



Photometric Test Report

Relevant Standards

- IES LM-79-2008
- ANSI C82.77:2017

Prepared For RAB Lighting Inc.

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2021/11/26

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1.0 Test Summary

DLC Technical Requirements v5.1

Outdoor - Pole/Arm-Mounted Area and Roadway Luminaires				
Requirement Category	Test Method	Requirements	Test value	
Luminaire Output (lm) (Goniophotometer - Section 4.2)	IES LM-79-2008	1000	48553	
Minimum Luminaire Efficacy (lm/W) (Goniophotometer - Section 4.2)	IES LM-79-2008	Standard 105	Premium 120	135.1
Power (Input Wattage) (W) (Goniophotometer - Section 4.2)	IES LM-79-2008	Worst Case	359.3	
Total Harmonic Distortion (A%) (THD & PF - section 4.3)	ANSI C82.77:2014	20.00%	4.87%	
Power Factor (THD & PF - section 4.3)	ANSI C82.77:2014	0.9	0.934	
Allowable CCTs* (K) (Integrating Sphere - Section 4.1)	IES LM-79-2008	7 step	3985±275	3920
		4 step	3985±154	
Minimum CRI (Integrating Sphere - Section 4.1)	IES LM-79-2008 CIE 13.3-1995	≥70	83	
Minimum R9 (Integrating Sphere - Section 4.1)	IES LM-79-2008 CIE 13.3-1995	≥-40	6	
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	95	
IES Rcs,h1 (Integrating Sphere - Section 4.1)	ANSI/IES TM-30-18	-18% ≤ IES Rcs,h1 ≤ +23%	-12%	
Zonal Lumen Requirement (0°-90°) (Goniophotometer - Section 4.2)	IES LM-79-2008	100%	100.00%	
Zonal Lumen Requirement (80°-90°) (Goniophotometer - Section 4.2)	IES LM-79-2008	≤10%	0.23%	
Input Voltage (V) (Goniophotometer - Section 4.2)	IES LM-79-2008	Worst Case	480	
Input Current (A) (Goniophotometer - Section 4.2)	IES LM-79-2008	Worst Case	0.803	

2.0 Test List

Test Item	Test	Test Date	Model Number	Sample No.
1	Integrating Sphere Test	2021/11/26	ALEDXL2TN/480	V1
2	Goniophotometer Test	2021/11/26	ALEDXL2TN/480	V1
3	THD and PF Test	2021/11/26	ALEDXL2TN/480	V1

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.

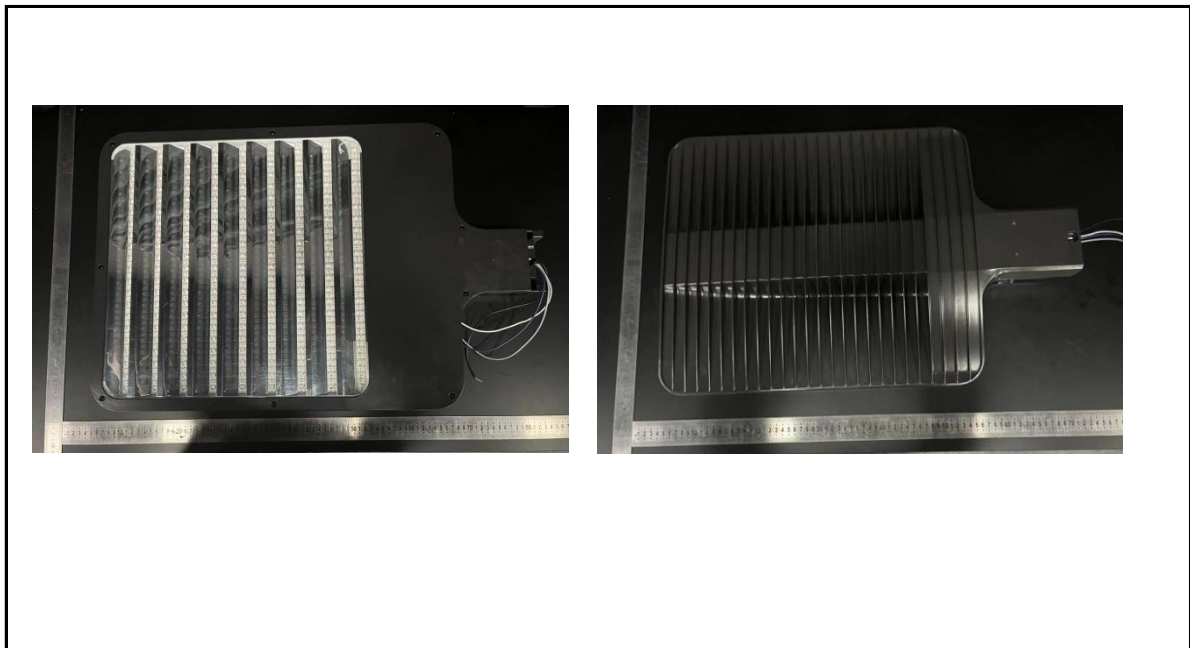
3.0 Production Description

Luminaire Description: ALEDXL2TN/480

Description: 385W/50,000 lm @ 4000K

Electrical Specification: 480V,50/60HZ

Photos of Luminaire Characteristics



4.0 LM-79 Measurement and Test Results

4.1 Integrating Sphere Test

Model No.	ALEDXL2TN/480	Sample ID.	V1
Operate time (Min.)	90	Stabilization time (Min.)	45
Temperature (°C)	25.3	Humidity (%RH)	56.0

Test Method

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

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

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

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

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

Test Result

Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor
480.02	60	0.804	360.6	0.934

