

Photometric Test Report

Relevant Standards

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

Prepared For

RAB Lighting Inc.

Prepared By

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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		2505
Minimum Luminaire Efficacy (lm/W) (Goniophotometer – Section 4.2)	IES LM-79-2008	Standard	Premium	131.8
		110	125	
Power (Input Wattage) (W) (Goniophotometer – Section 4.2)	IES LM-79-2008	Worst Case		19.0
Total Harmonic Distortion (A%) (THD & PF – Section 4.3)	ANSI C82.77:2014	20.00%	120V	7.01
			277V	7.74
Power Factor (THD & PF – Section 4.3)	ANSI C82.77:2014	0.9	120V	0.995
			277V	0.935
Allowable CCTs* (K) (Integrating Sphere – Section 4.1)	IES LM-79-2008	7 steps	3465±245	3502
		4 steps	3465±124	
Minimum CRI (Integrating Sphere – Section 4.1)	IES LM-79-2008 CIE13.3-1995	≥80		83.6
Minimum R9 (Integrating Sphere – Section 4.1)	IES LM-79-2008 CIE13.3-1995	≥0		11
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	20.4
		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		277.0
(Goniophotometer – Section 4.2)		Non-Worst Case		120.0
Input Current (A)				
(Goniophotometer – Section 4.2)	IES LM-79-2008	Worst Case		0.073
(Goniophotometer – Section 4.2)		Non-Worst Case		0.153
Power (Input Wattage – W)				
(Goniophotometer – Section 4.2)	IES LM-79-2008	Worst Case		19.0
(Goniophotometer – Section 4.2)		Non-Worst Case		18.3

2.0 Test List

Test Item	Test	Test Date	Model Number	Sample No.
1	Integrating Sphere Test	2024-03-06	RPLED2X2 @18W3500K	240306002-S1
2	Goniophotometer Test	2024-03-06	RPLED2X2 @18W3500K	240306002-S1
3	THD and PF Test	2024-03-06	RPLED2X2 @18W3500K	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 @18W3500K, 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 @18W3500K	Sample ID	240306002-S1
Operate time (Min.)	10	Stabilization time (Min.)	60
Temperature (°C)	25.4	Humidity (%RH)	41.0

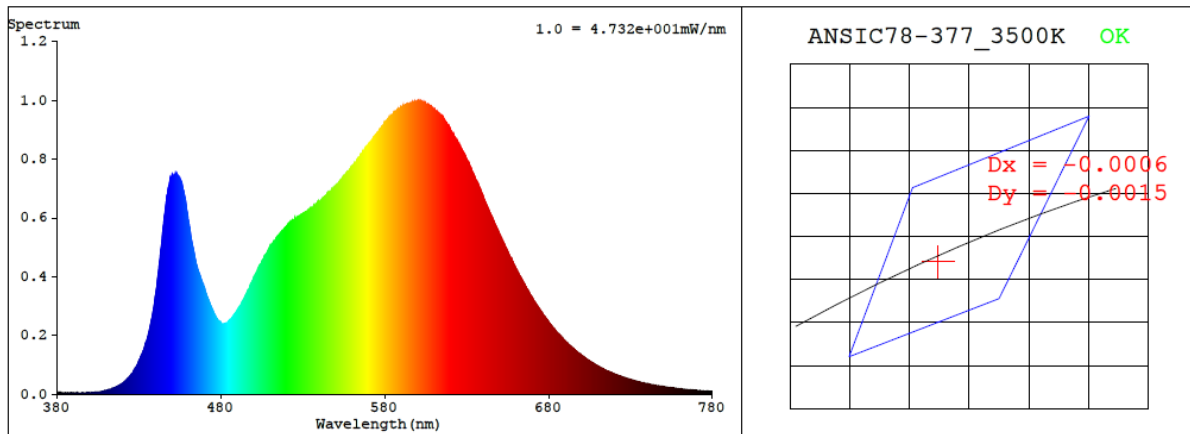
Test Method
<p>The Samples were tested according to the IES LM-79-2008.</p> <p>Photometric parameters were measured using an integrating sphere, a spectroradiometer and software. The ambient temperature condition inside the sphere was maintained at 25±1°C.</p> <p>The sample measurements were made using 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	0.153	18.3	0.995
277.0	60	0.073	19.0	0.935

