

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		3697
Minimum Luminaire Efficacy (lm/W) (Goniophotometer – Section 4.2)	IES LM-79-2008	Standard	Premium	127.0
		110	125	
Power (Input Wattage) (W) (Goniophotometer – Section 4.2)	IES LM-79-2008	Worst Case		29.1
Total Harmonic Distortion (A%) (THD & PF – Section 4.3)	ANSI C82.77:2014	20.00%	120V	10.62
			277V	9.43
Power Factor (THD & PF – Section 4.3)	ANSI C82.77:2014	0.9	120V	0.996
			277V	0.983
Allowable CCTs* (K) (Integrating Sphere – Section 4.1)	IES LM-79-2008	7 steps	3465±245	3510
		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%		76.7%
Discomfort Glare (UGR) (Goniophotometer – Section 4.2)	IES LM-79-2008	Standard	Premium	21.7
		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		0.243
(Goniophotometer – Section 4.2)		Non-Worst Case		0.104
Power (Input Wattage – W)				
(Goniophotometer – Section 4.2)	IES LM-79-2008	Worst Case		29.1
(Goniophotometer – Section 4.2)		Non-Worst Case		28.3

2.0 Test List

Test Item	Test	Test Date	Model Number	Sample No.
1	Integrating Sphere Test	2024-03-06	RPLED2X2 @30W3500K	240306002-S1
2	Goniophotometer Test	2024-03-06	RPLED2X2 @30W3500K	240306002-S1
3	THD and PF Test	2024-03-06	RPLED2X2 @30W3500K	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 @30W3500K, 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 @30W3500K	Sample ID	240306002-S1
Operate time (Min.)	10	Stabilization time (Min.)	60
Temperature (°C)	25.4	Humidity (%RH)	41.0

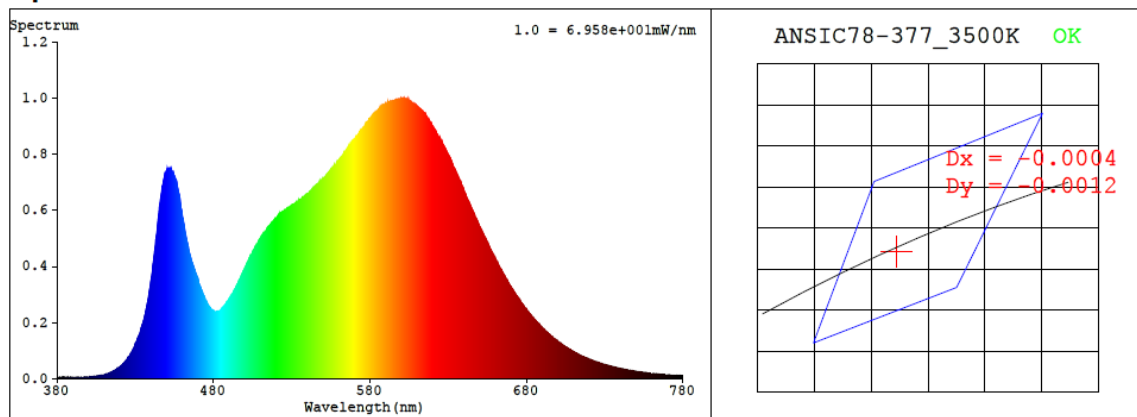
Test Method
<p>The Samples were tested according to the IES LM-79-2008.</p> <p>Photometric parameters were measured using an integrating sphere, a spectroradiometer and software. The ambient temperature condition inside the sphere was maintained at 25±1°C.</p> <p>The sample measurements were made using 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	0.243	29.1	0.996
277.0	60	0.104	28.3	0.983

CCT (K)	CRI	R9	Duv	Rf	Rg	IES Rcs,h1
3510	83.4	10	-0.0004	85	96	-12%

4.1 Integrating Sphere Test



Colorimetric Parameters

Chromaticity Coordinate: $x = 0.4043$ $y = 0.3893$ / $u' = 0.2357$ $v' = 0.5105$ ($duv = -4.26e-04$)

