

# Photometric Test Report

## Relevant Standards

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

## Prepared For RAB Lighting Inc.

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## Project Number

DLF2110112

## Report Number

DLF2110112-8a

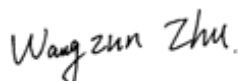
## Test Date

2021/11/1

## Issue Date

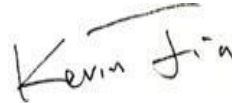
2021/11/4

### 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		19172
Minimum Luminaire Efficacy (lm/W) (Goniophotometer - Section 4.2)	IES LM-79-2008	Standard 105	Premium 120	129.1
Power (Input Wattage) (W) (Goniophotometer - Section 4.2)	IES LM-79-2008	Worst Case		148.6
Total Harmonic Distortion (A%) (THD & PF - section 4.3)	ANSI C82.77:2014	20.00%	120V	3.66%
		20.00%	277V	8.39%
Power Factor (THD & PF - section 4.3)	ANSI C82.77:2014	0.9	120V	1.000
		0.9	277V	0.957
Allowable CCTs* (K) (Integrating Sphere - Section 4.1)	IES LM-79-2008	7 step	5029±355	4958
		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		13
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%		0.25%
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		1.239
(Goniophotometer - Section 4.2)		Non-Worst Case		0.548
Power (Input Wattage - W)				
(Goniophotometer - Section 4.2)	IES LM-79-2008	Worst Case		148.6
(Goniophotometer - Section 4.2)		Non-Worst Case		145.4

## 2.0 Test List

Test Item	Test	Test Date	Model Number	Sample No.
1	Integrating Sphere Test	2021/11/1	ALEDM2T	H1
2	Goniophotometer Test	2021/11/1	ALEDM2T	H1
3	THD and PF Test	2021/11/1	ALEDM2T	H1

### Remark(If any)

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2、 The results reported herein have been performed in accordance with the laboratory's terms of accreditation. This report shall not be reproduced except in full without the written approval of the Laboratory. The results in this report apply to the test sample(s) mentioned above at the time of the testing period only and are not to be used to indicate applicability to other similar products. This report does not imply that the product(s) has met the criteria for certification.

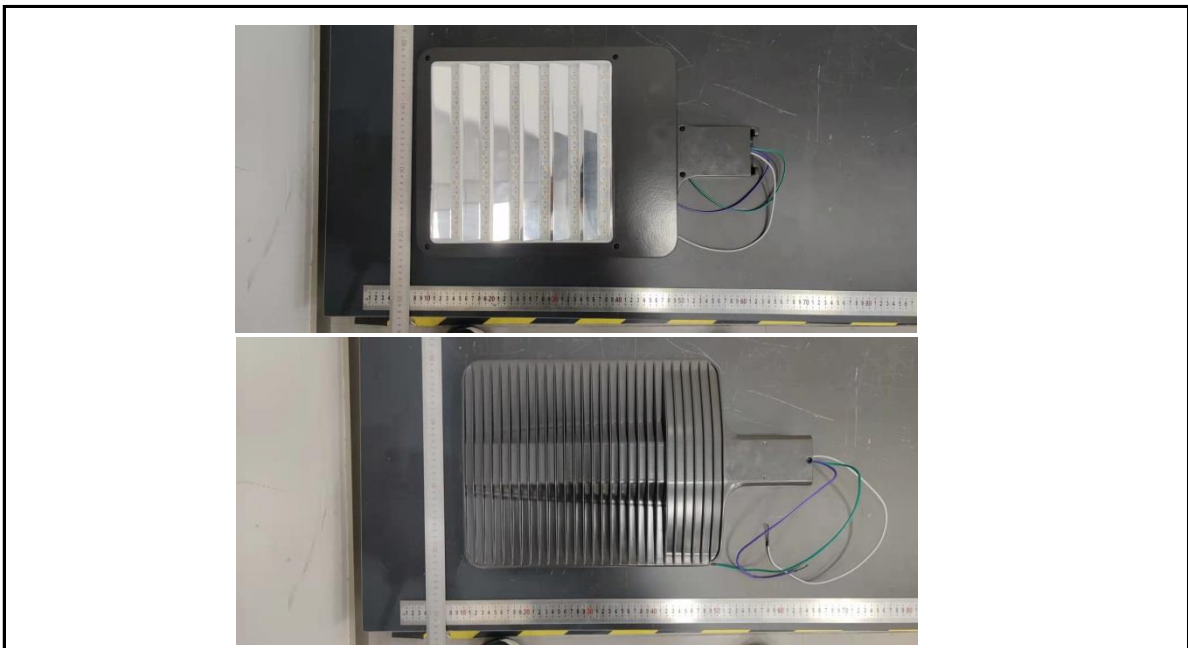
## 3.0 Production Description

**Luminaire Description:** ALEDM2T

**Description:** 150W/18,000 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.	ALEDM2T	Sample ID.	H1
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
120.00	60	1.235	148.1	1.000
277.02	60	0.547	144.9	0.957

