

## Photometric Test Report

### Relevant Standards

- ☒ ANSI/IES LM-79-2019
- ☒ ANSI C82.77-2017

Prepared For

**RAB Lighting Inc.**

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Prepared By

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Revised Date: N/A

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## 1.0 Test Summary

DLC Technical Requirements V5.1

Outdoor Non-Cutoff and Semi-Cutoff Wall-Mounted Area Luminaires				
Requirement Category	Test Method	Requirements		Test Value
Luminaire Output (lm) (Goniophotometer – Section 4.2) (0°-180° zones)	ANSI/IES LM-79:2019	N/A		5288
Minimum Luminaire Efficacy (lm/W) (Goniophotometer – Section 4.2) (0°-180° zones)	ANSI/IES LM-79:2019	N/A		132.7
Luminaire Output (lm) (Goniophotometer – Section 4.2) (0°-90° zones)	ANSI/IES LM-79:2019	300		5174
Minimum Luminaire Efficacy (lm/W) (Goniophotometer – Section 4.2) (0°-90° zones)	ANSI/IES LM-79:2019	Standard	Premium	130.0
		105	120	
Power (Input Wattage) (W) (Goniophotometer – Section 4.2)	ANSI/IES LM-79:2019	Worst Case		39.8
Total Harmonic Distortion (A%) (THD & PF – Section 4.3)	ANSI C82.77:2002 ANSI C82-77-10:2020	20.00%	480V	14.81
Power Factor (THD & PF – Section 4.3)	ANSI C82.77:2002 ANSI C82-77-10:2020	0.9	480V	0.824
Allowable CCTs* (K) (Integrating Sphere – Section 4.1)	ANSI/IES LM-79:2019	7 steps	3045±175	3044
		4 steps	3045±100	
Minimum CRI (Integrating Sphere – Section 4.1)	ANSI/IES LM-79:2019 CIE13.3-1995	≥70		81.4
Minimum R9 (Integrating Sphere – Section 4.1)	ANSI/IES LM-79-2019 CIE13.3-1995	N/A		11
Minimum Rf (Integrating Sphere – Section 4.1)	ANSI/IES TM-30-18	≥70		82
Minimum Rg (Integrating Sphere – Section 4.1)	ANSI/IES TM-30-18	≥89		98
IES Rcs,h1 (Integrating Sphere – Section 4.1)	ANSI/IES TM-30-18	-18%≤IES Rcs,h1≤+23%		-11%
Zonal Lumen Requirement (80°-90°) (Goniophotometer – Section 4.2)	ANSI/IES LM-79:2019	≤10%		5.0%
Input Voltage (V)				
(Goniophotometer – Section 4.2)	ANSI/IES LM-79:2019	Worst Cast		480.0
(Goniophotometer – Section 4.2)		Non-Worst Case		N/A
Input Current (A)				
(Goniophotometer – Section 4.2)	ANSI/IES LM-79:2019	Worst Case		0.101
(Goniophotometer – Section 4.2)		Non-Worst Case		N/A
Power (Input Wattage – W)				
(Goniophotometer – Section 4.2)	ANSI/IES LM-79:2019	Worst Case		39.8
(Goniophotometer – Section 4.2)		Non-Worst Case		N/A

## 2.0 Test List

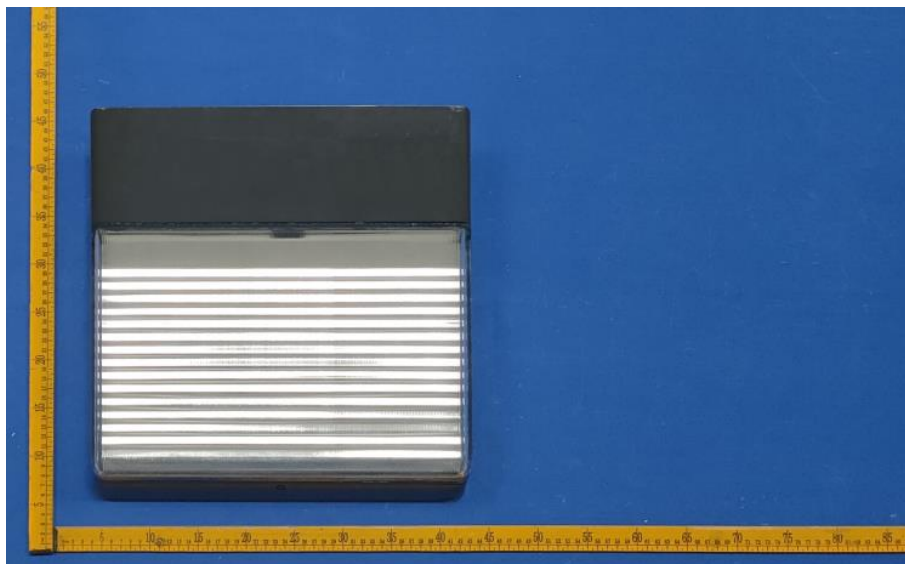
Test Item	Test	Test Date	Model Number	Build Level	Sample No.
1	Integrating Sphere Test	2024-10-09	PWLED/480 @41W3000K	-	241009002-S1
2	Goniophotometer Test	2024-10-09	PWLED/480 @41W3000K	-	241009002-S1
3	THD and PF Test	2024-10-09	PWLED/480 @41W3000K	-	241009002-S1
<b>Remark (If any):</b>					
<ol style="list-style-type: none"> <li>The results contained in this report pertain only to the tested samples.</li> <li>This report shall not be reproduced, no limited part or full, without approval of Dongguan New Testing Centre Co., Ltd.</li> <li>This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST or any agency of the U.S. Government.</li> </ol>					

### 3.0 Product Description

Luminaire Description: Model No. PWLED/480 @41W3000K, color tunable from 3000K, 4000K and 5000K.

