

# Photometric Test Report

## Relevant Standards

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

## Prepared For

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## Project Number

**DLF2111113**

## Report Number

**DLF2111113-28a**

## Test Date

**2021/11/26**

## Issue Date

**2021/12/2**

## 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		55139
Minimum Luminaire Efficacy (lm/W) (Goniophotometer - Section 4.2)	IES LM-79-2008	Standard 105	Premium 120	152.5
Power (Input Wattage) (W) (Goniophotometer - Section 4.2)	IES LM-79-2008	Worst Case		361.6
Total Harmonic Distortion (A%) (THD & PF - section 4.3)	ANSI C82.77:2014	20.00%		5.82%
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	4023
		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		8
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%		0.48%
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		0.806

## 2.0 Test List

Test Item	Test	Test Date	Model Number	Sample No.
1	Integrating Sphere Test	2021/11/26	ALEDXL5TN/480	AB1
2	Goniophotometer Test	2021/11/26	ALEDXL5TN/480	AB1
3	THD and PF Test	2021/11/26	ALEDXL5TN/480	AB1

### 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.

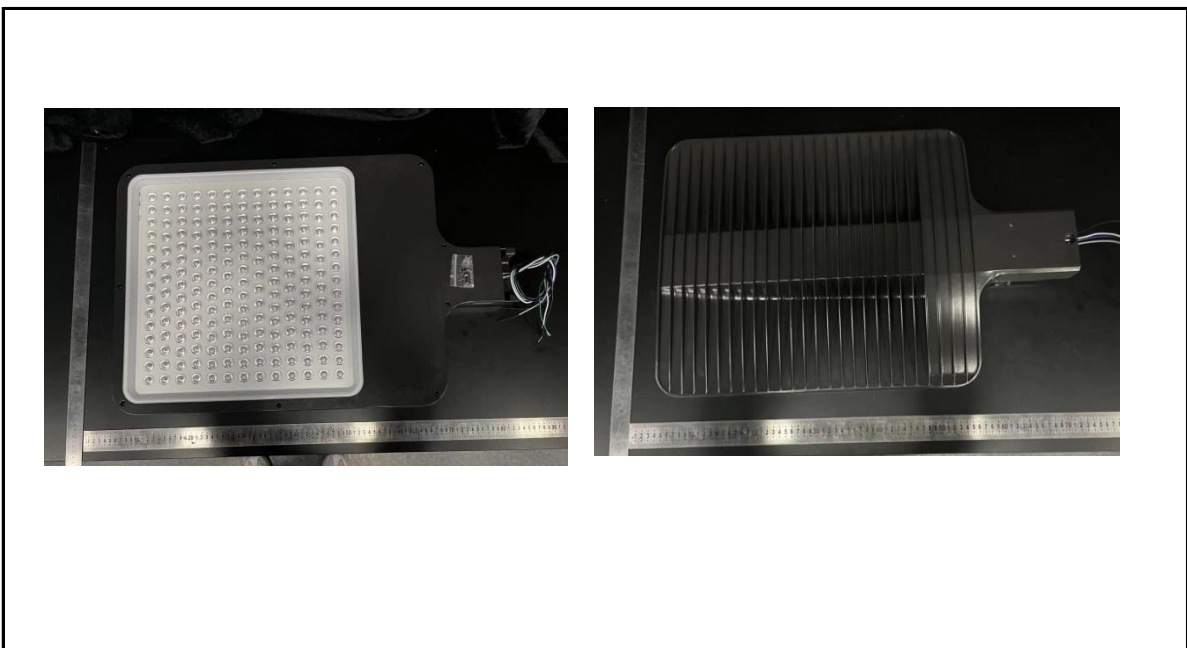
## 3.0 Production Description

**Luminaire Description:** ALEDXL5TN/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.	ALEDXL5TN/480	Sample ID.	AB1
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
479.95	60	0.803	359.9	0.934