CCT (K)	CRI	R9	Duv	Rf	Rg	IES Rcs,h1
3502	83.6	11	-0.0005	85	96	-12%

4.1 Integrating Sphere Test



Colorimetric Parameters

Chromaticity Coordinate: $x = 0.4047$ $y = 0.3892$ / $u' = 0.2359$ $v' = 0.5105$ ($duv = -5.29e-04$)

CCT= 3502K Prcp WL: $L_d = 581.1\text{nm}$ Purity=38.3%

Peak WL: $L_p = 601\text{nm}$ FWHM: $=144.3\text{nm}$ Ratio: $R=20.4\%$ $G=76.5\%$ $B=3.2\%$

Render Index: $R_a = 83.6$ $\text{Avg}R = 77.6$ $\text{TM}30:R_f = 84$ $R_g = 96$

EEL: 0.10163 A++ Highest

R1 =82	R2 =91	R3 =96	R4 =82	R5 =82	R6 =88	R7 =85
R8 =63	R9 =11	R10=78	R11=81	R12=67	R13=84	R14=98 R15=76

4.1 Integrating Sphere Test

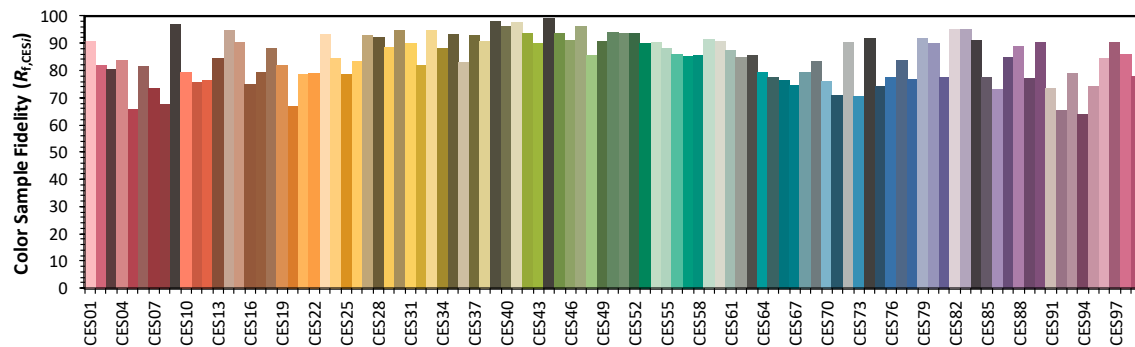
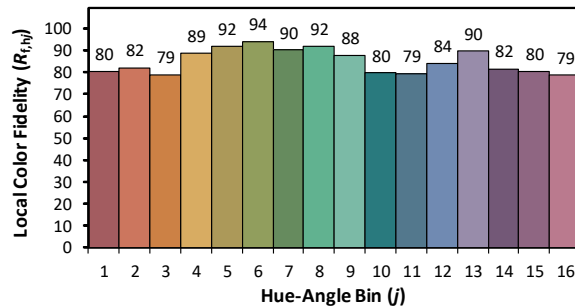
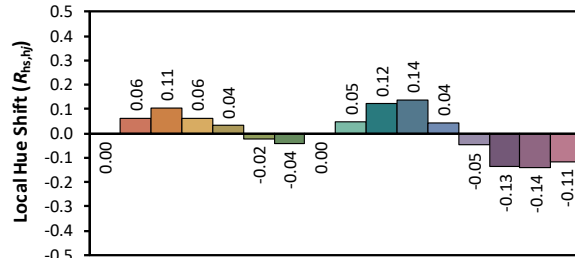
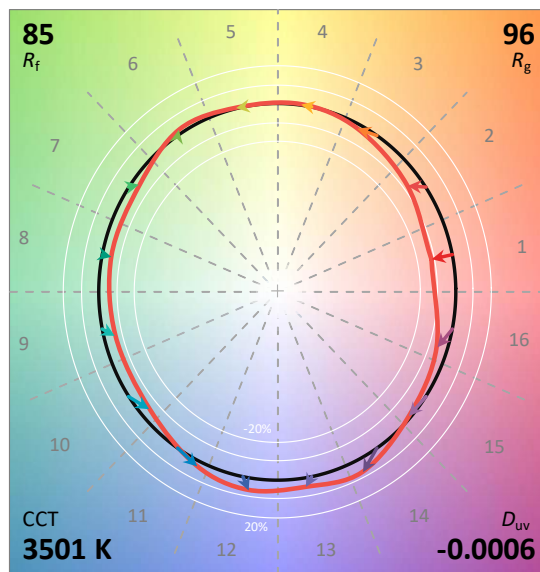
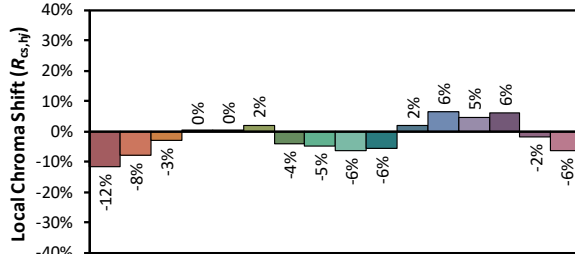
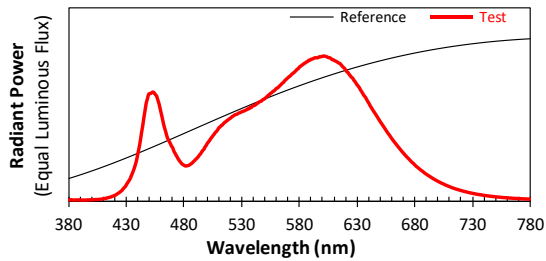
ANSI/IES TM-30-18 Color Rendition Report

