

Photometric Test Report

Relevant Standards

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

Prepared For

RAB Lighting Inc.

Prepared By

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Issue Date: 2024-02-28

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		4749
Minimum Luminaire Efficacy (lm/W) (Goniophotometer – Section 4.2)	IES LM-79-2008	Standard	Premium	144.8
		110	125	
Power (Input Wattage) (W) (Goniophotometer – Section 4.2)	IES LM-79-2008	Worst Case		32.8
Total Harmonic Distortion (A%) (THD & PF – Section 4.3)	ANSI C82.77:2014	20.00%	120V	8.42
			277V	8.39
Power Factor (THD & PF – Section 4.3)	ANSI C82.77:2014	0.9	120V	0.995
			277V	0.983
Allowable CCTs* (K) (Integrating Sphere – Section 4.1)	IES LM-79-2008	7 steps	3985±275	4203
		4 steps	3985±154	
Minimum CRI (Integrating Sphere – Section 4.1)	IES LM-79-2008 CIE13.3-1995	≥80		84.9
Minimum R9 (Integrating Sphere – Section 4.1)	IES LM-79-2008 CIE13.3-1995	≥0		18
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%		-11%
Zonal Lumen Requirement (0°-60°) (Goniophotometer – Section 4.2)	IES LM-79-2008	≥75%		77.7%
Discomfort Glare (UGR) (Goniophotometer – Section 4.2)	IES LM-79-2008	Standard	Premium	19.7
		N/A	<22	
Spacing Criterion (Goniophotometer – Section 4.2)	IES LM-79-2008	0°-180°	1.0-2.0	1.28
		90°-270°	1.0-2.0	1.28
Input Voltage (V)				
(Goniophotometer – Section 4.2)	IES LM-79-2008	Worst Cast		120.0
(Goniophotometer – Section 4.2)		Non-Worst Case		277.0
Input Current (A)				
(Goniophotometer – Section 4.2)	IES LM-79-2008	Worst Case		0.275
(Goniophotometer – Section 4.2)		Non-Worst Case		0.119
Power (Input Wattage – W)				
(Goniophotometer – Section 4.2)	IES LM-79-2008	Worst Case		32.8
(Goniophotometer – Section 4.2)		Non-Worst Case		32.5

2.0 Test List

Test Item	Test	Test Date	Model Number	Sample No.
1	Integrating Sphere Test	2024-02-23	RPLED2X4 @35W4000K	240130004-S1
2	Goniophotometer Test	2024-02-23	RPLED2X4 @35W4000K	240130004-S1
3	THD and PF Test	2024-02-23	RPLED2X4 @35W4000K	240130004-S1

Remark (If any)

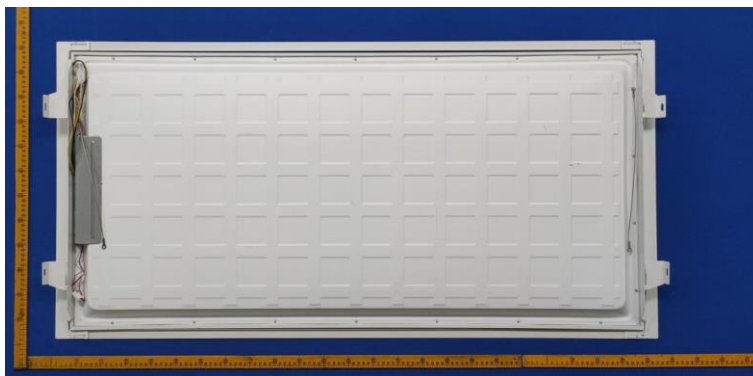
1. The results contained in this report pertain only to the tested samples.
2. Test Troffer is Lithonia 2GT8 lensed 2x4.
3. This report shall not be reproduced, no limited part or full, without approval of Dongguan New Testing Centre Co., Ltd.
4. This report does not imply product certification, approval,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

3.0 Product Description

Luminaire Description: Model No. RPLED2X4 @35W4000K, 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 @35W4000K	Sample ID	240130004-S1
Operate time (Min.)	10	Stabilization time (Min.)	60
Temperature (°C)	25.4	Humidity (%RH)	41.0