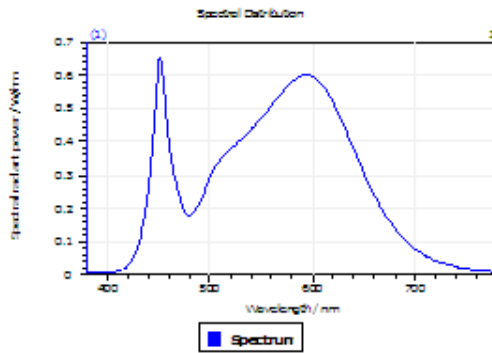
Test Result

CCT (K)	CRI	R9	Duv
3920	83	6	0.00024

Rf	Rg	IES Rcs,h1
84	95	-12%

4.1 Integrating Sphere Test

Results



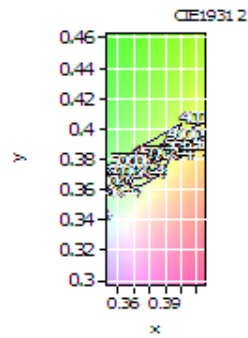
Spectral values

DominantWavelength	579.25 nm
Purity	0.292
PeakWavelength	451.58 nm
Radiant Power	103.8 W
Width50%	21.04 nm

Color Coordinates

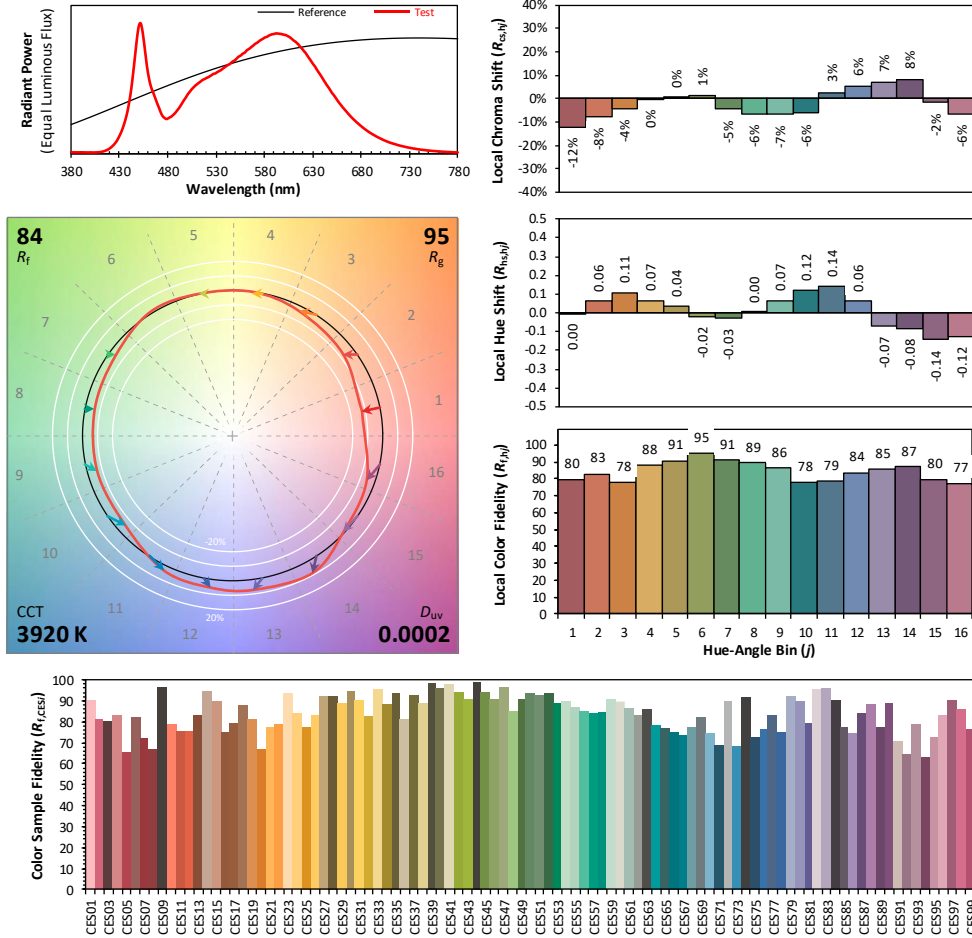
Correlated Color Temperat 3920 K
 x: 0.3842 u: 0.2265 u': 0.2265
 y: 0.3798 v: 0.3356 v': 0.5034

ResultsCRICRI01	80.6	ResultsCRICRI09	6.1
ResultsCRICRI02	89.7	ResultsCRICRI10	76.0
ResultsCRICRI03	95.5	ResultsCRICRI11	79.8
ResultsCRICRI04	80.9	ResultsCRICRI12	63.9
ResultsCRICRI05	81.3	ResultsCRICRI13	82.9
ResultsCRICRI06	86.2	ResultsCRICRI14	97.9
ResultsCRICRI07	84.9	ResultsCRICRI15	74.1
ResultsCRICRI08	62.6	ResultsCRICRI16	71.7
ResultsCRI	82.7		



PlanckDistance 2.4E-004

4.1 Integrating Sphere Test



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

x **0.3842**
 y **0.3796**
 u' **0.2265**
 v' **0.5034**

CIE 13.3-1995 (CRI)	
R_a	83
R_g	7

Colors are for visual orientation purposes only. Created with the ANSI/IES TM-30-18 Calculator Version 2.0

4.0 LM-79 Measurement and Test Results

4.2 Goniophotometer Test

Model No.	ALEDXL2TN/480	Sample ID.	V1
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° C ± 1° 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	479.96	60	0.803	359.3	0.932