Source: 1 CIE F1

Manufacturer: RAB Lighting Inc.

Date: 2024/3/8

Model: RPLED2X2 @18W3500K



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

x 0.4047
 y 0.3891
 u' 0.2360
 v' 0.5105

CIE 13.3-1995
(CRI)

R_a 84
 R_9 11

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	4.00E-06	447	6.74E-04	514	5.33E-04	581	9.29E-04	648	5.70E-04	715	8.13E-05
381	5.30E-06	448	7.02E-04	515	5.40E-04	582	9.36E-04	649	5.58E-04	716	7.89E-05
382	5.90E-06	449	7.34E-04	516	5.46E-04	583	9.41E-04	650	5.45E-04	717	7.67E-05
383	4.50E-06	450	7.40E-04	517	5.53E-04	584	9.48E-04	651	5.33E-04	718	7.41E-05
384	2.70E-06	451	7.41E-04	518	5.58E-04	585	9.52E-04	652	5.22E-04	719	7.18E-05
385	4.40E-06	452	7.47E-04	519	5.65E-04	586	9.59E-04	653	5.10E-04	720	6.94E-05
386	3.60E-06	453	7.50E-04	520	5.69E-04	587	9.61E-04	654	4.98E-04	721	6.72E-05
387	4.70E-06	454	7.43E-04	521	5.77E-04	588	9.70E-04	655	4.86E-04	722	6.50E-05
388	4.90E-06	455	7.32E-04	522	5.83E-04	589	9.71E-04	656	4.73E-04	723	6.29E-05
389	4.30E-06	456	7.23E-04	523	5.88E-04	590	9.77E-04	657	4.62E-04	724	6.12E-05
390	4.60E-06	457	6.97E-04	524	5.93E-04	591	9.78E-04	658	4.51E-04	725	5.90E-05
391	3.50E-06	458	6.72E-04	525	5.95E-04	592	9.83E-04	659	4.40E-04	726	5.72E-05
392	2.90E-06	459	6.38E-04	526	5.99E-04	593	9.86E-04	660	4.28E-04	727	5.52E-05
393	3.60E-06	460	6.02E-04	527	6.05E-04	594	9.88E-04	661	4.17E-04	728	5.35E-05
394	2.90E-06	461	5.68E-04	528	6.07E-04	595	9.86E-04	662	4.07E-04	729	5.17E-05
395	4.00E-06	462	5.30E-04	529	6.11E-04	596	9.88E-04	663	3.97E-04	730	5.00E-05
396	4.60E-06	463	5.00E-04	530	6.14E-04	597	9.94E-04	664	3.87E-04	731	4.85E-05
397	4.50E-06	464	4.73E-04	531	6.18E-04	598	9.94E-04	665	3.76E-04	732	4.69E-05
398	5.60E-06	465	4.43E-04	532	6.20E-04	599	9.96E-04	666	3.67E-04	733	4.52E-05
399	5.60E-06	466	4.23E-04	533	6.24E-04	600	9.97E-04	667	3.57E-04	734	4.36E-05
400	4.70E-06	467	4.08E-04	534	6.28E-04	601	1.00E-03	668	3.47E-04	735	4.26E-05
401	6.00E-06	468	3.93E-04	535	6.35E-04	602	9.98E-04	669	3.37E-04	736	4.11E-05
402	6.80E-06	469	3.75E-04	536	6.34E-04	603	9.96E-04	670	3.29E-04	737	3.99E-05
403	7.20E-06	470	3.64E-04	537	6.44E-04	604	9.92E-04	671	3.19E-04	738	3.90E-05
404	7.60E-06	471	3.41E-04	538	6.43E-04	605	9.88E-04	672	3.11E-04	739	3.71E-05
405	7.50E-06	472	3.27E-04	539	6.52E-04	606	9.87E-04	673	3.02E-04	740	3.58E-05
406	7.90E-06	473	3.12E-04	540	6.56E-04	607	9.84E-04	674	2.94E-04	741	3.49E-05
407	9.30E-06	474	2.98E-04	541	6.58E-04	608	9.75E-04	675	2.85E-04	742	3.38E-05
408	1.03E-05	475	2.84E-04	542	6.64E-04	609	9.74E-04	676	2.77E-04	743	3.26E-05
409	1.09E-05	476	2.73E-04	543	6.71E-04	610	9.69E-04	677	2.68E-04	744	3.16E-05
410	1.22E-05	477	2.63E-04	544	6.75E-04	611	9.65E-04	678	2.62E-04	745	3.03E-05
411	1.46E-05	478	2.54E-04	545	6.82E-04	612	9.62E-04	679	2.54E-04	746	2.97E-05