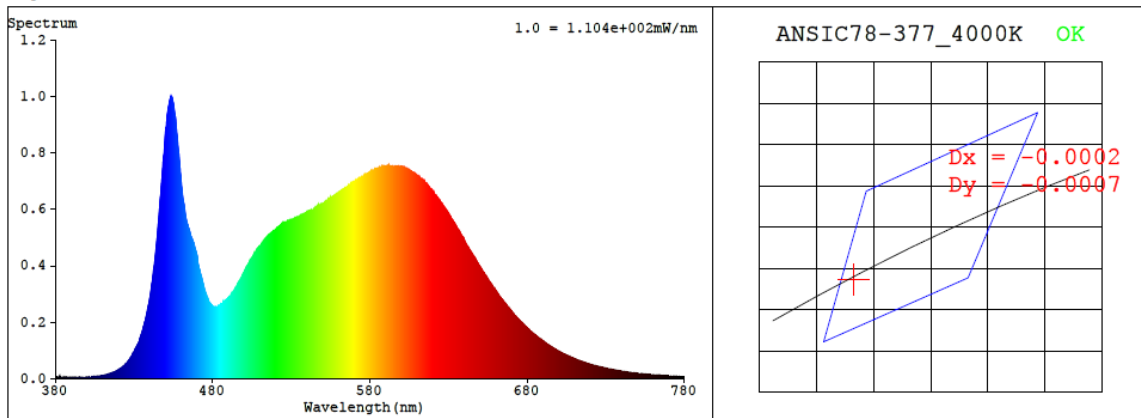
Test Method
<p>The Samples were tested according to the IES LM-79-2008.</p> <p>Photometric parameters were measured using an integrating sphere, a spectroradiometer and software. The ambient temperature condition inside the sphere was maintained at 25±1°C.</p> <p>The sample measurements were made using 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	0.275	32.8	0.995
277.0	60	0.119	32.5	0.983

CCT (K)	CRI	R9	Duv	Rf	Rg	IES Rcs,h1
4203	84.9	18	-0.0003	84	95	-11%

4.1 Integrating Sphere Test



Colorimetric Parameters

Chromaticity Coordinate: $x = 0.3717$ $y = 0.3705$ / $u' = 0.2218$ $v' = 0.4975$ ($duv = -2.77e-04$)

CCT= 4203K Prcp WL: $L_d = 578.4\text{nm}$ Purity=22.7%

Peak WL: $L_p = 453\text{nm}$ FWHM: $\approx 22.2\text{nm}$ Ratio: R=18.0% G=77.9% B=4.1%

