

## 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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## 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		9621
Minimum Luminaire Efficacy (lm/W) (Goniophotometer – Section 4.2) (0°-180° zones)	ANSI/IES LM-79:2019	N/A		140.9
Luminaire Output (lm) (Goniophotometer – Section 4.2) (0°-90° zones)	ANSI/IES LM-79:2019	300		9411
Minimum Luminaire Efficacy (lm/W) (Goniophotometer – Section 4.2) (0°-90° zones)	ANSI/IES LM-79:2019	Standard	Premium	137.8
		105	120	
Power (Input Wattage) (W) (Goniophotometer – Section 4.2)	ANSI/IES LM-79:2019	Worst Case		68.3
Total Harmonic Distortion (A%) (THD & PF – Section 4.3)	ANSI C82.77:2002 ANSI C82-77-10:2020	20.00%	480V	7.59
Power Factor (THD & PF – Section 4.3)	ANSI C82.77:2002 ANSI C82-77-10:2020	0.9	480V	0.917
Allowable CCTs* (K) (Integrating Sphere – Section 4.1)	ANSI/IES LM-79:2019	7 steps	3985±275	3948
		4 steps	3985±154	
Minimum CRI (Integrating Sphere – Section 4.1)	ANSI/IES LM-79:2019 CIE13.3-1995	≥70		83.9
Minimum R9 (Integrating Sphere – Section 4.1)	ANSI/IES LM-79-2019 CIE13.3-1995	N/A		21
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		97
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%		5.1%
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		0.155
(Goniophotometer – Section 4.2)		Non-Worst Case		N/A
Power (Input Wattage – W)				
(Goniophotometer – Section 4.2)	ANSI/IES LM-79:2019	Worst Case		68.3
(Goniophotometer – Section 4.2)		Non-Worst Case		N/A

## 2.0 Test List

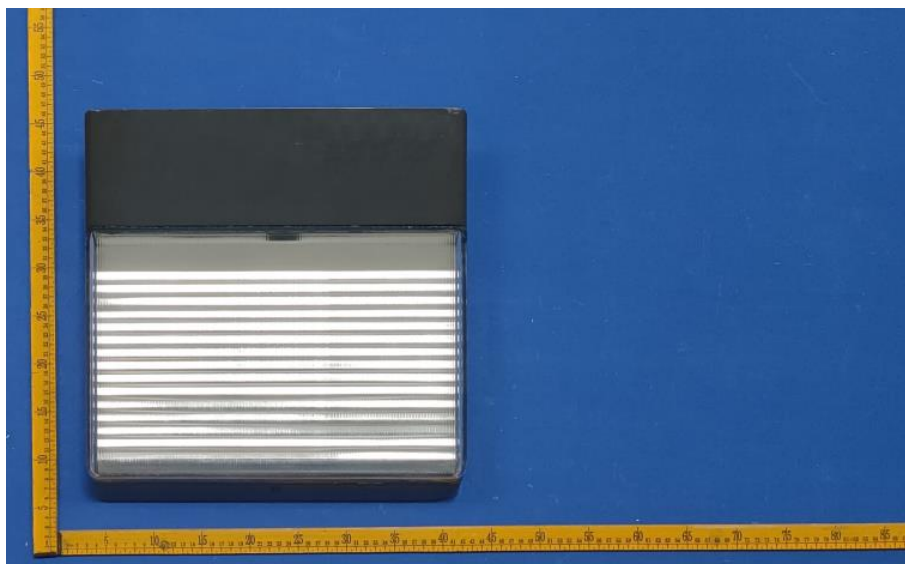
Test Item	Test	Test Date	Model Number	Build Level	Sample No.
1	Integrating Sphere Test	2024-10-09	PWLED/480 @72W4000K	-	241009002-S1
2	Goniophotometer Test	2024-10-09	PWLED/480 @72W4000K	-	241009002-S1
3	THD and PF Test	2024-10-09	PWLED/480 @72W4000K	-	241009002-S1
<b>Remark (If any):</b>					
<ol style="list-style-type: 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 @72W4000K, 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 @72W4000K	<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

