

# Photometric Test Report

## Relevant Standards

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

## Prepared For

**RAB Lighting Inc.**

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## Prepared By

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## Project Number

**DLF2207109**

## Report Number

**DLF2207109-2a**

## Test Date

**2022/7/29**

## Issue Date

**2022/7/30**

## 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		10917
Minimum Luminaire Efficacy (lm/W) (Goniophotometer - Section 4.2)	IES LM-79-2008	Standard 105	Premium 120	133.0
Power (Input Wattage) (W) (Goniophotometer - Section 4.2)	IES LM-79-2008	Worst Case		82.1
Total Harmonic Distortion (A%) (THD & PF - section 4.3)	ANSI C82.77:2014	20.00%	120V	1.94%
		20.00%	277V	7.00%
Power Factor (THD & PF - section 4.3)	ANSI C82.77:2014	0.9	120V	0.999
		0.9	277V	0.966
Allowable CCTs* (K) (Integrating Sphere - Section 4.1)	IES LM-79-2008	7 step	5029±355	4804
		4 step	5029±220	
Minimum CRI (Integrating Sphere - Section 4.1)	IES LM-79-2008 CIE 13.3-1995	≥70		81
Minimum R9 (Integrating Sphere - Section 4.1)	IES LM-79-2008 CIE 13.3-1995	≥-40		-1
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		95
Minimum IES Rcs,h1 (Integrating Sphere - Section 4.1)	ANSI/IES TM-30-18	-18%≤IES Rcs,h1≤+23%		-13%
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%		0.23%
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		0.685
(Goniophotometer - Section 4.2)		Non-Worst Case		0.299
Power (Input Wattage - W)				
(Goniophotometer - Section 4.2)	IES LM-79-2008	Worst Case		82.1
(Goniophotometer - Section 4.2)		Non-Worst Case		80.0

## 2.0 Test List

Test Item	Test	Test Date	Model Number	Sample No.
1	Integrating Sphere Test	2022/7/29	ALEDS2T	B1
2	Goniophotometer Test	2022/7/29	ALEDS2T	B1
3	THD and PF Test	2022/7/29	ALEDS2T	B1

### 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.

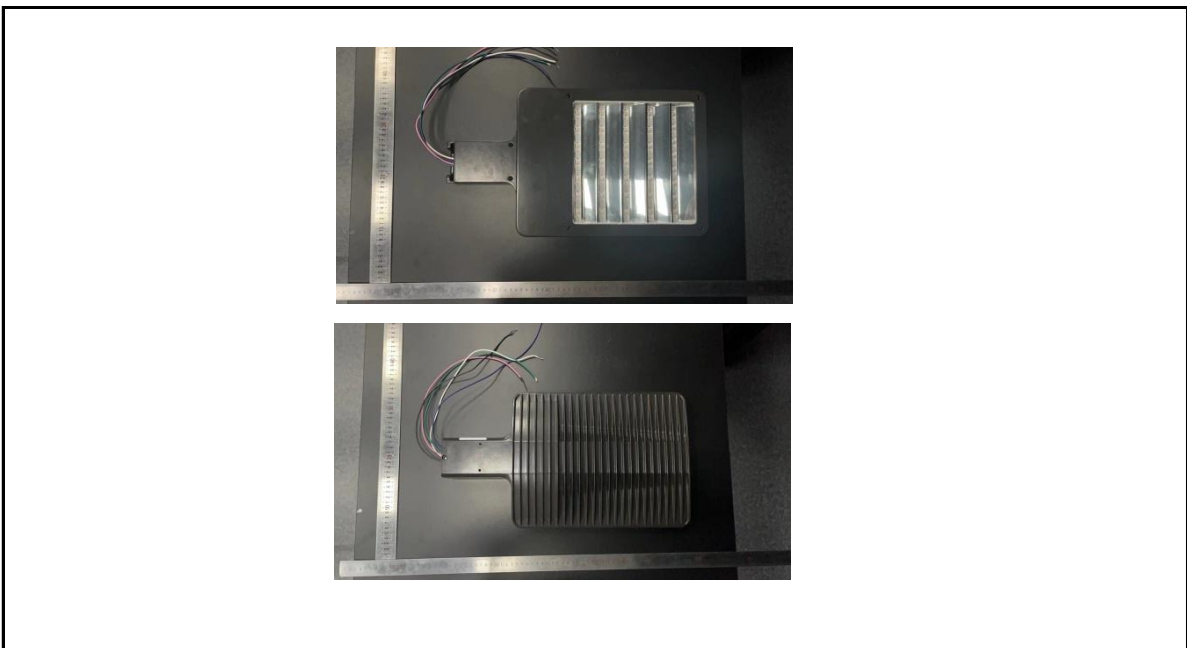
## 3.0 Production Description

**Luminaire Description:** ALEDS2T

**Description:** 80W @ 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.	ALEDS2T	Sample ID.	B1
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
120.05	60	0.683	81.9	0.999
276.99	60	0.298	79.7	0.966

