

Photometric Test Report

Relevant Standards

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

Prepared For

RAB Lighting Inc.

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Revised Date: N/A

1.0 Test Summary

DLC Technical Requirements V5.1

Integrated Retrofit Kits for 1x4 Luminaires				
Requirement Category	Test Method	Requirements		Test Value
Luminaire Output (lm) (Goniophotometer – Section 4.2)	IES LM-79-2008	1500		3722
Minimum Luminaire Efficacy (lm/W) (Goniophotometer – Section 4.2)	IES LM-79-2008	Standard	Premium	127.5
		110	125	
Power (Input Wattage) (W) (Goniophotometer – Section 4.2)	IES LM-79-2008	Worst Case		29.2
Total Harmonic Distortion (A%) (THD & PF – Section 4.3)	ANSI C82.77:2014	20.00%	120V	17.25
			277V	10.62
Power Factor (THD & PF – Section 4.3)	ANSI C82.77:2014	0.9	120V	0.995
			277V	0.927
Allowable CCTs* (K) (Integrating Sphere – Section 4.1)	IES LM-79-2008	7 steps	3465±245	3497
		4 steps	3465±124	
Minimum CRI (Integrating Sphere – Section 4.1)	IES LM-79-2008 CIE13.3-1995	≥80		83.1
Minimum R9 (Integrating Sphere – Section 4.1)	IES LM-79-2008 CIE13.3-1995	≥0		9
Minimum Rf (Integrating Sphere – Section 4.1)	ANSI/IES TM-30-18	≥70		84
Minimum Rg (Integrating Sphere – Section 4.1)	ANSI/IES TM-30-18	≥89		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%		77.4%
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	1.28
		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		0.245
(Goniophotometer – Section 4.2)		Non-Worst Case		0.112
Power (Input Wattage – W)				
(Goniophotometer – Section 4.2)	IES LM-79-2008	Worst Case		29.2
(Goniophotometer – Section 4.2)		Non-Worst Case		28.7

2.0 Test List

Test Item	Test	Test Date	Model Number	Sample No.
1	Integrating Sphere Test	2024-03-12	RPLED1X4 @30W3500K	240306004-S1
2	Goniophotometer Test	2024-03-12	RPLED1X4 @30W3500K	240306004-S1
3	THD and PF Test	2024-03-12	RPLED1X4 @30W3500K	240306004-S1

Remark (If any)

1. The results contained in this report pertain only to the tested samples.
2. Test Troffer is Lithonia GT8 lensed 1x4.
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. RPLED1X4 @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.	RPLED1X4 @30W3500K	Sample ID	240306004-S1
Operate time (Min.)	10	Stabilization time (Min.)	60
Temperature (°C)	25.4	Humidity (%RH)	41.0

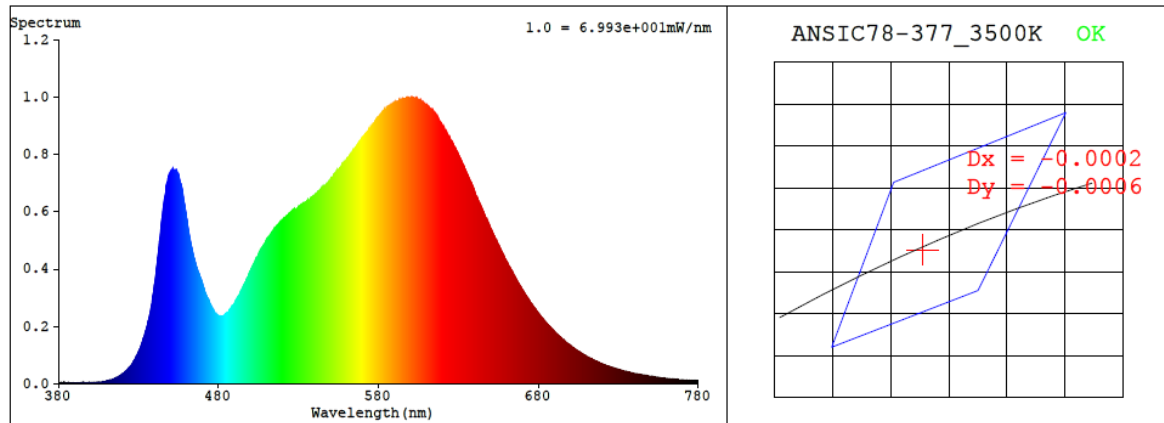
Test Method
<p>The Samples were tested according to the IES LM-79-2008.</p> <p>Photometric parameters were measured using an integrating sphere, a spectroradiometer and software. The ambient temperature condition inside the sphere was maintained at 25±1°C.</p> <p>The sample measurements were made using 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	0.245	29.2	0.995
277.0	60	0.112	28.7	0.927