CCT= 3510K Prcp WL: $L_d = 581.0\text{nm}$ Purity=38.2%

Peak WL: $L_p = 601\text{nm}$ FWHM: $=144.3\text{nm}$ Ratio: R=20.3% G=76.6% B=3.1%

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

EEL: 0.10622 A++ Highest

R1 =82 R2 =90 R3 =96 R4 =82 R5 =82 R6 =87 R7 =85

R8 =63 R9 =10 R10=77 R11=81 R12=67 R13=84 R14=98 R15=75

4.1 Integrating Sphere Test

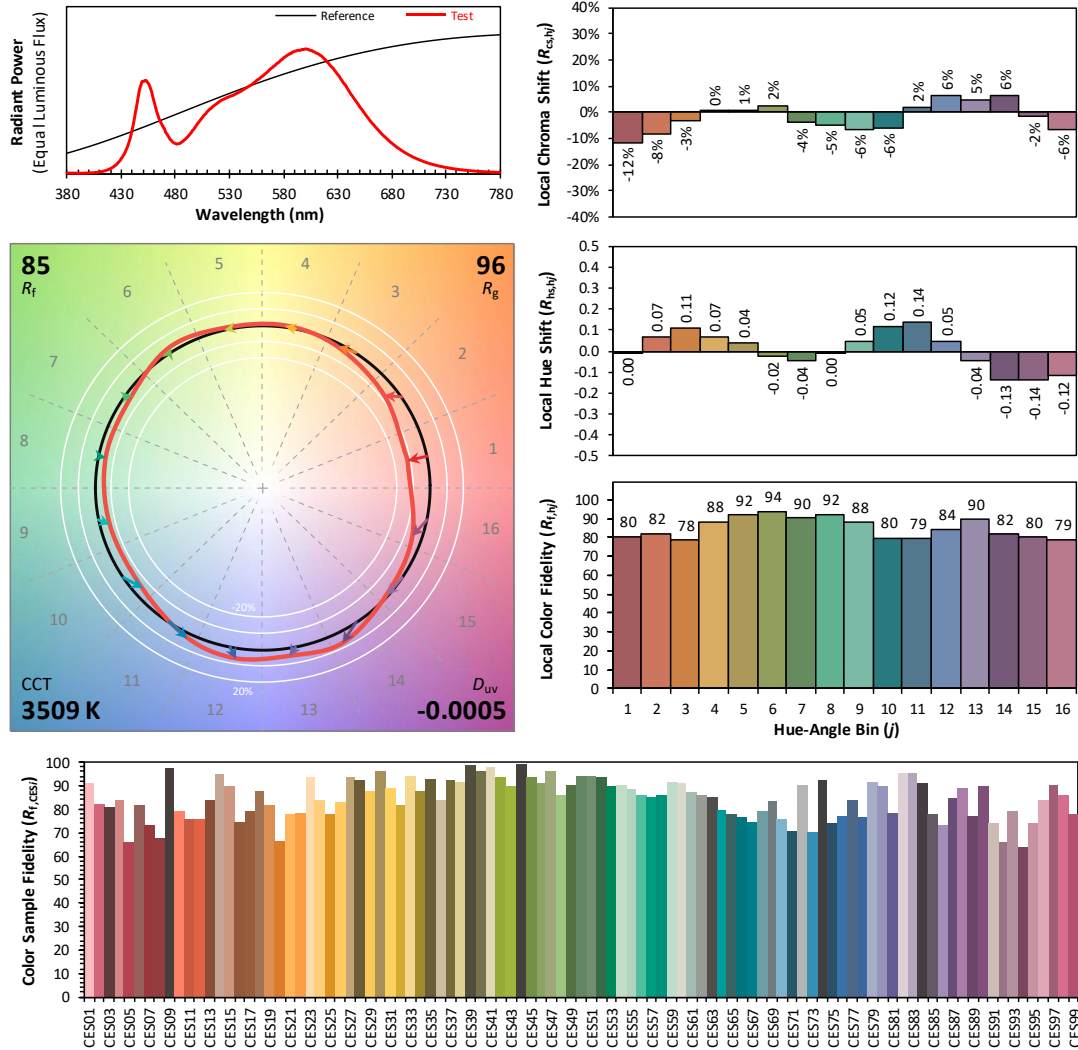
ANSI/IES TM-30-18 Color Rendition Report

Source: 1 CIE F1

Manufacturer: RAB Lighting Inc.

