

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: 2024-03-08

Revised Date: N/A

1.0 Test Summary

DLC Technical Requirements V5.1

Integrated Retrofit Kits for 2x2 Luminaires				
Requirement Category	Test Method	Requirements		Test Value
Luminaire Output (lm) (Goniophotometer – Section 4.2)	IES LM-79-2008	2000		3303
Minimum Luminaire Efficacy (lm/W) (Goniophotometer – Section 4.2)	IES LM-79-2008	Standard	Premium	130.6
		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	8.91
			277V	9.02
Power Factor (THD & PF – Section 4.3)	ANSI C82.77:2014	0.9	120V	0.996
			277V	0.974
Allowable CCTs* (K) (Integrating Sphere – Section 4.1)	IES LM-79-2008	7 steps	3465±245	3508
		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		96
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%		76.8%
Discomfort Glare (UGR) (Goniophotometer – Section 4.2)	IES LM-79-2008	Standard	Premium	21.4
		N/A	<22	
Spacing Criterion (Goniophotometer – Section 4.2)	IES LM-79-2008	0°-180°	1.0-2.0	1.30
		90°-270°	1.0-2.0	1.30
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		0.212
(Goniophotometer – Section 4.2)		Non-Worst Case		0.093
Power (Input Wattage – W)				
(Goniophotometer – Section 4.2)	IES LM-79-2008	Worst Case		25.3
(Goniophotometer – Section 4.2)		Non-Worst Case		25.0

2.0 Test List

Test Item	Test	Test Date	Model Number	Sample No.
1	Integrating Sphere Test	2024-03-06	RPLED2X2 @25W3500K	240306002-S1
2	Goniophotometer Test	2024-03-06	RPLED2X2 @25W3500K	240306002-S1
3	THD and PF Test	2024-03-06	RPLED2X2 @25W3500K	240306002-S1

Remark (If any)

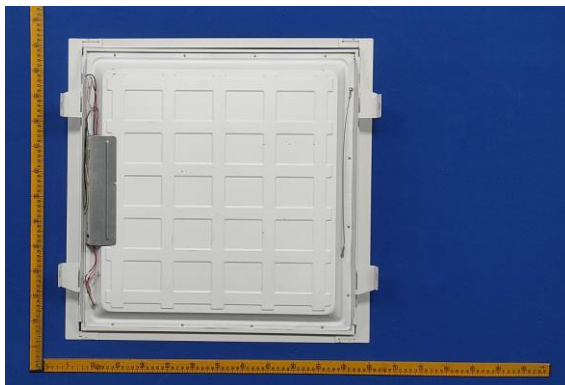
1. The results contained in this report pertain only to the tested samples.
2. Test Troffer is Lithonia 2GT8 lensed 2x2.
3. This report shall not be reproduced, no limited part or full, without approval of Dongguan New Testing Centre Co., Ltd.
4. This report does not imply product certification, approval, or endorsement by NVLAP, or any agency of the Federal Government.

3.0 Product Description

Luminaire Description: Model No. RPLED2X2 @25W3500K, 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.	RPLED2X2 @25W3500K	Sample ID	240306002-S1
Operate time (Min.)	10	Stabilization time (Min.)	60
Temperature (°C)	25.4	Humidity (%RH)	41.0

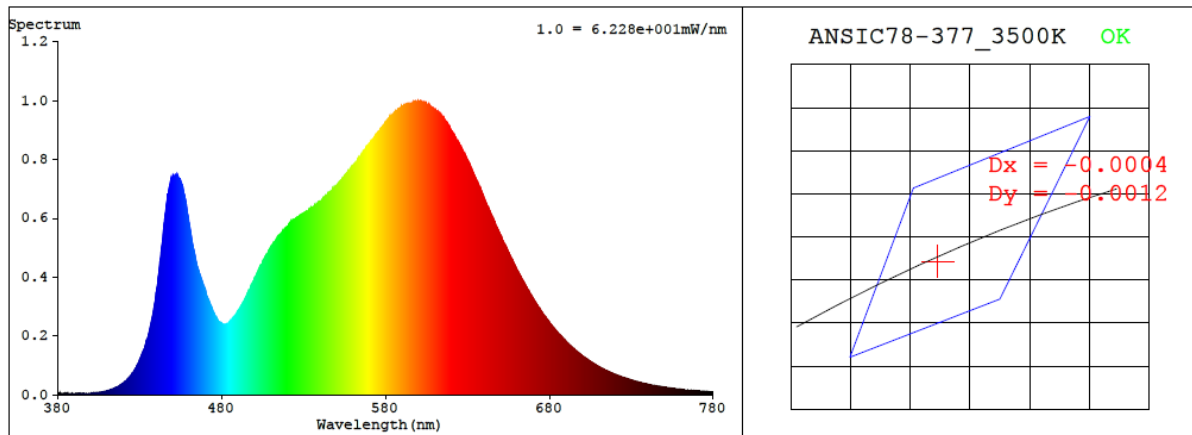
Test Method
<p>The Samples were tested according to the IES LM-79-2008.</p> <p>Photometric parameters were measured using an integrating sphere, a spectroradiometer and software. The ambient temperature condition inside the sphere was maintained at 25±1°C.</p> <p>The sample measurements were made using 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	0.212	25.3	0.996
277.0	60	0.093	25.0	0.974