Render Index: $R_a = 84.9$ AvgR = 78.8 TM30: $R_f = 85$ $R_g = 95$

EEL: 0.09297 A++ Highest

R1 =84 R2 =92 R3 =96 R4 =83 R5 =83 R6 =87 R7 =87

R8 =68 R9 =18 R10=79 R11=82 R12=61 R13=86 R14=98 R15=79

4.1 Integrating Sphere Test

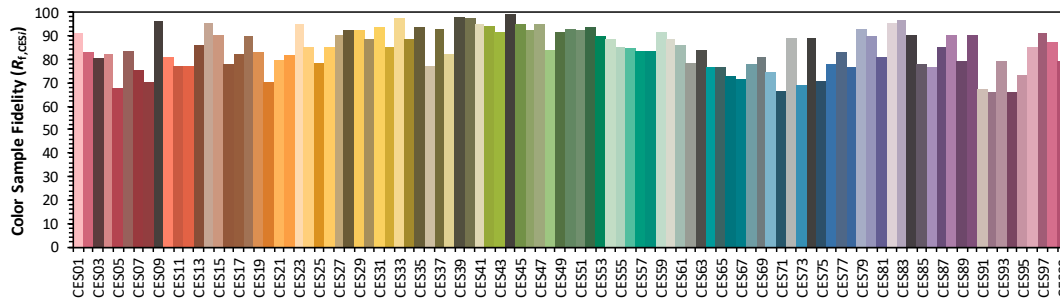
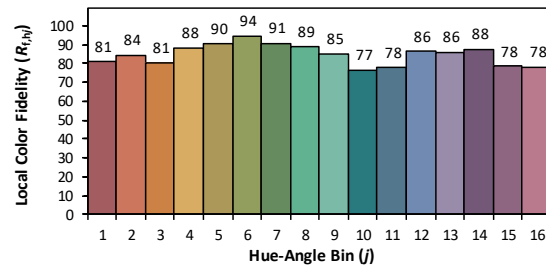
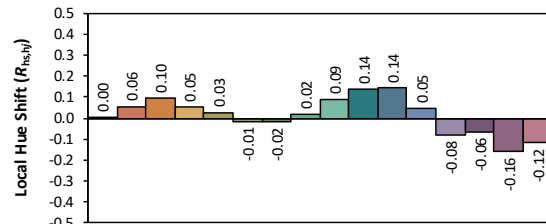
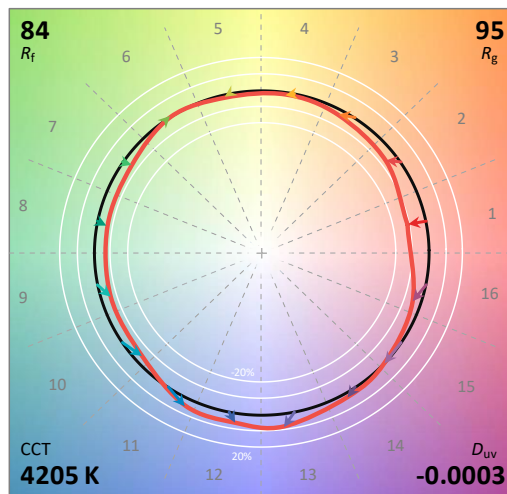
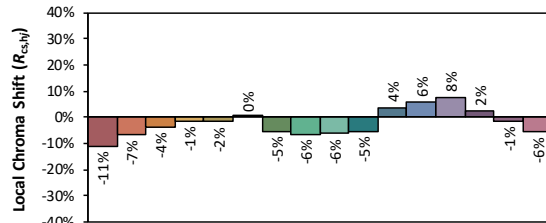
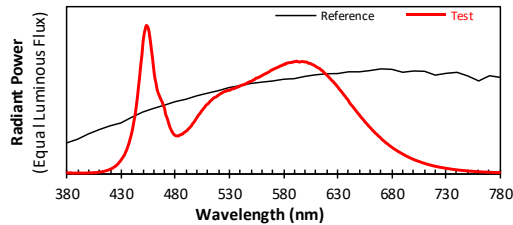
ANSI/IES TM-30-18 Color Rendition Report

Source: 1 CIE F1

Manufacturer: RAB Lighting Inc.

Date: 2024/2/28

Model: RPLED2X4 @35W4000K



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

x 0.3717
 y 0.3704
 u' 0.2218
 v' 0.4974

CIE 13.3-1995
(CRI)