Date: 2024/3/8

Model: RPLED2X2 @30W3500K



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

x 0.4043
 y 0.3891
 u' 0.2357
 v' 0.5104

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	3.90E-06	447	6.82E-04	514	5.33E-04	581	9.33E-04	648	5.68E-04	715	8.16E-05
381	4.90E-06	448	7.06E-04	515	5.41E-04	582	9.39E-04	649	5.58E-04	716	7.93E-05
382	5.50E-06	449	7.36E-04	516	5.47E-04	583	9.45E-04	650	5.43E-04	717	7.70E-05
383	4.90E-06	450	7.41E-04	517	5.54E-04	584	9.51E-04	651	5.31E-04	718	7.44E-05
384	4.70E-06	451	7.39E-04	518	5.58E-04	585	9.56E-04	652	5.20E-04	719	7.19E-05
385	5.10E-06	452	7.48E-04	519	5.68E-04	586	9.62E-04	653	5.09E-04	720	6.97E-05
386	4.20E-06	453	7.46E-04	520	5.72E-04	587	9.63E-04	654	4.97E-04	721	6.77E-05
387	4.50E-06	454	7.35E-04	521	5.79E-04	588	9.74E-04	655	4.84E-04	722	6.52E-05
388	4.50E-06	455	7.22E-04	522	5.86E-04	589	9.74E-04	656	4.72E-04	723	6.36E-05
389	4.40E-06	456	7.08E-04	523	5.90E-04	590	9.80E-04	657	4.61E-04	724	6.11E-05
390	3.90E-06	457	6.82E-04	524	5.95E-04	591	9.82E-04	658	4.50E-04	725	5.93E-05
391	4.00E-06	458	6.57E-04	525	5.98E-04	592	9.85E-04	659	4.39E-04	726	5.77E-05
392	4.80E-06	459	6.20E-04	526	6.02E-04	593	9.88E-04	660	4.26E-04	727	5.54E-05
393	3.60E-06	460	5.87E-04	527	6.07E-04	594	9.89E-04	661	4.16E-04	728	5.40E-05
394	4.00E-06	461	5.55E-04	528	6.11E-04	595	9.88E-04	662	4.05E-04	729	5.17E-05
395	4.50E-06	462	5.19E-04	529	6.13E-04	596	9.91E-04	663	3.95E-04	730	5.06E-05
396	5.30E-06	463	4.90E-04	530	6.18E-04	597	9.95E-04	664	3.87E-04	731	4.89E-05
397	4.60E-06	464	4.65E-04	531	6.22E-04	598	9.96E-04	665	3.75E-04	732	4.75E-05
398	6.00E-06	465	4.37E-04	532	6.23E-04	599	9.96E-04	666	3.67E-04	733	4.55E-05
399	6.00E-06	466	4.19E-04	533	6.28E-04	600	9.99E-04	667	3.56E-04	734	4.42E-05
400	5.80E-06	467	4.03E-04	534	6.30E-04	601	1.00E-03	668	3.47E-04	735	4.30E-05
401	6.50E-06	468	3.87E-04	535	6.36E-04	602	9.97E-04	669	3.37E-04	736	4.11E-05
402	7.40E-06	469	3.69E-04	536	6.40E-04	603	9.97E-04	670	3.28E-04	737	4.00E-05
403	7.60E-06	470	3.58E-04	537	6.46E-04	604	9.92E-04	671	3.18E-04	738	3.88E-05
404	7.90E-06	471	3.32E-04	538	6.47E-04	605	9.87E-04	672	3.10E-04	739	3.79E-05
405	9.10E-06	472	3.20E-04	539	6.55E-04	606	9.88E-04	673	3.01E-04	740	3.64E-05
406	9.90E-06	473	3.06E-04	540	6.58E-04	607	9.82E-04	674	2.94E-04	741	3.51E-05
407	1.04E-05	474	2.93E-04	541	6.63E-04	608	9.77E-04	675	2.85E-04	742	3.38E-05
408	1.09E-05	475	2.77E-04	542	6.68E-04	609	9.74E-04	676	2.78E-04	743	3.29E-05
409	1.28E-05	476	2.69E-04	543	6.74E-04	610	9.67E-04	677	2.69E-04	744	3.18E-05
410	1.38E-05	477	2.59E-04	544	6.79E-04	611	9.66E-04	678	2.61E-04	745	3.10E-05
411	1.60E-05	478	2.50E-04	545	6.85E-04	612	9.60E-04	679	2.53E-04	746	3.01E-05
