

# Photometric Test Report

## Relevant Standards

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

## Prepared For RAB Lighting Inc.

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## Project Number

DLF2111113

## Report Number

DLF2111113-9a

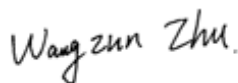
## Test Date

2021/11/25

## Issue Date

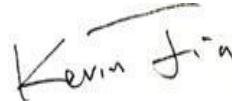
2021/12/1

### Prepared By



Wangzun Zhu

### Approved By



Kevin Jia

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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		49283
Minimum Luminaire Efficacy (lm/W) (Goniophotometer - Section 4.2)	IES LM-79-2008	Standard 105	Premium 120	132.1
Power (Input Wattage) (W) (Goniophotometer - Section 4.2)	IES LM-79-2008	Worst Case		373.2
Total Harmonic Distortion (A%) (THD & PF - section 4.3)	ANSI C82.77:2014	20.00%	120V	3.22%
		20.00%	277V	10.11%
Power Factor (THD & PF - section 4.3)	ANSI C82.77:2014	0.9	120V	0.999
		0.9	277V	0.964
Allowable CCTs* (K) (Integrating Sphere - Section 4.1)	IES LM-79-2008	7 step	3985±275	3952
		4 step	3985±154	
Minimum CRI (Integrating Sphere - Section 4.1)	IES LM-79-2008 CIE 13.3-1995	≥70		84
Minimum R9 (Integrating Sphere - Section 4.1)	IES LM-79-2008 CIE 13.3-1995	≥-40		11
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		95
Minimum 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%		1.05%
Input Voltage (V)				
(Goniophotometer - Section 4.2)	IES LM-79-2008	Worst Case		120
(Goniophotometer - Section 4.2)		Non-Worst Case		277
Input Current (A)				
(Goniophotometer - Section 4.2)	IES LM-79-2008	Worst Case		3.112
(Goniophotometer - Section 4.2)		Non-Worst Case		1.372
Power (Input Wattage - W)				
(Goniophotometer - Section 4.2)	IES LM-79-2008	Worst Case		373.2
(Goniophotometer - Section 4.2)		Non-Worst Case		366.5

## 2.0 Test List

Test Item	Test	Test Date	Model Number	Sample No.
1	Integrating Sphere Test	2021/11/25	ALEDXL3TN	I1
2	Goniophotometer Test	2021/11/25	ALEDXL3TN	I1
3	THD and PF Test	2021/11/25	ALEDXL3TN	I1

### 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.

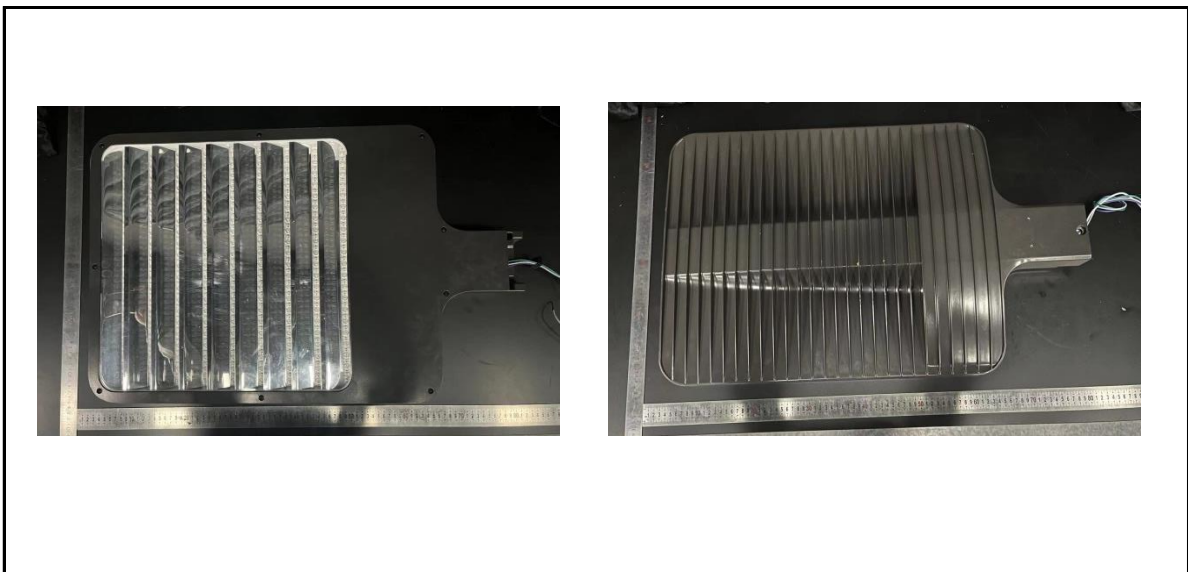
## 3.0 Production Description

**Luminaire Description:** ALEDXL3TN

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

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

### Photos of Luminaire Characteristics



## 4.0 LM-79 Measurement and Test Results

### 4.1 Integrating Sphere Test

Model No.	ALEDXL3TN	Sample ID.	I1
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  $\pm 0.2$  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
119.95	60	3.098	371.3	0.999
277.01	60	1.372	366.3	0.964

