

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

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		1643
Minimum Luminaire Efficacy (lm/W) (Goniophotometer – Section 4.2) (0°-180° zones)	ANSI/IES LM-79:2019	N/A		122.6
Luminaire Output (lm) (Goniophotometer – Section 4.2) (0°-90° zones)	ANSI/IES LM-79:2019	300		1608
Minimum Luminaire Efficacy (lm/W) (Goniophotometer – Section 4.2) (0°-90° zones)	ANSI/IES LM-79:2019	Standard	Premium	120.0
		105	120	
Power (Input Wattage) (W) (Goniophotometer – Section 4.2)	ANSI/IES LM-79:2019	Worst Case		13.4
Total Harmonic Distortion (A%) (THD & PF – Section 4.3)	ANSI C82.77:2002 ANSI C82-77-10:2020	20.00%	480V	37.17
Power Factor (THD & PF – Section 4.3)	ANSI C82.77:2002 ANSI C82-77-10:2020	0.9	480V	0.552
Allowable CCTs* (K) (Integrating Sphere – Section 4.1)	ANSI/IES LM-79:2019	7 steps	3045±175	3034
		4 steps	3045±100	
Minimum CRI (Integrating Sphere – Section 4.1)	ANSI/IES LM-79:2019 CIE13.3-1995	≥70		81.6
Minimum R9 (Integrating Sphere – Section 4.1)	ANSI/IES LM-79-2019 CIE13.3-1995	N/A		12
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		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		0.051
(Goniophotometer – Section 4.2)		Non-Worst Case		N/A
Power (Input Wattage – W)				
(Goniophotometer – Section 4.2)	ANSI/IES LM-79:2019	Worst Case		13.4
(Goniophotometer – Section 4.2)		Non-Worst Case		N/A

2.0 Test List

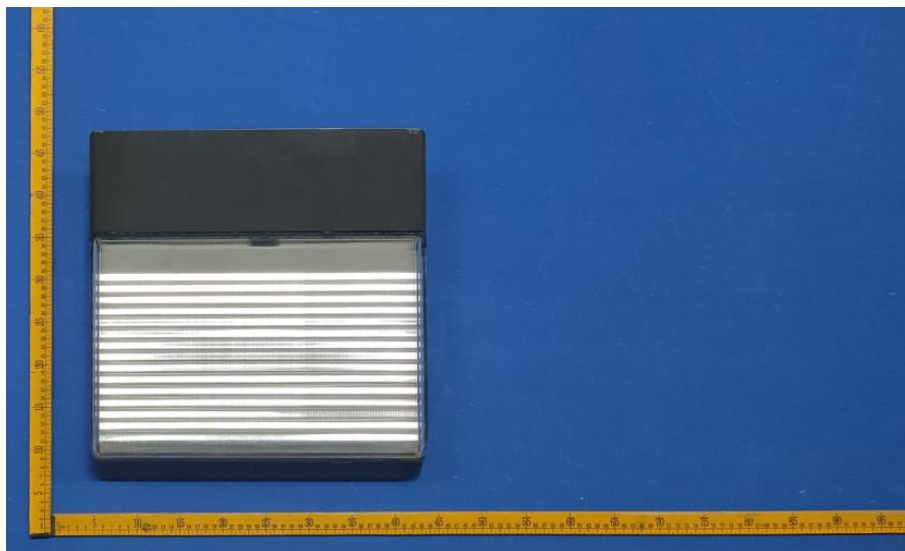
Test Item	Test	Test Date	Model Number	Build Level	Sample No.
1	Integrating Sphere Test	2024-10-09	PWLED/480 @13W3000K	-	241009002-S1
2	Goniophotometer Test	2024-10-09	PWLED/480 @13W3000K	-	241009002-S1
3	THD and PF Test	2024-10-09	PWLED/480 @13W3000K	-	241009002-S1
Remark (If any):					
<ol style="list-style-type: none"> The results contained in this report pertain only to the tested samples. This report shall not be reproduced, no limited part or full, without approval of Dongguan New Testing Centre Co., Ltd. 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. 					

3.0 Product Description

Luminaire Description: Model No. PWLED/480 @13W3000K, 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

Model No.	PWLED/480 @13W3000K	Sample ID	241009002-S1
Operate time (Min.)	10	Stabilization time (Min.)	60
Temperature (°C)	25.4	Humidity (%RH)	41.0

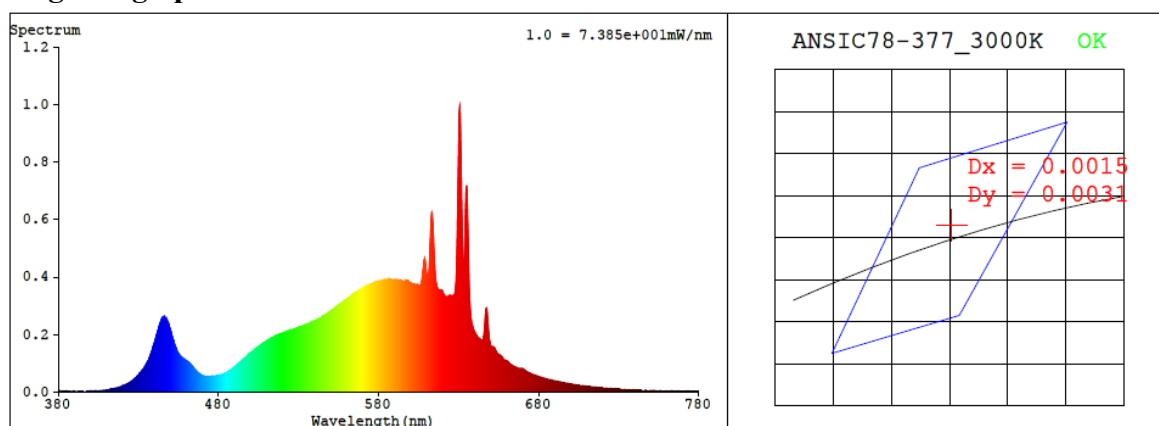
Test Method
<p>The Samples were tested according to the ANSI/IES LM-79:2019.</p> <p>Photometric parameters were measured using an integrating sphere, a spectroradiometer and software. The ambient temperature condition inside the sphere was maintained at 25±1°C.</p> <p>The sample measurements were made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

Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor
480.0	60	0.051	13.4	0.552

CCT (K)	CRI	R9	Duv	Rf	Rg	IES Rcs,h1
3034	81.6	12	0.0010	83	98	-11%

4.1 Integrating Sphere Test



Colorimetric Parameters

Chromaticity Coordinate: $x = 0.4360$ $y = 0.4064$ / $u' = 0.2490$ $v' = 0.5221$ ($duv=1.03e-03$)

CCT= 3034K Prcp WL: $L_d=582.3nm$ Purity=52.9%

Peak WL: $L_p=631nm$ FWHM: $=4.1nm$ Ratio:R=22.6% G=75.3% B=2.1%

Render Index: $R_a = 81.6$ AvgR = 75.4 TM30:Rf=82 Rg=97

EEL: 0.11517 A+

R1 =80 R2 =87 R3 =94 R4 =81 R5 =79 R6 =84 R7 =85

R8 =63 R9 =12 R10=71 R11=79 R12=66 R13=80 R14=96 R15=74

4.1 Integrating Sphere Test

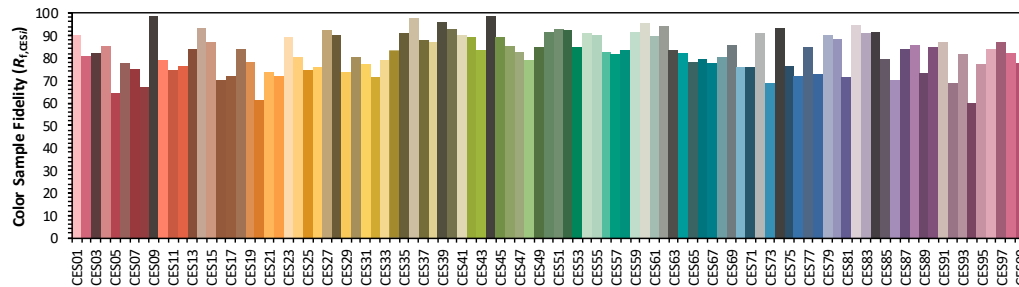
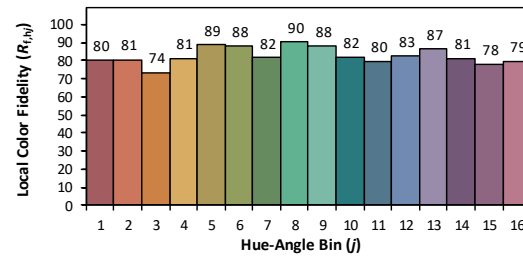
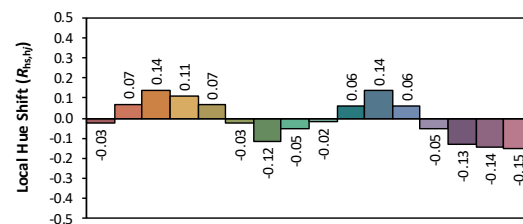
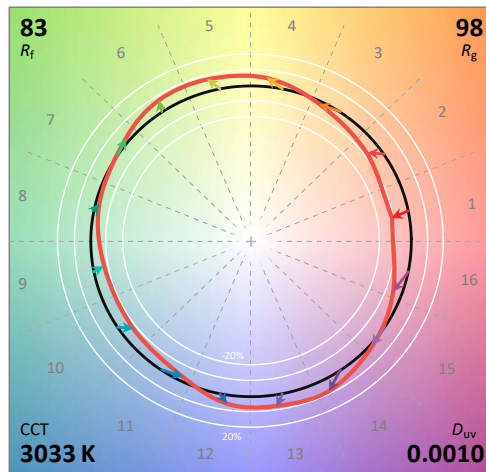
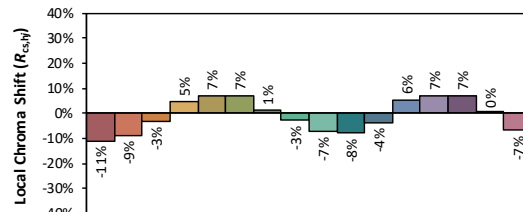
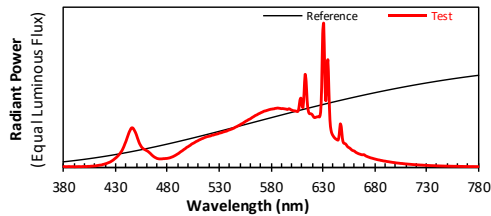
ANSI/IES TM-30-18 Color Rendition Report

Source: 1 CIE F1

Manufacturer: RAB Lighting Inc.