Electrical Specification: 480Vac, 50/60Hz

Photos of Luminaire Characteristics



## 4.0 LM-79 Measurement and Test Results

### 4.1 Integrating Sphere Test

<b>Model No.</b>	PWLED/480 @41W3000K	<b>Sample ID</b>	241009002-S1
<b>Operate time (Min.)</b>	10	<b>Stabilization time (Min.)</b>	60
<b>Temperature (°C)</b>	25.4	<b>Humidity (%RH)</b>	41.0

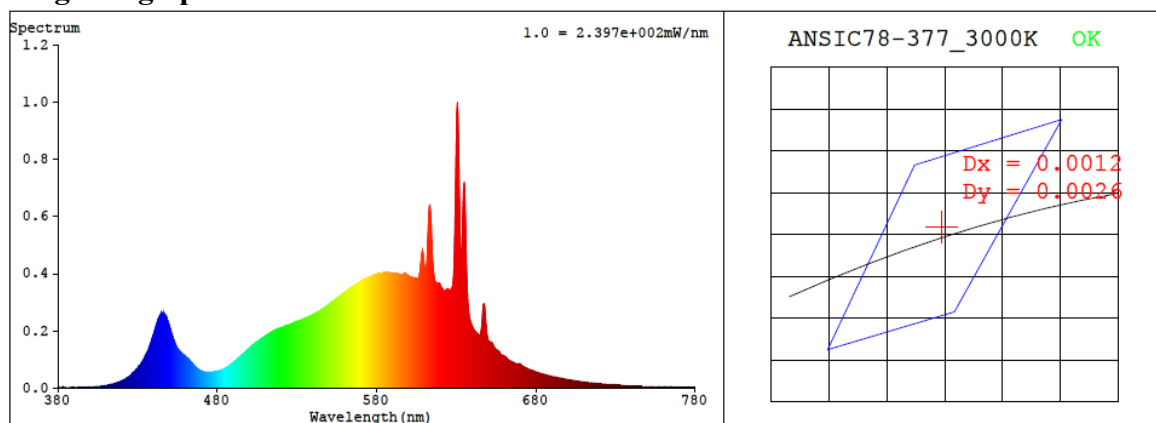
<b>Test Method</b>
<p>The Samples were tested according to the ANSI/IES LM-79:2019.</p> <p>Photometric parameters were measured using an integrating sphere, a spectroradiometer and software. The ambient temperature condition inside the sphere was maintained at 25±1°C.</p> <p>The sample measurements were made using a spectroradiometer connected by a fiber optic cable and detector through the detector port of the integrating sphere.</p> <p>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.</p> <p>The sample was measured using 4π 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 780nm.</p>

### Test Result

<b>Voltage (Vac)</b>	<b>Frequency (Hz)</b>	<b>Current (A)</b>	<b>Power (W)</b>	<b>Power Factor</b>
480.0	60	0.101	39.8	0.824

<b>CCT (K)</b>	<b>CRI</b>	<b>R9</b>	<b>Duv</b>	<b>Rf</b>	<b>Rg</b>	<b>IES Rcs,h1</b>
3044	81.4	11	0.0009	82	98	-11%

## 4.1 Integrating Sphere Test



### Colorimetric Parameters

Chromaticity Coordinate:  $x = 0.4351$   $y = 0.4056$  /  $u' = 0.2487$   $v' = 0.5217$  ( $duv=8.56e-04$ )

CCT= 3044K Prcp WL: Ld=582.3nm Purity=52.3%

Peak WL: Lp=631nm FWHM: =4.2nm Ratio:R=22.5% G=75.4% B=2.1%

Render Index: Ra = 81.4 AvgR = 75.1 TM30:Rf=82 Rg=97

EEL: 0.10352 A++ Highest

R1 =79 R2 =87 R3 =94 R4 =81 R5 =79 R6 =84 R7 =85

R8 =63 R9 =11 R10=70 R11=79 R12=66 R13=80 R14=96 R15=74

## 4.1 Integrating Sphere Test

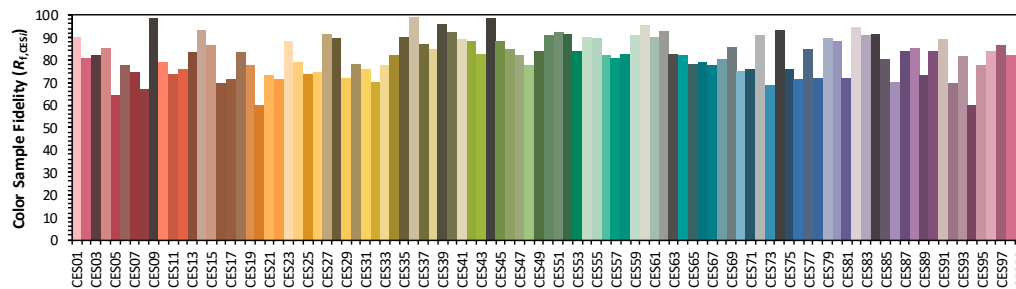
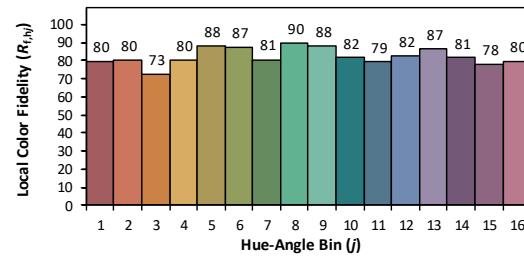
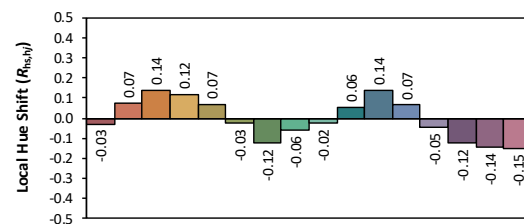
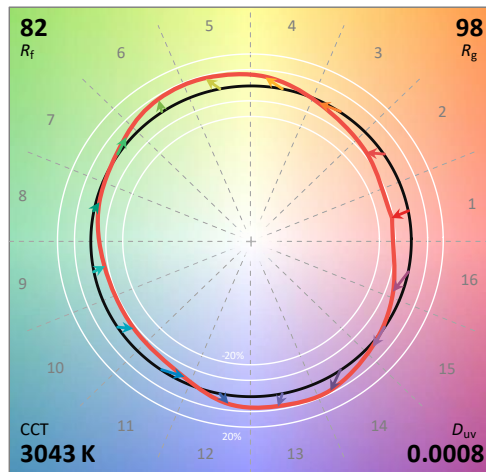
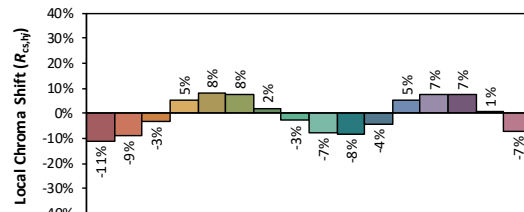
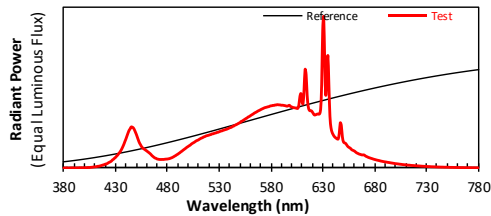
### ANSI/IES TM-30-18 Color Rendition Report