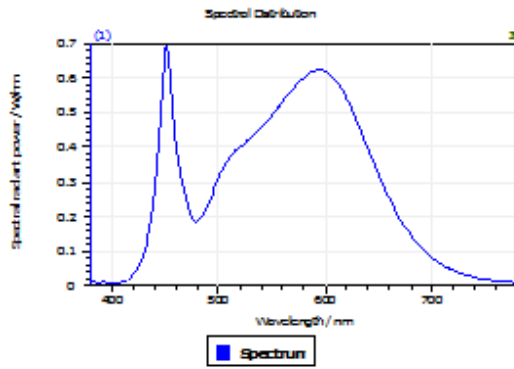
#### Test Result

CCT (K)	CRI	R9	Duv
3952	84	11	0.00044

Rf	Rg	IES Rcs,h1
85	95	-12%

## 4.1 Integrating Sphere Test

### Results



#### Spectral values

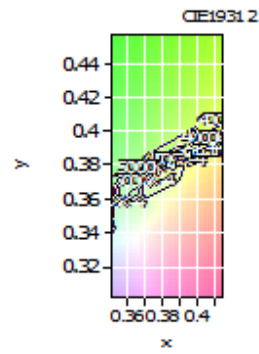
DominantWavelength	579.02 nm
Purity	0.287
PeakWavelength	451.33 nm
Radiant Power	108.7 W
Width50%	20.50 nm

#### Color Coordinates

Correlated Color Temperat 3952 K

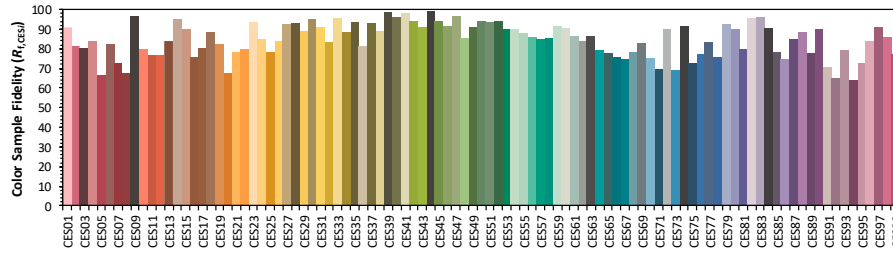
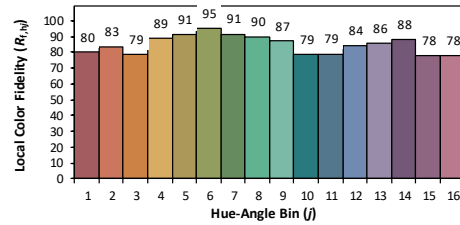
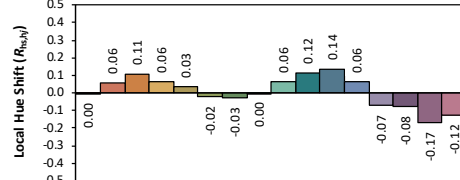
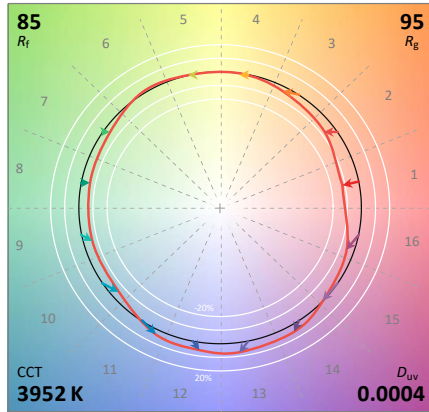
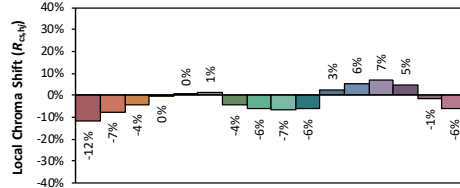
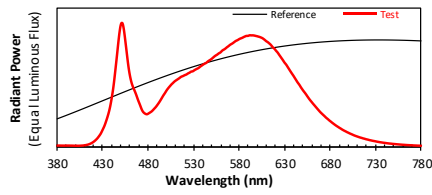
x: 0.3829 u: 0.2257 u': 0.2257  
y: 0.3792 v: 0.3353 v': 0.5030

