

Photometric Test Report

Relevant Standards

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

Prepared For

RAB Lighting Inc.

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Revised Date: N/A

1.0 Test Summary

DLC Technical Requirements V5.1

Integrated Retrofit Kits for 2x4 Luminaires				
Requirement Category	Test Method	Requirements		Test Value
Luminaire Output (lm) (Goniophotometer – Section 4.2)	IES LM-79-2008	3000		3646
Minimum Luminaire Efficacy (lm/W) (Goniophotometer – Section 4.2)	IES LM-79-2008	Standard	Premium	144.1
		110	125	
Power (Input Wattage) (W) (Goniophotometer – Section 4.2)	IES LM-79-2008	Worst Case		25.3
Total Harmonic Distortion (A%) (THD & PF – Section 4.3)	ANSI C82.77:2014	20.00%	120V	7.11
			277V	8.39
Power Factor (THD & PF – Section 4.3)	ANSI C82.77:2014	0.9	120V	0.996
			277V	0.956
Allowable CCTs* (K) (Integrating Sphere – Section 4.1)	IES LM-79-2008	7 steps	5029±283	5023
		4 steps	5029±220	
Minimum CRI (Integrating Sphere – Section 4.1)	IES LM-79-2008 CIE13.3-1995	≥80		84.4
Minimum R9 (Integrating Sphere – Section 4.1)	IES LM-79-2008 CIE13.3-1995	≥0		14
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		95
IES Rcs,h1 (Integrating Sphere – Section 4.1)	ANSI/IES TM-30-18	-12%≤IES Rcs,h1≤+23%		-12%
Zonal Lumen Requirement (0°-60°) (Goniophotometer – Section 4.2)	IES LM-79-2008	≥75%		77.9%
Discomfort Glare (UGR) (Goniophotometer – Section 4.2)	IES LM-79-2008	Standard	Premium	18.7
		N/A	<22	
Spacing Criterion (Goniophotometer – Section 4.2)	IES LM-79-2008	0°-180°	1.0-2.0	1.26
		90°-270°	1.0-2.0	1.28
Input Voltage (V)				
(Goniophotometer – Section 4.2)	IES LM-79-2008	Worst Cast		277.0
(Goniophotometer – Section 4.2)		Non-Worst Case		120.0
Input Current (A)				
(Goniophotometer – Section 4.2)	IES LM-79-2008	Worst Case		0.096
(Goniophotometer – Section 4.2)		Non-Worst Case		0.211
Power (Input Wattage – W)				
(Goniophotometer – Section 4.2)	IES LM-79-2008	Worst Case		25.3
(Goniophotometer – Section 4.2)		Non-Worst Case		25.2

2.0 Test List

Test Item	Test	Test Date	Model Number	Sample No.
1	Integrating Sphere Test	2024-02-23	RPLED2X4 @25W5000K	240130004-S1
2	Goniophotometer Test	2024-02-23	RPLED2X4 @25W5000K	240130004-S1
3	THD and PF Test	2024-02-23	RPLED2X4 @25W5000K	240130004-S1

Remark (If any)

1. The results contained in this report pertain only to the tested samples.
2. Test Troffer is Lithonia 2GT8 lensed 2x4.
3. This report shall not be reproduced, no limited part or full, without approval of Dongguan New Testing Centre Co., Ltd.
4. This report does not imply product certification, approval, or endorsement by NVLAP, or any agency of the Federal Government.

3.0 Product Description

Luminaire Description: Model No. RPLED2X4 @25W5000K, color tunable from 3500K, 4000K and 5000K.

Electrical Specification: 120-277Vac, 50/60Hz

Photos of Luminaire Characteristics



4.0 LM-79 Measurement and Test Results

4.1 Integrating Sphere Test

Model No.	RPLED2X4 @25W5000K	Sample ID	240130004-S1
Operate time (Min.)	10	Stabilization time (Min.)	60
Temperature (°C)	25.4	Humidity (%RH)	41.0