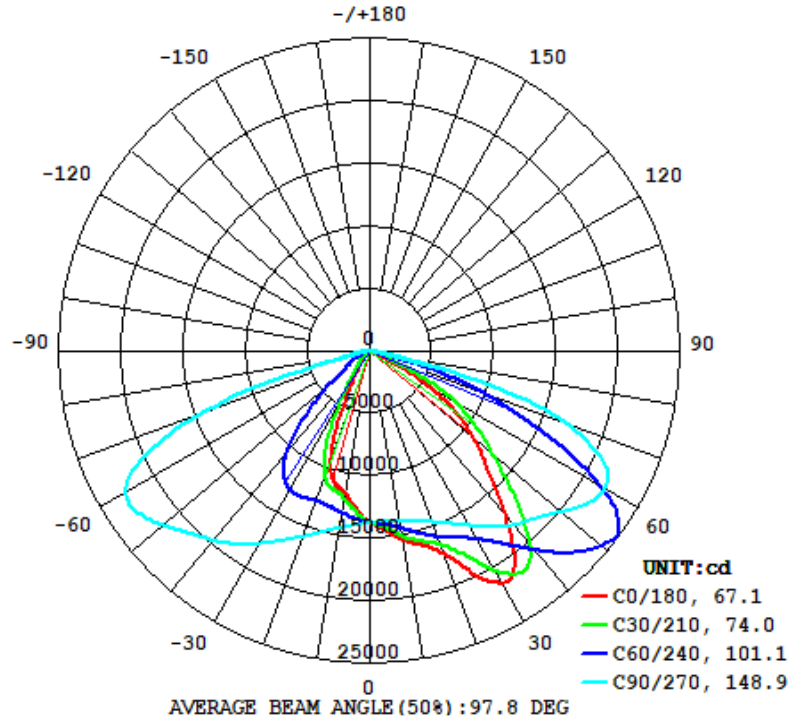
Test Result

Flux (lm)	Field Angle(10%)		Beam Angle(50%)		Luminous Efficacy (lm/W)
	C0-180	C90-270	C0-180	C90-270	
48553	95.8	157.6	67.1	148.9	135.1

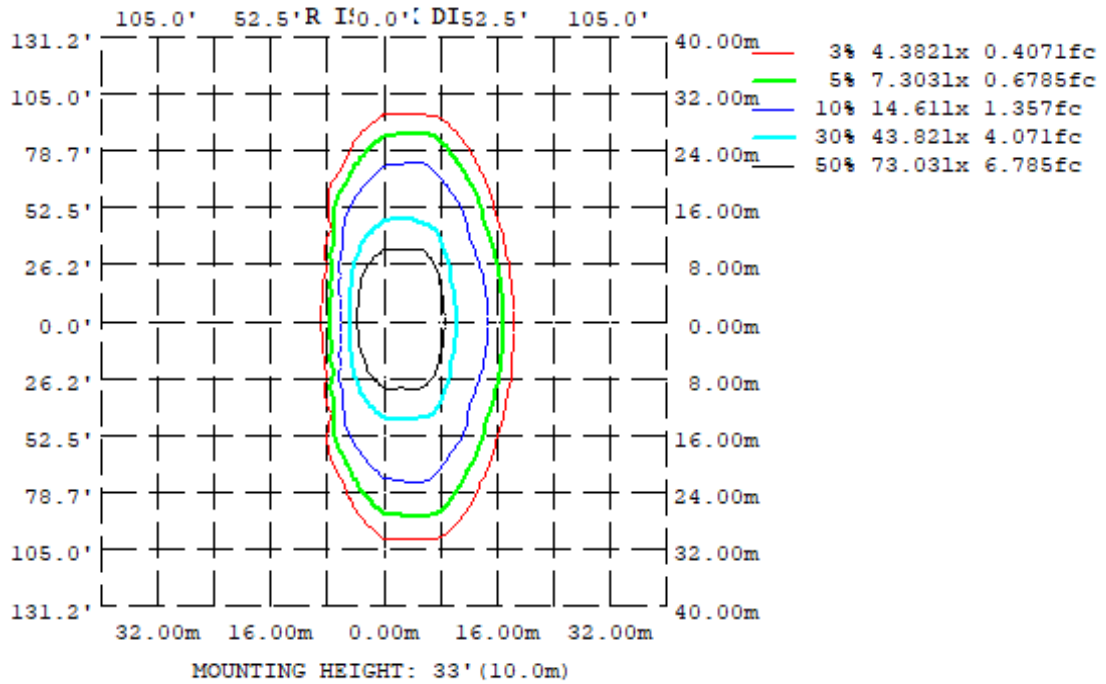
Zonal Lumen Requirement (0°-90°)	Zonal Lumen Requirement (80°-90°)	BUG rating
100.00%	0.23%	B4-U0-G3

4.2 Goniophotometer Test

Light Distribution Curve



Isolux Plot



4.2 Goniophotometer Test

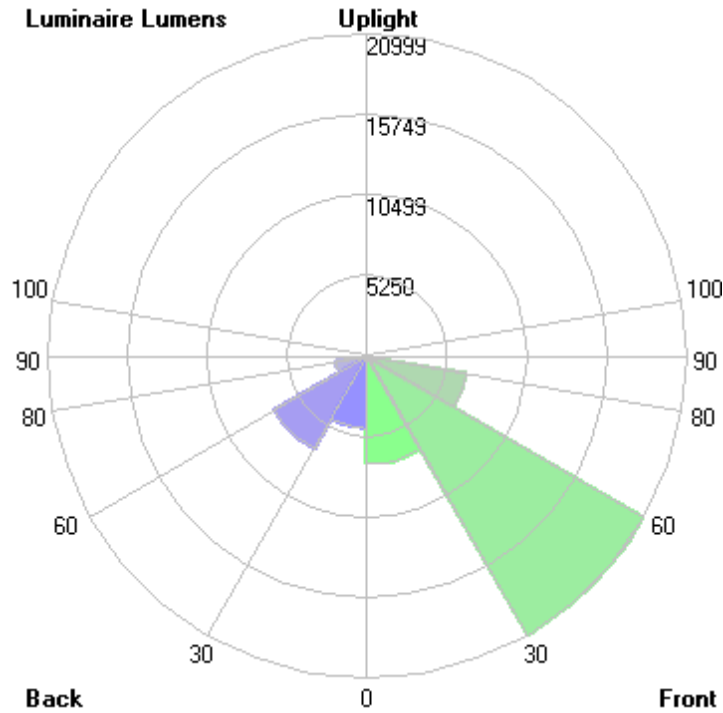
Zonal Lumen Summary

γ	C0	C45	C90	C135	C180	C225	C270	C315
10	1536	1475	1383	1207	1159	1253	1439	1506
20	1719	1611	1457	1110	922.7	1179	1578	1677
30	2143	1859	1616	842.0	283.9	910.1	1780	1985
40	1696	2249	1817	342.0	114.0	361.2	1981	2398
50	1117	1920	2006	131.6	30.68	137.6	2176	1992
60	496.3	1057	2191	41.30	12.99	38.30	2264	1062
70	47.90	286.1	1670	17.01	9.539	15.60	1408	217.8
80	11.64	23.65	124.2	4.921	1.828	3.532	68.80	21.92
90	0	0	0	0	0	0	0	0
100	0	0	0	0	0	0	0	0
110	0	0	0	0	0	0	0	0
120	0	0	0	0	0	0	0	0
130	0	0	0	0	0	0	0	0
140	0	0	0	0	0	0	0	0
150	0	0	0	0	0	0	0	0
160	0	0	0	0	0	0	0	0
170	0	0	0	0	0	0	0	0
180	0	0	0	0	0	0	0	0
DEG	LUMINOUS INTENSITY: *10cd							