412	1.60E-05	479	2.48E-04	546	6.86E-04	613	9.56E-04	680	2.46E-04	747	2.89E-05
413	1.75E-05	480	2.44E-04	547	6.89E-04	614	9.50E-04	681	2.38E-04	748	2.78E-05
414	2.04E-05	481	2.39E-04	548	6.97E-04	615	9.48E-04	682	2.31E-04	749	2.71E-05
415	2.20E-05	482	2.40E-04	549	7.00E-04	616	9.39E-04	683	2.25E-04	750	2.59E-05
416	2.41E-05	483	2.42E-04	550	7.07E-04	617	9.29E-04	684	2.19E-04	751	2.54E-05
417	2.74E-05	484	2.44E-04	551	7.13E-04	618	9.21E-04	685	2.11E-04	752	2.41E-05
418	3.06E-05	485	2.49E-04	552	7.21E-04	619	9.14E-04	686	2.06E-04	753	2.39E-05
419	3.33E-05	486	2.54E-04	553	7.28E-04	620	9.02E-04	687	2.01E-04	754	2.29E-05
420	3.70E-05	487	2.61E-04	554	7.35E-04	621	8.91E-04	688	1.93E-04	755	2.18E-05
421	4.13E-05	488	2.69E-04	555	7.42E-04	622	8.85E-04	689	1.87E-04	756	2.13E-05
422	4.69E-05	489	2.77E-04	556	7.47E-04	623	8.72E-04	690	1.82E-04	757	2.07E-05
423	5.20E-05	490	2.85E-04	557	7.55E-04	624	8.63E-04	691	1.76E-04	758	2.02E-05
424	5.78E-05	491	2.94E-04	558	7.59E-04	625	8.52E-04	692	1.72E-04	759	1.95E-05
425	6.44E-05	492	3.02E-04	559	7.68E-04	626	8.47E-04	693	1.66E-04	760	1.90E-05
426	7.08E-05	493	3.14E-04	560	7.76E-04	627	8.33E-04	694	1.61E-04	761	1.85E-05
427	8.12E-05	494	3.22E-04	561	7.79E-04	628	8.23E-04	695	1.56E-04	762	1.74E-05
428	8.97E-05	495	3.35E-04	562	7.87E-04	629	8.11E-04	696	1.51E-04	763	1.75E-05
429	9.85E-05	496	3.47E-04	563	7.95E-04	630	7.99E-04	697	1.46E-04	764	1.66E-05
430	1.13E-04	497	3.55E-04	564	8.03E-04	631	7.90E-04	698	1.42E-04	765	1.60E-05
431	1.25E-04	498	3.70E-04	565	8.12E-04	632	7.78E-04	699	1.37E-04	766	1.53E-05
432	1.37E-04	499	3.81E-04	566	8.17E-04	633	7.63E-04	700	1.33E-04	767	1.51E-05
433	1.50E-04	500	3.96E-04	567	8.28E-04	634	7.51E-04	701	1.29E-04	768	1.47E-05
434	1.71E-04	501	4.06E-04	568	8.35E-04	635	7.38E-04	702	1.25E-04	769	1.41E-05
435	1.89E-04	502	4.16E-04	569	8.43E-04	636	7.24E-04	703	1.21E-04	770	1.39E-05
436	2.10E-04	503	4.29E-04	570	8.50E-04	637	7.16E-04	704	1.17E-04	771	1.33E-05
437	2.34E-04	504	4.39E-04	571	8.57E-04	638	7.01E-04	705	1.14E-04	772	1.29E-05
438	2.60E-04	505	4.50E-04	572	8.62E-04	639	6.87E-04	706	1.10E-04	773	1.24E-05
439	2.94E-04	506	4.60E-04	573	8.72E-04	640	6.74E-04	707	1.06E-04	774	1.22E-05
440	3.35E-04	507	4.71E-04	574	8.78E-04	641	6.59E-04	708	1.03E-04	775	1.17E-05
441	3.74E-04	508	4.79E-04	575	8.85E-04	642	6.45E-04	709	9.93E-05	776	1.18E-05
442	4.20E-04	509	4.90E-04	576	8.91E-04	643	6.33E-04	710	9.65E-05	777	1.10E-05
443	4.73E-04	510	5.03E-04	577	9.00E-04	644	6.20E-04	711	9.32E-05	778	1.05E-05
444	5.20E-04	511	5.09E-04	578	9.08E-04	645	6.08E-04	712	8.96E-05	779	1.05E-05
445	5.76E-04	512	5.18E-04	579	9.13E-04	646	5.96E-04	713	8.71E-05	780	1.05E-05
446	6.24E-04	513	5.22E-04	580	9.25E-04	647	5.84E-04	714	8.42E-05	N/A	N/A

