

# Photometric Test Report

## Relevant Standards

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

## Prepared For RAB Lighting Inc.

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## Project Number

**DLF2111105**

## Report Number

**DLF2111105-9a**

## Test Date

**2021/11/8**

## Issue Date

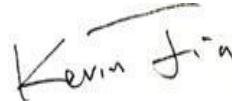
**2021/11/11**

### Prepared By



Wangzun Zhu

### Approved By



Kevin Jia

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## 1.0 Test Summary

DLC Technical Requirements v5.1

<b>Outdoor - Pole/Arm-Mounted Area and Roadway Luminaires</b>				
<b>Requirement Category</b>	<b>Test Method</b>	<b>Requirements</b>		<b>Test value</b>
Luminaire Output (lm) (Goniophotometer - Section 4.2)	IES LM-79-2008	1000		48702
Minimum Luminaire Efficacy (lm/W) (Goniophotometer - Section 4.2)	IES LM-79-2008	Standard 105	Premium 120	130.4
Power (Input Wattage) (W) (Goniophotometer - Section 4.2)	IES LM-79-2008	Worst Case		373.5
Total Harmonic Distortion (A%) (THD & PF - section 4.3)	ANSI C82.77:2014	20.00%	120V	2.95%
		20.00%	277V	10.75%
Power Factor (THD & PF - section 4.3)	ANSI C82.77:2014	0.9	120V	0.999
		0.9	277V	0.963
Allowable CCTs* (K) (Integrating Sphere - Section 4.1)	IES LM-79-2008	7 step	5029±355	5021
		4 step	5029±220	
Minimum CRI (Integrating Sphere - Section 4.1)	IES LM-79-2008 CIE 13.3-1995	≥70		85
Minimum R9 (Integrating Sphere - Section 4.1)	IES LM-79-2008 CIE 13.3-1995	≥-40		14
Minimum Rf (Integrating Sphere - Section 4.1)	ANSI/IES TM-30-18	≥70		83
Minimum Rg (Integrating Sphere - Section 4.1)	ANSI/IES TM-30-18	≥89		93
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%		0.63%
<b>Input Voltage (V)</b>				
(Goniophotometer - Section 4.2)	IES LM-79-2008	Worst Case		120
(Goniophotometer - Section 4.2)		Non-Worst Case		277
<b>Input Current (A)</b>				
(Goniophotometer - Section 4.2)	IES LM-79-2008	Worst Case		3.114
(Goniophotometer - Section 4.2)		Non-Worst Case		1.372
<b>Power (Input Wattage - W)</b>				
(Goniophotometer - Section 4.2)	IES LM-79-2008	Worst Case		373.5
(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	2021/11/8	ALEDXL3T	I1
2	Goniophotometer Test	2021/11/8	ALEDXL3T	I1
3	THD and PF Test	2021/11/8	ALEDXL3T	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.