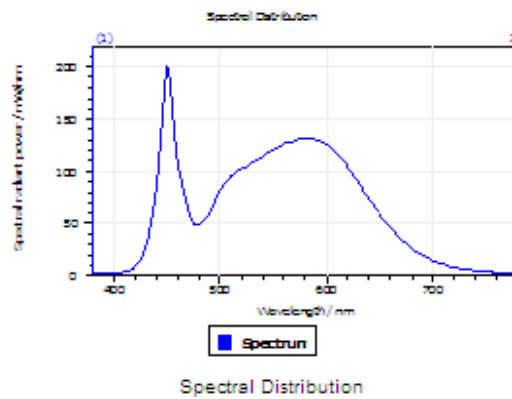
#### Test Result

CCT (K)	CRI	R9	Duv
4804	81	-1	0.0041

Rf	Rg	IES Rcs,h1
83	95	-13%

## 4.1 Integrating Sphere Test

### Results

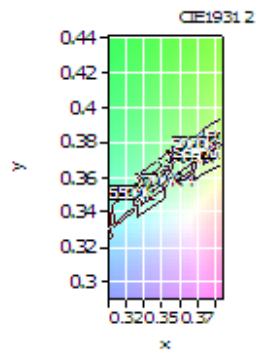


#### Spectral values

DominantWavelength 571.67 nm  
Purity 0.153  
PeakWavelength 450.59 nm  
Radiant Power 24.93 W  
Width50%:

#### Color Coordinates

Correlated Color Temperat 4804 K  
x: 0.3520 u: 0.2108 u': 0.2108  
y: 0.3653 v: 0.3281 v': 0.4922  
CRI01 78.5 CRI09 -0.5  
CRI02 87.1 CRI10 69.7  
CRI03 93.6 CRI11 78.6  
CRI04 80.1 CRI12 56.6  
CRI05 79.1 CRI13 80.6  
CRI06 82.0 CRI14 96.7  
CRI07 86.9 CRI15 71.8  
CRI08 64.2 CRI16 69.5  
ResultsCRI 81.4



PlanckDistance 4.1E-003

## 4.1 Integrating Sphere Test

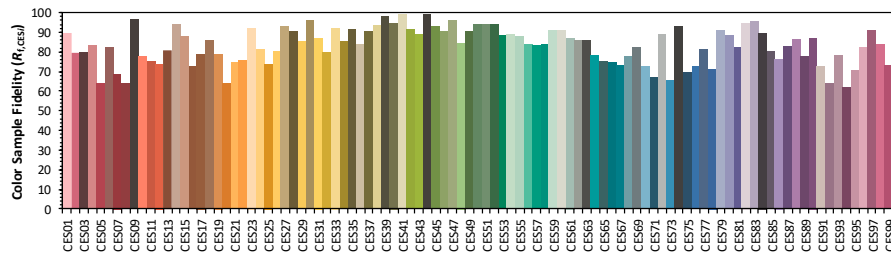
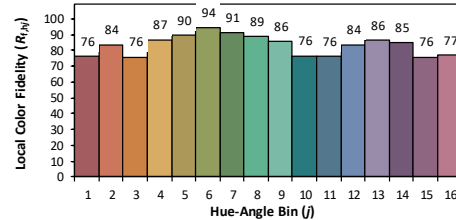
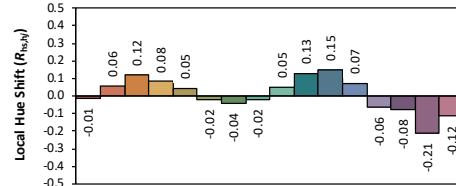
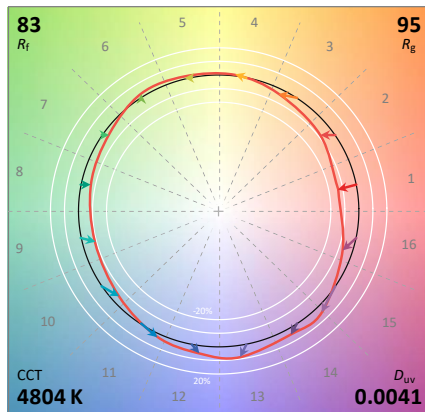
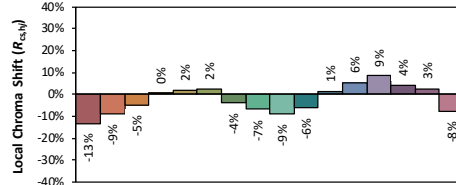
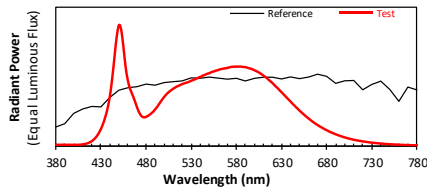
### IES TM-30-18 Color Rendition Report