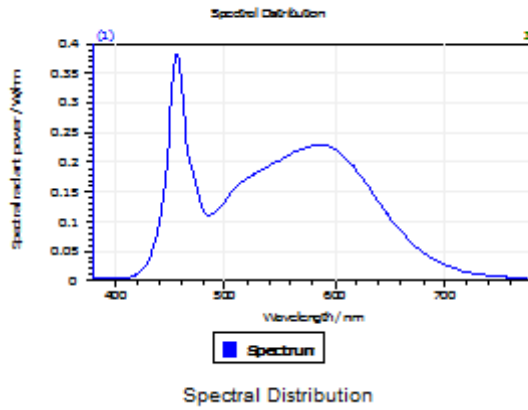
#### Test Result

CCT (K)	CRI	R9	Duv
4958	85	13	0.00083

Rf	Rg	IES Rcs,h1
83	93	-12%

## 4.1 Integrating Sphere Test

### Results



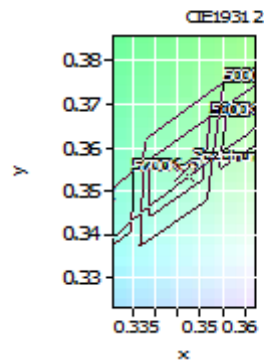
#### Spectral values

DominantWavelength	572.46 nm
Purity	0.103
PeakWavelength	456.38 nm
Radiant Power	44.61 W
Width50%:	

Date: 2021/11/1 13:14:31

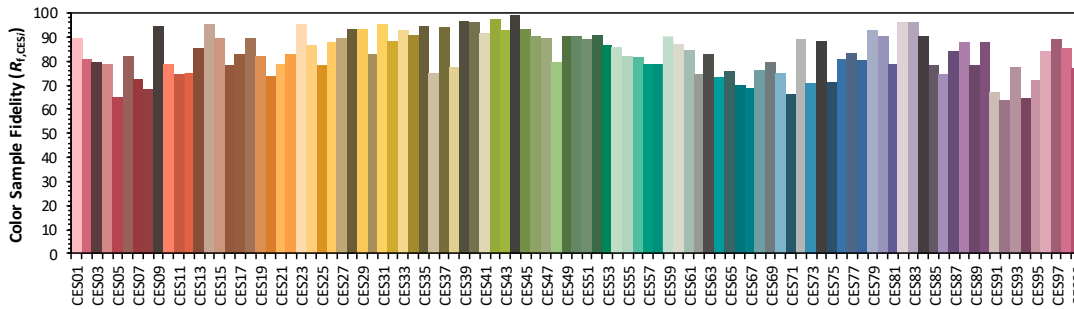
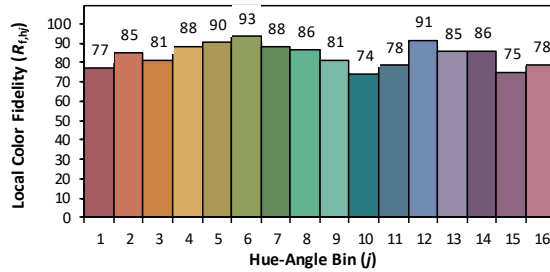
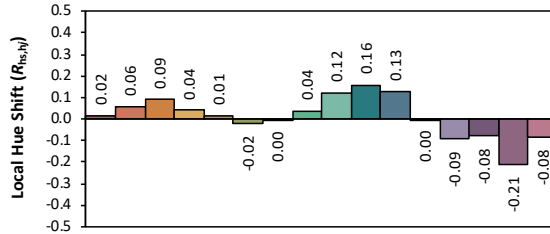
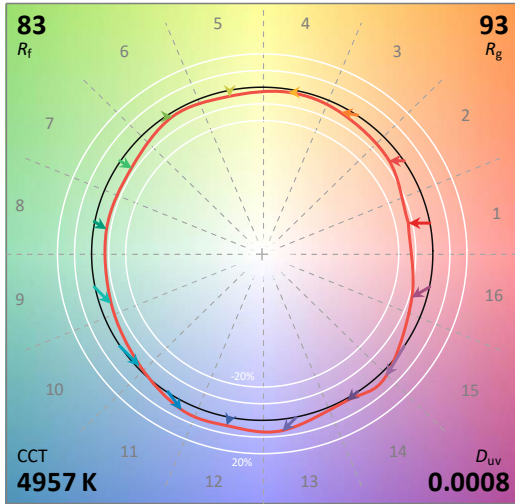
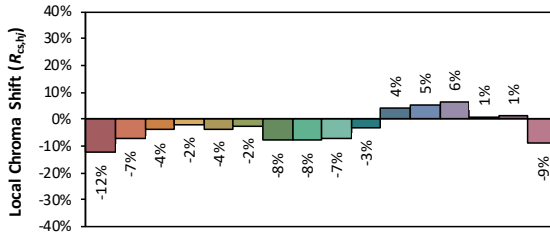
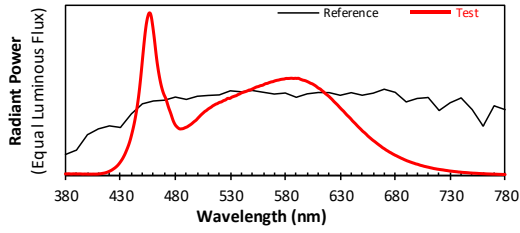
#### Color Coordinates