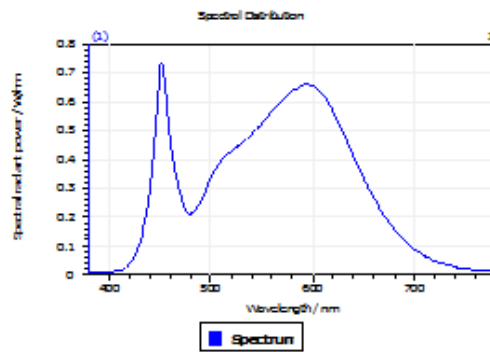
#### Test Result

CCT (K)	CRI	R9	Duv
4023	83	8	0.00029

Rf	Rg	IES Rcs,h1
84	95	-12%

## 4.1 Integrating Sphere Test

### Results



#### Spectral values

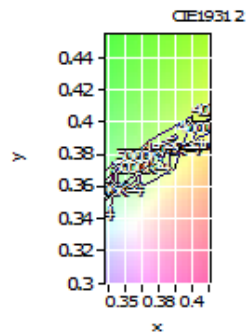
DominantWavelength	578.82 nm
Purity	0.271
PeakWavelength	451.82 nm
Radiant Power	116 W
Width50%	22.03 nm

#### Color Coordinates

Correlated Color Temperat 4023 K

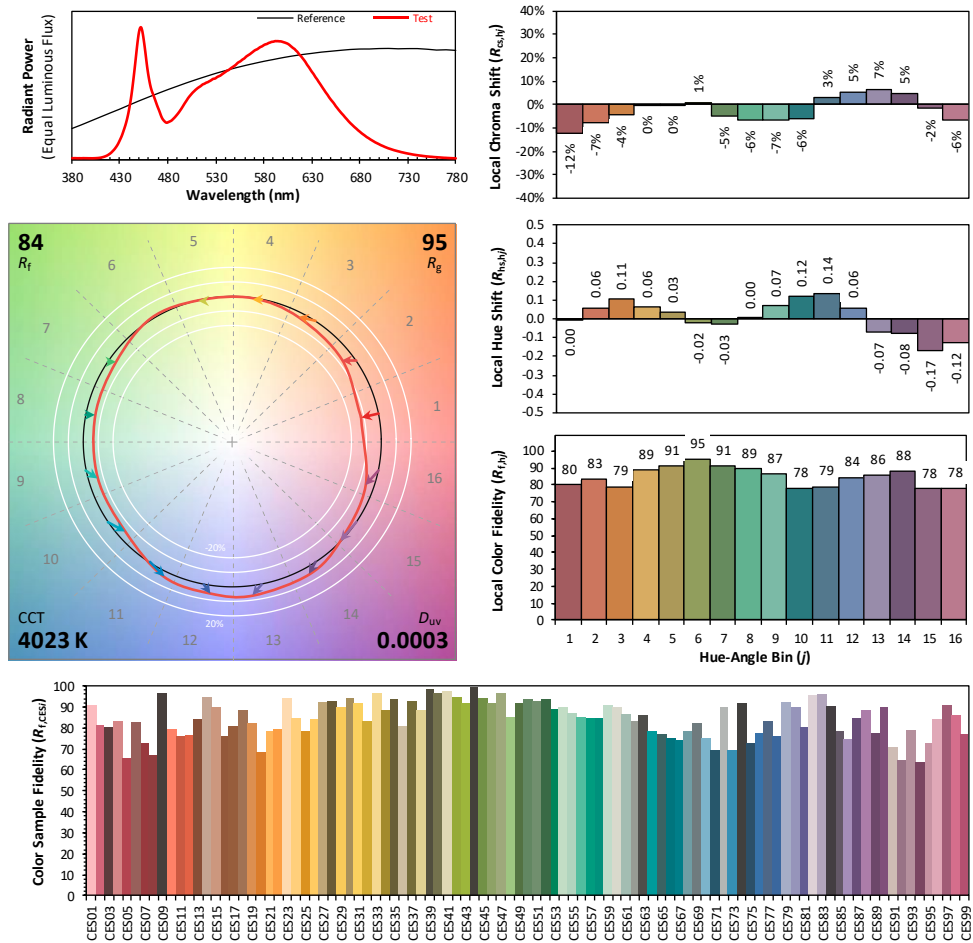
x: 0.3797 u: 0.2245 u': 0.2245  
y: 0.3769 v: 0.3344 v': 0.5015

ResultsCRICRI01	81.3	ResultsCRICRI09	7.6
ResultsCRICRI02	90.2	ResultsCRICRI10	77.0
ResultsCRICRI03	95.7	ResultsCRICRI11	80.2
ResultsCRICRI04	81.2	ResultsCRICRI12	64.4
ResultsCRICRI05	81.6	ResultsCRICRI13	83.7
ResultsCRICRI06	86.3	ResultsCRICRI14	98.0
ResultsCRICRI07	85.3	ResultsCRICRI15	74.8
ResultsCRICRI08	63.6	ResultsCRICRI16	72.3
ResultsCRI	83.2		