CCT (K)	CRI	R9	Duv	Rf	Rg	IES Rcs,h1
3497	83.1	9	-0.0002	84	96	-12%

4.1 Integrating Sphere Test



Colorimetric Parameters

Chromaticity Coordinate: $x = 0.4053$ $y = 0.3902$ / $u' = 0.2359$ $v' = 0.5110$ ($duv = -2.26e-04$)

CCT= 3497K Prcp WL: Ld=581.0nm Purity=38.7%

Peak WL: Lp=601nm FWHM: =144.1nm Ratio:R=20.3% G=76.6% B=3.1%

Render Index: Ra = 83.1 AvgR = 76.9 TM30:Rf=84 Rg=96

EEL: 0.10465 A++ Highest

R1 =81 R2 =90 R3 =96 R4 =81 R5 =82 R6 =87 R7 =85

R8 =62 R9 =9 R10=77 R11=80 R12=66 R13=84 R14=98 R15=75

4.1 Integrating Sphere Test

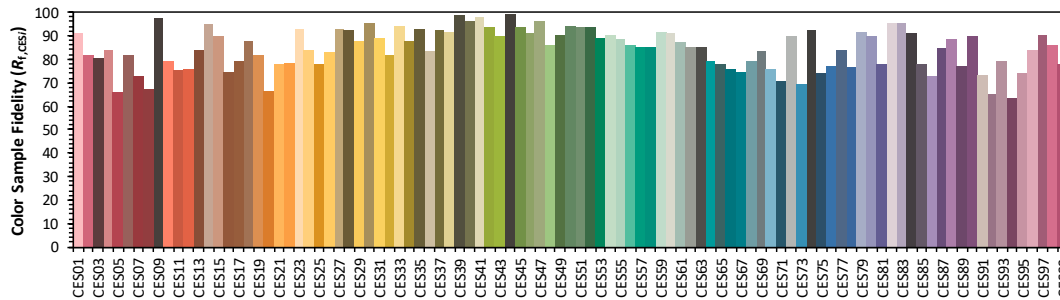
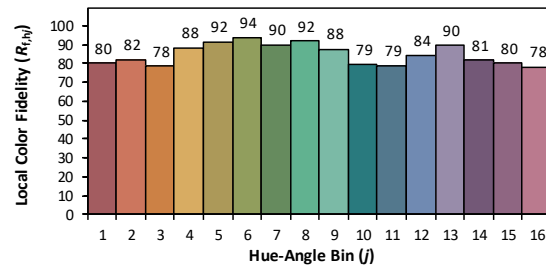
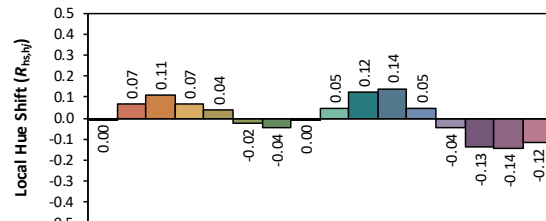
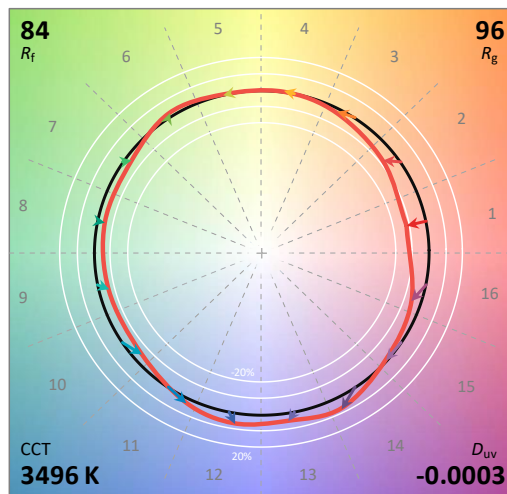
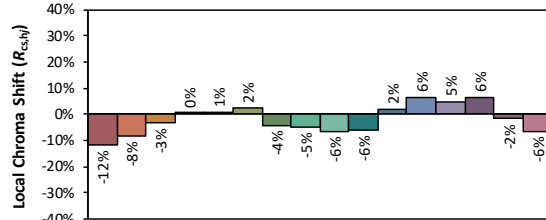
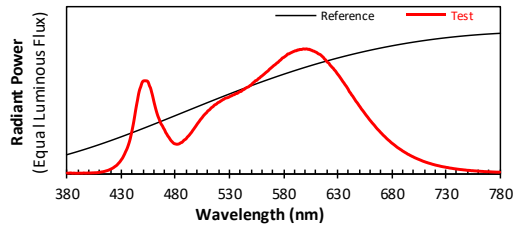
ANSI/IES TM-30-18 Color Rendition Report