CCT (K)	CRI	R9	Duv	Rf	Rg	IES Rcs,h1
3508	83.4	10	-0.0004	85	96	-12%

4.1 Integrating Sphere Test



Colorimetric Parameters

Chromaticity Coordinate: $x = 0.4045$ $y = 0.3893$ / $u' = 0.2357$ $v' = 0.5106$ ($duv = -4.30e-04$)

CCT= 3508K Prpc WL: Ld=581.0nm Purity=38.2%

Peak WL: Lp=600nm FWHM: =144.4nm Ratio:R=20.3% G=76.6% B=3.1%

Render Index: Ra = 83.4 AvgR = 77.4 TM30:Rf=84 Rg=96

EEL: 0.10243 A++ Highest

R1 =82 R2 =91 R3 =96 R4 =82 R5 =82 R6 =87 R7 =85

R8 =63 R9 =10 R10=78 R11=81 R12=67 R13=84 R14=98 R15=75

4.1 Integrating Sphere Test

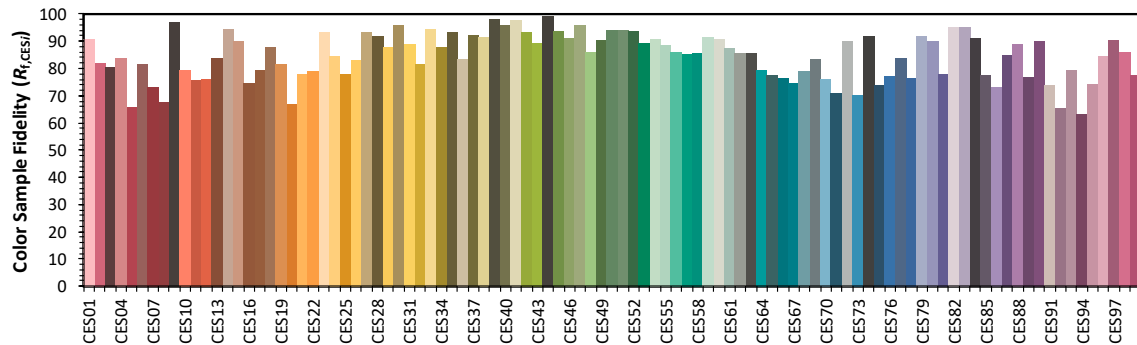
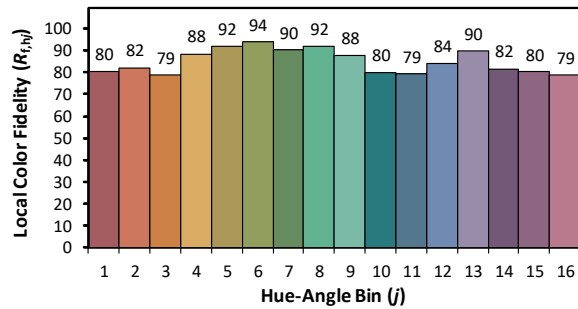
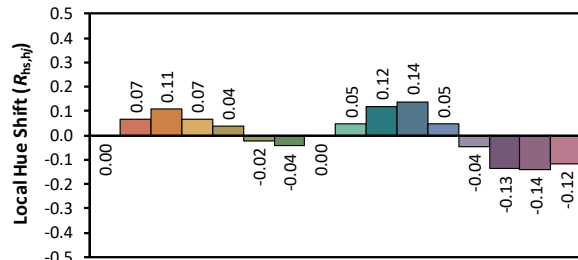
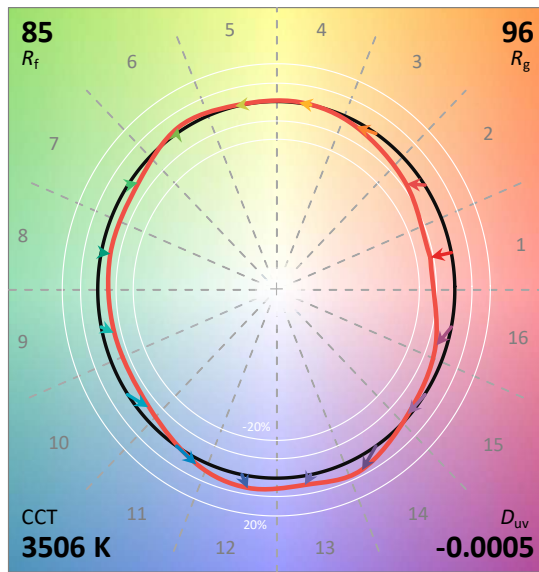
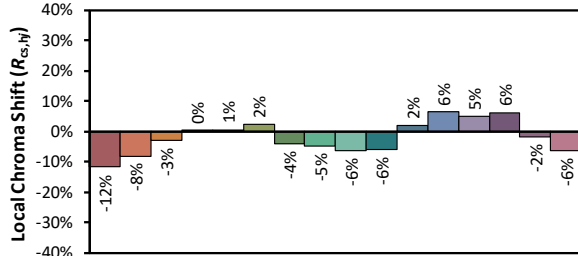
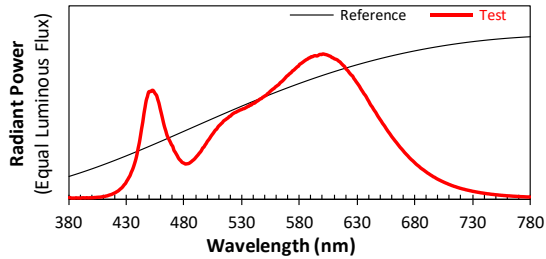
ANSI/IES TM-30-18 Color Rendition Report

