

Photometric Test Report

Relevant Standards

- ☒ ANSI/IES LM-79-2019
- ☒ ANSI C82.77-2017

Prepared For

RAB Lighting Inc.

Address: 408 W 14th St New York, NY 10014

Prepared By

Dongguan New Testing Centre Co., Ltd.

Address: 3F No. 1 the 1st North Industry Road, Songshan Lake Science & Technology Park, Dongguan, Guangdong, China

Prepare by:

Alan Wang

Engineer: Alan Wang

Date: 2025-01-21

Review by:

Vincent Yuan

Technical Lead: Vincent Yuan

Issue Date: 2025-01-21

Revised Date: N/A

1.0 Test Summary

DLC Technical Requirements V5.1

2x4 Luminaires for Ambient Lighting of Interior Commercial Spaces				
Requirement Category	Test Method	Requirements		Test Value
Luminaire Output (lm) (Goniophotometer – Section 4.2)	ANSI/IES LM-79:2019	3000		3961
Minimum Luminaire Efficacy (lm/W) (Goniophotometer – Section 4.2)	ANSI/IES LM-79:2019	Standard	Premium	130.3
		110	125	
Power (Input Wattage) (W) (Goniophotometer – Section 4.2)	ANSI/IES LM-79:2019	Worst Case		30.4
Total Harmonic Distortion (A%) (THD & PF – Section 4.3)	ANSI C82.77:2002 ANSI C82-77-10:2020	20.00%	120V	9.98
			277V	6.50
Power Factor (THD & PF – Section 4.3)	ANSI C82.77:2002 ANSI C82-77-10:2020	0.9	120V	0.993
			277V	0.915
Allowable CCTs* (K) (Integrating Sphere – Section 4.1)	ANSI/IES LM-79:2019	7 steps	3465±245	3372
		4 steps	3465±124	
Minimum CRI (Integrating Sphere – Section 4.1)	ANSI/IES LM-79:2019 CIE13.3-1995	≥80		83.4
Minimum R9 (Integrating Sphere – Section 4.1)	ANSI/IES LM-79:2019 CIE13.3-1995	≥0		9
Minimum Rf (Integrating Sphere – Section 4.1)	ANSI/IES TM-30-18	≥70		85
Minimum Rg (Integrating Sphere – Section 4.1)	ANSI/IES TM-30-18	≥89		95
IES Rcs,h1 (Integrating Sphere – Section 4.1)	ANSI/IES TM-30-18	-12%≤IES Rcs,h1≤+23%		-12%
Zonal Lumen Requirement (0°-60°) (Goniophotometer – Section 4.2)	ANSI/IES LM-79:2019	≥75%		78.0%
Discomfort Glare (UGR) (Goniophotometer – Section 4.2)	ANSI/IES LM-79:2019	Standard	Premium	18.6
		N/A	<22	
Spacing Criterion (Goniophotometer – Section 4.2)	ANSI/IES LM-79:2019	0°-180°	1.0-2.0	1.26
		90°-270°	1.0-2.0	1.28
Input Voltage (V)				
(Goniophotometer – Section 4.2)	ANSI/IES LM-79:2019	Worst Cast		277.0
(Goniophotometer – Section 4.2)		Non-Worst Case		120.0
Input Current (A)				
(Goniophotometer – Section 4.2)	ANSI/IES LM-79:2019	Worst Case		0.120
(Goniophotometer – Section 4.2)		Non-Worst Case		0.252
Power (Input Wattage – W)				
(Goniophotometer – Section 4.2)	ANSI/IES LM-79:2019	Worst Case		30.4
(Goniophotometer – Section 4.2)		Non-Worst Case		30.0

2.0 Test List

Test Item	Test	Test Date	Model Number	Build Level	Sample No.
1	Integrating Sphere Test	2025-01-20	EZP2X4 @30W3500K	-	250117003-S1
2	Goniophotometer Test	2025-01-20	EZP2X4 @30W3500K	-	250117003-S1
3	THD and PF Test	2025-01-20	EZP2X4 @30W3500K	-	250117003-S1

Remark (If any):

1. The results contained in this report pertain only to the tested samples.
2. This report shall not be reproduced, no limited part or full, without approval of Dongguan New Testing Centre Co., Ltd.
3. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST or any agency of the U.S. Government.

