

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		4554
Minimum Luminaire Efficacy (lm/W) (Goniophotometer – Section 4.2)	IES LM-79-2008	Standard	Premium	134.7
		110	125	
Power (Input Wattage) (W) (Goniophotometer – Section 4.2)	IES LM-79-2008	Worst Case		33.8
Total Harmonic Distortion (A%) (THD & PF – Section 4.3)	ANSI C82.77:2014	20.00%	120V	9.03
			277V	8.81
Power Factor (THD & PF – Section 4.3)	ANSI C82.77:2014	0.9	120V	0.996
			277V	0.985
Allowable CCTs* (K) (Integrating Sphere – Section 4.1)	IES LM-79-2008	7 steps	3465±245	3472
		4 steps	3465±124	
Minimum CRI (Integrating Sphere – Section 4.1)	IES LM-79-2008 CIE13.3-1995	≥80		83.4
Minimum R9 (Integrating Sphere – Section 4.1)	IES LM-79-2008 CIE13.3-1995	≥0		10
Minimum Rf (Integrating Sphere – Section 4.1)	ANSI/IES TM-30-18	≥70		85
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%		77.7%
Discomfort Glare (UGR) (Goniophotometer – Section 4.2)	IES LM-79-2008	Standard	Premium	19.6
		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		0.283
(Goniophotometer – Section 4.2)		Non-Worst Case		0.123
Power (Input Wattage – W)				
(Goniophotometer – Section 4.2)	IES LM-79-2008	Worst Case		33.8
(Goniophotometer – Section 4.2)		Non-Worst Case		33.6

2.0 Test List

Test Item	Test	Test Date	Model Number	Sample No.
1	Integrating Sphere Test	2024-02-23	RPLED2X4 @35W3500K	240130004-S1
2	Goniophotometer Test	2024-02-23	RPLED2X4 @35W3500K	240130004-S1
3	THD and PF Test	2024-02-23	RPLED2X4 @35W3500K	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 @35W3500K, 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 @35W3500K	Sample ID	240130004-S1
Operate time (Min.)	10	Stabilization time (Min.)	60
Temperature (°C)	25.4	Humidity (%RH)	41.0

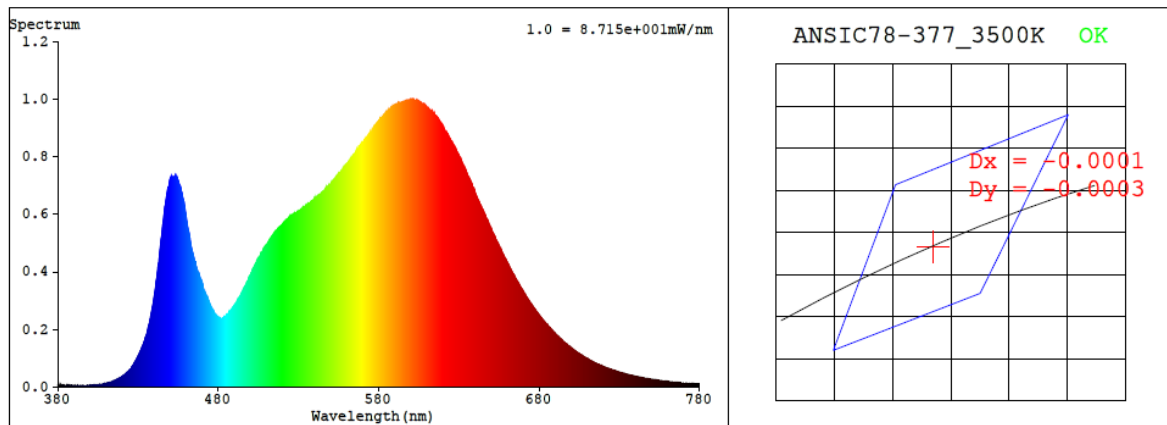
Test Method
<p>The Samples were tested according to the IES LM-79-2008.</p> <p>Photometric parameters were measured using an integrating sphere, a spectroradiometer and software. The ambient temperature condition inside the sphere was maintained at 25±1°C.</p> <p>The sample measurements were made using 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	0.283	33.8	0.996
277.0	60	0.123	33.6	0.985