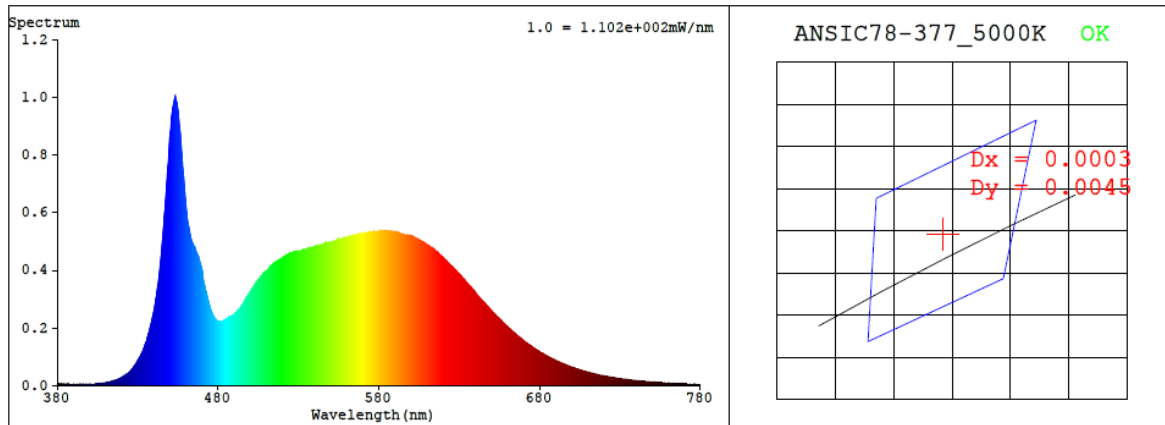
Test Method
<p>The Samples were tested according to the IES LM-79-2008.</p> <p>Photometric parameters were measured using an integrating sphere, a spectroradiometer and software. The ambient temperature condition inside the sphere was maintained at 25±1°C.</p> <p>The sample measurements were made using 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
120.0	60	0.211	25.2	0.996
277.0	60	0.096	25.3	0.956

CCT (K)	CRI	R9	Duv	Rf	Rg	IES Rcs,h1
5023	84.4	14	0.0021	84	95	-12%

4.1 Integrating Sphere Test



Colorimetric Parameters

Chromaticity Coordinate: $x = 0.3448$ $y = 0.3556$ / $u' = 0.2097$ $v' = 0.4866$ ($duv=2.12e-03$)

CCT= 5023K Prcp WL: $L_d=570.3nm$ Purity=10.2%

Peak WL: $L_p=453nm$ FWHM: $=18.6nm$ Ratio:R=15.9% G=79.4% B=4.7%

Render Index: $R_a = 84.4$ AvgR = 78.0 TM30:Rf=84 Rg=95

EEL: 0.09293 A++ Highest

R1 =83	R2 =90	R3 =94	R4 =83	R5 =83	R6 =86	R7 =87
R8 =69	R9 =14	R10=76	R11=83	R12=61	R13=85	R14=97
R15=78						

4.1 Integrating Sphere Test

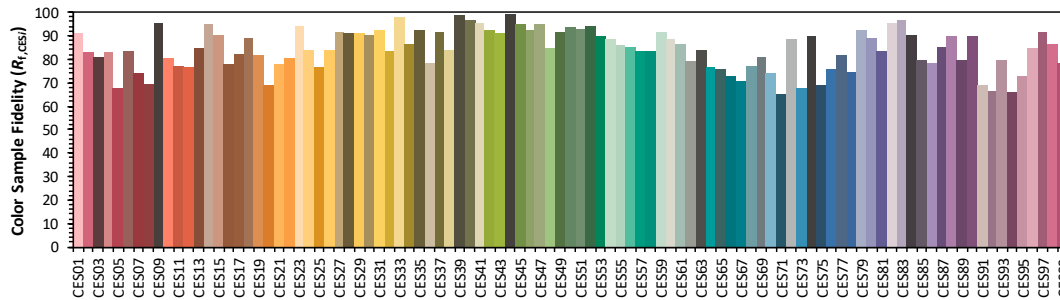
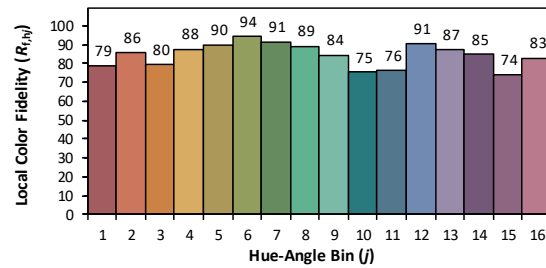
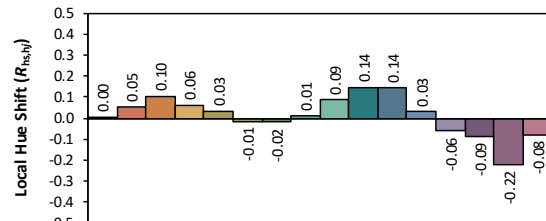
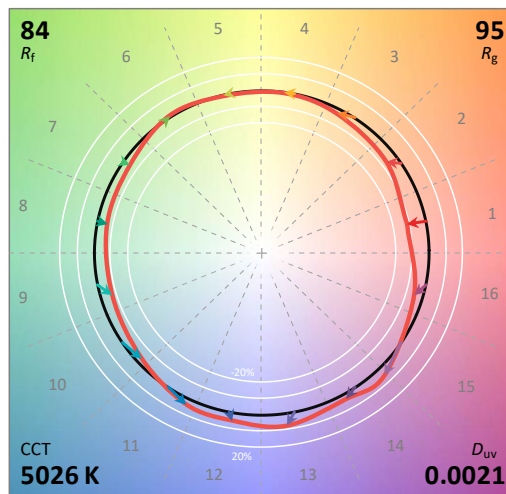
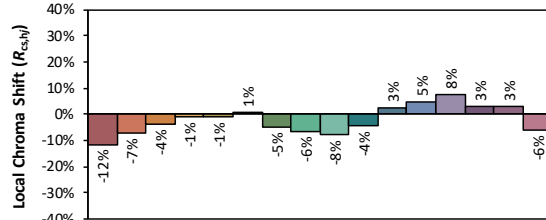
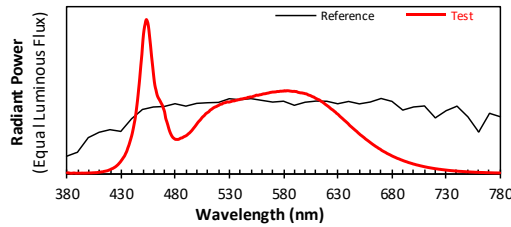
ANSI/IES TM-30-18 Color Rendition Report

