282.73	417.23	529.31	605.8	633.85
77	633.49	605.73	528.88	416.45	281.55	139.52	15.948	0.22	0.288	0.35	0.391	0.409	0.385	0.409	0.391	0.35	0.288	0.22	15.948	139.52	281.55	416.45	528.88	605.73	633.49
78	633.4	605.43	528.33	415.51	280.19	137.82	14.441	0.217	0.286	0.349	0.391	0.409	0.379	0.409	0.391	0.349	0.286	0.217	14.441	137.82	280.19	415.51	528.33	605.43	633.4
79	632.87	604.94	527.58	414.54	278.71	135.94	12.994	0.213	0.284	0.348	0.391	0.409	0.375	0.409	0.391	0.348	0.284	0.213	12.994	135.94	278.71	414.54	527.58	604.94	632.87
80	632.13	604.08	526.69	413.1	277.1	134.1	11.572	0.209	0.282	0.347	0.391	0.41	0.371	0.41	0.391	0.347	0.282	0.209	11.572	134.1	277.1	413.1	526.69	604.08	632.13
81	631.2	602.99	525.43	411.81	275.38	132.26	10.211	0.206	0.28	0.347	0.392	0.411	0.368	0.411	0.392	0.347	0.28	0.206	10.211	132.26	275.38	411.81	525.43	602.99	631.2
82	629.8	601.78	524.01	410.21	273.74	130.32	8.921	0.204	0.278	0.347	0.393	0.413	0.366	0.413	0.393	0.347	0.278	0.204	8.921	130.32	273.74	410.21	524.01	601.78	629.8
83	628.55	600.26	522.45	408.4	271.78	128.39	7.658	0.201	0.277	0.347	0.395	0.415	0.367	0.415	0.395	0.347	0.277	0.201	7.658	128.39	271.78	408.4	522.45	600.26	628.55
84	626.94	598.59	520.66	406.58	269.93	126.41	6.483	0.199	0.277	0.348	0.398	0.418	0.369	0.418	0.398	0.348	0.277	0.199	6.483	126.41	269.93	406.58	520.66	598.59	626.94
85	625.03	596.52	518.6	404.65	267.85	124.41	5.406	0.199	0.277	0.35	0.4	0.421	0.371	0.421	0.4	0.35	0.277	0.199	5.406	124.41	267.85	404.65	518.6	596.52	625.03
86	622.69	594.18	516.61	402.43	265.68	122.36	4.413	0.198	0.278	0.352	0.403	0.424	0.373	0.424	0.403	0.352	0.278	0.198	4.413	122.36	265.68	402.43	516.61	594.18	622.69
87	620.25	591.85	514.27	400.18	263.47	120.26	3.525	0.198	0.279	0.354	0.405	0.427	0.375	0.427	0.405	0.354	0.279	0.198	3.525	120.26	263.47	400.18	514.27	591.85	620.25
88	617.15	589.16	511.58	397.73	261.17	118.16	2.731	0.199	0.281	0.356	0.408	0.431	0.378	0.431	0.408	0.356	0.281	0.199	2.731	118.16	261.17	397.73	511.58	589.16	617.15
89	614.28	586.29	508.88	395.1	258.7	115.99	2.051	0.2	0.283	0.359	0.412	0.435	0.382	0.435	0.412	0.359	0.283	0.2	2.051	115.99	258.7	395.1	508.88	586.29	614.28
90	611.02	583.13	505.93	392.46	256.14	113.8	1.512	0.202	0.285	0.362	0.415	0.439	0.387	0.439	0.415	0.362	0.285	0.202	1.512	113.8	256.14	392.46	505.93	583.13	611.02
91	607.65	579.68	502.88	389.59	253.61	111.56	1.116	0.203	0.287	0.365	0.418	0.442	0.389	0.442	0.418	0.365	0.287	0.203	1.116	111.56	253.61	389.59	502.88	579.68	607.65
92	603.87	576.34	499.42	386.5	250.92	109.3	0.799	0.204	0.289	0.367	0.421	0.445	0.392	0.445	0.421	0.367	0.289	0.204	0.799	109.3	250.92	386.5	499.42	576.34	603.87
93	599.9	572.63	495.93	383.34	248.11	107.03	0.535	0.206	0.291	0.37	0.424	0.448	0.396	0.448	0.424	0.37	0.291	0.206	0.535	107.03	248.11	383.34	495.93	572.63	599.9
94	595.66	568.42	492.34	380.09	245.26	104.71	0.334	0.207	0.294	0.374	0.428	0.452	0.403	0.452	0.428	0.374	0.294								