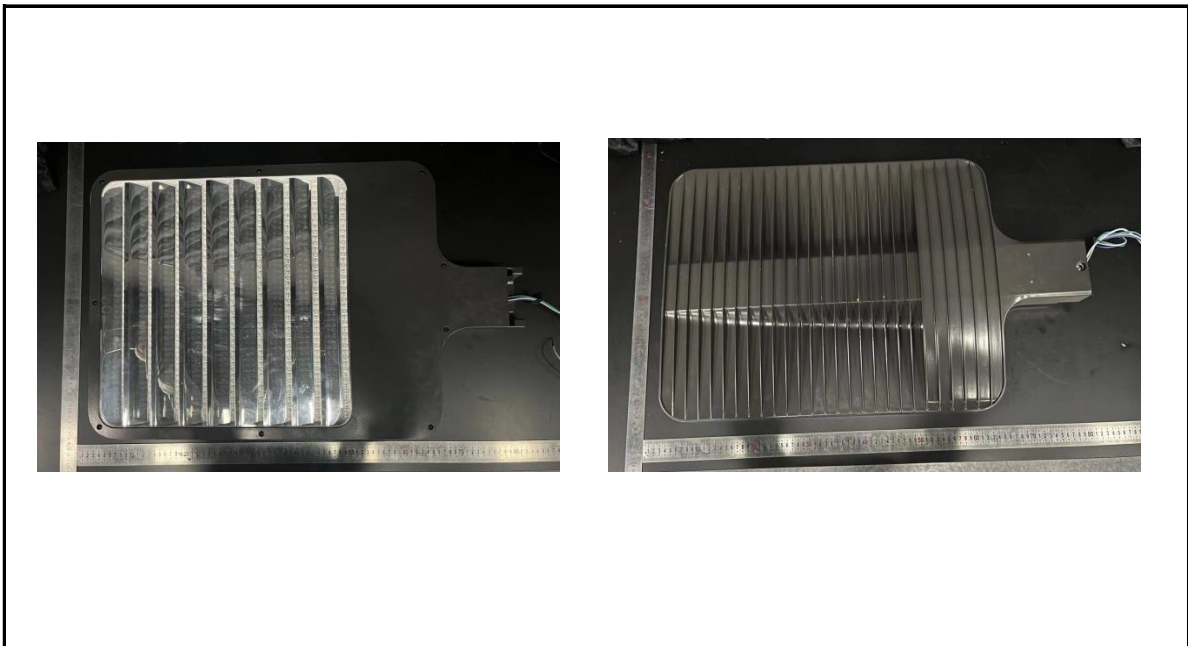
## 3.0 Production Description

**Luminaire Description:** ALEDXL3T

**Description:** 385W/50,000 lm @ 5000K

**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.	ALEDXL3T	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
120.04	60	3.092	370.9	0.999
277.00	60	1.373	366.2	0.963

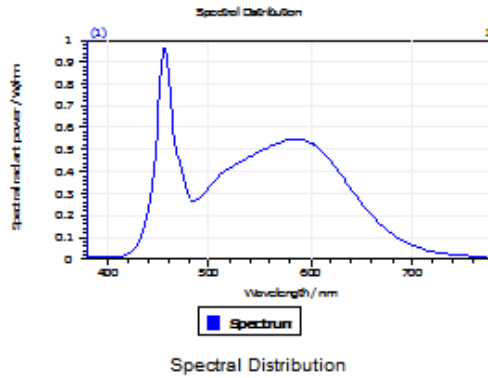
#### Test Result

CCT (K)	CRI	R9	Duv
5021	85	14	0.00069

Rf	Rg	IES Rcs,h1
83	93	-12%

## 4.1 Integrating Sphere Test

### Results



#### Spectral values

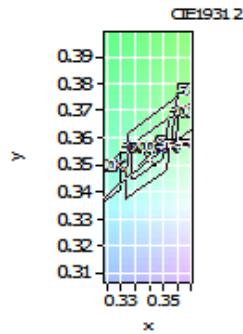
DominantWavelength 571.76 nm  
Purity 0.092  
PeakWavelength 456.41 nm  
Radiant Power 107.8 W  
Width50%:

#### Color Coordinates

Correlated Color Temporal 5021 K  
x: 0.3447 u: 0.2107 u': 0.2107  
y: 0.3526 v: 0.3234 v': 0.4851

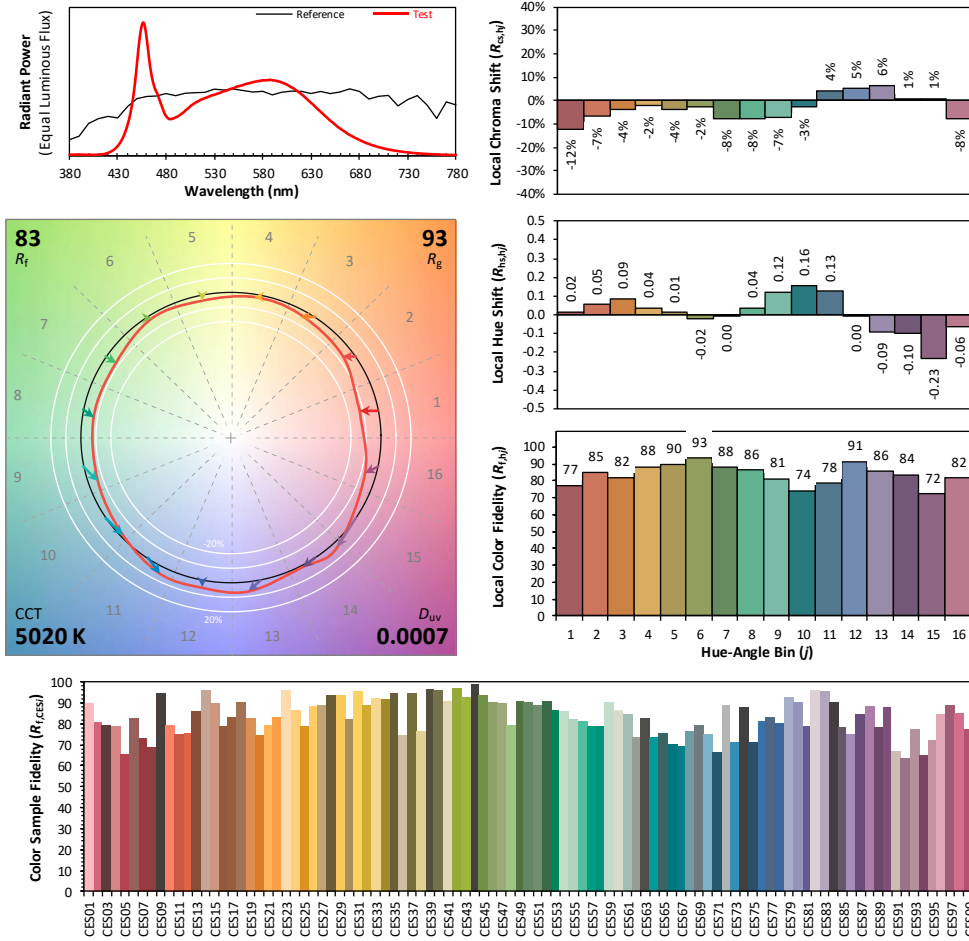
CRI01	83.7	CRI09	13.6
CRI02	93.3	CRI10	82.6
CRI03	94.7	CRI11	79.9
CRI04	80.8	CRI12	63.1
CRI05	83.6	CRI13	87.0
CRI06	88.3	CRI14	97.9
CRI07	84.8	CRI15	78.7
CRI08	66.6	CRI16	74.2