ResultsCRICRI01	81.9	ResultsCRICRI09	11.1
ResultsCRICRI02	89.8	ResultsCRICRI10	75.7
ResultsCRICRI03	95.5	ResultsCRICRI11	81.8
ResultsCRICRI04	82.8	ResultsCRICRI12	62.9
ResultsCRICRI05	82.2	ResultsCRICRI13	83.8
ResultsCRICRI06	85.6	ResultsCRICRI14	97.7
ResultsCRICRI07	86.7	ResultsCRICRI15	76.0
ResultsCRICRI08	65.7	ResultsCRICRI16	73.6
ResultsCRI	83.7		



PlanckDistance 4.4E-004

### 4.1 Integrating Sphere Test



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

$x$  0.3829  
 $y$  0.3792  
 $u'$  0.2257  
 $v'$  0.5030

CIE 13.3-1995 (CRI)	
$R_a$	83
$R_g$	9

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.	ALEDXL3TN	Sample ID.	I1
Operate time (Min.)	90	Stabilization time (Min.)	45
Temperature (°C)	25.3	Humidity (%RH)	54.0

#### Test Method

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

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

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

The voltage of an AC power supply (RMS voltage) or DC power supply (instantaneous voltage) applied to the device under test shall be regulated to within  $\pm 0.2$  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  $0.5^{\circ}$  vertical intervals and  $10^{\circ}$  horizontal intervals.

#### Test Conditions

Condition	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor
WORST CASE	120.01	60	3.112	373.2	0.999
NON-WROST CASE	277.02	60	1.372	366.5	0.964

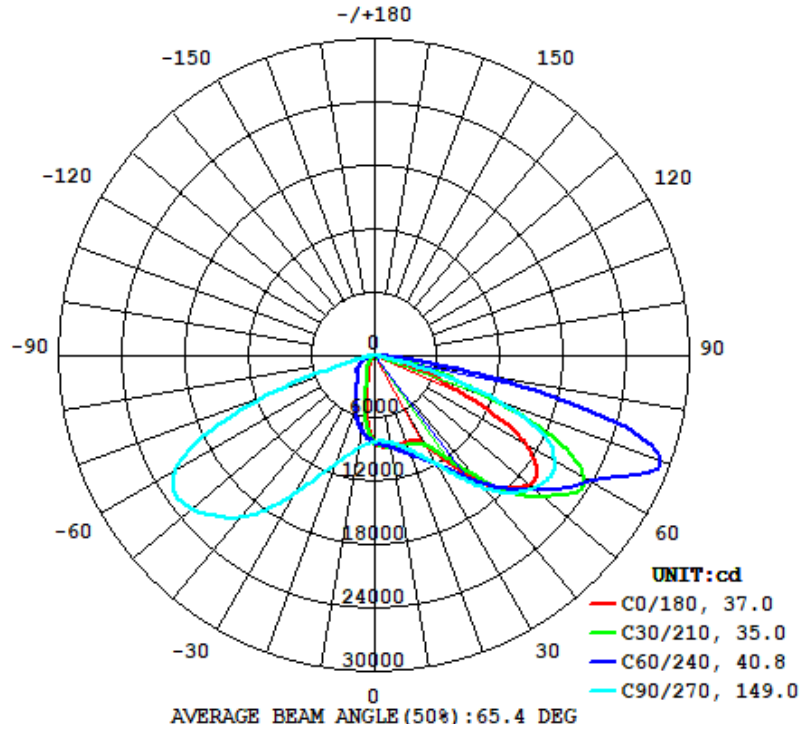
#### Test Result

Flux (lm)	Field Angle(10%)		Beam Angle(50%)		Luminous Efficacy (lm/W)
	C0-180	C90-270	C0-180	C90-270	
49283	94.3	158.5	37.0	149.0	132.1

