

# 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

**DLF2503101-5a**

## Test Date

**2025/3/5**

## Issue Date

**2025/3/5**

## Test By

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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		1363
Minimum Luminaire Efficacy (lm/W) (Goniophotometer - Section 4.2) (0°-180° zones)	IES LM-79-2019	Standard 105	Premium 120	131.1
Luminaire Output (lm) (Goniophotometer - Section 4.2) (0°-90° zones)	IES LM-79-2019	300		847
Minimum Luminaire Efficacy (lm/W) (Goniophotometer - Section 4.2) (0°-90° zones)	IES LM-79-2019	Standard 105	Premium 120	81.4
Power (Input Wattage) (W) (Goniophotometer - Section 4.2)	IES LM-79-2019	Worst Case		10.4
Total Harmonic Distortion (A%) (THD & PF - section 4.3)	ANSI C82.77-10:2014	20.00%	120V	4.79%
		20.00%	277V	16.23%
Power Factor (THD & PF - section 4.3)	ANSI C82.77-10:2014	0.9	120V	0.996
		0.9	277V	0.911
Allowable CCTs* (K) (Integrating Sphere - Section 4.1)	IES LM-79-2019	7 step	3985±275	3859
		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%		18.50%
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		0.041
(Goniophotometer - Section 4.2)		Non-Worst Case		0.083
Power (Input Wattage - W)				
(Goniophotometer - Section 4.2)	IES LM-79-2019	Worst Case		10.4
(Goniophotometer - Section 4.2)		Non-Worst Case		9.9

## 2.0 Test List

Test Item	Test	Test Date	Model Number	Build Level	Sample No.
1	Integrating Sphere Test	2025/3/5	ET @ 11W/4000K	N/A	DLF2503101-E1
2	Goniophotometer Test	2025/3/5	ET @ 11W/4000K	N/A	DLF2503101-E1
3	THD and PF Test	2025/3/5	ET @ 11W/4000K	N/A	DLF2503101-E1

### 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:** ET @ 11W/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 @ 11W/4000K	Sample ID.	DLF2503101-E1
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
120.04	60	0.084	10.0	0.996
277.01	60	0.042	10.5	0.911

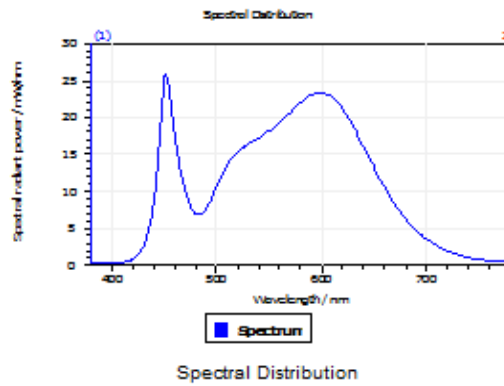
#### Test Result

CCT (K)	CRI	R9	Duv
3859	86	23	-0.00097

Rf	Rg	IES Rcs,h1
85	96	-10%

## 4.1 Integrating Sphere Test

### Results

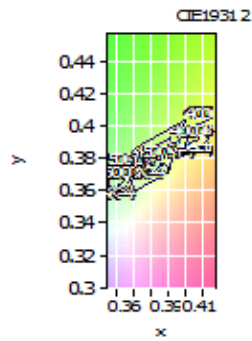


#### Spectral values

DominantWavelength 580.11 nm  
Purity 0.294  
PeakWavelength 451.81 nm  
Radiant Power 4.138 W  
Width50%:

#### Color Coordinates

Correlated Color Temporal 3859 K  
x: 0.3861 u: 0.2283 u': 0.2283  
y: 0.3781 v: 0.3354 v': 0.5030  
CRI01 84.9 CRI09 23.4  
CRI02 91.3 CRI10 78.5  
CRI03 95.2 CRI11 84.7  
CRI04 85.3 CRI12 63.3  
CRI05 84.9 CRI13 86.5  
CRI06 87.6 CRI14 97.3  
CRI07 87.8 CRI15 79.9  
CRI08 69.8 CRI16 77.3  
ResultsCRI 85.9



PlanckDistance 9.7E-004

## 4.1 Integrating Sphere Test

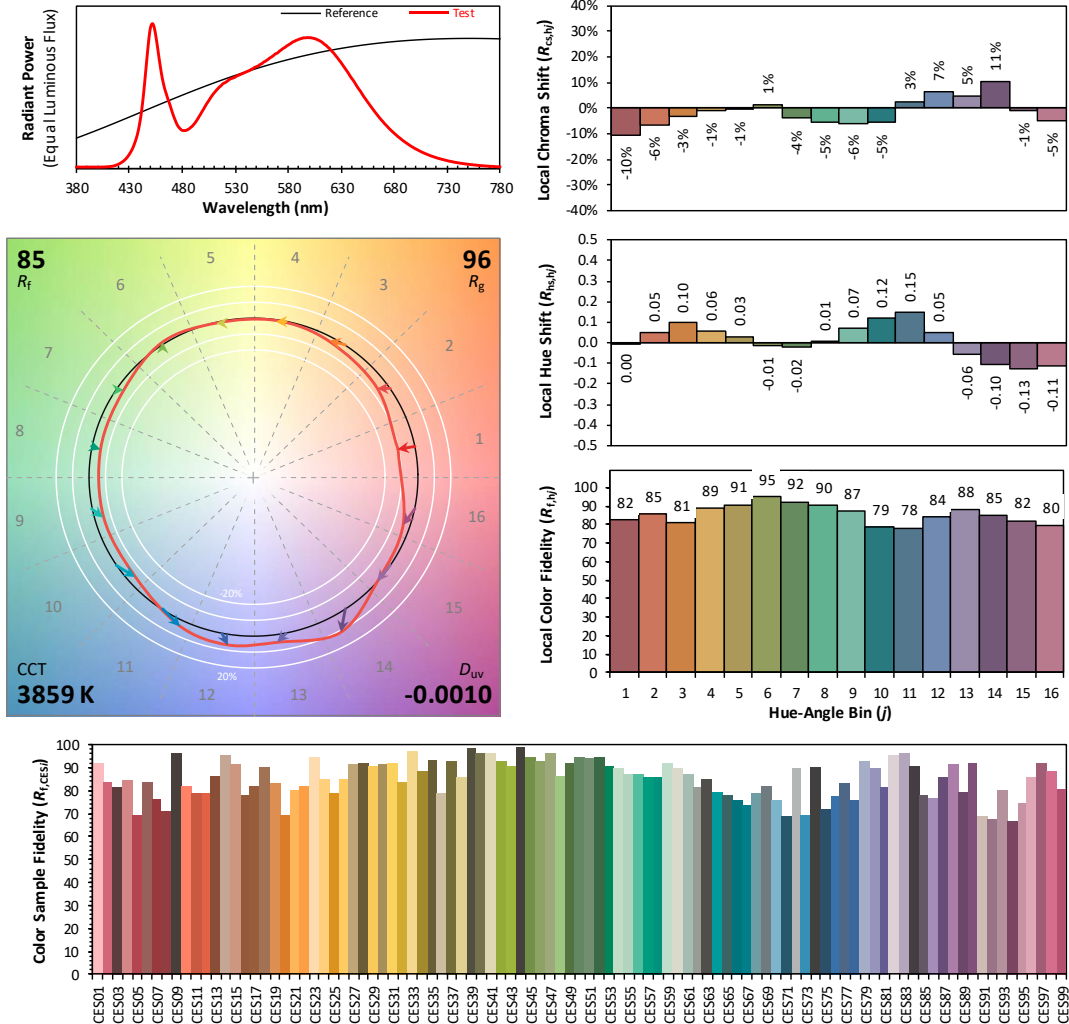
### IES TM-30-18 Color Rendition Report

Source: DLF2503101-5a

Manufacturer: RAB Lighting Inc.