Source: DLF2207109-2a

Manufacturer: RAB Lighting Inc.

Date: 2022/7/29

Model: ALED52T



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

$x$  0.3520  
 $y$  0.3653  
 $u'$  0.2108  
 $v'$  0.4922

CIE 13.3-1995  
(CRI)  
 $R_a$  81  
 $R_g$  -1

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.	ALEDS2T	Sample ID.	B1
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  $25^{\circ}\text{C} \pm 1^{\circ}\text{C}$ , 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	120.04	60	0.685	82.1	0.998
NON-WORST CASE	277.02	60	0.299	80.0	0.965

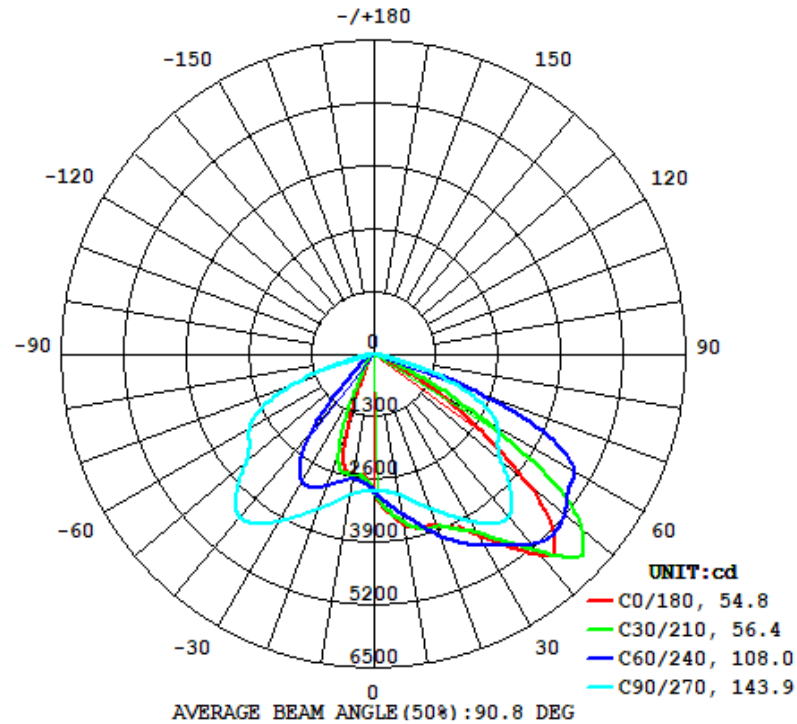
#### Test Result

Flux (lm)	Field Angle(10%)		Beam Angle(50%)		Luminous Efficacy (lm/W)
	C0-180	C90-270	C0-180	C90-270	
10917	90.8	158.8	54.8	143.9	133.0