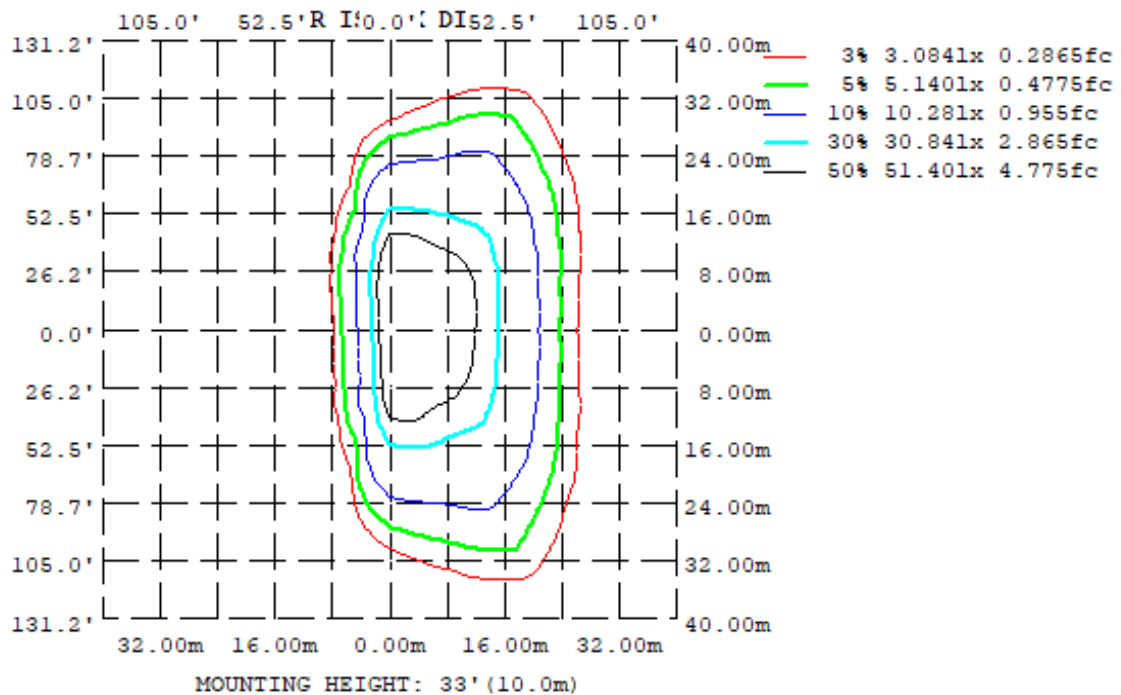
Zonal Lumen Requirement ( $0^{\circ}$ - $90^{\circ}$ )	Zonal Lumen Requirement ( $80^{\circ}$ - $90^{\circ}$ )	BUG rating
100.00%	1.05%	B3-U0-G5