412	1.70E-05	479	2.45E-04	546	6.90E-04	613	9.56E-04	680	2.47E-04	747	2.88E-05
413	1.88E-05	480	2.42E-04	547	6.94E-04	614	9.48E-04	681	2.39E-04	748	2.84E-05
414	2.18E-05	481	2.38E-04	548	7.02E-04	615	9.45E-04	682	2.32E-04	749	2.72E-05
415	2.39E-05	482	2.39E-04	549	7.04E-04	616	9.36E-04	683	2.25E-04	750	2.61E-05
416	2.70E-05	483	2.41E-04	550	7.11E-04	617	9.27E-04	684	2.18E-04	751	2.52E-05
417	3.02E-05	484	2.43E-04	551	7.16E-04	618	9.18E-04	685	2.11E-04	752	2.46E-05
418	3.37E-05	485	2.48E-04	552	7.24E-04	619	9.11E-04	686	2.06E-04	753	2.39E-05
419	3.72E-05	486	2.54E-04	553	7.30E-04	620	8.98E-04	687	2.00E-04	754	2.31E-05
420	4.15E-05	487	2.61E-04	554	7.39E-04	621	8.91E-04	688	1.94E-04	755	2.25E-05
421	4.57E-05	488	2.69E-04	555	7.46E-04	622	8.82E-04	689	1.87E-04	756	2.18E-05
422	5.15E-05	489	2.75E-04	556	7.53E-04	623	8.69E-04	690	1.82E-04	757	2.11E-05
423	5.64E-05	490	2.84E-04	557	7.58E-04	624	8.60E-04	691	1.77E-04	758	2.04E-05
424	6.43E-05	491	2.94E-04	558	7.63E-04	625	8.52E-04	692	1.71E-04	759	1.95E-05
425	7.08E-05	492	3.01E-04	559	7.73E-04	626	8.44E-04	693	1.66E-04	760	1.88E-05
426	7.86E-05	493	3.13E-04	560	7.78E-04	627	8.31E-04	694	1.61E-04	761	1.87E-05
427	8.84E-05	494	3.22E-04	561	7.85E-04	628	8.21E-04	695	1.56E-04	762	1.80E-05
428	9.76E-05	495	3.34E-04	562	7.92E-04	629	8.07E-04	696	1.51E-04	763	1.73E-05
429	1.08E-04	496	3.48E-04	563	8.00E-04	630	7.96E-04	697	1.46E-04	764	1.68E-05
430	1.23E-04	497	3.56E-04	564	8.06E-04	631	7.87E-04	698	1.42E-04	765	1.64E-05
431	1.34E-04	498	3.69E-04	565	8.15E-04	632	7.75E-04	699	1.37E-04	766	1.57E-05
432	1.49E-04	499	3.82E-04	566	8.21E-04	633	7.59E-04	700	1.33E-04	767	1.52E-05
433	1.63E-04	500	3.95E-04	567	8.33E-04	634	7.48E-04	701	1.29E-04	768	1.49E-05
434	1.84E-04	501	4.06E-04	568	8.39E-04	635	7.33E-04	702	1.25E-04	769	1.44E-05
435	2.03E-04	502	4.17E-04	569	8.46E-04	636	7.22E-04	703	1.21E-04	770	1.39E-05
436	2.23E-04	503	4.30E-04	570	8.53E-04	637	7.14E-04	704	1.17E-04	771	1.34E-05
437	2.51E-04	504	4.40E-04	571	8.62E-04	638	7.00E-04	705	1.14E-04	772	1.30E-05
438	2.79E-04	505	4.51E-04	572	8.67E-04	639	6.84E-04	706	1.10E-04	773	1.25E-05
439	3.13E-04	506	4.62E-04	573	8.75E-04	640	6.71E-04	707	1.07E-04	774	1.25E-05
440	3.52E-04	507	4.74E-04	574	8.84E-04	641	6.57E-04	708	1.03E-04	775	1.19E-05
441	3.93E-04	508	4.80E-04	575	8.88E-04	642	6.42E-04	709	9.97E-05	776	1.19E-05
442	4.39E-04	509	4.92E-04	576	8.96E-04	643	6.31E-04	710	9.66E-05	777	1.11E-05
443	4.90E-04	510	5.02E-04	577	9.05E-04	644	6.19E-04	711	9.31E-05	778	1.09E-05
444	5.34E-04	511	5.10E-04	578	9.13E-04	645	6.06E-04	712	9.09E-05	779	1.10E-05
445	5.86E-04	512	5.20E-04	579	9.17E-04	646	5.94E-04	713	8.74E-05	780	1.10E-05
446	6.36E-04	513	5.23E-04	580	9.29E-04	647	5.82E-04	714	8.45E-05	N/A	N/A