PlankDistance 2.9E-004

## 4.1 Integrating Sphere Test



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

$x$  0.3797  
 $y$  0.3769  
 $u'$  0.2245  
 $v'$  0.5015

CIE 13.3-1995  
(CRI)

$R_a$  83  
 $R_9$  8

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.	ALEDXL5TN/480	Sample ID.	AB1
Opreate time (Min.)	90	Stabilization time (Min.)	45
Temperature (°C)	25.3	Humidity (%RH)	54.0

#### Test Method

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

Photometric paramters 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	479.95	60	0.806	361.6	0.934

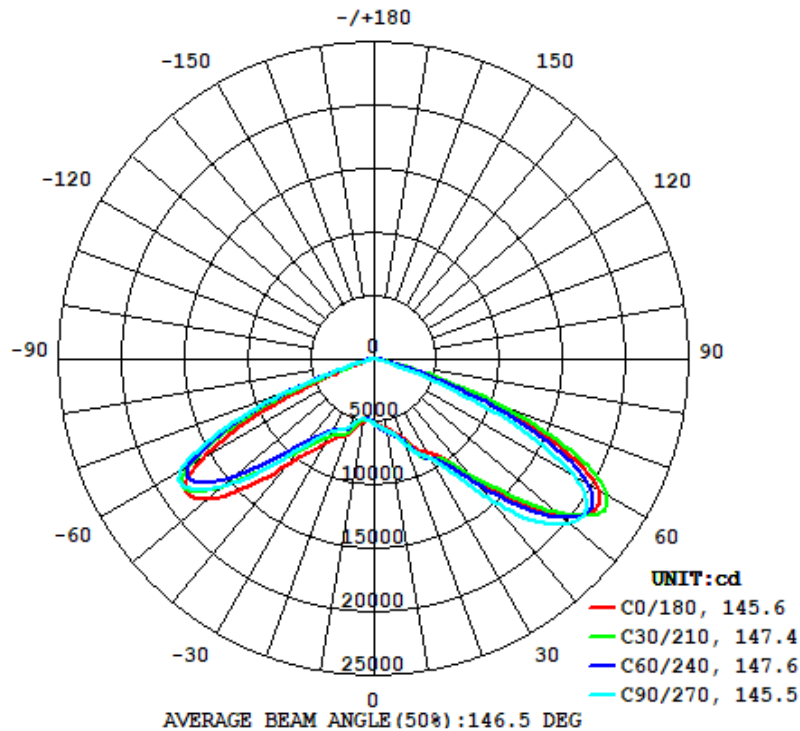
#### Test Result

Flux (lm)	Field Angle(10%)		Beam Angle(50%)		Luminous Efficacy (lm/W)
	C0-180	C90-270	C0-180	C90-270	
55139	161.2	153.3	145.6	145.5	152.5

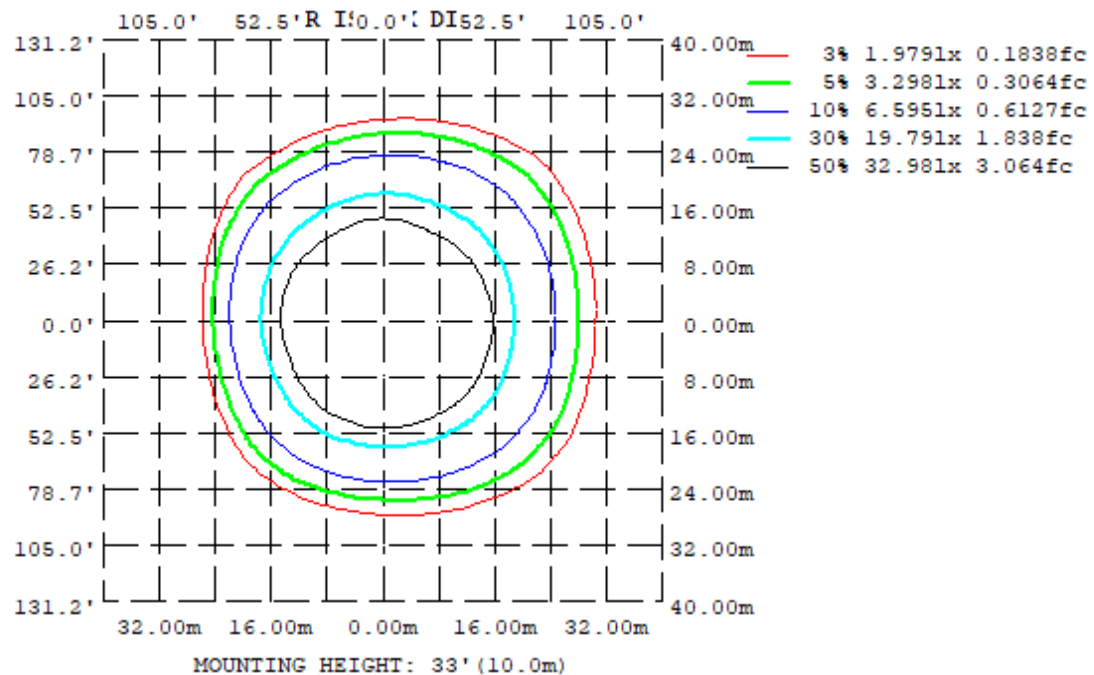
Zonal Lumen Requirement ( $0^{\circ}$ - $90^{\circ}$ )	Zonal Lumen Requirement ( $80^{\circ}$ - $90^{\circ}$ )	BUG rating
100.00%	0.48%	B5-U0-G5