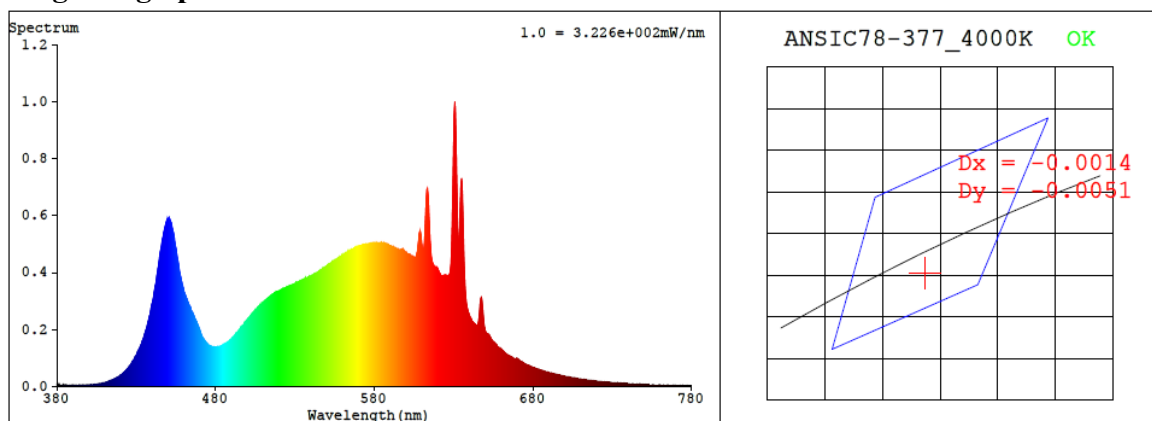
<b>Test Method</b>
<p>The Samples were tested according to the ANSI/IES LM-79:2019.</p> <p>Photometric parameters were measured using an integrating sphere, a spectroradiometer and software. The ambient temperature condition inside the sphere was maintained at 25±1°C.</p> <p>The sample measurements were 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	0.155	68.3	0.917

<b>CCT (K)</b>	<b>CRI</b>	<b>R9</b>	<b>Duv</b>	<b>Rf</b>	<b>Rg</b>	<b>IES Rcs,h1</b>
3948	83.9	21	-0.0020	84	97	-11%

### 4.1 Integrating Sphere Test



### Colorimetric Parameters

Chromaticity Coordinate:  $x = 0.3813$   $y = 0.3731$  /  $u' = 0.2272$   $v' = 0.5001$  ( $duv = -1.98e-03$ )

CCT= 3948K      Prcp WL:   Ld=580.4nm      Purity=26.4%

Peak WL: Lp=631nm FWHM: =7.9nm Ratio:R=18.9% G=77.7% B=3.5%

Render Index: Ra = 83.9 AvgR = 77.9 TM30:Rf=84 Rg=97

EEI: 0.09621 A++ Highest

R1 =83    R2 =89    R3 =93    R4 =83    R5 =83    R6 =84    R7 =87

R8 =69      R9 =21      R10=73      R11=81      R12=63      R13=84      R14=96      R15=79

## 4.1 Integrating Sphere Test

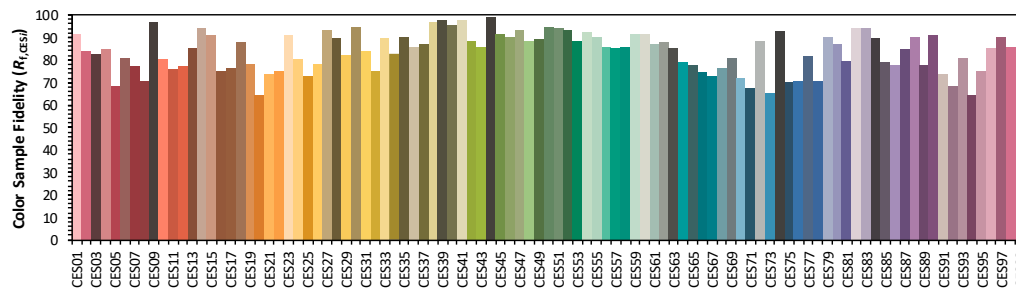
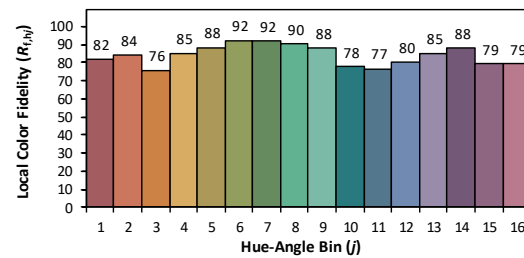
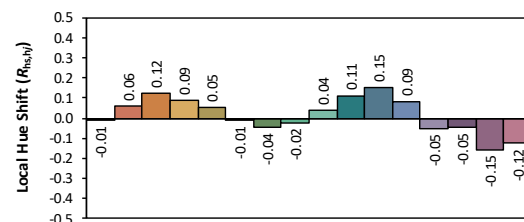
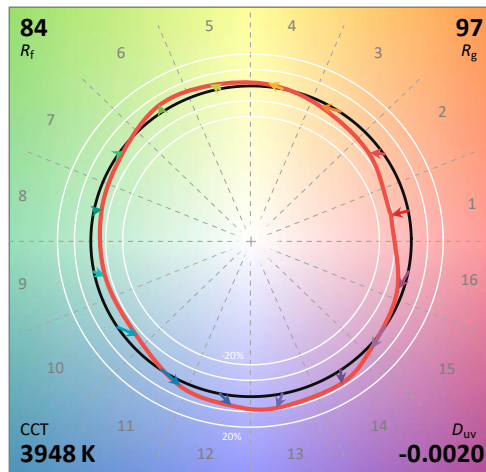
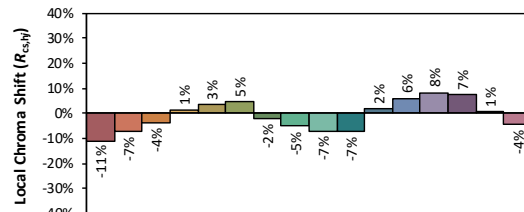
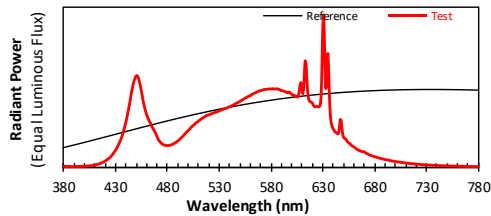
### ANSI/IES TM-30-18 Color Rendition Report

