

# Photometric Test Report

## Relevant Standards

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

## Prepared For

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## Project Number

**DLF2201106**

## Report Number

**DLF2201106-5a**

## Test Date

**2022/1/12**

## Issue Date

**2022/1/13**

## 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		28481
Minimum Luminaire Efficacy (lm/W) (Goniophotometer - Section 4.2)	IES LM-79-2008	Standard 105	Premium 120	166.0
Power (Input Wattage) (W) (Goniophotometer - Section 4.2)	IES LM-79-2008	Worst Case		171.6
Total Harmonic Distortion (A%) (THD & PF - section 4.3)	ANSI C82.77:2014	20.00%		11.31%
Power Factor (THD & PF - section 4.3)	ANSI C82.77:2014	0.9		0.926
Allowable CCTs* (K) (Integrating Sphere - Section 4.1)	IES LM-79-2008	7 step	3985±275	3930
		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%		0.36%
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		0.387

## 2.0 Test List

Test Item	Test	Test Date	Model Number	Sample No.
1	Integrating Sphere Test	2022/1/12	ALEDL5TN/480	E1
2	Goniophotometer Test	2022/1/12	ALEDL5TN/480	E1
3	THD and PF Test	2022/1/12	ALEDL5TN/480	E1

### Remark(If any)

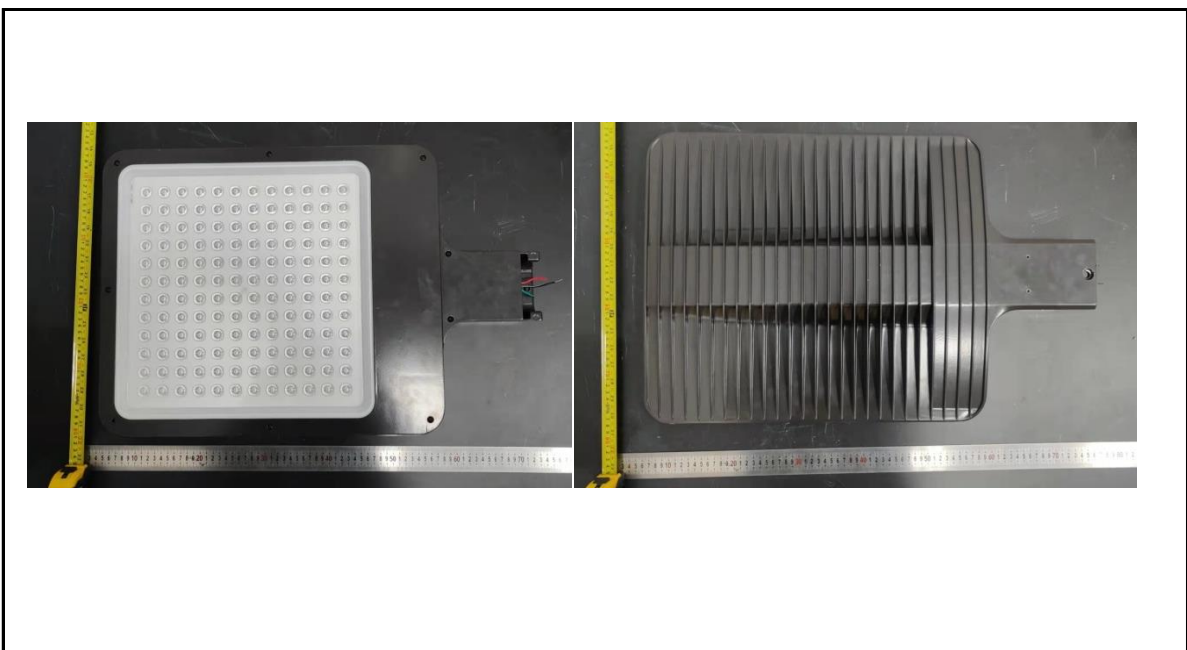
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## 3.0 Production Description

**Luminaire Description:** 170W/24,000 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.	ALEDL5TN/480	Sample ID.	E1
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
479.99	60	0.386	171.6	0.926

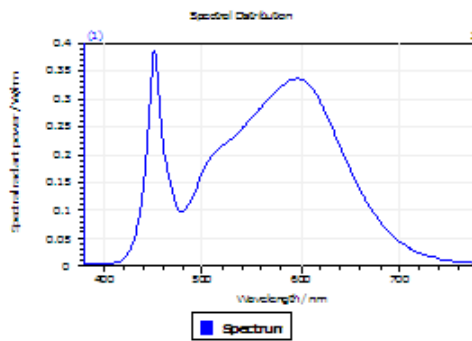
#### Test Result

CCT (K)	CRI	R9	Duv
3930	83	8	0.00028

Rf	Rg	IES Rcs,h1
84	95	-12%

## 4.1 Integrating Sphere Test

### Results



#### Spectral values

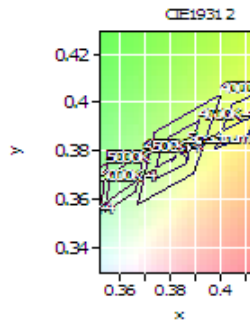
DominantWavelength	579.19 nm
Purity	0.291
PeakWavelength	451.42 nm
Radiant Power	58.52 W
Width50%	19.05 nm

