

# Photometric Test Report

## Relevant Standards

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

## Prepared For

**RAB Lighting Inc.**

Room 6A33, No.1388, Wuzhong road, Shanghai, China

Xiao Xiang, 15921313292, Gary.Xiao@rabweb.com

## Prepared By

**Deliver Co., Ltd.**

Block 11, 78 Keling Road, SSTP, Suzhou, China

0512-66801950, kevin.jia@szdeliver.com

## Project Number

**DLF2201106**

## Report Number

**DLF2201106-8a**

## Test Date

**2022/1/12**

## Issue Date

**2022/1/13**

## Prepared By



Wangzun Zhu

## Approved By



Kevin Jia

The results contained in this report pertain only to the tested sample.

This report shall not be reproduced, except in full, without written approval of Deliver Co., Ltd.

This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP.

## 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		36662
Minimum Luminaire Efficacy (lm/W) (Goniophotometer - Section 4.2)	IES LM-79-2008	Standard 105	Premium 120	162.2
Power (Input Wattage) (W) (Goniophotometer - Section 4.2)	IES LM-79-2008	Worst Case		226.1
Total Harmonic Distortion (A%) (THD & PF - section 4.3)	ANSI C82.77:2014	20.00%		6.38%
Power Factor (THD & PF - section 4.3)	ANSI C82.77:2014	0.9		0.954
Allowable CCTs* (K) (Integrating Sphere - Section 4.1)	IES LM-79-2008	7 step	5029±355	5012
		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		14
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
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%		0.51%
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		0.495

## 2.0 Test List

Test Item	Test	Test Date	Model Number	Sample No.
1	Integrating Sphere Test	2022/1/12	ALEDL5T/480	H1
2	Goniophotometer Test	2022/1/12	ALEDL5T/480	H1
3	THD and PF Test	2022/1/12	ALEDL5T/480	H1

### Remark(If any)

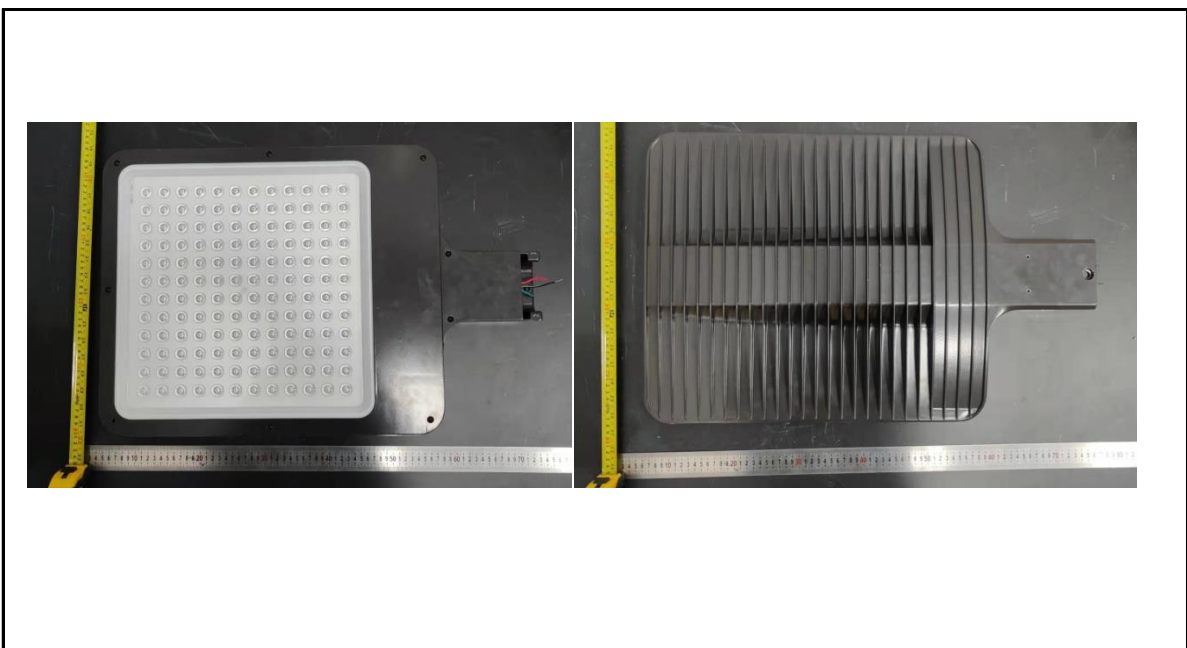
- 1、 This report shall not be used by the client to claim product endorsement by NVLAP, NIST or any agency of the US government.
- 2、 The results reported herein have been performed in accordance with the laboratory's terms of accreditation. This report shall not be reproduced except in full without 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:** 220W/30,000 lm @ 5000K