Correlated Color Temporal	4958 K	
x:	0.3465	u: 0.2113 u': 0.2113
y:	0.3544	v: 0.3242 v': 0.4862
CRI01	83.5	CRI09 13.4
CRI02	92.7	CRI10 81.1
CRI03	95.1	CRI11 80.2
CRI04	81.2	CRI12 62.6
CRI05	83.4	CRI13 86.6
CRI06	87.6	CRI14 98.0
CRI07	85.4	CRI15 78.7
CRI08	67.0	CRI16 74.4
ResultsCRI	84.5	



PlanckDistance 8.3E-004

### 4.1 Integrating Sphere Test



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

$x$  0.3465  
 $y$  0.3544  
 $u'$  0.2113  
 $v'$  0.4862

CIE 13.3-1995 (CRI)	
$R_a$	84
$R_g$	14

## 4.0 LM-79 Measurement and Test Results

### 4.2 Goniophotometer Test

Model No.	ALEDM2T	Sample ID.	H1
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	119.96	60	1.239	148.6	1.000
NON-WROST CASE	277.00	60	0.548	145.4	0.957

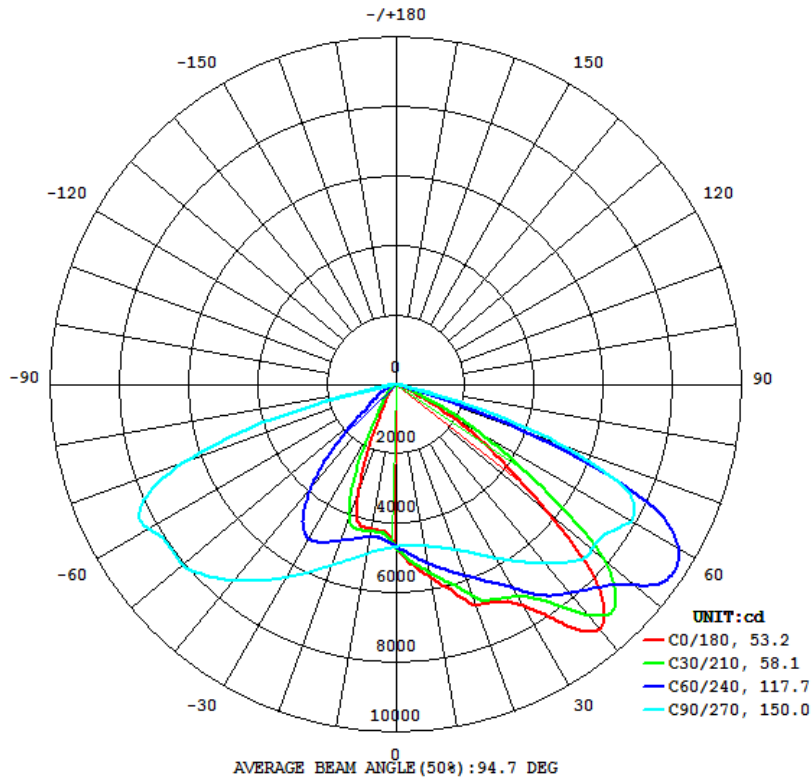
#### Test Result

Flux (lm)	Field Angle(10%)		Beam Angle(50%)		Luminous Efficacy (lm/W)
	C0-180	C90-270	C0-180	C90-270	
19172	91.8	158.5	53.2	150.0	129.1