Date: 2024/10/10

Model: PWLED/480 @13W3000K



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

x 0.4360
 y 0.4062
 u' 0.2491
 v' 0.5221

CIE 13.3-1995
(CRI)
 R_a 82
 R_g 12

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	2.70E-06	447	2.57E-04	514	1.90E-04	581	3.86E-04	648	2.65E-04	715	1.74E-05
381	2.30E-06	448	2.46E-04	515	1.93E-04	582	3.88E-04	649	1.93E-04	716	1.67E-05
382	1.30E-06	449	2.32E-04	516	1.96E-04	583	3.88E-04	650	1.62E-04	717	1.61E-05
383	2.10E-06	450	2.16E-04	517	1.99E-04	584	3.91E-04	651	1.57E-04	718	1.57E-05
384	2.00E-06	451	1.95E-04	518	2.02E-04	585	3.91E-04	652	1.54E-04	719	1.52E-05
385	2.90E-06	452	1.76E-04	519	2.03E-04	586	3.93E-04	653	1.46E-04	720	1.48E-05
386	1.90E-06	453	1.58E-04	520	2.05E-04	587	3.93E-04	654	1.36E-04	721	1.43E-05
387	2.00E-06	454	1.45E-04	521	2.06E-04	588	3.92E-04	655	1.31E-04	722	1.38E-05
388	1.90E-06	455	1.33E-04	522	2.08E-04	589	3.91E-04	656	1.27E-04	723	1.33E-05
389	2.30E-06	456	1.26E-04	523	2.12E-04	590	3.89E-04	657	1.21E-04	724	1.30E-05
390	1.00E-06	457	1.20E-04	524	2.12E-04	591	3.90E-04	658	1.14E-04	725	1.25E-05
391	1.30E-06	458	1.16E-04	525	2.14E-04	592	3.89E-04	659	1.10E-04	726	1.24E-05
392	2.00E-06	459	1.13E-04	526	2.17E-04	593	3.88E-04	660	1.08E-04	727	1.17E-05
393	2.00E-06	460	1.09E-04	527	2.18E-04	594	3.87E-04	661	1.04E-04	728	1.14E-05
394	2.40E-06	461	1.05E-04	528	2.20E-04	595	3.86E-04	662	9.78E-05	729	1.09E-05
395	2.50E-06	462	9.92E-05	529	2.22E-04	596	3.84E-04	663	9.41E-05	730	1.06E-05
396	1.90E-06	463	9.34E-05	530	2.25E-04	597	3.88E-04	664	9.05E-05	731	1.03E-05
397	1.80E-06	464	8.67E-05	531	2.27E-04	598	3.88E-04	665	8.75E-05	732	9.80E-06
398	2.80E-06	465	7.95E-05	532	2.28E-04	599	3.83E-04	666	8.55E-05	733	9.60E-06
399	2.30E-06	466	7.35E-05	533	2.31E-04	600	3.80E-04	667	8.28E-05	734	9.20E-06
400	3.30E-06	467	6.81E-05	534	2.34E-04	601	3.77E-04	668	8.14E-05	735	8.80E-06
401	2.90E-06	468	6.38E-05	535	2.35E-04	602	3.75E-04	669	8.14E-05	736	8.70E-06
402	2.70E-06	469	6.02E-05	536	2.38E-04	603	3.75E-04	670	8.16E-05	737	8.40E-06
403	3.70E-06	470	5.67E-05	537	2.39E-04	604	3.73E-04	671	7.66E-05	738	8.20E-06
404	3.90E-06	471	5.52E-05	538	2.42E-04	605	3.71E-04	672	7.23E-05	739	8.10E-06
405	3.80E-06	472	5.39E-05	539	2.46E-04	606	3.71E-04	673	6.95E-05	740	7.40E-06
406	4.90E-06	473	5.37E-05	540	2.48E-04	607	3.92E-04	674	6.66E-05	741	7.20E-06
407	5.30E-06	474	5.39E-05	541	2.51E-04	608	4.44E-04	675	6.42E-05	742	7.20E-06
408	5.50E-06	475	5.40E-05	542	2.53E-04	609	4.59E-04	676	6.15E-05	743	6.70E-06
409	6.50E-06	476	5.54E-05	543	2.56E-04	610	4.10E-04	677	5.96E-05	744	6.60E-06
410	6.60E-06	477	5.53E-05	544	2.58E-04	611	3.98E-04	678	5.79E-05	745	6.40E-06
411	7.40E-06	478	5.63E-05	545	2.63E-04	612	4.90E-04	679	5.57E-05	746	6.10E-06
412	9.10E-06	479	5.66E-05	546	2.66E-04	613	6.17E-04	680	5.39E-05	747	6.10E-06
413	1.02E-05	480	5.74E-05	547	2.70E-04	614	5.71E-04	681	5.20E-05	748	5.60E-06
414	1.13E-05	481	5.89E-05	548	2.73E-04	615	4.42E-04	682	5.02E-05	749	5.60E-06
415	1.23E-05	482	6.03E-05	549	2.78E-04	616	3.78E-04	683	4.84E-05	750	5.50E-06
416	1.29E-05	483	6.25E-05	550	2.80E-04	617	3.57E-04	684	4.70E-05	751	5.00E-06
417	1.45E-05	484	6.54E-05	551	2.86E-04	618	3.55E-04	685	4.59E-05	752	5.10E-06
418	1.72E-05	485	6.77E-05	552	2.89E-04	619	3.54E-04	686	4.39E-05	753	5.10E-06
419	1.81E-05	486	7.12E-05	553	2.93E-04	620	3.48E-04	687	4.30E-05	754	4.80E-06
420	2.10E-05	487	7.47E-05	554	2.98E-04	621	3.37E-04	688	4.12E-05	755	4.70E-06
421	2.26E-05	488	7.87E-05	555	3.02E-04	622	3.30E-04	689	3.99E-05	756	4.50E-06
422	2.55E-05	489	8.29E-05	556	3.07E-04	623	3.31E-04	690	3.90E-05	757	4.40E-06
423	2.83E-05	490	8.72E-05	557	3.10E-04	624	3.33E-04	691	3.79E-05	758	4.50E-06
424	3.10E-05	491	9.13E-05	558	3.15E-04	625	3.35E-04	692	3.64E-05	759	4.30E-06
425	3.41E-05	492	9.71E-05	559	3.18E-04	626	3.36E-04	693	3.55E-05	760	4.10E-06
426	3.86E-05	493	1.02E-04	560	3.21E-04	627	3.35E-04	694	3.44E-05	761	3.90E-06
427	4.29E-05	494	1.07E-04	561	3.26E-04	628	3.65E-04	695	3.32E-05	762	3.80E-06
428	4.79E-05	495	1.11E-04	562	3.31E-04	629	5.32E-04	696	3.21E-05	763	3.60E-06
429	5.40E-05	496	1.17E-04	563	3.35E-04	630	8.90E-04	697	3.10E-05	764	3.50E-06
430	5.93E-05	497	1.21E-04	564	3.39E-04	631	9.57E-04	698	3.00E-05	765	3.50E-06
431	6.55E-05	498	1.27E-04	565	3.44E-04	632	6.33E-04	699	2.92E-05	766	3.20E-06
432	7.24E-05	499	1.32E-04	566	3.47E-04	633	4.42E-04	700	2.81E-05	767	3.10E-06
433	7.98E-05	500	1.35E-04	567	3.50E-04	634	5.91E-04	701	2.70E-05	768	3.00E-06
434	8.80E-05	501	1.40E-04	568	3.55E-04	635	7.17E-04	702	2.62E-05	769	3.00E-06
435	9.80E-05	502	1.44E-04	569	3.58E-04	636	5.10E-04	703	2.55E-05	770	3.00E-06
436	1.08E-04	503	1.50E-04	570	3.61E-04	637	3.15E-04	704	2.48E-05	771	2.70E-06
437	1.22E-04	504	1.55E-04	571	3.65E-04	638	2.48E-04	705	2.37E-05	772	2.60E-06
438	1.37E-04	505	1.58E-04	572	3.67E-04	639	2.22E-04	706	2.32E-05	773	2.50E-06
439	1.55E-04	506	1.62E-04	573	3.71E-04	640	2.09E-04	707	2.28E-05	774	2.60E-06
440	1.72E-04	507	1.66E-04	574	3.73E-04	641	1.98E-04	708	2.17E-05	775	2.60E-06
441	1.92E-04	508	1.71E-04	575	3.75E-04	642	1.91E-04	709	2.12E-05	776	2.50E-06
442	2.11E-04	509	1.73E-04	576	3.77E-04	643	1.86E-04	710	2.02E-05	777	2.40E-06
443	2.31E-04	510	1.78E-04	577	3.79E-04	644	1.81E-04	711	1.98E-05	778	2.30E-06
444	2.45E-04	511	1.81E-04	578	3.82E-04	645	1.80E-04	712	1.91E-05	779	2.20E-06
445	2.58E-04	512	1.84E-04	579	3.84E-04	646	2.17E-04	713	1.85E-05	780	2.20E-06
446	2.61E-04	513	1.88E-04	580	3.86E-04	647	2.87E-04	714	1.80E-05	N/A	N/A