## 4.2 Goniophotometer Test

### Light Distribution Curve



### Isolux Plot



## 4.2 Goniophotometer Test

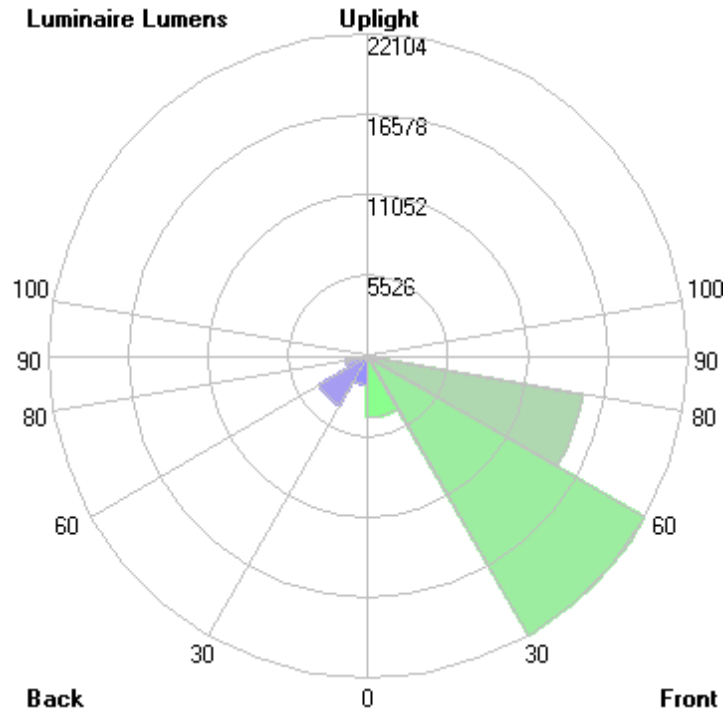
### Zonal Lumen Summary

γ	C0	C45	C90	C135	C180	C225	C270	C315
10	901.8	892.6	844.0	598.9	473.5	632.7	894.5	918.0
20	879.5	955.4	954.2	290.3	167.0	323.3	1092	1014
30	991.8	1074	1203	164.0	105.3	188.2	1495	1213
40	1574	1430	1657	127.1	53.60	155.9	2008	1654
50	1910	2155	1968	79.50	30.94	100.1	2272	2378
60	1644	2729	1982	48.53	17.00	54.74	2196	2979
70	592.2	2181	1234	19.36	6.209	20.72	1024	2061
80	60.60	526.7	82.98	5.387	2.852	5.563	62.10	424.6
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	757.48	0 - 10	757.48	1.54%
10-20	2055.68	0 - 20	2813.16	5.71%
20-30	3378.88	0 - 30	6192.04	12.56%
30-40	5620.15	0 - 40	11812.19	23.97%
40-50	8858.54	0 - 50	20670.73	41.94%
50-60	11509.53	0 - 60	32180.26	65.30%
60-70	11149.29	0 - 70	43329.55	87.92%
70-80	5434.48	0 - 80	48764.03	98.95%
80-90	518.66	0 - 90	49282.69	100.00%
90-100	0.00	0 - 100	49282.69	100.00%
100-110	0.00	0 - 110	49282.69	100.00%
110-120	0.00	0 - 120	49282.69	100.00%
120-130	0.00	0 - 130	49282.69	100.00%
130-140	0.00	0 - 140	49282.69	100.00%
140-150	0.00	0 - 150	49282.69	100.00%
150-160	0.00	0 - 160	49282.69	100.00%
160-170	0.00	0 - 170	49282.69	100.00%
170-180	0.00	0 - 180	49282.69	100.00%