**Electrical Specification:** 480V,50/60HZ

### Photos of Luminaire Characteristics



## 4.0 LM-79 Measurement and Test Results

### 4.1 Integrating Sphere Test

Model No.	ALEDL5T/480	Sample ID.	H1
Opreate 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 paramters 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	0.498	227.8	0.954

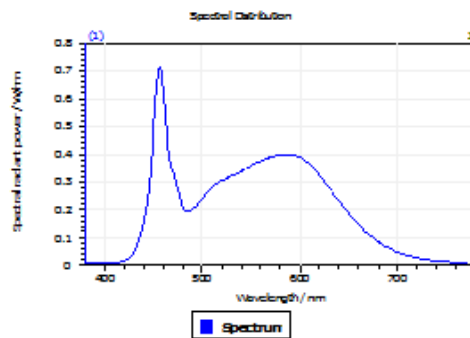
#### Test Result

CCT (K)	CRI	R9	Duv
5012	85	14	0.00084

Rf	Rg	IES Rcs,h1
83	93	-12%

## 4.1 Integrating Sphere Test

### Results



#### Spectral values

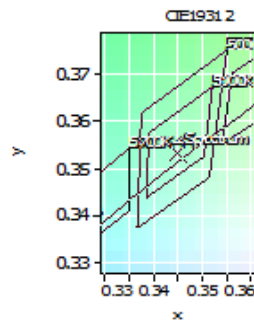
DominantWavelength	571.72 nm
Purity	0.095
PeakWavelength	456.47 nm
Radiant Power	78.51 W
Width50%	21.05 nm

#### Color Coordinates

Correlated Color Temperat 5012 K

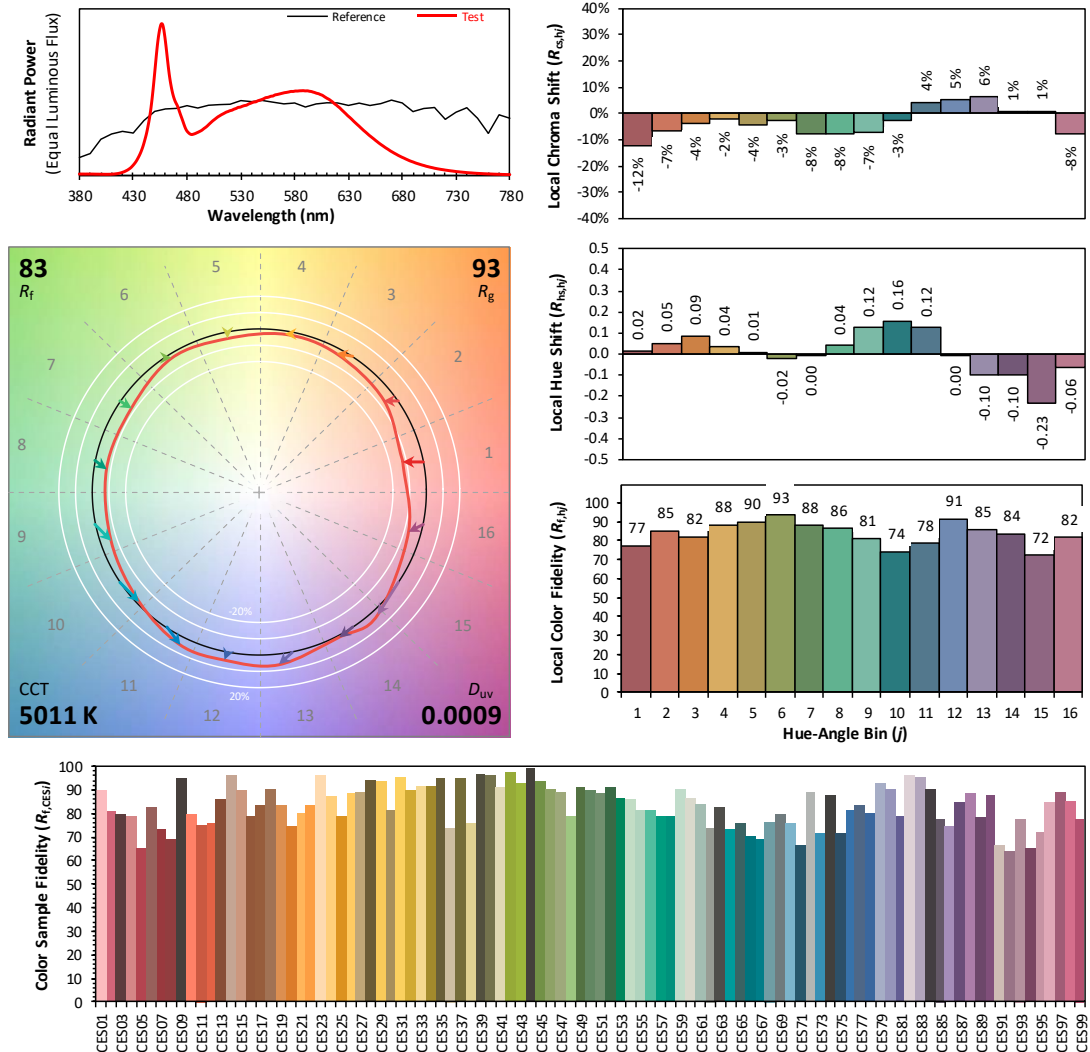
x: 0.3449 u: 0.2107 u': 0.2107  
y: 0.3532 v: 0.3236 v': 0.4854

