

# Photometric Test Report

## Relevant Standards

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

## Prepared For

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## Project Number

**DLF2111115**

## Report Number

**DLF2111115-14a**

## Test Date

**2021/11/30**

## Issue Date

**2021/12/3**

## 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		21609
Minimum Luminaire Efficacy (lm/W) (Goniophotometer - Section 4.2)	IES LM-79-2008	Standard 105	Premium 120	143.8
Power (Input Wattage) (W) (Goniophotometer - Section 4.2)	IES LM-79-2008	Worst Case		150.2
Total Harmonic Distortion (A%) (THD & PF - section 4.3)	ANSI C82.77:2014	20.00%	120V	3.84%
		20.00%	277V	9.23%
Power Factor (THD & PF - section 4.3)	ANSI C82.77:2014	0.9	120V	1.000
		0.9	277V	0.958
Allowable CCTs* (K) (Integrating Sphere - Section 4.1)	IES LM-79-2008	7 step	3985±275	3962
		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		10
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%		0.67%
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		1.253
(Goniophotometer - Section 4.2)		Non-Worst Case		0.554
Power (Input Wattage - W)				
(Goniophotometer - Section 4.2)	IES LM-79-2008	Worst Case		150.2
(Goniophotometer - Section 4.2)		Non-Worst Case		146.9

## 2.0 Test List

Test Item	Test	Test Date	Model Number	Sample No.
1	Integrating Sphere Test	2021/11/30	ALEDM5TN	N1
2	Goniophotometer Test	2021/11/30	ALEDM5TN	N1
3	THD and PF Test	2021/11/30	ALEDM5TN	N1

### 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.

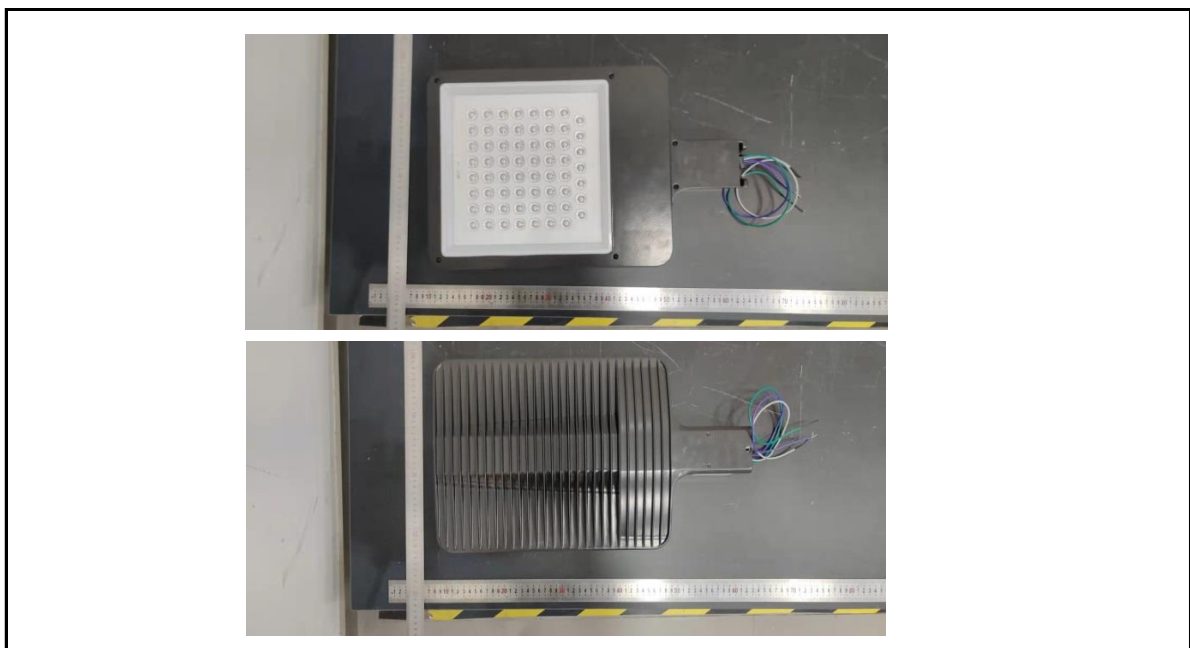
## 3.0 Production Description

**Luminaire Description:** ALEDM5TN

**Description:** 150W/18,000 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.	ALEDM5TN	Sample ID.	N1
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	1.245	149.4	1.000
277.01	60	0.551	146.1	0.958