R_a 85
 R_g 18

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	6.90E-06	447	6.58E-04	514	4.99E-04	581	7.38E-04	648	4.15E-04	715	6.04E-05
381	5.80E-06	448	7.34E-04	515	5.06E-04	582	7.36E-04	649	4.05E-04	716	5.84E-05
382	4.50E-06	449	7.94E-04	516	5.11E-04	583	7.43E-04	650	3.97E-04	717	5.66E-05
383	8.10E-06	450	8.79E-04	517	5.14E-04	584	7.44E-04	651	3.88E-04	718	5.45E-05
384	4.00E-06	451	9.34E-04	518	5.18E-04	585	7.45E-04	652	3.78E-04	719	5.30E-05
385	5.00E-06	452	9.68E-04	519	5.24E-04	586	7.46E-04	653	3.70E-04	720	5.10E-05
386	4.00E-06	453	9.94E-04	520	5.28E-04	587	7.47E-04	654	3.62E-04	721	5.01E-05
387	5.60E-06	454	9.91E-04	521	5.35E-04	588	7.48E-04	655	3.52E-04	722	4.78E-05
388	3.90E-06	455	9.76E-04	522	5.38E-04	589	7.51E-04	656	3.44E-04	723	4.68E-05
389	4.20E-06	456	9.35E-04	523	5.42E-04	590	7.52E-04	657	3.36E-04	724	4.53E-05
390	4.10E-06	457	8.82E-04	524	5.47E-04	591	7.53E-04	658	3.28E-04	725	4.38E-05
391	5.30E-06	458	8.23E-04	525	5.51E-04	592	7.57E-04	659	3.20E-04	726	4.23E-05
392	4.90E-06	459	7.66E-04	526	5.54E-04	593	7.53E-04	660	3.12E-04	727	4.11E-05
393	5.00E-06	460	7.00E-04	527	5.54E-04	594	7.51E-04	661	3.04E-04	728	4.02E-05
394	4.50E-06	461	6.44E-04	528	5.60E-04	595	7.50E-04	662	2.96E-04	729	3.87E-05
395	4.40E-06	462	6.10E-04	529	5.59E-04	596	7.52E-04	663	2.88E-04	730	3.70E-05
396	4.70E-06	463	5.69E-04	530	5.61E-04	597	7.53E-04	664	2.81E-04	731	3.61E-05
397	5.60E-06	464	5.44E-04	531	5.64E-04	598	7.53E-04	665	2.73E-04	732	3.51E-05
398	5.20E-06	465	5.27E-04	532	5.68E-04	599	7.52E-04	666	2.67E-04	733	3.39E-05
399	5.60E-06	466	5.09E-04	533	5.70E-04	600	7.50E-04	667	2.60E-04	734	3.27E-05
400	5.70E-06	467	4.93E-04	534	5.72E-04	601	7.50E-04	668	2.52E-04	735	3.17E-05
401	5.90E-06	468	4.78E-04	535	5.74E-04	602	7.48E-04	669	2.47E-04	736	3.08E-05
402	6.10E-06	469	4.56E-04	536	5.79E-04	603	7.42E-04	670	2.40E-04	737	2.93E-05
403	6.70E-06	470	4.38E-04	537	5.80E-04	604	7.41E-04	671	2.32E-04	738	2.85E-05
404	7.50E-06	471	3.99E-04	538	5.84E-04	605	7.40E-04	672	2.25E-04	739	2.80E-05
405	7.60E-06	472	3.81E-04	539	5.85E-04	606	7.36E-04	673	2.20E-04	740	2.67E-05
406	7.50E-06	473	3.59E-04	540	5.91E-04	607	7.32E-04	674	2.13E-04	741	2.63E-05
407	8.70E-06	474	3.34E-04	541	5.94E-04	608	7.30E-04	675	2.07E-04	742	2.50E-05
408	9.40E-06	475	3.12E-04	542	5.95E-04	609	7.25E-04	676	2.02E-04	743	2.44E-05
409	1.04E-05	476	2.96E-04	543	5.98E-04	610	7.20E-04	677	1.97E-04	744	2.35E-05
410	1.06E-05	477	2.81E-04	544	6.00E-04	611	7.15E-04	678	1.90E-04	745	2.30E-05
411	1.24E-05	478	2.70E-04	545	6.04E-04	612	7.12E-04	679	1.85E-04	746	2.22E-05
412	1.40E-05	479	2.62E-04	546	6.06E-04	613	7.08E-04	680	1.80E-04	747	2.15E-05
413	1.48E-05	480	2.57E-04	547	6.13E-04	614	7.03E-04	681	1.74E-04	748	2.08E-05
414	1.68E-05	481	2.55E-04	548	6.14E-04	615	6.96E-04	682	1.69E-04	749	2.03E-05
415	1.86E-05	482	2.55E-04	549	6.19E-04	616	6.92E-04	683	1.65E-04	750	1.92E-05
416	2.09E-05	483	2.55E-04	550	6.20E-04	617	6.84E-04	684	1.60E-04	751	1.87E-05
417	2.29E-05	484	2.59E-04	551	6.24E-04	618	6.76E-04	685	1.55E-04	752	1.84E-05
418	2.55E-05	485	2.63E-04	552	6.29E-04	619	6.71E-04	686	1.50E-04	753	1.79E-05
419	2.81E-05	486	2.65E-04	553	6.32E-04	620	6.63E-04	687	1.47E-04	754	1.74E-05
420	3.13E-05	487	2.70E-04	554	6.38E-04	621	6.56E-04	688	1.42E-04	755	1.69E-05
421	3.52E-05	488	2.77E-04	555	6.44E-04	622	6.48E-04	689	1.38E-04	756	1.61E-05
422	3.83E-05	489	2.81E-04	556	6.43E-04	623	6.41E-04	690	1.34E-04	757	1.57E-05
423	4.39E-05	490	2.87E-04	557	6.47E-04	624	6.32E-04	691	1.30E-04	758	1.52E-05
424	4.79E-05	491	2.92E-04	558	6.51E-04	625	6.25E-04	692	1.26E-04	759	1.45E-05
425	5.39E-05	492	3.01E-04	559	6.54E-04	626	6.19E-04	693	1.22E-04	760	1.42E-05
426	6.00E-05	493	3.07E-04	560	6.60E-04	627	6.10E-04	694	1.18E-04	761	1.37E-05
427	6.76E-05	494	3.16E-04	561	6.63E-04	628	6.02E-04	695	1.15E-04	762	1.34E-05
428	7.65E-05	495	3.24E-04	562	6.68E-04	629	5.93E-04	696	1.11E-04	763	1.29E-05
429	8.58E-05	496	3.36E-04	563	6.71E-04	630	5.85E-04	697	1.07E-04	764	1.28E-05
430	9.54E-05	497	3.45E-04	564	6.74E-04	631	5.75E-04	698	1.04E-04	765	1.21E-05
431	1.06E-04	498	3.55E-04	565	6.78E-04	632	5.65E-04	699	1.01E-04	766	1.17E-05
432	1.18E-04	499	3.67E-04	566	6.82E-04	633	5.57E-04	700	9.73E-05	767	1.17E-05
433	1.28E-04	500	3.78E-04	567	6.85E-04	634	5.48E-04	701	9.45E-05	768	1.13E-05
434	1.46E-04	501	3.89E-04	568	6.92E-04	635	5.39E-04	702	9.15E-05	769	1.05E-05
435	1.62E-04	502	3.99E-04	569	6.96E-04	636	5.28E-04	703	8.88E-05	770	1.02E-05
436	1.83E-04	503	4.08E-04	570	6.98E-04	637	5.21E-04	704	8.62E-05	771	1.02E-05
437	2.04E-04	504	4.20E-04	571	7.03E-04	638	5.10E-04	705	8.34E-05	772	9.80E-06
438	2.30E-04	505	4.28E-04	572	7.06E-04	639	5.02E-04	706	8.11E-05	773	9.60E-06
439	2.57E-04	506	4.38E-04	573	7.09E-04	640	4.92E-04	707	7.83E-05	774	9.10E-06
440	2.88E-04	507	4.46E-04	574	7.12E-04	641	4.79E-04	708	7.57E-05	775	9.20E-06
441	3.27E-04	508	4.57E-04	575	7.15E-04	642	4.69E-04	709	7.34E-05	776	8.90E-06
442	3.67E-04	509	4.64E-04	576	7.19E-04	643	4.60E-04	710	7.13E-05	777	8.30E-06
443	4.08E-04	510	4.69E-04	577	7.23E-04	644	4.52E-04	711	6.88E-05	778	8.20E-06
444	4.64E-04	511	4.77E-04	578	7.25E-04	645	4.43E-04	712	6.63E-05	779	8.30E-06
445	5.23E-04	512	4.85E-04	579	7.29E-04	646	4.33E-04	713	6.44E-05	780	8.30E-06
446	5.93E-04	513	4.92E-04	580	7.31E-04	647	4.23E-04	714	6.19E-05	N/A	N/A