Date: 2025/3/5

Model: ET @ 11W/4000K



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

$x$  0.3861  
 $y$  0.3781  
 $u'$  0.2283  
 $v'$  0.5030

CIE 13.3-1995  
(CRI)

$R_a$  86  
 $R_g$  26

#### 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	3.03E-04	485	6.94E-03	590	2.30E-02	695	4.12E-03
385	2.87E-04	490	7.70E-03	595	2.33E-02	700	3.55E-03
390	2.88E-04	495	9.00E-03	600	2.33E-02	705	3.06E-03
395	2.91E-04	500	1.06E-02	605	2.31E-02	710	2.63E-03
400	2.80E-04	505	1.21E-02	610	2.27E-02	715	2.26E-03
405	2.97E-04	510	1.35E-02	615	2.20E-02	720	1.94E-03
410	3.39E-04	515	1.45E-02	620	2.12E-02	725	1.68E-03
415	4.83E-04	520	1.53E-02	625	2.01E-02	730	1.43E-03
420	8.22E-04	525	1.59E-02	630	1.88E-02	735	1.23E-03
425	1.45E-03	530	1.63E-02	635	1.75E-02	740	1.05E-03
430	2.56E-03	535	1.68E-02	640	1.61E-02	745	9.13E-04
435	4.52E-03	540	1.72E-02	645	1.46E-02	750	7.81E-04
440	8.33E-03	545	1.77E-02	650	1.32E-02	755	6.76E-04
445	1.64E-02	550	1.82E-02	655	1.19E-02	760	5.80E-04
450	2.51E-02	555	1.87E-02	660	1.06E-02	765	4.99E-04
455	2.36E-02	560	1.93E-02	665	9.34E-03	770	4.30E-04
460	1.73E-02	565	2.00E-02	670	8.23E-03	775	3.73E-04
465	1.32E-02	570	2.06E-02	675	7.20E-03	780	3.24E-04
470	1.04E-02	575	2.14E-02	680	6.31E-03		
475	7.88E-03	580	2.20E-02	685	5.51E-03		
480	6.82E-03	585	2.26E-02	690	4.77E-03		



## 4.0 LM-79 Measurement and Test Results

### 4.2 Goniophotometer Test

Model No.	ET @ 11W/4000K	Sample ID.	DLF2503101-E1
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	277.08	60	0.041	10.4	0.911
NON-WORST CASE	120.06	60	0.083	9.9	0.996

#### Test Result

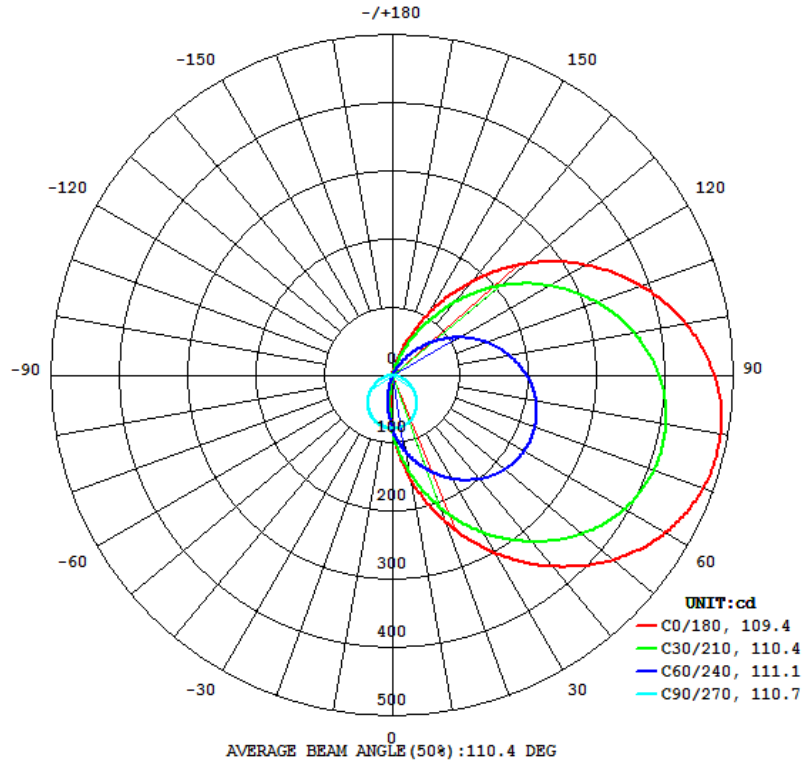
Result type	Flux (lm)	Field Angle(10%)		Beam Angle(50%)		Luminous Efficacy (lm/W)
		C0-180	C90-270	C0-180	C90-270	
0°-180° zones	1363	162.4	161.7	109.4	110.7	131.1
0°-90° zones	847	94.2	161.7	67.6	110.7	81.4