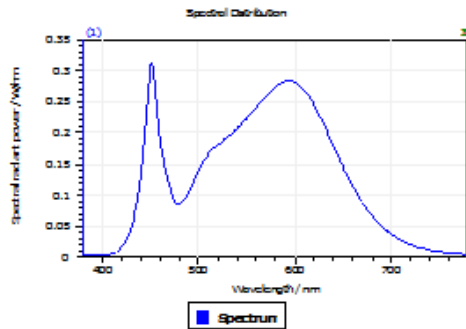
#### Test Result

CCT (K)	CRI	R9	Duv
3962	84	10	0.00017

Rf	Rg	IES Rcs,h1
85	95	-12%

## 4.1 Integrating Sphere Test

### Results



#### Spectral values

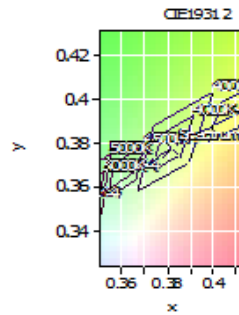
DominantWavelength	579.31 nm
Purity	0.279
PeakWavelength	451.36 nm
Radiant Power	49.45 W
Width50%:	21.54 nm

#### Color Coordinates

Correlated Color Temperat 3962 K

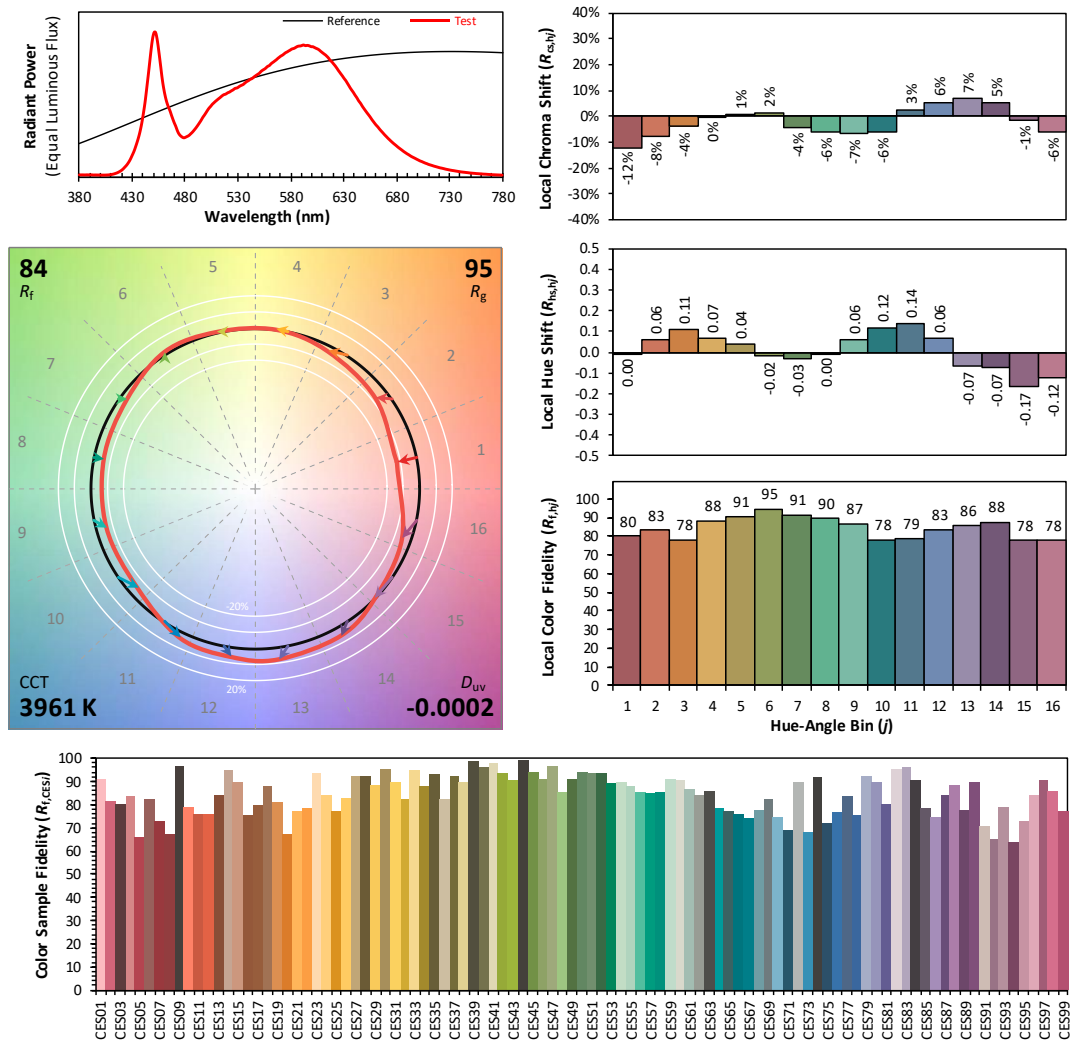
x: 0.3820 u: 0.2259 u': 0.2259  
y: 0.3774 v: 0.3347 v': 0.5021