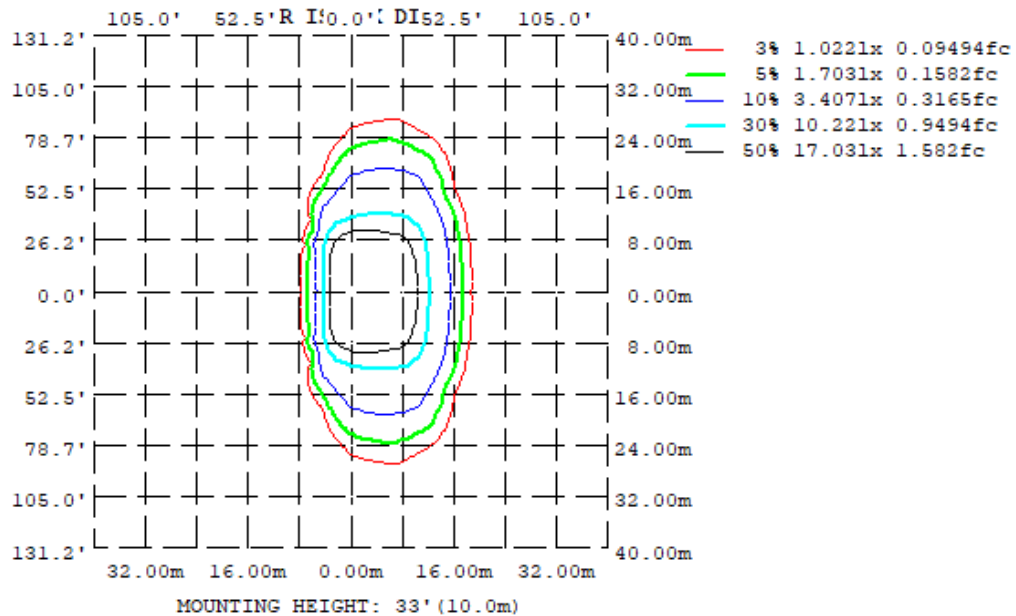
Zonal Lumen Requirement ( $0^{\circ}$ - $90^{\circ}$ )	Zonal Lumen Requirement ( $80^{\circ}$ - $90^{\circ}$ )	BUG rating
100.00%	0.23%	B3-U0-G1

## 4.2 Goniophotometer Test

### Light Distribution Curve



### Isolux Plot





## 4.2 Goniophotometer Test

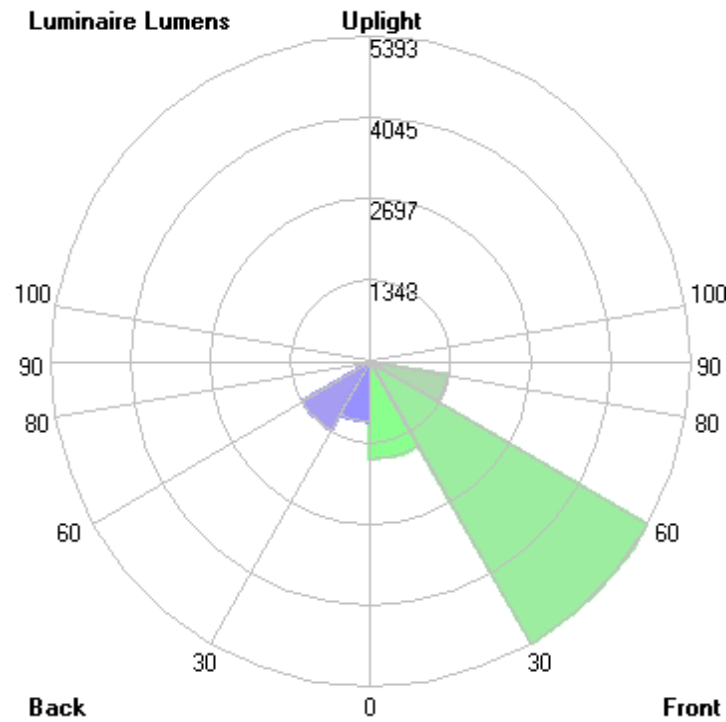
### Zonal Lumen Summary

$\gamma$	C0	C45	C90	C135	C180	C225	C270	C315
10	3572	3450	2954	2573	2520	2573	2954	3450
20	3783	3952	3402	2625	1683	2625	3402	3952
30	4329	4404	3992	1682	382.4	1682	3992	4404
40	5446	5248	4373	439.0	179.9	439.0	4373	5248
50	4245	6462	3486	227.0	71.16	227.0	3486	6462
60	1408	4206	2987	89.12	37.37	89.12	2987	4206
70	124.9	716.3	1788	46.15	15.11	46.15	1788	716.3
80	21.59	60.74	238.8	9.195	4.674	9.195	238.8	60.74
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	279.51	0 - 10	279.51	2.56%
10-20	888.37	0 - 20	1167.88	10.70%
20-30	1453.53	0 - 30	2621.41	24.01%
30-40	2044.05	0 - 40	4665.46	42.74%
40-50	2499.73	0 - 50	7165.19	65.63%
50-60	2162.00	0 - 60	9327.19	85.44%
60-70	1221.85	0 - 70	10549.04	96.63%
70-80	342.24	0 - 80	10891.28	99.77%
80-90	25.55	0 - 90	10916.83	100.00%
90-100	0.00	0 - 100	10916.83	100.00%
100-110	0.00	0 - 110	10916.83	100.00%
110-120	0.00	0 - 120	10916.83	100.00%
120-130	0.00	0 - 130	10916.83	100.00%
130-140	0.00	0 - 140	10916.83	100.00%
140-150	0.00	0 - 150	10916.83	100.00%
150-160	0.00	0 - 160	10916.83	100.00%
160-170	0.00	0 - 170	10916.83	100.00%
170-180	0.00	0 - 180	10916.83	100.00%