Source: 1 CIE F1

Manufacturer: RAB Lighting Inc.

Date: 2024/3/13

Model: RPLED1X4 @30W3500K



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

x 0.4053
 y 0.3901
 u' 0.2360
 v' 0.5110

CIE 13.3-1995
(CRI)

R_a 83
 R_g 9

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	3.50E-06	447	6.74E-04	514	5.31E-04	581	9.35E-04	648	5.69E-04	715	8.17E-05
381	2.50E-06	448	6.97E-04	515	5.37E-04	582	9.42E-04	649	5.57E-04	716	7.92E-05
382	3.20E-06	449	7.25E-04	516	5.47E-04	583	9.49E-04	650	5.44E-04	717	7.64E-05
383	4.40E-06	450	7.39E-04	517	5.52E-04	584	9.58E-04	651	5.32E-04	718	7.37E-05
384	3.30E-06	451	7.43E-04	518	5.57E-04	585	9.59E-04	652	5.19E-04	719	7.14E-05
385	1.70E-06	452	7.43E-04	519	5.65E-04	586	9.64E-04	653	5.08E-04	720	6.90E-05
386	3.30E-06	453	7.42E-04	520	5.70E-04	587	9.68E-04	654	4.97E-04	721	6.67E-05
387	2.30E-06	454	7.40E-04	521	5.74E-04	588	9.72E-04	655	4.85E-04	722	6.48E-05
388	1.80E-06	455	7.29E-04	522	5.81E-04	589	9.77E-04	656	4.73E-04	723	6.28E-05
389	1.70E-06	456	7.03E-04	523	5.86E-04	590	9.80E-04	657	4.61E-04	724	6.10E-05
390	2.00E-06	457	6.85E-04	524	5.92E-04	591	9.84E-04	658	4.51E-04	725	5.86E-05
391	2.40E-06	458	6.52E-04	525	5.96E-04	592	9.84E-04	659	4.39E-04	726	5.66E-05
392	2.70E-06	459	6.19E-04	526	6.03E-04	593	9.90E-04	660	4.28E-04	727	5.49E-05
393	2.60E-06	460	5.81E-04	527	6.05E-04	594	9.90E-04	661	4.17E-04	728	5.32E-05
394	2.30E-06	461	5.45E-04	528	6.07E-04	595	9.94E-04	662	4.07E-04	729	5.19E-05
395	4.30E-06	462	5.12E-04	529	6.10E-04	596	9.94E-04	663	3.97E-04	730	5.01E-05
396	3.50E-06	463	4.82E-04	530	6.15E-04	597	9.95E-04	664	3.87E-04	731	4.84E-05
397	3.00E-06	464	4.56E-04	531	6.20E-04	598	9.98E-04	665	3.76E-04	732	4.75E-05
398	2.90E-06	465	4.36E-04	532	6.23E-04	599	9.98E-04	666	3.65E-04	733	4.53E-05
399	4.40E-06	466	4.12E-04	533	6.28E-04	600	9.97E-04	667	3.55E-04	734	4.36E-05
400	3.00E-06	467	3.94E-04	534	6.31E-04	601	9.99E-04	668	3.47E-04	735	4.26E-05
401	3.90E-06	468	3.81E-04	535	6.35E-04	602	9.97E-04	669	3.38E-04	736	4.12E-05
402	4.20E-06	469	3.64E-04	536	6.41E-04	603	9.95E-04	670	3.28E-04	737	3.97E-05
403	5.00E-06	470	3.50E-04	537	6.42E-04	604	9.96E-04	671	3.19E-04	738	3.83E-05
404	5.00E-06	471	3.29E-04	538	6.47E-04	605	9.90E-04	672	3.10E-04	739	3.72E-05
405	5.60E-06	472	3.16E-04	539	6.54E-04	606	9.89E-04	673	3.01E-04	740	3.60E-05
406	6.00E-06	473	3.01E-04	540	6.56E-04	607	9.83E-04	674	2.94E-04	741	3.47E-05
407	5.80E-06	474	2.90E-04	541	6.59E-04	608	9.81E-04	675	2.84E-04	742	3.37E-05
408	7.40E-06	475	2.76E-04	542	6.68E-04	609	9.76E-04	676	2.76E-04	743	3.25E-05
409	7.60E-06	476	2.63E-04	543	6.72E-04	610	9.73E-04	677	2.68E-04	744	3.14E-05
410	9.30E-06	477	2.55E-04	544	6.77E-04	611	9.68E-04	678	2.62E-04	745	3.08E-05
411	1.10E-05	478	2.45E-04	545	6.84E-04	612	9.61E-04	679	2.53E-04	746	2.97E-05