4.0 LM-79 Measurement and Test Results

4.2 Goniophotometer Test

Model No.	RPLED2X4 @35W4000K	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	120.0	60	0.275	32.8	0.995
NON-WORST CASE	277.0	60	0.119	32.5	0.983

Test Result

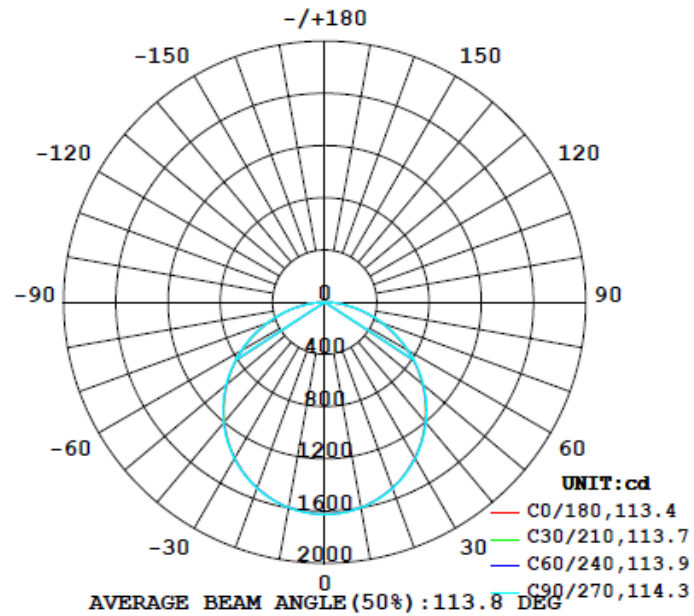
Flux (lm)	Field Angle (10%)		Beam Angle (50%)		Luminous Efficacy (lm/W)	Zonal Lumen Requirement
	C0-180	C90-270	C0-180	C90-270		(0° - 60°)
4749	164.3	164.6	113.3	114.1	144.8	77.7%