#### Color Coordinates

Correlated Color Temperat 3930 K

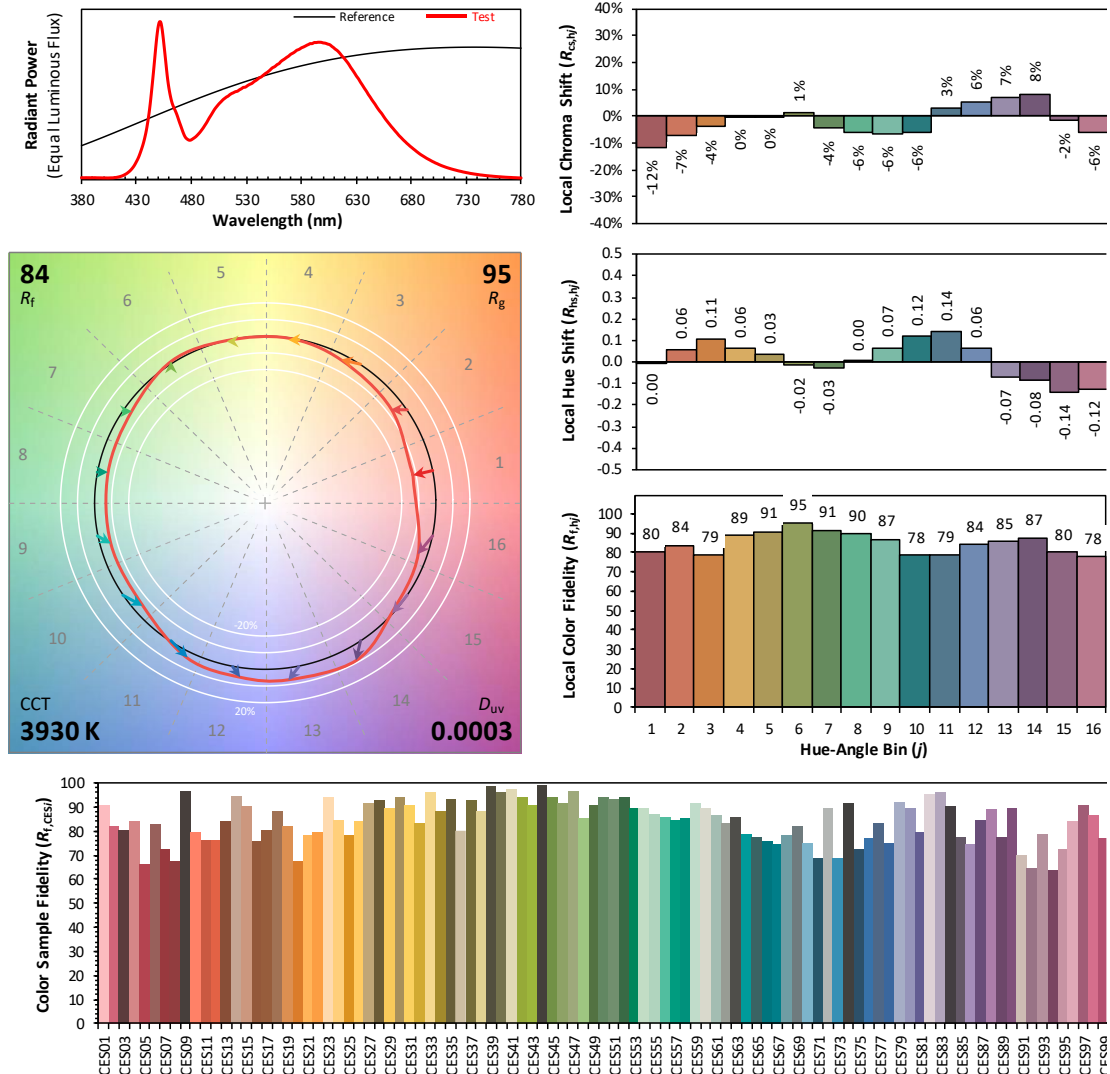
x: 0.3838 u: 0.2262 u': 0.2262  
y: 0.3794 v: 0.3355 v': 0.5032