Zonal Lumen Requirement (80°-90°)	BUG rating
18.50%	B0-U3-G2

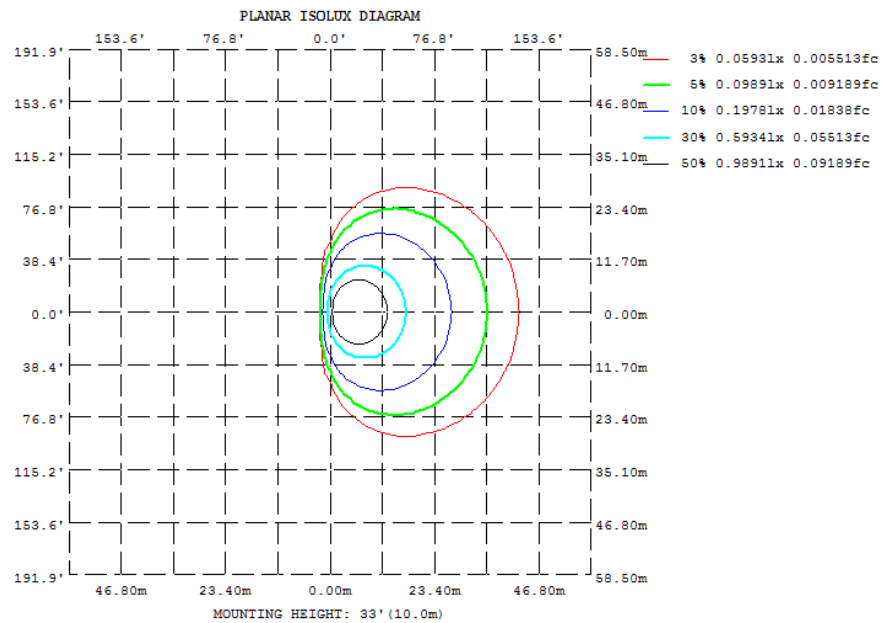


## 4.2 Goniophotometer Test

### Light Distrubtion Curve



### Isolux Plot



## 4.2 Goniophotometer Test

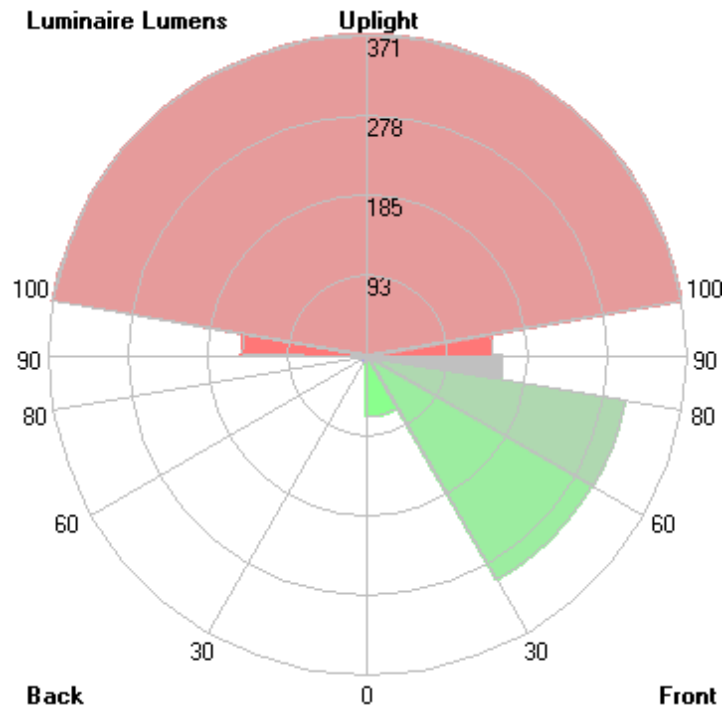
### Zonal Lumen Summary

γ	C0	C45	C90	C135	C180	C225	C270	C315
10	152.9	129.8	77.54	30.76	13.77	30.76	77.54	129.8
20	229.0	180.7	73.34	0.2473	0.2882	0.2473	73.34	180.7
30	301.5	226.6	66.39	0.2111	0.2705	0.2111	66.39	226.6
40	367.0	265.8	57.09	0.2170	0.2650	0.2170	57.09	265.8
50	421.5	295.9	45.97	0.2781	0.3170	0.2781	45.97	295.9
60	461.2	315.5	33.63	0.2809	0.3646	0.2809	33.63	315.5
70	484.2	323.5	20.84	0.2737	0.3494	0.2737	20.84	323.5
80	489.0	319.2	8.807	0.2685	0.2863	0.2685	8.807	319.2
90	472.1	303.7	1.166	0.2798	0.2985	0.2798	1.166	303.7
100	437.6	276.9	0.1067	0.3097	0.3662	0.3097	0.1067	276.9
110	387.8	240.6	0.1136	0.3138	0.4173	0.3138	0.1136	240.6
120	326.7	197.0	0.1257	0.3063	0.4259	0.3063	0.1257	197.0
130	256.4	148.2	0.1489	0.3025	0.4080	0.3025	0.1489	148.2
140	181.3	96.84	0.1805	0.2972	0.3818	0.2972	0.1805	96.84
150	105.8	46.14	0.1934	0.2569	0.3018	0.2569	0.1934	46.14
160	36.67	3.141	0.1982	0.2002	0.1858	0.2002	0.1982	3.141
170	0.0760	0.1581	0.1736	0.1368	0.0906	0.1368	0.1736	0.1581
180	0.0963	0.1415	0.1507	0.1330	0.0963	0.1330	0.1507	0.1415
DEG	LUMINOUS INTENSITY:cd							

	Zonal (lm)		Total (lm)	Percent
0-10	7.59	0 - 10	7.59	0.56%
10-20	24.29	0 - 20	31.88	2.34%
20-30	47.06	0 - 30	78.94	5.79%
30-40	74.40	0 - 40	153.34	11.25%
40-50	102.81	0 - 50	256.15	18.79%
50-60	128.65	0 - 60	384.80	28.23%
60-70	147.86	0 - 70	532.66	39.08%
70-80	157.65	0 - 80	690.31	50.64%
80-90	156.69	0 - 90	847.00	62.14%
90-100	145.53	0 - 100	992.53	72.81%
100-110	125.69	0 - 110	1118.22	82.03%
110-120	99.79	0 - 120	1218.01	89.35%
120-130	71.36	0 - 130	1289.37	94.59%
130-140	44.25	0 - 140	1333.62	97.83%
140-150	22.04	0 - 150	1355.66	99.45%
150-160	6.91	0 - 160	1362.57	99.96%
160-170	0.57	0 - 170	1363.14	100.00%
170-180	0.01	0 - 180	1363.15	100.00%