4.0 LM-79 Measurement and Test Results

4.2 Goniophotometer Test

Model No.	PWLED/480 @13W3000K	Sample ID	241009002-S1
Operate time (Min.)	30	Stabilization time (Min.)	60
Temperature (°C)	25.0	Humidity (%RH)	43.1

Test Method
<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 $25 \pm 1^{\circ}\text{C}$, measured at a point not more than 1 m from the sample and at the same height as the sample.</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 samples were operated at rated voltage and was stabilized before measurement. Luminous flux, luminaire efficacy, zonal lumen were calculated from the software taken at 1.0° vertical intervals and 15° horizontal intervals.</p>

Test Conditions

Condition	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor
WORST CASE	480.0	60	0.051	13.4	0.552
NON-WORST CASE	N/A	N/A	N/A	N/A	N/A

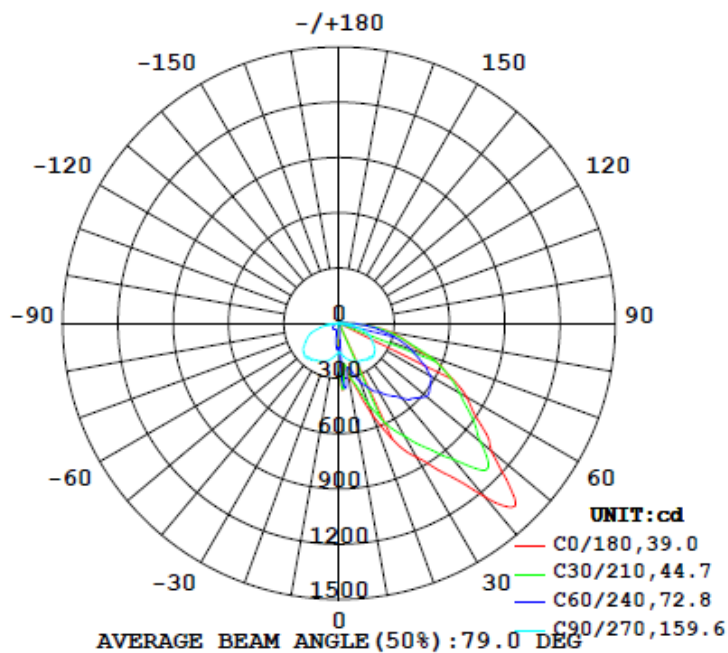
Test Result

Result Type	Flux (lm)	Field Angle (10%)		Beam Angle (50%)		Luminous Efficacy (lm/W)	Zonal Lumen Requirement	BUG
		C0-180	C90-270	C0-180	C90-270		(80°-90°)	
0°-180° zones	1643	89.4	150.2	39.9	84.1	122.6	4.9%	B0-U2-G1
0°-90° zones	1608	89.4	150.2	39.9	84.1	120.0	5.0%	B0-U2-G1