Source: 1 CIE F1

Manufacturer: RAB Lighting Inc.

Date: 2024/10/10

Model: PWLED/480 @72W4000K



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

$x$  0.3813  
 $y$  0.3729  
 $u'$  0.2272  
 $v'$  0.5000

CIE 13.3-1995  
(CRI)  
 $R_a$  84  
 $R_g$  21



## 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	4.10E-06	447	5.34E-04	514	3.14E-04	581	5.02E-04	648	2.93E-04	715	2.24E-05
381	6.10E-06	448	5.57E-04	515	3.20E-04	582	5.04E-04	649	2.27E-04	716	2.17E-05
382	1.90E-06	449	5.76E-04	516	3.23E-04	583	5.02E-04	650	1.95E-04	717	2.11E-05
383	2.90E-06	450	5.87E-04	517	3.28E-04	584	5.03E-04	651	1.86E-04	718	2.03E-05
384	4.70E-06	451	5.87E-04	518	3.31E-04	585	5.02E-04	652	1.82E-04	719	1.96E-05
385	4.50E-06	452	5.74E-04	519	3.34E-04	586	5.04E-04	653	1.73E-04	720	1.91E-05
386	3.70E-06	453	5.48E-04	520	3.35E-04	587	5.01E-04	654	1.63E-04	721	1.85E-05
387	2.50E-06	454	5.21E-04	521	3.39E-04	588	4.99E-04	655	1.56E-04	722	1.79E-05
388	3.70E-06	455	4.84E-04	522	3.41E-04	589	4.96E-04	656	1.52E-04	723	1.74E-05
389	2.30E-06	456	4.47E-04	523	3.45E-04	590	4.92E-04	657	1.46E-04	724	1.66E-05
390	3.50E-06	457	4.12E-04	524	3.46E-04	591	4.92E-04	658	1.38E-04	725	1.63E-05
391	4.40E-06	458	3.84E-04	525	3.49E-04	592	4.90E-04	659	1.34E-04	726	1.58E-05
392	4.10E-06	459	3.57E-04	526	3.52E-04	593	4.87E-04	660	1.30E-04	727	1.53E-05
393	2.80E-06	460	3.37E-04	527	3.54E-04	594	4.84E-04	661	1.25E-04	728	1.47E-05
394	4.30E-06	461	3.18E-04	528	3.55E-04	595	4.82E-04	662	1.19E-04	729	1.40E-05
395	3.50E-06	462	3.03E-04	529	3.58E-04	596	4.78E-04	663	1.15E-04	730	1.39E-05
396	4.50E-06	463	2.89E-04	530	3.61E-04	597	4.81E-04	664	1.11E-04	731	1.35E-05
397	3.50E-06	464	2.78E-04	531	3.65E-04	598	4.82E-04	665	1.08E-04	732	1.31E-05
398	4.90E-06	465	2.61E-04	532	3.67E-04	599	4.74E-04	666	1.04E-04	733	1.28E-05
399	5.20E-06	466	2.50E-04	533	3.70E-04	600	4.70E-04	667	1.02E-04	734	1.21E-05
400	5.30E-06	467	2.37E-04	534	3.73E-04	601	4.65E-04	668	9.92E-05	735	1.18E-05
401	5.40E-06	468	2.25E-04	535	3.75E-04	602	4.63E-04	669	9.90E-05	736	1.14E-05
402	6.50E-06	469	2.12E-04	536	3.77E-04	603	4.59E-04	670	9.80E-05	737	1.11E-05
403	6.50E-06	470	1.97E-04	537	3.78E-04	604	4.57E-04	671	9.38E-05	738	1.09E-05
404	7.40E-06	471	1.80E-04	538	3.82E-04	605	4.53E-04	672	8.85E-05	739	1.06E-05
405	7.50E-06	472	1.69E-04	539	3.86E-04	606	4.52E-04	673	8.60E-05	740	1.02E-05
406	8.70E-06	473	1.62E-04	540	3.87E-04	607	4.71E-04	674	8.24E-05	741	9.80E-06
407	9.10E-06	474	1.55E-04	541	3.91E-04	608	5.21E-04	675	7.88E-05	742	9.70E-06
408	1.03E-05	475	1.48E-04	542	3.94E-04	609	5.43E-04	676	7.62E-05	743	9.10E-06
409	1.25E-05	476	1.44E-04	543	3.98E-04	610	4.96E-04	677	7.41E-05	744	8.80E-06
410	1.27E-05	477	1.41E-04	544	4.00E-04	611	4.75E-04	678	7.17E-05	745	8.60E-06