	Zonal (lm)		Total (lm)	Percent
0-10	1303.87	0 - 10	1303.87	2.69%
10-20	3931.44	0 - 20	5235.31	10.78%
20-30	6524.48	0 - 30	11759.79	24.22%
30-40	8794.14	0 - 40	20553.93	42.33%
40-50	9768.15	0 - 50	30322.08	62.45%
50-60	9446.41	0 - 60	39768.49	81.91%
60-70	6721.79	0 - 70	46490.28	95.75%
70-80	1949.84	0 - 80	48440.12	99.77%
80-90	112.44	0 - 90	48552.56	100.00%
90-100	0.00	0 - 100	48552.56	100.00%
100-110	0.00	0 - 110	48552.56	100.00%
110-120	0.00	0 - 120	48552.56	100.00%
120-130	0.00	0 - 130	48552.56	100.00%
130-140	0.00	0 - 140	48552.56	100.00%
140-150	0.00	0 - 150	48552.56	100.00%
150-160	0.00	0 - 160	48552.56	100.00%
160-170	0.00	0 - 170	48552.56	100.00%
170-180	0.00	0 - 180	48552.56	100.00%

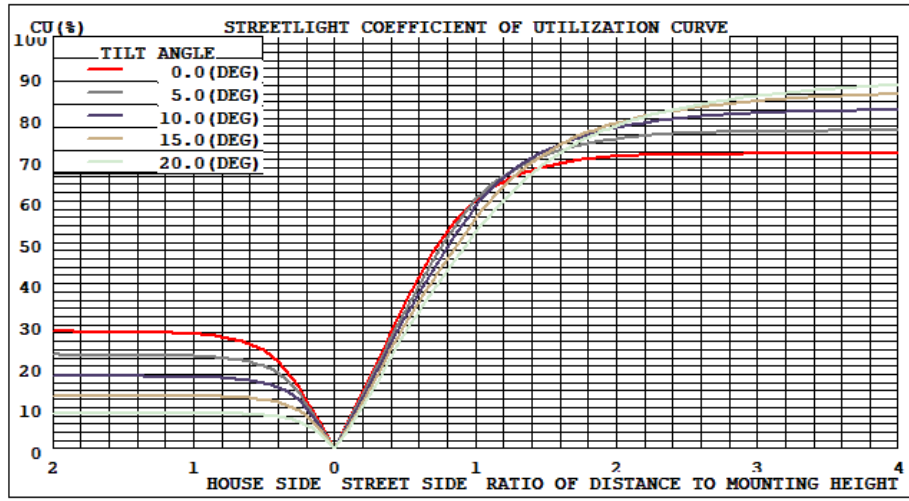
4.2 Goniophotometer Test

LCS/BUG

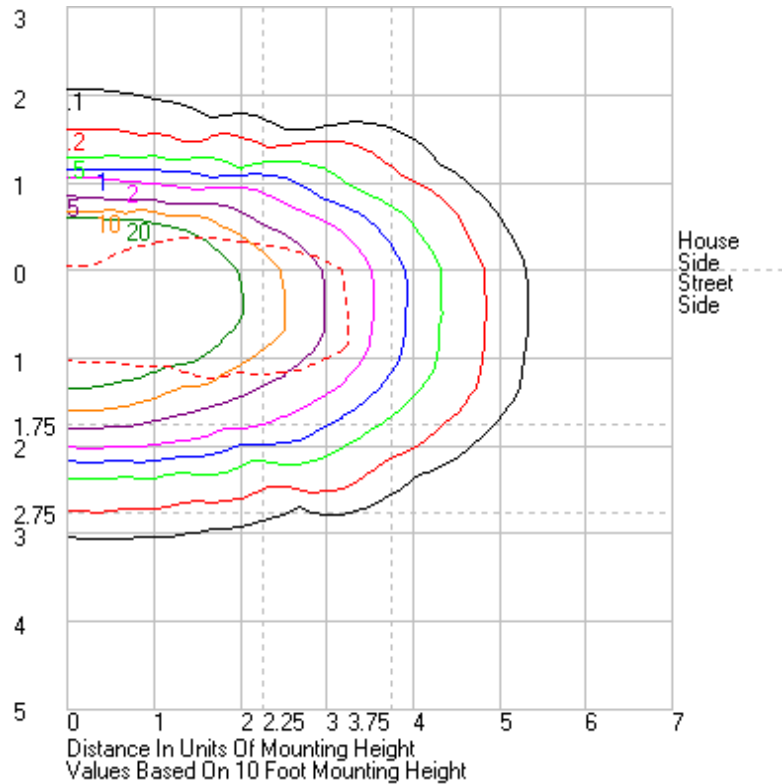


	Lumens	% Lamp	% Luminaire
FL - Front-Low (0-30)	7046.7	N.A.	14.5
FM - Front-Medium (30-60)	20998.5	N.A.	43.2
FH - Front-High (60-80)	6602.4	N.A.	13.6
FVH - Front-Very High (80-90)	83.0	N.A.	0.2
BL - Back-Low (0-30)	4713.1	N.A.	9.7
BM - Back-Medium (30-60)	7010.2	N.A.	14.4
BH - Back-High (60-80)	2069.2	N.A.	4.3
BVH - Back-Very High (80-90)	29.5	N.A.	0.1
UL - Uplight-Low (90-100)	0.0	N.A.	0.0
UH - Uplight-High (100-180)	0.0	N.A.	0.0
Total	48552.6	N.A.	100.0
BUG Rating	B4-U0-G3		