ResultsCRI 84.5



PlanckDistance 6.9E-004

### 4.1 Integrating Sphere Test



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

$x$     **0.3447**  
 $y$     **0.3526**  
 $u'$    **0.2107**  
 $v'$    **0.4851**

CIE 13.3-1995 (CRI)	
$R_a$	85
$R_g$	14

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.	ALEDXL3T	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° 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	120.01	60	3.114	373.5	0.999
NON-WROST CASE	277.02	60	1.372	366.5	0.964

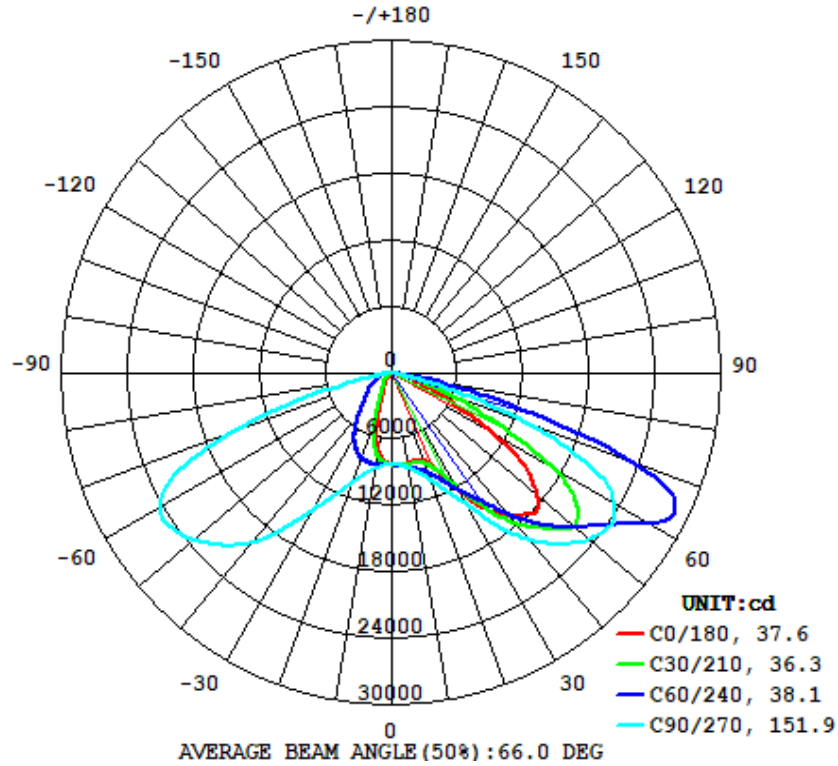
#### Test Result

Flux (lm)	Field Angle(10%)		Beam Angle(50%)		Luminous Efficacy (lm/W)
	C0-180	C90-270	C0-180	C90-270	
48702	97.5	161.2	37.6	151.9	130.4