4.0 LM-79 Measurement and Test Results

4.2 Goniophotometer Test

Model No.	RPLED2X2 @30W3500K	Sample ID	240306002-S1
Operate time (Min.)	30	Stabilization time (Min.)	60
Temperature (°C)	24.9	Humidity (%RH)	41.8

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	0.243	29.1	0.996
NON-WORST CASE	277.0	60	0.104	28.3	0.983

Test Result

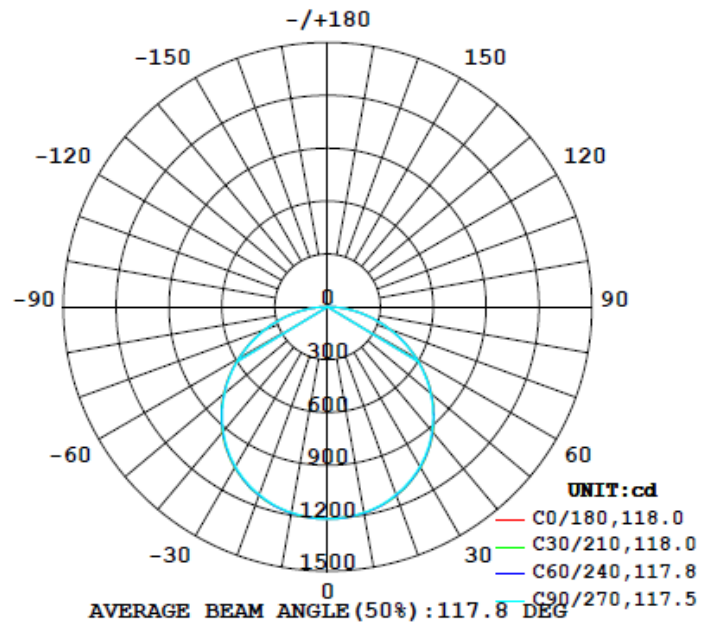
Flux (lm)	Field Angle (10%)		Beam Angle (50%)		Luminous Efficacy (lm/W)	Zonal Lumen Requirement
	C0-180	C90-270	C0-180	C90-270		(0° - 60°)
3697	166.3	166.2	117.9	117.2	127.0	76.7%