104	542.51	517.4	446.18	340.14	212.1	80.41	0.143	0.222	0.319	0.407	0.472	0.511	0.507	0.511	0.472	0.407	0.319	0.222	0.143	80.41	212.1	340.14	446.18	517.4	542.51
105	536.01	511.21	440.74	335.55	208.43	77.909	0.144	0.223	0.319	0.408	0.474	0.512	0.513	0.512	0.474	0.408	0.319	0.223	0.144	77.909	208.43	335.55	440.74	511.21	536.01
106	529.37	504.79	435.17	330.75	204.62	75.363	0.144	0.223	0.318	0.408	0.474	0.513	0.519	0.513	0.474	0.408	0.318	0.223	0.144	75.363	204.62	330.75	435.17	504.79	529.37
107	522.62	498.29	429.3	325.9	200.85	72.808	0.145	0.223	0.317	0.407	0.471	0.507	0.524	0.507	0.471	0.407	0.317	0.223	0.145	72.808	200.85	325.9	429.3	498.29	522.62
108	515.95	491.78	423.37	321	196.92	70.261	0.147	0.223	0.315	0.405	0.471	0.508	0.53	0.508	0.471	0.405	0.315	0.223	0.147	70.261	196.92	321	423.37	491.78	515.95
109	508.67	485.03	417.35	315.96	193.05	67.722	0.148	0.223	0.315	0.405	0.472	0.51	0.535	0.51	0.472	0.405	0.315	0.223	0.148	67.722	193.05	315.96	417.35	485.03	508.67
110	501.7	478.07	411.14	310.74	189.02	65.164	0.149	0.224	0.316	0.406	0.473	0.51	0.539	0.51	0.473	0.406	0.316	0.224	0.149	65.164	189.02	310.74	411.14	478.07	501.7
111	494.28	470.97	404.88	305.52	185.04	62.57	0.15	0.225	0.317	0.408	0.475	0.511	0.544	0.511	0.475	0.408	0.317	0.225	0.15	62.57	185.04	305.52	404.88	470.97	494.28
112	486.85	463.77	398.5	300.21	180.98	59.979	0.151	0.227	0.319	0.41	0.477	0.515	0.547	0.515	0.477	0.41	0.319	0.227	0.151	59.979	180.98	300.21	398.5	463.77	486.85
113	479.23	456.36	391.86	294.7	176.82	57.361	0.152	0.227	0.319	0.409	0.476	0.512	0.55	0.512	0.476	0.409	0.319	0.227	0.152	57.361	176.82	294.7	391.86	456.36	479.23
114	471.26	448.9	385.19	289.18	172.61	54.759	0.154	0.228	0.318	0.407	0.473	0.511	0.552	0.511	0.473	0.407	0.318	0.228	0.154	54.759	172.61	289.18	385.19	448.9	471.26
115	463.41	441.22	378.44	283.66	168.39	52.198	0.155	0.229	0.319	0.407	0.472	0.508	0.552	0.508	0.472	0.407	0.319	0.229	0.155	52.198	168.39	283.66	378.44	441.22	463.41
116	455.53	433.64	371.54	277.85	164.09	49.58	0.157	0.229	0.317	0.403	0.466	0.502	0.554	0.502	0.466	0.403	0.317	0.229	0.157	49.58	164.09	277.85	371.54	433.64	455.53
117	447.14	425.81	364.54	272.05	159.76	46.972	0.158	0.23	0.316	0.401	0.463	0.498	0.555	0.498	0.463	0.401	0.316	0.23	0.158	46.972	159.76	272.05	364.54	425.81	447.14
118	438.76	417.78	357.51	266.29	155.5	44.416	0.16	0.231	0.316	0.399	0.461	0.494	0.555	0.494	0.461	0.399	0.316	0.231	0.16	44.416	155.5	266.29	357.51	417.78	438.76