Source: 1 CIE F1

Manufacturer: RAB Lighting Inc.

Date: 2024/3/8

Model: RPLED2X2 @25W3500K



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

x 0.4044
 y 0.3892
 u' 0.2358
 v' 0.5105

CIE 13.3-1995
(CRI)

R_a 83
 R_9 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	6.10E-06	447	6.79E-04	514	5.36E-04	581	9.33E-04	648	5.68E-04	715	8.22E-05
381	6.50E-06	448	7.05E-04	515	5.42E-04	582	9.38E-04	649	5.57E-04	716	7.94E-05
382	2.90E-06	449	7.35E-04	516	5.47E-04	583	9.44E-04	650	5.45E-04	717	7.66E-05
383	3.10E-06	450	7.41E-04	517	5.53E-04	584	9.50E-04	651	5.33E-04	718	7.43E-05
384	3.40E-06	451	7.40E-04	518	5.58E-04	585	9.56E-04	652	5.20E-04	719	7.16E-05
385	2.90E-06	452	7.48E-04	519	5.67E-04	586	9.61E-04	653	5.09E-04	720	6.96E-05
386	5.10E-06	453	7.47E-04	520	5.70E-04	587	9.65E-04	654	4.98E-04	721	6.71E-05
387	4.00E-06	454	7.35E-04	521	5.79E-04	588	9.72E-04	655	4.85E-04	722	6.53E-05
388	3.70E-06	455	7.23E-04	522	5.86E-04	589	9.73E-04	656	4.73E-04	723	6.35E-05
389	4.00E-06	456	7.12E-04	523	5.91E-04	590	9.81E-04	657	4.61E-04	724	6.10E-05
390	2.90E-06	457	6.85E-04	524	5.95E-04	591	9.80E-04	658	4.51E-04	725	5.93E-05
391	4.70E-06	458	6.60E-04	525	5.98E-04	592	9.85E-04	659	4.39E-04	726	5.74E-05
392	5.10E-06	459	6.24E-04	526	6.03E-04	593	9.88E-04	660	4.28E-04	727	5.58E-05
393	5.00E-06	460	5.92E-04	527	6.06E-04	594	9.88E-04	661	4.17E-04	728	5.39E-05
394	3.90E-06	461	5.58E-04	528	6.11E-04	595	9.86E-04	662	4.07E-04	729	5.23E-05
395	5.50E-06	462	5.23E-04	529	6.14E-04	596	9.89E-04	663	3.97E-04	730	5.01E-05
396	5.00E-06	463	4.92E-04	530	6.17E-04	597	9.95E-04	664	3.87E-04	731	4.88E-05
397	4.40E-06	464	4.67E-04	531	6.21E-04	598	9.97E-04	665	3.77E-04	732	4.74E-05
398	5.20E-06	465	4.38E-04	532	6.22E-04	599	9.96E-04	666	3.67E-04	733	4.56E-05
399	5.10E-06	466	4.20E-04	533	6.27E-04	600	1.00E-03	667	3.56E-04	734	4.43E-05
400	5.00E-06	467	4.04E-04	534	6.31E-04	601	9.99E-04	668	3.47E-04	735	4.27E-05
401	5.70E-06	468	3.88E-04	535	6.37E-04	602	9.97E-04	669	3.38E-04	736	4.16E-05
402	7.10E-06	469	3.71E-04	536	6.38E-04	603	9.95E-04	670	3.29E-04	737	3.98E-05
403	7.20E-06	470	3.61E-04	537	6.47E-04	604	9.93E-04	671	3.19E-04	738	3.88E-05
404	8.20E-06	471	3.34E-04	538	6.46E-04	605	9.89E-04	672	3.10E-04	739	3.76E-05
405	8.70E-06	472	3.22E-04	539	6.55E-04	606	9.86E-04	673	3.02E-04	740	3.65E-05
406	9.40E-06	473	3.08E-04	540	6.58E-04	607	9.83E-04	674	2.94E-04	741	3.50E-05
407	9.50E-06	474	2.95E-04	541	6.61E-04	608	9.76E-04	675	2.85E-04	742	3.40E-05
408	1.10E-05	475	2.79E-04	542	6.67E-04	609	9.73E-04	676	2.76E-04	743	3.27E-05
409	1.20E-05	476	2.69E-04	543	6.73E-04	610	9.67E-04	677	2.69E-04	744	3.22E-05
410	1.39E-05	477	2.61E-04	544	6.77E-04	611	9.64E-04	678	2.62E-04	745	3.09E-05
411	1.46E-05	478	2.51E-04	545	6.84E-04	612	9.61E-04	679	2.54E-04	746	2.97E-05