3.0 Product Description

Luminaire Description: Model No. EZP2X4 @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.	EZP2X4 @30W3500K	Sample ID	250117003-S1
Operate time (Min.)	10	Stabilization time (Min.)	60
Temperature (°C)	25.4	Humidity (%RH)	41.0

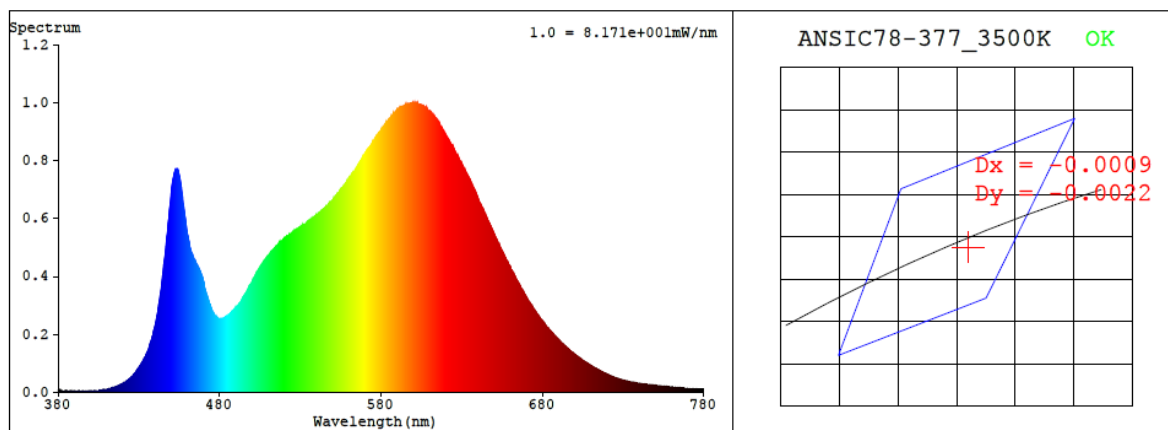
Test Method
<p>The Samples were tested according to the ANSI/IES LM-79:2019.</p> <p>Photometric parameters were measured using an integrating sphere, a spectroradiometer and software. The ambient temperature condition inside the sphere was maintained at 25±1°C.</p> <p>The sample measurements were made 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	0.252	30.0	0.993
277.0	60	0.120	30.4	0.915

CCT (K)	CRI	R9	Duv	Rf	Rg	IES Rcs,h1
3372	83.4	9	-0.0008	85	95	-12%

4.1 Integrating Sphere Test



Colorimetric Parameters

Chromaticity Coordinate: $x = 0.4118$ $y = 0.3921$ / $u' = 0.2394$ $v' = 0.5128$ ($duv = -7.62e-04$)