ResultsCRICRI01	83.8	ResultsCRICRI09	13.9
ResultsCRICRI02	93.4	ResultsCRICRI10	82.7
ResultsCRICRI03	94.7	ResultsCRICRI11	80.0
ResultsCRICRI04	80.9	ResultsCRICRI12	62.7
ResultsCRICRI05	83.6	ResultsCRICRI13	87.1
ResultsCRICRI06	88.4	ResultsCRICRI14	97.9
ResultsCRICRI07	84.9	ResultsCRICRI15	78.9
ResultsCRICRI08	66.7	ResultsCRICRI16	74.2
ResultsCRI	84.5		



PlanckDistance 8.4E-004

## 4.1 Integrating Sphere Test



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

$x$  0.3449  
 $y$  0.3532  
 $u'$  0.2107  
 $v'$  0.4854

CIE 13.3-1995  
 (CRI)

$R_a$  85  
 $R_g$  14

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.	ALEDL5T/480	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  $25^{\circ}\text{C} \pm 1^{\circ}\text{C}$ , 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	480.07	60	0.495	226.1	0.950

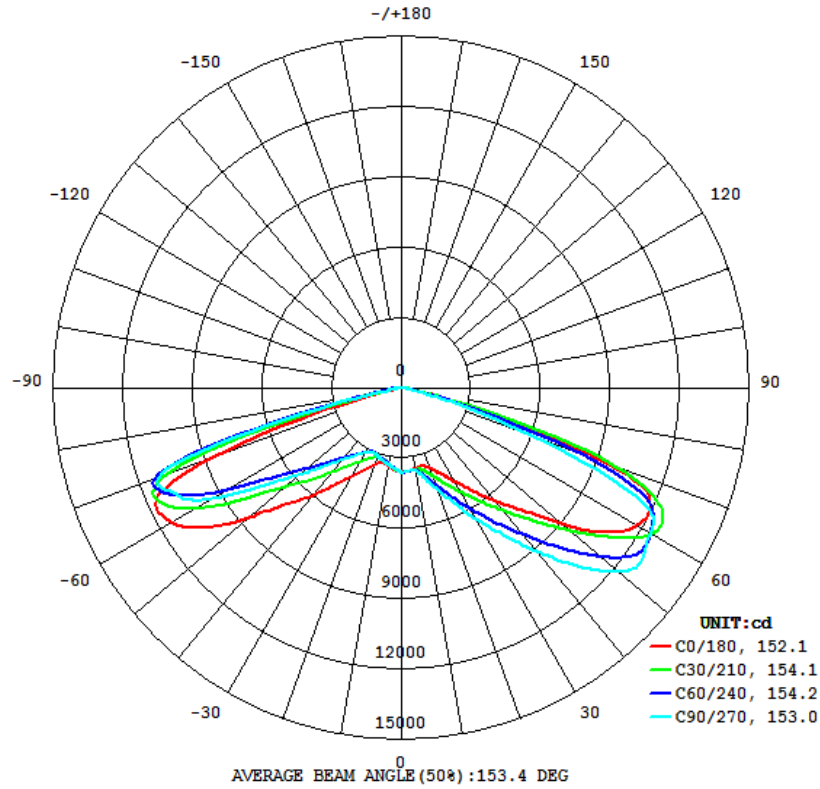
#### Test Result

Flux (lm)	Field Angle(10%)		Beam Angle(50%)		Luminous Efficacy (lm/W)
	C0-180	C90-270	C0-180	C90-270	
36662	157.6	160.3	152.1	153.0	162.2