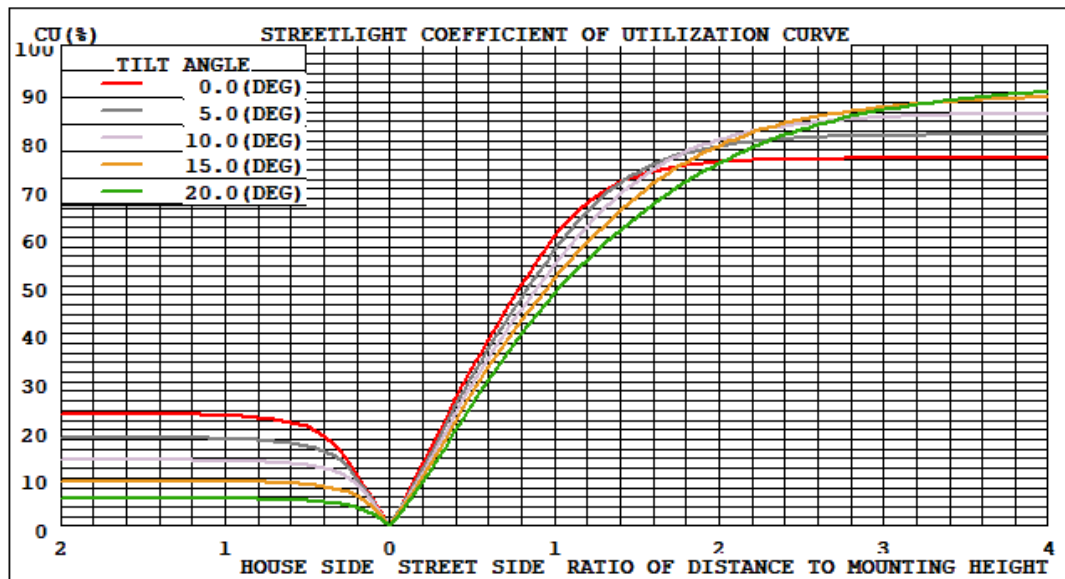
## 4.2 Goniophotometer Test

LCS/BUG

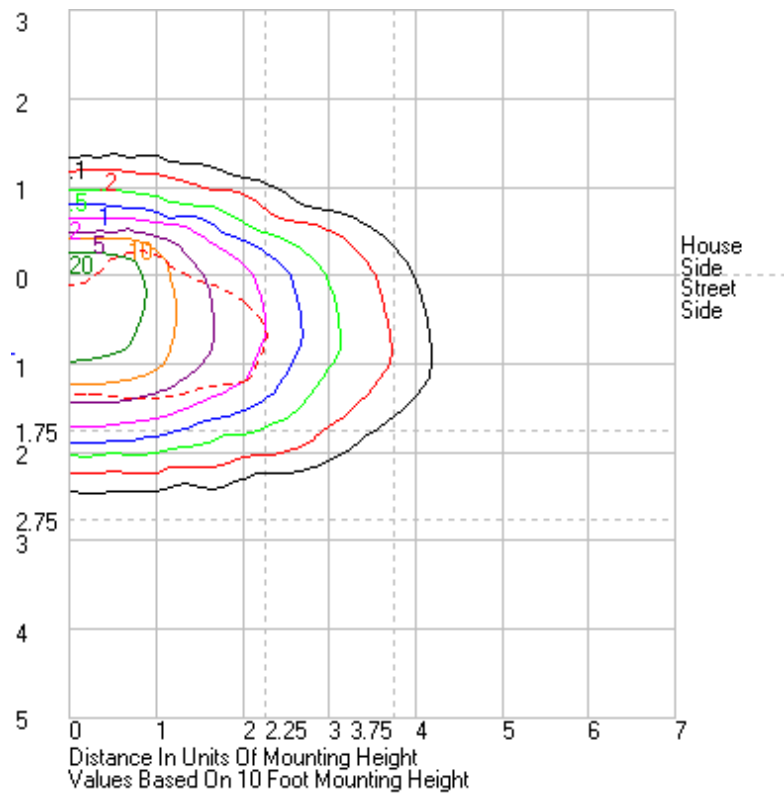


	Lumens	% Lamp	% Luminaire
FL - Front-Low (0-30)	1614.1	N.A.	14.8
FM - Front-Medium (30-60)	5393.1	N.A.	49.4
FH - Front-High (60-80)	1323.6	N.A.	12.1
FVH - Front-Very High (80-90)	20.3	N.A.	0.2
BL - Back-Low (0-30)	1007.3	N.A.	9.2
BM - Back-Medium (30-60)	1312.7	N.A.	12.0
BH - Back-High (60-80)	240.4	N.A.	2.2
BVH - Back-Very High (80-90)	5.3	N.A.	0.0
UL - Uplight-Low (90-100)	0.0	N.A.	0.0
UH - Uplight-High (100-180)	0.0	N.A.	0.0
Total	10916.8	N.A.	100.0
BUG Rating	B3-U0-G1		