CCT= 3372K Prcp WL: Ld=581.7nm Purity=41.3%

Peak WL: Lp=601nm FWHM: =141.2nm Ratio:R=21.0% G=75.8% B=3.2%

Render Index: Ra = 83.4 AvgR = 77.7 TM30:Rf=84 Rg=95

EEL: 0.09669 A++ Highest

R1 =82 R2 =92 R3 =96 R4 =81 R5 =82 R6 =90 R7 =83

R8 =61 R9 =9 R10=81 R11=80 R12=69 R13=85 R14=98 R15=75

4.1 Integrating Sphere Test

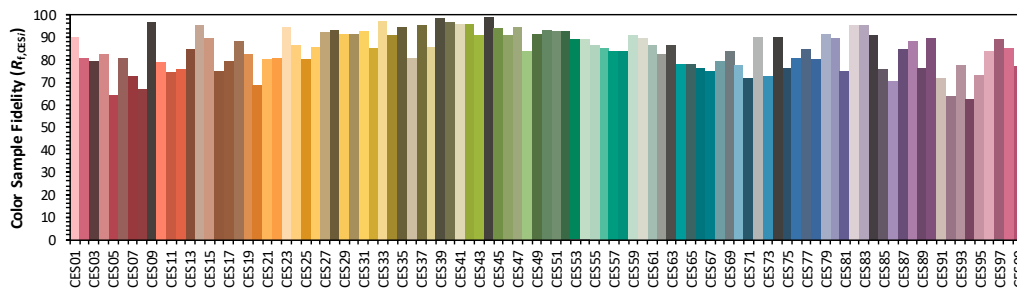
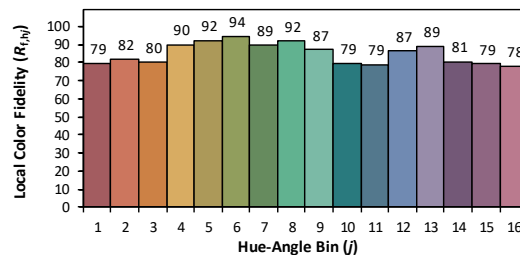
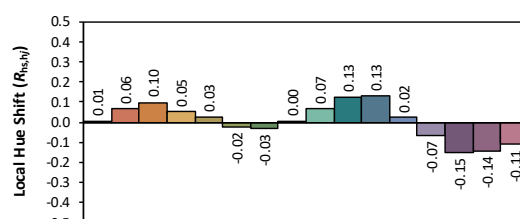
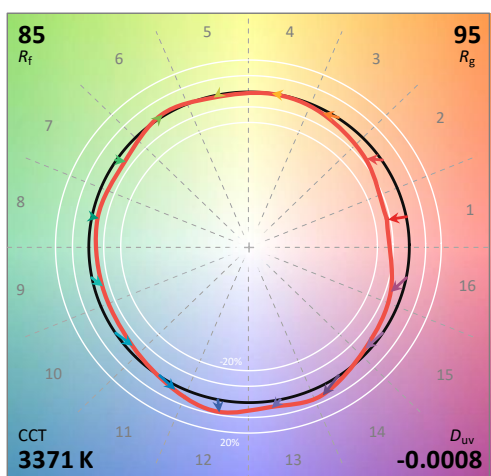
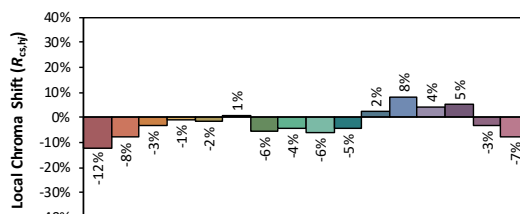
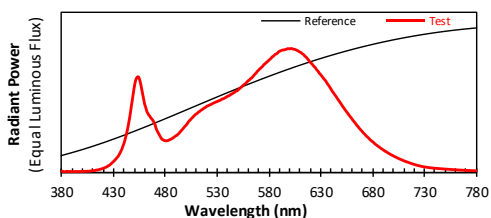
ANSI/IES TM-30-18 Color Rendition Report

Source: 1 CIE F1

Manufacturer: RAB Lighting Inc.