412	1.28E-05	479	2.39E-04	546	6.89E-04	613	9.57E-04	680	2.46E-04	747	2.86E-05
413	1.39E-05	480	2.37E-04	547	6.92E-04	614	9.53E-04	681	2.39E-04	748	2.80E-05
414	1.60E-05	481	2.35E-04	548	6.96E-04	615	9.46E-04	682	2.33E-04	749	2.67E-05
415	1.83E-05	482	2.35E-04	549	7.05E-04	616	9.37E-04	683	2.26E-04	750	2.55E-05
416	2.11E-05	483	2.37E-04	550	7.09E-04	617	9.30E-04	684	2.19E-04	751	2.52E-05
417	2.33E-05	484	2.40E-04	551	7.19E-04	618	9.17E-04	685	2.11E-04	752	2.47E-05
418	2.64E-05	485	2.47E-04	552	7.27E-04	619	9.10E-04	686	2.05E-04	753	2.39E-05
419	3.00E-05	486	2.49E-04	553	7.34E-04	620	8.98E-04	687	2.00E-04	754	2.23E-05
420	3.44E-05	487	2.58E-04	554	7.43E-04	621	8.90E-04	688	1.94E-04	755	2.25E-05
421	3.82E-05	488	2.67E-04	555	7.46E-04	622	8.85E-04	689	1.89E-04	756	2.14E-05
422	4.31E-05	489	2.72E-04	556	7.53E-04	623	8.70E-04	690	1.82E-04	757	2.08E-05
423	4.86E-05	490	2.79E-04	557	7.62E-04	624	8.61E-04	691	1.77E-04	758	2.03E-05
424	5.54E-05	491	2.91E-04	558	7.66E-04	625	8.51E-04	692	1.71E-04	759	1.97E-05
425	6.10E-05	492	3.00E-04	559	7.76E-04	626	8.43E-04	693	1.66E-04	760	1.89E-05
426	6.82E-05	493	3.09E-04	560	7.81E-04	627	8.31E-04	694	1.61E-04	761	1.84E-05
427	7.82E-05	494	3.21E-04	561	7.89E-04	628	8.23E-04	695	1.55E-04	762	1.78E-05
428	8.72E-05	495	3.31E-04	562	7.96E-04	629	8.10E-04	696	1.51E-04	763	1.71E-05
429	9.78E-05	496	3.45E-04	563	8.04E-04	630	7.97E-04	697	1.46E-04	764	1.68E-05
430	1.11E-04	497	3.56E-04	564	8.11E-04	631	7.87E-04	698	1.42E-04	765	1.60E-05
431	1.23E-04	498	3.69E-04	565	8.18E-04	632	7.75E-04	699	1.37E-04	766	1.50E-05
432	1.39E-04	499	3.81E-04	566	8.25E-04	633	7.62E-04	700	1.33E-04	767	1.52E-05
433	1.56E-04	500	3.94E-04	567	8.35E-04	634	7.50E-04	701	1.29E-04	768	1.45E-05
434	1.76E-04	501	4.06E-04	568	8.42E-04	635	7.36E-04	702	1.25E-04	769	1.42E-05
435	1.94E-04	502	4.17E-04	569	8.50E-04	636	7.25E-04	703	1.21E-04	770	1.40E-05
436	2.16E-04	503	4.30E-04	570	8.57E-04	637	7.12E-04	704	1.17E-04	771	1.34E-05
437	2.42E-04	504	4.40E-04	571	8.65E-04	638	7.01E-04	705	1.14E-04	772	1.31E-05
438	2.72E-04	505	4.51E-04	572	8.71E-04	639	6.87E-04	706	1.10E-04	773	1.25E-05
439	3.09E-04	506	4.63E-04	573	8.78E-04	640	6.73E-04	707	1.06E-04	774	1.21E-05
440	3.49E-04	507	4.72E-04	574	8.86E-04	641	6.55E-04	708	1.03E-04	775	1.17E-05
441	3.93E-04	508	4.81E-04	575	8.91E-04	642	6.45E-04	709	9.88E-05	776	1.14E-05
442	4.42E-04	509	4.89E-04	576	9.01E-04	643	6.31E-04	710	9.58E-05	777	1.08E-05
443	4.96E-04	510	5.01E-04	577	9.08E-04	644	6.20E-04	711	9.28E-05	778	1.08E-05
444	5.46E-04	511	5.07E-04	578	9.16E-04	645	6.07E-04	712	8.97E-05	779	1.07E-05
445	5.91E-04	512	5.14E-04	579	9.26E-04	646	5.94E-04	713	8.72E-05	780	1.07E-05
446	6.39E-04	513	5.25E-04	580	9.29E-04	647	5.80E-04	714	8.40E-05	N/A	N/A