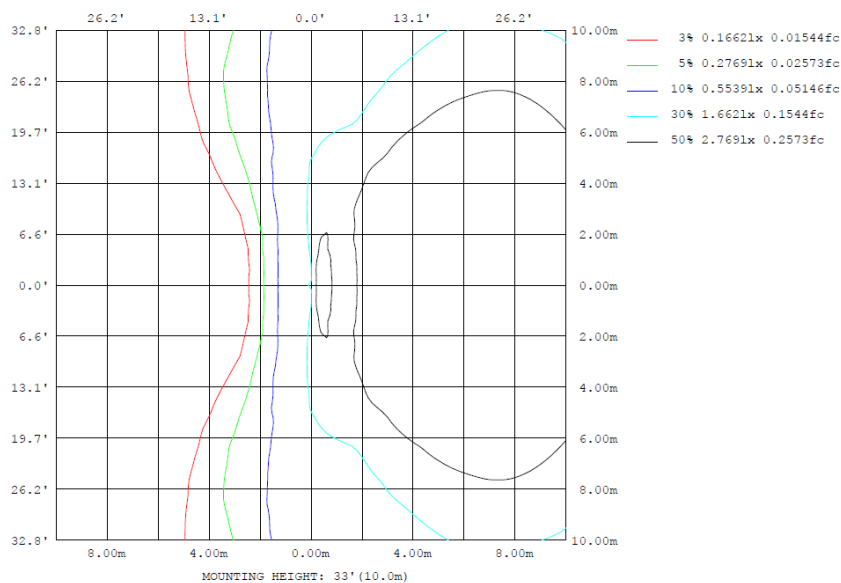
4.2 Goniophotometer Test

Lighting Distribution Curve

LUMINOUS INTENSITY DISTRIBUTION DIAGRAM



Isolux Plot



4.2 Goniophotometer Test

Zonal Lumen Summary

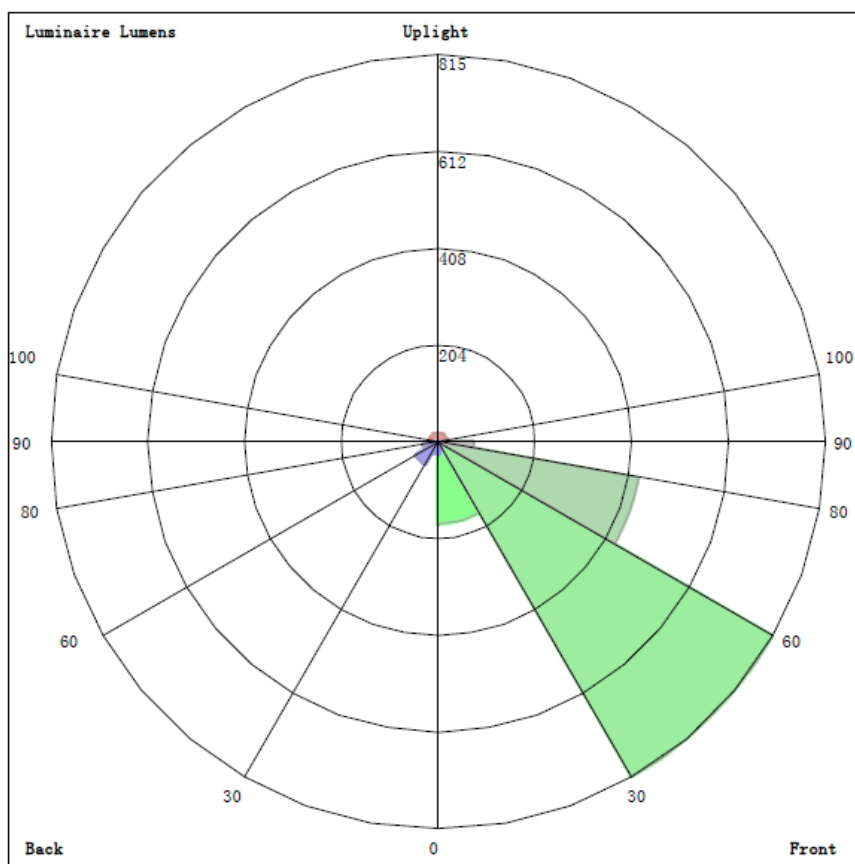
ZONAL FLUX DIAGRAM:

γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	Φ zone	Φ total	Φ lum, lamp
10	287.5	238.1	189.0	60.31	31.54	60.31	189.0	238.1	0- 10	18.03	18.03	1.1,1.1
20	529.8	395.6	219.6	21.51	9.982	21.51	219.6	395.6	10- 20	54.20	72.23	4.4,4.4
30	838.4	588.1	236.7	18.57	7.101	18.57	236.7	588.1	20- 30	124.4	196.6	12,12
40	1228	753.6	249.4	17.62	3.147	17.62	249.4	753.6	30- 40	216.8	413.5	25.2,25.2
50	1079	897.2	253.1	16.27	0.7418	16.27	253.1	897.2	40- 50	325.2	738.7	45,45
60	799.0	704.0	216.2	14.14	0.0337	14.14	216.2	704.0	50- 60	327.8	1066	64.9,64.9
70	502.1	508.5	166.2	11.02	0.0814	11.02	166.2	508.5	60- 70	277.3	1344	81.8,81.8
80	290.3	273.4	76.45	7.261	0.1910	7.261	76.45	273.4	70- 80	183.9	1528	93,93
90	50.68	66.32	11.41	2.826	0.3485	2.826	11.41	66.32	80- 90	80.05	1608	97.9,97.9
100	25.83	20.77	2.016	1.116	0.5335	1.116	2.016	20.77	90-100	16.98	1625	98.9,98.9
110	14.61	9.806	1.291	0.8564	0.6604	0.8564	1.291	9.806	100-110	7.442	1632	99.3,99.3
120	7.493	6.272	1.090	0.8585	0.7246	0.8585	1.090	6.272	110-120	3.897	1636	99.6,99.6
130	5.883	4.856	0.9440	0.8840	0.8191	0.8840	0.9440	4.856	120-130	2.582	1639	99.7,99.7
140	4.918	3.882	0.7576	0.8211	0.7915	0.8211	0.7576	3.882	130-140	1.851	1641	99.9,99.9
150	3.865	3.109	0.6417	0.6721	0.7169	0.6721	0.6417	3.109	140-150	1.245	1642	99.9,99.9
160	2.766	2.465	0.6133	0.5746	0.5409	0.5746	0.6133	2.465	150-160	0.7538	1643	100,100
170	2.018	2.171	0.5689	0.5246	0.3631	0.5246	0.5689	2.171	160-170	0.3639	1643	100,100
180	0.3019	0.3364	0.3886	0.3827	0.2998	0.3827	0.3886	0.3364	170-180	0.0799	1643	100,100
DEG	LUMINOUS INTENSITY:cd									UNIT:lm		

	Zonal (lm)		Total (lm)	Percent
0-10	18.03	0-10	18.03	1.10%
10-20	54.20	0-20	72.23	4.40%
20-30	124.38	0-30	196.61	11.97%
30-40	216.85	0-40	413.46	25.17%
40-50	325.24	0-50	738.70	44.96%
50-60	327.75	0-60	1066.45	64.91%
60-70	277.34	0-70	1343.79	81.79%
70-80	183.94	0-80	1527.73	92.99%
80-90	80.05	0-90	1607.78	97.86%
90-100	16.98	0-100	1624.76	98.90%
100-110	7.44	0-110	1632.20	99.35%
110-120	3.90	0-120	1636.10	99.59%
120-130	2.58	0-130	1638.68	99.74%
130-140	1.85	0-140	1640.53	99.86%
140-150	1.24	0-150	1641.77	99.93%
150-160	0.75	0-160	1642.52	99.98%
160-170	0.36	0-170	1642.88	100.00%
170-180	0.08	0-180	1642.96	100.00%

4.2 Goniophotometer Test

LCS/BUG

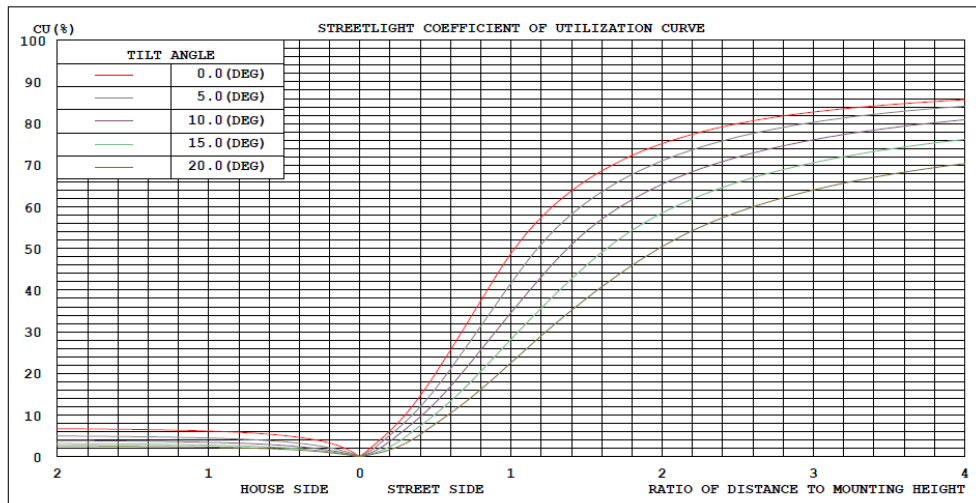


LUMINAIRE CLASSIFICATION SYSTEM (LCS)