Date: 2025/1/21

Model: EZP2X4 @30W3500K



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

x 0.4118
 y 0.3920
 u' 0.2394
 v' 0.5128

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	5.70E-06	447	5.26E-04	514	4.97E-04	581	9.13E-04	648	5.72E-04	715	7.68E-05
381	6.30E-06	448	5.79E-04	515	5.04E-04	582	9.19E-04	649	5.60E-04	716	7.36E-05
382	2.10E-06	449	6.38E-04	516	5.08E-04	583	9.31E-04	650	5.48E-04	717	7.06E-05
383	1.80E-06	450	6.91E-04	517	5.16E-04	584	9.35E-04	651	5.34E-04	718	6.76E-05
384	4.30E-06	451	7.33E-04	518	5.20E-04	585	9.43E-04	652	5.23E-04	719	6.50E-05
385	5.70E-06	452	7.57E-04	519	5.25E-04	586	9.51E-04	653	5.10E-04	720	6.23E-05
386	4.10E-06	453	7.69E-04	520	5.32E-04	587	9.55E-04	654	4.99E-04	721	6.00E-05
387	3.80E-06	454	7.69E-04	521	5.35E-04	588	9.61E-04	655	4.88E-04	722	5.75E-05
388	4.80E-06	455	7.50E-04	522	5.39E-04	589	9.69E-04	656	4.77E-04	723	5.51E-05
389	3.60E-06	456	7.18E-04	523	5.44E-04	590	9.77E-04	657	4.65E-04	724	5.29E-05
390	3.70E-06	457	6.75E-04	524	5.47E-04	591	9.79E-04	658	4.53E-04	725	5.05E-05
391	3.20E-06	458	6.32E-04	525	5.52E-04	592	9.84E-04	659	4.43E-04	726	4.89E-05
392	3.40E-06	459	5.90E-04	526	5.56E-04	593	9.87E-04	660	4.33E-04	727	4.71E-05
393	4.50E-06	460	5.48E-04	527	5.60E-04	594	9.88E-04	661	4.20E-04	728	4.47E-05
394	3.50E-06	461	5.23E-04	528	5.64E-04	595	9.88E-04	662	4.10E-04	729	4.35E-05
395	4.60E-06	462	4.92E-04	529	5.67E-04	596	9.92E-04	663	4.00E-04	730	4.18E-05
396	3.10E-06	463	4.76E-04	530	5.71E-04	597	9.94E-04	664	3.89E-04	731	4.08E-05
397	4.40E-06	464	4.60E-04	531	5.74E-04	598	9.98E-04	665	3.77E-04	732	3.94E-05
398	4.40E-06	465	4.52E-04	532	5.78E-04	599	9.98E-04	666	3.69E-04	733	3.77E-05
399	4.70E-06	466	4.36E-04	533	5.80E-04	600	9.96E-04	667	3.57E-04	734	3.67E-05
400	5.00E-06	467	4.28E-04	534	5.86E-04	601	9.99E-04	668	3.48E-04	735	3.55E-05
401	5.00E-06	468	4.16E-04	535	5.92E-04	602	9.99E-04	669	3.38E-04	736	3.45E-05
402	5.90E-06	469	4.01E-04	536	5.93E-04	603	9.96E-04	670	3.29E-04	737	3.36E-05
403	5.90E-06	470	3.83E-04	537	5.98E-04	604	9.94E-04	671	3.18E-04	738	3.26E-05
404	6.20E-06	471	3.53E-04	538	6.03E-04	605	9.92E-04	672	3.11E-04	739	3.16E-05
405	6.50E-06	472	3.35E-04	539	6.06E-04	606	9.89E-04	673	3.02E-04	740	3.09E-05
406	6.80E-06	473	3.18E-04	540	6.14E-04	607	9.84E-04	674	2.92E-04	741	2.99E-05
407	7.40E-06	474	3.03E-04	541	6.16E-04	608	9.82E-04	675	2.85E-04	742	2.95E-05
408	9.10E-06	475	2.87E-04	542	6.20E-04	609	9.75E-04	676	2.77E-04	743	2.87E-05
409	9.20E-06	476	2.73E-04	543	6.27E-04	610	9.71E-04	677	2.68E-04	744	2.81E-05
410	1.03E-05	477	2.63E-04	544	6.31E-04	611	9.66E-04	678	2.60E-04	745	2.73E-05
411	1.20E-05	478	2.60E-04	545	6.36E-04	612	9.58E-04	679	2.53E-04	746	2.67E-05
412	1.30E-05	479	2.55E-04	546	6.42E-04	613	9.53E-04	680	2.46E-04	747	2.60E-05
413	1.51E-05	480	2.53E-04	547	6.46E-04	614	9.45E-04	681	2.40E-04	748	2.56E-05
414	1.67E-05	481	2.52E-04	548	6.54E-04	615	9.36E-04	682	2.31E-04	749	2.48E-05
415	1.78E-05	482	2.54E-04	549	6.57E-04	616	9.30E-04	683	2.24E-04	750	2.41E-05
416	2.02E-05	483	2.57E-04	550	6.62E-04	617	9.19E-04	684	2.18E-04	751	2.35E-05
417	2.24E-05	484	2.61E-04	551	6.71E-04	618	9.09E-04	685	2.11E-04	752	2.28E-05
418	2.47E-05	485	2.64E-04	552	6.77E-04	619	8.97E-04	686	2.05E-04	753	2.23E-05
419	2.72E-05	486	2.69E-04	553	6.86E-04	620	8.87E-04	687	2.00E-04	754	2.18E-05
420	3.04E-05	487	2.74E-04	554	6.92E-04	621	8.79E-04	688	1.93E-04	755	2.14E-05
421	3.34E-05	488	2.80E-04	555	7.01E-04	622	8.71E-04	689	1.87E-04	756	2.06E-05
422	3.68E-05	489	2.87E-04	556	7.07E-04	623	8.60E-04	690	1.82E-04	757	2.01E-05
423	4.06E-05	490	2.93E-04	557	7.13E-04	624	8.51E-04	691	1.76E-04	758	1.93E-05
424	4.58E-05	491	2.96E-04	558	7.21E-04	625	8.42E-04	692	1.70E-04	759	1.89E-05
425	5.09E-05	492	3.05E-04	559	7.30E-04	626	8.29E-04	693	1.65E-04	760	1.82E-05
426	5.53E-05	493	3.11E-04	560	7.39E-04	627	8.20E-04	694	1.60E-04	761	1.76E-05
427	6.31E-05	494	3.22E-04	561	7.43E-04	628	8.09E-04	695	1.55E-04	762	1.75E-05
428	7.00E-05	495	3.32E-04	562	7.54E-04	629	7.96E-04	696	1.50E-04	763	1.67E-05
429	7.88E-05	496	3.41E-04	563	7.59E-04	630	7.89E-04	697	1.45E-04	764	1.59E-05
430	8.55E-05	497	3.51E-04	564	7.67E-04	631	7.77E-04	698	1.40E-04	765	1.60E-05
431	9.49E-05	498	3.61E-04	565	7.77E-04	632	7.66E-04	699	1.36E-04	766	1.52E-05
432	1.04E-04	499	3.71E-04	566	7.87E-04	633	7.55E-04	700	1.32E-04	767	1.50E-05
433	1.14E-04	500	3.79E-04	567	7.96E-04	634	7.46E-04	701	1.27E-04	768	1.45E-05
434	1.24E-04	501	3.90E-04	568	8.05E-04	635	7.35E-04	702	1.23E-04	769	1.41E-05
435	1.36E-04	502	4.03E-04	569	8.16E-04	636	7.21E-04	703	1.19E-04	770	1.35E-05
436	1.52E-04	503	4.14E-04	570	8.23E-04	637	7.09E-04	704	1.15E-04	771	1.31E-05
437	1.68E-04	504	4.21E-04	571	8.34E-04	638	6.98E-04	705	1.10E-04	772	1.26E-05
438	1.86E-04	505	4.31E-04	572	8.40E-04	639	6.84E-04	706	1.07E-04	773	1.24E-05
439	2.11E-04	506	4.39E-04	573	8.48E-04	640	6.71E-04	707	1.03E-04	774	1.18E-05
440	2.32E-04	507	4.48E-04	574	8.56E-04	641	6.56E-04	708	9.99E-05	775	1.16E-05
441	2.61E-04	508	4.57E-04	575	8.68E-04	642	6.45E-04	709	9.61E-05	776	1.10E-05
442	2.94E-04	509	4.65E-04	576	8.74E-04	643	6.32E-04	710	9.23E-05	777	1.07E-05
443	3.30E-04	510	4.71E-04	577	8.83E-04	644	6.21E-04	711	8.90E-05	778	1.05E-05
444	3.71E-04	511	4.77E-04	578	8.89E-04	645	6.10E-04	712	8.55E-05	779	1.06E-05
445	4.18E-04	512	4.86E-04	579	8.97E-04	646	5.96E-04	713	8.28E-05	780	1.06E-05
446	4.67E-04	513	4.90E-04	580	9.05E-04	647	5.84E-04	714	8.01E-05	N/A	N/A