UGR		Spacing Criterion	
Crosswise	Endwise	(0° - 180°)	(90° - 270°)
21.7	21.7	1.30	1.30

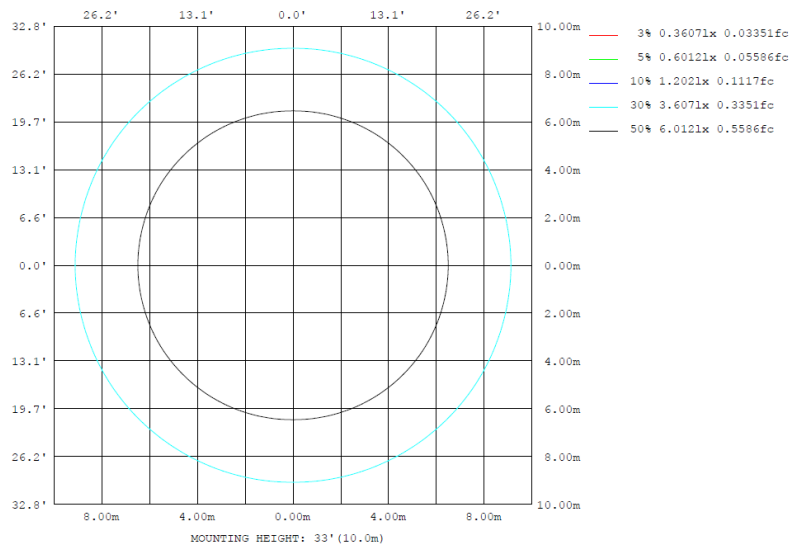
4.2 Goniophotometer Test

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	Φ zone	Φ total	lum, lamp
10	1188	1189	1185	1189	1188	1189	1185	1189	0- 10	114.1	114.1	3.09,3.09
20	1139	1140	1133	1140	1139	1140	1133	1140	10- 20	329.7	443.9	12,12
30	1053	1053	1047	1053	1053	1053	1047	1053	20- 30	506.9	950.8	25.7,25.7
40	928.5	927.5	920.3	927.5	928.5	927.5	920.3	927.5	30- 40	621.6	1572	42.5,42.5
50	769.6	768.0	762.4	768.0	769.6	768.0	762.4	768.0	40- 50	656.3	2229	60.3,60.3
60	582.5	581.9	576.2	581.9	582.5	581.9	576.2	581.9	50- 60	605.1	2834	76.7,76.7
70	379.8	379.7	375.0	379.7	379.8	379.7	375.0	379.7	60- 70	475.7	3309	89.5,89.5
80	178.0	178.5	175.9	178.5	178.0	178.5	175.9	178.5	70- 80	292.7	3602	97.4,97.4
90	0	0	0	0	0	0	0	0	80- 90	94.51	3697	100,100
100	0	0	0	0	0	0	0	0	90-100	0	3697	100,100
110	0	0	0	0	0	0	0	0	100-110	0	3697	100,100
120	0	0	0	0	0	0	0	0	110-120	0	3697	100,100
130	0	0	0	0	0	0	0	0	120-130	0	3697	100,100
140	0	0	0	0	0	0	0	0	130-140	0	3697	100,100
150	0	0	0	0	0	0	0	0	140-150	0	3697	100,100
160	0	0	0	0	0	0	0	0	150-160	0	3697	100,100
170	0	0	0	0	0	0	0	0	160-170	0	3697	100,100
180	0	0	0	0	0	0	0	0	170-180	0	3697	100,100
DEG	LUMINOUS INTENSITY:cd									UNIT:lm		