4.0 LM-79 Measurement and Test Results

4.2 Goniophotometer Test

Model No.	RPLED1X4 @30W3500K	Sample ID	240306004-S1
Operate time (Min.)	30	Stabilization time (Min.)	60
Temperature (°C)	24.8	Humidity (%RH)	42.2

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	0.245	29.2	0.995
NON-WORST CASE	277.0	60	0.112	28.7	0.927

Test Result

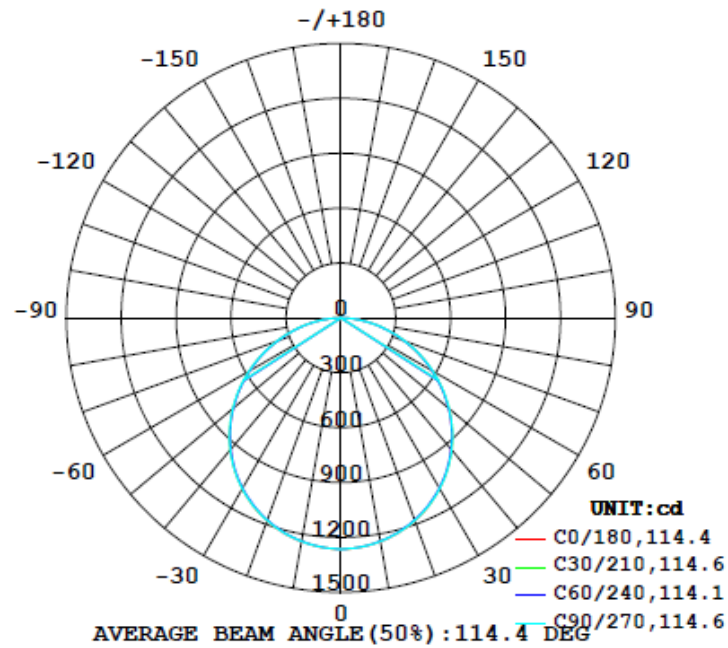
Flux (lm)	Field Angle (10%)		Beam Angle (50%)		Luminous Efficacy (lm/W)	Zonal Lumen Requirement
	C0-180	C90-270	C0-180	C90-270		(0° - 60°)
3722	165.3	165.0	114.3	114.6	127.5	77.4%