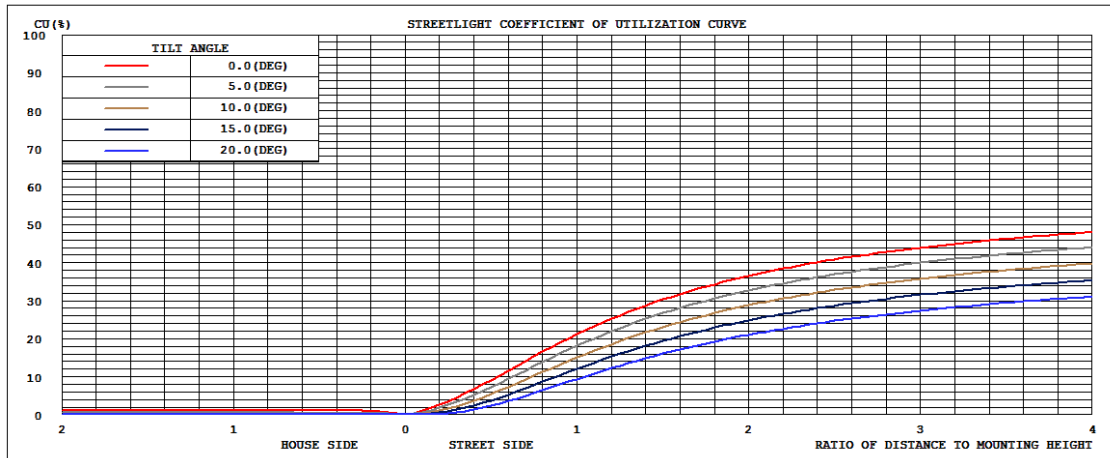
## 4.2 Goniophotometer Test

LCS/BUG

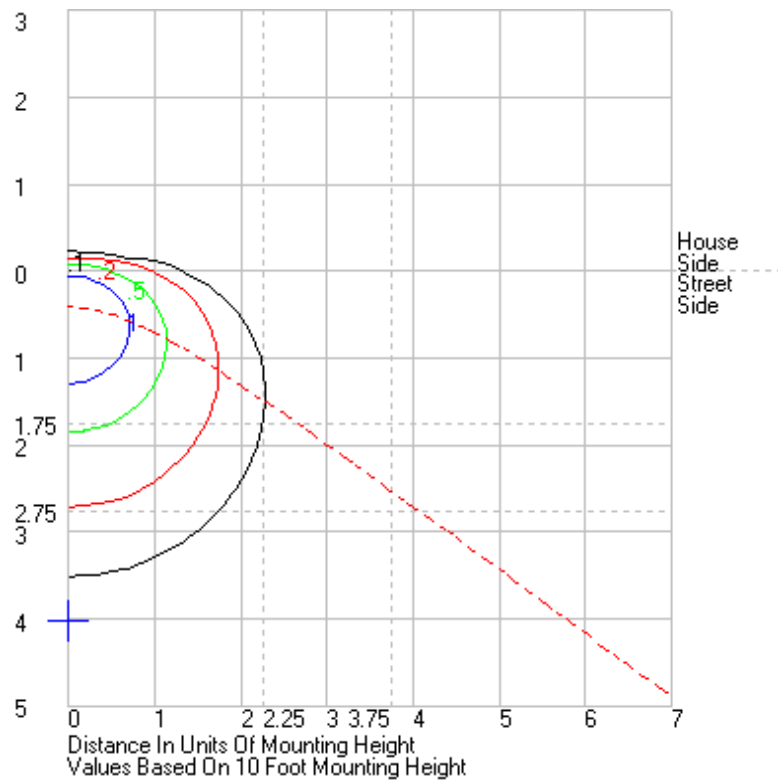


	Lumens	% Lamp	% Luminaire
FL - Front-Low (0-30)	70.9	N.A.	5.2
FM - Front-Medium (30-60)	300.3	N.A.	22.0
FH - Front-High (60-80)	303.5	N.A.	22.3
FVH - Front-Very High (80-90)	156.4	N.A.	11.5
BL - Back-Low (0-30)	8.0	N.A.	0.6
BM - Back-Medium (30-60)	5.6	N.A.	0.4
BH - Back-High (60-80)	2.0	N.A.	0.1
BVH - Back-Very High (80-90)	0.3	N.A.	0.0
UL - Uplight-Low (90-100)	145.5	N.A.	10.7
UH - Uplight-High (100-180)	370.6	N.A.	27.2
Total	1363.1	N.A.	100.0
BUG Rating	B0-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	78.556	78.556	78.556	78.556	78.556	78.556	78.556	78.556	78.556	78.556	78.556	78.556	78.556	78.556	78.556	78.556	78.556	78.556	78.556	78.556	78.556	78.556	78.556	78.556	78.556
1	85.386	85.163	84.567	83.658	82.286	80.663	78.897	76.988	75.222	73.566	72.287	71.407	71.147	71.407	72.287	73.566	75.222	76.988	78.897	80.663	82.286	83.658	84.567	85.163	85.386
2	92.636	92.102	90.852	88.781	85.876	82.46	78.904	75.129	71.644	68.616	66.222	64.607	64.173	64.607	66.222	68.616	71.644	75.129	78.904	82.46	85.876	88.781	90.852	92.102	92.636
3	99.99	99.19	97.132	93.84	89.375	84.317	78.862	73.301	68.111	63.678	60.652	58.08	57.529	58.08	60.652	63.678	68.111	73.301	78.862	84.317	89.375	93.84	97.132	99.19	99.99
4	107.32	106.36	103.44	98.929	92.957	86.058	78.728	71.33	64.511	58.915	54.632	51.634	50.673	51.634	54.632	58.915	64.511	71.33	78.728	86.058	92.957	98.929	103.44	106.36	107.32
5	114.85	113.5	109.85	104.08	96.577	87.843	78.578	69.461	61.457	54.094	48.609	45.277	44.148	45.277	48.609	54.094	61.457	69.461	78.578	87.843	96.577	104.08	109.85	113.5	114.85
6	122.35	120.61	116.23	109.19	100.05	89.461	78.469	67.5	57.819	49.248	42.959	38.986	37.717	38.986	42.959	49.248	57.819	67.5	78.469	89.461	100.05	109.19	116.23	120.61	122.35
7	129.89	128.02	122.74	114.44	103.69	91.244	78.206	65.518	54.148	44.537	37.3	32.821	31.382	32.821	37.3	44.537	54.148	65.518	78.206	91.244	103.69	114.44	122.74	128.02	129.89
8	137.55	135.33	129.22	119.6	107.17	92.902	78.001	63.612	50.659	39.89	31.841	26.848	25.256	26.848	31.841	39.89	50.659	63.612	78.001	92.902	107.17	119.6	129.22	135.33	137.55
9	145.23	142.78	135.7	124.69	110.57	94.499	77.84	61.623	47.211	35.299	26.434	20.982	19.42	20.982	26.434	35.299	47.211	61.623	77.84	94.499	110.57	124.69	135.7	142.78	145.23
10	152.91	150.12	142.35	129.78	114.08	96.043	77.539	59.635	43.792	30.759	21.18	15.45	13.77	15.45	21.18	30.759	43.792	59.635	77.539	96.043	114.08	129.78	142.35	150.12	152.91
11	160.7	157.65	148.93	135.08	117.6	97.674	77.192	57.717	40.385	26.288	16.103	10.027	8.137	10.027	16.103	26.288	40.385	57.717	77.192	97.674	117.6	135.08	148.93	157.65	160.7
12	168.43	164.94	155.39	140.26	121.01	99.255	76.898	55.661	37.059	21.944	11.165	5.645	3.985	5.645	11.165	21.944	37.059	55.661	76.898	99.255	121.01	140.26	155.39	164.94	168.43
13	175.88	172.16	161.81	145.42	124.41	100.72	76.574	53.663	33.708	17.714	6.769	2.557	1.37	2.557	6.769	17.714	33.708	53.663	76.574	100.72	124.41	145.42	161.81	172.16	175.88
14	183.56	179.65	168.31	150.65	127.68	102.19	76.165	51.644	30.373	13.593	3.758	0.523	0.273	0.523	3.758	13.593	30.373	51.644	76.165	102.19	127.68	150.65	168.31	179.65	183.56
15	191.35	186.86	174.79	155.63	130.99	103.67	75.763	49.653	27.134	9.665	1.339	0.186	0.26	0.186	1.339	9.665	27.134	49.653	75.763	103.67	130.99	155.63	174.79	186.86	191.35
16	198.76	194.17	181.21	160.73	134.44	105.01	75.355	47.635	23.915	6.319	0.278	0.188	0.267	0.188	0.278	6.319	23.915	47.635	75.355	105.01	134.44	160.73	181.21	194.17	198.76
17	206.61	201.63	187.42	165.75	137.65	106.41	74.86	45.624	20.691	3.724	0.211	0.192	0.273	0.192	0.211	3.724	20.691	45.624	74.86	106.41	137.65	165.75	187.42	201.63	206.61
18	214.11	208.55	193.89	170.77	140.82	107.8	74.407	43.553	17.579	1.692	0.214	0.195	0.278	0.195	0.214	1.692	17.579	43.553	74.407	107.8	140.82	170.77	193.89	208.55	214.11