4.0 LM-79 Measurement and Test Results

4.2 Goniophotometer Test

Model No.	RPLED2X2 @18W3500K	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 $25\pm1^{\circ}\text{C}$, measured at a point not more than 1 m from the sample and at the same height as the sample.</p> <p>The voltage of an AC power supply (RMS voltage) or DC power supply (instantaneous voltage) applied to the device under test shall be regulated to within ± 0.2 percent under load.</p> <p>The samples were operated at rated voltage and was stabilized before measurement. Luminous flux, luminaire efficacy, zonal lumen were calculated from the software taken at 1.0° vertical intervals and 15° horizontal intervals.</p>

Test Conditions

Condition	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor
WORST CASE	277.0	60	0.073	19.0	0.935
NON-WORST CASE	120.0	60	0.153	18.3	0.995

Test Result

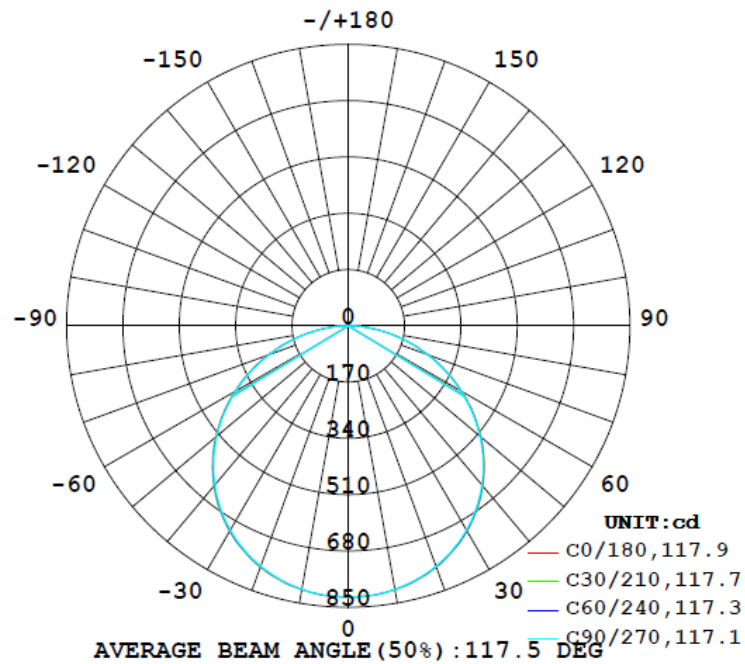
Flux (lm)	Field Angle (10%)		Beam Angle (50%)		Luminous Efficacy (lm/W)	Zonal Lumen Requirement
	C0-180	C90-270	C0-180	C90-270		(0° - 60°)
2505	166.0	165.9	117.6	116.9	131.8	76.8%

UGR		Spacing Criterion	
Crosswise	Endwise	(0° - 180°)	(90° - 270°)
20.4	20.3	1.30	1.30