ResultsCRICRI01	81.7	ResultsCRICRI09	10.3
ResultsCRICRI02	89.7	ResultsCRICRI10	75.5
ResultsCRICRI03	95.3	ResultsCRICRI11	81.3
ResultsCRICRI04	82.4	ResultsCRICRI12	63.2
ResultsCRICRI05	81.9	ResultsCRICRI13	83.6
ResultsCRICRI06	85.4	ResultsCRICRI14	97.7
ResultsCRICRI07	86.3	ResultsCRICRI15	75.8
ResultsCRICRI08	65.2	ResultsCRICRI16	73.6
ResultsCRI	83.5		



PlanckDistance 1.7E-004

## 4.1 Integrating Sphere Test



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

$x$  0.3820  
 $y$  0.3774  
 $u'$  0.2259  
 $v'$  0.5021

CIE 13.3-1995  
(CRI)

$R_a$  84  
 $R_g$  13

## 4.0 LM-79 Measurement and Test Results

### 4.2 Goniophotometer Test

Model No.	ALEDM5TN	Sample ID.	N1
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	119.95	60	1.253	150.2	1.000
NON-WROST CASE	277.00	60	0.554	146.9	0.958

#### Test Result

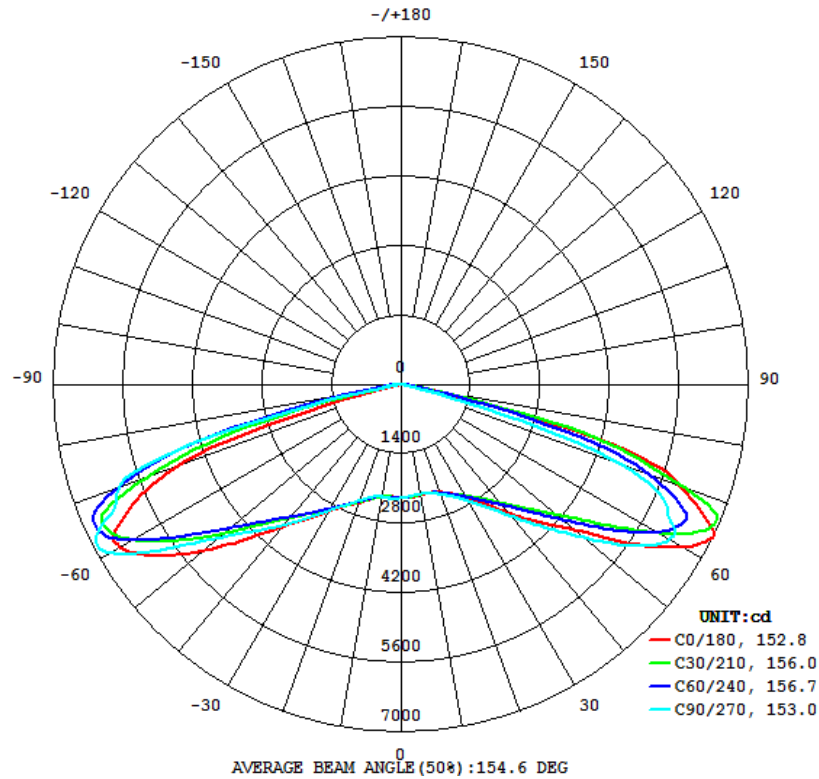
Flux (lm)	Field Angle(10%)		Beam Angle(50%)		Luminous Efficacy (lm/W)
	C0-180	C90-270	C0-180	C90-270	
21609	160.1	159.7	152.8	153.0	143.8

Zonal Lumen Requirement ( $0^{\circ}$ - $90^{\circ}$ )	Zonal Lumen Requirement ( $80^{\circ}$ - $90^{\circ}$ )	BUG rating
100.00%	0.67%	B4-U0-G3