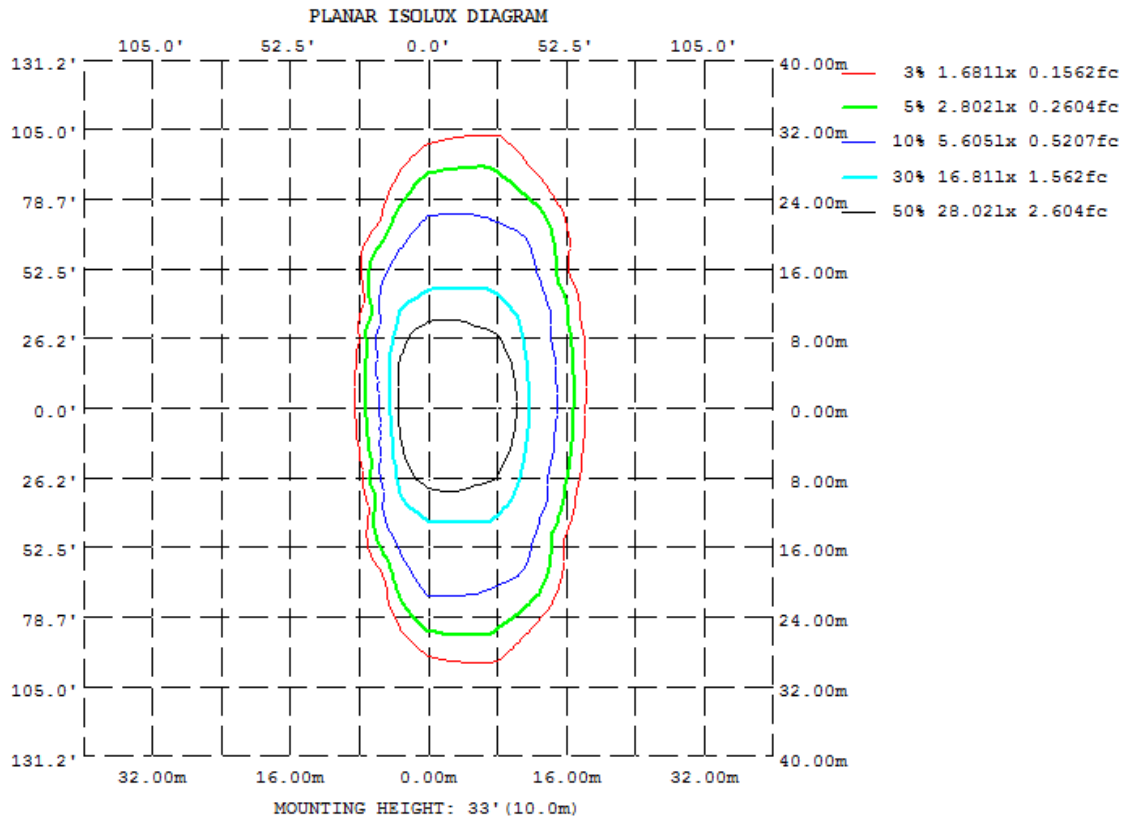
Zonal Lumen Requirement (0°-90°)	Zonal Lumen Requirement (80°-90°)	BUG rating
100.00%	0.25%	B3-U0-G2