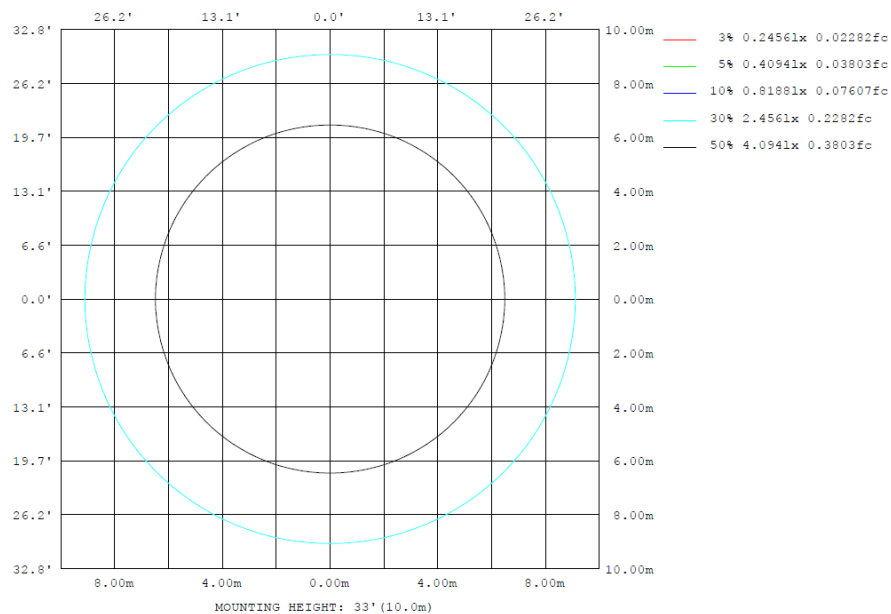
4.2 Goniophotometer Test

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	Φ zone	Φ total	%lum, lamp
10	809.3	808.8	807.8	808.8	809.3	808.8	807.8	808.8	0- 10	77.70	77.70	3.1, 3.1
20	775.9	774.3	772.2	774.3	775.9	774.3	772.2	774.3	10- 20	224.3	302.0	12.1, 12.1
30	716.3	715.0	711.9	715.0	716.3	715.0	711.9	715.0	20- 30	344.7	646.7	25.8, 25.8
40	631.7	630.0	626.3	630.0	631.7	630.0	626.3	630.0	30- 40	422.4	1069	42.7, 42.7
50	522.7	520.8	517.9	520.8	522.7	520.8	517.9	520.8	40- 50	445.5	1515	60.5, 60.5
60	395.4	393.6	390.7	393.6	395.4	393.6	390.7	393.6	50- 60	409.9	1924	76.8, 76.8
70	256.5	255.6	253.4	255.6	256.5	255.6	253.4	255.6	60- 70	321.5	2246	89.7, 89.7
80	119.4	119.4	117.8	119.4	119.4	119.4	117.8	119.4	70- 80	196.7	2443	97.5, 97.5
90	0	0	0	0	0	0	0	0	80- 90	62.28	2505	100, 100
100	0	0	0	0	0	0	0	0	90-100	0	2505	100, 100
110	0	0	0	0	0	0	0	0	100-110	0	2505	100, 100
120	0	0	0	0	0	0	0	0	110-120	0	2505	100, 100
130	0	0	0	0	0	0	0	0	120-130	0	2505	100, 100
140	0	0	0	0	0	0	0	0	130-140	0	2505	100, 100
150	0	0	0	0	0	0	0	0	140-150	0	2505	100, 100
160	0	0	0	0	0	0	0	0	150-160	0	2505	100, 100
170	0	0	0	0	0	0	0	0	160-170	0	2505	100, 100
180	0	0	0	0	0	0	0	0	170-180	0	2505	100, 100
DEG	LUMINOUS INTENSITY:cd									UNIT:lm		

	Zonal (lm)		Total (lm)	Percent
0-10	77.70	0-10	77.70	3.10%
10-20	224.33	0-20	302.03	12.06%
20-30	344.70	0-30	646.73	25.82%
30-40	422.36	0-40	1069.09	42.68%
40-50	445.48	0-50	1514.57	60.46%
50-60	409.93	0-60	1924.50	76.83%
60-70	321.50	0-70	2246.00	89.66%
70-80	196.73	0-80	2442.73	97.51%
80-90	62.28	0-90	2505.01	100.00%
90-100	0.00	0-100	2505.01	100.00%