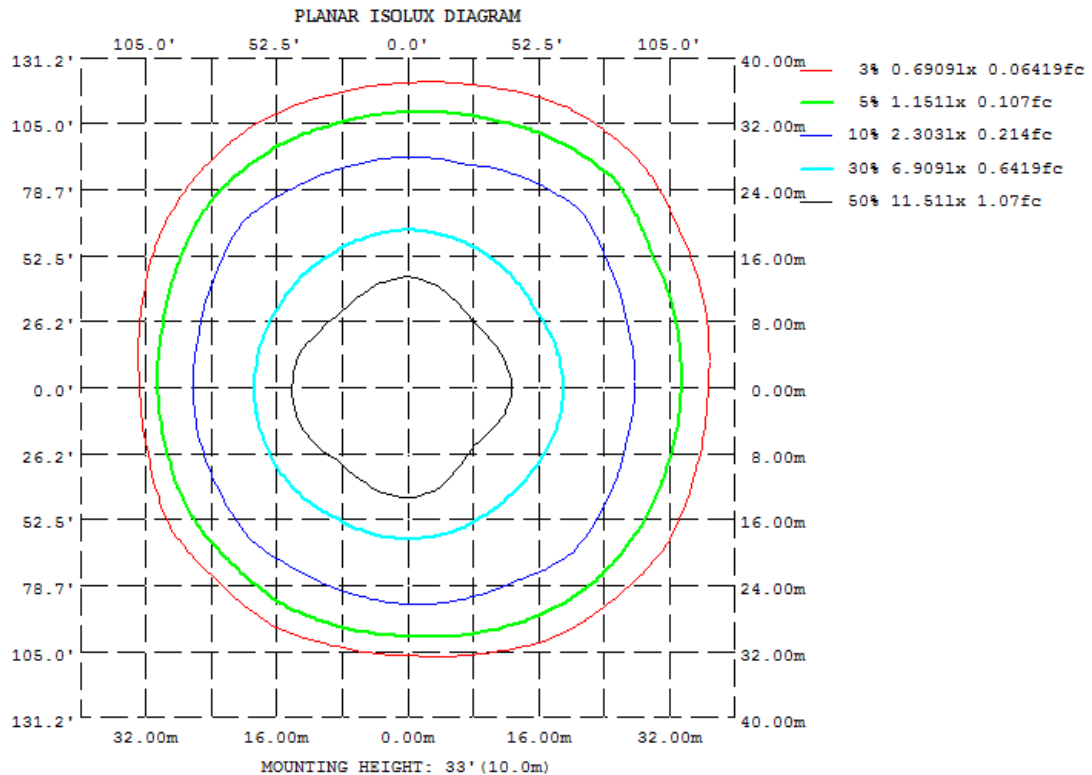


## 4.2 Goniophotometer Test

### Light Distrubtion Curve



### Isolux Plot





## 4.2 Goniophotometer Test

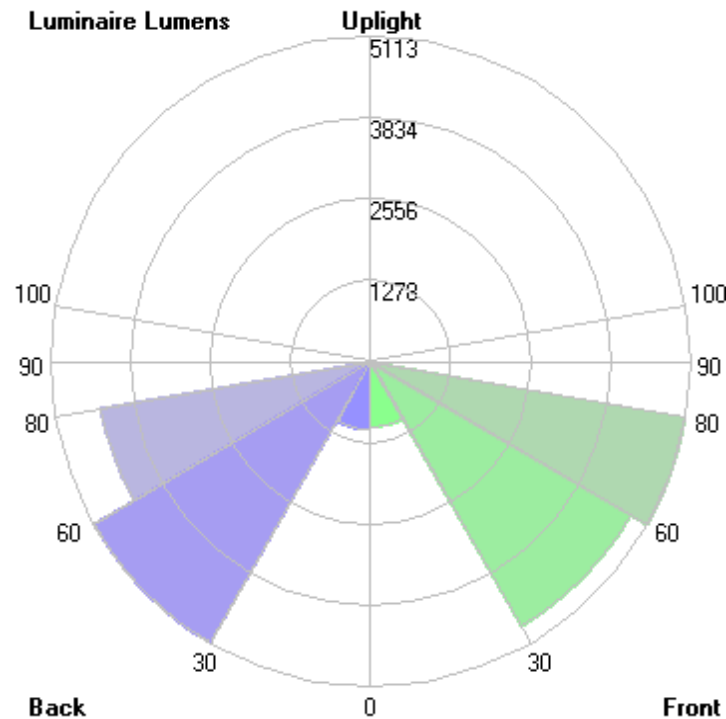
### Zonal Lumen Summary

γ	C0	C45	C90	C135	C180	C225	C270	C315
10	2266	2256	2249	2277	2286	2307	2308	2308
20	2324	2350	2364	2474	2546	2521	2495	2434
30	2627	2583	2727	2826	2958	2884	2937	2774
40	3396	3051	3475	3377	3743	3412	3706	3277
50	4556	3987	4805	4454	5211	4437	4812	4117
60	6564	5852	6240	6161	6539	6235	6788	5971
70	5949	6543	4745	4878	4801	6504	6047	7772
80	424.8	547.2	122.3	182.1	186.3	588.9	388.5	1405
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:cd							