UGR		Spacing Criterion	
Crosswise	Endwise	(0° - 180°)	(90° - 270°)
19.6	19.7	1.28	1.28

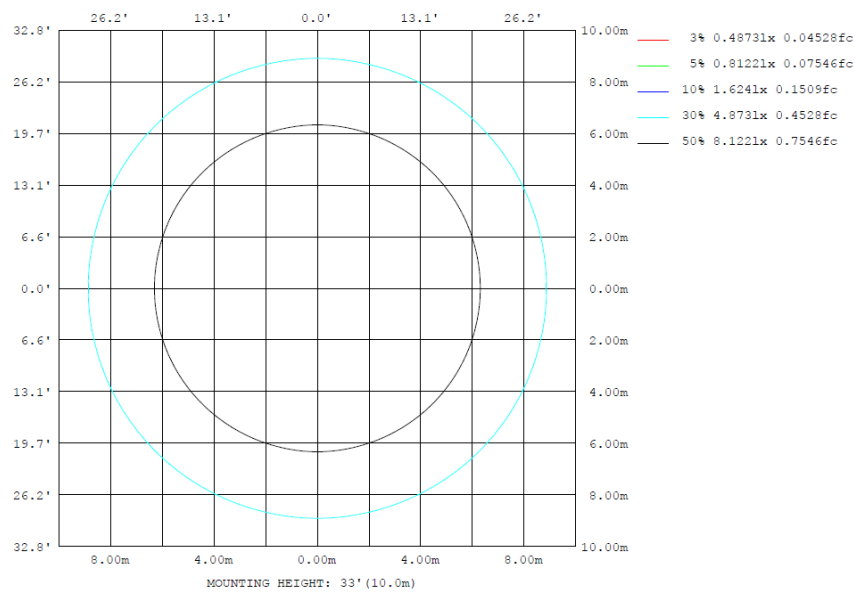
4.2 Goniophotometer Test

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	φ zone	φ total	lum, lamp
10	1598	1597	1598	1597	1598	1597	1598	1597	0- 10	153.8	153.8	3.24,3.24
20	1515	1516	1518	1516	1515	1516	1518	1516	10- 20	441.2	595.0	12.5,12.5
30	1379	1382	1386	1382	1379	1382	1386	1382	20- 30	670.4	1265	26.6,26.6
40	1196	1202	1207	1202	1196	1202	1207	1202	30- 40	811.2	2077	43.7,43.7
50	976.8	983.2	988.6	983.2	976.8	983.2	988.6	983.2	40- 50	845.2	2922	61.5,61.5
60	729.4	734.0	739.7	734.0	729.4	734.0	739.7	734.0	50- 60	768.8	3690	77.7,77.7
70	466.3	468.4	472.8	468.4	466.3	468.4	472.8	468.4	60- 70	595.3	4286	90.2,90.2
80	209.2	210.3	212.8	210.3	209.2	210.3	212.8	210.3	70- 80	355.9	4642	97.7,97.7
90	0	0	0	0	0	0	0	0	80- 90	107.1	4749	100,100
100	0	0	0	0	0	0	0	0	90-100	0	4749	100,100
110	0	0	0	0	0	0	0	0	100-110	0	4749	100,100
120	0	0	0	0	0	0	0	0	110-120	0	4749	100,100
130	0	0	0	0	0	0	0	0	120-130	0	4749	100,100
140	0	0	0	0	0	0	0	0	130-140	0	4749	100,100
150	0	0	0	0	0	0	0	0	140-150	0	4749	100,100
160	0	0	0	0	0	0	0	0	150-160	0	4749	100,100
170	0	0	0	0	0	0	0	0	160-170	0	4749	100,100
180	0	0	0	0	0	0	0	0	170-180	0	4749	100,100
DEG	LUMINOUS INTENSITY:cd									UNIT:lm		