ResultsCRICRI01	81.2	ResultsCRICRI09	7.7
ResultsCRICRI02	90.1	ResultsCRICRI10	76.8
ResultsCRICRI03	95.6	ResultsCRICRI11	80.5
ResultsCRICRI04	81.4	ResultsCRICRI12	64.1
ResultsCRICRI05	81.8	ResultsCRICRI13	83.5
ResultsCRICRI06	86.7	ResultsCRICRI14	98.0
ResultsCRICRI07	85.1	ResultsCRICRI15	74.6
ResultsCRICRI08	63.2	ResultsCRICRI16	72.1
ResultsCRI	83.1		



PlanckDistance 2.8E-004

## 4.1 Integrating Sphere Test



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

$x$  0.3838  
 $y$  0.3794  
 $u'$  0.2262  
 $v'$  0.5032

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.	ALEDL5TN/480	Sample ID.	E1
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° 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	480.00	60	0.387	171.6	0.923

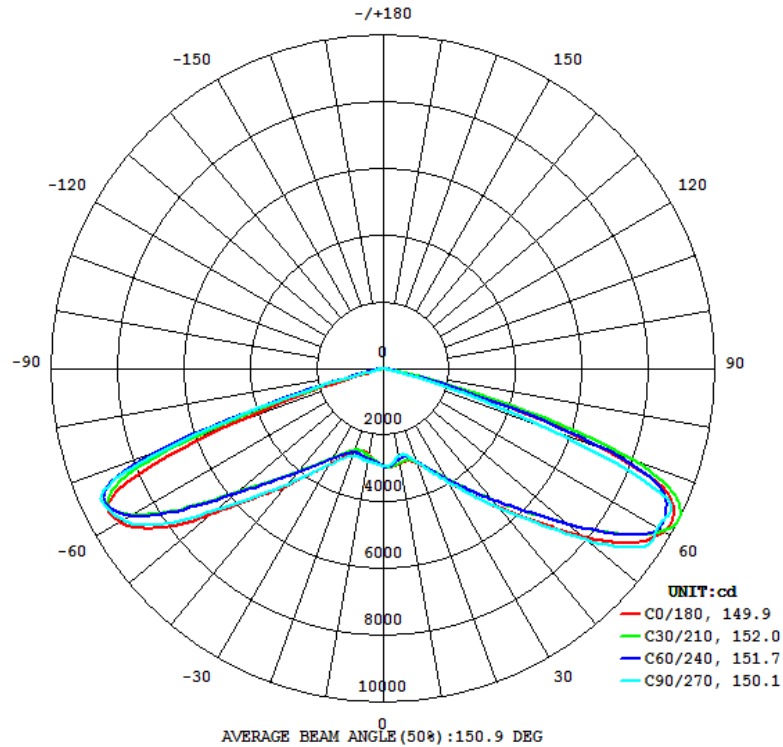
#### Test Result

Flux (lm)	Field Angle(10%)		Beam Angle(50%)		Luminous Efficacy (lm/W)
	C0-180	C90-270	C0-180	C90-270	
28481	155.9	154.4	149.9	150.1	166.0

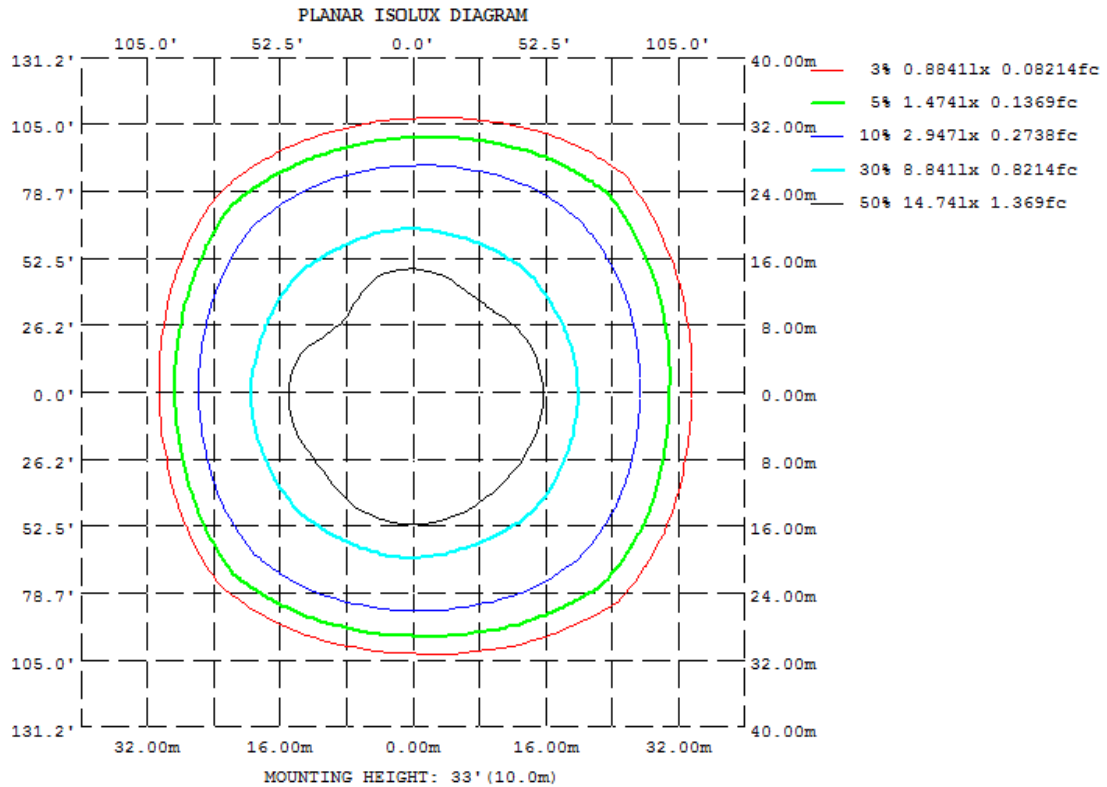
Zonal Lumen Requirement (0°-90°)	Zonal Lumen Requirement (80°-90°)	BUG rating
100.00%	0.36%	B5-U0-G3