Source: 1 CIE F1

Manufacturer: RAB Lighting Inc.

Date: 2024/10/10

Model: PWLED/480 @41W3000K



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

$x$  0.4351  
 $y$  0.4054  
 $u'$  0.2488  
 $v'$  0.5216

CIE 13.3-1995  
(CRI)  
 $R_a$  81  
 $R_g$  11



## 4.1 Integrating Sphere Test

Spectral Distribution over Visible Wavelength											
WL (nm)	Radiant (W/nm)	WL (nm)	Radiant (W/nm)	WL (nm)	Radiant (W/nm)	WL (nm)	Radiant (W/nm)	WL (nm)	Radiant (W/nm)	WL (nm)	Radiant (W/nm)
380	1.80E-06	447	2.57E-04	514	1.94E-04	581	3.98E-04	648	2.72E-04	715	1.80E-05
381	1.30E-06	448	2.47E-04	515	1.99E-04	582	4.00E-04	649	2.01E-04	716	1.74E-05
382	1.00E-06	449	2.31E-04	516	2.01E-04	583	4.00E-04	650	1.69E-04	717	1.70E-05
383	2.70E-06	450	2.15E-04	517	2.05E-04	584	4.03E-04	651	1.61E-04	718	1.67E-05
384	0.00E+00	451	1.97E-04	518	2.07E-04	585	4.03E-04	652	1.59E-04	719	1.58E-05
385	6.00E-07	452	1.78E-04	519	2.09E-04	586	4.05E-04	653	1.50E-04	720	1.55E-05
386	1.40E-06	453	1.61E-04	520	2.10E-04	587	4.04E-04	654	1.41E-04	721	1.51E-05
387	1.70E-06	454	1.50E-04	521	2.13E-04	588	4.03E-04	655	1.34E-04	722	1.46E-05
388	2.00E-06	455	1.38E-04	522	2.14E-04	589	4.03E-04	656	1.30E-04	723	1.43E-05
389	1.70E-06	456	1.30E-04	523	2.19E-04	590	4.01E-04	657	1.25E-04	724	1.36E-05
390	1.90E-06	457	1.24E-04	524	2.19E-04	591	4.01E-04	658	1.18E-04	725	1.31E-05
391	1.10E-06	458	1.20E-04	525	2.21E-04	592	4.01E-04	659	1.14E-04	726	1.25E-05
392	1.80E-06	459	1.15E-04	526	2.24E-04	593	3.99E-04	660	1.11E-04	727	1.22E-05
393	2.00E-06	460	1.10E-04	527	2.25E-04	594	3.98E-04	661	1.08E-04	728	1.19E-05
394	1.00E-06	461	1.05E-04	528	2.28E-04	595	3.96E-04	662	1.02E-04	729	1.15E-05
395	3.10E-06	462	9.98E-05	529	2.29E-04	596	3.96E-04	663	9.71E-05	730	1.12E-05
396	2.10E-06	463	9.44E-05	530	2.32E-04	597	3.99E-04	664	9.40E-05	731	1.07E-05
397	3.00E-06	464	8.82E-05	531	2.35E-04	598	4.01E-04	665	9.05E-05	732	1.03E-05
398	2.30E-06	465	8.07E-05	532	2.37E-04	599	3.93E-04	666	8.85E-05	733	1.02E-05
399	2.80E-06	466	7.50E-05	533	2.39E-04	600	3.91E-04	667	8.63E-05	734	9.70E-06
400	3.00E-06	467	6.96E-05	534	2.42E-04	601	3.88E-04	668	8.45E-05	735	9.20E-06
401	3.20E-06	468	6.49E-05	535	2.43E-04	602	3.86E-04	669	8.46E-05	736	9.10E-06
402	3.40E-06	469	6.26E-05	536	2.46E-04	603	3.85E-04	670	8.41E-05	737	8.80E-06
403	4.10E-06	470	5.87E-05	537	2.48E-04	604	3.83E-04	671	7.94E-05	738	8.70E-06
404	4.30E-06	471	5.74E-05	538	2.50E-04	605	3.81E-04	672	7.51E-05	739	8.20E-06
405	4.30E-06	472	5.59E-05	539	2.53E-04	606	3.81E-04	673	7.25E-05	740	8.10E-06
406	5.40E-06	473	5.56E-05	540	2.57E-04	607	4.03E-04	674	6.89E-05	741	7.60E-06
407	5.80E-06	474	5.53E-05	541	2.59E-04	608	4.56E-04	675	6.67E-05	742	7.40E-06
408	6.70E-06	475	5.58E-05	542	2.61E-04	609	4.75E-04	676	6.44E-05	743	7.20E-06
409	7.70E-06	476	5.54E-05	543	2.66E-04	610	4.25E-04	677	6.22E-05	744	6.90E-06
410	8.60E-06	477	5.64E-05	544	2.68E-04	611	4.10E-04	678	6.02E-05	745	6.70E-06
411	9.30E-06	478	5.73E-05	545	2.73E-04	612	4.99E-04	679	5.77E-05	746	6.70E-06
412	1.09E-05	479	5.80E-05	546	2.76E-04	613	6.29E-04	680	5.59E-05	747	6.30E-06
413	1.21E-05	480	5.82E-05	547	2.79E-04	614	5.95E-04	681	5.41E-05	748	6.10E-06
414	1.26E-05	481	5.99E-05	548	2.83E-04	615	4.64E-04	682	5.22E-05	749	6.20E-06
415	1.46E-05	482	6.08E-05	549	2.87E-04	616	3.94E-04	683	5.06E-05	750	5.90E-06
416	1.64E-05	483	6.38E-05	550	2.89E-04	617	3.70E-04	684	4.92E-05	751	5.80E-06
417	1.87E-05	484	6.58E-05	551	2.97E-04	618	3.66E-04	685	4.76E-05	752	5.50E-06
418	2.07E-05	485	6.92E-05	552	2.99E-04	619	3.66E-04	686	4.57E-05	753	5.20E-06
419	2.27E-05	486	7.26E-05	553	3.04E-04	620	3.58E-04	687	4.44E-05	754	5.00E-06
420	2.56E-05	487	7.69E-05	554	3.08E-04	621	3.47E-04	688	4.29E-05	755	5.10E-06
421	2.73E-05	488	8.03E-05	555	3.12E-04	622	3.39E-04	689	4.17E-05	756	4.80E-06
422	2.99E-05	489	8.53E-05	556	3.17E-04	623	3.40E-04	690	4.03E-05	757	4.60E-06
423	3.45E-05	490	8.88E-05	557	3.20E-04	624	3.43E-04	691	3.96E-05	758	4.70E-06
424	3.80E-05	491	9.40E-05	558	3.26E-04	625	3.45E-04	692	3.82E-05	759	4.30E-06
425	4.12E-05	492	9.83E-05	559	3.29E-04	626	3.44E-04	693	3.70E-05	760	4.20E-06
426	4.58E-05	493	1.04E-04	560	3.33E-04	627	3.46E-04	694	3.61E-05	761	4.20E-06
427	5.29E-05	494	1.08E-04	561	3.38E-04	628	3.73E-04	695	3.49E-05	762	4.10E-06
428	5.73E-05	495	1.14E-04	562	3.42E-04	629	5.31E-04	696	3.36E-05	763	3.90E-06
429	6.41E-05	496	1.19E-04	563	3.46E-04	630	8.77E-04	697	3.27E-05	764	3.60E-06
430	6.94E-05	497	1.24E-04	564	3.51E-04	631	9.64E-04	698	3.15E-05	765	3.70E-06
431	7.73E-05	498	1.29E-04	565	3.55E-04	632	6.65E-04	699	3.05E-05	766	3.60E-06
432	8.39E-05	499	1.34E-04	566	3.58E-04	633	4.64E-04	700	2.91E-05	767	3.30E-06
433	9.30E-05	500	1.38E-04	567	3.62E-04	634	5.90E-04	701	2.86E-05	768	3.30E-06
434	1.01E-04	501	1.43E-04	568	3.66E-04	635	7.19E-04	702	2.77E-05	769	3.30E-06
435	1.12E-04	502	1.47E-04	569	3.69E-04	636	5.29E-04	703	2.69E-05	770	3.20E-06
436	1.24E-04	503	1.53E-04	570	3.73E-04	637	3.31E-04	704	2.58E-05	771	3.00E-06
437	1.38E-04	504	1.58E-04	571	3.76E-04	638	2.59E-04	705	2.51E-05	772	3.00E-06
438	1.53E-04	505	1.62E-04	572	3.79E-04	639	2.30E-04	706	2.43E-05	773	2.90E-06
439	1.71E-04	506	1.65E-04	573	3.82E-04	640	2.15E-04	707	2.33E-05	774	2.80E-06
440	1.87E-04	507	1.70E-04	574	3.85E-04	641	2.04E-04	708	2.27E-05	775	2.50E-06
441	2.06E-04	508	1.75E-04	575	3.87E-04	642	1.96E-04	709	2.20E-05	776	2.70E-06
442	2.24E-04	509	1.77E-04	576	3.89E-04	643	1.91E-04	710	2.13E-05	777	2.60E-06
443	2.41E-04	510	1.81E-04	577	3.91E-04	644	1.86E-04	711	2.06E-05	778	2.40E-06
444	2.51E-04	511	1.85E-04	578	3.92E-04	645	1.86E-04	712	1.98E-05	779	2.50E-06
445	2.63E-04	512	1.89E-04	579	3.95E-04	646	2.21E-04	713	1.92E-05	780	2.50E-06
446	2.61E-04	513	1.92E-04	580	3.97E-04	647	2.89E-04	714	1.90E-05	N/A	N/A



## 4.0 LM-79 Measurement and Test Results

### 4.2 Goniophotometer Test

<b>Model No.</b>	PWLED/480 @41W3000K	<b>Sample ID</b>	241009002-S1
<b>Operate time (Min.)</b>	30	<b>Stabilization time (Min.)</b>	60
<b>Temperature (°C)</b>	25.0	<b>Humidity (%RH)</b>	43.1

<b>Test Method</b>
<p>The Samples were tested according to the ANSI/IES LM-79:2019.</p> <p>Photometric parameters were measured using a type C goniophotometer and software.</p> <p>The ambient temperature shall be maintained at <math>25 \pm 1^{\circ}\text{C}</math>, measured at a point not more than 1 m from the sample and at the same height as the sample.</p> <p>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 <math>\pm 0.2</math> percent under load.</p> <p>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 <math>1.0^{\circ}</math> vertical intervals and <math>15^{\circ}</math> horizontal intervals.</p>

### Test Conditions

Condition	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor
<b>WORST CASE</b>	480.0	60	0.101	39.8	0.824
<b>NON-WORST CASE</b>	N/A	N/A	N/A	N/A	N/A