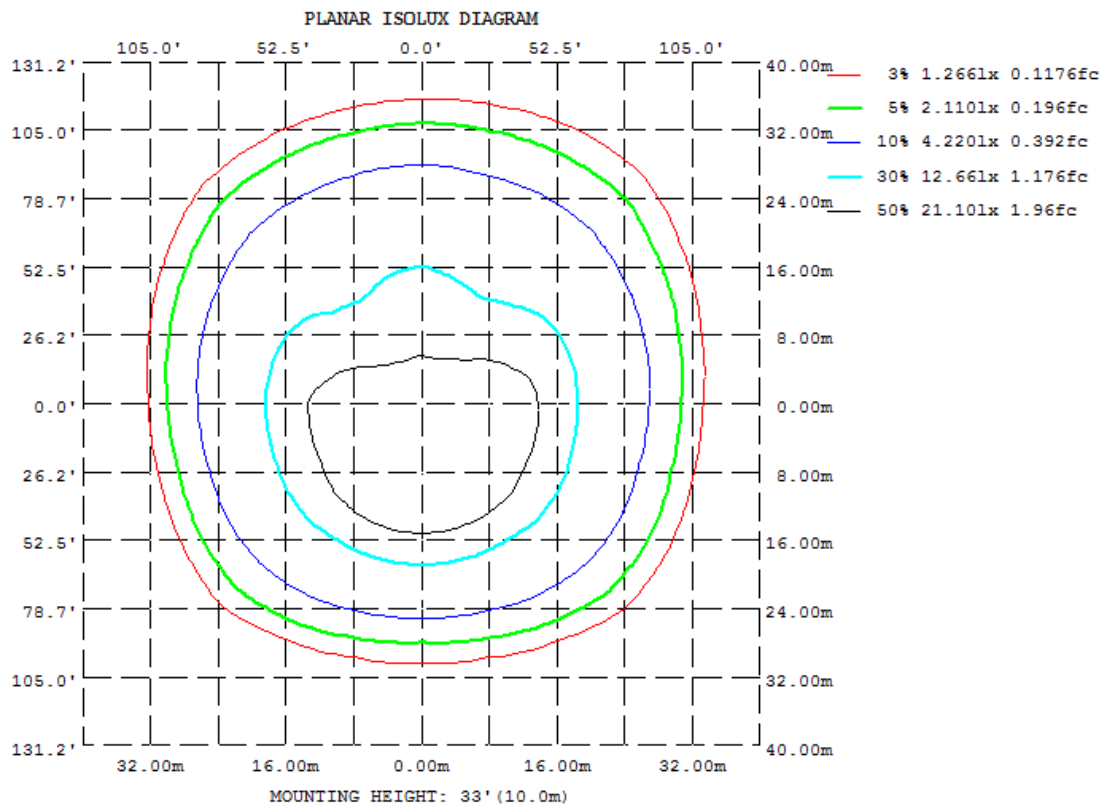
Zonal Lumen Requirement ( $0^{\circ}$ - $90^{\circ}$ )	Zonal Lumen Requirement ( $80^{\circ}$ - $90^{\circ}$ )	BUG rating
100.00%	0.51%	B5-U0-G5