4.0 LM-79 Measurement and Test Results

4.2 Goniophotometer Test

Model No.	EZP2X4 @30W3500K	Sample ID	250117003-S1
Operate time (Min.)	30	Stabilization time (Min.)	60
Temperature (°C)	24.8	Humidity (%RH)	41.3

Test Method
<p>The Samples were tested according to the ANSI/IES LM-79:2019.</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	277.0	60	0.120	30.4	0.915
NON-WORST CASE	120.0	60	0.252	30.0	0.993

Test Result

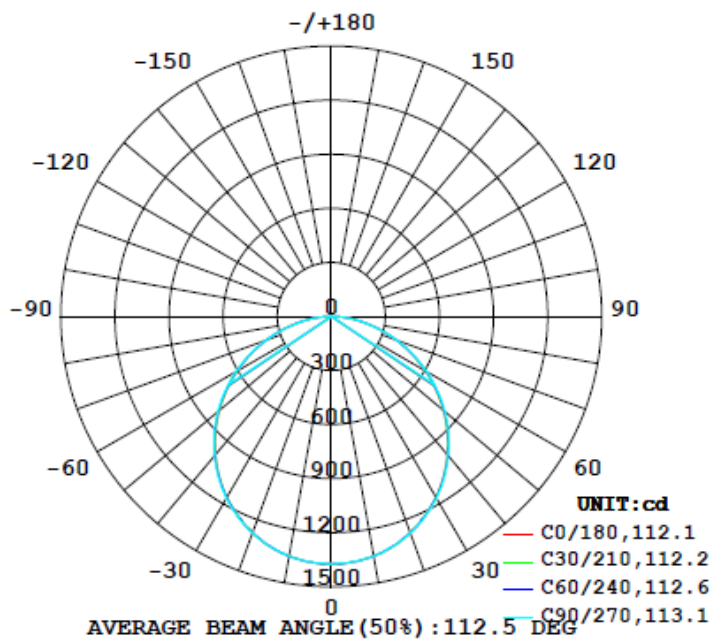
Flux (lm)	Field Angle (10%)		Beam Angle (50%)		Luminous Efficacy (lm/W)	Zonal Lumen Requirement (0°-60°)
	C0-180	C90-270	C0-180	C90-270		
3961	164.5	163.9	111.9	112.9	130.3	78.0%

UGR		Spacing Criterion	
Crosswise	Endwise	(0°-180°)	(90°-270°)
18.6	18.6	1.26	1.28