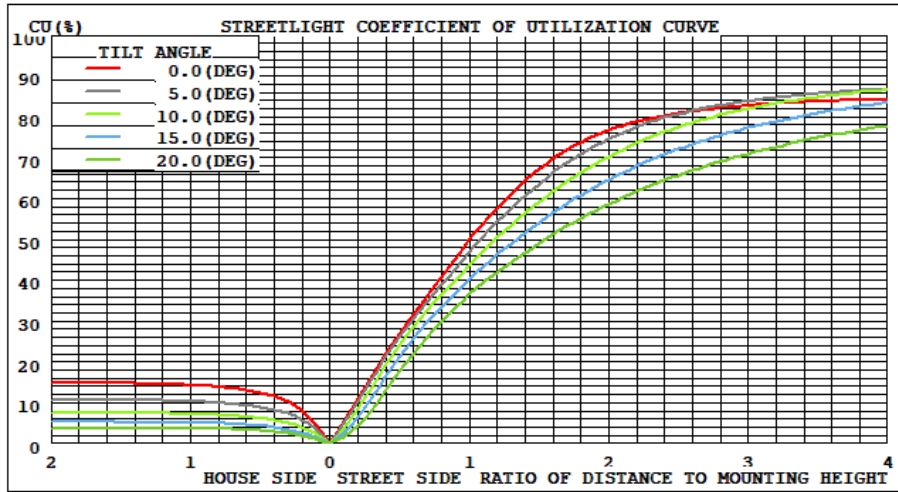
## 4.2 Goniophotometer Test

LCS/BUG

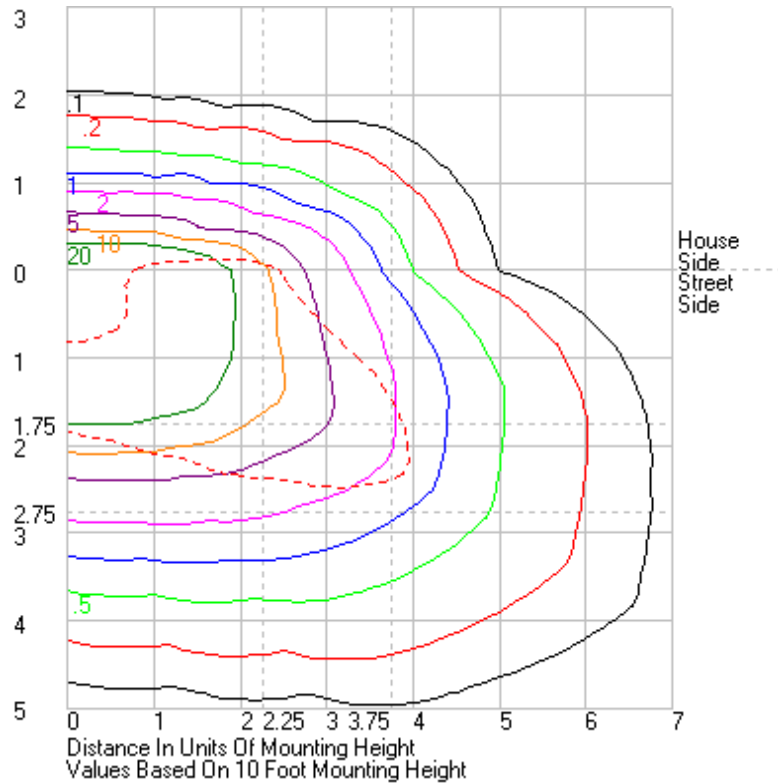


	Lumens	% Lamp	% Luminaire
FL - Front-Low (0-30)	4220.8	N.A.	8.6
FM - Front-Medium (30-60)	22103.7	N.A.	44.9
FH - Front-High (60-80)	15073.9	N.A.	30.6
FVH - Front-Very High (80-90)	487.5	N.A.	1.0
BL - Back-Low (0-30)	1971.2	N.A.	4.0
BM - Back-Medium (30-60)	3884.5	N.A.	7.9
BH - Back-High (60-80)	1509.8	N.A.	3.1
BVH - Back-Very High (80-90)	31.2	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
<b>Total</b>	<b>49282.7</b>	<b>N.A.</b>	<b>100.0</b>
<b>BUG Rating</b>	<b>B3-U0-G5</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	8280.63	8280.63	8280.63	8280.63	8280.63	8280.63	8280.63	8280.63	8280.63	8280.63	8280.63	8280.63	8280.63	8280.63	8280.63	8280.63	8280.63	8280.63	8280.63	8280.63	8280.63	8280.63	8280.63	8280.63	8280.63
1	8464.16	8450.8	8431.28	8405.49	8370.68	8332.28	8234.52	8184.22	8137.02	8090	8053.6	8027.74	8163	8167.93	8187.97	8218.89	8256.16	8292.52	8278.1	8304.35	8326.42	8346.27	8352.17	8353.85	8464.16
2	8561.6	8540.05	8512.72	8474.16	8423.81	8359.88	8232.29	8132.8	8024.74	7925.02	7837.46	7783.9	7917.3	7942.21	8003.42	8088.23	8185.99	8281.56	8309.63	8373.34	8419.06	8446.86	8462.23	8459.3	8561.6
3	8633.16	8608.98	8572.88	8530.64	8474.8	8390.81	8232.2	8078.58	7908.7	7733.1	7591.21	7497.23	7624.95	7675.49	7779.02	7930.41	8104.26	8271.73	8356.98	8447.36	8511.18	8538.18	8546.8	8542.09	8633.16
4	8696.44	8668.49	8630.75	8583.76	8520.82	8426.57	8232.11	8025.01	7777	7519.01	7304.31	7164.6	7292.2	7356.94	7517.5	7750.32	8017.75	8266.77	8405.52	8528.44	8595.14	8623.36	8627.32	8610.09	8696.44
5	8750.72	8717.42	8680.52	8635.61	8568.77	8468.43	8243.34	7977.35	7634.4	7283.28	6993.9	6814.23	6928.29	7017.32	7233.14	7553.78	7916.21	8263.57	8465.31	8614.1	8683.11	8708.98	8697.73	8673.34	8750.72
6	8808.87	8772.76	8733.18	8685.43	8618	8514.35	8263.57	7929.14	7483.22	7028.29	6677.54	6452.4	6549.44	6666.42	6929.81	7332.71	7805.94	8259.89	8538.96	8713.86	8779.5	8789.95	8773.39	8735.75	8808.87
7	8868.22	8827.52	8787.25	8740.11	8674.52	8570.79	8294.39	7877.87	7322.26	6777.55	6341.94	6063.26	6148.51	6284.42	6611.33	7094.76	7690.73	8266.39	8628.17	8822.24	8877.29	8876.66	8852.18	8805.63	8868.22
8	8928.9	8884.79	8844.85	8797.23	8739	8636.8	8337.54	7835.88	7157.22	6526.89	6005.77	5674.13	5700.47	5864.54	6276.23	6858.11	7567.6	8275.79	8723.67	8941.92	8992.35	8967.61	8932.04	8874.39	8928.9
9	8984	8941.17	8901.8	8860.04	8810.24	8710.78	8385.04	7792.02	6991.42	6257.7	5629.67	5211.16	5211.5	5410.45	5894.98	6605.52	7427.85	8280.91	8828.04	9062.54	9103.53	9071.93	9015.8	8940.44	8984
10	9018.14	8982.67	8960.22	8926.09	8888.04	8791.5	8440.41	7745.73	6824.53	5988.51	5227.81	4748.14	4735.45	4948.39	5488.82	6327.4	7289.65	8292.46	8944.97	9195.04	9230.32	9180.24	9094.25	8994.86	9018.14