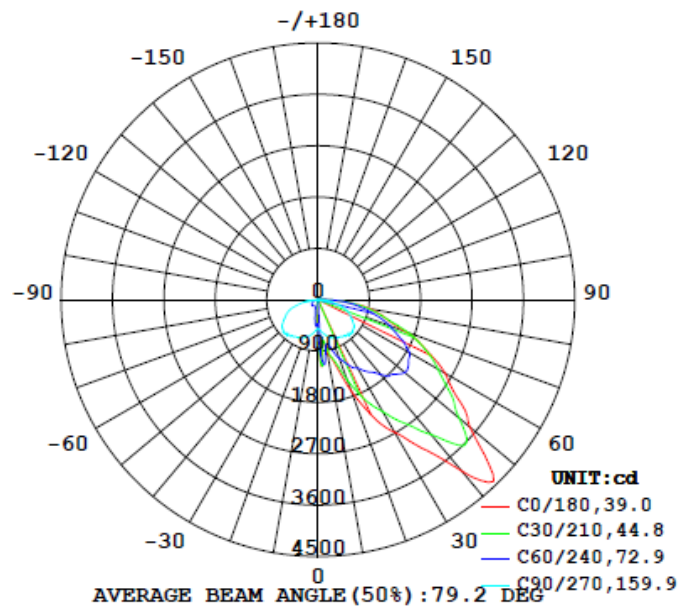
### Test Result

Result Type	Flux (lm)	Field Angle (10%)		Beam Angle (50%)		Luminous Efficacy (lm/W)	Zonal Lumen Requirement (80°-90°)	BUG
		C0-180	C90-270	C0-180	C90-270			
<b>0°-180° zones</b>	5288	89.5	150.7	40.1	84.5	132.7	4.9%	B0-U3-G3
<b>0°-90° zones</b>	5174	89.5	150.7	40.1	84.5	130.0	5.0%	B0-U3-G3

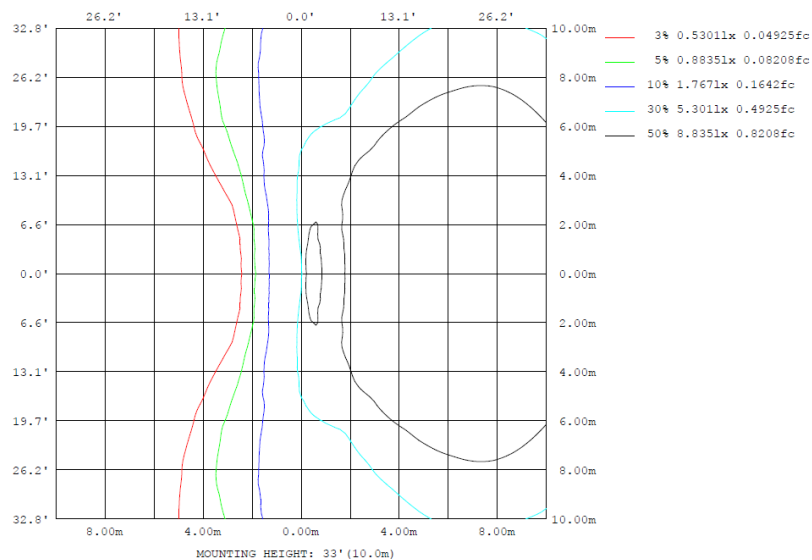
## 4.2 Goniophotometer Test

### Lighting Distribution Curve

**LUMINOUS INTENSITY DISTRIBUTION DIAGRAM**



### Isolux Plot



## 4.2 Goniophotometer Test

### Zonal Lumen Summary

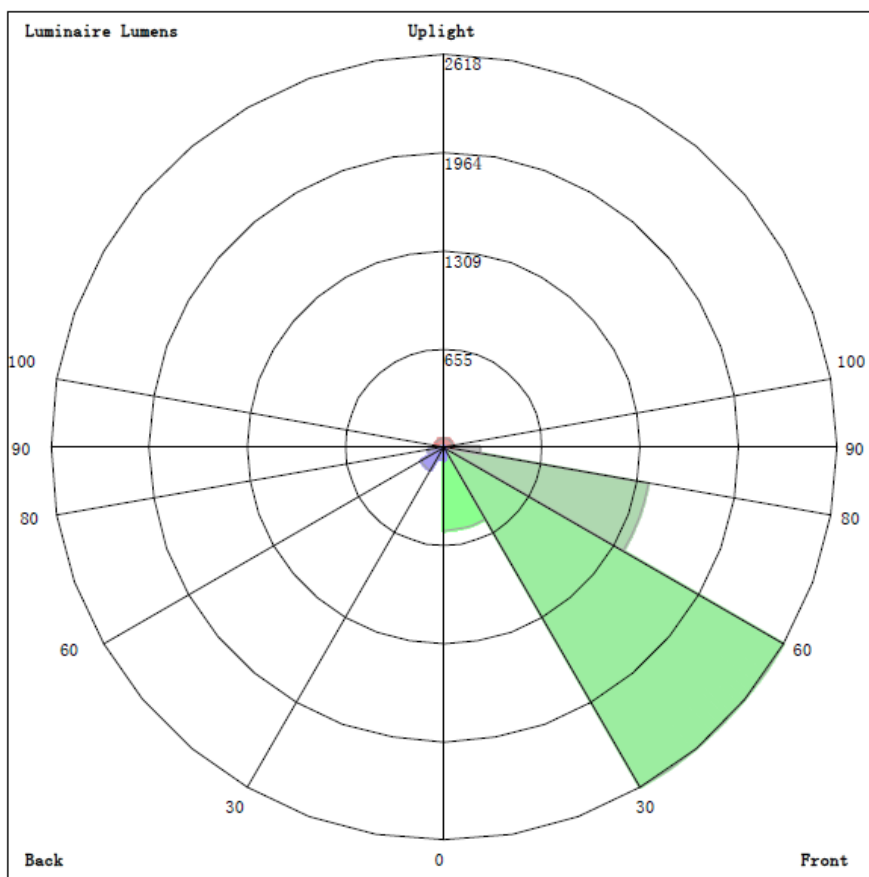
ZONAL FLUX DIAGRAM:

γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	zone	total	lum, lamp
10	922.5	765.4	609.1	197.6	100.4	197.6	609.1	765.4	0- 10	58.18	58.18	1.1,1.1
20	1698	1271	707.9	69.47	32.12	69.47	707.9	1271	10- 20	174.5	232.6	4.4,4.4
30	2681	1893	762.6	59.78	22.95	59.78	762.6	1893	20- 30	399.3	631.9	11.9,11.9
40	3918	2413	802.0	56.75	10.06	56.75	802.0	2413	30- 40	694.7	1327	25.1,25.1
50	3476	2881	817.4	52.66	2.352	52.66	817.4	2881	40- 50	1044	2371	44.8,44.8
60	2572	2267	700.2	45.63	0.1099	45.63	700.2	2267	50- 60	1055	3426	64.8,64.8
70	1626	1642	536.9	35.60	0.2652	35.60	536.9	1642	60- 70	894.1	4320	81.7,81.7
80	932.7	888.3	250.4	23.59	0.6179	23.59	250.4	888.3	70- 80	594.8	4915	92.9,92.9
90	164.7	198.5	30.17	9.251	1.131	9.251	30.17	198.5	80- 90	259.0	5174	97.8,97.8
100	83.69	67.38	6.551	3.625	1.722	3.625	67.38	67.38	90-100	55.34	5229	98.9,98.9
110	47.38	31.62	4.179	2.769	2.138	2.769	4.179	31.62	100-110	24.13	5253	99.3,99.3
120	24.26	20.31	3.522	2.769	2.341	2.769	3.522	20.31	110-120	12.62	5266	99.6,99.6
130	19.06	15.73	3.050	2.851	2.643	2.851	3.050	15.73	120-130	8.357	5274	99.7,99.7
140	15.93	12.58	2.450	2.654	2.550	2.654	2.450	12.58	130-140	5.989	5280	99.9,99.9
150	12.52	10.04	2.073	2.168	2.309	2.168	2.073	10.04	140-150	4.029	5284	99.9,99.9
160	8.944	7.970	1.978	1.852	1.737	1.852	1.978	7.970	150-160	2.437	5287	100,100
170	6.525	7.008	1.842	1.693	1.168	1.693	1.842	7.008	160-170	1.176	5288	100,100
180	0.9727	1.083	1.184	1.193	0.9659	1.193	1.184	1.083	170-180	0.2593	5288	100,100
DEG	LUMINOUS INTENSITY:cd									UNIT:lm		

	Zonal (lm)		Total (lm)	Percent
0-10	58.19	0-10	58.19	1.10%
10-20	174.46	0-20	232.65	4.40%
20-30	399.28	0-30	631.93	11.95%
30-40	694.67	0-40	1326.60	25.09%
40-50	1044.40	0-50	2371.00	44.84%
50-60	1055.04	0-60	3426.04	64.79%
60-70	894.11	0-70	4320.15	81.70%
70-80	594.77	0-80	4914.92	92.94%
80-90	259.02	0-90	5173.94	97.84%
90-100	55.34	0-100	5229.28	98.89%
100-110	24.13	0-110	5253.41	99.35%
110-120	12.62	0-120	5266.03	99.58%
120-130	8.36	0-130	5274.39	99.74%
130-140	5.99	0-140	5280.38	99.86%
140-150	4.03	0-150	5284.41	99.93%
150-160	2.44	0-160	5286.85	99.98%
160-170	1.18	0-170	5288.03	100.00%
170-180	0.26	0-180	5288.29	100.00%