411	1.47E-05	478	1.39E-04	545	4.04E-04	612	5.54E-04	679	6.90E-05	746	8.40E-06
412	1.62E-05	479	1.39E-04	546	4.09E-04	613	6.82E-04	680	6.65E-05	747	8.10E-06
413	1.80E-05	480	1.38E-04	547	4.12E-04	614	6.59E-04	681	6.49E-05	748	7.80E-06
414	2.06E-05	481	1.38E-04	548	4.15E-04	615	5.32E-04	682	6.26E-05	749	7.60E-06
415	2.30E-05	482	1.39E-04	549	4.19E-04	616	4.54E-04	683	6.09E-05	750	7.40E-06
416	2.59E-05	483	1.41E-04	550	4.22E-04	617	4.27E-04	684	5.89E-05	751	7.00E-06
417	2.82E-05	484	1.44E-04	551	4.27E-04	618	4.20E-04	685	5.72E-05	752	7.00E-06
418	3.19E-05	485	1.46E-04	552	4.30E-04	619	4.19E-04	686	5.53E-05	753	6.60E-06
419	3.43E-05	486	1.50E-04	553	4.34E-04	620	4.12E-04	687	5.35E-05	754	6.50E-06
420	3.96E-05	487	1.54E-04	554	4.39E-04	621	3.99E-04	688	5.19E-05	755	6.20E-06
421	4.29E-05	488	1.57E-04	555	4.43E-04	622	3.90E-04	689	5.05E-05	756	6.10E-06
422	4.80E-05	489	1.62E-04	556	4.46E-04	623	3.88E-04	690	4.86E-05	757	5.90E-06
423	5.35E-05	490	1.67E-04	557	4.50E-04	624	3.90E-04	691	4.75E-05	758	5.70E-06
424	5.91E-05	491	1.73E-04	558	4.54E-04	625	3.90E-04	692	4.62E-05	759	5.80E-06
425	6.43E-05	492	1.79E-04	559	4.56E-04	626	3.89E-04	693	4.47E-05	760	5.20E-06
426	7.22E-05	493	1.86E-04	560	4.59E-04	627	3.90E-04	694	4.33E-05	761	5.40E-06
427	8.04E-05	494	1.92E-04	561	4.64E-04	628	4.14E-04	695	4.18E-05	762	5.10E-06
428	9.00E-05	495	1.99E-04	562	4.69E-04	629	5.56E-04	696	4.04E-05	763	5.00E-06
429	1.00E-04	496	2.07E-04	563	4.71E-04	630	8.72E-04	697	3.91E-05	764	4.90E-06
430	1.09E-04	497	2.13E-04	564	4.76E-04	631	9.77E-04	698	3.81E-05	765	4.70E-06
431	1.21E-04	498	2.21E-04	565	4.78E-04	632	7.11E-04	699	3.69E-05	766	4.60E-06
432	1.33E-04	499	2.28E-04	566	4.82E-04	633	5.07E-04	700	3.57E-05	767	4.40E-06
433	1.46E-04	500	2.34E-04	567	4.85E-04	634	6.07E-04	701	3.45E-05	768	4.10E-06
434	1.61E-04	501	2.41E-04	568	4.88E-04	635	7.31E-04	702	3.36E-05	769	4.00E-06
435	1.78E-04	502	2.47E-04	569	4.91E-04	636	5.66E-04	703	3.27E-05	770	4.00E-06
436	1.95E-04	503	2.57E-04	570	4.91E-04	637	3.74E-04	704	3.13E-05	771	3.90E-06
437	2.16E-04	504	2.62E-04	571	4.94E-04	638	2.96E-04	705	3.09E-05	772	3.80E-06
438	2.39E-04	505	2.69E-04	572	4.95E-04	639	2.65E-04	706	2.97E-05	773	3.60E-06
439	2.66E-04	506	2.73E-04	573	4.98E-04	640	2.48E-04	707	2.88E-05	774	3.60E-06
440	2.90E-04	507	2.80E-04	574	4.99E-04	641	2.36E-04	708	2.80E-05	775	3.30E-06
441	3.23E-04	508	2.87E-04	575	5.00E-04	642	2.26E-04	709	2.69E-05	776	3.50E-06
442	3.56E-04	509	2.90E-04	576	5.00E-04	643	2.21E-04	710	2.60E-05	777	3.40E-06
443	3.91E-04	510	2.95E-04	577	5.01E-04	644	2.16E-04	711	2.53E-05	778	3.20E-06
444	4.27E-04	511	3.01E-04	578	5.03E-04	645	2.14E-04	712	2.51E-05	779	3.20E-06
445	4.69E-04	512	3.06E-04	579	5.03E-04	646	2.44E-04	713	2.37E-05	780	3.20E-06
446	5.02E-04	513	3.11E-04	580	5.02E-04	647	3.06E-04	714	2.30E-05	N/A	N/A