CCT (K)	CRI	R9	Duv	Rf	Rg	IES Rcs,h1
3472	83.4	10	-0.0001	85	95	-12%

4.1 Integrating Sphere Test



Colorimetric Parameters

Chromaticity Coordinate: $x = 0.4067$ $y = 0.3912$ / $u' = 0.2365$ $v' = 0.5117$ ($duv = -1.15e-04$)

CCT= 3472K Prcp WL: $L_d = 581.0nm$ Purity=39.5%

Peak WL: $L_p = 601nm$ FWHM: $= 144.0nm$ Ratio: $R = 20.4\%$ $G = 76.4\%$ $B = 3.1\%$

Render Index: $R_a = 83.4$ AvgR = 77.3 TM30: $R_f = 84$ $R_g = 96$

EEL: 0.10006 A++ Highest

R1 =82 R2 =91 R3 =96 R4 =82 R5 =82 R6 =88 R7 =85

R8 =63 R9 =10 R10=78 R11=81 R12=66 R13=84 R14=98 R15=75

4.1 Integrating Sphere Test

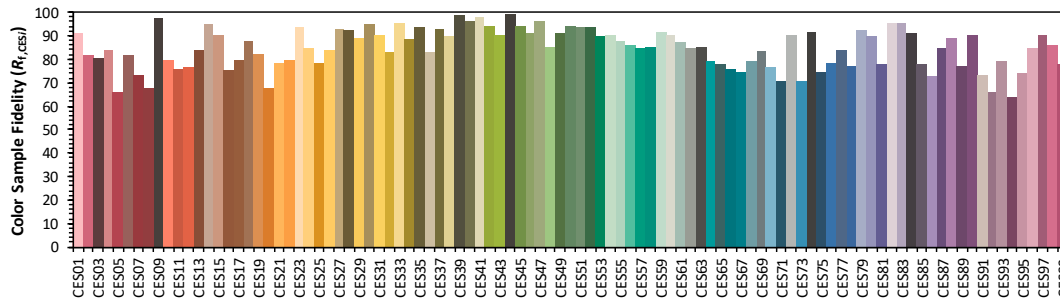
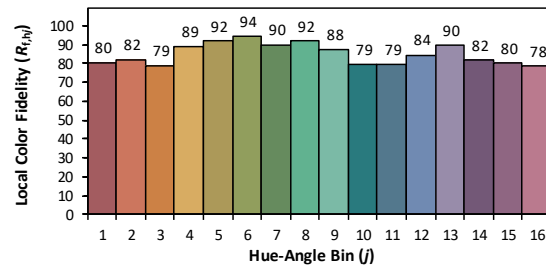
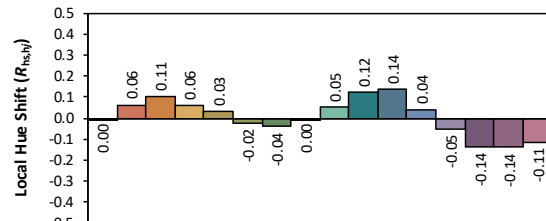
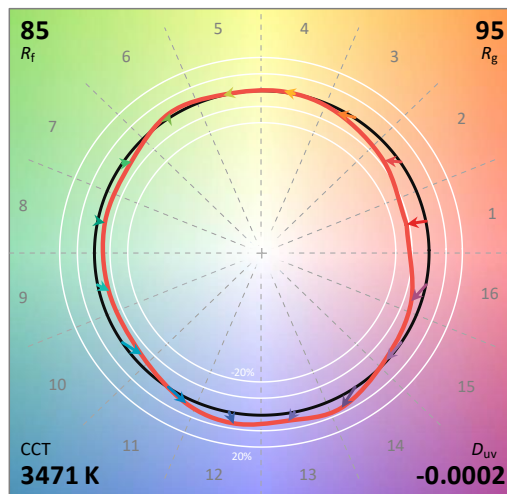
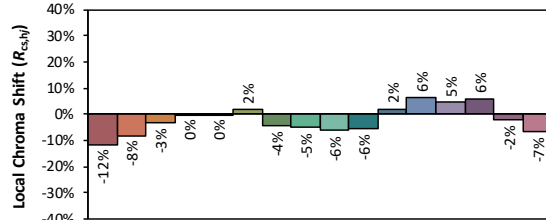
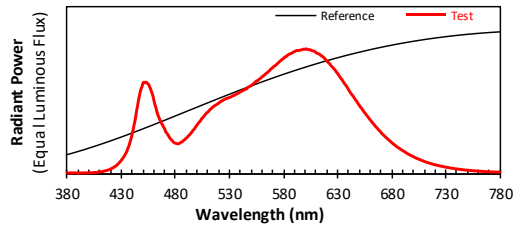
ANSI/IES TM-30-18 Color Rendition Report