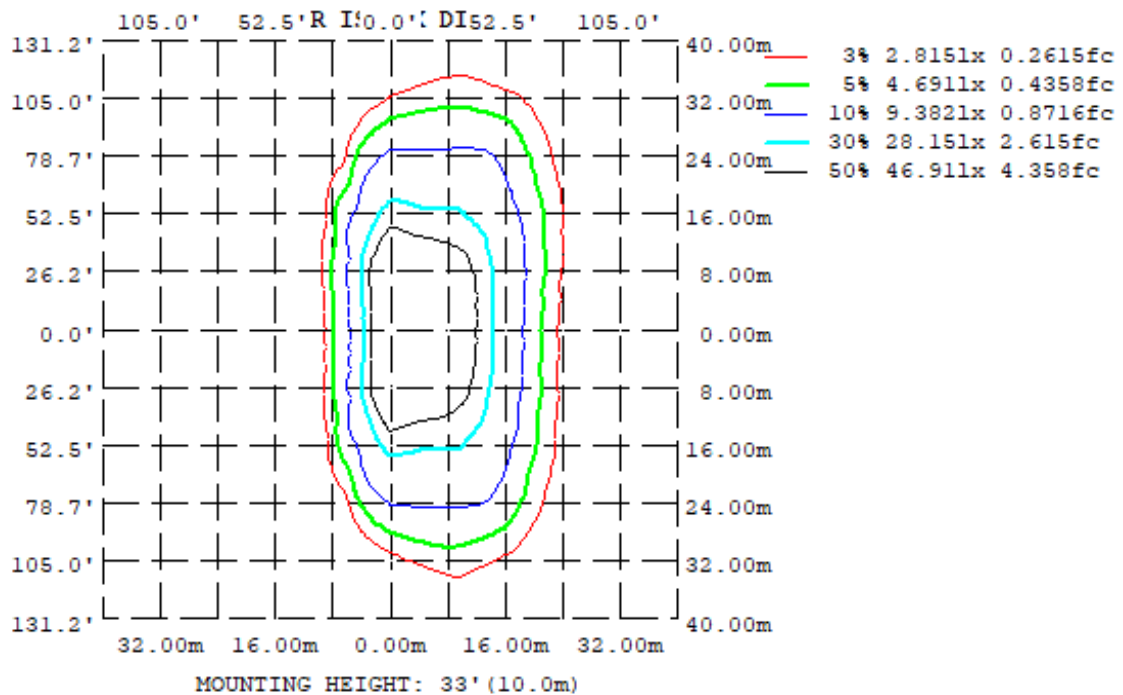
Zonal Lumen Requirement (0°-90°)	Zonal Lumen Requirement (80°-90°)	BUG rating
100.00%	0.63%	B4-U0-G4