Source: 1 CIE F1

Manufacturer: RAB Lighting Inc.

Date: 2024/2/28

Model: RPLED2X4 @25W5000K



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

x 0.3448
 y 0.3555
 u' 0.2097
 v' 0.4865

CIE 13.3-1995
(CRI)

R_a 84
 R_g 14

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	6.20E-06	447	6.17E-04	514	4.20E-04	581	5.37E-04	648	2.72E-04	715	3.94E-05
381	6.20E-06	448	6.99E-04	515	4.25E-04	582	5.35E-04	649	2.65E-04	716	3.81E-05
382	4.60E-06	449	7.73E-04	516	4.29E-04	583	5.37E-04	650	2.59E-04	717	3.69E-05
383	3.50E-06	450	8.67E-04	517	4.32E-04	584	5.36E-04	651	2.53E-04	718	3.56E-05
384	3.40E-06	451	9.30E-04	518	4.35E-04	585	5.36E-04	652	2.48E-04	719	3.46E-05
385	4.30E-06	452	9.67E-04	519	4.39E-04	586	5.35E-04	653	2.42E-04	720	3.33E-05
386	5.20E-06	453	9.96E-04	520	4.42E-04	587	5.34E-04	654	2.37E-04	721	3.23E-05
387	4.60E-06	454	9.85E-04	521	4.47E-04	588	5.33E-04	655	2.31E-04	722	3.14E-05
388	3.40E-06	455	9.56E-04	522	4.50E-04	589	5.32E-04	656	2.25E-04	723	3.04E-05
389	3.60E-06	456	8.95E-04	523	4.50E-04	590	5.33E-04	657	2.20E-04	724	2.93E-05
390	4.30E-06	457	8.29E-04	524	4.56E-04	591	5.31E-04	658	2.14E-04	725	2.87E-05
391	3.80E-06	458	7.56E-04	525	4.58E-04	592	5.32E-04	659	2.09E-04	726	2.76E-05
392	3.80E-06	459	6.93E-04	526	4.60E-04	593	5.28E-04	660	2.04E-04	727	2.67E-05
393	4.20E-06	460	6.26E-04	527	4.62E-04	594	5.26E-04	661	1.98E-04	728	2.60E-05
394	4.50E-06	461	5.72E-04	528	4.65E-04	595	5.24E-04	662	1.93E-04	729	2.51E-05
395	4.00E-06	462	5.42E-04	529	4.63E-04	596	5.23E-04	663	1.88E-04	730	2.43E-05
396	4.40E-06	463	5.12E-04	530	4.64E-04	597	5.23E-04	664	1.83E-04	731	2.35E-05
397	4.20E-06	464	4.94E-04	531	4.66E-04	598	5.21E-04	665	1.78E-04	732	2.26E-05
398	4.70E-06	465	4.81E-04	532	4.68E-04	599	5.20E-04	666	1.74E-04	733	2.20E-05
399	4.90E-06	466	4.68E-04	533	4.71E-04	600	5.18E-04	667	1.70E-04	734	2.12E-05
400	5.30E-06	467	4.55E-04	534	4.71E-04	601	5.17E-04	668	1.64E-04	735	2.05E-05
401	5.30E-06	468	4.42E-04	535	4.72E-04	602	5.14E-04	669	1.61E-04	736	2.00E-05
402	5.50E-06	469	4.20E-04	536	4.75E-04	603	5.09E-04	670	1.56E-04	737	1.94E-05
403	6.00E-06	470	4.00E-04	537	4.76E-04	604	5.08E-04	671	1.51E-04	738	1.87E-05
404	6.50E-06	471	3.60E-04	538	4.79E-04	605	5.05E-04	672	1.47E-04	739	1.84E-05
405	6.70E-06	472	3.38E-04	539	4.79E-04	606	5.01E-04	673	1.43E-04	740	1.76E-05
406	7.30E-06	473	3.15E-04	540	4.82E-04	607	4.98E-04	674	1.39E-04	741	1.70E-05
407	7.30E-06	474	2.90E-04	541	4.83E-04	608	4.96E-04	675	1.35E-04	742	1.63E-05
408	8.40E-06	475	2.69E-04	542	4.84E-04	609	4.91E-04	676	1.31E-04	743	1.59E-05
409	9.30E-06	476	2.54E-04	543	4.86E-04	610	4.87E-04	677	1.28E-04	744	1.55E-05
410	9.90E-06	477	2.41E-04	544	4.87E-04	611	4.84E-04	678	1.24E-04	745	1.52E-05
411	1.13E-05	478	2.32E-04	545	4.89E-04	612	4.80E-04	679	1.21E-04	746	1.45E-05