Source: 1 CIE F1

Manufacturer: RAB Lighting Inc.

Date: 2024/2/28

Model: RPLED2X4 @35W3500K



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

x 0.4067
 y 0.3910
 u' 0.2365
 v' 0.5116

CIE 13.3-1995
(CRI)

R_a 83
 R_g 10

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	6.50E-06	447	6.35E-04	514	5.28E-04	581	9.34E-04	648	5.76E-04	715	8.34E-05
381	4.60E-06	448	6.74E-04	515	5.36E-04	582	9.35E-04	649	5.60E-04	716	8.11E-05
382	3.20E-06	449	6.95E-04	516	5.42E-04	583	9.44E-04	650	5.49E-04	717	7.85E-05
383	7.10E-06	450	7.24E-04	517	5.48E-04	584	9.49E-04	651	5.36E-04	718	7.57E-05
384	3.80E-06	451	7.33E-04	518	5.53E-04	585	9.57E-04	652	5.26E-04	719	7.30E-05
385	4.20E-06	452	7.28E-04	519	5.59E-04	586	9.59E-04	653	5.13E-04	720	7.11E-05
386	6.30E-06	453	7.33E-04	520	5.65E-04	587	9.64E-04	654	5.02E-04	721	6.86E-05
387	5.30E-06	454	7.23E-04	521	5.72E-04	588	9.67E-04	655	4.89E-04	722	6.64E-05
388	4.50E-06	455	7.18E-04	522	5.77E-04	589	9.74E-04	656	4.78E-04	723	6.51E-05
389	4.30E-06	456	6.99E-04	523	5.83E-04	590	9.78E-04	657	4.66E-04	724	6.25E-05
390	2.30E-06	457	6.79E-04	524	5.87E-04	591	9.82E-04	658	4.56E-04	725	6.07E-05
391	5.10E-06	458	6.54E-04	525	5.93E-04	592	9.86E-04	659	4.44E-04	726	5.87E-05
392	5.30E-06	459	6.29E-04	526	5.97E-04	593	9.86E-04	660	4.33E-04	727	5.71E-05
393	2.70E-06	460	5.92E-04	527	6.00E-04	594	9.87E-04	661	4.23E-04	728	5.54E-05
394	5.00E-06	461	5.54E-04	528	6.05E-04	595	9.88E-04	662	4.10E-04	729	5.34E-05
395	5.50E-06	462	5.28E-04	529	6.06E-04	596	9.91E-04	663	4.01E-04	730	5.12E-05
396	4.40E-06	463	4.91E-04	530	6.10E-04	597	9.93E-04	664	3.91E-04	731	4.98E-05
397	5.00E-06	464	4.65E-04	531	6.14E-04	598	9.96E-04	665	3.79E-04	732	4.88E-05
398	5.60E-06	465	4.45E-04	532	6.17E-04	599	9.98E-04	666	3.70E-04	733	4.70E-05
399	5.80E-06	466	4.23E-04	533	6.24E-04	600	9.97E-04	667	3.61E-04	734	4.54E-05
400	6.30E-06	467	4.04E-04	534	6.25E-04	601	1.00E-03	668	3.50E-04	735	4.38E-05
401	5.40E-06	468	3.91E-04	535	6.30E-04	602	9.97E-04	669	3.42E-04	736	4.22E-05
402	6.50E-06	469	3.74E-04	536	6.36E-04	603	9.94E-04	670	3.33E-04	737	4.10E-05
403	6.90E-06	470	3.59E-04	537	6.39E-04	604	9.93E-04	671	3.22E-04	738	3.98E-05
404	7.70E-06	471	3.35E-04	538	6.44E-04	605	9.92E-04	672	3.13E-04	739	3.85E-05
405	8.10E-06	472	3.25E-04	539	6.48E-04	606	9.87E-04	673	3.05E-04	740	3.70E-05
406	8.80E-06	473	3.13E-04	540	6.56E-04	607	9.84E-04	674	2.97E-04	741	3.61E-05
407	8.90E-06	474	2.97E-04	541	6.60E-04	608	9.83E-04	675	2.88E-04	742	3.50E-05
408	9.90E-06	475	2.83E-04	542	6.63E-04	609	9.78E-04	676	2.81E-04	743	3.38E-05
409	1.22E-05	476	2.73E-04	543	6.68E-04	610	9.71E-04	677	2.73E-04	744	3.25E-05
410	1.24E-05	477	2.64E-04	544	6.72E-04	611	9.65E-04	678	2.65E-04	745	3.20E-05
411	1.47E-05	478	2.53E-04	545	6.78E-04	612	9.61E-04	679	2.57E-04	746	3.04E-05