Zonal (lm)		Total (lm)		Percent
0-10	153.79	0-10	153.79	3.24%
10-20	441.20	0-20	594.99	12.53%
20-30	670.41	0-30	1265.40	26.65%
30-40	811.16	0-40	2076.56	43.73%
40-50	845.17	0-50	2921.73	61.53%
50-60	768.77	0-60	3690.50	77.71%
60-70	595.26	0-70	4285.76	90.25%
70-80	355.94	0-80	4641.70	97.74%
80-90	107.10	0-90	4748.80	100.00%
90-100	0.00	0-100	4748.80	100.00%
100-110	0.00	0-110	4748.80	100.00%
110-120	0.00	0-120	4748.80	100.00%
120-130	0.00	0-130	4748.80	100.00%
130-140	0.00	0-140	4748.80	100.00%
140-150	0.00	0-150	4748.80	100.00%
150-160	0.00	0-160	4748.80	100.00%
160-170	0.00	0-170	4748.80	100.00%
170-180	0.00	0-180	4748.80	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	30
Walls	50	30	50	30	30	50	30	50	30	30	30
Floor Cavity	20	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	14.6	15.0
	8H	13.0	14.3	13.4	14.7	15.1	13.1	14.3	13.5	14.7	15.1
	12H	13.2	14.4	13.6	14.7	15.2	13.2	14.4	13.7	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	13.4	14.4	13.8	14.8	15.3
	6H	14.0	14.9	14.4	15.4	15.8	14.0	15.0	14.5	15.4	15.9
	8H	14.2	15.1	14.7	15.6	16.0	14.3	15.2	14.7	15.6	16.1
	12H	14.4	15.2	14.9	15.7	16.2	14.5	15.3	15.0	15.8	16.2
8H	4H	13.6	14.5	14.1	15.0	15.4	13.7	14.6	14.1	15.0	15.5
	6H	14.5	15.2	15.0	15.7	16.2	14.5	15.3	15.0	15.7	16.2
	8H	14.8	15.5	15.3	16.0	16.5	14.9	15.5	15.4	16.0	16.5
	12H	15.1	15.7	15.6	16.2	16.7	15.1	15.7	15.6	16.2	16.8
12H	4H	13.7	14.5	14.2	15.0	15.4	13.7	14.5	14.2	15.0	15.5
	6H	14.6	15.2	15.1	15.7	16.2	14.6	15.3	15.1	15.7	16.3
	8H	14.9	15.5	15.5	16.0	16.6	15.0	15.6	15.5	16.1	16.6

Maximum UGR = 16.8

UGR – Corrected Table:

UGR TABLE - CORRECTED

Reflectances											
Ceiling Cavity	70	70	50	50	30	70	70	50	50	30	30
Walls	50	30	50	30	30	50	30	50	30	30	30
Floor Cavity	20	20	20	20	20	20	20	20	20	20	20
Room Size											
UGR Viewed Crosswise						UGR Viewed Endwise					
X=2H	Y=2H	15.1	16.7	15.4	17.0	17.3	15.1	16.8	15.5	17.1	17.4
	3H	16.9	18.4	17.3	18.8	19.1	17.0	18.5	17.4	18.8	19.2
	4H	17.7	19.1	18.1	19.4	19.8	17.7	19.1	18.1	19.5	19.9
	6H	18.2	19.5	18.6	19.9	20.3	18.3	19.6	18.7	20.0	20.4
	8H	18.4	19.7	18.8	20.1	20.5	18.5	19.7	18.9	20.1	20.5
	12H	18.6	19.8	19.0	20.1	20.6	18.6	19.8	19.1	20.2	20.6
4H	2H	15.7	17.1	16.1	17.5	17.9	15.8	17.2	16.2	17.5	17.9
	3H	17.8	19.0	18.2	19.4	19.8	17.9	19.1	18.3	19.5	19.9
	4H	18.7	19.8	19.1	20.2	20.6	18.8	19.8	19.2	20.2	20.7
	6H	19.4	20.3	19.8	20.8	21.2	19.4	20.4	19.9	20.8	21.3
	8H	19.6	20.5	20.1	21.0	21.4	19.7	20.6	20.1	21.0	21.5
	12H	19.8	20.6	20.3	21.1	21.6	19.9	20.7	20.4	21.2	21.6
8H	4H	19.0	19.9	19.5	20.4	20.8	19.1	20.0	19.5	20.4	20.9
	6H	19.9	20.6	20.4	21.1	21.6	19.9	20.7	20.4	21.1	21.6
	8H	20.2	20.9	20.7	21.4	21.9	20.3	20.9	20.8	21.4	21.9
	12H	20.5	21.1	21.0	21.6	22.1	20.5	21.1	21.0	21.6	22.2
12H	4H	19.1	19.9	19.6	20.4	20.8	19.1	19.9	19.6	20.4	20.9
	6H	20.0	20.6	20.5	21.1	21.6	20.0	20.7	20.5	21.1	21.7
	8H	20.3	20.9	20.9	21.4	22.0	20.4	21.0	20.9	21.5	22.0