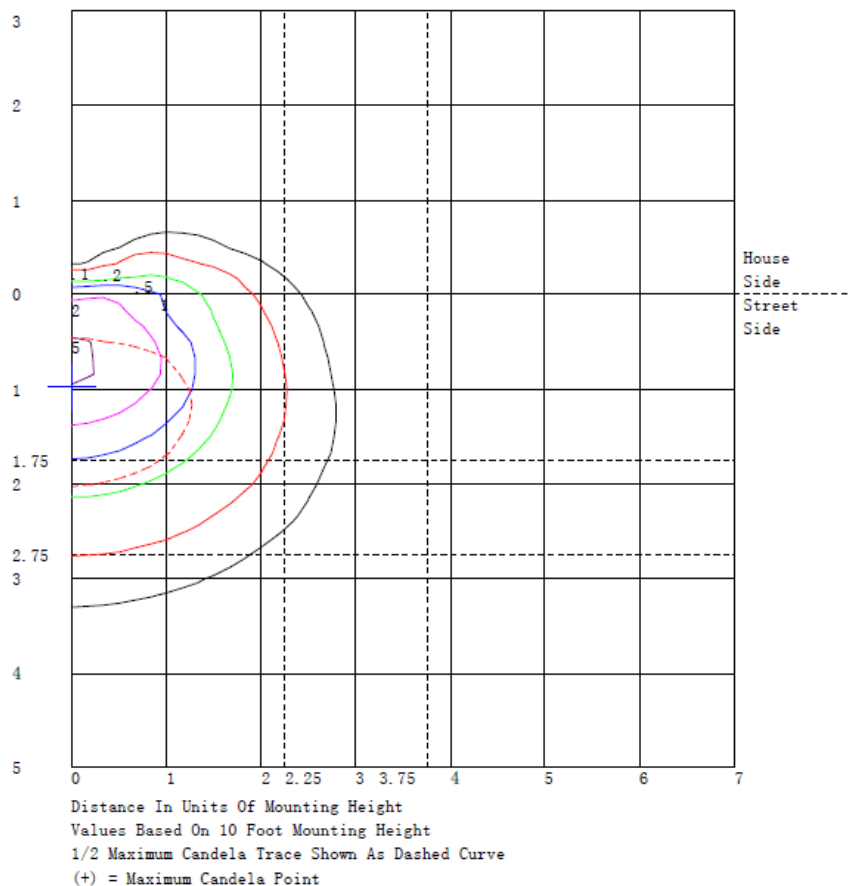
	Lumens	% Lamp	% Luminaire
FL - Front-Low (0-30)	172.2	N.A.	10.5
FM - Front-Medium (30-60)	815.4	N.A.	49.6
FH - Front-High (60-80)	429.0	N.A.	26.1
FVH - Front-Very High (80-90)	74.5	N.A.	4.5
BL - Back-Low (0-30)	24.4	N.A.	1.5
BM - Back-Medium (30-60)	54.5	N.A.	3.3
BH - Back-High (60-80)	32.3	N.A.	2.0
BVH - Back-Very High (80-90)	5.6	N.A.	0.3
UL - Uplight-Low (90-100)	17.0	N.A.	1.0
UH - Uplight-High (100-180)	18.2	N.A.	1.1
Total	1643.1	N.A.	100.0
BUG Rating	B0-U2-G1		