412	1.57E-05	479	2.47E-04	546	6.80E-04	613	9.60E-04	680	2.49E-04	747	2.96E-05
413	1.69E-05	480	2.43E-04	547	6.92E-04	614	9.52E-04	681	2.42E-04	748	2.83E-05
414	1.93E-05	481	2.41E-04	548	6.95E-04	615	9.44E-04	682	2.35E-04	749	2.77E-05
415	2.22E-05	482	2.39E-04	549	7.01E-04	616	9.40E-04	683	2.29E-04	750	2.71E-05
416	2.30E-05	483	2.40E-04	550	7.04E-04	617	9.33E-04	684	2.22E-04	751	2.63E-05
417	2.66E-05	484	2.43E-04	551	7.11E-04	618	9.23E-04	685	2.15E-04	752	2.52E-05
418	2.89E-05	485	2.50E-04	552	7.19E-04	619	9.14E-04	686	2.09E-04	753	2.44E-05
419	3.19E-05	486	2.54E-04	553	7.26E-04	620	9.05E-04	687	2.04E-04	754	2.38E-05
420	3.64E-05	487	2.61E-04	554	7.34E-04	621	8.94E-04	688	1.97E-04	755	2.28E-05
421	4.08E-05	488	2.68E-04	555	7.43E-04	622	8.87E-04	689	1.91E-04	756	2.22E-05
422	4.45E-05	489	2.75E-04	556	7.45E-04	623	8.77E-04	690	1.86E-04	757	2.15E-05
423	5.01E-05	490	2.84E-04	557	7.51E-04	624	8.65E-04	691	1.80E-04	758	2.08E-05
424	5.55E-05	491	2.91E-04	558	7.60E-04	625	8.56E-04	692	1.75E-04	759	2.04E-05
425	6.13E-05	492	3.02E-04	559	7.65E-04	626	8.47E-04	693	1.69E-04	760	1.96E-05
426	6.88E-05	493	3.10E-04	560	7.75E-04	627	8.36E-04	694	1.64E-04	761	1.90E-05
427	7.69E-05	494	3.21E-04	561	7.81E-04	628	8.27E-04	695	1.58E-04	762	1.84E-05
428	8.70E-05	495	3.30E-04	562	7.89E-04	629	8.13E-04	696	1.54E-04	763	1.78E-05
429	9.63E-05	496	3.43E-04	563	7.95E-04	630	8.04E-04	697	1.49E-04	764	1.73E-05
430	1.07E-04	497	3.53E-04	564	8.04E-04	631	7.90E-04	698	1.44E-04	765	1.68E-05
431	1.19E-04	498	3.64E-04	565	8.09E-04	632	7.78E-04	699	1.41E-04	766	1.62E-05
432	1.31E-04	499	3.78E-04	566	8.18E-04	633	7.64E-04	700	1.36E-04	767	1.58E-05
433	1.44E-04	500	3.89E-04	567	8.25E-04	634	7.55E-04	701	1.31E-04	768	1.54E-05
434	1.61E-04	501	4.01E-04	568	8.36E-04	635	7.41E-04	702	1.27E-04	769	1.47E-05
435	1.77E-04	502	4.13E-04	569	8.42E-04	636	7.28E-04	703	1.23E-04	770	1.42E-05
436	2.02E-04	503	4.21E-04	570	8.50E-04	637	7.16E-04	704	1.20E-04	771	1.39E-05
437	2.22E-04	504	4.35E-04	571	8.58E-04	638	7.05E-04	705	1.16E-04	772	1.34E-05
438	2.52E-04	505	4.47E-04	572	8.64E-04	639	6.91E-04	706	1.13E-04	773	1.31E-05
439	2.81E-04	506	4.55E-04	573	8.70E-04	640	6.77E-04	707	1.09E-04	774	1.27E-05
440	3.16E-04	507	4.66E-04	574	8.79E-04	641	6.61E-04	708	1.05E-04	775	1.25E-05
441	3.57E-04	508	4.78E-04	575	8.86E-04	642	6.47E-04	709	1.02E-04	776	1.20E-05
442	3.98E-04	509	4.86E-04	576	8.95E-04	643	6.36E-04	710	9.83E-05	777	1.14E-05
443	4.41E-04	510	4.94E-04	577	9.03E-04	644	6.25E-04	711	9.51E-05	778	1.11E-05
444	4.98E-04	511	5.02E-04	578	9.10E-04	645	6.13E-04	712	9.17E-05	779	1.11E-05
445	5.44E-04	512	5.13E-04	579	9.18E-04	646	5.99E-04	713	8.96E-05	780	1.11E-05
446	5.94E-04	513	5.20E-04	580	9.23E-04	647	5.87E-04	714	8.59E-05	N/A	N/A