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	13765.4	13765.4	13765.4	13765.4	13765.4	13765.4	13765.4	13765.4	13765.4	13765.4	13765.4	13765.4	13765.4	13765.4	13765.4	13765.4	13765.4	13765.4	13765.4	13765.4	13765.4	13765.4	13765.4	13765.4	13765.4	
1	13903.4	13882.1	13856.4	13830.3	13796.5	13765.2	13736.6	13701	13665.3	13629.9	13603.9	13583.4	13660	13661.2	13700.2	13719.9	13739.7	13763.1	13788.1	13803.7	13814.8	13824	13827.8	13824.7	13803.4	13903.1
2	14003.1	13975.6	13938.6	13890	13832.1	13772	13720.6	13651.5	13570.1	13489.3	13418.5	13377.2	13465	13485.6	13537.3	13622.1	13695.7	13763.2	13823.8	13862	13896	13921.6	13936.8	13938	14003.4	14003.1
3	14083.3	14046.6	14006.3	13952.6	13873.1	13785.3	13707.1	13599.8	13460.8	13313.3	13196.2	13128.2	13269.9	13309.5	13374.5	13506.3	13639.4	13767.6	13869.8	13927.4	13987.2	14023.9	14035.3	14024.8	14083.3	14083.3
4	14194	14141.8	14072.5	14002.4	13922	13807.8	13708.8	13548.8	13338.6	13125.2	12970.8	12878.1	13013.7	13075.9	13206.3	13390.5	13575.9	13770.1	13916.8	14000.7	14080.8	14114	14120.4	14129.9	14194	14194
5	14371.9	14301.7	14192.1	14063.9	13968.6	13840.7	13710.5	13501.5	13208.4	12941.6	12738.5	12618	12749.6	12749.6	12824.8	12996.9	13247.8	13521.4	13779	13975.3	14084.3	14170.5	14206	14268.3	14306.7	14371.9
6	14544.5	14472.7	14351.3	14168.8	14019.7	13885.5	13718.1	13454	13080.5	12752.2	12507.5	12376.4	12498.2	12588.6	12779.7	13093.3	13466.4	13785.6	14042.1	14180.7	14262.1	14351.4	14451.5	14483.5	14544.5	14544.5
7	14755.1	14658.5	14501.5	14306.8	14077.9	13927.9	13733.5	13406.2	12959.6	12566.4	12299.2	12143	12253.9	12357.9	12592.4	12938.7	13390.4	13792.6	14119.6	14283.2	14368.3	14522.1	14623.4	14680.7	14755.1	14755.1
8	14960.9	14864.8	14684.4	14447	14161.8	13978.1	13753.9	13361	12840.9	12395	12089.5	11920.8	12021.2	12138.2	12405.7	12797.8	13314.4	13801.6	14202.2	14392.5	14505.8	14692.5	14822.6	14894.3	14960.9	14960.9
9	15152.6	15050.8	14874.5	14585.8	14272.8	14036.1	13785.3	13317	12716.9	12228	11889.3	11700.7	11796	11926	12219.3	12664	13239.9	13815	14292.2	14507.2	14669.4	14865.7	15025.8	15085.9	15152.6	15152.6
10	15359.2	15240.2	15044	14752.3	14396.8	14096.8	13825.5	13278.7	12600.8	12070.3	11699.2	11493.3	11587.6	11722.7	12041.6	12534.1	13163.8	13832.8	14386.8	14620.7	14840	15063.7	15218	15284	15359.2	15359.2
11	15535.4	15431.3	15218.6	14919.3	14521.9	14165.9	13870.3	13246.7	12501.9	11911.4	11511.1	11338.9	11450	11563.8	11869.8	12408.2	13101.8	13856	14494	14745.1	15009.5	15263.5	15409.9	15479.6	15535.4	15535.4
12	15643.6	15550.8	15395.6	15078	14648	14240.5	13922.4	13220.1	12403.7	11764.7	11360.2	11239.1	11352.1	11465.2	11730.6	12290.2	13053.3	13887	14604.1	14875.6	15178.6	15452.4	15604.2	15601	15643.6	15643.6
13	15790.9	15659.5	15513.9	15228.5	14787.4	14322.6	13980.2	13197.2	12310	11617.9	11268	11156.9	11271.9	11385.9	11644.9	12172.1	13001.1	13918.5	14725.2	15018.5	15373.4	15636.3	15740.3	15721.7	15790.9	15790.9
14	15948.1	15830.3	15615.7	15395.7	14936.7	14420.2	14041.6	13179	12221.6	11487.4	11186.1	11073.7	11163.3	11303.8	11577.6	12063.1	12952.9	13956.4	14855.4	15183.6	15575.9	15834.9	15858	15898.4	15948.1	15948.1
15	16094	15960.1	15755.5	15541.6	15091.4	14523.5	14110.1	13165.7	12131.6	11398.6	11118.4	10943.2	11015.3	11174.9	11521.2	11993.9	12910.8	13999.6	14981.8	15355.1	15797.9	16008.4	16021.1	16033.5	16094	16094
16	16232.4	16108.4	15893.1	15636.4	15239	14643.2	14185.3	13156.4	12053.2	11341.6	11025.1	10780.1	10822.1	11010.8	11436.4	11955.7	12874.5	14044.8	15127.9	15544.4	15979.7	16135.7	16164	16192.6	16232.4	16232.4
17	16408.8	16253.4	16018.6	15729.2	15373.5	14769.2	14268.2	13151.9	11981.6	11286.8	10901.5	10564	10546.6	10792.7	11314.9	11924	12842.7	14094.6	15276.7	15746.2	16164	16261.1	16324.5	16354.5	16408.9	16408.9
18	16638.8	16430.6	16154.2	15853.3	15514.7	14901.2	14362.5	13158.5	11914.8	11244.7	10746.8	10264.2	10183.3	10482.3	11166.7	11900.4	12816.2	14153	15437.6	15951.8	16359.8	16438.9	16475.2	16536.4	16638.8	16638.8