## 4.2 Goniophotometer Test

### Light Distribution Curve



### Isolux Plot



## 4.2 Goniophotometer Test

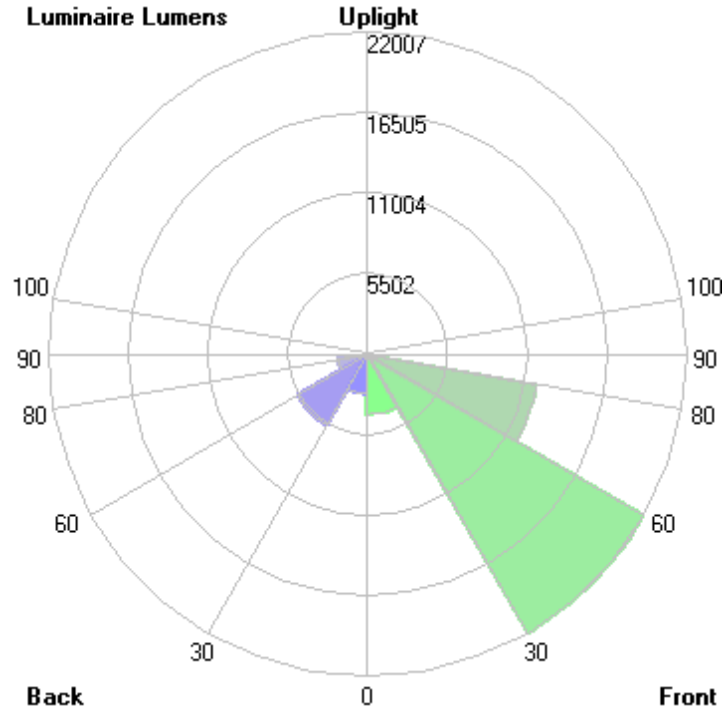
### Zonal Lumen Summary

γ	C0	C45	C90	C135	C180	C225	C270	C315
10	828.3	857.7	870.7	792.1	719.8	802.9	874.5	849.6
20	847.8	914.8	1023	584.5	330.7	609.7	1047	912.5
30	1218	1157	1383	305.0	137.3	329.4	1422	1166
40	1687	1752	1975	180.6	81.72	193.3	2004	1768
50	1743	2317	2340	134.1	36.05	149.7	2353	2394
60	1017	2479	2339	69.42	23.76	76.81	2433	2683
70	256.2	1151	1308	34.52	9.019	40.47	1520	1411
80	20.43	61.80	75.03	6.421	3.054	8.158	146.1	201.1
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	791.79	0 - 10	791.79 1.63%
10-20	2270.46	0 - 20	3062.25 6.29%
20-30	3794.22	0 - 30	6856.47 14.08%
30-40	6460.89	0 - 40	13317.36 27.34%
40-50	9651.52	0 - 50	22968.88 47.16%
50-60	11494.74	0 - 60	34463.62 70.76%
60-70	9761.40	0 - 70	44225.02 90.81%
70-80	4170.93	0 - 80	48395.95 99.37%
80-90	306.27	0 - 90	48702.22 100.00%
90-100	0.00	0 - 100	48702.22 100.00%
100-110	0.00	0 - 110	48702.22 100.00%
110-120	0.00	0 - 120	48702.22 100.00%
120-130	0.00	0 - 130	48702.22 100.00%
130-140	0.00	0 - 140	48702.22 100.00%
140-150	0.00	0 - 150	48702.22 100.00%
150-160	0.00	0 - 160	48702.22 100.00%
160-170	0.00	0 - 170	48702.22 100.00%
170-180	0.00	0 - 180	48702.22 100.00%