## 4.2 Goniophotometer Test

### Light Distribution Curve



### Isolux Plot



## 4.2 Goniophotometer Test

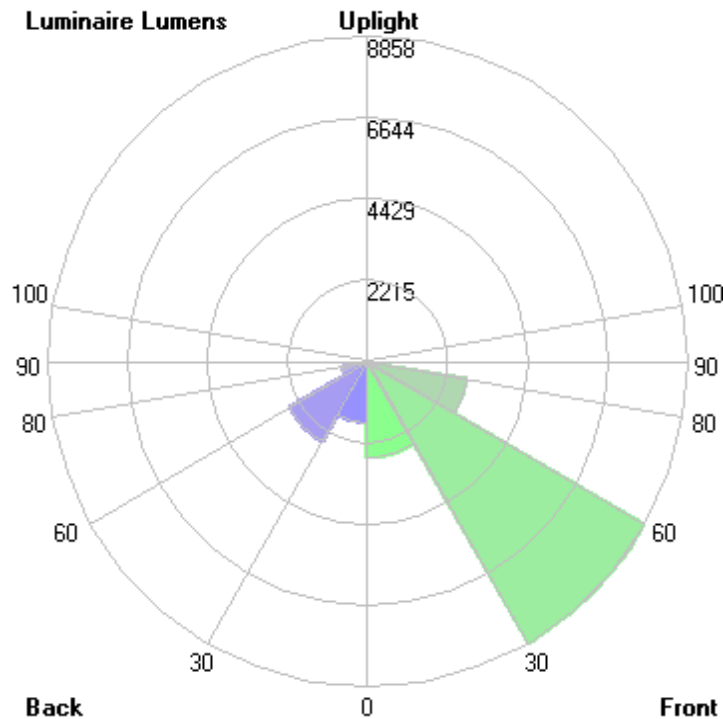
### Zonal Lumen Summary

γ	C0	C45	C90	C135	C180	C225	C270	C315
10	562.3	535.6	472.4	422.9	422.8	436.8	493.7	547.8
20	675.8	611.7	507.3	421.1	319.1	452.3	553.4	640.5
30	735.5	705.6	577.8	260.7	80.45	320.7	641.5	749.2
40	915.0	796.8	673.5	82.29	38.90	106.0	736.8	841.7
50	572.1	955.0	738.4	40.58	12.86	50.35	809.3	1027
60	188.4	594.5	784.3	12.48	6.509	20.06	828.5	711.0
70	23.61	68.22	502.4	7.413	3.828	9.013	652.5	116.3
80	4.480	9.301	21.59	1.321	0.8237	2.102	51.16	14.05
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	454.26	0 - 10	454.26	2.37%
10-20	1442.37	0 - 20	1896.63	9.89%
20-30	2379.95	0 - 30	4276.58	22.31%
30-40	3294.42	0 - 40	7571.00	39.49%
40-50	4159.19	0 - 50	11730.19	61.18%
50-60	3902.00	0 - 60	15632.19	81.54%
60-70	2664.48	0 - 70	18296.67	95.43%
70-80	826.62	0 - 80	19123.29	99.75%
80-90	48.78	0 - 90	19172.07	100.00%
90-100	0.00	0 - 100	19172.07	100.00%
100-110	0.00	0 - 110	19172.07	100.00%
110-120	0.00	0 - 120	19172.07	100.00%
120-130	0.00	0 - 130	19172.07	100.00%
130-140	0.00	0 - 140	19172.07	100.00%
140-150	0.00	0 - 150	19172.07	100.00%
150-160	0.00	0 - 160	19172.07	100.00%
160-170	0.00	0 - 170	19172.07	100.00%
170-180	0.00	0 - 180	19172.07	100.00%