412	1.69E-05	479	2.47E-04	546	6.89E-04	613	9.57E-04	680	2.46E-04	747	2.87E-05
413	1.83E-05	480	2.43E-04	547	6.92E-04	614	9.50E-04	681	2.39E-04	748	2.82E-05
414	2.10E-05	481	2.39E-04	548	7.00E-04	615	9.45E-04	682	2.32E-04	749	2.70E-05
415	2.40E-05	482	2.40E-04	549	7.04E-04	616	9.36E-04	683	2.26E-04	750	2.62E-05
416	2.62E-05	483	2.41E-04	550	7.11E-04	617	9.28E-04	684	2.19E-04	751	2.55E-05
417	2.87E-05	484	2.43E-04	551	7.13E-04	618	9.20E-04	685	2.11E-04	752	2.48E-05
418	3.24E-05	485	2.48E-04	552	7.24E-04	619	9.13E-04	686	2.06E-04	753	2.36E-05
419	3.63E-05	486	2.54E-04	553	7.29E-04	620	8.99E-04	687	2.00E-04	754	2.32E-05
420	3.98E-05	487	2.61E-04	554	7.37E-04	621	8.91E-04	688	1.95E-04	755	2.20E-05
421	4.49E-05	488	2.67E-04	555	7.45E-04	622	8.83E-04	689	1.88E-04	756	2.18E-05
422	4.95E-05	489	2.75E-04	556	7.51E-04	623	8.71E-04	690	1.83E-04	757	2.07E-05
423	5.47E-05	490	2.84E-04	557	7.58E-04	624	8.62E-04	691	1.77E-04	758	2.04E-05
424	6.21E-05	491	2.94E-04	558	7.63E-04	625	8.53E-04	692	1.72E-04	759	1.95E-05
425	6.89E-05	492	3.03E-04	559	7.71E-04	626	8.47E-04	693	1.66E-04	760	1.87E-05
426	7.57E-05	493	3.13E-04	560	7.77E-04	627	8.32E-04	694	1.61E-04	761	1.84E-05
427	8.54E-05	494	3.22E-04	561	7.83E-04	628	8.21E-04	695	1.56E-04	762	1.82E-05
428	9.60E-05	495	3.34E-04	562	7.89E-04	629	8.09E-04	696	1.51E-04	763	1.74E-05
429	1.04E-04	496	3.49E-04	563	7.99E-04	630	7.98E-04	697	1.47E-04	764	1.69E-05
430	1.19E-04	497	3.56E-04	564	8.06E-04	631	7.87E-04	698	1.42E-04	765	1.61E-05
431	1.32E-04	498	3.70E-04	565	8.12E-04	632	7.75E-04	699	1.37E-04	766	1.58E-05
432	1.46E-04	499	3.81E-04	566	8.20E-04	633	7.61E-04	700	1.33E-04	767	1.53E-05
433	1.60E-04	500	3.95E-04	567	8.29E-04	634	7.48E-04	701	1.29E-04	768	1.49E-05
434	1.81E-04	501	4.05E-04	568	8.38E-04	635	7.36E-04	702	1.25E-04	769	1.42E-05
435	1.98E-04	502	4.16E-04	569	8.47E-04	636	7.23E-04	703	1.21E-04	770	1.37E-05
436	2.20E-04	503	4.29E-04	570	8.52E-04	637	7.14E-04	704	1.17E-04	771	1.33E-05
437	2.45E-04	504	4.40E-04	571	8.61E-04	638	7.00E-04	705	1.13E-04	772	1.30E-05
438	2.72E-04	505	4.51E-04	572	8.67E-04	639	6.86E-04	706	1.10E-04	773	1.27E-05
439	3.07E-04	506	4.62E-04	573	8.74E-04	640	6.73E-04	707	1.07E-04	774	1.25E-05
440	3.48E-04	507	4.73E-04	574	8.84E-04	641	6.57E-04	708	1.03E-04	775	1.21E-05
441	3.85E-04	508	4.80E-04	575	8.88E-04	642	6.44E-04	709	9.97E-05	776	1.15E-05
442	4.33E-04	509	4.92E-04	576	8.96E-04	643	6.33E-04	710	9.65E-05	777	1.11E-05
443	4.84E-04	510	5.03E-04	577	9.03E-04	644	6.19E-04	711	9.35E-05	778	1.08E-05
444	5.29E-04	511	5.10E-04	578	9.11E-04	645	6.07E-04	712	9.00E-05	779	1.08E-05
445	5.86E-04	512	5.18E-04	579	9.16E-04	646	5.96E-04	713	8.75E-05	780	1.08E-05
446	6.32E-04	513	5.25E-04	580	9.28E-04	647	5.82E-04	714	8.42E-05	N/A	N/A