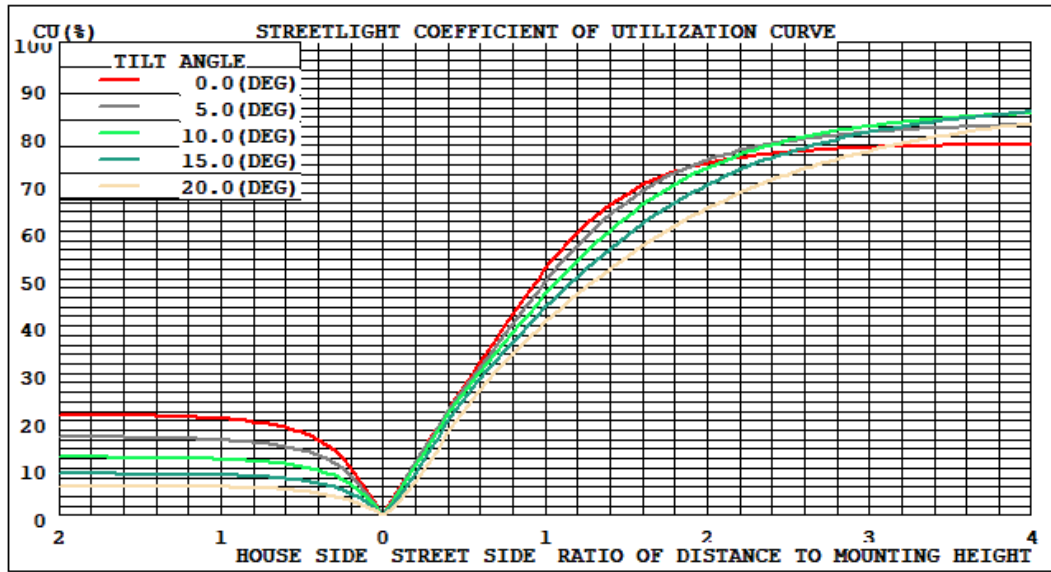
## 4.2 Goniophotometer Test

LCS/BUG

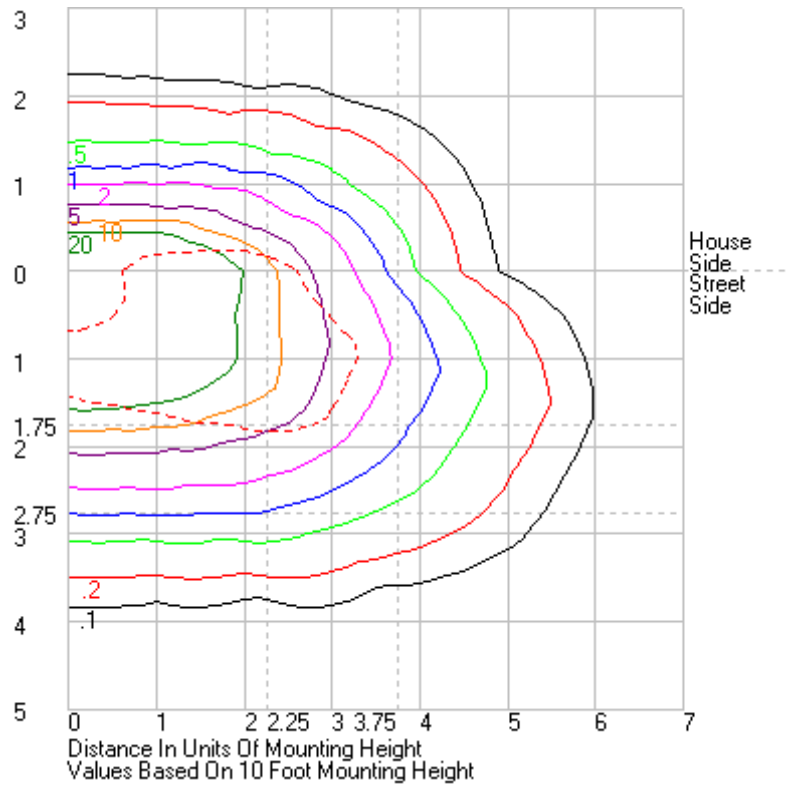


	Lumens	% Lamp	% Luminaire
FL - Front-Low (0-30)	4113.9	N.A.	8.4
FM - Front-Medium (30-60)	22007.0	N.A.	45.2
FH - Front-High (60-80)	11843.2	N.A.	24.3
FVH - Front-Very High (80-90)	255.1	N.A.	0.5
BL - Back-Low (0-30)	2742.5	N.A.	5.6
BM - Back-Medium (30-60)	5600.1	N.A.	11.5
BH - Back-High (60-80)	2089.1	N.A.	4.3
BVH - Back-Very High (80-90)	51.2	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>48702.1</b>	<b>N.A.</b>	<b>100.0</b>
<b>BUG Rating</b>	<b>B4-U0-G4</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	8355.41	8355.41	8355.41	8355.41	8355.41	8355.41	8355.41	8355.41	8355.41	8355.41	8355.41	8355.41	8355.41	8355.41	8355.41	8355.41	8355.41	8355.41	8355.41	8355.41	8355.41	8355.41	8355.41	8355.41	8355.41
1	8391.06	8384.42	8378.24	8370.89	8361.36	8299.36	8286.11	8270.52	8255.07	8243.97	8230.57	8226.79	8315.95	8314.67	8315.82	8320.44	8326.13	8283.92	8288.62	8293.22	8295.17	8298.07	8297.42	8300.41	8391.06
2	8415.34	8410.39	8406.21	8398.96	8388.51	8322.02	8297.22	8272.63	8258.84	8225.82	8207.81	8198.74	8284.25	8285.22	8290.56	8302.15	8316.68	8286.23	8299.98	8313.16	8322.14	8325.23	8324.45	8326.69	8415.34
3	8429.34	8426.93	8427.48	8427.09	8417.66	8348.9	8317.18	8279.29	8243.54	8212.04	8183.63	8162.76	8247.99	8253.23	8266.98	8290.35	8316.74	8297.68	8324.4	8343.09	8351.73	8351.37	8344.86	8342.49	8429.34
4	8431.23	8433.19	8442.24	8452.31	8453	8384.02	8346.8	8295.08	8247.84	8199.1	8147.02	8109.72	8190	8201.14	8235.18	8281.16	8324.63	8317.76	8356.38	8380.83	8385.21	8378.65	8360.45	8349.08	8431.23
5	8420.61	8426.79	8448.31	8475.69	8489.71	8426.76	8382.15	8319.39	8254.59	8176.59	8094.53	8035.88	8110.78	8132.14	8188.97	8266.53	8336.74	8341.32	8422.53	8423.51	8403.06	8361.85	8342.02	8420.61	
6	8398.15	8412.58	8452.38	8499.71	8530.2	8476.32	8429.16	8355.15	8268.11	8149.71	8027.43	7940.13	7997.88	8033.28	8125.89	8242.42	8351.28	8378.65	8442.16	8476.13	8462.97	8423.39	8363.26	8328.78	8398.15
7	8369.2	8391.07	8448.82	8522.01	8574.9	8537.08	8487.21	8402.85	8281.19	8116.47	7938.04	7796.67	7845.7	7898.56	8038.77	8211.6	8368.21	8425.03	8498.7	8531.64	8506.5	8441.81	8364.67	8306	8369.2
8	8343.3	8370.39	8441.26	8542.12	8623.37	8602.48	8549.07	8451.2	8297.21	8067.02	7817.79	7628.8	7663.82	7735.24	7925.45	8168.8	8386.99	8483.11	8569.96	8603.1	8554.68	8461.71	8355.81	8285.97	8343.3
9	8314.9	8348.53	8438.39	8559.77	8674.71	8676.12	8624.84	8508.63	8306.33	8001.17	7666.43	7433.43	7450.21	7542	7782.09	8107	8407.06	8552.1	8654.81	8681.68	8607.36	8477.46	8351.3	8267.61	8314.9
10	8283.07	8322.59	8434.39	8576.74	8726.3	8750.92	8706.91	8573.44	8310.78	7921.08	7499.64	7202.11	7198.02	7317.4	7618.83	8028.72	8427.47	8622.13	8745.17	8766.69	8664.05	8496.06	8346.81	8241.17	8283.07