Maximum UGR = 22.2

4.2 Goniophotometer Test

Luminous Distribution Intensity Data

Table--1

UNIT: cd

C (DEG) γ (DEG)	0	15	30	45	60	75	90	105	120	135	150	165	180	195	210	225	240	255	270
0	1624	1624	1625	1625	1625	1624	1626	1624	1625	1625	1625	1624	1624	1624	1625	1625	1625	1624	1626
5	1618	1618	1618	1618	1618	1618	1620	1618	1618	1618	1618	1618	1618	1618	1618	1618	1618	1618	1620
10	1598	1598	1597	1597	1597	1597	1598	1597	1597	1597	1597	1598	1598	1598	1597	1597	1597	1597	1598
15	1563	1564	1563	1563	1563	1563	1565	1563	1563	1563	1563	1564	1563	1564	1563	1563	1563	1563	1565
20	1515	1514	1515	1516	1515	1515	1518	1515	1515	1516	1515	1514	1515	1514	1515	1516	1515	1515	1518
25	1452	1453	1455	1455	1455	1455	1458	1455	1455	1455	1455	1453	1452	1453	1455	1455	1455	1455	1458
30	1379	1380	1381	1382	1382	1382	1386	1382	1382	1382	1381	1380	1379	1380	1381	1382	1382	1382	1386
35	1293	1294	1296	1297	1298	1298	1302	1298	1298	1297	1296	1294	1293	1294	1296	1297	1298	1298	1302
40	1196	1198	1200	1202	1203	1203	1207	1203	1203	1202	1200	1198	1196	1198	1200	1202	1203	1203	1207
45	1091	1092	1094	1096	1098	1099	1102	1099	1098	1096	1094	1092	1091	1092	1094	1096	1098	1099	1102
50	977	977	979	983	984	985	989	985	984	983	979	977	977	977	979	983	984	985	989
55	855	856	858	861	862	864	867	864	862	861	858	856	855	856	858	861	862	864	867
60	729	730	731	734	734	736	740	736	734	734	731	730	729	730	731	734	734	736	740
65	599	599	600	602	603	604	607	604	603	602	600	599	599	599	600	602	603	604	607
70	466	466	467	468	469	470	473	470	469	468	467	466	466	466	467	468	469	470	473
75	335	335	336	337	337	338	340	338	337	337	336	335	335	335	336	337	337	338	340
80	209	209	210	210	210	211	213	211	210	210	210	209	209	209	210	210	210	211	213
85	94.3	94.6	94.2	94.4	94.8	95.4	96.7	95.4	94.8	94.4	94.2	94.6	94.3	94.6	94.2	94.4	94.8	95.4	96.7
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) γ (DEG)	285	300	315	330	345														
0	1624	1625	1625	1625	1624														
5	1618	1618	1618	1618	1618														
10	1597	1597	1597	1597	1598														
15	1563	1563	1563	1563	1564														
20	1515	1515	1516	1515	1514														
25	1455	1455	1455	1455	1453														
30	1382	1382	1382	1381	1380														
35	1298	1298	1297	1296	1294														
40	1203	1203	1202	1200	1198														
45	1099	1098	1096	1094	1092														
50	985	984	983	979	977														
55	864	862	861	858	856														
60	736	734	734	731	730														
65	604	603	602	600	599														
70	470	469	468	467	466														
75	338	337	337	336	335														
80	211	210	210	210	209														
85	95.4	94.8	94.4	94.2	94.6														
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 @35W4000K	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	0.275	32.8	0.995	8.42
277.0	60	0.119	32.5	0.983	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*****