## 4.2 Goniophotometer Test

### Light Distrubtion Curve



### Isolux Plot





## 4.2 Goniophotometer Test

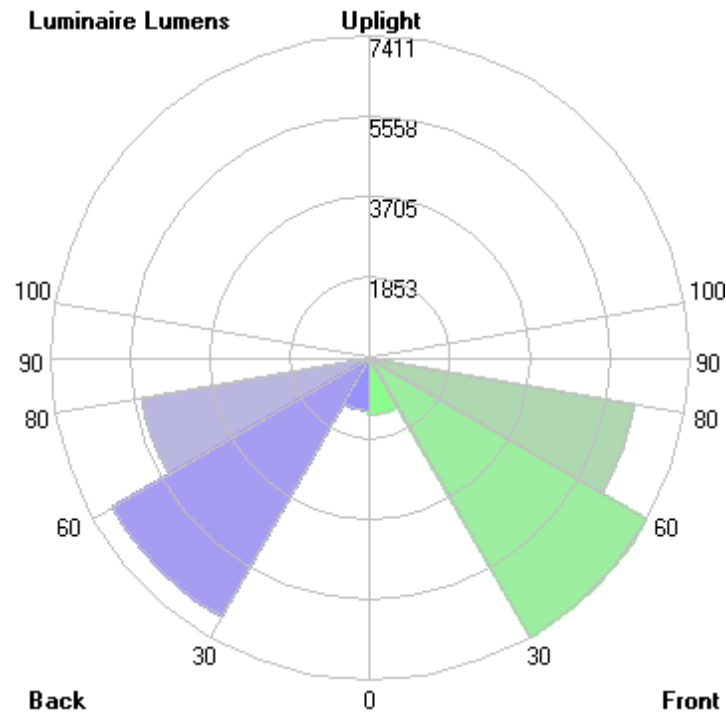
### Zonal Lumen Summary

γ	C0	C45	C90	C135	C180	C225	C270	C315
10	289.9	282.5	268.2	268.4	264.8	271.1	283.4	288.5
20	302.9	296.1	299.0	271.1	266.7	262.5	279.6	288.4
30	390.1	375.1	391.6	337.1	332.1	303.2	334.2	336.8
40	543.9	501.2	547.1	449.1	459.1	391.4	452.4	440.5
50	782.5	702.9	796.4	632.4	679.9	551.2	659.0	612.1
60	975.1	983.1	954.5	930.7	917.8	877.7	908.2	903.1
70	712.1	816.9	537.5	697.6	485.5	755.3	677.9	874.1
80	25.10	37.77	13.94	22.63	12.63	23.81	14.94	38.91
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	271.55	0 - 10	271.55	0.95%
10-20	779.80	0 - 20	1051.35	3.69%
20-30	1455.51	0 - 30	2506.86	8.80%
30-40	2563.40	0 - 40	5070.26	17.80%
40-50	4385.21	0 - 50	9455.47	33.20%
50-60	7332.80	0 - 60	16788.27	58.95%
60-70	8873.69	0 - 70	25661.96	90.10%
70-80	2717.21	0 - 80	28379.17	99.64%
80-90	101.65	0 - 90	28480.82	100.00%
90-100	0.00	0 - 100	28480.82	100.00%
100-110	0.00	0 - 110	28480.82	100.00%
110-120	0.00	0 - 120	28480.82	100.00%
120-130	0.00	0 - 130	28480.82	100.00%
130-140	0.00	0 - 140	28480.82	100.00%
140-150	0.00	0 - 150	28480.82	100.00%
150-160	0.00	0 - 160	28480.82	100.00%
160-170	0.00	0 - 170	28480.82	100.00%
170-180	0.00	0 - 180	28480.82	100.00%