19	16889	16682.4	16307	15995.2	15666.7	15048	14465.1	13169.5	11858.8	11188.7	10541.5	9864.82	9735.92	10088.6	10955.5	11861.3	12794.4	14217.2	15604.6	16162.3	16560.4	16605.7	16669.6	16808.5	16889	16889
20	17187	16928.2	16469.7	16107.9	15817	15197.1	14573.8	13191.9	11817.4	11104.7	10267.1	9407.73	9226.95	9628.45	10665.3	11790.7	12792.7	14291	15775.4	16379.1	16764.2	16773.9	16874.3	17065.1	17187	17187
21	17521.2	17225.4	16715.4	16239.4	15953.4	15350.7	14694.7	13231.7	11801.4	11003.9	9916.43	8906.25	8679.23	9125.11	10307.6	11703.3	12812.8	14372.3	15954	16598.2	16933.7	16954.8	17154	17377.9	17521.2	17521.2
22	17954.9	17570.3	16945.7	16376.9	16060.4	15518.3	14825.4	13270.4	11805.4	10884.9	9508.81	8364.47	8083.57	8571.42	9903.07	11593	12844.5	14457.6	16135.2	16821.5	17091.6	17139.3	17418.2	17733.3	17954.9	17954.9
23	18445.9	18017.7	17236.4	16553.4	16171.9	15690.4	14953.8	13315	11810.1	10711.6	9061.01	7764.56	7380.35	7955.01	9460.97	11426.3	12880.3	14541.5	16326.3	17055.6	17255.4	17372.1	17743.8	18200.2	18445.9	18445.9
24	19012.4	18508.4	17548.3	16739.6	16313.1	15876	15099.6	13371.4	11823.4	10496.3	8573.23	7068.68	6621.99	7258.34	8979.26	11218.1	12915.2	14633.7	16519	17286.7	17459.1	17616	18095.2	18698.5	19012.4	19012.4
25	19562.2	19055.2	17944.7	16983.9	16477.4	16067	15252.5	13426.7	11834.7	10234.8	8053.57	6346.45	5851.07	6497.77	8438.93	10950.6	12946.1	14730	16274.2	17530.6	17665.6	17931.2	18504.2	19248.6	19562.2	19562.2
26	20072.8	19582.7	18390.2	17230.3	16635.9	16270.8	15417.8	13492.4	11841.6	9925.28	7474.69	5629.15	5090.95	5745.77	7827.36	10652.7	12966.4	14824.8	16930.5	17779.1	17863.9	18237.9	19026.5	19778.9	20072.8	20072.8
27	20523.2	20075.7	18885.8	17523.8	16806.4	16483.8	15593.6	13563.4	11833	9590.51	6819.71	4911.86	4394.81	5017.93	7147.27	10320.2	12964.4	14920.4	17147.2	18025	18089.9	18575.8	19547.3	20258.7	20523.2	20523.2
28	20919.6	20492.2	19414.7	17836.2	16985.5	16690.6	15776.3	13635.5	11817.2	9234.46	6170.1	4261.51	3786.02	4352.85	6449.6	9961	12946.3	15014.3	17359.4	18265.2	18321.9	18952.9	20089.8	20668.3	20919.6	20919.6
29	21229.1	20867.8	19886.5	18191.9	17175.9	16900.5	15969.9	13711.5	11785.9	8852.37	5517.45	3681.81	3264.35	3762.31	5757.63	9564.77	12913.1	15116.9	17577.7	18496.2	18547.2	19365.8	20577.1	21046.9	21229.1	21229.1
30	21429.3	21170.4	20318.1	18594.6	17380.5	17105.6	16164.4	13795.2	11734.6	8419.99	4876.89	3193.96	2838.64	3266.4	5093.59	9100.85	12853.5	15225.3	17798.1	18728.7	18819.1	19848.9	21017.4	21330.4	21429.3	21429.3
31	21505	21349	20712.1	19038.4	17629.5	17311.7	16366	13888.1	11662.1	7941.83	4296.21	2803.29	2497.06	2864.53	4496.35	8576	12766.3	15334.9	18014.9	18960.4	19110.1	20335	21413	21502.4	21505	21505
32	21438.4	21410.5	21055.8	19514.8	17893.8	17518.3	16577	13989.4	11551.7	7405.38	3772.56	2473.16	2181.56	2516.13	3952.34	7986.32	12646	15449.8	18236.5	19182.9	19417	20859.4	21758.5	21558.4	21438.4	21438.4
33	21244.7	21237	21320.9	20010.3	18195.8	17729.7	16780.8	14094.8	11419.8	6830.77	3320.13	2166.8	1900.39	2197.26	3481.55	7379.16	12492.1	15566.4	18443.9	19402.5	19768.5	21383.1	22018.1	21481.5	21244.7	21244.7
34	20936	21142	21475.9	20488.3	18503.9	17936	16985.3	14207.1	11264.4	6230.55	2945.75	1894.91	1693.07	1917.28	3088.39	6752.93	12312	15680.1	18659.1	19610.2	20123.2	21862.1	22184	21288.9	20936	20936
35	20486.1	20839.9	21534.2	20918.9	18840.7	18136.3	17197.2	14321.8	11084.4	5714.4	2621.07	1682.74	1555.08	1708.73	2782.52	6135.43	12114.2	15793.4	18870.9	19815.9	20472.2	22325.7	22244.7	20965	20486.1	20486.1
36	19896.4	20421.1	21478.7	21334.8	19194.7	18328	17396.7	14430	10890.5	5182.4	2324.65	1543.13	1465.62	1565.99	2401.02	5539.7	11882.3	15905.8	19080.6	20011.6	20845.8	22758.8	22192.7	20491.9	19896.4	19896.4
37	19179.7	19828.9	21322.3	21715.4	19567.1	18505.5	17596.9	14539.6	10664.1	4672.46	2045.28	1449.14	1388.67	1474.21	2108.75	4978.86	11607.7</									