## 4.2 Goniophotometer Test

### Light Distribution Curve



### Isolux Plot





## 4.2 Goniophotometer Test

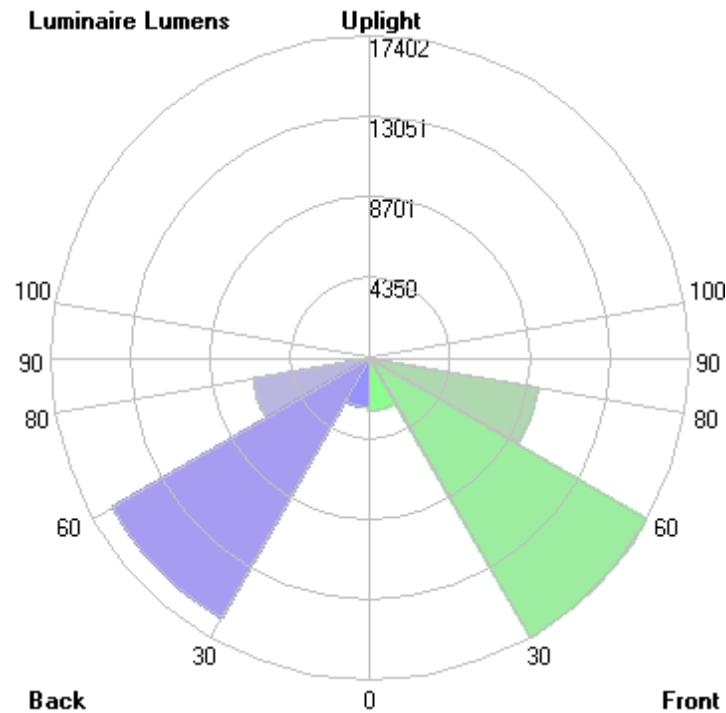
### Zonal Lumen Summary

γ	C0	C45	C90	C135	C180	C225	C270	C315
10	562.8	584.7	577.9	541.9	508.8	486.0	489.9	523.9
20	662.0	685.4	709.0	687.4	645.4	606.5	570.1	593.1
30	858.3	912.9	921.4	807.3	763.0	681.9	662.8	738.1
40	1220	1207	1455	1124	1114	883.5	931.9	920.2
50	1918	1906	2020	1752	1722	1436	1560	1492
60	2054	2120	1818	1753	1578	1744	1768	1952
70	912.1	1004	502.2	553.6	282.7	655.5	636.6	1112
80	75.11	79.26	29.37	52.20	42.22	56.17	31.04	83.28
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	499.40	0 - 10	499.40	0.91%
10-20	1650.69	0 - 20	2150.09	3.90%
20-30	3384.15	0 - 30	5534.24	10.04%
30-40	5778.00	0 - 40	11312.24	20.52%
40-50	11013.04	0 - 50	22325.28	40.49%
50-60	16793.04	0 - 60	39118.32	70.94%
60-70	13105.24	0 - 70	52223.56	94.71%
70-80	2650.91	0 - 80	54874.47	99.52%
80-90	264.54	0 - 90	55139.01	100.00%
90-100	0.00	0 - 100	55139.01	100.00%
100-110	0.00	0 - 110	55139.01	100.00%
110-120	0.00	0 - 120	55139.01	100.00%
120-130	0.00	0 - 130	55139.01	100.00%
130-140	0.00	0 - 140	55139.01	100.00%
140-150	0.00	0 - 150	55139.01	100.00%
150-160	0.00	0 - 160	55139.01	100.00%
160-170	0.00	0 - 170	55139.01	100.00%
170-180	0.00	0 - 180	55139.01	100.00%