UGR		Spacing Criterion	
Crosswise	Endwise	(0° - 180°)	(90° - 270°)
21.7	21.6	1.28	1.28

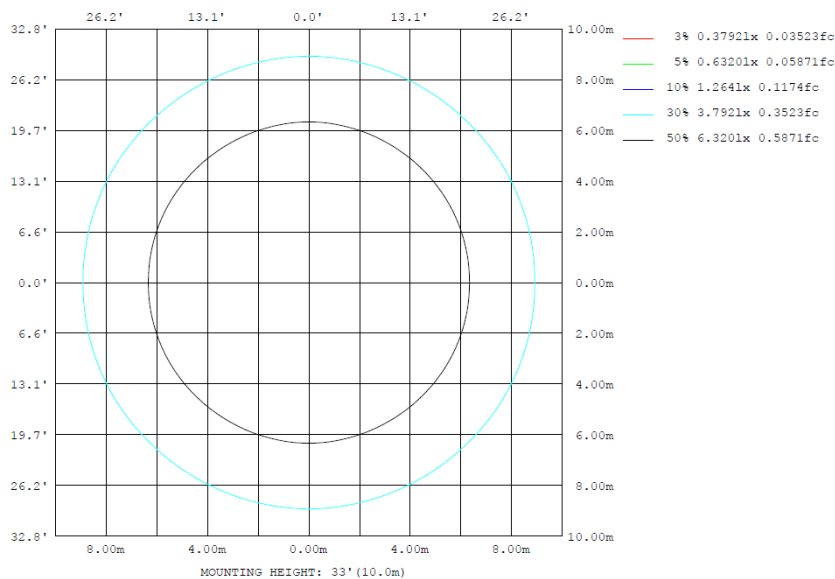
4.2 Goniophotometer Test

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	1242	1239	1241	1239	1242	1239	1241	1239	0- 10	119.4	119.4	3.21, 3.21
20	1180	1176	1179	1176	1180	1176	1179	1176	10- 20	342.6	462.0	12.4, 12.4
30	1078	1075	1078	1075	1078	1075	1078	1075	20- 30	521.7	983.7	26.4, 26.4
40	938.3	937.7	941.7	937.7	938.3	937.7	941.7	937.7	30- 40	633.2	1617	43.4, 43.4
50	769.1	767.4	771.5	767.4	769.1	767.4	771.5	767.4	40- 50	661.5	2278	61.2, 61.2
60	576.6	574.4	578.8	574.4	576.6	574.4	578.8	574.4	50- 60	603.0	2881	77.4, 77.4
70	372.7	368.8	372.3	368.8	372.7	368.8	372.3	368.8	60- 70	468.8	3350	90, 90
80	173.4	169.7	171.1	169.7	173.4	169.7	171.1	169.7	70- 80	284.1	3634	97.6, 97.6
90	0	0	0	0	0	0	0	0	80- 90	87.95	3722	100, 100
100	0	0	0	0	0	0	0	0	90-100	0	3722	100, 100
110	0	0	0	0	0	0	0	0	100-110	0	3722	100, 100
120	0	0	0	0	0	0	0	0	110-120	0	3722	100, 100
130	0	0	0	0	0	0	0	0	120-130	0	3722	100, 100
140	0	0	0	0	0	0	0	0	130-140	0	3722	100, 100
150	0	0	0	0	0	0	0	0	140-150	0	3722	100, 100
160	0	0	0	0	0	0	0	0	150-160	0	3722	100, 100
170	0	0	0	0	0	0	0	0	160-170	0	3722	100, 100
180	0	0	0	0	0	0	0	0	170-180	0	3722	100, 100
DEG	LUMINOUS INTENSITY:cd									UNIT:lm		