51	10648	11054.7	12518.4	18391.9	24438.7	21528.4	20314	14451.5	4249.46	1245.28	607.41	305.93	250.22	312.18	613.65	1305.17	4231.79	15542.8	21979.4	23615.2	26334.5	18927.2	12649.4	11075.9	10648	
52	10111.9	10528	12004.6	17505.4	24624.2	21961.8	20579.2	14337.6	3832.12	1173.6	517.06	252.85	205.79	251.46	513.9	1226.73	3788.76	15347.1	22188.1	24025.4	26395.2	17891.5	12115.9	10552.7	10111.9	
53	9569.9	10008.1	11496.6	16553.9	24751.6	22403.7	20839.2	14194.6	3439.32	1092.84	432.31	210.23	176.84	207.89	430.35	1127.66	3348.8	15093	22381.2	24409.7	26316.4	16837.4	11577.9	10010.7	9569.9	
54	9027.36	9471.2	10968	15567	24752.9	22842.9	21078.3	14007.8	3050.88	996.92	362.17	180.76	161.24	161.24	181.62	356.17	1016.48	2943.9	14775.4	22553.4	24766.4	26042	15692.2	11021.1	9476.95	9027.36
55	8493.78	8944.82	10434.6	14495.6	24528.8	23266.9	21308.6	13745.5	2684.1	893.02	302.81	160.9	151.98	165.12	292.75	894.97	2568.65	14380.3	22699.3	25081.7	25587	14651.5	10459.4	8943.95	8493.78	
56	7946.91	8419.32	9891.56	13578.3	24179.7	23658.8	21511.1	13425.2	2352.87	783.33	251.31	152.11	142.83	156.47	242.64	772.43	2263.63	13870.3	22803.7	25342.2	24944	13705.1	9897.16	8418.58	7946.91	
57	7309.41	7888.93	9359.54	12685.6	23682.3	24018.7	21680.3	13002	2080.02	676.59	215.18	147.22	138.93	151.98	209.36	658.22	2034.01	13323.6	22861	25591.2	24181.7	12760.2	9355.49	7835.23	7309.41	
58	6608.91	7254.79	8838.49	11860.5	23045.2	24330	21808.7	12501.2	1874.06	585.59	190.91	143.56	135.7	147.49	187.48	550.41	1879.9	12703.9	22857.1	25792.1	23301.2	11959.4	8800.56	7156.51	6608.91	
59	5786.22	6533.13	8310.42	11205.9	22271.1	24604.2	21893.1	11910.2	1733.42	494.67	174.91	140.86	132.99	143.21	175.98	462.6	1773.43	11965.1	22792.7	25932.1	22377	11265.1	8228.72	6390.57	5786.22	
60	4963.17	5734.17	7762.04	10565.8	21433.4	24813.4	21910.1	11250.5	1630.18	412.99	168.09	138.25	129.87	139.36	169.7	382.98	1669.97	11227.4	22642.9	26030.1	21355.7	10619.4	7555.82	5550.41	4963.17	
61	4125.18	4933.83	7093.53	10015.6	20402.6	25000.7	21865.2	10550.1	1529.54	346.17	163.18	135.49	127.55	135.38	164.94	309.52	1542.11	10461	22399.1	26076.5	20144.7	9958.86	6757.83	4677.65	4125.18	
62	3311.47	4092.86	6300.97	9455.57	19247.7	25140.9	21750.9	9847.81	1410.1	285.75	159.12	132.75	124.97	132.89	160.29	259.16	1390.47	9700.83	22057	26004.9	18817	9312.04	5866.6	3839.97	3311.47	
63	2613.27	3282.92	5445.41	8883.61	18035.9	25211.3	21549.8	9158.53	1279.64	245.55	155.2	130.12	123.65	130.59	155.65	222.41	1238.78	8915.55	21585.9	25739.6	17397.8	8594.18	4939.05	3066.21	2613.27	
64	1985.18	2574.07	4589.85	8287.61	16740.2	25169.8	21221.1	8456.41	1137.46	217.98	151.33	127.95	121.84	127.69	151.16	201.27	1086.91	8118.57	20936	25233.9	15834.3	7807.41	4040.52	2418.44	1985.18	
65	1461.45	1938.34	3731.7	7582.87	15380.2	24983.9	20719.9	7747.25	1009.57	200.12	147.69	125.57	119.24	123.77	146.68	191.9	925.92	7272.89	20126.8	24420.3	14409.8	6849.28	3198.84	1874.85	1461.45	
66	1070.52	1424.52	2938.18	6758.59	14099.6	24550	20109.1	7020.27	874.44	192.27	143.85	123.61	116.92	121.8	142.11	184.6	777.86	6431.47	19212.8	23318.2	12985.4	5794.59	2493.91	1429.53	1070.52	
67	818.3	1034.65	2245.07	5745.27	12926.8	23791.1	19397.9	6333.18	746.02	186.53	140.4	121.47	113.63	118.41	137.77	177.52	648.11	5634.86	18152	21961.5	11665.6	4751.78	1943.03	987.21	818.3	
68	686.16	792.73	1638.08	4730.61	11892.4	22750.5	18582.8	5681.13	636.3	180.67	136.86	117.72	109.41	114.27	133.88	170.44	527.24	4916.34	16967.3	20410.6	10423.6	3780.18	1480.91	768.3	686.16	
69	582.52	663.55	1194.42	3757.27	10867.6	21452.5	17697.5	5029.07	538.38	175.14	133.28	112.11	102.9	107.92	130	162.83	422.11	4257.06	15668.3	18677.1	9165.39	2908.43	1023.45	650.12	582.52	
70	478.99	561.3	880.73	2861.07	9799.65	19965.3	16696	4447.91	440.46	170.15	128.93	105.87	95.39	101.82	123.56	156	341.5	3644.2	14079.7	16613.2	7843.86	2178.2	785.88	547.88	478.99	
71	384.08	459.34	701.24	2129.52	8585.38	18185	15498.6	3870.94	362.31	164.97	123.14	96.93	83.82	91.05	115.16	151.24	297.61	3047.01	12491.1	14323.6	6526.05	1690.34	647.23	449.97	384.08	
72	305.62	377.16	589.26	1506.01	7325.23	16170.8	14033.9	3302.12	317.87	160.22	115.47	84.52	71.46	78.78	106.08	149	272.61	2518.51	10590.5	12034	5236	1202.48	535.32	368.43	305.62	
73	244.45	303.26	487.49	1081.89	6053.3	14024	12290.4	2764.9	290.96	154.95	104.6	70.26	57.23	64.67	91.29	145.22	267.85	2043.1	8102.24	9653.06	4013.78	843.99	443.72	297.7	244.45	
74	208.27	249.66	395.53	792.55	4778.96	11673.5	10152.4	2257.06	280.5	148.02	90.27	57.44	45.62	51.15	73.9	138.75	266.17	1641.46	5704.85	7086.2	2954.17	657.22	360.65	246.53	208.27	
75	186.25	215.66	322.54	634.81	3504.63	9021.63	7844.53	1793.43	277.11	138.14	73.31	45.63	36.11	40.76	56.76	124.83	263.85	1280.98	3755.43	4846.36	2199.84	524.01	297.84	213.39	186.25	
76	170.88	195.95	270.78	516.93	2433.21	6552.69	5862.75	1441.04	273.22	123.87	59.44	35.8	30.32	33.72	45.89	103.69	261.85	944.42	2513.14	3114.19	1555.77	428.16	254.01	193.44	170.88	
77	157.89	179.75	236.35	399.05	1588.24	4868.72	4231.59	1146.63	269.32	104.16	48.27	30.39	26.44	28.97	36.95	77.54	254.73	650.1	1920.91	2058.67	916.38	346.15	224.45	177.16	157.89	
78	145.05	164.8	212.59	323.79	1024.51	3206.85	2600.43	841.05	260.88	79.69	37.11	26.09	23.32	25.34	31.31	55.94	233.81	446.43	1328.67	1581.5	660.66	288.14	201.94	161.47	145.05	
79	131.5	150.23	192.33	271.57	726.72	1978.57	1761.07	620.15	241.51	62.07	31.45	23.18	20.64	22.28	27.53	43	185.01	312.71	896.72	1106.07	504.22	247.67	181.69	145.62	131.5	
80	116.42	134.12	172.22	236.45	554.67	1394.62	1241.82	463.36	206.29	49.21	26.84	20.3	18.28	19.61	23.87	35.32	122.51	229.27	688.01	807.09	397.49	219.18	159.74	129.24	116.42	
81	99.99	116.7	151.34	210.62	422.33	1027.73	918.34	308.03	144.06	36.36	22.98	17.65	16.14	17.21	20.77	29.82	70.17	181.78	535.33	616.45	321.12	192.72	137.79	111.23	99.99	
82	84.01	98.63	129.66	184.18	319.8	778.54	683.37	232.86	87.83	29.84	19.65	15.43	14.41	15.12	18.31	25.54	49.16	140.73	398.92	435.55	271.8	163.07	115.44	93.16	84.01	
83	69.93	81.78	107.37	156.05	269.07	571.79	534.8	181.25	61.59	24.63	16.72	13.44	12.67	13.13	15.73	21.73	37.98	99.85	290	314.41	233.47	133.42	94.14	77.36	69.93	
84	59.37	67.72	87.53	126.31	232.55	415.18	388.03	132.12	46.76	20.42	14.12	11.52	10.88	11.14	12.88	17.43	29.29	67.62	212	231.3	187.61	105.62	76.78	64.15	59.37	
85	50.34	57.51	70.73	99.09	185.71	258.57	257.53	88.28	31.93	16.4	11.44	9.35	8.69	8.63	10.02	12.85	21.5	46.01	134	169.47	137.34	83.57	63.05	53.48	50.34	
86	41.93	47.4	57.4	76.97	128.93	178.88	164.87	61.01	23.36	12.52	8.53	6.31	5.08	4.59	5.79	8.27	14.06	30.13	71.87	107.81	93.25	65.66	51.27	44.78	41.93	
87	34.65	38.08	45.39	59.18	87.81	119.35	98.87	40.67	15.69	8.26	5.16	3.4	0.67	0.64	1.24	3.05	6.61	16.68	41.43	60.79	59.04	47.34	39.83	36.06	34.65	
88	26.41	28.65	33.25	42.1	59.44	69.44	58.33	20.32	8.57	4.59	2.19	0.49	0.26	0.3	0.43	0.75	1.45	3.48	21.49	36.76	35.21	31.1	28.01	26.98	26.41	
89	16.42	18.17	20.82	25.02	36.03	43.3	30.84	7.87	4.04	2.29	0.66	0.53	0.29	0.35	0.5	0.89	1.51	1.97	1.83	12.72	17.76	16.64	16.2	17.12	16.42	
90	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
91	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
92	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
93	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
94	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
95	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
96	0	0	0	0	0</																					