## 4.2 Goniophotometer Test

LCS/BUG

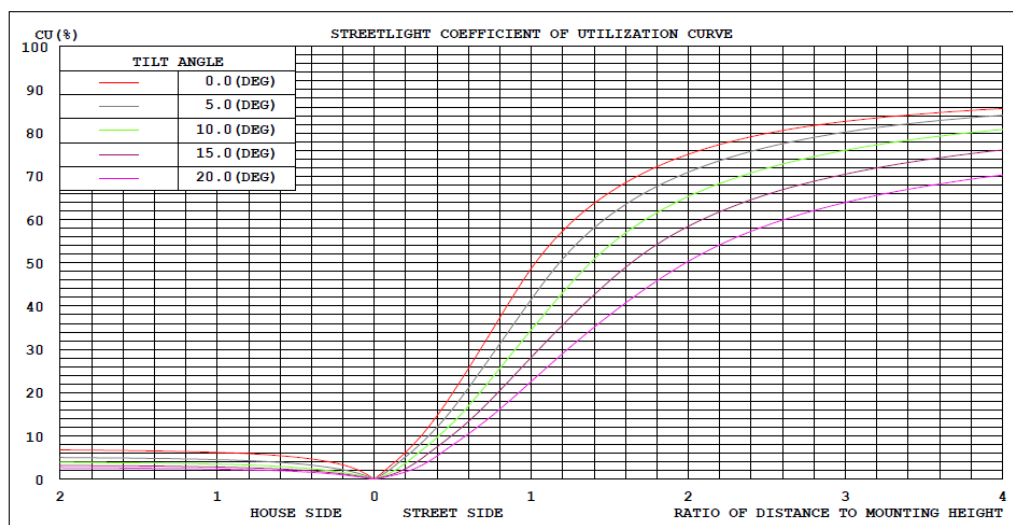


### LUMINAIRE CLASSIFICATION SYSTEM (LCS)

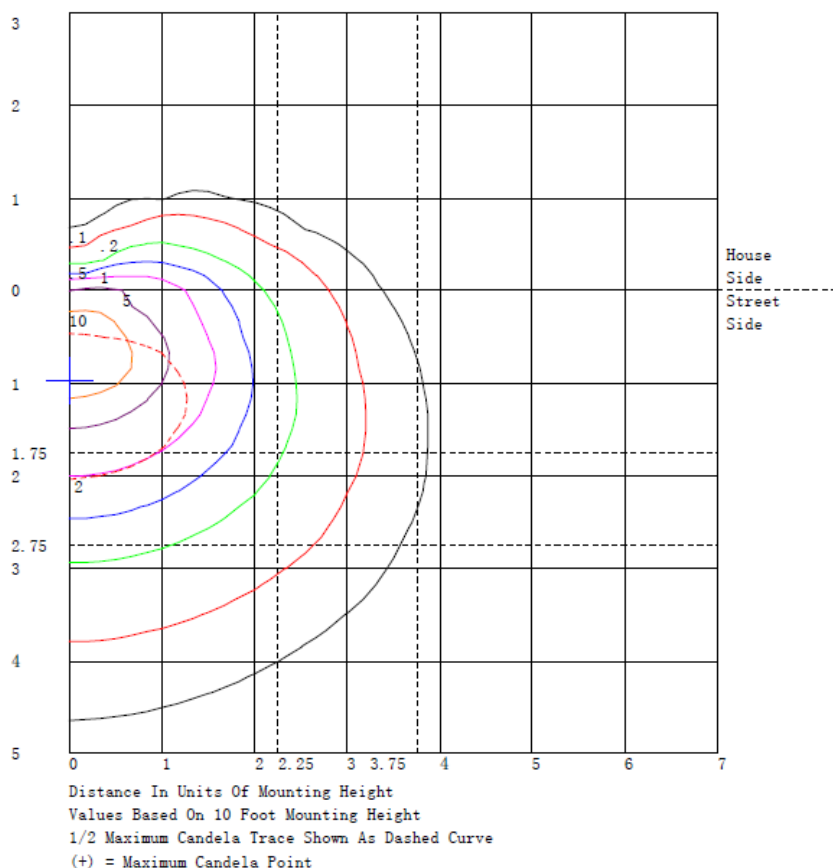
	Lumens	% Lamp	% Luminaire
FL - Front-Low (0-30)	553.1	N.A.	10.5
FM - Front-Medium (30-60)	2618.0	N.A.	49.5
FH - Front-High (60-80)	1384.2	N.A.	26.2
FVH - Front-Very High (80-90)	240.8	N.A.	4.6
BL - Back-Low (0-30)	78.8	N.A.	1.5
BM - Back-Medium (30-60)	176.1	N.A.	3.3
BH - Back-High (60-80)	104.7	N.A.	2.0
BVH - Back-Very High (80-90)	18.2	N.A.	0.3
UL - Uplight-Low (90-100)	55.3	N.A.	1.0
UH - Uplight-High (100-180)	59.0	N.A.	1.1
<b>Total</b>	<b>5288.3</b>	<b>N.A.</b>	<b>100.0</b>
<b>BUG Rating</b>	<b>B0-U3-G3</b>		

## 4.2 Goniophotometer Test

### Coefficients of Utilization



### Isolines



## 4.2 Goniophotometer Test

### Luminous Distribution Intensity Data

Table--1

UNIT: cd

C (DEG) y (DEG)	0	15	30	45	60	75	90	105	120	135	150	165	180	195	210	225	240	255	270
0	474	487	492	499	503	504	505	504	500	494	487	480	474	480	487	494	500	504	505
5	839	864	958	1127	1125	952	549	420	464	419	363	325	314	325	363	419	464	420	549
10	923	901	839	765	801	1048	609	415	312	198	134	109	100	109	134	198	312	415	609
15	1168	1152	1099	1062	877	856	668	358	188	98.2	65.5	52.5	49.0	52.5	65.5	98.2	188	358	668
20	1698	1672	1495	1271	1098	819	708	315	136	69.5	44.4	34.1	32.1	34.1	44.4	69.5	136	315	708
25	2245	2204	1922	1611	1258	943	745	279	125	62.1	37.3	26.9	26.0	26.9	37.3	62.1	125	279	745
30	2681	2579	2258	1893	1384	938	763	263	126	59.8	35.0	24.3	23.0	24.3	35.0	59.8	126	263	763
35	3173	2999	2638	2130	1544	915	780	286	133	58.5	34.0	20.6	16.2	20.6	34.0	58.5	133	286	780
40	3918	3599	3080	2413	1714	929	802	289	138	56.7	32.7	15.2	10.1	15.2	32.7	56.7	138	289	802
45	4346	4067	3617	2742	1854	943	841	289	145	55.5	31.7	12.2	5.68	12.2	31.7	55.5	145	289	841
50	3476	3343	3227	2881	1982	1059	817	284	145	52.7	31.5	10.7	2.35	10.7	31.5	52.7	145	284	817
55	2974	2895	2822	2574	1939	1147	778	287	137	48.4	33.1	10.1	0.36	10.1	33.1	48.4	137	287	778
60	2572	2516	2427	2267	1854	1099	700	272	124	45.6	34.2	11.6	0.11	11.6	34.2	45.6	124	272	700
65	2098	2088	2079	1975	1586	1004	618	245	106	40.5	36.3	12.7	0.16	12.7	36.3	40.5	106	245	618