4.0 LM-79 Measurement and Test Results

4.2 Goniophotometer Test

Model No.	RPLED2X4 @35W3500K	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	0.283	33.8	0.996
NON-WORST CASE	277.0	60	0.123	33.6	0.985

Test Result

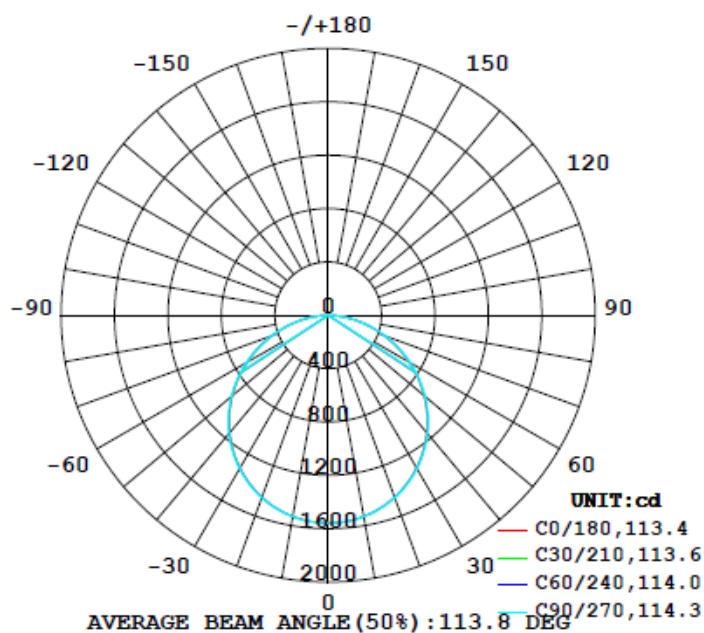
Flux (lm)	Field Angle (10%)		Beam Angle (50%)		Luminous Efficacy (lm/W)	Zonal Lumen Requirement
	C0-180	C90-270	C0-180	C90-270		(0°-60°)
4554	164.3	164.6	113.3	114.2	134.7	77.7%