## 4.2 Goniophotometer Test

### Light Distrubtion Curve



### Isolux Plot





## 4.2 Goniophotometer Test

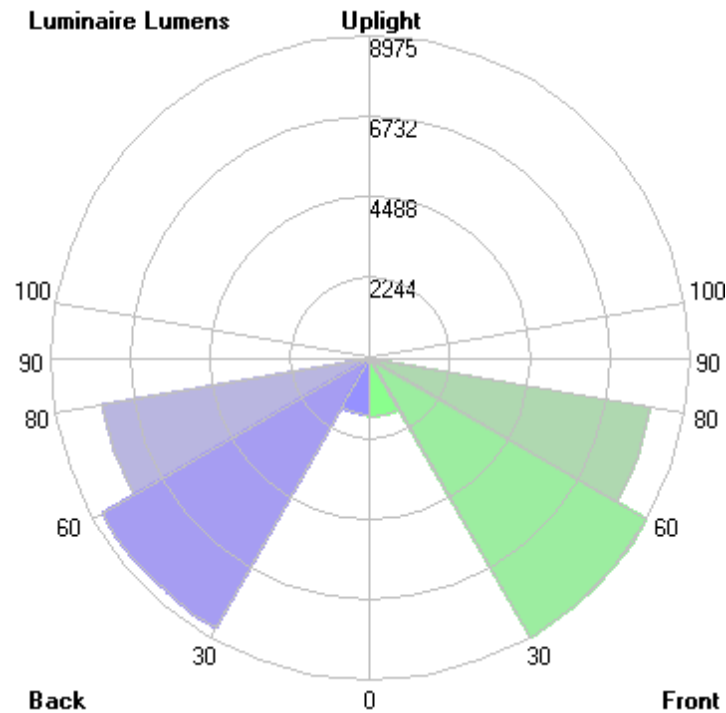
### Zonal Lumen Summary

γ	C0	C45	C90	C135	C180	C225	C270	C315
10	349.4	357.0	359.8	349.5	338.2	331.1	334.2	340.2
20	365.9	421.5	464.7	404.3	349.2	306.3	309.1	323.0
30	462.1	549.5	646.0	524.9	436.2	333.4	320.3	351.0
40	633.0	739.7	910.6	706.6	598.6	414.6	401.1	439.2
50	900.3	1025	1221	985.4	857.5	563.6	575.7	596.9
60	1174	1293	1241	1254	1148	899.9	949.5	938.0
70	955.7	977.8	595.3	931.5	870.2	1178	1116	1190
80	27.98	47.52	20.40	41.62	20.19	67.71	52.09	82.59
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	335.05	0 - 10	335.05	0.91%
10-20	999.35	0 - 20	1334.40	3.64%
20-30	1886.20	0 - 30	3220.60	8.78%
30-40	3297.64	0 - 40	6518.24	17.78%
40-50	5546.99	0 - 50	12065.23	32.91%
50-60	8806.56	0 - 60	20871.79	56.93%
60-70	11059.82	0 - 70	31931.61	87.10%
70-80	4543.80	0 - 80	36475.41	99.49%
80-90	186.71	0 - 90	36662.12	100.00%
90-100	0.00	0 - 100	36662.12	100.00%
100-110	0.00	0 - 110	36662.12	100.00%
110-120	0.00	0 - 120	36662.12	100.00%
120-130	0.00	0 - 130	36662.12	100.00%
130-140	0.00	0 - 140	36662.12	100.00%
140-150	0.00	0 - 150	36662.12	100.00%
150-160	0.00	0 - 160	36662.12	100.00%
160-170	0.00	0 - 170	36662.12	100.00%
170-180	0.00	0 - 180	36662.12	100.00%