11	8258.65	8301.35	8429.16	8601.93	8781.61	8843.27	8802.74	8644.95	8315.36	7811.93	7303.02	6911.85	6889.07	7044.66	7425.86	7929.32	8442.1	8706.05	8843.8	8859.63	8724.57	8525.07	8337.67	8209.59	8258.65
12	8248.41	8293.28	8426.02	8628.16	8837.91	8937.67	8909.17	8725.75	8308.9	7690.83	7055.74	6541.06	6539.13	6722.69	7196.62	7819.12	8449.9	8795.77	8957.94	8956.81	8783.44	8551.81	8335.51	8220.82	8248.41
13	8248.96	8297.21	8432.02	8654.76	8899.94	9035.88	9024.96	8812.59	8295.31	7541.01	6776.59	6209.03	6156.65	6369.08	6924.38	7696	8451.38	8898.1	9085.98	9069.96	8850.07	8580.6	8342.37	8212.09	8248.96
14	8254.99	8308.35	8451.87	8682.6	8969.8	9154.51	9158.62	8910.74	8275.05	7366.56	6457.12	5877.27	5752.33	5992.32	6623.52	7543.92	8446.15	9007.39	9228.78	9190.02	8925.12	8615.16	8365.62	8225.77	8254.99
15	8262.74	8323.71	8482.71	8720.66	9041.82	9269.97	9301.34	9016.54	8239.14	7161.2	6143.87	5488.86	5342.31	5603.04	6300.94	8239.15	8434.47	9130.16	9388.2	9322.37	9011.96	8659.83	8399.42	8241.24	8262.74
16	8274.28	8336.13	8521.05	8773.09	9129.69	9413.19	9465.32	9134.88	8196.91	6920.19	5807.67	5081.52	4922.18	5196.97	5957.94	7146.54	8414.5	9268.47	9569.76	9474.77	9107.13	8726.27	8443.67	8257.29	8274.28
17	8292.81	8355.54	8560.86	8846.47	9225.71	9560.82	9641.71	9252.91	8148.12	6670.41	5444.06	4683.11	4521.2	4805.41	5611.09	6905.41	8388.49	9418.36	9769.45	9637.76	9209.03	8802.45	8487.44	8281.98	8292.81
18	8325.32	8388.14	8609.2	8933.51	9334.28	9715.13	9825.47	9378.81	8083.98	6399.79	5080.69	4292.61	4105	4414.12	5242.91	6642.25	8352.86	9576.47	9990.21	9819.88	9331.43	8895.67	8542.48	8321.29	8325.32
19	8381.09	8437.51	8666.16	9031.22	9459.18	9885.96	10022.7	9511.64	8004.26	6128.97	4719.1	3888.32	3691.45	4009.75	4888.69	6372.77	8304.93	9749.28	10225.2	10018.9	9470.18	9004.68	8607.71	8376.23	8381.09
20	8477.77	8521.09	8740.05	9147.71	9597.72	10057.5	10228.3	9640.75	7906.43	5844.67	4353.66	3495.57	3306.91	3611.49	4530.25	6096.92	8242.79	9924.59	10472.6	10232.3	9626.61	9124.55	8691.48	8469.3	8477.77
21	8625.12	8653.58	8835.49	9272.8	9756.29	10260.3	10470.9	9786.74	7785.4	5545.29	3990.91	3145.04	2969.19	3249.38	4165.9	5802.44	8166.62	10098	10740.6	10460.3	9815.37	9259.26	8800.71	8606.66	8625.12
22	8797.74	8829.02	8969.48	9411.43	9933.28	10475.4	10731.3	9933.83	7655.5	5245.22	3631.75	2836.08	2670.11	2927.19	3802.75	5509.72	8067.23	10282.6	11026.4	10712	10023	9410.32	8944.34	8783.23	8797.74
23	9007.13	9039.33	9154.56	9571.85	10143.5	10732.9	11021.7	10089.1	7503.08	4953.48	3301.59	2559.53	2412.46	2644.55	3458.75	5215.23	7956.06	10467.3	11333.1	10990	10259.6	9583.57	9143.51	8985.78	9007.13
24	9279.94	9285.3	9389.99	9745.99	10384.1	11019.7	11344	10258.9	7342.19	4656.78	3012.64	2329.91	2187.35	2405.33	3155.52	4928.31	7823.06	10657	11656.6	11280.8	10512.8	9772.54	9384.88	9224.47	9279.94
25	9646.46	9606.06	9655.63	9950.13	10643.8	11325.6	11674.2	10412.7	7177.74	4349.19	2754.95	2125.47	1984.16	2189.95	2889.62	4632.06	7679.67	10860.3	12006.5	11600	10786.5	9993.42	9650.81	9532.06	9646.46