19	221.56	216.08	200.21	175.49	144.17	108.95	73.862	41.542	14.463	0.537	0.217	0.198	0.283	0.198	0.217	0.537	14.463	41.542	73.862	108.95	144.17	175.49	200.21	216.08	221.56
20	228.99	223.16	206.52	180.67	147.37	110.35	73.339	39.495	11.483	0.247	0.22	0.201	0.288	0.201	0.22	0.247	11.483	39.495	73.339	110.35	147.37	180.67	206.52	223.16	228.99
21	236.47	230.47	212.94	185.41	150.49	111.61	72.743	37.467	8.648	0.245	0.221	0.203	0.292	0.203	0.221	0.245	8.648	37.467	72.743	111.61	150.49	185.41	212.94	230.47	236.47
22	243.76	237.54	218.83	190.1	153.65	112.72	72.152	35.435	6.36	0.243	0.221	0.204	0.294	0.204	0.221	0.243	6.36	35.435	72.152	112.72	153.65	190.1	218.83	237.54	243.76
23	251.35	244.38	225.2	194.84	156.51	113.85	71.466	33.374	4.376	0.24	0.219	0.204	0.293	0.204	0.219	0.24	4.376	33.374	71.466	113.85	156.51	194.84	225.2	244.38	251.35
24	258.54	251.54	231.3	199.68	159.62	115.02	70.883	31.311	2.716	0.236	0.217	0.204	0.291	0.204	0.217	0.236	2.716	31.311	70.883	115.02	159.62	199.68	231.3	251.54	258.54
25	265.57	258.43	237.34	204.2	162.49	116.11	70.202	29.298	1.481	0.231	0.214	0.203	0.29	0.203	0.214	0.231	1.481	29.298	70.202	116.11	162.49	204.2	237.34	258.43	265.57
26	273.15	265.29	243.41	208.74	165.4	117.05	69.432	27.243	0.652	0.227	0.211	0.202	0.286	0.202	0.211	0.227	0.652	27.243	69.432	117.05	165.4	208.74	243.41	265.29	273.15
27	280.5	272.16	249.03	213.34	168.22	118.01	68.757	25.183	0.304	0.222	0.208	0.2	0.283	0.2	0.208	0.222	0.304	25.183	68.757	118.01	168.22	213.34	249.03	272.16	280.5
28	287.36	278.8	255.02	217.93	170.73	119.02	67.979	23.175	0.233	0.218	0.205	0.199	0.278	0.199	0.205	0.218	0.233	23.175	67.979	119.02	170.73	217.93	255.02	278.8	287.36
29	294.11	285.95	260.88	222.26	173.71	119.87	67.159	21.142	0.228	0.214	0.202	0.197	0.273	0.197	0.202	0.214	0.228	21.142	67.159	119.87	173.71	222.26	260.88	285.95	294.11
30	301.47	292.25	266.48	226.63	176.27	120.83	66.39	19.168	0.225	0.211	0.201	0.197	0.271	0.197	0.201	0.211	0.225	19.168	66.39	120.83	176.27	226.63	266.48	292.25	301.47
31	308.46	298.94	272.32	230.64	178.85	121.53	65.577	17.174	0.223	0.21	0.201	0.199	0.269	0.199	0.201	0.21	0.223	17.174	65.577	121.53	178.85	230.64	272.32	298.94	308.46
32	314.98	305.19	277.63	235.14	181.29	122.36	64.705	15.223	0.221	0.21	0.202	0.201	0.268	0.201	0.202	0.21	0.221	15.223	64.705	122.36	181.29	235.14	277.63	305.19	314.98
33	322.05	311.89	283.36	239.23	183.86	123.01	63.832	13.285	0.221	0.21	0.203	0.204	0.267	0.204	0.203	0.21	0.221	13.285	63.832	123.01	183.86	239.23	283.36	311.89	322.05
34	328.43	318.03	288.59	243.15	186.19	123.65	62.959	11.436	0.219	0.21	0.204	0.206	0.264	0.206	0.204	0.21	0.219	11.436	62.959	123.65	186.19	243.15	288.59	318.03	328.43
35	334.92	324.24	293.95	246.93	188.55	124.23	62.03	9.689	0.218	0.21	0.206	0.209	0.263	0.209	0.206	0.21	0.218	9.689	62.03	124.23	188.55	246.93	293.95	324.24	334.92
36	342.08	330.82	299.14	250.88	190.75	124.81	61.061	8.112	0.217	0.21	0.208	0.212	0.263	0.212	0.208	0.21	0.217	8.112	61.061	124.81	190.75	250.88	299.14	330.82	342.08
37	348.15	336.72	304.28	254.81	192.88	125.34	60.129	6.687	0.216	0.211	0.211	0.216	0.262	0.216	0.211	0.211	0.216	6.687	60.129	125.34	192.88	254.81	304.28	336.72	348.15
38	354.61	342.82	309.26	258.41	195.15	125.88	59.084	5.374	0.216	0.212	0.214	0.221	0.262	0.221	0.214	0.212	0.216	5.374	59.084	125.88	195.15	258.41	309.26	342.82	354.61
39	360.38	348.36	314.27	262.05	197.03	126.3	58.128	4.223	0.217	0.214	0.219	0.226	0.263	0.226	0.219	0.214	0.217	4.223	58.128	126.3	197.03	262.05	314.27	348.36	360.38
40	366.96	354.36	319.33	265.84	199.12	126.69	57.088	3.206	0.217	0.217	0.223	0.233	0.265	0.233	0.223	0.217	0.217	3.206	57.088	126.69	199.12	265.84	319.33	354.36	366.96
41	372.63	360.19	323.95	268.87	201.11	126.93	56.041	2.33	0.218	0.22	0.229	0.24	0.267	0.24	0.229	0.22	0.218	2.33	56.041	126.93	201.11	268.87	323.95	360.19	372.63
42	378.3	365.59	328.79	272.51	202.87	127.33	54.975	1.616	0.22	0.224	0.235	0.248	0.271	0.248	0.235	0.224	0.22	1.616	54.975	127.33	202.87				