UGR		Spacing Criterion	
Crosswise	Endwise	(0°-180°)	(90°-270°)
19.5	19.6	1.28	1.28

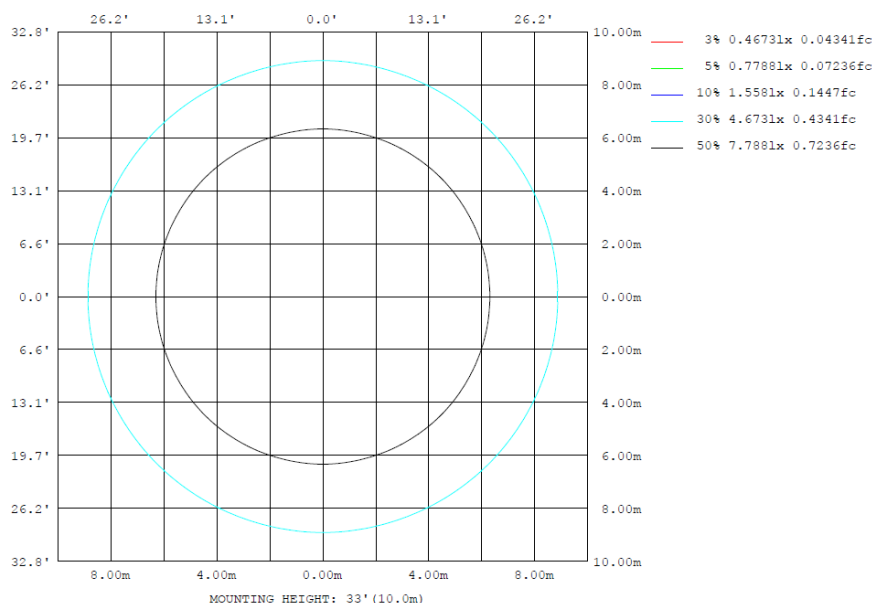
4.2 Goniophotometer Test

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	1531	1531	1533	1531	1531	1531	1533	1531	0- 10	147.5	147.5	3.24, 3.24
20	1452	1454	1456	1454	1452	1454	1456	1454	10- 20	423.1	570.6	12.5, 12.5
30	1322	1324	1328	1324	1322	1324	1328	1324	20- 30	643.0	1214	26.6, 26.6
40	1147	1154	1158	1154	1147	1154	1158	1154	30- 40	777.8	1991	43.7, 43.7
50	936.2	943.7	947.7	943.7	936.2	943.7	947.7	943.7	40- 50	810.5	2802	61.5, 61.5
60	698.4	703.3	709.1	703.3	698.4	703.3	709.1	703.3	50- 60	737.2	3539	77.7, 77.7
70	446.7	449.5	453.9	449.5	446.7	449.5	453.9	449.5	60- 70	570.8	4110	90.2, 90.2
80	200.8	201.6	204.6	201.6	200.8	201.6	204.6	201.6	70- 80	341.4	4451	97.7, 97.7
90	0	0	0	0	0	0	0	0	80- 90	102.9	4554	100, 100
100	0	0	0	0	0	0	0	0	90-100	0	4554	100, 100
110	0	0	0	0	0	0	0	0	100-110	0	4554	100, 100
120	0	0	0	0	0	0	0	0	110-120	0	4554	100, 100
130	0	0	0	0	0	0	0	0	120-130	0	4554	100, 100
140	0	0	0	0	0	0	0	0	130-140	0	4554	100, 100
150	0	0	0	0	0	0	0	0	140-150	0	4554	100, 100
160	0	0	0	0	0	0	0	0	150-160	0	4554	100, 100
170	0	0	0	0	0	0	0	0	160-170	0	4554	100, 100
180	0	0	0	0	0	0	0	0	170-180	0	4554	100, 100
DEG	LUMINOUS INTENSITY:cd									UNIT:lm		