Zonal (lm)	Total (lm)	Percent
0-10	114.12	3.09%
10-20	329.74	12.01%
20-30	506.89	25.72%
30-40	621.61	42.53%
40-50	656.31	60.29%
50-60	605.07	76.66%
60-70	475.72	89.53%
70-80	292.66	97.44%
80-90	94.51	100.00%
90-100	0.00	100.00%
100-110	0.00	100.00%
110-120	0.00	100.00%
120-130	0.00	100.00%
130-140	0.00	100.00%
140-150	0.00	100.00%
150-160	0.00	100.00%
160-170	0.00	100.00%
170-180	0.00	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										
X=2H Y=2H		UGR Viewed Crosswise					UGR Viewed Endwise			
3H	12.4	14.1	12.8	14.4	14.7	12.4	14.0	12.7	14.4	14.7
4H	14.4	15.9	14.7	16.2	16.6	14.3	15.8	14.7	16.2	16.5
6H	15.1	16.6	15.5	16.9	17.3	15.1	16.5	15.5	16.9	17.2
8H	15.8	17.1	16.2	17.4	17.8	15.7	17.0	16.1	17.4	17.8
12H	16.0	17.2	16.4	17.6	18.0	15.9	17.2	16.3	17.6	18.0
4H	16.1	17.4	16.6	17.7	18.2	16.1	17.3	16.5	17.7	18.1
3H	13.1	14.5	13.5	14.9	15.2	13.1	14.5	13.5	14.8	15.2
4H	15.3	16.5	15.7	16.9	17.3	15.2	16.4	15.6	16.8	17.2
6H	16.2	17.3	16.6	17.7	18.1	16.1	17.2	16.6	17.6	18.1
8H	16.9	17.9	17.4	18.3	18.8	16.9	17.8	17.3	18.3	18.7
12H	17.2	18.1	17.7	18.6	19.0	17.2	18.1	17.6	18.5	19.0
8H	17.4	18.3	17.9	18.7	19.2	17.4	18.2	17.9	18.7	19.1
4H	16.6	17.4	17.0	17.9	18.4	16.5	17.4	17.0	17.8	18.3
6H	17.5	18.2	18.0	18.7	19.2	17.4	18.2	17.9	18.6	19.1
8H	17.8	18.5	18.3	19.0	19.5	17.8	18.4	18.3	18.9	19.4
12H	18.1	18.7	18.6	19.2	19.8	18.1	18.7	18.6	19.2	19.7
4H	16.6	17.4	17.1	17.9	18.4	16.6	17.4	17.0	17.8	18.3
6H	17.5	18.2	18.1	18.7	19.2	17.5	18.2	18.0	18.6	19.2
8H	18.0	18.6	18.5	19.1	19.6	17.9	18.5	18.4	19.0	19.6

Maximum UGR = 19.8

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										
X=2H Y=2H		UGR Viewed Crosswise					UGR Viewed Endwise			
3H	16.9	18.6	17.3	18.9	19.2	16.9	18.5	17.2	18.9	19.2
4H	18.9	20.4	19.2	20.7	21.1	18.8	20.3	19.2	20.7	21.0
6H	19.6	21.1	20.0	21.4	21.8	19.6	21.0	20.0	21.4	21.7
8H	20.3	21.6	20.7	21.9	22.3	20.2	21.5	20.6	21.9	22.3
12H	20.5	21.7	20.9	22.1	22.5	20.4	21.7	20.8	22.1	22.5
4H	20.6	21.9	21.1	22.2	22.7	20.6	21.8	21.0	22.2	22.6
3H	17.6	19.0	18.0	19.4	19.7	17.6	19.0	18.0	19.3	19.7
4H	19.8	21.0	20.2	21.4	21.8	19.7	20.9	20.1	21.3	21.7
6H	20.7	21.8	21.1	22.2	22.6	20.6	21.7	21.1	22.1	22.6
8H	21.4	22.4	21.9	22.8	23.3	21.4	22.3	21.8	22.8	23.2
12H	21.7	22.6	22.2	23.1	23.5	21.7	22.6	22.1	23.0	23.5
8H	21.9	22.8	22.4	23.2	23.7	21.9	22.7	22.4	23.2	23.6
4H	21.1	21.9	21.5	22.4	22.9	21.0	21.9	21.5	22.3	22.8
6H	22.0	22.7	22.5	23.2	23.7	21.9	22.7	22.4	23.1	23.6
8H	22.3	23.0	22.8	23.5	24.0	22.3	22.9	22.8	23.4	23.9
12H	22.6	23.2	23.1	23.7	24.3	22.6	23.2	23.1	23.7	24.2
4H	21.1	21.9	21.6	22.4	22.9	21.1	21.9	21.5	22.3	22.8
6H	22.0	22.7	22.6	23.2	23.7	22.0	22.7	22.5	23.1	23.7
8H	22.5	23.1	23.0	23.6	24.1	22.4	23.0	22.9	23.5	24.1