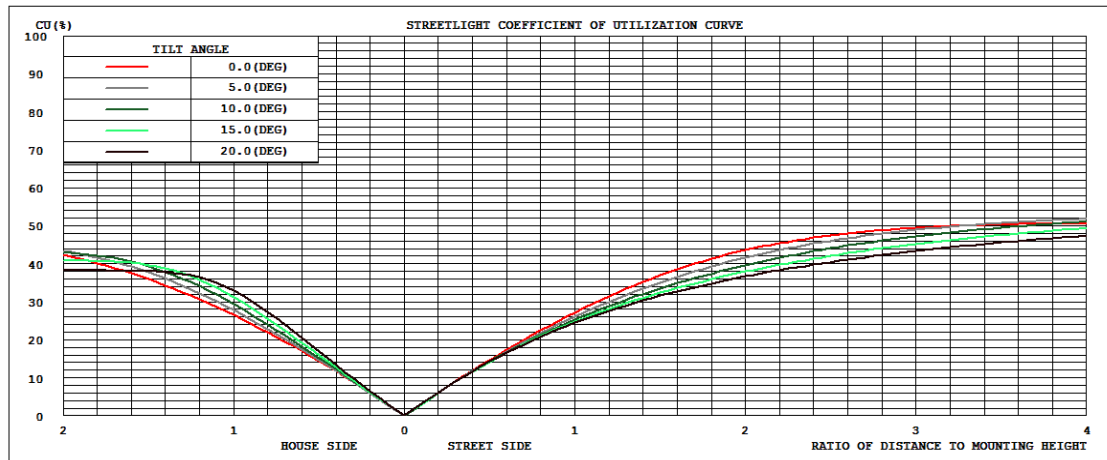
## 4.2 Goniophotometer Test

LCS/BUG

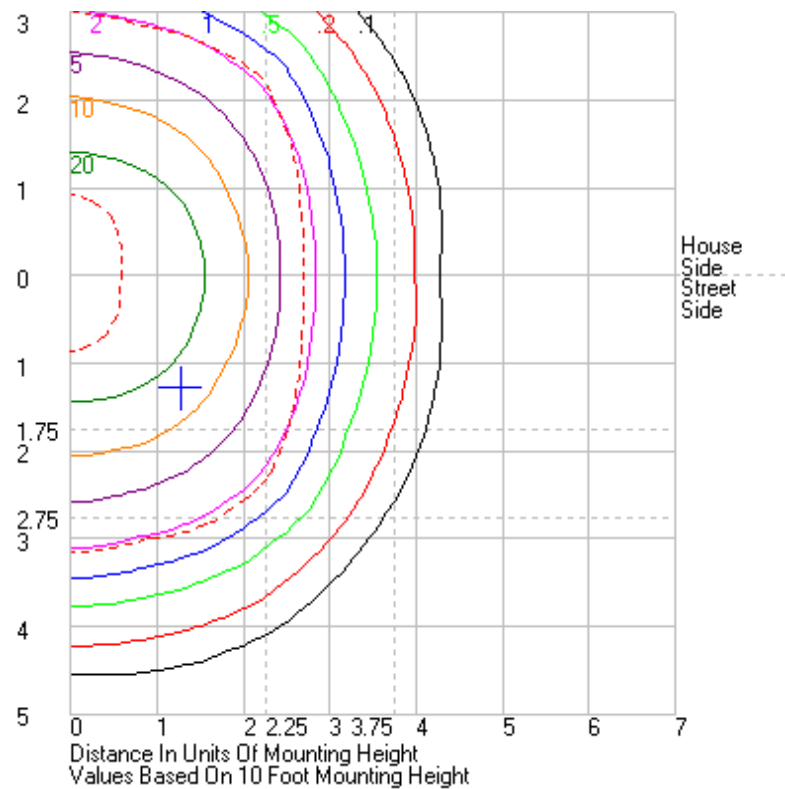


	Lumens	% Lamp	% Luminaire
FL - Front-Low (0-30)	1637.3	N.A.	4.5
FM - Front-Medium (30-60)	8975.4	N.A.	24.5
FH - Front-High (60-80)	7986.6	N.A.	21.8
FVH - Front-Very High (80-90)	101.2	N.A.	0.3
BL - Back-Low (0-30)	1583.3	N.A.	4.3
BM - Back-Medium (30-60)	8675.8	N.A.	23.7
BH - Back-High (60-80)	7617.0	N.A.	20.8
BVH - Back-Very High (80-90)	85.5	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
<b>Total</b>	<b>36662.1</b>	<b>N.A.</b>	<b>100.0</b>
<b>BUG Rating</b>	<b>B5-U0-G5</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	3625.33	3625.33	3625.33	3625.33	3625.33	3625.33	3625.33	3625.33	3625.33	3625.33	3625.33	3625.33	3625.33	3625.33	3625.33	3625.33	3625.33	3625.33	3625.33	3625.33	3625.33	3625.33	3625.33	3625.33	3625.33
1	3624.1	3628.14	3630.38	3630.84	3630.83	3628.59	3627.64	3628.81	3628.41	3623.75	3620.53	3616.63	3611.9	3611.14	3610.07	3607.65	3606.86	3606.09	3607.5	3612.3	3616.63	3619.68	3623.55	3625.6	3624.1
2	3620.33	3625.02	3629.62	3627.98	3625.39	3622.63	3621.19	3620.53	3617.55	3613.09	3610.2	3604.07	3597.91	3593.51	3588.81	3583.52	3579.9	3579.86	3582.24	3589.85	3598.88	3605.89	3613.51	3619.23	3620.33
3	3606.69	3613.89	3618.33	3619.54	3618.12	3615.15	3613.5	3610.59	3605.07	3597.49	3593.43	3589.53	3581.16	3572.79	3564.83	3552.33	3547.38	3547.95	3553.94	3562.4	3571.51	3581.25	3594.52	3603.72	3606.69
4	3590.62	3599.08	3604.33	3609.91	3610.83	3603.61	3600.98	3596.04	3589.25	3581.45	3578.07	3573.61	3561.32	3547.53	3533.28	3520.38	3515.36	3516.64	3524.89	3535.63	3543.9	3553.7	3570.22	3585.11	3590.62
5	3578.79	3587.08	3592.32	3598.23	3596.55	3589.51	3585.95	3578.7	3571.62	3567.01	3560.63	3552.57	3537.84	3519.3	3500.98	3489.48	3481.91	3483.35	3493.53	3505.62	3517.1	3526.55	3544.76	3567.96	3578.79
6	3566.52	3577.47	3587.78	3585.13	3583.2	3575.11	3569.23	3561.24	3552.51	3550.13	3541.39	3528.49	3509.93	3488.43	3467.35	3455.65	3444.11	3445.17	3460.27	3472.4	3486.09	3500.23	3519.99	3550.66	3566.52
7	3547.65	3565.62	3582.47	3576.21	3572.58	3559.78	3550.96	3537.8	3535.8	3532.71	3521.07	3502.75	3478.56	3451.58	3432.72	3417.04	3408.81	3409.88	3428.87	3443.59	3456.8	3473.87	3496.57	3526.78	3547.65
8	3527.01	3551.65	3574.64	3573.09	3563.01	3553.01	3546.87	3526.36	3520.54	3516.52	3500.36	3476.08	3446.7	3413.75	3394.82	3378.6	3373.61	3376.29	3397.88	3412.15	3430.05	3449.83	3470.31	3500.49	3527.01
9	3509.16	3540.1	3564.61	3571.32	3563.07	3564.19	3560.38	3534.06	3515.58	3503.81	3479.58	3450.73	3413.75	3375.52	3355.32	3344.41	3340.85	3345.35	3366.94	3382.17	3402.16	3426.74	3441.49	3472.68	3509.16
10	3493.86	3531.98	3557.86	3570.15	3579.61	3597.68	3598.35	3563.39	3525.58	3494.79	3462.09	3426.64	3381.54	3339.31	3317.47	3311.39	3310.49	3319.34	3341.81	3356.57	3378.61	3402.27	3414.79	3449.23	3493.86