## 4.0 LM-79 Measurement and Test Results

### 4.2 Goniophotometer Test

<b>Model No.</b>	PWLED/480 @72W4000K	<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	0.155	68.3	0.917
<b>NON-WORST CASE</b>	N/A	N/A	N/A	N/A	N/A

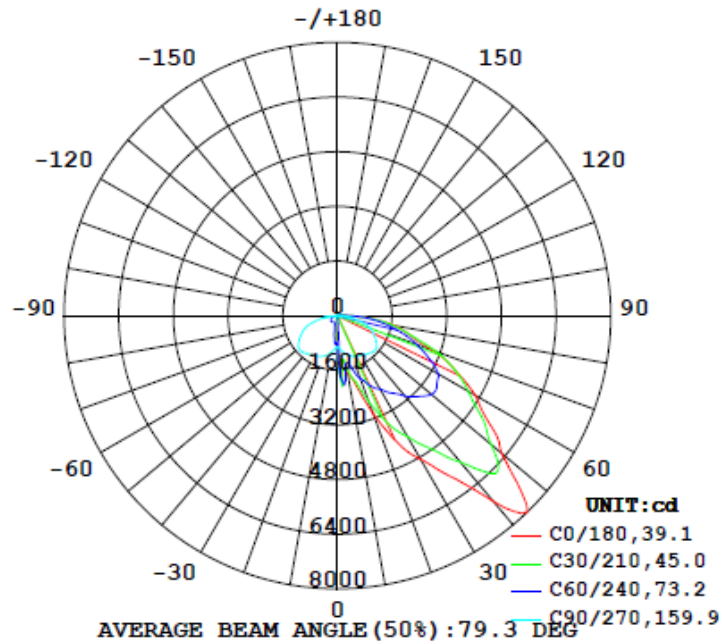
### Test Result

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>	9621	89.6	151.2	40.1	85.4	140.9	4.9%	B1-U3-G3
<b>0°-90° zones</b>	9411	89.6	151.2	40.1	85.4	137.8	5.1%	B1-U3-G3