50	421.49	405.86	361.96	295.86	214.87	127.81	45.965	0.222	0.252	0.278	0.307	0.329	0.317	0.329	0.307	0.278	0.252	0.222	45.965	127.81	214.87	295.86	361.96	405.86	421.49
51	426.38	410.67	365.71	298.3	216.12	127.61	44.785	0.223	0.255	0.283	0.313	0.336	0.324	0.336	0.313	0.283	0.255	0.223	44.785	127.61	216.12	298.3	365.71	410.67	426.38
52	430.27	414.84	368.89	300.64	217.19	127.47	43.548	0.223	0.256	0.287	0.319	0.342	0.33	0.342	0.319	0.287	0.256	0.223	43.548	127.47	217.19	300.64	368.89	414.84	430.27
53	435.1	418.83	372.55	303.01	218.24	127.16	42.335	0.223	0.257	0.289	0.322	0.347	0.335	0.347	0.322	0.289	0.257	0.223	42.335	127.16	218.24	303.01	372.55	418.83	435.1
54	439.45	422.79	375.74	304.89	219.06	126.8	41.129	0.221	0.257	0.29	0.325	0.35	0.34	0.35	0.325	0.29	0.257	0.221	41.129	126.8	219.06	304.89	375.74	422.79	439.45
55	443.27	427.06	378.69	307.08	219.83	126.49	39.905	0.22	0.256	0.29	0.326	0.352	0.344	0.352	0.326	0.29	0.256	0.22	39.905	126.49	219.83	307.08	378.69	427.06	443.27
56	447.65	430.41	381.86	309.14	220.8	126.07	38.661	0.217	0.255	0.289	0.326	0.353	0.349	0.353	0.326	0.289	0.255	0.217	38.661	126.07	220.8	309.14	381.86	430.41	447.65
57	451.55	434.26	384.24	310.82	221.49	125.78	37.377	0.214	0.252	0.287	0.326	0.353	0.353	0.353	0.326	0.287	0.252	0.214	37.377	125.78	221.49	310.82	384.24	434.26	451.55
58	454.75	437.3	387.24	312.46	221.85	125.25	36.175	0.211	0.249	0.285	0.324	0.353	0.357	0.353	0.324	0.285	0.249	0.211	36.175	125.25	221.85	312.46	387.24	437.3	454.75
59	458.58	440.71	389.63	314.02	222.56	124.66	34.899	0.209	0.246	0.283	0.322	0.353	0.361	0.353	0.322	0.283	0.246	0.209	34.899	124.66	222.56	314.02	389.63	440.71	458.58
60	461.15	443.68	391.88	315.53	222.86	124.11	33.631	0.206	0.244	0.281	0.321	0.353	0.365	0.353	0.321	0.281	0.244	0.206	33.631	124.11	222.86	315.53	391.88	443.68	461.15
61	464.65	446.5	394.59	316.84	223.35	123.52	32.381	0.203	0.242	0.279	0.32	0.353	0.369	0.353	0.32	0.279	0.242	0.203	32.381	123.52	223.35	316.84	394.59	446.5	464.65
62	467.76	449.21	396.42	318.12	223.56	122.78	31.099	0.2	0.239	0.277	0.318	0.352	0.371	0.352	0.318	0.277	0.239	0.2	31.099	122.78	223.56	318.12	396.42	449.21	467.76
63	470.6	452.02	398.5	319.22	223.59	122.01	29.792	0.198	0.237	0.275	0.316	0.352	0.373	0.352	0.316	0.275	0.237	0.198	29.792	122.01	223.59	319.22	398.5	452.02	470.6
64	473.03	454.28	400.3	320.1	223.96	121.26	28.536	0.195	0.235	0.274	0.314	0.351	0.375	0.351	0.314	0.274	0.235	0.195	28.536	121.26	223.96	320.1	400.3	454.28	473.03
65	475.91	456.42	401.92	321.05	223.96	120.49	27.216	0.193	0.234	0.273	0.312	0.349	0.375	0.349	0.312	0.273	0.234	0.193	27.216	120.49	223.96	321.05	401.92	456.42	475.91
66	477.52	458.26	403.31	321.89	223.83	119.63	25.964	0.191	0.232	0.273	0.31	0.346	0.374	0.346	0.31	0.273	0.232	0.191	25.964	119.63	223.83	321.89	403.31	458.26	477.52
67	479.65	460.47	404.42	322.46	223.62	118.72	24.673	0.189	0.231	0.273	0.308	0.342	0.37	0.342	0.308	0.273	0.231	0.189	24.673	118.72	223.62	322.46	404.42	460.47	479.65
68	481.61	461.76	405.72	322.76	223.46	117.79	23.376	0.187	0.23	0.273	0.307	0.337	0.365	0.337	0.307	0.273	0.23	0.187	23.376	117.79	223.46	322.76	405.72	461.76	481.61
69	483.91	463.31	406.88	323.34	223.02	116.86	22.095	0.185	0.229	0.274	0.305	0.332	0.358	0.332	0.305	0.274	0.229	0.185	22.095	116.86	223.02	323.34	406.88	463.31	483.91
70	484.19	464.64	407.94	323.47	222.85	115.78	20.835	0.183	0.228	0.274	0.304	0.327	0.349	0.327	0.304	0.274	0.228	0.183	20.835	115.78	222.85	323.47	407.94	464.64	484.19
71	486.19	465.79	408.49	323.68	222.29	114.75	19.549	0.181	0.227	0.273	0.303	0.323	0.341	0.323	0.303	0.273	0.227	0.181	19.549	114.75	222.29	323.68	408.49	465.79	486.19
72	486.91	466.68	409.14	323.46	221.73	113.62	18.271	0.179	0.226	0.273	0.302	0.319	0.331	0.319	0.302	0.273	0.226	0.179	18.271	113.62	221.73	323.46	409.14	466.68	486.91
73	488.12	467.33	409.14	323.52	221.02	112.51	17.021	0.178	0.225	0.273	0.302	0.317	0.322	0.317	0.302	0.273	0.225	0.178	17.021	112.51	221.02	323.52	409.14	467.33	488.12
74	488.63	468.34	409.81	323.39	220.18	111.29	15.762	0.176	0.225	0.272	0.302	0.315	0.314	0.315	0.302	0.272	0.225	0.176	15.762	111.29	220.18	323.39	409.81	468.34	488.63
75	489.39	468.26	409.72	323.07	219.46	110.11	14.543	0.174	0.224	0.271	0.302	0.315	0.306	0.315	0.302	0.271	0.224	0.174	14.543	110.11	219.46	323.07	409.72	468.26	489.39
76	489.57	468.85	409.48	322.35	218.75	108.93	13.351	0.172	0.223	0.271	0.302	0.315	0.301	0.315	0.302	0.271	0.223	0.172	13.351	108.93	218.75	322.35	409.48	468.85	489.57
77	489.43	469.01	409.17	321.87	217.72	107.5	12.163	0.169	0.222	0.271	0.302	0.316	0.297	0.316	0.302	0.271	0.222	0.169	12.163	107.5	217.72	321.87	409.17	469.01	489.43
78	489.45	467.97	408.73	321.2	216.39	106.23	11.005	0.167	0.22	0.27	0.302	0.316	0.293	0.316	0.302	0.27	0.22	0.167	11.005	106.23	216.39	321.2	408.73	467.97	489.45
79	489.46	467.87	407.88	320.35	215.6	104.94	9.896	0.164	0.218	0.269	0.302	0.316	0.29	0.316	0.302	0.269	0.218	0.164	9.896	104.94	215.6	320.35	407.88	467.87	489.46
80	488.97	467.07	407.62	319.23	214.21	103.5	8.807	0.161	0.217	0.269	0.302	0.317	0.286	0.317	0.302	0.269	0.217	0.161	8.807	103.5	214.21	319.23	407.62	467.07	488.97
81	487.95	466.63	406.32	318.27	213.08	102.16	7.745	0.159	0.215	0.269	0.303	0.318	0.285	0.318	0.303	0.269	0.215	0.159	7.745	102.16	213.08	318.27	406.32	466.63	487.95
82	487.14	465.86	405.62	317.14	211.75	100.71	6.741	0.157	0.214	0.268	0.304	0.319	0.283	0.319	0.304	0.268	0.214	0.157	6.741	100.71	211.75	317.14	405.62	465.86	487.14
83	485.78	464.9	404.48	315.72	210.26	99.153	5.778	0.155	0.214	0.269	0.305	0.321	0.283	0.321	0.305	0.269	0.214	0.155	5.778	99.153	210.26	315.72	404.48	464.9	485.78
84	484.33	463.37	402.56	314.25	208.66	97.585	4.886	0.154	0.213	0.27	0.307	0.323	0.284	0.323	0.307	0.27	0.213	0.154	4.886	97.585	208.66	314.25	402.56	463.37	484.33
85	483.27	461.64	401.13	312.85	206.89	96.118	4.063	0.153	0.214	0.271	0.309	0.325	0.286	0.325	0.309	0.271	0.214	0.153	4.063	96.118	206.89	312.85	401.13	461.64	483.27
86	481	459.74	399.67	311.13	205.42	94.57	3.315	0.153	0.214	0.272	0.31	0.328	0.287	0.328	0.31	0.272	0.214	0.153	3.315	94.57	205.42	311.13	399.67	459.74	481
87	479.63	457.87	397.82	309.24	203.66	92.874	2.646	0.153	0.215	0.274	0.313	0.33	0.289	0.33	0.313	0.274	0.215	0.153	2.646	92.874	203.66	309.24	397.82	457.87	479.63
88	477.28	455.89	395.65	307.58	201.88	91.244	2.055	0.153	0.216	0.276	0.315	0.333	0.291	0.333	0.315	0.276	0.216	0.153	2.055	91.244	201.88	307.58	395.65	455.89	477.28
89	474.42	453.67	393.64	305.42	199.99	89.684	1.553	0.154	0.218	0.278	0.318	0.336	0.295	0.336	0.318	0.278	0.218	0.154	1.553	89.684	199.99	305.42	393.64	453.67	474.42
90	472.12	451.45	391.57	303.66	197.94	88.039	1.166	0.155	0.219	0.28	0.321	0.339	0.298	0.339	0.321	0.28	0.219	0.155	1.166	88.039	197.94	303.66	391.57	451.45	472.12
91	469.16	448.67	389.04	301.41	196.12	86.297	0.855	0.156	0.221	0.282	0.323	0.341	0.3	0.341	0.323	0.282	0.221	0.156	0.855	86.297	196.12	301.41	389.04	448.67	469.16
92	466.68	445.86	386.3	299.15	193.86	84.518	0.604	0.157	0.222	0.283	0.325	0.343	0.302	0.343	0.325	0.283	0.222	0.157	0.604	84.518	193.86	299.15	386.3	445.86	466.68
93	463.29	442.82	383.97	296.78	191.82	82.795	0.404	0.158	0.225	0.286	0.327	0.346	0.305	0.346	0.327	0.286	0.225	0.158	0.404	82.795	191.82	296.78	383.97	442.82	463.29
94	460.56	439.45	381.02	294.38	189.67	80.965	0.249	0.16	0.227	0.288	0.33	0.349													