4.2 Goniophotometer Test

Coefficients of Utilization



Isolines



4.2 Goniophotometer Test

Luminous Distribution Intensity Data

Table--1

UNIT: cd

C (DEG)	0	15	30	45	60	75	90	105	120	135	150	165	180	195	210	225	240	255	270
0	201	199	196	158	158	157	156	154	152	148	146	143	201	143	146	148	152	154	156
5	256	264	292	346	350	296	169	130	144	129	111	99.3	98.6	99.3	111	129	144	130	169
10	287	281	262	238	247	325	189	129	96.8	60.3	41.0	33.1	31.5	33.1	41.0	60.3	96.8	129	189
15	364	359	342	330	273	265	207	111	57.6	30.0	20.1	16.1	15.3	16.1	20.1	30.0	57.6	111	207
20	530	520	466	396	341	255	220	97.0	42.2	21.5	13.7	10.5	9.98	10.5	13.7	21.5	42.2	97.0	220
25	703	690	599	502	391	294	232	86.4	38.7	19.2	11.6	8.32	8.05	8.32	11.6	19.2	38.7	86.4	232
30	838	806	706	588	430	291	237	81.4	39.1	18.6	10.9	7.51	7.10	7.51	10.9	18.6	39.1	81.4	237
35	994	939	826	666	479	284	241	88.6	41.2	18.2	10.5	6.35	5.07	6.35	10.5	18.2	41.2	88.6	241
40	1228	1127	963	754	532	288	249	89.7	42.8	17.6	10.1	4.69	3.15	4.69	10.1	17.6	42.8	89.7	249
45	1351	1264	1127	858	576	292	261	89.0	45.0	17.2	9.82	3.77	1.78	3.77	9.82	17.2	45.0	89.0	261
50	1079	1039	1002	897	618	328	253	87.9	44.8	16.3	9.75	3.28	0.74	3.28	9.75	16.3	44.8	87.9	253
55	923	900	876	801	603	355	239	88.9	42.4	15.0	10.3	3.15	0.12	3.15	10.3	15.0	42.4	88.9	239
60	799	782	754	704	576	340	216	84.2	38.0	14.1	10.6	3.61	0.03	3.61	10.6	14.1	38.0	84.2	216
65	651	648	645	613	492	310	191	75.6	32.6	12.5	11.2	3.93	0.05	3.93	11.2	12.5	32.6	75.6	191
70	502	507	520	509	416	267	166	63.8	27.9	11.0	10.2	3.67	0.08	3.67	10.2	11.0	27.9	63.8	166
75	376	372	376	385	327	220	122	46.7	20.3	9.62	9.07	3.10	0.13	3.10	9.07	9.62	20.3	46.7	122
80	290	284	275	273	233	145	76.4	32.3	15.1	7.26	6.92	2.45	0.19	2.45	6.92	7.26	15.1	32.3	76.4
85	158	158	159	165	148	85.5	37.6	19.3	10.1	4.77	4.62	1.67	0.26	1.67	4.62	4.77	10.1	19.3	37.6
90	50.7	51.0	53.8	66.3	59.1	32.1	11.4	9.95	5.30	2.83	2.68	1.05	0.35	1.05	2.68	2.83	5.30	9.95	11.4
95	34.7	34.0	33.3	33.3	29.2	12.9	3.13	4.11	2.80	1.55	1.38	0.66	0.44	0.66	1.38	1.55	2.80	4.11	3.13
100	25.8	24.9	22.8	20.8	17.1	7.85	2.02	2.49	1.82	1.12	0.99	0.55	0.53	0.55	0.99	1.12	1.82	2.49	2.02
105	19.0	18.2	16.3	14.0	11.3	5.46	1.53	1.79	1.35	0.93	0.83	0.54	0.62	0.54	0.83	0.93	1.35	1.79	1.53
110	14.6	13.9	11.9	9.81	7.68	4.15	1.29	1.39	1.10	0.86	0.78	0.57	0.66	0.57	0.78	0.86	1.10	1.39	1.29
115	9.81	9.45	8.45	7.43	5.97	3.45	1.17	1.17	0.99	0.84	0.79	0.62	0.70	0.62	0.79	0.84	0.99	1.17	1.17
120	7.49	7.47	6.94	6.27	4.98	3.04	1.09	1.06	0.95	0.86	0.82	0.70	0.72	0.70	0.82	0.86	0.95	1.06	1.09
125	6.55	6.58	6.09	5.47	4.31	2.75	1.03	1.01	0.92	0.88	0.86	0.76	0.78	0.76	0.86	0.88	0.92	1.01	1.03
130	5.88	5.92	5.40	4.86	3.76	2.54	0.94	0.92	0.90	0.88	0.88	0.80	0.82	0.80	0.88	0.88	0.90	0.92	0.94
135	5.30	5.35	4.89	4.31	3.38	2.38	0.85	0.86	0.87	0.87	0.86	0.80	0.81	0.80	0.86	0.87	0.87	0.86	0.85
140	4.92	4.84	4.45	3.88	3.07	2.24	0.76	0.79	0.82	0.82	0.81	0.76	0.79	0.76	0.81	0.82	0.82	0.79	0.76
145	4.35	4.34	4.02	3.48	2.81	2.17	0.69	0.72	0.74	0.75	0.74	0.69	0.76	0.69	0.74	0.75	0.74	0.72	0.69
150	3.86	3.87	3.56	3.11	2.56	2.17	0.64	0.67	0.67	0.67	0.66	0.63	0.72	0.63	0.66	0.67	0.67	0.67	0.64
155	3.26	3.27	3.08	2.75	2.37	2.18	0.63	0.65	0.64	0.63	0.60	0.57	0.64	0.57	0.60	0.63	0.64	0.65	0.63
160	2.77	2.79	2.68	2.47	2.24	2.22	0.61	0.62	0.61	0.57	0.54	0.48	0.54	0.48	0.54	0.57	0.61	0.62	0.61
165	2.33	2.33	2.34	2.24	2.21	1.49	0.59	0.59	0.58	0.55	0.51	0.39	0.44	0.39	0.51	0.55	0.58	0.59	0.59
170	2.02	2.03	2.11	2.17	1.92	0.57	0.57	0.56	0.55	0.52	0.46	0.37	0.36	0.37	0.46	0.52	0.55	0.56	0.57
175	1.51	1.48	1.32	0.54	0.40	0.45	0.49	0.48	0.46	0.44	0.42	0.39	0.35	0.39	0.42	0.44	0.46	0.48	0.49
180	0.30	0.30	0.31	0.34	0.36	0.38	0.39	0.39	0.39	0.38	0.37	0.37	0.30	0.37	0.37	0.38	0.39	0.39	0.39

Table--2

UNIT: cd

C (DEG)	285	300	315	330	345														
0	157	158	158	196	199														
5	296	350	346	292	264														
10	325	247	238	262	281														
15	265	273	330	342	359														
20	255	341	396	466	520														
25	294	391	502	599	690														
30	291	430	588	706	806														
35	284	479	666	826	939														
40	288	532	754	963	1127														
45	292	576	858	1127	1264														
50	328	618	897	1002	1039														
55	355	603	801	876	900														
60	340	576	704	754	782														
65	310	492	613	645	648														
70	267	416	509	520	507														
75	220	327	385	376	372														
80	145	233	273	275	284														
85	85.5	148	165	159	158														
90	32.1	59.1	66.3	53.8	51.0														
95	12.9	29.2	33.3	33.3	34.0														
100	7.85	17.1	20.8	22.8	24.9														
105	5.46	11.3	14.0	16.3	18.2														
110	4.15	7.68	9.81	11.9	13.9														
115	3.45	5.97	7.43	8.45	9.45														
120	3.04	4.98	6.27	6.94	7.47														
125	2.75	4.31	5.47	6.09	6.58														
130	2.54	3.76	4.86	5.40	5.92														
135	2.38	3.38	4.31	4.89	5.35														
140	2.24	3.07	3.88	4.45	4.84														
145	2.17	2.81	3.48	4.02	4.34														
150	2.17	2.56	3.11	3.56	3.87														
155	2.18	2.37	2.75	3.08	3.27														
160	2.22	2.24	2.47	2.68	2.79														
165	1.49	2.21	2.24	2.34	2.33														
170	0.57	1.92	2.17	2.11	2.03														
175	0.45	0.40	0.54	1.32	1.48														
180	0.38	0.36	0.34	0.31	0.30														

4.0 LM-79 Measurement and Test Results

4.3 THD and PF Test

Model No.	PWLED/480 @13W3000K	Sample ID	241009002-S1
Temperature (°C)	25.4	Humidity (%RH)	41.0

Test Method
<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 $25 \pm 1^{\circ}\text{C}$. 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 was calculated.</p>

Test Results

Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	iTHD(%)
480.0	60	0.051	13.4	0.552	37.17

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*****