4.0 LM-79 Measurement and Test Results

4.2 Goniophotometer Test

Model No.	RPLED2X2 @25W3500K	Sample ID	240306002-S1
Operate time (Min.)	30	Stabilization time (Min.)	60
Temperature (°C)	25.0	Humidity (%RH)	44.3

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	0.212	25.3	0.996
NON-WORST CASE	277.0	60	0.093	25.0	0.974

Test Result

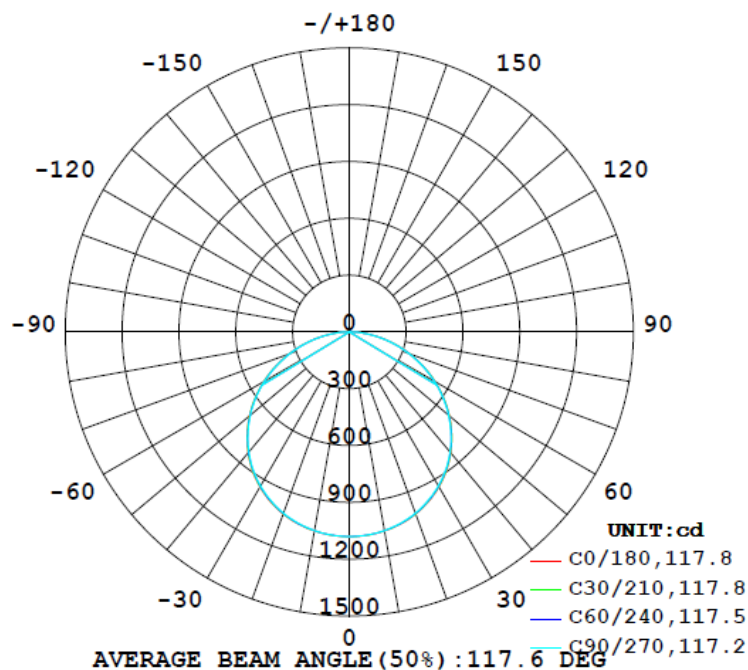
Flux (lm)	Field Angle (10%)		Beam Angle (50%)		Luminous Efficacy (lm/W)	Zonal Lumen Requirement
	C0-180	C90-270	C0-180	C90-270		(0° - 60°)
3303	166.0	165.9	117.6	117.0	130.6	76.8%