119	430.7	409.7	350.22	260.21	151.17	41.811	0.162	0.232	0.316	0.398	0.458	0.492	0.554	0.492	0.458	0.398	0.316	0.232	0.162	41.811	151.17	260.21	350.22	409.7	430.7
120	421.98	401.52	343.03	254.25	146.62	39.248	0.164	0.234	0.317	0.398	0.457	0.49	0.552	0.49	0.457	0.398	0.317	0.234	0.164	39.248	146.62	254.25	343.03	401.52	421.98
121	413.17	393.26	335.58	248.21	142.21	36.657	0.166	0.235	0.317	0.397	0.455	0.488	0.551	0.488	0.455	0.397	0.317	0.235	0.166	36.657	142.21	248.21	335.58	393.26	413.17
122	404.73	384.84	328.18	242.03	137.61	34.103	0.168	0.237	0.318	0.397	0.454	0.486	0.55	0.486	0.454	0.397	0.318	0.237	0.168	34.103	137.61	242.03	328.18	384.84	404.73
123	395.86	376.35	320.6	235.81	133.05	31.529	0.171	0.239	0.319	0.397	0.453	0.484	0.55	0.484	0.453	0.397	0.319	0.239	0.171	31.529	133.05	235.81	320.6	376.35	395.86
124	386.97	367.82	312.93	229.63	128.57	29.005	0.173	0.241	0.32	0.396	0.452	0.482	0.549	0.482	0.452	0.396	0.32	0.241	0.173	29.005	128.57	229.63	312.93	367.82	386.97
125	377.95	359.18	305.13	223.24	124.01	26.471	0.176	0.243	0.321	0.396	0.45	0.479	0.547	0.479	0.45	0.396	0.321	0.243	0.176	26.471	124.01	223.24	305.13	359.18	377.95
126	368.85	350.37	297.34	216.79	119.52	23.954	0.18	0.246	0.322	0.395	0.448	0.476	0.543	0.476	0.448	0.395	0.322	0.246	0.18	23.954	119.52	216.79	297.34	350.37	368.85
127	359.53	341.41	289.48	210.47	114.95	21.488	0.183	0.248	0.323	0.395	0.446	0.472	0.539	0.472	0.446	0.395	0.323	0.248	0.183	21.488	114.95	210.47	289.48	341.41	359.53
128	350.43	332.55	281.54	203.94	110.36	19.06	0.187	0.252	0.324	0.394	0.443	0.469	0.535	0.469	0.443	0.394	0.324	0.252	0.187	19.06	110.36	203.94	281.54	332.55	350.43
129	341.02	323.56	273.56	197.53	105.84	16.714	0.19	0.255	0.326	0.393	0.441	0.465	0.532	0.465	0.441	0.393	0.326	0.255	0.19	16.714	105.84	197.53	273.56	323.56	341.02
130	331.55	314.53	265.53	190.85	101.26	14.473	0.194	0.258	0.327	0.392	0.438	0.461	0.529	0.461	0.438	0.392	0.327	0.258	0.194	14.473	101.26	190.85	265.53	314.53	331.55
131	322.02	305.4	257.43	184.34	96.699	12.404	0.199	0.261	0.329	0.392	0.435	0.458	0.527	0.458	0.435	0.392	0.329	0.261	0.199	12.404	96.699	184.34	257.43	305.4	322.02
132	312.51	296.14	249.19	177.77	92.169	10.442	0.203	0.265	0.33	0.391	0.431	0.455	0.525	0.455	0.431	0.391	0.33	0.265	0.203	10.442	92.169	177.77	249.19	296.14	312.51
133	302.93	287.01	241.1	171.23	87.567	8.575	0.207	0.268	0.332	0.389	0.427	0.452	0.521	0.452	0.427	0.389	0.332	0.268	0.207	8.575	87.567	171.23	241.1	287.01	302.93