Zonal (lm)		Total (lm)		Percent
0-10	147.48	0-10	147.48	3.24%
10-20	423.08	0-20	570.56	12.53%
20-30	642.96	0-30	1213.52	26.65%
30-40	777.84	0-40	1991.36	43.73%
40-50	810.50	0-50	2801.86	61.52%
50-60	737.24	0-60	3539.10	77.71%
60-70	570.83	0-70	4109.93	90.24%
70-80	341.43	0-80	4451.36	97.74%
80-90	102.89	0-90	4554.25	100.00%
90-100	0.00	0-100	4554.25	100.00%
100-110	0.00	0-110	4554.25	100.00%
110-120	0.00	0-120	4554.25	100.00%
120-130	0.00	0-130	4554.25	100.00%
130-140	0.00	0-140	4554.25	100.00%
140-150	0.00	0-150	4554.25	100.00%
150-160	0.00	0-160	4554.25	100.00%
160-170	0.00	0-170	4554.25	100.00%
170-180	0.00	0-180	4554.25	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	13.8	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	14.4	13.5	14.7	15.1
	12H	13.1	14.4	13.6	14.7	15.2	13.2	14.4	13.7	14.8	15.3
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	14.1	15.0	14.5	15.4	15.9
	8H	14.2	15.1	14.7	15.6	16.0	14.3	15.2	14.8	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	15.8	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	15.4	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	
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	15.0	16.6	15.3	16.9	17.2	15.0	16.7	15.4	17.0	17.3
	3H	16.8	18.3	17.2	18.7	19.0	16.9	18.4	17.3	18.7	19.1
	4H	17.6	19.0	18.0	19.3	19.7	17.6	19.1	18.0	19.4	19.8
	6H	18.1	19.4	18.5	19.8	20.2	18.2	19.5	18.6	19.9	20.3
	8H	18.3	19.6	18.7	20.0	20.4	18.4	19.7	18.8	20.0	20.4
	12H	18.4	19.7	18.9	20.0	20.5	18.5	19.7	19.0	20.1	20.6
4H	2H	15.6	17.0	16.0	17.4	17.8	15.7	17.1	16.1	17.4	17.8
	3H	17.7	18.9	18.1	19.3	19.7	17.8	19.0	18.2	19.4	19.8
	4H	18.6	19.7	19.0	20.1	20.5	18.7	19.7	19.1	20.1	20.6
	6H	19.3	20.2	19.7	20.7	21.1	19.4	20.3	19.8	20.7	21.2
	8H	19.5	20.4	20.0	20.9	21.3	19.6	20.5	20.1	20.9	21.4
	12H	19.7	20.5	20.2	21.0	21.5	19.8	20.6	20.3	21.1	21.5
8H	4H	18.9	19.8	19.4	20.3	20.7	19.0	19.9	19.4	20.3	20.8
	6H	19.8	20.5	20.3	21.0	21.5	19.8	20.6	20.3	21.1	21.5
	8H	20.1	20.8	20.6	21.3	21.8	20.2	20.8	20.7	21.3	21.8
	12H	20.4	21.0	20.9	21.5	22.0	20.4	21.0	20.9	21.5	22.1
12H	4H	19.0	19.8	19.5	20.3	20.7	19.0	19.8	19.5	20.3	20.8
	6H	19.9	20.5	20.4	21.0	21.5	19.9	20.6	20.4	21.0	21.6
	8H	20.2	20.8	20.7	21.3	21.9	20.3	20.9	20.8	21.4	21.9