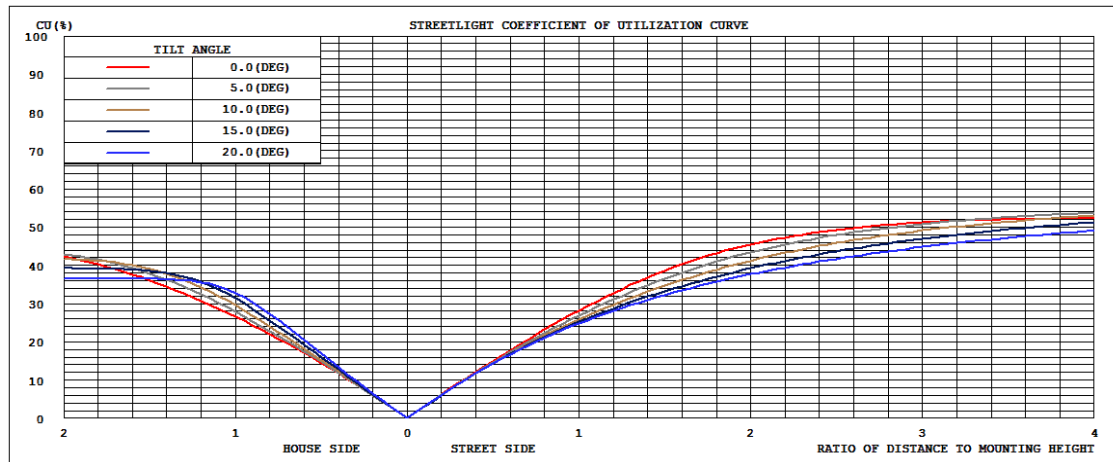
## 4.2 Goniophotometer Test

LCS/BUG

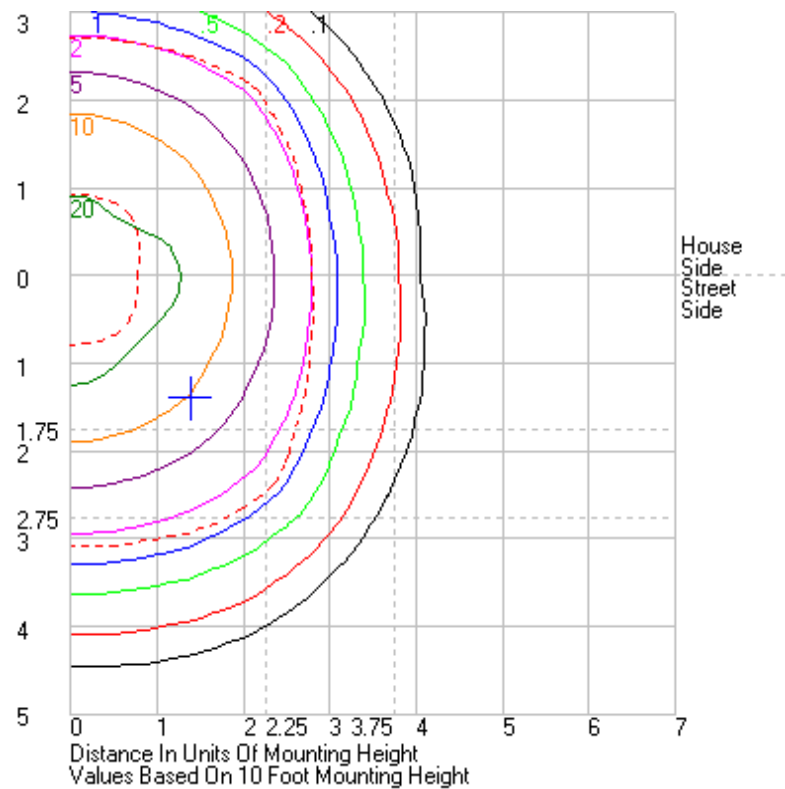


	Lumens	% Lamp	% Luminaire
FL - Front-Low (0-30)	1302.7	N.A.	4.6
FM - Front-Medium (30-60)	7410.9	N.A.	26.0
FH - Front-High (60-80)	6220.2	N.A.	21.8
FVH - Front-Very High (80-90)	61.7	N.A.	0.2
BL - Back-Low (0-30)	1204.2	N.A.	4.2
BM - Back-Medium (30-60)	6870.5	N.A.	24.1
BH - Back-High (60-80)	5370.7	N.A.	18.9
BVH - Back-Very High (80-90)	40.0	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
Total	28480.9	N.A.	100.0
BUG Rating	B5-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	2943.13	2943.13	2943.13	2943.13	2943.13	2943.13	2943.13	2943.13	2943.13	2943.13	2943.13	2943.13	2943.13	2943.13	2943.13	2943.13	2943.13	2943.13	2943.13	2943.13	2943.13	2943.13	2943.13	2943.13	2943.13
1	2959.49	2961.97	2962.14	2960.68	2957.27	2953.21	2948.25	2943.65	2937.71	2932.15	2926.9	2922.67	2914.69	2913.91	2914.25	2916.38	2919.79	2925.92	2931.77	2939.01	2945.34	2952.21	2957.98	2962.65	2959.49
2	2972.88	2974.01	2972.53	2966.55	2959.59	2951.51	2942.67	2933.03	2922.7	2915.84	2910.78	2904.17	2891.57	2886.76	2885.2	2887.48	2892.88	2901.86	2913.8	2927.45	2941.52	2954.39	2966.13	2974.6	2972.88
3	2980.67	2980.57	2974.72	2964.64	2954.91	2943.84	2930.12	2917.86	2907.46	2899.32	2891.24	2883.4	2866.81	2858.79	2857.42	2858.06	2863.92	2877.98	2895.17	2914.59	2932.89	2950.41	2967.45	2981.44	2980.67
4	2977.9	2976.87	2968.92	2957.54	2941.59	2925.83	2909.11	2895.14	2887.48	2879.74	2869.25	2859.93	2840.9	2830.59	2827.34	2830.74	2841.93	2858.61	2882.15	2905.53	2926.34	2943.76	2960.89	2978	2977.9
5	2973.14	2970.39	2958.75	2942.62	2916.97	2898.54	2879.69	2864.7	2859.69	2854.66	2847.33	2834.43	2815.13	2801.82	2797.56	2807.81	2824.82	2843.07	2869.54	2897.04	2917.95	2932.93	2949.64	2970.81	2973.14
6	2966.95	2962.42	2946.81	2920.49	2891.1	2867.79	2844.27	2829.81	2829.16	2827.17	2819	2801.45	2780.89	2767.32	2769.15	2784.73	2806.64	2830.21	2859.76	2888.98	2905.31	2919.59	2936.53	2960.76	2966.95
7	2958.14	2952.79	2933.53	2896.22	2858.48	2826.68	2803.06	2787.75	2790.9	2794.81	2785.31	2768.53	2746.38	2732.78	2738.52	2763.97	2794.23	2822.94	2854.05	2883.92	2896.53	2906.91	2923	2949.16	2958.14
8	2943.28	2941.16	2918.6	2871.41	2824.06	2786.14	2756.09	2741.29	2751.15	2758.38	2752.54	2737.73	2713.4	2700.17	2710.35	2744.53	2783.73	2815.63	2847.34	2877.05	2888.41	2896.6	2911.06	2935.04	2943.28
9	2922.03	2923.22	2901.63	2848.32	2793.17	2750.52	2717.23	2699.33	2711.42	2720.33	2719.68	2705.4	2678.91	2668.58	2684.16	2727.19	2772.91	2807.86	2841.73	2870.19	2881.07	2890.04	2899.03	2913.76	2922.03
10	2899.44	2902.84	2882.27	2824.86	2763.9	2717.74	2681.59	2661.04	2671.66	2683.55	2687.47	2675.77	2647.87	2640.69	2660.96	2710.81	2761.75	2799.04	2834.3	2863.19	2875.55	2884.84	2885.07	2890.64	2899.44