134	293.43	277.72	232.75	164.55	83.041	6.915	0.212	0.272	0.334	0.386	0.425	0.448	0.518	0.448	0.425	0.386	0.334	0.272	0.212	6.915	83.041	164.55	232.75	277.72	293.43
135	283.43	268.31	224.45	157.96	78.52	5.346	0.216	0.275	0.336	0.385	0.426	0.444	0.515	0.444	0.426	0.385	0.336	0.275	0.216	5.346	78.52	157.96	224.45	268.31	283.43
136	273.53	259	216.21	151.38	74.003	3.977	0.221	0.279	0.336	0.386	0.427	0.441	0.513	0.441	0.427	0.386	0.336	0.279	0.221	3.977	74.003	151.38	216.21	259	273.53
137	263.86	249.44	207.83	144.61	69.548	2.767	0.225	0.283	0.337	0.387	0.426	0.436	0.509	0.436	0.426	0.387	0.337	0.283	0.225	2.767	69.548	144.61	207.83	249.44	263.86
138	254.14	240.06	199.42	137.88	65.021	1.723	0.229	0.286	0.339	0.387	0.424	0.432	0.506	0.432	0.424	0.387	0.339	0.286	0.229	1.723	65.021	137.88	199.42	240.06	254.14
139	244.16	230.44	191.02	131.16	60.47	0.933	0.232	0.287	0.339	0.387	0.419	0.427	0.501	0.427	0.419	0.387	0.339	0.287	0.232	0.933	60.47	131.16	191.02	230.44	244.16
140	234.39	221.13	182.77	124.52	56.143	0.474	0.235	0.288	0.338	0.385	0.415	0.42	0.495	0.42	0.415	0.385	0.338	0.288	0.235	0.474	56.143	124.52	182.77	221.13	234.39
141	224.59	211.5	172.78	117.87	51.75	0.207	0.237	0.289	0.338	0.383	0.408	0.413	0.488	0.413	0.408	0.383	0.338	0.289	0.237	0.207	51.75	117.87	172.78	211.5	224.59
142	214.43	202.04	165.85	111.27	47.338	0.187	0.239	0.29	0.337	0.379	0.402	0.405	0.48	0.405	0.402	0.379	0.337	0.29	0.239	0.187	47.338	111.27	165.85	202.04	214.43
143	204.6	192.56	157.57	104.63	42.888	0.189	0.242	0.291	0.337	0.375	0.396	0.397	0.472	0.397	0.396	0.375	0.337	0.291	0.242	0.189	42.888	104.63	157.57	192.56	204.6
144	194.77	183	149	98.008	38.487	0.193	0.244	0.292	0.336	0.37	0.389	0.389	0.463	0.389	0.389	0.37	0.336	0.292	0.244	0.193	38.487	98.008	149	183	194.77
145	185.01	173.46	140.6	91.319	34.084	0.196	0.246	0.291	0.332	0.364	0.38	0.379	0.452	0.379	0.38	0.364	0.332	0.291	0.246	0.196	34.084	91.319	140.6	173.46	185.01
146	175.05	163.98	132.12	84.802	29.748	0.199	0.247	0.29	0.328	0.358	0.371	0.368	0.439	0.368	0.371	0.358	0.328	0.29	0.247	0.199	29.748	84.802	132.12	163.98	175.05
147	165.35	154.49	123.85	78.368	25.469	0.201	0.248	0.288	0.325	0.35	0.361	0.357	0.425	0.357	0.361	0.35	0.325	0.288	0.248	0.201	25.469	78.368	123.85	154.49	165.35
148	155.57	145.05	115.58	71.822	21.26	0.204	0.249	0.287	0.32	0.343	0.352	0.346	0.412	0.346	0.352	0.343	0.32	0.287	0.249	0.204					