UGR		Spacing Criterion	
Crosswise	Endwise	(0° - 180°)	(90° - 270°)
21.4	21.3	1.30	1.30

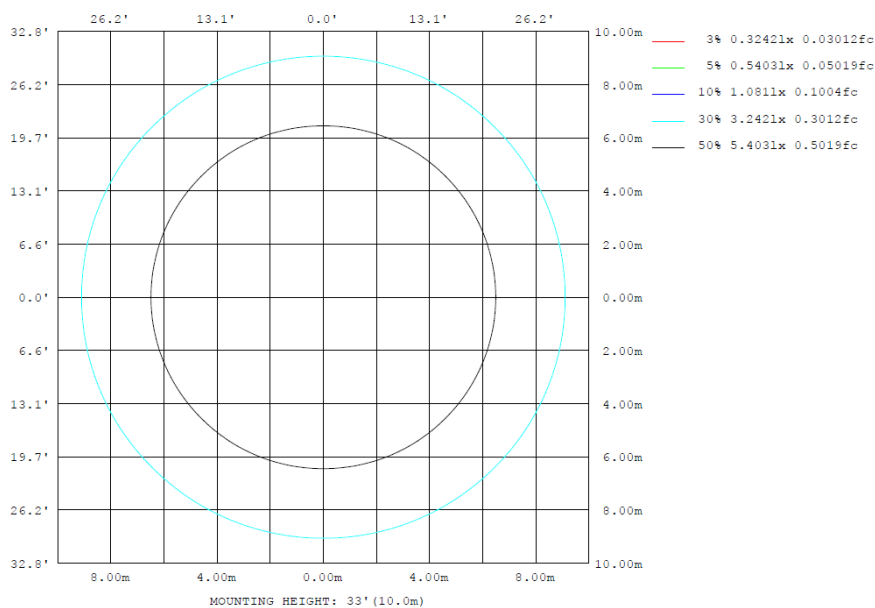
4.2 Goniophotometer Test

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	1066	1066	1065	1066	1066	1066	1065	1066	0- 10	102.4	102.4	3.1, 3.1
20	1023	1021	1017	1021	1023	1021	1017	1021	10- 20	295.8	398.2	12.1, 12.1
30	944.8	942.8	938.8	942.8	944.8	942.8	938.8	942.8	20- 30	454.4	852.6	25.8, 25.8
40	832.1	829.9	825.3	829.9	832.1	829.9	825.3	829.9	30- 40	556.9	1410	42.7, 42.7
50	689.5	685.0	682.6	685.0	689.5	685.0	682.6	685.0	40- 50	587.4	1997	60.5, 60.5
60	520.7	518.7	515.7	518.7	520.7	518.7	515.7	518.7	50- 60	540.7	2538	76.8, 76.8
70	338.3	336.8	333.9	336.8	338.3	336.8	333.9	336.8	60- 70	424.0	2962	89.7, 89.7
80	157.3	157.3	155.4	157.3	157.3	157.3	155.4	157.3	70- 80	259.3	3221	97.5, 97.5
90	0	0	0	0	0	0	0	0	80- 90	81.93	3303	100, 100
100	0	0	0	0	0	0	0	0	90-100	0	3303	100, 100
110	0	0	0	0	0	0	0	0	100-110	0	3303	100, 100
120	0	0	0	0	0	0	0	0	110-120	0	3303	100, 100
130	0	0	0	0	0	0	0	0	120-130	0	3303	100, 100
140	0	0	0	0	0	0	0	0	130-140	0	3303	100, 100
150	0	0	0	0	0	0	0	0	140-150	0	3303	100, 100
160	0	0	0	0	0	0	0	0	150-160	0	3303	100, 100
170	0	0	0	0	0	0	0	0	160-170	0	3303	100, 100
180	0	0	0	0	0	0	0	0	170-180	0	3303	100, 100
DEG	LUMINOUS INTENSITY:cd									UNIT:lm		