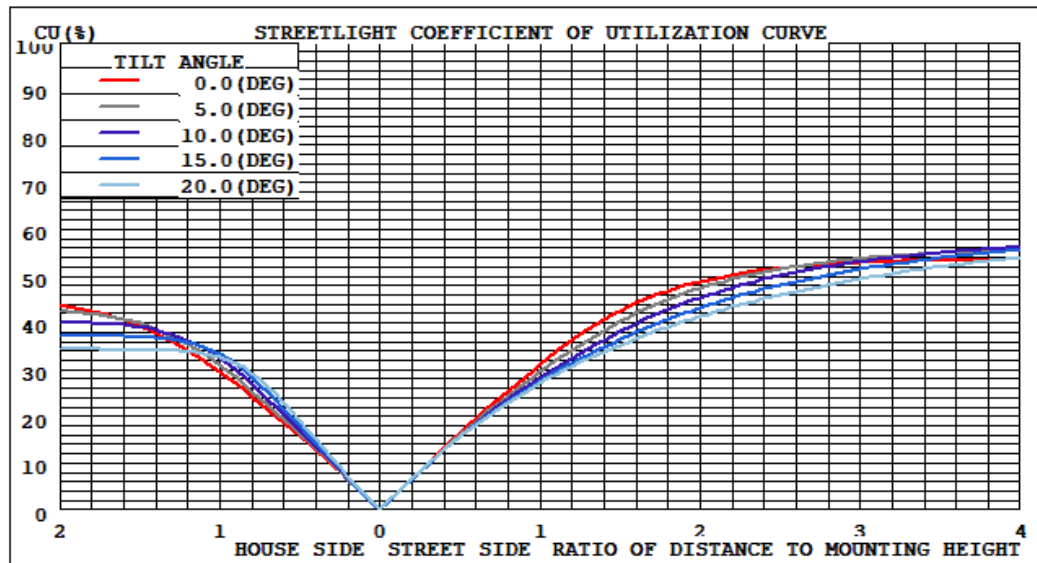
## 4.2 Goniophotometer Test

LCS/BUG

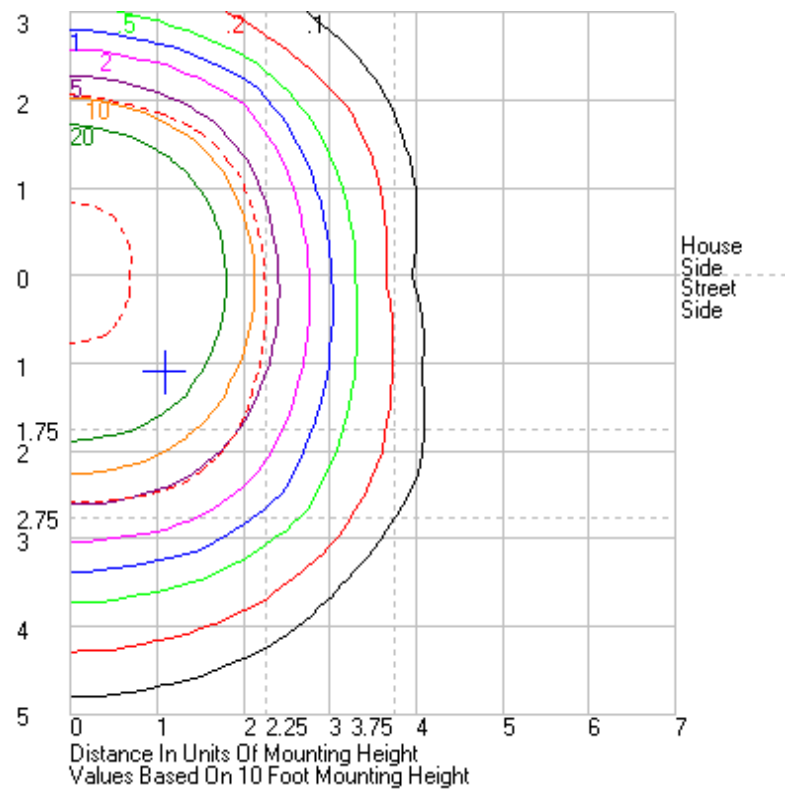


	Lumens	% Lamp	% Luminaire
FL - Front-Low (0-30)	2849.8	N.A.	5.2
FM - Front-Medium (30-60)	17401.7	N.A.	31.6
FH - Front-High (60-80)	9314.6	N.A.	16.9
FVH - Front-Very High (80-90)	173.6	N.A.	0.3
BL - Back-Low (0-30)	2684.4	N.A.	4.9
BM - Back-Medium (30-60)	16182.4	N.A.	29.3
BH - Back-High (60-80)	6441.6	N.A.	11.7
BVH - Back-Very High (80-90)	91.0	N.A.	0.2
UL - Uplight-Low (90-100)	0.0	N.A.	0.0
UH - Uplight-High (100-180)	0.0	N.A.	0.0
Total	55139.1	N.A.	100.0
BUG Rating	B5-U0-G5		