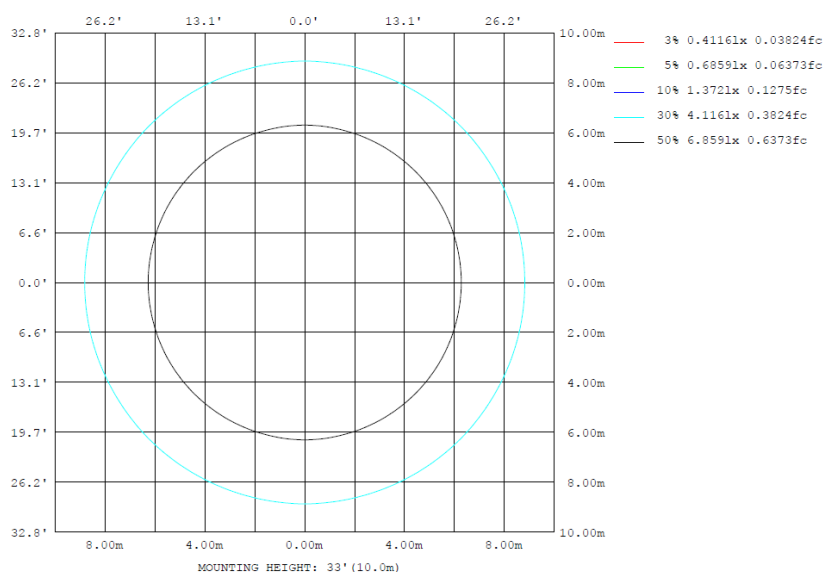
4.2 Goniophotometer Test

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	zone	total	%lum, lamp
10	1348	1350	1349	1350	1348	1350	1349	1350	0- 10	130.0	130.0	3.28,3.28
20	1277	1279	1278	1279	1277	1279	1278	1279	10- 20	372.6	502.6	12.7,12.7
30	1159	1162	1167	1162	1159	1162	1167	1162	20- 30	564.4	1067	26.9,26.9
40	998.5	1006	1006	1006	998.5	1006	1006	1006	30- 40	680.1	1747	44.1,44.1
50	810.3	818.4	822.4	818.4	810.3	818.4	822.4	818.4	40- 50	704.7	2452	61.9,61.9
60	601.1	607.8	610.4	607.8	601.1	607.8	610.4	607.8	50- 60	636.9	3089	78,78
70	385.1	383.8	385.1	383.8	385.1	383.8	385.1	383.8	60- 70	489.8	3579	90.4,90.4
80	177.5	173.5	171.3	173.5	177.5	173.5	171.3	173.5	70- 80	292.1	3871	97.7,97.7
90	0	0	0	0	0	0	0	0	80- 90	89.98	3961	100,100
100	0	0	0	0	0	0	0	0	90-100	0	3961	100,100
110	0	0	0	0	0	0	0	0	100-110	0	3961	100,100
120	0	0	0	0	0	0	0	0	110-120	0	3961	100,100
130	0	0	0	0	0	0	0	0	120-130	0	3961	100,100
140	0	0	0	0	0	0	0	0	130-140	0	3961	100,100
150	0	0	0	0	0	0	0	0	140-150	0	3961	100,100
160	0	0	0	0	0	0	0	0	150-160	0	3961	100,100
170	0	0	0	0	0	0	0	0	160-170	0	3961	100,100
180	0	0	0	0	0	0	0	0	170-180	0	3961	100,100
DEG	LUMINOUS INTENSITY:cd									UNIT:lm		

	Zonal (lm)		Total (lm)	Percent
0-10	130.00	0-10	130.00	3.28%
10-20	372.62	0-20	502.62	12.69%
20-30	564.40	0-30	1067.02	26.94%
30-40	680.11	0-40	1747.13	44.11%
40-50	704.67	0-50	2451.80	61.90%
50-60	636.94	0-60	3088.74	77.99%
60-70	489.80	0-70	3578.54	90.35%
70-80	292.12	0-80	3870.66	97.73%
80-90	89.98	0-90	3960.64	100.00%
90-100	0.00	0-100	3960.64	100.00%
100-110	0.00	0-110	3960.64	100.00%
110-120	0.00	0-120	3960.64	100.00%
120-130	0.00	0-130	3960.64	100.00%
130-140	0.00	0-140	3960.64	100.00%
140-150	0.00	0-150	3960.64	100.00%
150-160	0.00	0-160	3960.64	100.00%
160-170	0.00	0-170	3960.64	100.00%
170-180	0.00	0-180	3960.64	100.00%

4.2 Goniophotometer Test

UGR – Uncorrected Table:

UGR TABLE - UNCORRECTED

Reflectances		70	70	50	50	30	70	70	50	50	30
Ceiling Cavity		50	30	50	30	30	50	30	50	30	30
Walls		20	20	20	20	20	20	20	20	20	20
Floor Cavity											
Room Size		UGR Viewed Crosswise					UGR Viewed Endwise				
X=2H	Y=2H	9.2	10.9	9.6	11.2	11.5	9.3	10.9	9.6	11.2	11.6
	3H	11.1	12.6	11.5	12.9	13.3	11.1	12.6	11.5	13.0	13.3
	4H	11.8	13.2	12.2	13.6	14.0	11.8	13.3	12.2	13.6	14.0
	6H	12.4	13.7	12.8	14.1	14.5	12.4	13.7	12.8	14.1	14.4
	8H	12.6	13.9	13.0	14.2	14.6	12.6	13.8	13.0	14.2	14.6
	12H	12.7	14.0	13.2	14.3	14.8	12.7	13.9	13.1	14.3	14.7
4H	2H	9.9	11.3	10.3	11.6	12.0	9.9	11.3	10.3	11.7	12.1
	3H	12.0	13.2	12.4	13.6	14.0	12.0	13.2	12.4	13.6	14.0
	4H	12.8	13.9	13.3	14.3	14.8	12.8	13.9	13.3	14.3	14.8
	6H	13.6	14.5	14.0	14.9	15.4	13.5	14.5	14.0	14.9	15.4
	8H	13.8	14.7	14.3	15.1	15.6	13.8	14.7	14.2	15.1	15.6
	12H	14.0	14.8	14.5	15.3	15.8	14.0	14.7	14.4	15.2	15.7
8H	4H	13.2	14.1	13.7	14.5	15.0	13.2	14.1	13.7	14.5	15.0
	6H	14.0	14.8	14.5	15.3	15.7	14.0	14.7	14.5	15.2	15.7
	8H	14.4	15.0	14.9	15.6	16.0	14.3	15.0	14.8	15.5	16.0
	12H	14.7	15.3	15.2	15.8	16.3	14.6	15.2	15.1	15.7	16.2
12H	4H	13.2	14.0	13.7	14.5	15.0	13.2	14.0	13.7	14.5	15.0
	6H	14.1	14.8	14.6	15.2	15.8	14.1	14.8	14.6	15.2	15.8
	8H	14.5	15.1	15.0	15.6	16.2	14.5	15.0	15.0	15.5	16.1

Maximum UGR = 16.3

UGR – Corrected Table:

UGR TABLE - CORRECTED

Reflectances		70	70	50	50	30	70	70	50	50	30
Ceiling Cavity		50	30	50	30	30	50	30	50	30	30
Walls		20	20	20	20	20	20	20	20	20	20
Floor Cavity											
Room Size		UGR Viewed Crosswise					UGR Viewed Endwise				
X=2H	Y=2H	14.0	15.7	14.4	16.0	16.3	14.1	15.7	14.4	16.0	16.4
	3H	15.9	17.4	16.3	17.7	18.1	15.9	17.4	16.3	17.8	18.1
	4H	16.6	18.0	17.0	18.4	18.8	16.6	18.1	17.0	18.4	18.8
	6H	17.2	18.5	17.6	18.9	19.3	17.2	18.5	17.6	18.9	19.2
	8H	17.4	18.7	17.8	19.0	19.4	17.4	18.6	17.8	19.0	19.4
	12H	17.5	18.8	18.0	19.1	19.6	17.5	18.7	17.9	19.1	19.5
4H	2H	14.7	16.1	15.1	16.4	16.8	14.7	16.1	15.1	16.5	16.9
	3H	16.8	18.0	17.2	18.4	18.8	16.8	18.0	17.2	18.4	18.8
	4H	17.6	18.7	18.1	19.1	19.6	17.6	18.7	18.1	19.1	19.6
	6H	18.4	19.3	18.8	19.7	20.2	18.3	19.3	18.8	19.7	20.2
	8H	18.6	19.5	19.1	19.9	20.4	18.6	19.5	19.0	19.9	20.4
	12H	18.8	19.6	19.3	20.1	20.6	18.8	19.5	19.2	20.0	20.5
8H	4H	18.0	18.9	18.5	19.3	19.8	18.0	18.9	18.5	19.3	19.8
	6H	18.8	19.6	19.3	20.1	20.5	18.8	19.5	19.3	20.0	20.5
	8H	19.2	19.8	19.7	20.4	20.8	19.1	19.8	19.6	20.3	20.8
	12H	19.5	20.1	20.0	20.6	21.1	19.4	20.0	19.9	20.5	21.0
12H	4H	18.0	18.8	18.5	19.3	19.8	18.0	18.8	18.5	19.3	19.8
	6H	18.9	19.6	19.4	20.0	20.6	18.9	19.6	19.4	20.0	20.6
	8H	19.3	19.9	19.8	20.4	21.0	19.3	19.8	19.8	20.3	20.9