Zonal (lm)		Total (lm)		Percent
0-10	119.41	0-10	119.41	3.21%
10-20	342.58	0-20	461.99	12.41%
20-30	521.70	0-30	983.69	26.43%
30-40	633.18	0-40	1616.87	43.44%
40-50	661.48	0-50	2278.35	61.21%
50-60	603.04	0-60	2881.39	77.41%
60-70	468.80	0-70	3350.19	90.00%
70-80	284.13	0-80	3634.32	97.64%
80-90	87.95	0-90	3722.27	100.00%
90-100	0.00	0-100	3722.27	100.00%
100-110	0.00	0-110	3722.27	100.00%
110-120	0.00	0-120	3722.27	100.00%
120-130	0.00	0-130	3722.27	100.00%
130-140	0.00	0-140	3722.27	100.00%
140-150	0.00	0-150	3722.27	100.00%
150-160	0.00	0-160	3722.27	100.00%
160-170	0.00	0-170	3722.27	100.00%
170-180	0.00	0-180	3722.27	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										
X=2H	Y=2H	12.4	14.0	12.7	14.4	14.7	12.3	14.0	12.7	14.3
	3H	14.3	15.8	14.7	16.1	16.5	14.2	15.7	14.6	16.1
	4H	15.0	16.5	15.4	16.8	17.2	15.0	16.4	15.4	16.8
	6H	15.6	17.0	16.0	17.3	17.7	15.6	16.9	16.0	17.3
	8H	15.8	17.1	16.3	17.5	17.9	15.8	17.0	16.2	17.4
	12H	16.0	17.2	16.4	17.6	18.0	15.9	17.1	16.4	17.5
UGR Viewed Endwise										
	12.3	14.0	12.7	14.3	14.6					
4H	2H	13.0	14.5	13.4	14.8	15.2	13.0	14.4	13.4	14.8
	3H	15.2	16.4	15.6	16.8	17.2	15.1	16.3	15.6	16.7
	4H	16.1	17.2	16.5	17.6	18.0	16.0	17.1	16.5	17.5
	6H	16.8	17.8	17.3	18.2	18.7	16.7	17.7	17.2	18.1
	8H	17.1	18.0	17.5	18.4	18.9	17.0	17.9	17.5	18.3
	12H	17.3	18.1	17.8	18.6	19.0	17.2	18.0	17.7	18.5
8H	4H	16.4	17.3	16.9	17.7	18.2	16.4	17.3	16.8	17.7
	6H	17.3	18.0	17.8	18.5	19.0	17.2	18.0	17.7	18.5
	8H	17.7	18.3	18.2	18.8	19.3	17.6	18.2	18.1	18.8
	12H	18.0	18.5	18.5	19.0	19.6	17.9	18.5	18.4	19.0
12H	4H	16.5	17.3	16.9	17.7	18.2	16.4	17.2	16.9	17.7
	6H	17.4	18.1	17.9	18.5	19.1	17.3	18.0	17.9	18.5
	8H	17.8	18.4	18.3	18.9	19.4	17.7	18.3	18.2	18.8

Maximum UGR = 19.6

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										
X=2H	Y=2H	17.0	18.6	17.3	19.0	19.3	16.9	18.6	17.3	18.9
	3H	18.9	20.4	19.3	20.7	21.1	18.8	20.3	19.2	20.7
	4H	19.6	21.1	20.0	21.4	21.8	19.6	21.0	20.0	21.4
	6H	20.2	21.6	20.6	21.9	22.3	20.2	21.5	20.6	21.9
	8H	20.4	21.7	20.9	22.1	22.5	20.4	21.6	20.8	22.0
	12H	20.6	21.8	21.0	22.2	22.6	20.5	21.7	21.0	22.1
UGR Viewed Endwise										
	16.9	18.6	17.3	18.9	19.2					
4H	2H	17.6	19.1	18.0	19.4	19.7	17.6	19.0	18.0	19.4
	3H	19.8	21.0	20.2	21.4	21.8	19.7	20.9	20.2	21.3
	4H	20.7	21.8	21.1	22.2	22.6	20.6	21.7	21.1	22.1
	6H	21.4	22.4	21.9	22.8	23.3	21.3	22.3	21.8	22.7
	8H	21.7	22.6	22.1	23.0	23.5	21.6	22.5	22.1	22.9
	12H	21.9	22.7	22.4	23.2	23.6	21.8	22.6	22.3	23.1
8H	4H	21.0	21.9	21.5	22.3	22.8	21.0	21.9	21.4	22.3
	6H	21.9	22.6	22.4	23.1	23.6	21.8	22.6	22.3	23.1
	8H	22.3	22.9	22.8	23.4	23.9	22.2	22.8	22.7	23.4
	12H	22.6	23.1	23.1	23.6	24.2	22.5	23.1	23.0	23.6
12H	4H	21.1	21.9	21.5	22.3	22.8	21.0	21.8	21.5	22.3
	6H	22.0	22.7	22.5	23.1	23.7	21.9	22.6	22.5	23.1
	8H	22.4	23.0	22.9	23.5	24.0	22.3	22.9	22.8	23.4