161	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
162	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
163	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
164	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
165	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
166	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
167	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
168	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
169	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
170	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
171	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
172	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
173	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
174	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
175	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
176	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
177	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
178	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
179	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
180	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

4.0 LM-79 Measurement and Test Results

4.3 THD and PF Test

Model No.	ALEDXL2TN/480	Sample ID.	V1
Temperature (°C)	25.3	Humidity (%RH)	56.0

Test Method

The samples were tested according to the ANSI C82.77:2002.
 The total harmonic distortion shall be measured to the 40th order.
 The ambient temperature condition was maintained at 25° C ± 1° 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
480.02	60	0.804	360.6	0.934	4.87%

5.0 Equipment Information

Test Equipment			
Equipment ID	Equipment Name	Last Calibration Date	Calibration Due Date
DLF107	Integrating Sphere System	2020/12/26	2021/12/25
DLF108	Auxiliary Lamp	2020/12/26	2021/12/25
DLF122	Measurement Standard Lamp Standard Lamp Type: 220 V, 0.4720 A, Tungsten, Omni-derectional	2020/12/26	2021/12/25
DLF116	AC Power Source	2020/12/26	2021/12/25
DLF113	Power Meter	2020/12/26	2021/12/25
DLF112	Temperature Recorder	2020/12/26	2021/12/25
DLF114	Temperature & Humidity Datalogger	2020/12/26	2021/12/25
DLF101	Goniophotometer	2020/12/26	2021/12/25
DLF125	Standard Lamp Standard Lamp Type: 76.58 V, 6.7875 A, Tungsten, Omni-derectional	2020/12/26	2021/12/25
DLF104	AC Power Source	2020/12/26	2021/12/25
DLF507	DC Power Source	2020/12/26	2021/12/25
DLF102	Power Meter	2020/12/26	2021/12/25
DLF111	Temperature & Humidity Datalogger	2020/12/26	2021/12/25
DLF119	Power Meter	2020/12/26	2021/12/25
DLF031	Temperature data logger	2020/12/26	2021/12/25
DLF022	Digital power meter	2020/12/26	2021/12/25
DLF003	Temperature & Humidity Datalogger	2020/12/26	2021/12/25

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