11	9032.28	9005.64	9015.2	9003.43	8974.41	8881.17	8503.11	7695.83	6628.22	5664.59	4793.79	4281.6	4260.24	4474.74	5073.6	6017.66	7143.89	8302.88	9076.49	9340.6	9362.93	9293.17	9167	9028.35	9032.28
12	9025.17	9011.93	9061.13	9084.82	9068.93	8971.89	8573.06	7642.39	6456.83	5327.23	4385.05	3853.48	3816.2	4040.87	4653.36	5697.56	6983.22	8313.5	9214.75	9489.53	9497.66	9404.29	9228.26	9043.64	9025.17
13	9000.15	8996.65	9091.04	9168.4	9167.46	9082.31	8650.17	7592.08	6287.21	4977.08	3993.18	3461.79	3407.33	3631.45	4241.65	5353.95	6819.23	8327.62	9378.1	9669.72	9648.59	9516.69	9275.37	9041.24	9000.15
14	8960.21	8967.69	9101.24	9244.85	9269.81	9199.24	8739.93	7537.91	6090.37	4631.08	3623.72	3101.2	3048.3	3250.5	3866.63	5010.22	6642.58	8341.93	9549.03	9859.39	9806.29	9617.79	9309.06	9020.75	8960.21
15	8912.48	8930.12	9099.98	9313.61	9380.69	9322.26	8840.48	7486.74	5870.84	4293.7	3286.96	2784.97	2724.98	2926.53	3517.46	4669.91	6446.69	8359.34	9744.95	10063.9	9972.4	9715.5	9326.81	8986.94	8912.48
16	8866.88	8887.7	9092.71	9377.49	9502.36	9465.57	8953.29	7435.41	5637.38	3979.04	2975.45	2496.92	2437.84	2629.65	3194.01	4336.43	6247.7	8379.79	9955.81	10292.3	10155.5	9807.76	9331.37	8950.55	8866.88
17	8829.09	8852.86	9079.77	9427.13	9626.71	9621.67	9084.93	7389.77	5394.04	3677.3	2704.03	2248.89	2193.94	2372.63	2908.66	4029.4	6045.96	8399.75	10175	10523.6	10337.2	9886.34	9335.93	8924.02	8829.09
18	8805.71	8826.18	9070.52	9472.36	9766.63	9785.84	9223.9	7347	5144.14	3394	2455.86	2031.9	1981.89	2147.41	2659.81	4747.88	5825.99	8427.6	10406.6	10780.4	10538	9968.56	9342.85	8906.19	8805.71
19	8795.83	8812.44	9065.94	9516.19	9910.17	9972.74	9381.42	7304.6	4901.71	3136.13	2244.67	1855.45	1804.52	1957.22	2434.73	3477.35	5606.82	8458.63	10658.5	11053.1	10749.8	10050.3	9365.82	8904.22	8795.83
20	8794.77	8809.88	9067.6	9554.29	10053.7	10156.8	9541.94	7259.41	4657.32	2903.41	2055.15	1705.76	1669.84	1799.22	2238.15	3232.81	5382.95	8491.32	10923	11323.5	10966.6	10136.6	9401.82	8913.69	8794.77
21	8805.37	8818.89	9086.74	9601.75	10210.7	10365.5	9719.15	7225.64	4426.81	2691.24	1892.6	1589.74	1562.82	1678.67	2068.61	3014.64	5161.88	8535.71	11215.6	11632.9	11195.9	10245.4	9454.81	8938.13	8805.37
22	8824.58	8833.38	9117.88	9662.41	10365	10583.5	9902.93	7185.71	4219.37	2498.15	1758.37	1499.26	1478.58	1584.27	1924.02	2820.15	4948.77	8577.84	11523	11968.9	11430	10364.7	9525.42	8967.89	8824.58
23	8844.29	8851.42	9164.05	9731.12	10518.4	10814.5	10106.6	7143.46	4008.36	2328.45	1649.84	1427.49	1413	1505.89	1809.92	2644.57	4744.87	8619.64	11869.6	12322.1	11674.1	10513.4	9615.01	9010.69	8844.29
24	8876.45	8874.99	9215.85	9822.68	10682.5	11079.6	10335.3	7110.92	3809.43	2181.19	1564.14	1366.77	1361.01	1445.01	1721.62	2489.87	4549.35	8670.07	12232	12714	11932.3	10683.5	9724.8	9055.34	8876.45
25	8945.22	8917.51	9275.18	9928.63	10840	11368.6	10572.5	7066.68	3626.27	2045.42	1494.05	1311.98	1308.97	1392.91	1649.26	2346.34	4360.73	8704.9	12621.7	13144.9	12212	10873.9	9842.31	9131.82	8945.22