70	1626	1642	1681	1642	1342	864	537	207	90.4	35.6	33.0	11.9	0.27	11.9	33.0	35.6	90.4	207	537
75	1213	1198	1212	1242	1057	713	397	152	65.8	31.2	29.3	10.0	0.42	10.0	29.3	31.2	65.8	152	397
80	933	911	887	888	758	471	250	106	49.2	23.6	22.5	7.96	0.62	7.96	22.5	23.6	49.2	106	250
85	516	514	518	538	482	278	123	62.7	32.8	15.5	15.1	5.44	0.85	5.44	15.1	15.5	32.8	62.7	123
90	165	166	176	198	194	106	30.2	32.1	17.3	9.25	8.70	3.44	1.13	3.44	8.70	9.25	17.3	32.1	30.2
95	113	111	108	108	96.6	42.0	10.5	13.4	9.30	5.04	4.49	2.15	1.41	2.15	4.49	5.04	9.30	13.4	10.5
100	83.7	80.8	74.1	67.4	55.5	25.6	6.55	8.09	5.92	3.62	3.21	1.80	1.72	1.80	3.21	3.62	5.92	8.09	6.55
105	61.4	59.1	52.8	45.3	36.7	17.7	4.96	5.80	4.40	3.00	2.69	1.73	1.99	1.73	2.69	3.00	4.40	5.80	4.96
110	47.4	45.1	38.5	31.6	24.9	13.5	4.18	4.51	3.57	2.77	2.52	1.83	2.14	1.83	2.52	2.77	3.57	4.51	4.18
115	31.4	30.6	27.4	24.1	19.4	11.2	3.79	3.78	3.21	2.72	2.53	2.01	2.26	2.01	2.53	2.72	3.21	3.78	3.79
120	24.3	24.2	22.5	20.3	16.1	9.82	3.52	3.42	3.05	2.77	2.65	2.24	2.34	2.24	2.65	2.77	3.05	3.42	3.52
125	21.2	21.3	19.7	17.7	14.0	8.89	3.32	3.26	2.98	2.83	2.78	2.47	2.52	2.47	2.78	2.83	2.98	3.26	3.32
130	19.1	19.2	17.5	15.7	12.2	8.22	3.05	2.98	2.91	2.85	2.83	2.59	2.64	2.59	2.83	2.85	2.91	2.98	3.05
135	17.2	17.3	15.8	14.0	11.0	7.70	2.76	2.77	2.82	2.82	2.78	2.59	2.61	2.59	2.78	2.82	2.82	2.77	2.76
140	15.9	15.7	14.4	12.6	9.91	7.25	2.45	2.54	2.65	2.65	2.62	2.46	2.55	2.46	2.62	2.65	2.65	2.54	2.45
145	14.1	14.1	13.0	11.3	9.08	6.99	2.22	2.34	2.39	2.42	2.38	2.24	2.45	2.24	2.38	2.42	2.39	2.34	2.22
150	12.5	12.5	11.5	10.0	8.28	7.00	2.07	2.18	2.17	2.17	2.13	2.02	2.31	2.02	2.13	2.17	2.17	2.18	2.07
155	10.6	10.6	9.97	8.89	7.67	7.04	2.03	2.10	2.08	2.02	1.94	1.83	2.06	1.83	1.94	2.02	2.08	2.10	2.03
160	8.94	9.04	8.67	7.97	7.23	7.23	1.98	2.01	1.95	1.85	1.73	1.56	1.74	1.56	1.73	1.85	1.95	2.01	1.98
165	7.53	7.53	7.56	7.25	7.14	4.81	1.91	1.91	1.86	1.76	1.65	1.25	1.40	1.25	1.65	1.76	1.86	1.91	1.91
170	6.52	6.55	6.81	7.01	6.28	1.83	1.84	1.81	1.77	1.69	1.50	1.19	1.17	1.19	1.50	1.69	1.77	1.81	1.84
175	4.95	4.86	4.32	1.84	1.30	1.46	1.61	1.57	1.47	1.41	1.34	1.26	1.11	1.26	1.34	1.41	1.47	1.57	1.61
180	0.97	0.96	1.00	1.08	1.12	1.16	1.18	1.19	1.20	1.19	1.18	1.18	0.97	1.18	1.18	1.19	1.20	1.19	1.18