158	63.401	55.428	36.622	11.475	0.202	0.237	0.264	0.28	0.287	0.282	0.271	0.251	0.28	0.251	0.271	0.282	0.287	0.28	0.264	0.237	0.202	11.475	36.622	55.428	63.401
159	55.206	47.238	29.438	7.204	0.205	0.238	0.261	0.275	0.278	0.272	0.259	0.239	0.262	0.239	0.259	0.272	0.278	0.275	0.261	0.238	0.205	7.204	29.438	47.238	55.206
160	46.896	39.074	22.742	3.791	0.208	0.238	0.258	0.268	0.268	0.26	0.245	0.225	0.242	0.225	0.245	0.26	0.268	0.268	0.258	0.238	0.208	3.791	22.742	39.074	46.896
161	38.702	31.182	16.499	1.953	0.21	0.237	0.254	0.261	0.258	0.248	0.231	0.211	0.222	0.211	0.231	0.248	0.258	0.261	0.254	0.237	0.21	1.953	16.499	31.182	38.702
162	30.805	23.902	10.604	0.579	0.213	0.237	0.252	0.256	0.25	0.238	0.22	0.2	0.208	0.2	0.22	0.238	0.25	0.256	0.252	0.237	0.213	0.579	10.604	23.902	30.805
163	23.183	17.078	5.855	0.192	0.215	0.237	0.249	0.25	0.243	0.229	0.209	0.189	0.193	0.189	0.209	0.229	0.243	0.25	0.249	0.237	0.215	0.192	5.855	17.078	23.183
164	16.299	10.656	2.708	0.19	0.217	0.236	0.245	0.245	0.235	0.22	0.2	0.18	0.181	0.18	0.2	0.22	0.235	0.245	0.245	0.236	0.217	0.19	2.708	10.656	16.299
165	10.142	5.455	1.071	0.194	0.219	0.236	0.243	0.239	0.228	0.211	0.19	0.17	0.168	0.17	0.19	0.211	0.228	0.239	0.243	0.236	0.219	0.194	1.071	5.455	10.142
166	5.559	2.513	0.177	0.198	0.22	0.236	0.239	0.234	0.221	0.204	0.182	0.162	0.155	0.162	0.182	0.204	0.221	0.234	0.239	0.236	0.22	0.198	0.177	2.513	5.559
167	2.017	0.883	0.174	0.201	0.222	0.235	0.237	0.23	0.215	0.196	0.174	0.155	0.145	0.155	0.174	0.196	0.215	0.23	0.237	0.235	0.222	0.201	0.174	0.883	2.017
168	0.102	0.151	0.178	0.203	0.222	0.233	0.233	0.224	0.21	0.19	0.168	0.149	0.136	0.149	0.168	0.19	0.21	0.224	0.233	0.233	0.222	0.203	0.178	0.151	0.102
169	0.096	0.155	0.181	0.205	0.222	0.231	0.23	0.219	0.204	0.184	0.161	0.143	0.127	0.143	0.161	0.184	0.204	0.219	0.23	0.231	0.222	0.205	0.181	0.155	0.096
170	0.1	0.16	0.185	0.206	0.221	0.229	0.226	0.215	0.199	0.178	0.156	0.138	0.119	0.138	0.156	0.178	0.199	0.215	0.226	0.229	0.221	0.206	0.185	0.16	0.1
171	0.104	0.164	0.188	0.209	0.224	0.231	0.228	0.217	0.2	0.179	0.157	0.139	0.12	0.139	0.157	0.179	0.2	0.217	0.228	0.231	0.224	0.209	0.188	0.164	0.104
172	0.108	0.168	0.193	0.214	0.229	0.237	0.234	0.224	0.207	0.185	0.161	0.142	0.126	0.142	0.161	0.185	0.207	0.224	0.234	0.237	0.229	0.214	0.193	0.168	0.108
173	0.113	0.172	0.195	0.215	0.231	0.238	0.236	0.226	0.209	0.188	0.164	0.145	0.126	0.145	0.164	0.188	0.209	0.226	0.236	0.238	0.231	0.215	0.195	0.172	0.113
174	0.117	0.173	0.196	0.216	0.232	0.239	0.238	0.229	0.214	0.192	0.17	0.151	0.126	0.151	0.17	0.192	0.214	0.229	0.238	0.239	0.232	0.216	0.196	0.173	0.117
175	0.12	0.174	0.196	0.215	0.23	0.237	0.236	0.228	0.214	0.194	0.173	0.155	0.125	0.155	0.173	0.194	0.214	0.228	0.236	0.237	0.23	0.215	0.196	0.174	0.12
176	0.124	0.174	0.193	0.21	0.223	0.23	0.229	0.221	0.208	0.191	0.172	0.156	0.126	0.156	0.172	0.191	0.208	0.221	0.229	0.23	0.223	0.21	0.193	0.174	0.124
177	0.125	0.172	0.188	0.203	0.214	0.219	0.219	0.212	0.2	0.184	0.168	0.154	0.126	0.154	0.168	0.184	0.2	0.212	0.219	0.219	0.214	0.203	0.188	0.172	0.125
178	0.125	0.169	0.182	0.195	0.205	0.21	0.209	0.204	0.193	0.179	0.165	0.155	0.126	0.155	0.165	0.179	0.193	0.204	0.209	0.21	0.205	0.195	0.182	0.169	0.125
179	0.126	0.164	0.176	0.186	0.195	0.199	0.199	0.194	0.185	0.174	0.162	0.154	0.125	0.154	0.162	0.174	0.185	0.194	0.199	0.199	0.195	0.186	0.176	0.164	0.126
180	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128