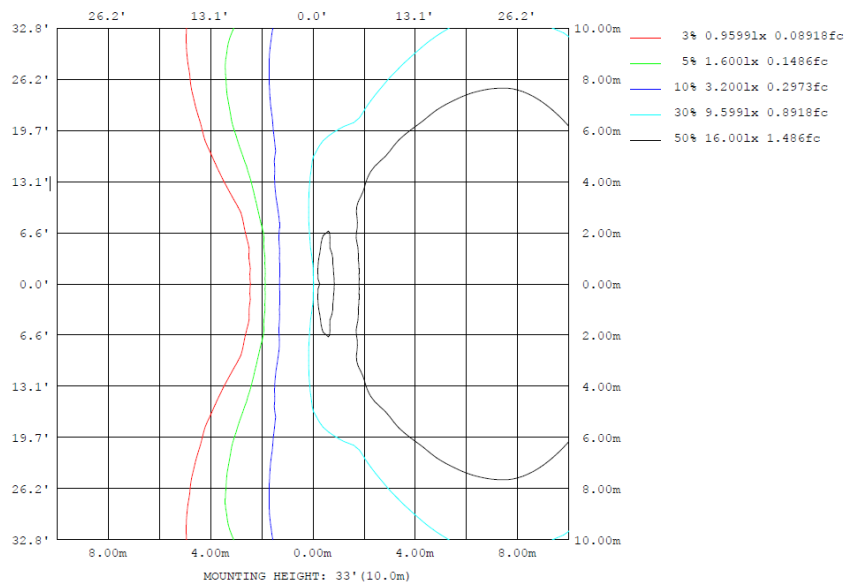
## 4.2 Goniophotometer Test

### Lighting Distribution Curve

**LUMINOUS INTENSITY DISTRIBUTION DIAGRAM**



### Isolux Plot



## 4.2 Goniophotometer Test

### Zonal Lumen Summary

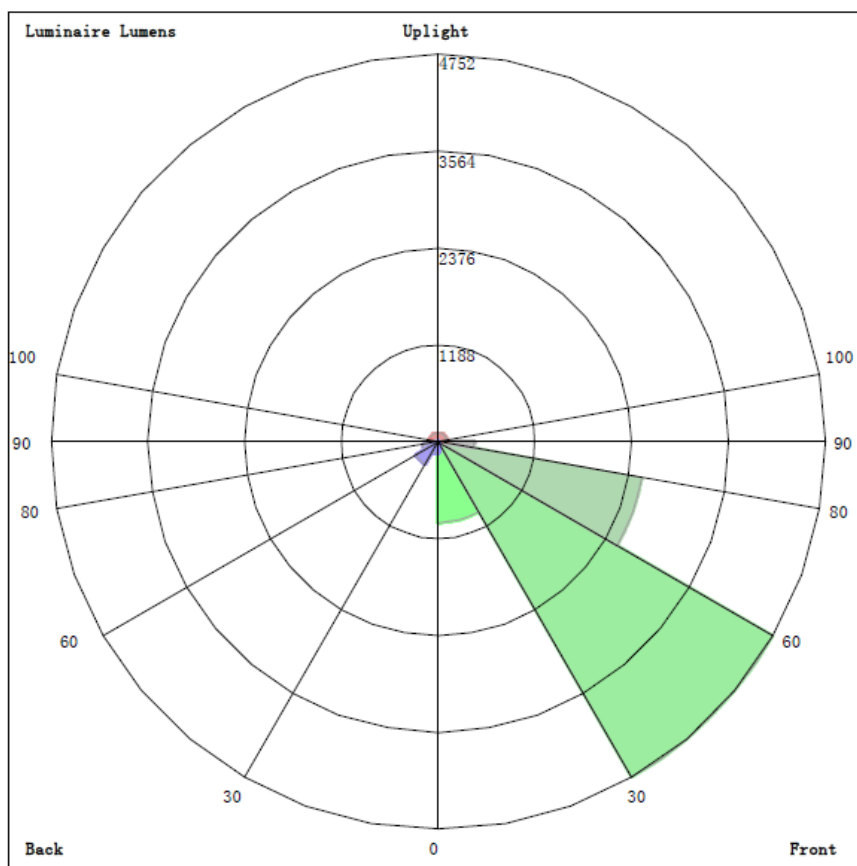
ZONAL FLUX DIAGRAM:

γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	zone	total	lum, lamp
10	1656	1372	1099	351.3	184.4	351.3	1099	1372	0- 10	104.0	104.0	1.08,1.08
20	3049	2279	1268	125.9	58.98	125.9	1268	2279	10- 20	313.2	417.2	4.34,4.34
30	4847	3386	1360	107.5	42.08	107.5	1360	3386	20- 30	716.5	1134	11.8,11.8
40	7099	4390	1446	102.0	18.81	102.0	1446	4390	30- 40	1254	2387	24.8,24.8
50	6277	5234	1490	93.59	4.390	93.59	1490	5234	40- 50	1893	4280	44.5,44.5
60	4652	4142	1266	80.64	0.2045	80.64	1266	4142	50- 60	1923	6203	64.5,64.5
70	2934	3018	981.0	65.36	0.4874	65.36	981.0	3018	60- 70	1638	7842	81.5,81.5
80	1690	1640	455.1	43.26	1.132	43.26	455.1	1640	70- 80	1093	8935	92.9,92.9
90	299.7	367.0	62.56	17.12	2.064	17.12	62.56	367.0	80- 90	476.0	9411	97.8,97.8
100	152.6	125.1	12.21	6.754	3.142	6.754	12.21	125.1	90-100	101.8	9513	98.9,98.9
110	85.94	58.26	7.717	5.106	3.895	5.106	7.717	58.26	100-110	44.49	9557	99.3,99.3
120	44.12	37.19	6.465	5.063	4.265	5.063	6.465	37.19	110-120	23.10	9580	99.6,99.6
130	34.53	28.64	5.563	5.181	4.802	5.181	5.563	28.64	120-130	15.23	9596	99.7,99.7
140	28.75	22.77	4.439	4.807	4.627	4.807	4.439	22.77	130-140	10.86	9606	99.9,99.9
150	22.62	18.15	3.744	3.918	4.183	3.918	3.744	18.15	140-150	7.276	9614	99.9,99.9
160	16.13	14.32	3.560	3.339	3.148	3.339	3.560	14.32	150-160	4.391	9618	100,100
170	11.66	12.51	3.304	3.042	2.108	3.042	3.304	12.51	160-170	2.109	9620	100,100
180	1.759	1.962	2.249	2.235	1.742	2.235	2.249	1.962	170-180	0.4571	9621	100,100
DEG	LUMINOUS INTENSITY:cd									UNIT:lm		