100-110	0.00	0-110	2505.01	100.00%
110-120	0.00	0-120	2505.01	100.00%
120-130	0.00	0-130	2505.01	100.00%
130-140	0.00	0-140	2505.01	100.00%
140-150	0.00	0-150	2505.01	100.00%
150-160	0.00	0-160	2505.01	100.00%
160-170	0.00	0-170	2505.01	100.00%
170-180	0.00	0-180	2505.01	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	14.3	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	17.3	17.7
	8H	15.9	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	17.6	18.5	19.0	17.1	18.0	17.6	18.5	18.9
	12H	17.4	18.2	17.9	18.7	19.1	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	15.6	17.3	16.0	17.6	17.9	15.6	17.2	15.9	17.6	17.9
	3H	17.5	19.1	17.9	19.4	19.8	17.5	19.0	17.9	19.3	19.7
	4H	18.3	19.8	18.7	20.1	20.5	18.3	19.7	18.7	20.0	20.4
	6H	18.9	20.3	19.3	20.6	21.0	18.9	20.2	19.3	20.5	20.9
	8H	19.1	20.4	19.6	20.8	21.2	19.1	20.3	19.5	20.7	21.1
	12H	19.3	20.5	19.7	20.9	21.3	19.2	20.4	19.6	20.8	21.3
4H	2H	16.3	17.7	16.7	18.1	18.4	16.3	17.7	16.7	18.0	18.4
	3H	18.5	19.7	18.9	20.1	20.5	18.4	19.6	18.8	20.0	20.4
	4H	19.4	20.5	19.8	20.9	21.3	19.3	20.4	19.7	20.8	21.2
	6H	20.1	21.1	20.6	21.5	22.0	20.0	21.0	20.5	21.4	21.9
	8H	20.4	21.3	20.8	21.7	22.2	20.3	21.2	20.8	21.7	22.1
	12H	20.6	21.4	21.1	21.9	22.3	20.5	21.3	21.0	21.8	22.3
8H	4H	19.7	20.6	20.2	21.1	21.5	19.7	20.6	20.1	21.0	21.5
	6H	20.6	21.4	21.1	21.9	22.3	20.6	21.3	21.1	21.8	22.3
	8H	21.0	21.6	21.5	22.2	22.6	20.9	21.6	21.4	22.1	22.6
	12H	21.3	21.9	21.8	22.4	22.9	21.2	21.8	21.7	22.3	22.9
12H	4H	19.8	20.6	20.3	21.1	21.5	19.7	20.5	20.2	21.0	21.5
	6H	20.7	21.4	21.2	21.8	22.4	20.6	21.3	21.2	21.8	22.3
	8H	21.1	21.7	21.6	22.2	22.8	21.1	21.7	21.6	22.2	22.7