## 4.0 LM-79 Measurement and Test Results

### 4.3 THD and PF Test

Model No.	ET @ 14W/4000K	Sample ID.	DLF2503101-H1
Temperature (°C)	25.1	Humidity (%RH)	57.0

#### Test Method

The samples were tested according to the ANSI C82.77-10:2014.

The ambient temperature shall be maintained at 25° C ± 1.0° C and 10% - 65% RH. 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	0.110	13.2	0.995	5.46%
276.97	60	0.051	13.3	0.945	10.99%

## 5.0 Equipment Information

Test Equipment			
Equipment ID	Equipment Name	Last Calibration Date	Calibration Due Date
DLF107	Integrating Sphere System	2024/12/23	2025/12/22
DLF108	Auxiliary Lamp	2024/12/23	2025/12/22
DLF122	Measurement Standard Lamp Standard Lamp Type: 220 V, 0.473 A, Tungsten, Omni-derectional	2024/12/23	2025/12/22
DLF116	AC Power Source	2024/12/13	2025/12/12
DLF516	Power Meter	2024/12/13	2025/12/12
DLF114	Temperature & Humidity Datalogger	2024/12/19	2025/12/18
DLF101	Goniophotometer	2024/12/23	2025/12/22
DLF521	Measurement Standard Lamp Standard Lamp Type: Tungsten, Omni- derectional	2024/12/23	2025/12/22
DLF512	AC Power Source	2024/12/13	2025/12/12
DLF507	DC Power Source	2024/12/13	2025/12/12
DLF111	Temperature & Humidity Datalogger	2024/12/19	2025/12/18
DLF119	Power Meter	2024/12/13	2025/12/12
DLF530	Hot-wire anemometer	2025/1/23	2026/1/22
DLF129	Clock	2024/6/20	2025/6/19

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