## 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	5122.39	5122.39	5122.39	5122.39	5122.39	5122.39	5122.39	5122.39	5122.39	5122.39	5122.39	5122.39	5122.39	5122.39	5122.39	5122.39	5122.39	5122.39	5122.39	5122.39	5122.39	5122.39	5122.39	5122.39	5122.39
1	5167.66	5178.93	5187.21	5191.93	5190.67	5186.24	5176.45	5162.76	5147.05	5130.21	5110.14	5092.06	5089.23	5076.05	5069.57	5065.68	5064.42	5068.89	5077.25	5088.7	5102.3	5115.22	5131.03	5143.4	5167.66
2	5214.91	5234.95	5254.99	5262.26	5260.18	5250.37	5232.77	5206.6	5174.65	5137.73	5104.67	5070.08	5052.12	5028.73	5014.06	5008.91	5011.54	5023.35	5041.33	5065.73	5091.58	5120.98	5150.38	5177.66	5214.91
3	5260.88	5293.22	5318.64	5330.67	5331.39	5318.54	5293.42	5255.57	5204.71	5151.75	5101.48	5052.28	5020.42	4984.71	4967.01	4963.55	4969.78	4984.49	5011.92	5048.17	5089.36	5131.29	5176.27	5215.84	5260.88
4	5301.89	5346.96	5380.96	5402.58	5403.7	5388.87	5355.72	5306.9	5242.59	5171.16	5098.47	5037.31	4992.26	4949.16	4931.18	4927.68	4932.21	4948.39	4981.67	5029.16	5086.73	5146.19	5199.84	5250.51	5301.89
5	5345.88	5403.57	5446.83	5469.04	5474.39	5456.79	5418.04	5356.02	5279.1	5190.4	5108.48	5036.59	4977.69	4923.84	4900.49	4895.28	4899.11	4916.66	4956.39	5012.97	5085.38	5159.51	5224.13	5282.4	5345.88
6	5397.28	5461.63	5514.57	5542.16	5547.16	5530.24	5486.55	5414.24	5321.16	5223.37	5129.38	5043.79	4973.02	4911.27	4879.57	4865.89	4872.04	4891.7	4934.29	5001.32	5088.18	5169.35	5248.35	5320.6	5397.28
7	5450.31	5530.24	5586.03	5615.32	5620.72	5605.19	5557.24	5475.86	5370.51	5263.76	5157.63	5058.1	4979.53	4910.02	4870.04	4847.13	4848.63	4872.68	4916.86	4989.42	5089.84	5180.93	5276.36	5362.29	5450.31
8	5507.55	5600.46	5662.86	5689.27	5697.98	5680.31	5630.21	5539.68	5421.33	5306.75	5197.84	5088.49	4999.4	4920.75	4871.82	4839.12	4837.45	4862.04	4907.62	4984.9	5089.55	5194.88	5308.88	5406.62	5507.55
9	5566.93	5674.45	5742.86	5768.38	5776.05	5757.81	5702.41	5611.47	5478.19	5361.88	5245.71	5132.77	5037.11	4949.47	4886.73	4843.72	4836.8	4860.13	4904.23	4986.58	5094.2	5211.66	5345.57	5453.5	5566.93
10	5627.75	5746.87	5821.73	5846.93	5854.6	5836.65	5778.94	5680.01	5539.05	5418.79	5306.55	5190.15	5087.56	4995.85	4918.58	4860.43	4843.96	4860.33	4899.03	4990.16	5105.77	5239.43	5385.91	5506.41	5627.75
11	5699.83	5828.87	5907.22	5930.23	5937.46	5906.11	5851.42	5754.89	5608.36	5487.17	5380.89	5257.08	5149.31	5052.59	4963.35	4889.2	4857.81	4861.72	4897.16	4995.86	5124.66	5272.57	5429.1	5564.74	5699.83
12	5778.46	5916.62	5985.78	6017.98	6013.4	5985.97	5928.07	5833.92	5684.71	5564.41	5457.42	5332.64	5221.75	5119.86	5019.38	4933.02	4882.38	4869.68	4907.96	5008.96	5148.21	5312.25	5478.6	5631.28	5778.46
13	5861.4	6007.63	6073.24	6100.46	6094.81	6072.72	6015.89	5916.22	5774.48	5649.92	5544.41	5418.02	5306.17	5200.98	5090.09	4992.68	4922.13	4889.71	4934.38	5035.5	5177.41	5356.31	5536.31	5706.34	5861.4