Maximum UGR = 24.3

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	1202	1201	1204	1203	1203	1204	1202	1204	1203	1203	1204	1201	1202	1201	1204	1203	1203	1204	1202
5	1200	1199	1200	1201	1200	1199	1198	1199	1200	1201	1200	1199	1200	1199	1200	1201	1200	1199	1198
10	1188	1187	1188	1189	1189	1187	1185	1187	1189	1189	1188	1187	1188	1187	1188	1189	1189	1187	1185
15	1167	1167	1168	1168	1168	1166	1165	1166	1168	1168	1168	1167	1167	1167	1168	1168	1168	1166	1165
20	1139	1138	1140	1140	1138	1136	1133	1136	1138	1140	1140	1138	1139	1138	1140	1140	1138	1136	1133
25	1100	1101	1102	1101	1099	1097	1094	1097	1099	1101	1102	1101	1100	1101	1102	1101	1099	1097	1094
30	1053	1053	1054	1053	1050	1048	1047	1048	1050	1053	1054	1053	1053	1053	1054	1053	1050	1048	1047
35	996	995	996	994	993	992	987	992	993	994	996	995	996	995	996	994	993	992	987
40	928	929	929	927	926	925	920	925	926	927	929	929	928	929	929	927	926	925	920
45	853	853	853	853	850	849	845	849	850	853	853	853	853	853	853	853	850	849	845
50	770	770	771	768	766	765	762	765	766	768	771	770	770	770	771	768	766	765	762
55	679	680	680	678	676	675	672	675	676	678	680	680	679	680	680	678	676	675	672
60	582	583	583	582	580	579	576	579	580	582	583	583	582	583	583	582	580	579	576
65	483	483	483	482	481	479	477	479	481	482	483	483	483	483	483	482	481	479	477
70	380	380	380	380	378	377	375	377	378	380	380	380	380	380	380	380	378	377	375
75	278	278	278	278	277	276	274	276	277	278	278	278	278	278	278	278	277	276	274
80	178	179	179	179	178	177	176	177	178	179	179	179	178	179	179	179	178	177	176
85	84.9	85.7	86.1	85.9	85.7	84.9	84.5	84.9	85.7	85.9	86.1	85.7	84.9	85.7	86.1	85.9	85.7	84.9	84.5
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	1204	1203	1203	1204	1201														
5	1199	1200	1201	1200	1199														
10	1187	1189	1189	1188	1187														
15	1166	1168	1168	1168	1167														
20	1136	1138	1140	1140	1138														
25	1097	1099	1101	1102	1101														
30	1048	1050	1053	1054	1053														
35	992	993	994	996	995														
40	925	926	927	929	929														
45	849	850	853	853	853														
50	765	766	768	771	770														
55	675	676	678	680	680														
60	579	580	582	583	583														
65	479	481	482	483	483														
70	377	378	380	380	380														
75	276	277	278	278	278														
80	177	178	179	179	179														
85	84.9	85.7	85.9	86.1	85.7														
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 @30W3500K	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 $25 \pm 1^{\circ}\text{C}$. 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	0.243	29.1	0.996	10.62
277.0	60	0.104	28.3	0.983	9.43

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*****