Maximum UGR = 22.1

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	1558	1559	1558	1558	1558	1558	1559	1558	1558	1558	1559	1558	1559	1558	1558	1558	1558	1558	1559
5	1552	1551	1552	1552	1552	1551	1552	1551	1552	1552	1551	1552	1551	1552	1552	1552	1552	1551	1552
10	1531	1532	1531	1531	1531	1532	1533	1532	1531	1531	1531	1532	1531	1532	1531	1531	1531	1532	1533
15	1499	1497	1498	1499	1499	1499	1501	1499	1499	1499	1498	1497	1499	1497	1498	1499	1499	1499	1501
20	1452	1453	1453	1454	1453	1454	1456	1454	1453	1454	1453	1453	1452	1453	1453	1454	1453	1454	1456
25	1393	1394	1394	1396	1395	1396	1398	1396	1395	1396	1394	1394	1393	1394	1394	1396	1395	1396	1398
30	1322	1322	1324	1324	1324	1327	1328	1327	1324	1324	1324	1322	1322	1322	1324	1324	1324	1327	1328
35	1239	1240	1241	1244	1245	1246	1248	1246	1245	1244	1241	1240	1239	1240	1241	1244	1245	1246	1248
40	1147	1148	1150	1154	1153	1154	1158	1154	1153	1154	1150	1148	1147	1148	1150	1154	1153	1154	1158
45	1046	1047	1048	1053	1053	1054	1057	1054	1053	1053	1048	1047	1046	1047	1048	1053	1053	1054	1057
50	936	937	939	944	944	945	948	945	944	944	939	937	936	937	939	944	944	945	948
55	820	820	823	826	827	829	832	829	827	826	823	820	820	820	823	826	827	829	832
60	698	699	701	703	704	706	709	706	704	703	701	699	698	699	701	703	704	706	709
65	573	574	575	578	578	580	582	580	578	578	575	574	573	574	575	578	578	580	582
70	447	446	448	450	450	451	454	451	450	450	448	446	447	446	448	450	450	451	454
75	322	321	322	323	323	324	327	324	323	323	322	321	322	321	322	323	323	324	327
80	201	201	201	202	201	203	205	203	201	202	201	201	201	201	201	202	201	203	205
85	90.6	90.8	90.7	90.5	91.1	91.8	93.1	91.8	91.1	90.5	90.7	90.8	90.6	90.8	90.7	90.5	91.1	91.8	93.1
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	1558	1558	1558	1558	1559														
5	1551	1552	1552	1552	1551														
10	1532	1531	1531	1531	1532														
15	1499	1499	1499	1498	1497														
20	1454	1453	1454	1453	1453														
25	1396	1395	1396	1394	1394														
30	1327	1324	1324	1324	1322														
35	1246	1245	1244	1241	1240														
40	1154	1153	1154	1150	1148														
45	1054	1053	1053	1048	1047														
50	945	944	944	939	937														
55	829	827	826	823	820														
60	706	704	703	701	699														
65	580	578	578	575	574														
70	451	450	450	448	446														
75	324	323	323	322	321														
80	203	201	202	201	201														
85	91.8	91.1	90.5	90.7	90.8														
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 @35W3500K	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±1°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	0.283	33.8	0.996	9.03
277.0	60	0.123	33.6	0.985	8.81

5.0 Equipment List:

Equipment ID	Equipment Name	Last Cal.	Due Cal.
NTC-F01-001	Goniophotometer System	2023-11-08	2024-11-07
NTC-F01-006	2.0 meter Integrating Sphere	2023-11-08	2024-11-07
NTC-F01-012	Standard Lamp	2023-11-02	2024-11-01
NTC-F01-013	Standard Lamp	2023-11-02	2024-11-01
NTC-F01-031	Digital Power Meter	2023-08-25	2024-08-24
NTC-F01-019	Temperature & Humidity Meter	2023-11-06	2024-11-05

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