14	5949.42	6101.08	6168.38	6186.39	6182.47	6162.5	6111.07	6011.5	5878.8	5747.24	5636.35	5515.64	5401.78	5295.17	5173.07	5066.23	4970.39	4925.03	4977.27	5079.23	5214.46	5403.39	5606.01	5785.21	5949.42
15	6041	6197.55	6264.57	6273.13	6270.59	6261.86	6211.15	6116.25	5986.09	5851.77	5745.72	5630.93	5515.91	5404.6	5272.38	5154.55	5032.41	4976.14	5035.17	5137.36	5262.74	5454.7	5680.6	5863.59	6041
16	6138.83	6297.87	6366.72	6372.31	6369.04	6366.82	6329.69	6235	6115.94	5978.26	5886.9	5786.99	5673.79	5558.35	5415.21	5276.36	5126.99	5058.83	5114.29	5212.37	5324.13	5516.24	5760.96	5948.7	6138.83
17	6240.68	6407.28	6473.6	6472.82	6470.51	6481.03	6455.79	6373	6262.08	6139.75	6070.57	5993.04	5872.5	5758.54	5595.92	5440.81	5259.17	5178.71	5228.91	5306.71	5401.33	5589.1	5842.57	6038.69	6240.68
18	6351.02	6521.99	6586.22	6584.24	6583.84	6621.17	6620.08	6544.78	6456.03	6356.26	6288.42	6212.96	6094.07	5975.86	5811.2	5645.26	5426.59	5323.28	5375.11	5431.64	5495.48	5675.12	5934.56	6136.41	6351.02
19	6469.59	6644.21	6708.48	6707.68	6721.08	6795.81	6836.55	6777.37	6710.96	6605.22	6528.85	6421.3	6290.38	6175.5	6039.69	5866.32	5609.23	5484.47	5537.73	5585.96	5619.4	5786.31	6043.25	6248.96	6469.59
20	6619.51	6791.39	6845.71	6853.64	6892.31	7026.18	7090.28	7041.38	6986.58	6874.01	6741.41	6601.66	6454.01	6341.52	6232.88	6065.03	5786.09	5646.31	5700.76	5756.8	5780.06	5930.87	6183.96	6417.53	6619.51
21	6820.83	6983.79	7031.2	7058.2	7134.5	7317.73	7376.84	7323.15	7273.14	7148.05	6927.83	6736.34	6542.59	6468.94	6380.47	6228.95	5933.35	5785.5	5849.21	5929.98	5959.46	6110.02	6375.26	6586.1	6820.83
22	7074.75	7234.63	7276.09	7317.56	7433.96	7612.07	7659.46	7582.81	7518.12	7340.9	7072.7	6831.01	6631.17	6557.16	6488.58	6353.47	6047.57	5898.44	5970.83	6091.05	6156.02	6304.54	6566.56	6785.37	7074.75
23	7364.09	7541.59	7601.7	7659.38	7756.15	7892.08	7904.29	7818.14	7727.17	7495.69	7172.84	6905.36	6709.38	6599.96	6558.25	6435.99	6137.54	5984.2	6069.72	6228.88	6354.25	6494.25	6774.89	7043.24	7364.09
24	7640.48	7870.65	7975.67	8057.47	8074.21	8141.92	8126.43	8103.53	7887.82	7607.67	7238.93	6965.14	6777.83	6642.76	6600.15	6485.96	6196.85	6048.25	6143.79	6338.12	6474.76	6715.92	6993.99	7285.11	7640.48
25	7877.77	8167.97	8342.99	8423.24	8346.64	8355.12	8305.46	8162.37	7990.62	7679.35	7289.91	7034.27	6850.69	6701.69	6633.08	6524.08	6238.23	6110.85	6215.8	6430.96	6596.25	6920.31	7193.09	7481.89	7877.77
26	8068.32	8410.91	8644.42	8711.22	8578.17	8536.86	8458.92	8290.28	8069.98	7728.28	7350.78	7120.1	6956.54	6794.29	6666.23	6550.45	6279.57	6174.88	6295.16	6515.56	6747.35	7087.22	7365.26	7651.93	8068.32
27	8227.8	8591.43	8851.79	8892.05	8755	8701.27	8611.34	8409.58	8136	7774.3	7424.57	7229.94	7089.3	6910.12	6743.09	6600.66	6324.31	6241.35	6372.96	6579.36	6840.73	7208.7	7500.33	7793.24	8227.8