Maximum UGR = 21.1

4.2 Goniophotometer Test

Luminous Distribution Intensity Data

Table--1

UNIT: cd

C (DEG) y (DEG)	0	15	30	45	60	75	90	105	120	135	150	165	180	195	210	225	240	255	270
0	1371	1374	1374	1373	1374	1373	1374	1373	1374	1373	1374	1373	1371	1374	1374	1373	1374	1373	1374
5	1366	1370	1367	1369	1368	1368	1368	1368	1368	1369	1367	1370	1366	1370	1367	1369	1368	1368	1368
10	1348	1350	1349	1350	1351	1347	1349	1347	1351	1350	1349	1350	1348	1350	1349	1350	1351	1347	1349
15	1319	1321	1322	1320	1320	1322	1324	1322	1320	1320	1322	1321	1319	1321	1322	1320	1320	1322	1324
20	1277	1279	1277	1279	1277	1279	1278	1279	1277	1279	1277	1279	1277	1279	1277	1279	1277	1279	1278
25	1225	1225	1221	1227	1226	1225	1226	1225	1226	1227	1221	1225	1225	1225	1221	1227	1226	1225	1226
30	1159	1160	1159	1162	1162	1162	1167	1162	1162	1162	1159	1160	1159	1160	1159	1162	1162	1162	1167
35	1084	1084	1086	1086	1087	1089	1092	1089	1087	1086	1086	1084	1084	1084	1086	1086	1087	1089	1092
40	999	1001	1003	1006	1007	1008	1006	1008	1007	1006	1003	1001	999	1001	1003	1006	1007	1008	1006
45	907	910	911	919	917	915	921	915	917	919	911	910	907	910	911	919	917	915	921
50	810	811	813	818	818	819	822	819	818	818	813	811	810	811	813	818	818	819	822
55	708	709	710	714	714	717	718	717	714	714	710	709	708	709	710	714	714	717	718
60	601	602	603	608	607	606	610	606	607	608	603	602	601	602	603	608	607	606	610
65	493	493	494	496	496	495	500	495	496	496	494	493	493	493	494	496	496	495	500
70	385	385	384	384	383	385	385	385	383	384	384	385	385	385	384	384	383	385	385
75	278	278	277	277	275	274	275	274	275	277	277	278	278	278	277	277	275	274	275
80	178	176	175	174	172	170	171	170	172	174	175	176	178	176	175	174	172	170	171
85	84.0	83.1	81.5	80.2	78.6	77.5	77.6	77.5	78.6	80.2	81.5	83.1	84.0	83.1	81.5	80.2	78.6	77.5	77.6
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	1373	1374	1373	1374	1374														
5	1368	1368	1369	1367	1370														
10	1347	1351	1350	1349	1350														
15	1322	1320	1320	1322	1321														
20	1279	1277	1279	1277	1279														
25	1225	1226	1227	1221	1225														
30	1162	1162	1162	1159	1160														
35	1089	1087	1086	1086	1084														
40	1008	1007	1006	1003	1001														
45	915	917	919	911	910														
50	819	818	818	813	811														
55	717	714	714	710	709														
60	606	607	608	603	602														
65	495	496	496	494	493														
70	385	383	384	384	385														
75	274	275	277	277	278														
80	170	172	174	175	176														
85	77.5	78.6	80.2	81.5	83.1														
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.	EZP2X4 @30W3500K	Sample ID	250117003-S1
Temperature (°C)	25.4	Humidity (%RH)	41.0

Test Method
<p>The samples were tested according to the and Ansi C82.77: 2002 and ANSI C82.77-10:2020</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	0.252	30.0	0.993	9.98
277.0	60	0.120	30.4	0.915	6.50

5.0 Equipment List:

Equipment ID	Equipment Name	Last Cal.	Due Cal.
NTC-F01-001	Goniophotometer System	2024-11-07	2025-11-06
NTC-F01-006	2.0 meter Integrating Sphere	2024-11-07	2025-11-06
NTC-F01-012	Standard Lamp	2024-10-28	2025-10-27
NTC-F01-013	Standard Lamp	2024-10-28	2025-10-27
NTC-F01-031	Digital Power Meter	2024-08-06	2025-08-05
NTC-F01-019	Temperature & Humidity Meter	2024-10-29	2025-10-28

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