	Zonal (lm)		Total (lm)	Percent
0-10	217.98	0 - 10	217.98	1.01%
10-20	665.73	0 - 20	883.71	4.09%
20-30	1206.20	0 - 30	2089.91	9.67%
30-40	1946.29	0 - 40	4036.20	18.68%
40-50	3076.06	0 - 50	7112.26	32.91%
50-60	4873.56	0 - 60	11985.82	55.47%
60-70	6307.39	0 - 70	18293.21	84.66%
70-80	3170.70	0 - 80	21463.91	99.33%
80-90	144.66	0 - 90	21608.57	100.00%
90-100	0.00	0 - 100	21608.57	100.00%
100-110	0.00	0 - 110	21608.57	100.00%
110-120	0.00	0 - 120	21608.57	100.00%
120-130	0.00	0 - 130	21608.57	100.00%
130-140	0.00	0 - 140	21608.57	100.00%
140-150	0.00	0 - 150	21608.57	100.00%
150-160	0.00	0 - 160	21608.57	100.00%
160-170	0.00	0 - 170	21608.57	100.00%
170-180	0.00	0 - 180	21608.57	100.00%

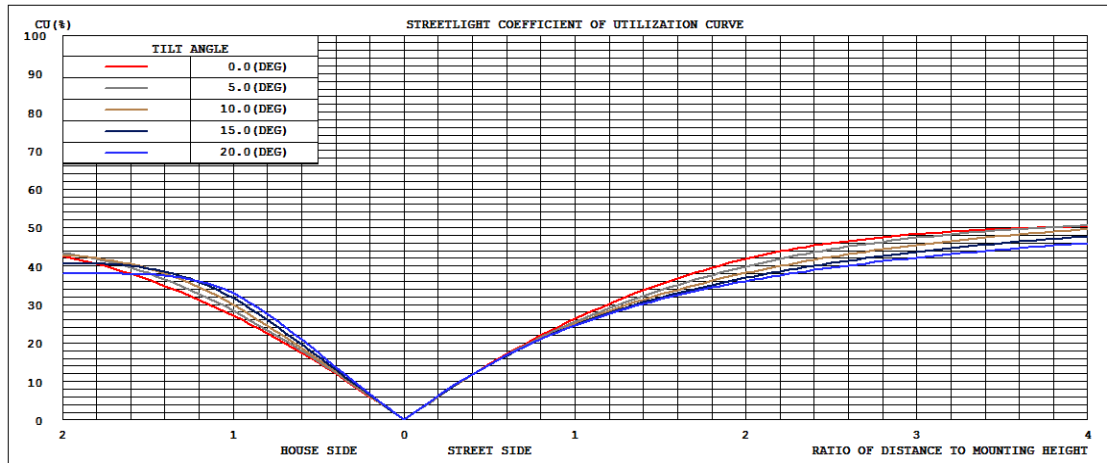
## 4.2 Goniophotometer Test

LCS/BUG

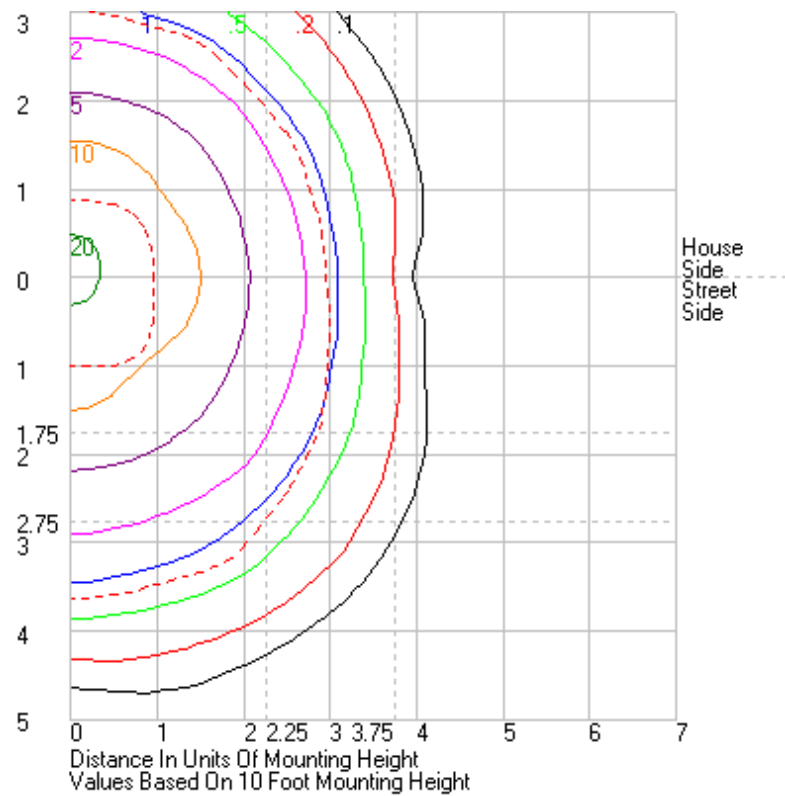


	Lumens	% Lamp	% Luminaire
FL - Front-Low (0-30)	1023.1	N.A.	4.7
FM - Front-Medium (30-60)	4793.2	N.A.	22.2
FH - Front-High (60-80)	5112.5	N.A.	23.7
FVH - Front-Very High (80-90)	90.0	N.A.	0.4
BL - Back-Low (0-30)	1066.9	N.A.	4.9
BM - Back-Medium (30-60)	5102.7	N.A.	23.6
BH - Back-High (60-80)	4365.5	N.A.	20.2
BVH - Back-Very High (80-90)	54.6	N.A.	0.3
UL - Uplight-Low (90-100)	0.0	N.A.	0.0
UH - Uplight-High (100-180)	0.0	N.A.	0.0
Total	21608.4	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	2295.46	2295.46	2295.46	2295.46	2295.46	2295.46	2295.46	2295.46	2295.46	2295.46	2295.46	2295.46	2295.46	2295.46	2295.46	2295.46	2295.46	2295.46	2295.46	2295.46	2295.46	2295.46	2295.46	2295.46	2295.46
1	2303.23	2300.5	2298.25	2295.55	2293.54	2291.71	2289.49	2288.32	2287	2286.19	2285.9	2286.08	2300.46	2299.79	2299.59	2299.83	2300.51	2300.38	2299.7	2298.29	2296.93	2294.87	2292.6	2290.76	2303.23
2	2299.9	2296.07	2293.13	2291.7	2289.96	2288.36	2285.9	2284.77	2283.65	2282.97	2282.52	2283.12	2297.76	2298.33	2299.82	2300.99	2302.76	2304.39	2304.56	2303.44	2300.29	2296.9	2292.37	2288.46	2299.9
3	2298.25	2293.75	2290.16	2286.24	2283.05	2281.21	2279.85	2279.12	2279.3	2279.9	2277.2	2275.85	2290.56	2292.86	2296.3	2302.07	2305.7	2307.57	2309.08	2307.32	2302.8	2297.38	2291.74	2286.8	2298.25
4	2300.04	2294.84	2289.23	2281.54	2277.05	2273.84	2273.39	2273.5	2274.92	2273.48	2271.18	2267.97	2282.26	2285.1	2291.46	2299.29	2307.72	2310.5	2312.98	2310.25	2304.63	2299.63	2294.68	2289.65	2300.04