Maximum UGR = 24.2

4.2 Goniophotometer Test

Luminous Distribution Intensity Data

Table--1

UNIT: cd

C (DEG)	0	15	30	45	60	75	90	105	120	135	150	165	180	195	210	225	240	255	270
γ (DEG)	0	1264	1263	1264	1263	1264	1263	1264	1263	1264	1263	1264	1263	1264	1263	1264	1263	1264	1263
5	1258	1257	1257	1257	1256	1257	1257	1257	1256	1257	1257	1257	1257	1258	1257	1257	1256	1257	1257
10	1242	1241	1239	1239	1239	1240	1241	1240	1239	1239	1239	1241	1242	1241	1239	1239	1239	1240	1241
15	1216	1215	1214	1212	1212	1212	1215	1212	1212	1212	1214	1215	1216	1215	1214	1212	1212	1212	1215
20	1180	1179	1178	1176	1176	1177	1179	1177	1176	1176	1178	1179	1180	1179	1178	1176	1176	1177	1179
25	1135	1134	1133	1130	1130	1131	1133	1131	1130	1130	1133	1134	1135	1134	1133	1130	1130	1131	1133
30	1078	1079	1078	1075	1074	1075	1078	1075	1074	1075	1078	1079	1078	1079	1078	1075	1074	1075	1078
35	1013	1015	1014	1011	1010	1011	1014	1011	1010	1011	1014	1015	1013	1015	1014	1011	1010	1011	1014
40	938	941	941	938	937	938	942	938	937	938	941	941	938	941	941	938	937	938	942
45	857	860	861	856	855	856	860	856	855	856	861	860	857	860	861	856	855	856	860
50	769	772	771	767	767	768	772	768	767	767	771	772	769	772	771	767	767	768	772
55	675	677	676	673	673	674	678	674	673	673	676	677	675	677	676	673	673	674	678
60	577	578	578	574	573	575	579	575	573	574	578	578	577	578	578	574	573	575	579
65	476	477	475	472	472	473	476	473	472	472	475	477	476	477	475	472	472	473	476
70	373	373	372	369	368	369	372	369	368	369	372	373	373	373	372	369	368	369	372
75	272	271	270	267	267	267	269	267	267	267	270	271	272	271	270	267	267	267	269
80	173	173	172	170	169	169	171	169	169	170	172	173	173	173	172	170	169	169	171
85	81.8	81.0	79.4	78.2	77.4	77.8	78.7	77.8	77.4	78.2	79.4	81.0	81.8	81.0	79.4	78.2	77.4	77.8	78.7
90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
95	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
105	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
110	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
115	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
120	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
125	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
130	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
135	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
140	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
145	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
150	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
155	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
160	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
165	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
170	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
175	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
180	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Table--2

UNIT: cd

C (DEG)	285	300	315	330	345														
γ (DEG)	0	1263	1264	1263	1264	1263													
5	1257	1256	1257	1257	1257														
10	1240	1239	1239	1239	1241														
15	1212	1212	1212	1214	1215														
20	1177	1176	1176	1178	1179														
25	1131	1130	1130	1133	1134														
30	1075	1074	1075	1078	1079														
35	1011	1010	1011	1014	1015														
40	938	937	938	941	941														
45	856	855	856	861	860														
50	768	767	767	771	772														
55	674	673	673	676	677														
60	575	573	574	578	578														
65	473	472	472	475	477														
70	369	368	369	372	373														
75	267	267	267	270	271														
80	169	169	170	172	173														
85	77.8	77.4	78.2	79.4	81.0														
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.	RPLED1X4 @30W3500K	Sample ID	240306004-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	0.245	29.2	0.995	17.25
277.0	60	0.112	28.7	0.927	10.62

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*****