412	1.25E-05	479	2.27E-04	546	4.89E-04	613	4.78E-04	680	1.17E-04	747	1.41E-05
413	1.30E-05	480	2.23E-04	547	4.94E-04	614	4.73E-04	681	1.14E-04	748	1.38E-05
414	1.56E-05	481	2.22E-04	548	4.94E-04	615	4.68E-04	682	1.10E-04	749	1.31E-05
415	1.65E-05	482	2.22E-04	549	4.96E-04	616	4.64E-04	683	1.07E-04	750	1.27E-05
416	1.83E-05	483	2.23E-04	550	4.97E-04	617	4.59E-04	684	1.04E-04	751	1.25E-05
417	1.96E-05	484	2.27E-04	551	4.96E-04	618	4.53E-04	685	1.01E-04	752	1.19E-05
418	2.22E-05	485	2.31E-04	552	5.01E-04	619	4.48E-04	686	9.81E-05	753	1.16E-05
419	2.51E-05	486	2.32E-04	553	5.02E-04	620	4.43E-04	687	9.58E-05	754	1.12E-05
420	2.80E-05	487	2.36E-04	554	5.05E-04	621	4.37E-04	688	9.26E-05	755	1.09E-05
421	3.19E-05	488	2.40E-04	555	5.08E-04	622	4.32E-04	689	8.97E-05	756	1.06E-05
422	3.42E-05	489	2.43E-04	556	5.07E-04	623	4.26E-04	690	8.72E-05	757	1.01E-05
423	3.86E-05	490	2.47E-04	557	5.08E-04	624	4.20E-04	691	8.42E-05	758	9.80E-06
424	4.26E-05	491	2.52E-04	558	5.11E-04	625	4.15E-04	692	8.18E-05	759	9.60E-06
425	4.77E-05	492	2.58E-04	559	5.11E-04	626	4.10E-04	693	7.93E-05	760	9.40E-06
426	5.37E-05	493	2.64E-04	560	5.13E-04	627	4.04E-04	694	7.73E-05	761	8.90E-06
427	6.00E-05	494	2.71E-04	561	5.16E-04	628	3.99E-04	695	7.46E-05	762	8.60E-06
428	6.81E-05	495	2.78E-04	562	5.17E-04	629	3.91E-04	696	7.20E-05	763	8.50E-06
429	7.59E-05	496	2.87E-04	563	5.17E-04	630	3.87E-04	697	7.03E-05	764	8.30E-06
430	8.56E-05	497	2.96E-04	564	5.19E-04	631	3.81E-04	698	6.79E-05	765	8.10E-06
431	9.53E-05	498	3.05E-04	565	5.21E-04	632	3.73E-04	699	6.60E-05	766	8.00E-06
432	1.06E-04	499	3.14E-04	566	5.22E-04	633	3.67E-04	700	6.34E-05	767	7.50E-06
433	1.16E-04	500	3.24E-04	567	5.24E-04	634	3.61E-04	701	6.18E-05	768	7.20E-06
434	1.31E-04	501	3.33E-04	568	5.26E-04	635	3.54E-04	702	5.98E-05	769	7.10E-06
435	1.45E-04	502	3.41E-04	569	5.27E-04	636	3.48E-04	703	5.77E-05	770	6.90E-06
436	1.67E-04	503	3.48E-04	570	5.28E-04	637	3.42E-04	704	5.62E-05	771	6.60E-06
437	1.85E-04	504	3.57E-04	571	5.28E-04	638	3.36E-04	705	5.46E-05	772	6.40E-06
438	2.08E-04	505	3.66E-04	572	5.29E-04	639	3.29E-04	706	5.27E-05	773	6.30E-06
439	2.32E-04	506	3.72E-04	573	5.29E-04	640	3.23E-04	707	5.10E-05	774	6.00E-06
440	2.58E-04	507	3.78E-04	574	5.32E-04	641	3.15E-04	708	4.96E-05	775	5.80E-06
441	2.92E-04	508	3.87E-04	575	5.32E-04	642	3.08E-04	709	4.78E-05	776	5.60E-06
442	3.28E-04	509	3.92E-04	576	5.32E-04	643	3.02E-04	710	4.63E-05	777	5.60E-06
443	3.67E-04	510	3.97E-04	577	5.34E-04	644	2.96E-04	711	4.47E-05	778	5.40E-06
444	4.19E-04	511	4.02E-04	578	5.33E-04	645	2.90E-04	712	4.34E-05	779	5.40E-06
445	4.78E-04	512	4.10E-04	579	5.34E-04	646	2.84E-04	713	4.19E-05	780	5.40E-06
446	5.46E-04	513	4.15E-04	580	5.34E-04	647	2.78E-04	714	4.05E-05	N/A	N/A