Zonal (lm)		Total (lm)		Percent
0-10	102.41	0-10	102.41	3.10%
10-20	295.82	0-20	398.23	12.06%
20-30	454.40	0-30	852.63	25.82%
30-40	556.89	0-40	1409.52	42.68%
40-50	587.40	0-50	1996.92	60.46%
50-60	540.68	0-60	2537.60	76.83%
60-70	423.95	0-70	2961.55	89.67%
70-80	259.34	0-80	3220.89	97.52%
80-90	81.93	0-90	3302.82	100.00%
90-100	0.00	0-100	3302.82	100.00%
100-110	0.00	0-110	3302.82	100.00%
110-120	0.00	0-120	3302.82	100.00%
120-130	0.00	0-130	3302.82	100.00%
130-140	0.00	0-140	3302.82	100.00%
140-150	0.00	0-150	3302.82	100.00%
150-160	0.00	0-160	3302.82	100.00%
160-170	0.00	0-170	3302.82	100.00%
170-180	0.00	0-180	3302.82	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	12.4	14.1	12.8	14.4	14.7	12.4	14.0	12.7	14.4	14.7
	3H	14.4	15.9	14.7	16.2	16.6	14.3	15.8	14.7	16.1	16.5
	4H	15.1	16.6	15.5	16.9	17.3	15.1	16.5	15.5	16.8	17.2
	6H	15.7	17.1	16.1	17.4	17.8	15.7	17.0	16.1	17.4	17.7
	8H	16.0	17.2	16.4	17.6	18.0	15.9	17.1	16.3	17.5	17.9
	12H	16.1	17.3	16.5	17.7	18.1	16.0	17.2	16.4	17.6	18.1
4H	2H	13.1	14.5	13.5	14.9	15.2	13.1	14.5	13.5	14.8	15.2
	3H	15.3	16.5	15.7	16.9	17.3	15.2	16.4	15.6	16.8	17.2
	4H	16.2	17.3	16.6	17.7	18.1	16.1	17.2	16.5	17.6	18.0
	6H	16.9	17.9	17.4	18.3	18.8	16.8	17.8	17.3	18.2	18.7
	8H	17.2	18.1	17.7	18.5	19.0	17.1	18.0	17.6	18.5	18.9
	12H	17.4	18.2	17.9	18.7	19.2	17.3	18.1	17.8	18.6	19.1
8H	4H	16.5	17.4	17.0	17.9	18.3	16.5	17.4	16.9	17.8	18.3
	6H	17.4	18.2	17.9	18.7	19.1	17.4	18.1	17.9	18.6	19.1
	8H	17.8	18.4	18.3	19.0	19.4	17.7	18.4	18.2	18.9	19.4
	12H	18.1	18.7	18.6	19.2	19.7	18.0	18.6	18.5	19.1	19.7
12H	4H	16.6	17.4	17.1	17.9	18.3	16.5	17.3	17.0	17.8	18.3
	6H	17.5	18.2	18.0	18.6	19.2	17.4	18.1	18.0	18.6	19.1
	8H	17.9	18.5	18.4	19.0	19.6	17.9	18.5	18.4	19.0	19.5

Maximum UGR = 19.7

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	16.6	18.3	17.0	18.6	18.9	16.6	18.2	16.9	18.6	18.9
	3H	18.6	20.1	18.9	20.4	20.8	18.5	20.0	18.9	20.3	20.7
	4H	19.3	20.8	19.7	21.1	21.5	19.3	20.7	19.7	21.0	21.4
	6H	19.9	21.3	20.3	21.6	22.0	19.9	21.2	20.3	21.6	21.9
	8H	20.2	21.4	20.6	21.8	22.2	20.1	21.3	20.5	21.7	22.1
	12H	20.3	21.5	20.7	21.9	22.3	20.2	21.4	20.6	21.8	22.3
4H	2H	17.3	18.7	17.7	19.1	19.4	17.3	18.7	17.7	19.0	19.4
	3H	19.5	20.7	19.9	21.1	21.5	19.4	20.6	19.8	21.0	21.4
	4H	20.4	21.5	20.8	21.9	22.3	20.3	21.4	20.7	21.8	22.2
	6H	21.1	22.1	21.6	22.5	23.0	21.0	22.0	21.5	22.4	22.9
	8H	21.4	22.3	21.9	22.7	23.2	21.3	22.2	21.8	22.7	23.1
	12H	21.6	22.4	22.1	22.9	23.4	21.5	22.3	22.0	22.8	23.3
8H	4H	20.7	21.6	21.2	22.1	22.5	20.7	21.6	21.1	22.0	22.5
	6H	21.6	22.4	22.1	22.9	23.3	21.6	22.3	22.1	22.8	23.3
	8H	22.0	22.6	22.5	23.2	23.6	21.9	22.6	22.4	23.1	23.6
	12H	22.3	22.9	22.8	23.4	23.9	22.2	22.8	22.7	23.3	23.9
12H	4H	20.8	21.6	21.3	22.1	22.5	20.7	21.5	21.2	22.0	22.5
	6H	21.7	22.4	22.2	22.8	23.4	21.6	22.3	22.2	22.8	23.3
	8H	22.1	22.7	22.6	23.2	23.8	22.1	22.7	22.6	23.2	23.7