5	2296.48	2292.41	2286.51	2278	2270.18	2266.02	2266.76	2267.74	2269.63	2267.91	2265.48	2261.72	2274.57	2278.22	2286.48	2296.66	2307.69	2312.47	2315.85	2313.37	2307.6	2303.53	2295.98	2288.03	2296.48
6	2291.55	2286.58	2280.74	2273.02	2263.16	2258.48	2261.26	2262.87	2265.34	2264.43	2261.95	2257.61	2269.06	2272.43	2283.34	2294.84	2307.5	2314.73	2317.42	2315.62	2310.74	2306.37	2295.5	2284.47	2291.55
7	2287.53	2282.56	2273.37	2266.44	2257.49	2253.13	2257.19	2261.03	2263.93	2262.59	2260.77	2256.93	2266.42	2270.5	2282.92	2294.64	2308.64	2314.94	2316.25	2314.9	2313.82	2307.31	2294.61	2282.1	2287.53
8	2280.01	2276.19	2268.23	2261.1	2254.25	2248.01	2254.07	2261.2	2265.02	2262.8	2263.17	2260.74	2268.31	2272.34	2284.75	2296.02	2309.05	2314.48	2312.89	2310.87	2314.65	2307.97	2293.7	2276.46	2280.01
9	2272.04	2267.95	2262.58	2257.85	2251.76	2243.28	2250.7	2261.87	2268.34	2268.45	2270.12	2268.74	2274.17	2278.66	2290.38	2300.22	2309.07	2313.84	2309.7	2306.47	2311.02	2307.94	2291.66	2270.48	2272.04
10	2266.23	2262.9	2257.41	2256.26	2248.83	2239.86	2249.04	2264.15	2272.94	2277.44	2280.94	2280.6	2286.13	2289.28	2299.46	2306.88	2309.86	2316.11	2307.69	2302.95	2308.56	2307.7	2289.62	2264.78	2266.23
11	2263.08	2262.78	2255.58	2257.36	2247.23	2239.96	2250.35	2269.03	2279.48	2288.44	2295.29	2296.92	2301.95	2304.85	2312.5	2315.96	2314.51	2319.74	2307.3	2302.3	2307.05	2306.58	2288.34	2262.34	2263.08
12	2262.37	2265.4	2259.5	2259.5	2248.95	2243.09	2254.6	2275.5	2288.93	2302.07	2313.59	2315.31	2320.42	2324.2	2329.33	2327.4	2322.84	2326.97	2311.58	2304.15	2308.85	2307.31	2291.03	2262.86	2262.37
13	2260.14	2268.2	2267.78	2263.57	2253.06	2248.64	2260.83	2283.36	2300.63	2318.99	2334.3	2336.58	2342.27	2346.01	2349.56	2341.78	2334.61	2340.13	2322.57	2311.84	2312.75	2310.77	2297.01	2264.84	2260.14
14	2259.62	2270.02	2278.19	2272.35	2258.82	2256.67	2268.54	2292.47	2313.65	2338.82	2357.05	2358.77	2367.85	2370.56	2371.84	2360.27	2352.78	2357.59	2338.63	2326.54	2321.56	2316.03	2304.39	2265.55	2259.62
15	2262.12	2275.61	2287.22	2283.29	2266.33	2266.79	2279.26	2302.69	2327.47	2359.3	2378.98	2382.84	2395.03	2396.83	2394.52	2381.39	2375.11	2376.17	2355.87	2344.53	2335.43	2324.97	2310.8	2269.86	2262.12
16	2269.43	2283.21	2297.94	2296.52	2274.85	2280.26	2293.49	2315.32	2342.87	2381.63	2402.66	2408.41	2424.04	2424.45	2419.72	2406.45	2400.33	2396.33	2376.76	2363.79	2356.28	2339.09	2318.2	2277.77	2269.43