28	8357.71	8719.22	8983.1	9013.23	8891.68	8854.73	8777.29	8543.79	8222.46	7842.37	7509.66	7364.43	7248.11	7047.14	6841.61	6650.86	6375.79	6318.13	6459.69	6643.16	6919.69	7287.55	7607.04	7904.3	8357.71
29	8467.92	8821.53	9064.64	9084.47	9000.99	9016.69	8971.64	8708.33	8343.1	7939.42	7622.55	7516.72	7429.47	7211.17	6967.32	6712.1	6448.94	6405.15	6543.28	6715.42	6980.82	7338.81	7676.38	7992.33	8467.92
30	8583.22	8919.39	9119.76	9128.77	9115.88	9215.66	9213.75	8910.04	8499.55	8073.26	7764.16	7697.58	7630.31	7392.53	7113.14	6819.19	6544	6510.86	6628.15	6805.81	7035.37	7380.78	7735.85	8081.06	8583.22
31	8716.97	9026.91	9179.7	9181.62	9249.59	9446.46	9485.52	9158.35	8692.61	8229.44	7928.97	7900.84	7851.1	7596.67	7272.76	6949.02	6639.06	6616.58	6777.03	6911.02	7102.66	7428.26	7809.92	8195.06	8716.97
32	8887.21	9158.05	9262.13	9273.47	9424.3	9727.09	9795.81	9448.71	8915.67	8422.52	8123.3	8133.58	8090.4	7815.96	7454.77	7091.78	6757.62	6747.24	6940.19	7040.07	7192.38	7495.09	7905.02	8340.2	8887.21
33	9090.09	9318.56	9387.81	9417.15	9656.3	10064	10173.4	9781.08	9187.74	8632.6	8345.6	8382.51	8352.03	8051.08	7651.21	7251.52	6911.58	6920.28	7124.53	7202.12	7310.49	7591.08	8024.77	8528.87	9090.09
34	9339.42	9528.89	9566.9	9616.63	9946.7	10445.2	10584.1	10164.1	9489.11	8881.21	8587.81	8656.58	8630.04	8304.92	7858.29	7423.8	7080.78	7113.17	7329.87	7384.68	7454.48	7717.42	8183.33	8747.84	9339.42
35	9629.8	9794.71	9813.72	9883.67	10308.3	10926.5	11101.3	10616.4	9852.73	9173.63	8873.74	8959.08	8936.91	8583.03	8082.4	7608.52	7264.79	7330.17	7573.74	7598.99	7629.2	7881.7	8380.63	9012.6	9629.8
36	9974.35	10132.9	10116.2	10202.6	10729.4	11478.2	11725.5	11143.3	10264.5	9488.9	9189.75	9304.22	9263.52	8887.31	8322.71	7809.96	7473.35	7581.14	7841.21	7845.05	7839.06	8071.15	8620.35	9314.65	9974.35
37	10397.4	10555.9	10497.5	10592.8	11207.7	12098.5	12396.5	11750.8	10723.2	9874.42	9551.51	9686.4	9649.72	9223.63	8590.78	8018.31	7699.79	7860.31	8141.33	8118.39	8069.05	8298.96	8895.07	9678.68	10397.4
38	10928.8	11035.8	10920.9	11035.7	11741.2	12771.5	13101.1	12421.7	11238.6	10286.8	9942.93	10121	10096.2	9608.72											

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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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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

## 4.0 LM-79 Measurement and Test Results

### 4.3 THD and PF Test

Model No.	ALEDXL5TN/480	Sample ID.	AB1
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  $25^{\circ}\text{C} \pm 1^{\circ}\text{C}$ . 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
479.95	60	0.803	359.9	0.934	5.82%



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