Maximum UGR = 23.9

4.2 Goniophotometer Test

Luminous Distribution Intensity Data

Table--1																				UNIT: cd			
y (DEG)	C (DEG)																						
	0	15	30	45	60	75	90	105	120	135	150	165	180	195	210	225	240	255	270				
0	1081	1080	1079	1079	1080	1080	1080	1080	1080	1079	1079	1080	1081	1080	1079	1079	1080	1080	1080				
5	1078	1077	1077	1076	1076	1077	1076	1077	1076	1076	1077	1077	1078	1077	1077	1076	1076	1077	1076				
10	1066	1067	1065	1066	1065	1065	1065	1065	1065	1066	1065	1067	1066	1067	1065	1066	1065	1065	1065				
15	1049	1049	1048	1048	1047	1046	1045	1046	1047	1048	1048	1049	1049	1049	1048	1048	1047	1046	1045				
20	1023	1023	1022	1021	1020	1019	1017	1019	1020	1021	1022	1023	1023	1023	1022	1021	1020	1019	1017				
25	988	988	986	986	984	984	982	984	984	986	986	988	988	988	986	986	984	984	982				
30	945	944	943	943	942	940	939	940	942	943	943	944	945	944	943	943	942	940	939				
35	893	892	892	890	889	888	886	888	889	890	892	892	893	892	892	890	889	888	886				
40	832	832	832	830	829	828	825	828	829	830	832	832	832	832	832	830	829	828	825				
45	764	764	764	762	760	760	758	760	760	762	764	764	764	764	764	762	760	760	758				
50	690	690	688	685	685	684	683	684	685	685	688	690	690	690	688	685	685	684	683				
55	608	608	607	606	604	603	602	603	604	606	607	608	608	608	607	606	604	603	602				
60	521	521	520	519	518	517	516	517	518	519	520	521	521	521	520	519	518	517	516				
65	431	431	430	429	427	427	425	427	427	429	430	431	431	431	430	429	427	427	425				
70	338	339	338	337	336	335	334	335	336	337	338	339	338	339	338	337	336	335	334				
75	247	246	246	246	244	244	243	244	244	246	246	246	247	246	246	246	244	244	243				
80	157	158	157	157	157	156	155	156	157	157	157	158	157	158	157	157	157	156	155				
85	73.3	74.0	73.9	73.9	73.4	73.4	73.0	73.4	73.4	73.9	73.9	74.0	73.3	74.0	73.9	73.9	73.4	73.4	73.0				
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

y (DEG)	C (DEG)																		
	285	300	315	330	345														
0	1080	1080	1079	1079	1080														
5	1077	1076	1076	1077	1077														
10	1065	1065	1066	1065	1067														
15	1046	1047	1048	1048	1049														
20	1019	1020	1021	1022	1023														
25	984	984	986	986	988														
30	940	942	943	943	944														
35	888	889	890	892	892														
40	828	829	830	832	832														
45	760	760	762	764	764														
50	684	685	685	688	690														
55	603	604	606	607	608														
60	517	518	519	520	521														
65	427	427	429	430	431														
70	335	336	337	338	339														
75	244	244	246	246	246														
80	156	157	157	157	158														
85	73.4	73.4	73.9	73.9	74.0														
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.	RPLED2X2 @25W3500K	Sample ID	240306002-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	0.212	25.3	0.996	8.91
277.0	60	0.093	25.0	0.974	9.02

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*****