4.0 LM-79 Measurement and Test Results

4.2 Goniophotometer Test

Model No.	RPLED2X4 @25W5000K	Sample ID	240130004-S1
Operate time (Min.)	30	Stabilization time (Min.)	60
Temperature (°C)	24.8	Humidity (%RH)	42.3

Test Method
<p>The Samples were tested according to the IES LM-79-2008.</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	277.0	60	0.096	25.3	0.956
NON-WORST CASE	120.0	60	0.211	25.2	0.996

Test Result

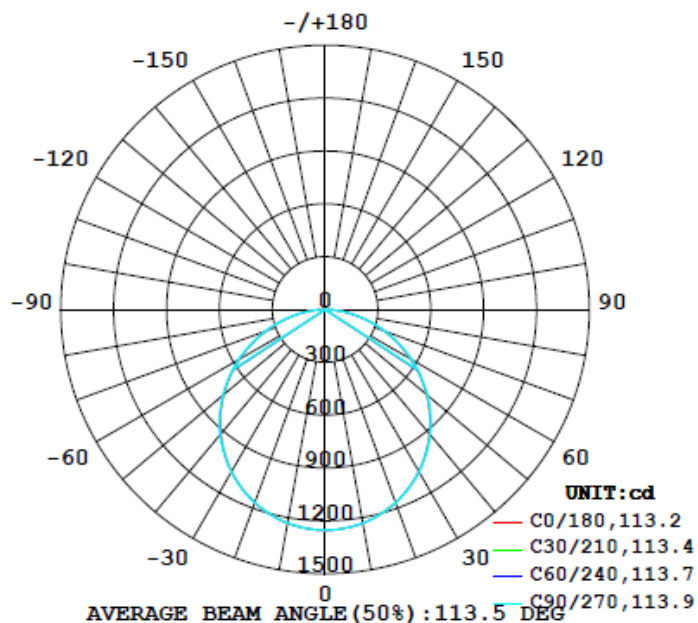
Flux (lm)	Field Angle (10%)		Beam Angle (50%)		Luminous Efficacy (lm/W)	Zonal Lumen Requirement
	C0-180	C90-270	C0-180	C90-270		(0° - 60°)
3646	164.1	164.3	113.1	113.9	144.1	77.9%

UGR		Spacing Criterion	
Crosswise	Endwise	(0° - 180°)	(90° - 270°)
18.7	18.7	1.26	1.28