	Zonal (lm)		Total (lm)	Percent
0-10	103.96	0-10	103.96	1.08%
10-20	313.21	0-20	417.17	4.34%
20-30	716.46	0-30	1133.63	11.78%
30-40	1253.56	0-40	2387.19	24.81%
40-50	1892.88	0-50	4280.07	44.49%
50-60	1923.34	0-60	6203.41	64.48%
60-70	1638.49	0-70	7841.90	81.52%
70-80	1093.07	0-80	8934.97	92.88%
80-90	476.00	0-90	9410.97	97.83%
90-100	101.75	0-100	9512.72	98.88%
100-110	44.49	0-110	9557.21	99.35%
110-120	23.10	0-120	9580.31	99.59%
120-130	15.23	0-130	9595.54	99.74%
130-140	10.86	0-140	9606.40	99.86%
140-150	7.28	0-150	9613.68	99.93%
150-160	4.39	0-160	9618.07	99.98%
160-170	2.11	0-170	9620.18	100.00%
170-180	0.46	0-180	9620.64	100.00%

## 4.2 Goniophotometer Test

LCS/BUG



### LUMINAIRE CLASSIFICATION SYSTEM (LCS)

	Lumens	% Lamp	% Luminaire
FL - Front-Low (0-30)	992.3	N.A.	10.3
FM - Front-Medium (30-60)	4752.5	N.A.	49.4
FH - Front-High (60-80)	2540.1	N.A.	26.4
FVH - Front-Very High (80-90)	442.6	N.A.	4.6
BL - Back-Low (0-30)	141.3	N.A.	1.5
BM - Back-Medium (30-60)	317.3	N.A.	3.3
BH - Back-High (60-80)	191.5	N.A.	2.0
BVH - Back-Very High (80-90)	33.4	N.A.	0.3
UL - Uplight-Low (90-100)	101.8	N.A.	1.1
UH - Uplight-High (100-180)	107.9	N.A.	1.1
Total	9620.7	N.A.	100.0
BUG Rating	B1-U3-G3		



## 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	886	908	911	920	922	918	913	903	1064	891	875	860	886	860	875	891	1064	903	913
5	1488	1535	1703	2006	1971	1717	988	759	835	752	649	579	574	579	649	752	835	759	988
10	1656	1623	1508	1372	1432	1883	1099	747	561	351	241	195	184	195	241	351	561	747	1099
15	2104	2082	1971	1898	1568	1534	1205	641	336	177	119	97.2	89.9	97.2	119	177	336	641	1205
20	3049	3009	2681	2279	1968	1473	1268	562	242	126	80.4	62.0	59.0	62.0	80.4	126	242	562	1268
25	4051	3968	3466	2867	2262	1674	1322	496	224	112	67.8	49.2	47.7	49.2	67.8	112	224	496	1322
30	4847	4647	4086	3386	2479	1687	1360	474	223	108	63.6	44.3	42.1	44.3	63.6	108	223	474	1360
35	5741	5425	4748	3842	2766	1651	1389	493	236	105	61.8	37.4	30.1	37.4	61.8	105	236	493	1389
40	7099	6552	5595	4390	3076	1690	1446	512	245	102	59.5	27.7	18.8	27.7	59.5	102	245	512	1446
45	7836	7391	6539	4967	3351	1708	1495	532	260	99.4	57.8	22.2	10.6	22.2	57.8	99.4	260	532	1495
50	6277	6095	5870	5234	3592	1936	1490	523	255	93.6	57.4	19.2	4.39	19.2	57.4	93.6	255	523	1490
55	5371	5280	5145	4724	3556	2088	1393	519	247	86.2	60.2	18.5	0.68	18.5	60.2	86.2	247	519	1393
60	4652	4610	4416	4142	3407	2000	1266	497	224	80.6	62.3	21.2	0.20	21.2	62.3	80.6	224	497	1266
65	3809	3839	3802	3614	2952	1832	1128	445	195	73.1	66.0	23.1	0.30	23.1	66.0	73.1	195	445	1128
70	2934	3015	3081	3018	2482	1581	981	374	165	65.4	60.6	21.7	0.49	21.7	60.6	65.4	165	374	981
75	2194	2207	2225	2291	1950	1317	728	277	122	57.4	54.0	18.4	0.76	18.4	54.0	57.4	122	277	728
80	1690	1681	1645	1640	1403	877	455	194	90.4	43.3	41.3	14.6	1.13	14.6	41.3	43.3	90.4	194	455
85	945	943	946	997	890	513	225	116	60.1	28.7	27.6	10.1	1.57	10.1	27.6	28.7	60.1	116	225
90	300	300	304	323	367	358	195	62.6	59.2	32.0	17.1	16.2	6.36	2.06	6.36	16.2	17.1	32.0	59.2
95	206	202	200	200	177	80.9	19.0	25.0	17.0	9.56	8.38	4.00	2.58	4.00	8.38	9.56	17.0	25.0	19.0
100	153	148	136	125	104	47.7	12.2	15.1	11.1	6.75	5.99	3.33	3.14	3.33	5.99	6.75	11.1	15.1	12.2
105	112	108	98.7	83.5	68.0	32.9	9.20	10.8	8.17	5.57	4.99	3.19	3.64	3.19	4.99	5.57	8.17	10.8	9.20
110	85.9	82.1	70.5	58.3	46.1	24.9	7.72	8.36	6.59	5.11	4.64	3.35	3.90	3.35	4.64	5.11	6.59	8.36	7.72
115	57.1	55.9	50.2	44.3	35.7	20.6	6.97	6.97	5.89	5.00	4.65	3.68	4.11	3.68	4.65	5.00	5.89	6.97	6.97
120	44.1	44.1	41.1	37.2	29.6	18.0	6.47	6.29	5.59	5.06	4.86	4.10	4.27	4.10	4.86	5.06	5.59	6.29	6.47
125	38.5	38.8	35.9	32.3	25.5	16.2	6.08	5.97	5.43	5.16	5.07	4.49	4.58	4.49	5.07	5.16	5.43	5.97	6.08
130	34.5	34.8	31.8	28.6	22.2	14.9	5.56	5.43	5.30	5.18	5.15	4.70	4.80	4.70	5.15	5.18	5.30	5.43	5.56
135	31.1	31.4	28.7	25.4	19.9	13.9	5.01	5.03	5.12	5.11	5.06	4.70	4.73	4.70	5.06	5.11	5.12	5.03	5.01
140	28.7	28.4	26.1	22.8	18.0	13.1	4.44	4.61	4.80	4.81	4.75	4.45	4.63	4.45	4.75	4.81	4.80	4.61	4.44
145	25.4	25.4	23.5	20.4	16.4	12.6	4.02	4.23	4.31	4.37	4.30	4.05	4.44	4.05	4.30	4.37	4.31	4.23	4.02
150	22.6	22.6	20.8	18.1	14.9	12.5	3.74	3.93	3.93	3.92	3.85	3.65	4.18	3.65	3.85	3.92	3.93	3.93	3.74
155	19.0	19.1	18.0	16.0	13.8	12.6	3.65	3.80	3.75	3.65	3.48	3.29	3.74	3.29	3.48	3.65	3.75	3.80	3.65
160	16.1	16.3	15.6	14.3	13.0	12.9	3.56	3.62	3.52	3.34	3.12	2.80	3.15	2.80	3.12	3.34	3.52	3.62	3.56
165	13.5	13.5	13.6	13.0	12.8	8.53	3.43	3.44	3.35	3.18	2.97	2.26	2.54	2.26	2.97	3.18	3.35	3.44	3.43
170	11.7	11.7	12.1	12.5	11.0	3.27	3.30	3.26	3.18	3.04	2.68	2.15	2.11	2.15	2.68	3.04	3.18	3.26	3.30
175	8.58	8.32	6.04	2.95	2.35	2.61	2.83	2.79	2.66	2.56	2.42	2.28	2.01	2.28	2.42	2.56	2.66	2.79	2.83
180	1.76	1.74	1.81	1.96	2.10	2.20	2.25	2.26	2.27	2.24	2.19	2.15	1.74	2.15	2.19	2.24	2.27	2.26	2.25