26	9050.98	8997.66	9346.22	10058.1	11023.1	11673.9	10829.2	7013.55	3456.16	1931.15	1438.89	1260.72	1254.95	1343.7	1590.97	2216.74	4178.55	8736.89	13039	13603.3	12525.9	11096.2	9973.92	9250.29	9050.98
27	9200.45	9121.63	9434.44	10209	11231.9	12014.5	11108.3	6974.02	3292.78	1832.99	1389.04	1210.14	1204.57	1294.5	1542.15	2107.97	4005.97	8773.37	13479.1	14085.6	12850.6	11332.6	10130.4	9418.35	9200.45
28	9382.19	9285.17	9555.48	10372.9	11458.7	12366.5	11396.5	6916.6	3136.59	1754.43	1342.03	1161.86	1154.21	1245.65	1495.46	2013.34	3832.46	8795.03	13945.8	14596.2	13212	11587	10323.6	9628.61	9382.19
29	9615.27	9486.14	9719.89	10548.9	11722.3	12743.9	11704.1	6863.73	2997.69	1693.41	1296.69	1115.66	1102.9	1197.59	1449.66	1939.59	3673.74	8802.55	14431.3	15134.2	13578.3	11858.5	10560.2	9877.17	9615.27
30	9918.16	9742.6	9931.42	10743.1	11997.8	13152	12031.4	6807.8	2861.96	1640.28	1253.55	1066.63	1052.55	1148.16	1407.27	1882.11	3525.93	8807.45	14948.2	15694	13960.5	12127.4	10843.6	10180	9918.16
31	10294.2	10065.5	10186.2	10962.2	12300.9	13594.2	12392.4	6734.85	2739.89	1597.54	1212.8	1020.07	1004.42	1100.46	1369.1	1835.35	3384.55	8793.1	15481.1	16269	14377.5	12408.9	11166.1	10550.2	10294.2
32	10734.7	10471.5	10489.2	11200.6	12623.9	14037.6	12771.8	6673.95	2631.77	1557.76	1170.81	972.62	953.91	1051.35	1330.93	1796.17	3253.53	8766.46	16032.8	16869.9	14804.9	12719.1	11536.8	10996.2	10734.7
33	11241.2	10935.7	10845.9	11469.1	12959.9	14504.7	13185.4	6614.75	2523.14	1516.15	1129.39	924.32	899.79	1001.29	1290.43	1761.06	3135.05	8732.66	16590.5	17484.1	15245.3	13045.8	11961.1	11501.4	11241.2
34	11812	11464.3	11273.5	11757.4	13319.7	15016.7	13644.6	6555.46	2427.64	1477.6	1086.16	871.32	844.96	946.43	1246.37	1728.55	3017.46	8673.76	17157.8	18096	15697.5	13402.4	12448.7	12069.3	11812
35	12430.7	12062.2	11753.7	12087.1	13689.6	15579	14101.3	6492.28	2339.76	1441.6	1042.46	818.93	788.45	891.31	1201.54	1697.73	2908.32	8599.34	17721.7	18717.6	16154.9	13814	12999.1	12682.6	12430.7
36	13081	12691.8	12288.3	12447.1	14059.4	16174.5	14587.3	6426.93	2260.62	1407.61	996.66	765.09	729.45	836.15	1155.02	1669.15	2805.89	8519.78	18267.4	19320.6	16618.6	14271.7	13615.5	13345.5	13081
37	13747.7	13370.3	12908.6	12838.1	14472.4	16786.9	15083.3	6362.79	2194.7	1374.25	945.54	706.26	671.81	777.56	1102.76	1642.06	2706.95	8422.04	18788.3	19911.5	17093.7	14779.6	14283.9	14042.4	13747.7
38	14414.4	14041.1	13575.5	13302.3	14906	17400.6	15583.5	6291.53	2142.09	1340.56	894.06	656.7	622.52	721.13	1047.02	1613.88	2623.72	8298.91	19275.6	20472.9	17551.9	15311.6	15007.9	14758.8	14414.4







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.	ALEDXL3TN	Sample ID.	I1
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
119.95	60	3.098	371.3	0.999	3.22%
277.01	60	1.372	366.3	0.964	10.11%

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