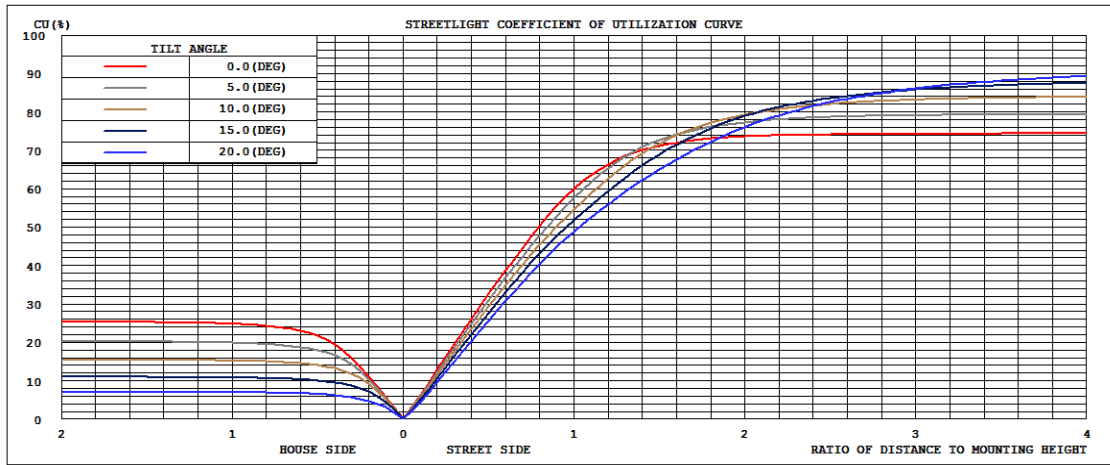
## 4.2 Goniophotometer Test

LCS/BUG

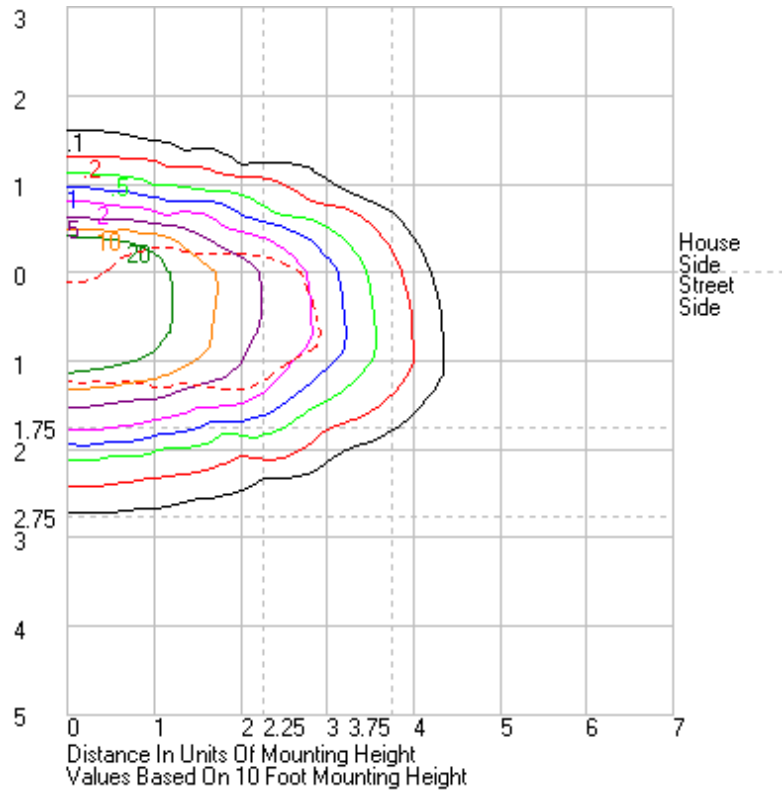


	Lumens	% Lamp	% Luminaire
FL - Front-Low (0-30)	2604.5	N.A.	13.6
FM - Front-Medium (30-60)	8858.3	N.A.	46.2
FH - Front-High (60-80)	2786.7	N.A.	14.5
FVH - Front-Very High (80-90)	37.9	N.A.	0.2
BL - Back-Low (0-30)	1672.1	N.A.	8.7
BM - Back-Medium (30-60)	2497.3	N.A.	13.0
BH - Back-High (60-80)	704.4	N.A.	3.7
BVH - Back-Very High (80-90)	10.9	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>19172.1</b>	<b>N.A.</b>	<b>100.0</b>
<b>BUG Rating</b>	<b>B3-U0-G2</b>		