## 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	2831.27	2831.27	2831.27	2831.27	2831.27	2831.27	2831.27	2831.27	2831.27	2831.27	2831.27	2831.27	2831.27	2831.27	2831.27	2831.27	2831.27	2831.27	2831.27	2831.27	2831.27	2831.27	2831.27	2831.27	2831.27
1	2925.07	2926.16	2917.07	2901	2883.85	2861.66	2837.55	2811.59	2790.46	2771.9	2758.56	2751.59	2747.09	2751.59	2758.56	2771.9	2790.46	2811.59	2837.55	2861.66	2883.85	2901	2917.07	2926.16	2925.07
2	3024.87	3019.32	3001.84	2972.83	2936.83	2888.73	2840.34	2792.71	2753.87	2724.51	2701.47	2690.98	2684.3	2690.98	2701.47	2724.51	2753.87	2792.71	2840.34	2888.73	2936.83	2972.83	3001.84	3019.32	3024.87
3	3112.74	3104.59	3082.72	3042.65	2988.11	2918.78	2844.38	2775.51	2723.49	2683.36	2652.74	2633.96	2632.61	2633.96	2652.74	2683.36	2723.49	2775.51	2844.38	2918.78	2988.11	3042.65	3082.72	3104.59	3112.74
4	3186.27	3180.32	3155.78	3108.82	3040.81	2952.33	2852.7	2765.51	2699.76	2646.84	2615.3	2594.27	2587.64	2594.27	2615.3	2646.84	2699.76	2765.51	2852.7	2952.33	3040.81	3108.82	3155.78	3180.32	3186.27
5	3256.22	3245.09	3217.84	3171.11	3093.22	2988.25	2862.64	2756.22	2677.5	2621.3	2577.47	2551.68	2544.95	2551.68	2577.47	2621.3	2677.5	2756.22	2862.64	2988.25	3093.22	3171.11	3217.84	3245.09	3256.22
6	3320.19	3312.07	3281.01	3224.09	3144.44	3023.23	2874.72	2752.61	2660.39	2595.06	2547.77	2529.98	2529.91	2529.98	2547.77	2595.06	2660.39	2752.61	2874.72	3023.23	3144.44	3224.09	3281.01	3312.07	3320.19
7	3387.04	3376.66	3339.63	3280.63	3195.27	3060.19	2889.07	2748.85	2648.89	2571.17	2538.29	2528.34	2527.39	2528.34	2538.29	2571.17	2648.89	2748.85	2889.07	3060.19	3195.27	3280.63	3339.63	3376.66	3387.04
8	3447.16	3436.25	3400.95	3335.79	3241.84	3100.99	2908.33	2750.48	2638.91	2562.06	2540.4	2525.72	2525.47	2525.72	2540.4	2562.06	2638.91	2750.48	2908.33	3100.99	3241.84	3335.79	3400.95	3436.25	3447.16
9	3509.52	3498.95	3457.42	3394.19	3293.46	3142.54	2928.17	2753.06	2628.66	2565.73	2541.24	2526.74	2523.21	2526.74	2541.24	2565.73	2628.66	2753.06	2928.17	3142.54	3293.46	3394.19	3457.42	3498.95	3509.52
10	3571.65	3557.32	3518.37	3449.57	3345.26	3191.76	2954.25	2761.49	2625.39	2572.94	2543.92	2524.29	2519.64	2524.29	2543.92	2572.94	2625.39	2761.49	2954.25	3191.76	3345.26	3449.57	3518.37	3557.32	3571.65
11	3621.64	3609.38	3574.55	3506.24	3398.58	3243.02	2987.24	2775.94	2632.83	2580.17	2544.74	2522.16	2517.99	2522.16	2544.74	2580.17	2632.83	2775.94	2987.24	3243.02	3398.58	3506.24	3574.55	3609.38	3621.64
12	3663.77	3657	3630.25	3566.92	3459.35	3294.99	3021.79	2795.02	2648.06	2588.22	2544.4	2519.33	2515.24	2519.33	2544.4	2588.22	2648.06	2795.02	3021.79	3294.99	3459.35	3566.92	3630.25	3657	3663.77