Table--2

UNIT: cd

C (DEG) y (DEG)	285	300	315	330	345														
0	918	922	920	911	908														
5	1717	1971	2006	1703	1535														
10	1883	1432	1372	1508	1623														
15	1534	1568	1898	1971	2082														
20	1473	1968	2279	2681	3009														
25	1674	2262	2867	3466	3968														
30	1687	2479	3386	4086	4647														
35	1651	2766	3842	4748	5425														
40	1690	3076	4390	5595	6552														
45	1708	3351	4967	6539	7391														
50	1936	3592	5234	5870	6095														
55	2088	3556	4724	5145	5280														
60	2000	3407	4142	4416	4610														
65	1832	2952	3614	3802	3839														
70	1581	2482	3018	3081	3015														
75	1317	1950	2291	2225	2207														
80	877	1403	1640	1645	1681														
85	513	890	997	946	943														
90	195	358	367	323	304														
95	80.9	177	200	200	202														
100	47.7	104	125	136	148														
105	32.9	68.0	83.5	98.7	108														
110	24.9	46.1	58.3	70.5	82.1														
115	20.6	35.7	44.3	50.2	55.9														
120	18.0	29.6	37.2	41.1	44.1														
125	16.2	25.5	32.3	35.9	38.8														
130	14.9	22.2	28.6	31.8	34.8														
135	13.9	19.9	25.4	28.7	31.4														
140	13.1	18.0	22.8	26.1	28.4														
145	12.6	16.4	20.4	23.5	25.4														
150	12.5	14.9	18.1	20.8	22.6														
155	12.6	13.8	16.0	18.0	19.1														
160	12.9	13.0	14.3	15.6	16.3														
165	8.53	12.8	13.0	13.6	13.5														
170	3.27	11.0	12.5	12.1	11.7														
175	2.61	2.35	2.95	6.04	8.32														
180	2.20	2.10	1.96	1.81	1.74														

## 4.0 LM-79 Measurement and Test Results

### 4.3 THD and PF Test

<b>Model No.</b>	PWLED/480 @72W4000K	<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	0.155	68.3	0.917	7.59



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