Coefficients of Utilization



Isolines





## 4.2 Goniophotometer Test

	0	15	30	45	60	75	90	105	120	135	150	165	180	195	210	225	240	255	270	285	300	315	330	345	360
0	4687	4687	4687	4687	4687	4687	4687	4687	4687	4687	4687	4687	4687	4687	4687	4687	4687	4687	4687	4687	4687	4687	4687	4687	4687
1	4783.97	4779.76	4762.78	4742.79	4718.28	4691.61	4663.45	4634.12	4607.18	4585.61	4567.07	4553.73	4583.31	4590.68	4600.72	4617.91	4639.08	4660.98	4684.03	4704.47	4723.18	4738.6	4747.42	4752.45	4783.97
2	4898.3	4880.18	4853.37	4812.51	4762.3	4709.75	4656.04	4600.22	4547.32	4496.97	4463.98	4444.87	4471.01	4483.82	4507.64	4546.38	4598.61	4648.95	4696.69	4742.31	4783.37	4820.22	4846.73	4858.58	4898.3
3	5000.63	4982.38	4942.27	4884.61	4811.76	4730.36	4652.08	4571.61	4485.79	4419.45	4374.01	4351.38	4375.07	4389.36	4426.51	4482.05	4554.74	4639.35	4717.1	4785.21	4852.91	4908.83	4948.19	4967.53	5000.63
4	5101.67	5074.55	5026.19	4958.3	4865.91	4757.38	4652.69	4541.68	4432.97	4352.08	4299.79	4278.33	4297.63	4317.8	4357.16	4424.85	4517.29	4633.04	4737.49	4833.23	4927.05	4999.18	5042.99	5067.07	5101.67
5	5186.76	5158.67	5109.86	5026.83	4922.2	4788.79	4657.78	4515.58	4385.19	4294.36	4251.38	4237.47	4260.2	4275.72	4311.86	4378.84	4486.48	4623.19	4760.95	4881.82	4998.71	5080.44	5137.16	5157.86	5186.76
6	5275.46	5243.27	5177.71	5100.35	4977.04	4822.18	4663.35	4492.79	4347.2	4259.19	4225.13	4224.08	4247.07	4264.02	4292.38	4349.2	4461.03	4619.42	4789.68	4937.05	5073	5168.41	5217.57	5246.83	5275.46
7	5354.9	5318.17	5257.5	5162.25	5032.9	4859.78	4673.27	4474.36	4314.03	4237.82	4219.1	4216.64	4240.07	4260.84	4292.46	4338.3	4440.21	4621.51	4819.32	4993.91	5144.5	5242.86	5304.62	5328.27	5354.9
8	5436.93	5396.69	5325.66	5230.73	5093.05	4899.49	4686.84	4459.27	4291.25	4234.35	4212.69	4208.08	4233.42	4256.61	4295.37	4341.99	4432.38	4626.43	4853.65	5055.13	5222.04	5323.08	5383.63	5406.17	5436.93
9	5529.21	5481.32	5398.57	5291.77	5151.2	4943.25	4703.54	4448.38	4279.87	4232.13	4206.97	4203.58	4230.48	4256.86	4296.93	4355.48	4434.75	4635	4892.17	5120.77	5298.85	5402.07	5460.9	5500.12	5529.21
10	5623.42	5568.71	5479.56	5355.73	5205.16	4990.41	4724.08	4442.51	4279.11	4228.95	4202.64	4199.32	4228.46	4257.75	4302.84	4367.71	4446.61	4649.13	4936.87	5188.44	5370.12	5477.98	5550.29	5590.11	5623.42
11	5715.43	5665.45	5561.52	5425.11	5267.05	5040.03	4747.8	4441.84	4289.47	4228.47	4197.92	4195	4227.59	4258.93	4309.36	4378.46	4468.88	4667.64	4986.77	5264.19	5452.95	5557.54	5640.33	5688.23	5715.43
12	5815.27	5745.08	5647.25	5500.4	5329.58	5094.08	4775.91	4442.5	4300.37	4230.24	4194.29	4194.1	4228.91	4263.88	4313.33	4394.02	4496.58	4693.09	5038.71	5339.62	5533.14	5644.02	5732.43	5774.98	5815.27
13	5911.64	5850.8	5721.44	5577.2	5390.61	5145.44	4804.19	4448.48	4311.76	4231.16	4193.38	4190.7	4225.77	4265.15	4321.2	4408.45	4530.2	4720.78	5093.47	5418.17	5613.36	5732.88	5820.35	5884.42	5911.64
14	6005.18	5942.19	5816.27	5652.36	5454.5	5199.34	4834.6	4456	4320.87	4233.65	4191.62	4178.77	4211.04	4262.18	4329.17	4425.19	4563.53	4751.99	5150.87	5498.12	5699.75	5824.28	5921.35	5981.66	6005.18
15	6119.01	6038.25	5908.21	5735.54	5512.91	5254.99	4864.99	4467.85	4331.8	4237.18	4186.72	4140.26	4167.24	4237.21	4334.71	4442.38	4596.73	4785.01	5206.97	5581	5782.24	5919.35	6014.7	6072.86	6119.01
16	6241.96	6146.94	5988.43	5800.48	5578.45	5314.07	4898.32	4485.24	4345.37	4242.57	4162.65	4073.23	4085.93	4186.18	4330.77	4463.77	4632.5	4823.35	5268.71	5666.22	5873.56	6007.51	6106.04	6191.25	6241.96
17	6375.36	6274.12	6094.4	5885.87	5643.31	5373.07	4937.93	4507.9	4359.25	4246.25	4118.97	3947.36	3939.69	4083.68	4305.31	4485.86	4670.09	4865.37	5330.15	5746.2	5965.23	6111.37	6217.3	6317.89	6375.36
18	6524.65	6416.3	6194.11	5962	5715.5	5433.68	4979.66	4535.88	4375.32	4246.96	4040.89	3770.07	3732.89	3924.3	4256.73	4506.56	4709.32	4912.51	5394.19	5828.35	6054.56	6207.72	6329.89	6462.8	6524.65
19	6667.86	6551.99	6315.88	6038.32	5785.1	5495.08	5025.46	4571.26	4393.35	4234.65	3917.9	3528.11	3474.38	3701.19	4159.54	4522.29	4748.77	4964.38	5463.9	5911.92	6146.76	6307.79	6462.63	6606.74	6667.86