13	3693.2	3689.02	3676.38	3622.48	3517.54	3351.97	3059.68	2820.08	2669.96	2596.26	2546.2	2514.87	2506.03	2514.87	2546.2	2596.26	2669.96	2820.08	3059.68	3351.97	3517.54	3622.48	3676.38	3689.02	3693.2
14	3715.22	3718.12	3711.88	3680.48	3579.46	3412.33	3103.06	2849.07	2697.38	2606.73	2543.55	2497.31	2475.46	2497.31	2543.55	2606.73	2697.38	2849.07	3103.06	3412.33	3579.46	3680.48	3711.88	3718.12	3715.22
15	3723.46	3733.77	3743.24	3735.26	3643.55	3475.03	3149.77	2880.41	2721.58	2616.08	2538.91	2453.27	2415.31	2453.27	2538.91	2616.08	2721.58	2880.41	3149.77	3475.03	3643.55	3735.26	3743.24	3733.77	3723.46
16	3719.13	3735.7	3771.79	3787	3713.59	3537.42	3197.1	2911.54	2752.83	2627.77	2512.35	2384.09	2325.29	2384.09	2512.35	2627.77	2752.83	2911.54	3197.1	3537.42	3713.59	3787	3771.79	3735.7	3719.13
17	3714.78	3733.5	3787.65	3831.68	3781.83	3601.72	3248.17	2947.11	2783.22	2639.31	2466.48	2286.53	2209.59	2286.53	2466.48	2639.31	2783.22	2947.11	3248.17	3601.72	3781.83	3831.68	3787.65	3733.5	3714.78
18	3720.75	3730.66	3790.48	3876.54	3853.08	3668.21	3299.37	2985.73	2815.27	2645.67	2400.61	2155.73	2051.88	2155.73	2400.61	2645.67	2815.27	2985.73	3299.37	3668.21	3853.08	3876.54	3790.48	3730.66	3720.75
19	3738.38	3740.9	3796.03	3919.03	3925.33	3730.93	3349.14	3025.45	2849.22	2641.68	2309.09	1995.08	1876.26	1995.08	2309.09	2641.68	2849.22	3025.45	3349.14	3730.93	3925.33	3919.03	3796.03	3740.9	3738.38
20	3782.86	3769.03	3798.83	3952.26	3992.57	3799.05	3402.06	3067.86	2887.24	2624.51	2187.87	1816.63	1682.58	1816.63	2187.87	2624.51	2887.24	3067.86	3402.06	3799.05	3992.57	3952.26	3798.83	3769.03	3782.86
21	3827.07	3817.99	3815.49	3978.78	4060.9	3863.45	3455.46	3112.63	2925.2	2595.98	2045.08	1627.54	1494.1	1627.54	2045.08	2595.98	2925.2	3112.63	3455.46	3863.45	4060.9	3978.78	3815.49	3817.99	3827.07
22	3864.23	3860.32	3850.72	4002.19	4127.89	3927.75	3506.11	3156.44	2961.04	2550.4	1890.69	1451.21	1315.81	1451.21	1890.69	2550.4	2961.04	3156.44	3506.11	3927.75	4127.89	4002.19	3850.72	3860.32	3864.23
23	3903.51	3901.94	3901.06	4028.69	4187.67	3995.84	3562.89	3206.88	2997.37	2485.16	1722.58	1272.18	1137.54	1272.18	1722.58	2485.16	2997.37	3206.88	3562.89	3995.84	4187.67	4028.69	3901.06	3901.94	3903.51
24	3940.4	3936.12	3951.03	4054.91	4249.71	4061.36	3617.47	3252.09	3028.75	2403.6	1559.11	1102.03	969.18	1102.03	1559.11	2403.6	3028.75	3252.09	3617.47	4061.36	4249.71	4054.91	3951.03	3936.12	3940.4
25	3976.62	3978.08	4004.08	4082.79	4307.64	4137.95	3677.08	3307.14	3052.19	2307.85	1401.38	940.25	811.46	940.25	1401.38	2307.85	3052.19	3307.14	3677.08	4137.95	4307.64	4082.79	4004.08	3978.08	3976.62
26	4002.58	4011.03	4048.09	4134.19	4370.62	4213.61	3739.87	3363.04	3067.4	2199.27	1246.08	789.15	672.46	789.15	1246.08	2199.27	3067.4	3363.04	3739.87	4213.61	4370.62	4134.19	4048.09	4011.03	4002.58