11	2882.25	2887.43	2862.42	2804.34	2742.67	2696.27	2657.18	2632.43	2638.58	2650.18	2655.49	2649.36	2620.26	2613.31	2640.42	2694.5	2748.4	2786.65	2823.99	2854.82	2870.17	2880.72	2872.59	2871.75	2882.25
12	2871.99	2878.73	2847.11	2787.46	2728.55	2684.65	2646.7	2615.55	2612.5	2620.95	2628.73	2625.96	2595.8	2589.23	2619.77	2677.49	2734.87	2772.36	2812.76	2845.51	2864.58	2877.07	2861.52	2860.14	2871.99
13	2867.32	2876.3	2838.23	2776.66	2720.59	2685.68	2648.8	2610.87	2596.45	2597.03	2606.5	2604.95	2575.7	2569.57	2599.76	2658.9	2720.51	2758.17	2799.28	2834.02	2857.78	2872.88	2855	2855.76	2867.32
14	2867.92	2877.15	2835.03	2774.28	2723.79	2699.02	2665.05	2619.48	2591.25	2581.19	2591.83	2591.3	2564.28	2557.23	2582.82	2641.03	2706.95	2743.12	2785.61	2823.07	2849.73	2867.89	2853.06	2857.37	2867.92
15	2873.24	2881.8	2837.22	2781.26	2739.37	2726.41	2696.46	2642.93	2598.78	2576.35	2585.13	2586.49	2560.6	2552.2	2571.29	2625.31	2693.74	2731.2	2774.86	2812.84	2842.1	2863.09	2856.53	2863.2	2873.24
16	2885.67	2892.06	2847.98	2799.78	2766.8	2765.86	2739.79	2676.58	2616.63	2583.34	2587.07	2591.5	2565.98	2554.28	2568.47	2612.15	2681.65	2720.73	2766.51	2804.7	2833.97	2858.89	2864.05	2875.14	2885.67
17	2907.57	2911.66	2869.59	2827.69	2806.65	2815.13	2789.15	2718.76	2647.63	2600.52	2597.79	2603.47	2578.07	2561	2572.45	2606.34	2671.46	2713.77	2763.22	2798.42	2828.2	2857.59	2876.83	2891.51	2907.57
18	2939.77	2940.83	2899.83	2863.43	2857.73	2874.49	2853.72	2772.4	2689.36	2628.94	2619.11	2623.25	2598.45	2573.64	2581.69	2607.37	2668.05	2713.38	2765.6	2796.63	2826.93	2861.13	2893.13	2916.56	2939.77
19	2980.99	2977.16	2939.98	2906.99	2912.98	2934.72	2917.64	2827.19	2735.5	2666.26	2650.29	2651.89	2629.28	2593.46	2594.49	2613.83	2672.35	2720.41	2776.3	2800.79	2831.6	2869.36	2914.89	2948.1	2980.99
20	3029.21	3021.68	2989.12	2960.66	2979.2	3005.7	2990.25	2891.34	2791.15	2710.95	2690.04	2688.95	2667.05	2623.08	2611.86	2624.93	2684.15	2734.53	2795.75	2811.97	2843.2	2883.55	2941.68	2988.26	3029.21
21	3089.45	3075.01	3045.63	3020.97	3048.5	3078.06	3070.38	2960.18	2849.42	2761.34	2737.38	2733.15	2711.89	2657.86	2635.53	2640.92	2701.84	2756.58	2822.29	2832.26	2861.32	2904.17	2975.82	3037.43	3089.45
22	3156.93	3138.86	3108.56	3085.71	3118.46	3152.62	3142.24	3029.08	2909.24	2813.48	2786.24	2780.92	2760.75	2697.87	2667.21	2662.3	2725.05	2784.16	2855.82	2860.25	2886.17	2931.45	3018.99	3094.26	3156.93
23	3229.32	3207.64	3180.07	3157.47	3199.76	3236.5	3231.7	3109.48	2978.23	2870.68	2843.3	2835.35	2814.7	2742.91	2705.2	2691.53	2755.3	2819.27	2896.48	2895.25	2920.07	2966.23	3069.29	3157.91	3229.32
24	3313.26	3286.76	3255.44	3230.88	3276.13	3318.28	3316.69	3185.42	3046.08	2929.11	2900.59	2892.24	2874.01	2793.46	2747.17	2725.81	2792.35	2860.72	2944.11	2936.98	2958.6	3007.18	3124.11	3226.47	3313.26