11	3479.81	3524.12	3557.93	3579.46	3613.34	3647.29	3648.44	3605.91	3550.94	3495.37	3450.21	3409.51	3352.22	3303.49	3281.39	3279.8	3281.2	3295.56	3318.41	3332.69	3355.17	3379.73	3390.53	3429.67	3479.81
12	3469.57	3523.82	3566.87	3605.52	3664.31	3715.52	3717.59	3667.83	3591.68	3510.21	3451.63	3398.9	3327.33	3272.48	3246.01	3249.88	3257.79	3273.26	3297.76	3314.4	3336.43	3357.06	3370.69	3412.24	3469.57
13	3460.21	3530.85	3583.99	3647.24	3731.08	3799.02	3806.03	3744.11	3649.57	3538.64	3463.69	3398.32	3309.28	3244.93	3214.08	3220.39	3235.8	3252.83	3277.38	3296.98	3320.11	3337.13	3353.28	3397.24	3460.21
14	3457.76	3545.89	3611.43	3700.56	3806.59	3882.7	3893.26	3826.12	3712.21	3577.93	3485.85	3406.59	3302.93	3227.04	3186.33	3190.38	3216.3	3231.5	3255.91	3279.19	3305.04	3316.94	3337.97	3386.64	3457.76
15	3464.51	3568.79	3649.18	3766.56	3894.53	3993.97	4009.64	3929.51	3794.44	3633.85	3515.88	3422.62	3307.24	3219.16	3165.4	3162.03	3197.19	3208.74	3232.7	3260.59	3290.89	3297.22	3327.08	3381.91	3464.51
16	3483.87	3601.51	3701.87	3841.17	3989.95	4097.77	4118.95	4032.3	3882.59	3697.43	3559.03	3447.61	3322.61	3218.08	3151.76	3135.79	3172.85	3180.07	3205.08	3236.81	3273.89	3280.32	3320.05	3386.06	3483.87
17	3512.24	3643.1	3766.25	3925.24	4092.25	4215.7	4243.73	4142.99	3976.94	3773.9	3618.72	3482.19	3349.07	3225.32	3143.94	3112.18	3143.84	3148.8	3172.83	3208.73	3254.51	3264.6	3317.61	3397.64	3512.24
18	3551.7	3693.36	3840.19	4016.04	4205.56	4345.34	4377.23	4265.76	4085.79	3856.21	3687.38	3530.99	3385.93	3242.44	3142.29	3091.15	3112.94	3118.37	3141.92	3177.03	3231.92	3250.21	3322.22	3416.7	3551.7
19	3601.28	3753.8	3923.52	4112.67	4318.09	4462.98	4500.48	4380.25	4188.51	3945.52	3762.41	3588.95	3433.35	3270.95	3148.75	3074.26	3084.29	3090.22	3113.72	3145.01	3206.23	3237.83	3331.74	3446.3	3601.28
20	3659.08	3822.29	4012.22	4215.16	4442.56	4602.68	4646.51	4515.63	4305.93	4042.96	3845.71	3655.44	3491.87	3309.14	3162.58	3063.34	3061.06	3064.98	3091.39	3116.1	3181.6	3230.38	3348.03	3486.61	3659.08
21	3725.74	3899.26	4106.67	4319.61	4568.32	4734.43	4780.31	4642.73	4425.16	4139.6	3928.75	3727.05	3556.98	3353.78	3183.16	3059.61	3042.94	3041.6	3074.8	3090.15	3159.85	3228.42	3373.74	3535.1	3725.74
22	3802.64	3982.9	4204.17	4432.15	4693.75	4871.89	4927.59	4775.94	4544.14	4246.44	4019.73	3801.31	3625.65	3405.06	3211.66	3063.15	3031.92	3023.37	3062.03	3069.83	3145.3	3230.87	3407.84	3589.31	3802.64
23	3883.27	4074.61	4307.5	4547.31	4838.52	5031.57	5097.53	4929.74	4683.69	4354.39	4112.28	3883.8	3700.38	3460.68	3245.08	3072.99	3026.36	3009.67	3053.17	3054.78	3137.84	3239.64	3448.33	3652.86	3883.27
24	3970.6	4167.39	4410.68	4667.29	4973.75	5176.97	5251.99	5078.49	4810.4	4464.4	4206.52	3966.51	3781.28	3522.84	3284.32	3089.78	3027.13	3002.94	3049.44	3045.99	3136.63	3256.73	3493.2	3720.73	3970.6
25	4066.35	4266.15	4512.40	4788.82	5123.34	5350.36	5435.81	5246.08	4958.16	4583.06	4310.83	4054.25	3866.17	3590.39	3330.08	3113.86	3036.57	3005.32	3053.99	3045.49	3142.58	3282.33	3544.6	3795.86	4066.35