26	10085.5	10034.9	9960.95	10193.8	10935.3	11673.6	12049.8	10596.5	7011.16	4054.38	2535.36	1935.97	1814.4	1997.41	2654.1	4331.9	7542.06	11072.2	12394.8	11958.7	11093.2	10245.4	9964.55	9944.67	10085.5
27	10599.9	10517	10332.8	10479.7	11236.8	12021	12442.3	10782.5	6841.45	3764.37	2344.58	1778.15	1668.6	1835.47	2452.27	4041.71	7396.33	11285.6	12796.3	12332.8	11403.1	10529.9	10320.3	10418.9	10599.9
28	11066.5	11022	10786.8	10815.7	11555.5	12427.6	12864.6	10971.6	6669.2	3495.83	2163.72	1643.84	1543.37	1694.52	2265.13	3762.77	7235.22	11504.4	13238.8	12732.5	11717.9	10872	10757.7	10926.7	11066.5
29	11614.9	11558.9	11301.6	11177.2	11885.1	12818.4	13327	11177.7	6502.96	3262.08	2002.63	1529.32	1441.43	1573.8	2101.9	3516.41	7067.77	11732	13716	13157.1	12073.1	11248.7	11261.6	11467.9	11614.9
30	12177.7	12129.9	11853.7	11574.6	12229.2	13251.4	13828.8	11381.4	6336.73	3050.27	1860.91	1435.88	1373.41	1476.42	1955.44	3294.37	6884.79	11966.9	14220.5	13595.6	12425.1	11658.1	11815	12021.1	12177.7
31	12755.6	12691.6	12430.1	12027.5	12569.6	13738.2	14370.2	11577	6159.29	2867.09	1745.31	1365.76	1305.63	1410.04	1827.39	3098.37	6692.28	12203.2	14745.8	14049	12791.6	12099.1	12390.6	12590.3	12755.6
32	13354.4	13295.4	13038.5	12515.2	12927.9	14199.2	14941	11792.5	5966.88	2695.62	1643.14	1304.82	1251.45	1352.33	1720.11	2924.13	6494.92	12436.1	15305.6	14534	13172.7	12582	12984.5	13177.9	13354.4
33	13941.5	13895.4	13635	13060.1	13307.2	14728.7	15542.5	11998.9	5764.54	2538.87	1558.11	1251.58	1200.96	1294.68	1631.13	2760.76	6285.19	12665.5	15878.1	15031.1	13562.6	13122.5	13601.7	13786.5	13941.5
34	14516.4	14495.3	14230.8	13644.2	13707.8	15248.2	16164	12195.5	5545.91	2389.2	1491.78	1200.77	1152.19	1244.61	1561.05	2601.09	6064.68	12886.8	16467.9	15544.1	13965.5	13727.1	14213	14411.6	14516.4
35	15042.9	15071.6	14856	14228.2	14108.4	15781.7	16797.3	12397.5	5317.59	2254.57	1435.01	1152.62	1102.1	1196.04	1502.22	2452.54	5827.22	13096.8	17077.5	16069	14391.8	14355.7	14850.4	15018.5	15042.9
36	15529.7	15617.6	15492.3	14841	14556.1	16334	17424.5	12559.5	5089.39	2135.9	1385.27	1102.25	1047.6	1147.74	1454.29	2316.33	5577.75	13289.9	17707.8	16598.8	14843.6	15008.1	15496.5	15590.5	15529.7
37	15970	16109.3	16140.3	15502.6	15047.1	16881.5	18068.2	12705.3	4860.98	2037.34	1338.2	1050.79	993.26	1096.06	1408.66	2199.07	5329.27	13446.9	18340.4	17137.3	15334.3	15667.2	16159.5	16113	15970
38	16321.6	16549.1	16742.4	16155	15583.3	17415.8	18668.8	12820	4644.85	1946.69	1291.67	997.05	934.47	1044.51	1367.26	2095.51	5077.76	13566.2	18953	17660.7	15871.7	16334.7	16808		







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.	ALEDXL3T	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
120.04	60	3.092	370.9	0.999	2.95%
277.00	60	1.373	366.2	0.963	10.75%

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