25	3397.98	3369.54	3332.98	3308.01	3359.76	3406.49	3406.81	3268.5	3121.49	2992.47	2961.67	2954.5	2937.14	2847.83	2793.63	2765.83	2836.76	2909.03	2997.06	2986.01	3004.27	3056.57	3185.13	3300.21	3397.98
26	3487.11	3456.53	3418.3	3388.3	3445.85	3497.41	3505.72	3357.19	3199.27	3059.49	3028.02	3021.07	3005.23	2907.58	2845.29	2811.88	2885.06	2962.92	3058.13	3039.81	3056.13	3110.35	3250.21	3379.91	3487.11
27	3585.17	3549.55	3505.4	3470.88	3533.41	3589.08	3593.48	3441.88	3279.51	3129.79	3095.2	3092.48	3077.92	2971.64	2898.97	2860.62	2938.8	3022.75	3122.73	3100.67	3112.33	3167.76	3319.45	3462.85	3585.17
28	3685.25	3646.56	3597.96	3562.46	3630.37	3691.26	3701.06	3543.49	3368.96	3207.08	3168.74	3168.54	3153.09	3039.13	2956.52	2912.8	2995.72	3086.81	3193.69	3163.9	3173.58	3230.66	3394.65	3651.99	3685.25
29	3788.69	3749.47	3694.78	3651.52	3722.56	3791.74	3804.48	3639.25	3456.53	3286.56	3243.49	3248.86	3233.98	3111.5	3018.28	2970.32	3056.24	3155.15	3265.45	3235.3	3239.25	3296.99	3472.53	3646.43	3788.69
30	3901.17	3859.62	3797.91	3750.62	3826.76	3903.92	3915.86	3743.92	3553.74	3370.94	3326.75	3333.94	3320.7	3189.73	3085.38	3031.7	3120.15	3226.74	3342.23	3310.36	3308.66	3368.38	3559.25	3748.6	3901.17
31	4023.42	3974.05	3905.91	3852.98	3934.38	4024.6	4047.68	3863.97	3655.92	3461.97	3409.73	3424.5	3409.51	3269.68	3153.74	3098.13	3189.26	3303.52	3423.22	3388.64	3382.97	3444.82	3648.7	3854.62	4023.42
32	4147.9	4097.92	4018.99	3959.01	4040.42	4143.86	4170.64	3978.69	3756.23	3555.18	3501.85	3519.77	3506.04	3357.14	3227.9	3169	3262.35	3386.43	3512.23	3474.23	3463.59	3529.2	3745.52	3974.98	4147.9
33	4292.5	4229.97	4139.24	4076.79	4161.61	4279.67	4319.87	4116.9	3871.57	3655.05	3598.59	3624.31	3612.39	3451.26	3306.96	3244.4	3341.53	3476.66	3610.14	3568.3	3548.52	3618.86	3848.9	4098.69	4292.5
34	4436.8	4371.78	4263.66	4191.81	4279.45	4417.17	4469.2	4253.06	3983.46	3757.78	3697.23	3735.72	3723.32	3552.76	3392.64	3323.63	3424.23	3575.7	3715.17	3668.55	3637.22	3711.74	3957.97	4230.61	4436.8
35	4585.36	4515.93	4395.41	4315.16	4405.43	4560.85	4617.58	4398.06	4106	3864.66	3805.77	3856.96	3848.55	3664.93	3483.46	3409.02	3514.63	3683.94	3832.82	3777	3731.93	3813.34	4074.09	4370.89	4585.36
36	4753.62	4672.54	4530.83	4446.77	4541.95	4720.61	4791.98	4559.99	4235.39	3980.05	3917.8	3987.27	3983.33	3784.66	3580.99	3498.03	3609.75	3801	3958.3	3894.58	3833.91	3918.61	4197.35	4520.23	4753.62
37	4919.61	4834.74	4672.77	4576.67	4673.95	4872.62	4944.74	4707.79	4364.41	4097.7	4037.85	4126.85	4121	3911.24	3683.81	3593.77	3709.51	3926.88	4091.49	4019.88	3942.01	4032.2	4326.28	4674.94	4919.61
38	5086.47	4999.64	4820.44	4719.93	4824.58	5039.69	5122.3	4878.35	4509.19	4224.44	4162.86	4272.18	4274.46	4049.97	3794.08										