26	4165.2	4370.8	4637.61	4918.28	5279.37	5531.3	5623.51	5423.97	5107.13	4704.97	4414.43	4150.52	3956.04	3662.34	3380.82	3144.81	3053.8	3016.55	3067.27	3052.37	3156.43	3315.76	3601.9	3876.66	4165.2
27	4273.74	4481.43	4754.31	5053.68	5432.72	5703.72	5815.48	5596.88	5255.13	4831.45	4522.85	4248.71	4051.19	3742.01	3438.73	3183.9	3079.66	3036.05	3090.69	3069.05	3179.25	3355.57	3666.11	3965.25	4273.74
28	4383.86	4597.9	4880.53	5195.59	5609.58	5910.79	6037.73	5802.5	5428.35	4964.25	4636.44	4353.69	4147.27	3825.6	3501.73	3228.89	3113.4	3063.78	3120.48	3094.47	3208.7	3402	3735.7	4058.31	4383.86
29	4497.43	4722.25	5010.06	5342.85	5776.93	6105.28	6236.04	5991.22	5588.42	5102.82	4753.68	4466.21	4251.97	3911.32	3570.68	3278.98	3152.99	3100.38	3157.48	3127.76	3246.07	3453.11	3811.29	4157.4	4497.43
30	4621.27	4852.23	5144.63	5495.47	5959.63	6313.98	6459.54	6201.21	5770.41	5249.15	4880.13	4585.78	4362.19	4006.31	3643.58	3334.04	3198.32	3144.09	3203.12	3169.17	3287.89	3509.77	3892.77	4262.2	4621.27
31	4749.66	4987.54	5287.01	5657.59	6149.16	6540.86	6687.49	6417.79	5956.13	5402.59	5007.12	4712.32	4478.63	4102.93	3720.88	3392.98	3248.96	3195.5	3257.28	3218.42	3334.75	3571.68	3980	4369.81	4749.66
32	4887.27	5134.2	5433.37	5825.36	6334.99	6743.81	6903.2	6625.12	6138.71	5562.68	5142.51	4846.54	4604.98	4206.98	3803.77	3456.92	3303.35	3254.21	3220.04	3273.98	3387.22	3639.55	4070.61	4488.34	4887.27
33	5038.22	5285.96	5588.05	6000.76	6505.15	6988.57	7163.56	6864.64	6344.96	5728.81	5282.13	4989.12	4746.19	4318.57	3891.42	3524.55	3362.05	3321.49	3390.26	3338.33	3443.86	3712.57	4164.68	4615.63	5038.22
34	5196.04	5443.7	5747.19	6179.45	6746.54	7222.62	7391.87	7084	6532.73	5904.47	5427.51	5139.66	4895.94	4442.9	3983.25	3597.58	3424.88	3394.29	3467.33	3408.22	3506.96	3789.73	4269.22	4751.6	5196.04
35	5365.65	5614.91	5913.49	6363.2	6962.98	7457.2	7650.61	7325.54	6744.17	6081.84	5584.35	5300.58	5058.87	4576.55	4080.89	3674.88	3491.31	3472.2	3546.97	3484.16	3574.79	3873.41	4376.59	4900.52	5365.65
36	5547.03	5789.59	6085.49	6563.49	7189.36	7728.68	7926.47	7583.37	6957.26	6269.29	5738.92	5466.02	5230.53	4727.91	4186.45	3757.15	3563.53	3556.01	3630.99	3566.4	3648.32	3965.11	4496.57	5065.23	5547.03
37	5737.5	5977.97	6263.53	6754.77	7407.28	7974.29	8179.31	7827.61	7166.6	6458.82	5906.84	5638.49	5407.98	4888.66	4299.78	3845.04	3639.91	3642.11	3718.35	3651.72	3726.88	4060.7	4624.51	5237.97	5737.5
38	5927.34	6168.56	6448.82	6962.04	7654.05	8264.08	8497.45	8115.71	7399.5	6655.79	6079.33	5821.18	5596.18	5058.4											

Page 13 of 17

Page 14 of 17

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.	ALEDL5T/480	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  $25^{\circ}\text{C} \pm 1^{\circ}\text{C}$ . 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	0.498	227.8	0.954	6.38%



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