17	2278.77	2292.98	2310.4	2310	2285.84	2294.63	2309.63	2331.23	2360.08	2403.14	2427.74	2434.01	2453.6	2452.25	2444.61	2433.18	2423.55	2419.94	2403.52	2388.31	2378.04	2357.24	2329.69	2288.63	2278.77
18	2290.39	2304.33	2324.18	2323.11	2299.53	2311.48	2327.99	2349.63	2380.32	2424.91	2454.35	2461.94	2483.04	2480.89	2470.65	2461.64	2449.59	2448.03	2434.4	2417.78	2401.89	2379.79	2344.8	2301.27	2290.39
19	2305.32	2316.67	2338.73	2335.73	2315.19	2327.74	2345.65	2368.45	2403.18	2447.77	2484.26	2491.29	2514.08	2510.53	2497.38	2491.73	2478.25	2475.48	2464.43	2449.06	2428.12	2406.21	2361.49	2316.15	2305.32
20	2324.45	2331.97	2353.44	2350.1	2334.74	2344.23	2364.08	2389.52	2429.74	2473.76	2513.84	2523.31	2545.89	2542.04	2525.77	2520.94	2508.18	2503.03	2494.59	2478.59	2461.46	2434.28	2379.2	2333.77	2324.45
21	2345.88	2350.09	2368.8	2366.49	2355.5	2362.8	2386.35	2412.34	2458.71	2502.62	2546.7	2556.49	2577.52	2574.86	2557.51	2549.84	2537.54	2531.56	2527.84	2509.33	2497.47	2463.53	2399.08	2354.29	2345.88
22	2368.64	2371.31	2385.5	2383.37	2376.44	2383.27	2410.62	2436.61	2487.3	2532.33	2581.56	2589.54	2607.78	2606.65	2592.08	2581.15	2566.53	2563.5	2563.75	2543.45	2532.49	2492.37	2421.15	2375.79	2368.64
23	2389.67	2394.49	2406.43	2403.38	2401.65	2409.75	2439.79	2466.97	2519.37	2566.07	2617.03	2623.97	2639.92	2640.23	2628.97	2613.98	2599.04	2599.04	2602.38	2582.17	2568.11	2523.36	2448.13	2399.71	2389.67
24	2413.99	2415.49	2429.19	2424.26	2426.89	2436.24	2471.11	2497.7	2550.66	2600.9	2652.78	2658.54	2671.98	2672	2666	2649.33	2634.07	2637.36	2643.24	2623.33	2606.47	2555.68	2478.96	2421.17	2413.99
25	2442.69	2442.63	2454.93	2445.28	2455.87	2466.9	2505.97	2533.91	2586.17	2637.61	2688.29	2695.16	2709.74	2707.49	2703.53	2684.38	2672.39	2676.31	2684.14	2666.08	2647.02	2588.17	2511.79	2447.19	2442.69
26	2474.66	2476.2	2477.78	2466.44	2486.92	2502.77	2545.55	2571.67	2624.6	2675.15	2726.02	2737.24	2750.98	2745.87	2743.16	2720.12	2713.9	2716.75	2727.26	2709.23	2690.45	2620.97	2545.37	2476.71	2474.66
27	2507.1	2511.59	2501.65	2489.78	2519.21	2538.81	2584.95	2611.8	2660.9	2711.55	2761.27	2780.63	2798.43	2788.02	2780.39	2758.04	2756.43	2759.92	2774.15	2753.85	2737.44	2654.84	2582.77	2511.32	2507.1
28	2543.36	2549.23	2531.43	2518.53	2555.52	2582.38	2630.97	2656.43	2704.31	2750.75	2802.33	2831.54	2848.05	2834.38	2820.78	2797.62	2799.28	2808.07	2824.51	2803.35	2785.29	2691.4	2621.59	2545.8	2543.36