Table--2

UNIT: cd

C (DEG) y (DEG)	285	300	315	330	345														
0	504	503	499	492	487														
5	952	1125	1127	958	864														
10	1048	801	765	839	901														
15	856	877	1062	1099	1152														
20	819	1098	1271	1495	1672														
25	943	1258	1611	1922	2204														
30	938	1384	1893	2258	2579														
35	915	1544	2130	2638	2999														
40	929	1714	2413	3080	3599														
45	943	1854	2742	3617	4067														
50	1059	1982	2881	3227	3343														
55	1147	1939	2574	2822	2895														
60	1099	1854	2267	2427	2516														
65	1004	1586	1975	2079	2088														
70	864	1342	1642	1681	1642														
75	713	1057	1242	1212	1198														
80	471	758	888	887	911														
85	278	482	538	518	514														
90	106	194	198	176	166														
95	42.0	96.6	108	108	111														
100	25.6	55.5	67.4	74.1	80.8														
105	17.7	36.7	45.3	52.8	59.1														
110	13.5	24.9	31.6	38.5	45.1														
115	11.2	19.4	24.1	27.4	30.6														
120	9.82	16.1	20.3	22.5	24.2														
125	8.89	14.0	17.7	19.7	21.3														
130	8.22	12.2	15.7	17.5	19.2														
135	7.70	11.0	14.0	15.8	17.3														
140	7.25	9.91	12.6	14.4	15.7														
145	6.99	9.08	11.3	13.0	14.1														
150	7.00	8.28	10.0	11.5	12.5														
155	7.04	7.67	8.89	9.97	10.6														
160	7.23	7.23	7.97	8.67	9.04														
165	4.81	7.14	7.25	7.56	7.53														
170	1.83	6.28	7.01	6.81	6.55														
175	1.46	1.30	1.84	4.32	4.86														
180	1.16	1.12	1.08	1.00	0.96														

## 4.0 LM-79 Measurement and Test Results

### 4.3 THD and PF Test

<b>Model No.</b>	PWLED/480 @41W3000K	<b>Sample ID</b>	241009002-S1
<b>Temperature (°C)</b>	25.4	<b>Humidity (%RH)</b>	41.0

<b>Test Method</b>
<p>The samples were tested according to the and Ansi C82.77: 2002 and ANSI C82.77-10:2020</p> <p>The total harmonic distortion shall be measured to the 40th order.</p> <p>The ambient temperature shall be maintained at <math>25 \pm 1^\circ\text{C}</math>. 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 was calculated.</p>

### Test Results

Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	iTHD(%)
480.0	60	0.101	39.8	0.824	14.81



## 5.0 Equipment List:

Equipment ID	Equipment Name	Last Cal.	Due Cal.
NTC-F01-001	Goniophotometer System	2023-11-08	2024-11-07
NTC-F01-006	2.0 meter Integrating Sphere	2023-11-08	2024-11-07
NTC-F01-012	Standard Lamp	2023-11-02	2024-11-01
NTC-F01-013	Standard Lamp	2023-11-02	2024-11-01
NTC-F01-031	Digital Power Meter	2024-08-06	2025-08-05
NTC-F01-019	Temperature & Humidity Meter	2023-11-06	2024-11-05

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