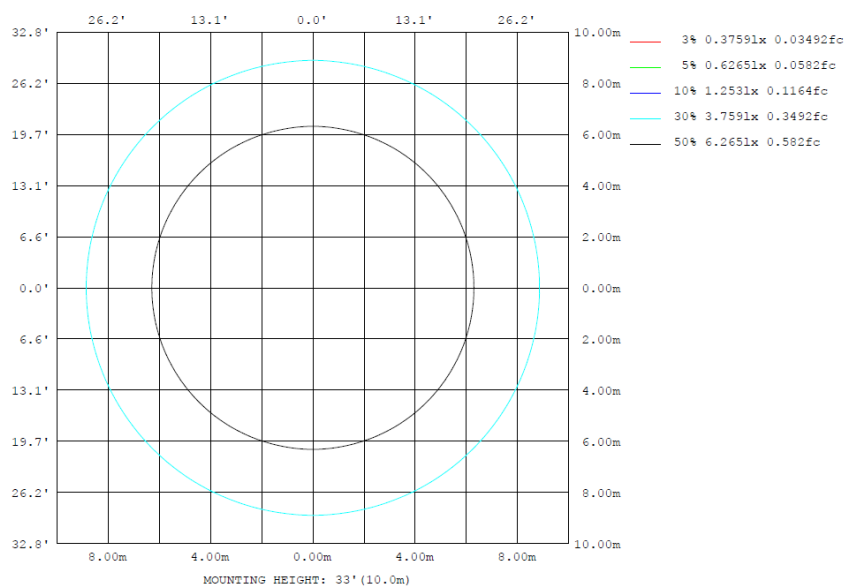
4.2 Goniophotometer Test

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	1231	1231	1232	1231	1231	1231	1232	1231	0- 10	118.5	118.5	3.25,3.25
20	1167	1167	1168	1167	1167	1167	1168	1167	10- 20	339.9	458.4	12.6,12.6
30	1062	1063	1065	1063	1062	1063	1065	1063	20- 30	516.2	974.6	26.7,26.7
40	920.1	924.2	927.6	924.2	920.1	924.2	927.6	924.2	30- 40	624.0	1599	43.9,43.9
50	750.4	755.3	758.6	755.3	750.4	755.3	758.6	755.3	40- 50	649.6	2248	61.7,61.7
60	559.6	562.5	566.3	562.5	559.6	562.5	566.3	562.5	50- 60	590.3	2838	77.9,77.9
70	356.7	357.9	361.0	357.9	356.7	357.9	361.0	357.9	60- 70	455.9	3294	90.4,90.4
80	158.7	159.2	160.7	159.2	158.7	159.2	160.7	159.2	70- 80	271.3	3566	97.8,97.8
90	0	0	0	0	0	0	0	0	80- 90	79.92	3646	100,100
100	0	0	0	0	0	0	0	0	90-100	0	3646	100,100
110	0	0	0	0	0	0	0	0	100-110	0	3646	100,100
120	0	0	0	0	0	0	0	0	110-120	0	3646	100,100
130	0	0	0	0	0	0	0	0	120-130	0	3646	100,100
140	0	0	0	0	0	0	0	0	130-140	0	3646	100,100
150	0	0	0	0	0	0	0	0	140-150	0	3646	100,100
160	0	0	0	0	0	0	0	0	150-160	0	3646	100,100
170	0	0	0	0	0	0	0	0	160-170	0	3646	100,100
180	0	0	0	0	0	0	0	0	170-180	0	3646	100,100
DEG	LUMINOUS INTENSITY:cd									UNIT:lm		

	Zonal (lm)		Total (lm)	Percent
0-10	118.53	0-10	118.53	3.25%
10-20	339.89	0-20	458.42	12.57%
20-30	516.16	0-30	974.58	26.73%
30-40	624.05	0-40	1598.63	43.85%
40-50	649.62	0-50	2248.25	61.67%
50-60	590.26	0-60	2838.51	77.86%
60-70	455.88	0-70	3294.39	90.37%
70-80	271.30	0-80	3565.69	97.81%
80-90	79.92	0-90	3645.61	100.00%
90-100	0.00	0-100	3645.61	100.00%
100-110	0.00	0-110	3645.61	100.00%
110-120	0.00	0-120	3645.61	100.00%
120-130	0.00	0-130	3645.61	100.00%
130-140	0.00	0-140	3645.61	100.00%
140-150	0.00	0-150	3645.61	100.00%
150-160	0.00	0-160	3645.61	100.00%
160-170	0.00	0-170	3645.61	100.00%
170-180	0.00	0-180	3645.61	100.00%

4.2 Goniophotometer Test

UGR – Uncorrected Table:

UGR TABLE - UNCORRECTED

Reflectances											
Ceiling Cavity		70	70	50	50	30	70	70	50	50	30
Walls		50	30	50	30	30	50	30	50	30	30
Floor Cavity		20	20	20	20	20	20	20	20	20	20
Room Size		UGR Viewed Crosswise					UGR Viewed Endwise				
X=2H	Y=2H	9.7	11.3	10.0	11.6	11.9	9.7	11.4	10.1	11.7	12.0
	3H	11.5	13.0	11.9	13.4	13.7	11.6	13.1	12.0	13.4	13.8
	4H	12.3	13.7	12.7	14.0	14.4	12.3	13.7	12.7	14.1	14.5
	6H	12.8	14.1	13.2	14.5	14.9	12.9	14.2	13.3	14.5	14.9
	8H	13.0	14.2	13.4	14.6	15.0	13.1	14.3	13.5	14.7	15.1
	12H	13.1	14.3	13.5	14.7	15.1	13.2	14.4	13.6	14.8	15.2
4H	2H	10.3	11.7	10.7	12.1	12.5	10.4	11.8	10.8	12.1	12.5
	3H	12.4	13.6	12.8	14.0	14.4	12.5	13.7	12.9	14.1	14.5
	4H	13.3	14.4	13.7	14.8	15.2	13.3	14.4	13.8	14.8	15.3
	6H	14.0	14.9	14.4	15.3	15.8	14.0	15.0	14.5	15.4	15.9
	8H	14.2	15.1	14.7	15.5	16.0	14.2	15.1	14.7	15.6	16.0
	12H	14.4	15.2	14.9	15.7	16.1	14.4	15.2	14.9	15.7	16.2
8H	4H	13.6	14.5	14.1	14.9	15.4	13.7	14.5	14.1	15.0	15.5
	6H	14.4	15.2	14.9	15.7	16.1	14.5	15.2	15.0	15.7	16.2
	8H	14.8	15.4	15.3	15.9	16.4	14.8	15.5	15.3	16.0	16.5
	12H	15.0	15.6	15.5	16.1	16.7	15.1	15.7	15.6	16.1	16.7
12H	4H	13.7	14.5	14.2	14.9	15.4	13.7	14.5	14.2	15.0	15.4
	6H	14.5	15.2	15.0	15.6	16.2	14.6	15.2	15.1	15.7	16.2
	8H	14.9	15.5	15.4	16.0	16.5	14.9	15.5	15.4	16.0	16.6

Maximum UGR = 16.7

UGR – Corrected Table:

UGR TABLE - CORRECTED

Reflectances											
Ceiling Cavity	70	70	50	50	30	70	70	50	50	30	
Walls	50	30	50	30	30	50	30	50	30	30	
Floor Cavity	20	20	20	20	20	20	20	20	20	20	
Room Size		UGR Viewed Crosswise					UGR Viewed Endwise				
X=2H	Y=2H	14.2	15.8	14.5	16.1	16.4	14.2	15.9	14.6	16.2	16.5
	3H	16.0	17.5	16.4	17.9	18.2	16.1	17.6	16.5	17.9	18.3
	4H	16.8	18.2	17.2	18.5	18.9	16.8	18.2	17.2	18.6	19.0
	6H	17.3	18.6	17.7	19.0	19.4	17.4	18.7	17.8	19.0	19.4
	8H	17.5	18.7	17.9	19.1	19.5	17.6	18.8	18.0	19.2	19.6
	12H	17.6	18.8	18.0	19.2	19.6	17.7	18.9	18.1	19.3	19.7
4H	2H	14.8	16.2	15.2	16.6	17.0	14.9	16.3	15.3	16.6	17.0
	3H	16.9	18.1	17.3	18.5	18.9	17.0	18.2	17.4	18.6	19.0
	4H	17.8	18.9	18.2	19.3	19.7	17.8	18.9	18.3	19.3	19.8
	6H	18.5	19.4	18.9	19.8	20.3	18.5	19.5	19.0	19.9	20.4
	8H	18.7	19.6	19.2	20.0	20.5	18.7	19.6	19.2	20.1	20.5
	12H	18.9	19.7	19.4	20.2	20.6	18.9	19.7	19.4	20.2	20.7
8H	4H	18.1	19.0	18.6	19.4	19.9	18.2	19.0	18.6	19.5	20.0
	6H	18.9	19.7	19.4	20.2	20.6	19.0	19.7	19.5	20.2	20.7
	8H	19.3	19.9	19.8	20.4	20.9	19.3	20.0	19.8	20.5	21.0
	12H	19.5	20.1	20.0	20.6	21.2	19.6	20.2	20.1	20.6	21.2
12H	4H	18.2	19.0	18.7	19.4	19.9	18.2	19.0	18.7	19.5	19.9
	6H	19.0	19.7	19.5	20.1	20.7	19.1	19.7	19.6	20.2	20.7
	8H	19.4	20.0	19.9	20.5	21.0	19.4	20.0	19.9	20.5	21.1