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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.	ALEDL5TN/480	Sample ID.	E1
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
479.99	60	0.386	171.6	0.926	11.31%



## 5.0 Equipment Information

Test Equipment			
Equipment ID	Equipment Name	Last Calibration Date	Calibration Due Date
DLF107	Integrating Sphere System	2021/12/26	2022/12/25
DLF108	Auxiliary Lamp	2021/12/26	2022/12/25
DLF122	Measurement Standard Lamp Standard Lamp Type: 220 V, 0.4720 A, Tungsten, Omni-derectional	2021/12/26	2022/12/25
DLF116	AC Power Source	2021/12/26	2022/12/25
DLF113	Power Meter	2021/12/26	2022/12/25
DLF112	Temperature Recorder	2021/12/26	2022/12/25
DLF114	Temperature & Humidity Datalogger	2021/12/26	2022/12/25
DLF101	Goniophotometer	2021/12/26	2022/12/25
DLF125	Standard Lamp Standard Lamp Type: 76.58 V, 6.7875 A, Tungsten, Omni-derectional	2021/12/26	2022/12/25
DLF104	AC Power Source	2021/12/26	2022/12/25
DLF507	DC Power Source	2021/12/26	2022/12/25
DLF102	Power Meter	2021/12/26	2022/12/25
DLF111	Temperature & Humidity Datalogger	2021/12/26	2022/12/25
DLF119	Power Meter	2021/12/26	2022/12/25
DLF031	Temperature data logger	2021/12/26	2022/12/25
DLF022	Digital power meter	2021/12/26	2022/12/25
DLF003	Temperature & Humidity Datalogger	2021/12/26	2022/12/25

\*\*\*\*\* End of Test Report\*\*\*\*\*