27	4051.99	4046.21	4099.9	4190.96	4422.84	4290.05	3800.54	3419.7	3076.89	2082.3	1095.25	660.68	563.27	660.68	1095.25	2082.3	3076.89	3419.7	3800.54	4290.05	4422.84	4190.96	4099.9	4046.21	4051.99
28	4128.62	4100.94	4149.93	4260.23	4471.15	4366.01	3864.81	3479.41	3072.14	1950.97	947.21	566.69	481.14	566.69	947.21	1950.97	3072.14	3479.41	3864.81	4366.01	4471.15	4260.23	4149.93	4100.94	4128.62
29	4223.14	4181.88	4193.75	4331.81	4519.39	4444.32	3928.15	3535.91	3058.73	1821.51	811.4	485.68	420.53	485.68	811.4	1821.51	3058.73	3535.91	3928.15	4444.32	4519.39	4331.81	4193.75	4181.88	4223.14
30	4328.95	4282.5	4247.21	4403.69	4569	4522.4	3991.87	3592.69	3031.64	1681.72	690.27	421.87	382.35	421.87	690.27	1681.72	3031.64	3592.69	3991.87	4522.4	4569	4403.69	4247.21	4282.5	4328.95
31	4435.74	4386.82	4319.76	4465.07	4620.49	4602.14	4059.34	3648.76	2989.6	1536.41	596.5	386.04	359.25	386.04	596.5	1536.41	2989.6	3648.76	4059.34	4602.14	4620.49	4465.07	4319.76	4386.82	4435.74
32	4526.6	4487.07	4411.45	4540.38	4666.88	4677.52	4122.96	3703.63	2935.94	1388.59	518.63	363.68	337.29	363.68	518.63	1388.59	2935.94	3703.63	4122.96	4677.52	4666.88	4540.38	4411.45	4487.07	4526.6
33	4617.93	4580.83	4517.71	4607.75	4718.35	4749.97	4186.63	3758.79	2862.21	1234.54	452.37	341.63	316.73	341.63	452.37	1234.54	2862.21	3758.79	4186.63	4749.97	4718.35	4607.75	4517.71	4580.83	4617.93
34	4724.85	4670.59	4629.87	4676.84	4775.68	4820.17	4246.07	3808.34	2778.38	1079.49	410.97	321.27	296.14	321.27	410.97	1079.49	2778.38	3808.34	4246.07	4820.17	4775.68	4676.84	4629.87	4670.59	4724.85
35	4840.5	4777.77	4737.65	4746.57	4836.06	4882.98	4298.86	3857.08	2683.43	926.87	385.34	300.47	275.33	300.47	385.34	926.87	2683.43	3857.08	4298.86	4882.98	4836.06	4746.57	4737.65	4777.77	4840.5
36	4964.84	4896.34	4837.74	4833.83	4897.54	4941.19	4342.45	3892.91	2572.31	792.35	364.16	279.35	253.62	279.35	364.16	792.35	2572.31	3892.91	4342.45	4941.19	4897.54	4833.83	4837.74	4896.34	4964.84
37	5074.89	5014.52	4949.4	4922.38	4961.12	4988.78	4370.6	3917.68	2455.15	680.36	344.4	258.56	232.63	258.56	344.4	680.36	2455.15	3917.68	4370.6	4988.78	4961.12	4922.38	4949.4	5014.52	5074.89
38	5208.81	5125.33	5069.09	5023.84	5027.34	5025.43	4388.81	3930.42	2318.69	581.26	323.11	237.58	213.47	237.58	323.11	581.26	2318.69	3930.42	4388.81</						

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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.	ALEDS2T	Sample ID.	B1
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
120.05	60	0.683	81.9	0.999	1.94%
276.99	60	0.298	79.7	0.966	7.00%



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