104	418.73	400.28	345.01	263.22	164.33	62.366	0.109	0.171	0.245	0.314	0.365	0.394	0.392	0.394	0.365	0.314	0.245	0.171	0.109	62.366	164.33	263.22	345.01	400.28	418.73
105	413.84	395.44	341.4	259.68	161.36	60.457	0.11	0.172	0.246	0.315	0.366	0.395	0.396	0.395	0.366	0.315	0.246	0.172	0.11	60.457	161.36	259.68	341.4	395.44	413.84
106	409.14	390.76	336.69	255.9	158.39	58.446	0.111	0.172	0.246	0.315	0.366	0.396	0.4	0.396	0.366	0.315	0.246	0.172	0.111	58.446	158.39	255.9	336.69	390.76	409.14
107	404.06	385.82	332.12	252.19	155.54	56.507	0.112	0.172	0.245	0.314	0.364	0.391	0.405	0.391	0.364	0.314	0.245	0.172	0.112	56.507	155.54	252.19	332.12	385.82	404.06
108	398.7	380.6	327.39	248.39	152.44	54.519	0.112	0.171	0.243	0.313	0.364	0.391	0.41	0.391	0.364	0.313	0.243	0.171	0.112	54.519	152.44	248.39	327.39	380.6	398.7
109	393.33	375.12	323.13	244.69	149.48	52.552	0.113	0.171	0.243	0.313	0.364	0.393	0.413	0.393	0.364	0.313	0.243	0.171	0.113	52.552	149.48	244.69	323.13	375.12	393.33
110	387.78	370.16	318.42	240.55	146.41	50.566	0.114	0.172	0.244	0.314	0.365	0.393	0.417	0.393	0.365	0.314	0.244	0.172	0.114	50.566	146.41	240.55	318.42	370.16	387.78
111	382.27	364.73	313.51	236.32	143.35	48.595	0.115	0.173	0.245	0.315	0.367	0.394	0.42	0.394	0.367	0.315	0.245	0.173	0.115	48.595	143.35	236.32	313.51	364.73	382.27
112	376.78	358.8	308.3	232.37	139.98	46.638	0.116	0.174	0.246	0.316	0.368	0.397	0.423	0.397	0.368	0.316	0.246	0.174	0.116	46.638	139.98	232.37	308.3	358.8	376.78
113	370.9	353.14	303.33	228.26	136.81	44.61	0.117	0.175	0.246	0.315	0.367	0.395	0.425	0.395	0.367	0.315	0.246	0.175	0.117	44.61	136.81	228.26	303.33	353.14	370.9
114	364.62	347.74	298.32	223.68	133.59	42.582	0.118	0.175	0.246	0.315	0.365	0.394	0.426	0.394	0.365	0.315	0.246	0.175	0.118	42.582	133.59	223.68	298.32	347.74	364.62
115	358.63	341.48	293.11	219.47	130.3	40.627	0.119	0.176	0.246	0.314	0.364	0.392	0.427	0.392	0.364	0.314	0.246	0.176	0.119	40.627	130.3	219.47	293.11	341.48	358.63
116	352.36	335.74	287.66	215.14	126.9	38.591	0.12	0.176	0.244	0.31	0.359	0.387	0.427	0.387	0.359	0.31	0.244	0.176	0.12	38.591	126.9	215.14	287.66	335.74	352.36
117	345.87	329.66	282.23	210.74	123.7	36.618	0.121	0.177	0.244	0.309	0.357	0.384	0.428	0.384	0.357	0.309	0.244	0.177	0.121	36.618	123.7	210.74	282.23	329.66	345.87
118	339.48	323.36	276.72	206.27	120.35	34.628	0.123	0.178	0.244	0.308	0.355	0.381	0.428	0.381	0.355	0.308	0.244	0.178	0.123	34.628	120.35	206.27	276.72	323.36	339.48
119	332.81	317.34	271.16	201.62	117.01	32.619	0.124	0.178	0.243	0.307	0.353	0.379	0.427	0.379	0.353	0.307	0.243	0.178	0.124	32.619	117.01	201.62	271.16	317.34	332.81
120	326.66	310.9	265.62	197.03	113.65	30.591	0.126	0.18	0.243	0.306	0.352	0.377	0.426	0.377	0.352	0.306	0.243	0.18	0.126	30.591	113.65	197.03	265.62	310.9	326.66
121	320.43	304.35	259.96	192.18	110.05	28.636	0.127	0.181	0.244	0.306	0.351	0.376	0.425	0.376	0.351	0.306	0.244	0.181	0.127	28.636	110.05	192.18	259.96	304.35	320.43
122	313.11	297.83	254.18	187.67	106.69	26.659	0.129	0.183	0.245	0.306	0.35	0.374	0.425	0.374	0.35	0.306	0.245	0.183	0.129	26.659	106.69	187.67	254.18	297.83	313.11
123	306.31	291.63	248.23	182.85	103.24	24.667	0.131	0.184	0.246	0.306	0.349	0.373	0.424	0.373	0.349	0.306	0.246	0.184	0.131	24.667	103.24	182.85	248.23	291.63	306.31
124	299.53	284.96	242.37	178.03	99.736	22.741	0.133	0.185	0.247	0.305	0.348	0.371	0.424	0.371	0.348	0.305	0.247	0.185	0.133	22.741	99.736	178.03	242.37	284.96	299.53
125	292.29	278.32	236.42	173.07	96.218	20.754	0.135	0.187	0.247	0.305	0.347	0.369	0.422	0.369	0.347	0.305	0.247	0.187	0.135	20.754	96.218	173.07	236.42	278.32	292.29
126	285.03	271.35	230.34	168.08	92.778	18.818	0.138	0.189	0.248	0.305	0.345	0.367	0.419	0.367	0.345	0.305	0.248	0.189	0.138	18.818	92.778	168.08	230.34	271.35	285.03
127	277.97	264.55	224.15	163.1	89.263	16.896	0.14	0.191	0.249	0.304	0.343	0.364	0.416	0.364	0.343	0.304	0.249	0.191	0.14	16.896	89.263	163.1	224.15	264.55	277.97
128	271.01	257.53	218.21	158.21	85.723	15.013	0.143	0.194	0.25	0.304	0.341	0.361	0.412	0.361	0.341	0.304	0.25	0.194	0.143	15.013	85.723	158.21	218.21	257.53	271.01
129	263.7	250.7	212.07	153.18	82.183	13.186	0.146	0.196	0.251	0.303	0.34	0.358	0.41	0.358	0.34	0.303	0.251	0.196	0.146	13.186	82.183	153.18	212.07	250.7	263.7
130	256.4	243.43	205.77	148.17	78.662	11.421	0.149	0.199	0.252	0.302	0.337	0.355	0.408	0.355	0.337	0.302	0.252	0.199	0.149	11.421	78.662	148.17	205.77	243.43	256.4
131	249.25	236.79	199.65	143	75.214	9.725	0.152	0.201	0.253	0.302	0.335	0.353	0.406	0.353	0.335	0.302	0.253	0.201	0.152	9.725	75.214	143	199.65	236.79	249.25
132	241.62	229.55	193.09	137.73	71.663	8.153	0.156	0.204	0.254	0.301	0.332	0.351	0.404	0.351	0.332	0.301	0.254	0.204	0.156	8.153	71.663	137.73	193.09	229.55	241.62
133	234.24	222.31	186.96	132.87	68.127	6.724	0.159	0.207	0.256	0.299	0.329	0.348	0.402	0.348	0.329	0.299	0.256	0.207	0.159	6.724	68.127	132.87	186.96	222.31	234.24
134	227.02	215.2	180.5	127.67	64.713	5.39	0.163	0.21	0.257	0.297	0.328	0.345	0.4	0.345	0.328	0.297	0.257	0.21	0.163	5.39	64.713	127.67	180.5	215.2	227.02
135	219.2	207.88	174.12	122.45	61.454	4.206	0.166	0.213	0.258	0.296	0.328	0.343	0.397	0.343	0.328	0.296	0.258	0.213	0.166	4.206	61.454	122.45	174.12	207.88	219.2
136	211.79	200.65	167.82	117.43	57.825	3.137	0.17	0.215	0.259	0.297	0.329	0.34	0.395	0.34	0.329	0.297	0.259	0.215	0.17	3.137	57.825	117.43	167.82	200.65	211.79
137	204.26	193.44	161.27	112.33	54.273	2.196	0.173	0.218	0.259	0.298	0.328	0.337	0.393	0.337	0.328	0.298	0.259	0.218	0.173	2.196	54.273	112.33	161.27	193.44	204.26
138	196.69	186.11	154.96	107.01	50.78	1.397	0.177	0.22	0.261	0.298	0.326	0.333	0.39	0.333	0.326	0.298	0.261	0.22	0.177	1.397	50.78	107.01	154.96	186.11	196.69
139	189	178.72	148.49	101.91	47.288	0.783	0.178	0.221	0.261	0.298	0.323	0.329	0.386	0.329	0.323	0.298	0.261	0.221	0.178	0.783	47.288	101.91	148.49	178.72	189
140	181.32	171.41	141.76	96.843	43.887	0.418	0.181	0.222	0.261	0.297	0.32	0.324	0.382	0.324	0.32	0.297	0.261	0.222	0.181	0.418	43.887	96.843	141.76	171.41	181.32
141	173.85	164.02	135.08	91.658	40.47	0.183	0.183	0.223	0.26	0.295	0.315	0.318	0.376	0.318	0.315	0.295	0.26	0.223	0.183	0.183	40.47	91.658	135.08	164.02	173.85
142	166.07	156.77	128.57	86.485	37.021	0.144	0.184	0.223	0.26	0.292	0.31	0.313	0.369	0.313	0.31	0.292	0.26	0.223	0.184	0.144	37.021	86.485	128.57	156.77	166.07
143	158.58	149.34	122.16	81.382	33.636	0.146	0.186	0.224	0.26	0.289	0.305	0.306	0.363	0.306	0.305	0.289	0.26	0.224	0.186	0.146	33.636	81.382	122.16	149.34	158.58
144	150.96	141.9	115.57	76.243	30.205	0.148	0.188	0.224	0.259	0.285	0.299	0.299	0.356	0.299	0.299	0.285	0.259	0.224	0.188	0.148	30.205	76.243	115.57	141.9	150.96
145	143.23	134.45	109.05	71.187	26.819	0.15	0.189	0.224	0.256	0.281	0.293	0.292	0.348	0.292	0.293	0.281	0.256	0.224	0.189	0.15	26.819	71.187	109.05	134.45	143.23
146	135.48	127.05	102.66	66.071	23.4	0.152	0.19	0.223	0.253	0.276	0.286	0.284	0.338	0.284	0.286	0.276	0.253	0.223	0.19	0.152	23.4	66.071	102.66	127.05	135.48
147	128.24	119.91	96.261	61.367	20.067	0.154	0.191	0.222	0.25	0.27	0.278	0.275	0.327	0.275	0.278	0.27	0.25	0.222	0.191	0.154	20.067	61.367	96.261	119.91	128.24
148	120.63	112.68	89.807	56.216	16.825	0.156	0.191	0.221	0.247	0.265	0.271	0.267	0.316	0.267	0.271	0.265	0.247	0.221	0.191	0.156					