Maximum UGR = 21.2

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	1253	1253	1252	1252	1253	1253	1252	1253	1252	1252	1253	1253	1253	1253	1252	1252	1253	1253	1252
5	1247	1247	1247	1246	1247	1248	1247	1248	1247	1246	1247	1247	1247	1247	1247	1246	1247	1248	1247
10	1231	1231	1230	1231	1232	1231	1232	1231	1232	1231	1230	1231	1231	1231	1230	1231	1232	1231	1232
15	1204	1204	1204	1204	1205	1204	1205	1204	1205	1204	1204	1204	1204	1204	1204	1204	1205	1204	1205
20	1167	1167	1166	1167	1167	1167	1168	1167	1167	1166	1167	1167	1167	1167	1166	1167	1167	1167	1168
25	1119	1119	1120	1120	1121	1121	1121	1121	1120	1120	1119	1119	1119	1119	1120	1120	1121	1121	1121
30	1062	1062	1063	1063	1065	1064	1065	1064	1065	1063	1063	1062	1062	1062	1063	1063	1065	1064	1065
35	995	996	997	998	999	999	1000	999	998	997	996	995	996	997	998	999	999	999	1000
40	920	921	923	924	926	926	928	926	926	924	923	921	920	921	923	924	926	926	928
45	839	839	841	842	844	844	847	844	844	842	841	839	839	839	841	842	844	844	847
50	750	751	753	755	756	757	759	757	756	755	753	751	750	751	753	755	756	757	759
55	657	657	659	661	662	663	665	663	662	661	659	657	657	657	659	661	662	663	665
60	560	560	561	562	564	564	566	564	564	562	561	560	560	560	561	562	564	564	566
65	459	459	460	461	462	463	465	463	462	461	460	459	459	459	460	461	462	463	465
70	357	357	357	358	359	360	361	360	359	358	357	357	357	357	357	358	359	360	361
75	256	255	256	256	257	258	259	258	257	256	255	256	255	256	256	256	257	258	259
80	159	159	159	159	159	160	161	160	159	159	159	159	159	159	159	159	159	160	161
85	70.1	69.9	69.9	69.9	70.1	70.6	71.6	70.6	70.1	69.9	69.9	69.9	70.1	69.9	69.9	69.9	70.1	70.6	71.6
90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
95	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
105	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
110	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
115	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
120	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
125	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
130	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
135	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
140	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
145	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
150	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
155	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
160	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
165	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
170	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
175	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
180	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Table--2 UNIT: cd

C (DEG) y (DEG)	285	300	315	330	345														
0	1253	1253	1252	1252	1253														
5	1248	1247	1246	1247	1247														
10	1231	1232	1231	1230	1231														
15	1204	1205	1204	1204	1204														
20	1167	1167	1167	1166	1167														
25	1121	1121	1120	1120	1119														
30	1064	1065	1063	1063	1062														
35	999	999	998	997	996														
40	926	926	924	923	921														
45	844	844	842	841	839														
50	757	756	755	753	751														
55	663	662	661	659	657														
60	564	564	562	561	560														
65	463	462	461	460	459														
70	360	359	358	357	357														
75	258	257	256	256	255														
80	160	159	159	159	159														
85	70.6	70.1	69.9	69.9	69.9														
90	0.00	0.00	0.00	0.00	0.00														
95	0.00	0.00	0.00	0.00	0.00														
100	0.00	0.00	0.00	0.00	0.00														
105	0.00	0.00	0.00	0.00	0.00														
110	0.00	0.00	0.00	0.00	0.00														
115	0.00	0.00	0.00	0.00	0.00														
120	0.00	0.00	0.00	0.00	0.00														
125	0.00	0.00	0.00	0.00	0.00														
130	0.00	0.00	0.00	0.00	0.00														
135	0.00	0.00	0.00	0.00	0.00														
140	0.00	0.00	0.00	0.00	0.00														
145	0.00	0.00	0.00	0.00	0.00														
150	0.00	0.00	0.00	0.00	0.00														
155	0.00	0.00	0.00	0.00	0.00														
160	0.00	0.00	0.00	0.00	0.00														
165	0.00	0.00	0.00	0.00	0.00														
170	0.00	0.00	0.00	0.00	0.00														
175	0.00	0.00	0.00	0.00	0.00														
180	0.00	0.00	0.00	0.00	0.00														

4.0 LM-79 Measurement and Test Results

4.3 THD and PF Test

Model No.	RPLED2X4 @25W5000K	Sample ID	240130004-S1
Temperature (°C)	25.4	Humidity (%RH)	41.0

Test Method
<p>The samples were tested according to the ANSI C82.77:2014</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(%)
120.0	60	0.211	25.2	0.996	7.11
277.0	60	0.096	25.3	0.956	8.39

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	2023-08-25	2024-08-24
NTC-F01-019	Temperature & Humidity Meter	2023-11-06	2024-11-05

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