29	2581.28	2588.82	2563.62	2548.8	2591.66	2625.12	2676.37	2701.15	2744.88	2787.55	2842.61	2884.52	2901.05	2883.74	2863.64	2841.05	2843.63	2857.77	2878.16	2854.87	2829.91	2733.16	2661.05	2583.96	2581.28
30	2627.38	2632.56	2599.14	2582.7	2632.81	2673.07	2726.72	2753.25	2789.66	2826.21	2887.37	2941.31	2957.81	2936.25	2908.87	2884.19	2890.55	2912.16	2936.9	2911.21	2874.93	2774.36	2704.09	2625.74	2627.38
31	2676.77	2681.46	2637.05	2614.27	2674.25	2725.95	2783.02	2806.59	2837.55	2864.78	2934.37	3000.38	3016.97	2991.2	2956.29	2926.84	2940.8	2969.66	2999.55	2971.51	2923.35	2816.26	2748.64	2671.34	2676.77
32	2734.16	2735.43	2678.3	2647.13	2715.68	2777.65	2838.87	2861.89	2883.95	2905.05	2985.39	3059.88	3081.35	3050.28	3006.64	2969.07	2990.85	3031.19	3066.86	3034.92	2971.27	2860.29	2796.56	2723.13	2734.16
33	2793.73	2794.8	2723.99	2686.67	2762.58	2839.85	2903.27	2925.33	2937.56	2953.48	3039.94	3126.36	3148.65	3113.4	3059.26	3011.4	3043.92	3096.61	3135.6	3103.67	3021.55	2907.6	2846.86	2777.82	2793.73
34	2860.07	2857.28	2769.85	2727.11	2809	2900.48	2967.25	2988.09	2989.41	3000.06	3095.5	3193.73	3221.04	3181.48	3112.73	3058.82	3100.84	3163.13	3209.16	3172.52	3071.35	2952.18	2898.83	2839.96	2860.07
35	2933.01	2925.8	2819.63	2772.85	2860.14	2966.79	3036.04	3058.95	3045.38	3053.06	3154.34	3266.9	3295.42	3255.12	3169.59	3108.49	3158.6	3235.16	3283.94	3246.4	3126.95	2996.39	2955.4	2905.39	2933.01
36	3013.35	3001.06	2874.3	2820.21	2915.29	3041.77	3114.03	3132.43	3105.52	3108.62	3218.72	3345.17	3373.38	3333.84	3231.96	3160.2	3219	3310.16	3363.87	3323.66	3188.77	3046.64	3012.26	2978.55	3013.35
37	3101.08	3077.2	2931.56	2871.09	2973.21	3116.56	3192.4	3208.98	3164.42	3167.8	3285.98	3426.02	3457.36	3415.96	3299.49	3215.23	3282.46	3386.44	3446.77	3404.1	3250.32	3100.95	3074.14	3058.29	3101.08
38	3195.61	3161.07	2994.49	2927.84	3039.33	3206.47	3283.28	3295.76	3229.82	3235.1	3358.79	3513.71	3545.39	3504.97	3369.71										

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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
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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.	ALEDM5TN	Sample ID.	N1
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
120.04	60	1.245	149.4	1.000	3.84%
277.01	60	0.551	146.1	0.958	9.23%

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