158	49.768	43.352	28.871	9.082	0.156	0.183	0.203	0.215	0.221	0.218	0.208	0.193	0.214	0.193	0.208	0.218	0.221	0.215	0.203	0.183	0.156	9.082	28.871	43.352	49.768
159	43.035	36.976	23.304	5.757	0.158	0.183	0.201	0.211	0.214	0.209	0.199	0.183	0.201	0.183	0.199	0.209	0.214	0.211	0.201	0.183	0.158	5.757	23.304	36.976	43.035
160	36.669	30.753	18.088	3.141	0.159	0.183	0.198	0.206	0.207	0.2	0.188	0.173	0.186	0.173	0.188	0.2	0.207	0.206	0.198	0.183	0.159	3.141	18.088	30.753	36.669
161	30.345	24.654	13.008	1.482	0.161	0.182	0.195	0.2	0.198	0.191	0.177	0.162	0.17	0.162	0.177	0.191	0.198	0.2	0.195	0.182	0.161	1.482	13.008	24.654	30.345
162	24.213	18.924	8.424	0.468	0.164	0.182	0.193	0.196	0.193	0.183	0.169	0.154	0.159	0.154	0.169	0.183	0.193	0.196	0.193	0.182	0.164	0.468	8.424	18.924	24.213
163	18.274	13.416	4.703	0.15	0.165	0.182	0.191	0.192	0.187	0.176	0.161	0.145	0.148	0.145	0.161	0.176	0.187	0.192	0.191	0.182	0.165	0.15	4.703	13.416	18.274
164	12.794	8.407	2.213	0.146	0.167	0.182	0.189	0.188	0.181	0.169	0.153	0.137	0.138	0.137	0.153	0.169	0.181	0.188	0.189	0.182	0.167	0.146	2.213	8.407	12.794
165	7.965	4.356	0.597	0.149	0.168	0.181	0.186	0.183	0.175	0.162	0.146	0.13	0.128	0.13	0.146	0.162	0.175	0.183	0.186	0.181	0.168	0.149	0.597	4.356	7.965
166	4.416	1.774	0.14	0.151	0.169	0.181	0.184	0.18	0.17	0.156	0.139	0.124	0.119	0.124	0.139	0.156	0.17	0.18	0.184	0.181	0.169	0.151	0.14	1.774	4.416
167	1.632	0.219	0.133	0.154	0.17	0.18	0.182	0.176	0.166	0.151	0.134	0.119	0.111	0.119	0.134	0.151	0.166	0.176	0.182	0.18	0.17	0.154	0.133	0.219	1.632
168	0.079	0.115	0.136	0.156	0.17	0.179	0.179	0.172	0.161	0.146	0.129	0.114	0.104	0.114	0.129	0.146	0.161	0.172	0.179	0.179	0.17	0.156	0.136	0.115	0.079
169	0.073	0.119	0.139	0.157	0.17	0.177	0.176	0.169	0.156	0.14	0.123	0.109	0.097	0.109	0.123	0.14	0.156	0.169	0.176	0.177	0.17	0.157	0.139	0.119	0.073
170	0.076	0.122	0.141	0.158	0.17	0.176	0.174	0.165	0.153	0.137	0.119	0.105	0.091	0.105	0.119	0.137	0.153	0.165	0.174	0.176	0.17	0.158	0.141	0.122	0.076
171	0.079	0.126	0.144	0.16	0.172	0.178	0.175	0.167	0.154	0.137	0.12	0.106	0.091	0.106	0.12	0.137	0.154	0.167	0.175	0.178	0.172	0.16	0.144	0.126	0.079
172	0.083	0.129	0.148	0.164	0.176	0.182	0.18	0.172	0.159	0.141	0.124	0.109	0.096	0.109	0.124	0.141	0.159	0.172	0.18	0.182	0.176	0.164	0.148	0.129	0.083
173	0.086	0.131	0.15	0.166	0.177	0.183	0.182	0.174	0.161	0.144	0.126	0.111	0.096	0.111	0.126	0.144	0.161	0.174	0.182	0.183	0.177	0.166	0.15	0.131	0.086
174	0.089	0.133	0.151	0.167	0.178	0.184	0.183	0.176	0.164	0.147	0.13	0.115	0.096	0.115	0.13	0.147	0.164	0.176	0.183	0.184	0.178	0.167	0.151	0.133	0.089
175	0.092	0.133	0.15	0.165	0.176	0.182	0.182	0.175	0.164	0.149	0.132	0.118	0.096	0.118	0.132	0.149	0.164	0.175	0.182	0.182	0.176	0.165	0.15	0.133	0.092
176	0.094	0.134	0.148	0.161	0.171	0.176	0.176	0.17	0.16	0.146	0.131	0.119	0.096	0.119	0.131	0.146	0.16	0.17	0.176	0.176	0.171	0.161	0.148	0.134	0.094
177	0.095	0.132	0.144	0.156	0.164	0.169	0.168	0.163	0.154	0.142	0.128	0.118	0.096	0.118	0.128	0.142	0.154	0.163	0.168	0.169	0.164	0.156	0.144	0.132	0.095
178	0.096	0.129	0.14	0.15	0.157	0.161	0.16	0.156	0.148	0.138	0.126	0.118	0.096	0.118	0.126	0.138	0.148	0.156	0.16	0.161	0.157	0.15	0.14	0.129	0.096
179	0.097	0.126	0.134	0.142	0.149	0.153	0.152	0.149	0.142	0.133	0.124	0.118	0.095	0.118	0.124	0.133	0.142	0.149	0.152	0.153	0.149	0.142	0.134	0.126	0.097
180	0.096	0.096	0.096	0.096	0.096	0.096	0.096	0.096	0.096	0.096	0.096	0.096	0.096	0.096	0.096	0.096	0.096	0.096	0.096	0.096	0.096	0.096	0.096	0.096	0.096

## 4.0 LM-79 Measurement and Test Results

### 4.3 THD and PF Test

Model No.	ET @ 11W/4000K	Sample ID.	DLF2503101-E1
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
120.04	60	0.084	10.0	0.996	4.79%
277.01	60	0.042	10.5	0.911	16.23%

## 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\*\*\*\*\*