20	6758.15	6683.69	6447.67	6116.89	5854.81	5557.47	5073.02	4610.61	4413.08	4210.7	3745.38	3268.7	3191.25	3449.16	4015.77	4522.59	4787.83	5018.88	5534.49	6001.84	6245.41	6404.54	6607.7	6740.39	6758.15
21	6782.64	6743.37	6571.51	6210.22	5933.36	5626.57	5123.69	4653.71	4438.82	4165.91	3528.85	2984.79	2887.98	3170.38	3825.4	4512.59	4829.41	5078.74	5609.63	6092.67	6340.9	6522.79	6745.16	6810.14	6782.64
22	6812.06	6763.85	6695.93	6310.32	6001.62	5692.05	5177.56	4700.52	4464.9	4090.8	3293.37	2686.16	2580.23	2873.27	3608.97	4477.55	4875.49	5146.36	5688.8	6185.65	6429.17	6638.89	6877.76	6836.81	6812.06
23	6831.58	6791.21	6760.97	6427.05	6081.38	5762.19	5235.87	4749.94	4490.95	3982.28	3039.77	2394.48	2271.79	2575.01	3367.08	4411.62	4924.5	5215.67	5769.25	6276.11	6537.28	6771.94	6962.27	6867.04	6831.58
24	6873.89	6812.37	6779.56	6553.28	6169.41	5836.62	5301.87	4804.42	4515.32	3833.09	2769.88	2094.84	1975.59	2278.35	3112.03	4310.9	4972.91	5287.73	5851.78	6372.55	6639	6913.61	6995.3	6890.68	6873.89
25	6899.11	6853.79	6823.23	6669.86	6254.41	5916.97	5371.67	4858.1	4532.49	3666.88	2503.34	1820.02	1689.52	1981.38	2841.17	4172.99	5022.74	5362.32	5941.38	6473.19	6744.15	7051.29	7038.6	6933.82	6899.11
26	6955.85	6885.98	6855.41	6794.84	6341.58	6004.61	5446.21	4920.38	4545.18	3475.74	2235.22	1551.57	1464.35	1701.76	2568.88	4012.15	5063.11	5437.47	6035.01	6572.76	6840.99	7190.11	7071.35	6964.12	6955.85
27	7000.61	6949.8	6908.38	6866.54	6430.35	6091.51	5526.31	4986.69	4549.86	3274.84	1969.97	1324.32	1239.17	1479.31	2294.83	3834.02	5097.05	5511.37	6129.11	6676.95	6949.44	7304.97	7113.26	7021.11	7000.61
28	7107.1	6986.75	6947.02	6941.32	6533.2	6183.77	5606.39	5053.13	4537.92	3056.13	1719.82	1122.83	1042.12	1256.85	2023.62	3638.45	5121.39	5586.74	6222.31	6782.25	7074.73	7360	7157.17	7068.01	7107.1
29	7226.72	7105.57	6986.44	6992.53	6642.22	6276.22	5691.93	5124.21	4506.76	2829.73	1487.42	963.49	902.35	1059.72	1768.12	3428.82	5130.47	5662.24	6317.08	6889.95	7194.05	7423.78	7202.36	7169.52	7226.72
30	7355.08	7216.26	7051.54	7056	6762.17	6374.36	5778.12	5193.93	4454.94	2606.64	1282.43	847.79	804.47	920.71	1545.25	3207.23	5120.19	5741	6414.77	7000.72	7337.07	7491.91	7285.05	7294.02	7355.08
31	7513.93	7352.7	7104.29	7100.79	6897.89	6481.04	5862.77	5260.94	4379.44	2370.86	1104.16	769.08	740.27	819.88	1347.24	2979.2	5084.46	5822.68	6509.77	7114.88	7471.74	7544.98	7330.3	7421.58	7513.93
32	7687.27	7504.31	7221.08	7168.34	7028.5	6588.13	5951	5328.05	4279.32	2143.71	963.17	710.32	683.02	755.38	1150.52	2740.24	5026.62	5900.86	6605.63	7225.39	7609.97	7610.42	7459.25	7579.01	7687.27
33	7895.13	7681.16	7330.79	7228.97	7167.17	6698.89	6038.77	5397.27	4155.94	1916.63	856.84	655.91	631.26	699.4	1003.56	2492.69	4947.31	5977.66	6699.93	7330.98	7744.72	7675.01	7581.84	7753.89	7895.13
34	8139.27	7883.2	7468.9	7271.68	7292.46	6801.31	6134.37	5467.72	4018.54	1698.15	784.07	615	592.36	647	894.18	2247.78	4842.55	6049.26	6792.04	7427.94	7874.98	7729.63	7717.49	7956.14	8139.27
35	8380.97	8120.17	7623.19	7354.65	7413.72	6900.48	6229.45	5542.78	3862.64	1494.51	727.38	574.17	555.98	604.97	820.6	2003.66	4717.58	6117.95	6887.1	7534.17	8007.83	7810.83	7877.65	8198.96	8380.97
36	8630.59	8356.29	7797.38	7415.35	7523.19	6993.51	6329.11	5618.17	3700.1	1311.21	672.97	537.5	520.08	569.62	763.89	1771.71	4575.75	6187.08	6982.06	7636.75	8113.46	7880	8053.75	8435.97	8630.59
37	8857.6	8590.86	7998.12	7514.4	7591.42	7094.39	6430.35	5693.5	3518.66	1147.89	631.78	501.08	485.78	534.09	708.74	1569.3	4415.45	6254.54	7076.51	7738.43	8170.96	7966.72	8258.44	8684.38	8857.6
38	9012.57	8795.52	8224.24	7659.57	7668.43	7192.79	6533.35	5763.37	3334.19	1014.23	591	466.41	452.49	458.92	659.5	1385.98	4238.64	6324.4	7175.85	7835.13	8254.24	8119.27	8486.28	8905.15	9012.57
39	9116.5	8936.19	8437.96	7795.62	7																				







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.	ALEDM2T	Sample ID.	H1
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
120.00	60	1.235	148.1	1.000	3.66%
277.02	60	0.547	144.9	0.957	8.39%

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