Maximum UGR = 22.9

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	819	818	819	820	819	819	820	819	819	820	819	818	819	818	819	820	819	819	820
5	817	816	817	817	817	817	817	817	817	817	817	816	817	816	817	817	817	817	817
10	809	808	808	809	808	809	808	809	808	809	808	808	809	808	808	809	808	809	808
15	795	795	795	795	794	794	793	794	794	795	795	795	795	795	795	795	794	794	793
20	776	775	775	774	774	773	772	773	774	774	775	775	776	775	775	774	774	773	772
25	749	749	748	748	747	746	745	746	747	748	748	749	749	749	748	748	747	746	745
30	716	715	715	715	714	713	712	713	714	715	715	715	716	715	715	715	714	713	712
35	677	677	676	676	675	674	672	674	675	676	676	677	677	677	676	676	675	674	672
40	632	630	630	630	629	627	626	627	629	630	630	630	632	630	630	630	629	627	626
45	580	579	579	579	577	576	575	576	577	579	579	579	580	579	579	579	577	576	575
50	523	522	522	521	520	519	518	519	520	521	522	522	523	522	522	521	520	519	518
55	461	460	460	459	458	457	456	457	458	459	460	460	461	460	460	459	458	457	456
60	395	395	394	394	392	391	392	391	392	394	394	395	395	395	394	394	392	391	391
65	327	326	326	326	324	324	323	324	324	326	326	326	327	326	326	326	324	324	323
70	257	257	256	256	255	254	253	254	255	256	256	257	257	257	256	256	255	254	253
75	187	187	187	186	186	185	184	185	186	186	187	187	187	187	186	186	185	184	184
80	119	120	120	119	119	118	118	118	119	119	120	120	119	120	120	119	119	118	118
85	55.5	56.2	56.2	56.2	56.0	55.9	55.5	55.9	56.0	56.2	56.2	56.2	55.5	56.2	56.2	56.2	56.0	55.9	55.5
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	819	819	820	819	818														
5	817	817	817	817	816														
10	809	808	809	808	808														
15	794	794	795	795	795														
20	773	774	774	775	775														
25	746	747	748	748	749														
30	713	714	715	715	715														
35	674	675	676	676	677														
40	627	629	630	630	630														
45	576	577	579	579	579														
50	519	520	521	522	522														
55	457	458	459	460	460														
60	392	392	394	394	395														
65	324	324	326	326	326														
70	254	255	256	256	257														
75	185	186	186	187	187														
80	118	119	119	120	120														
85	55.9	56.0	56.2	56.2	56.2														
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 @18W3500K	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	0.153	18.3	0.995	7.01
277.0	60	0.073	19.0	0.935	7.74

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*****