

## Photometric Test Report

### Relevant Standards

- ☒ ANSI/IES LM-79-2019
- ☒ 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

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		4131
Minimum Luminaire Efficacy (lm/W) (Goniophotometer – Section 4.2)	ANSI/IES LM-79:2019	Standard	Premium	140.0
		110	125	
Power (Input Wattage) (W) (Goniophotometer – Section 4.2)	ANSI/IES LM-79:2019	Worst Case		29.5
Total Harmonic Distortion (A%) (THD & PF – Section 4.3)	ANSI C82.77:2002 ANSI C82-77-10:2020	20.00%	120V	10.42
			277V	6.59
Power Factor (THD & PF – Section 4.3)	ANSI C82.77:2002 ANSI C82-77-10:2020	0.9	120V	0.992
			277V	0.909
Allowable CCTs* (K) (Integrating Sphere – Section 4.1)	ANSI/IES LM-79:2019	7 steps	3985±275	4010
		4 steps	3985±154	
Minimum CRI (Integrating Sphere – Section 4.1)	ANSI/IES LM-79:2019 CIE13.3-1995	≥80		84.5
Minimum R9 (Integrating Sphere – Section 4.1)	ANSI/IES LM-79:2019 CIE13.3-1995	≥0		14
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		93
IES Rcs,h1 (Integrating Sphere – Section 4.1)	ANSI/IES TM-30-18	-12%≤IES Rcs,h1≤+23%		-11%
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	18.7
		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		0.117
(Goniophotometer – Section 4.2)		Non-Worst Case		0.244
Power (Input Wattage – W)				
(Goniophotometer – Section 4.2)	ANSI/IES LM-79:2019	Worst Case		29.5
(Goniophotometer – Section 4.2)		Non-Worst Case		29.1

## 2.0 Test List

Test Item	Test	Test Date	Model Number	Build Level	Sample No.
1	Integrating Sphere Test	2025-01-20	EZP2X4 @30W4000K	-	250117003-S1
2	Goniophotometer Test	2025-01-20	EZP2X4 @30W4000K	-	250117003-S1
3	THD and PF Test	2025-01-20	EZP2X4 @30W4000K	-	250117003-S1

### Remark (If any):

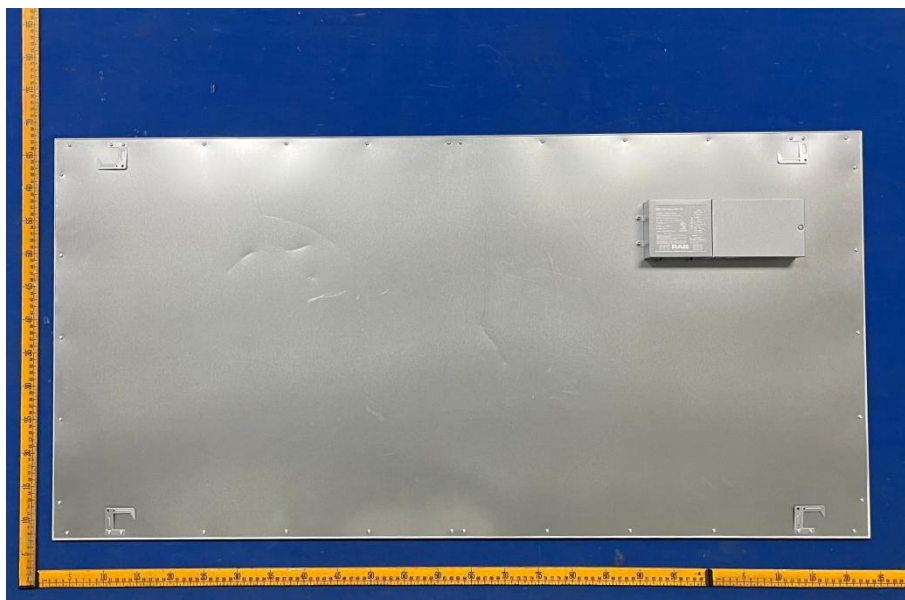
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3. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST or any agency of the U.S. Government.

### 3.0 Product Description

Luminaire Description: Model No. EZP2X4 @30W4000K, 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

<b>Model No.</b>	EZP2X4 @30W4000K	<b>Sample ID</b>	250117003-S1
<b>Operate time (Min.)</b>	10	<b>Stabilization time (Min.)</b>	60
<b>Temperature (°C)</b>	25.4	<b>Humidity (%RH)</b>	41.0

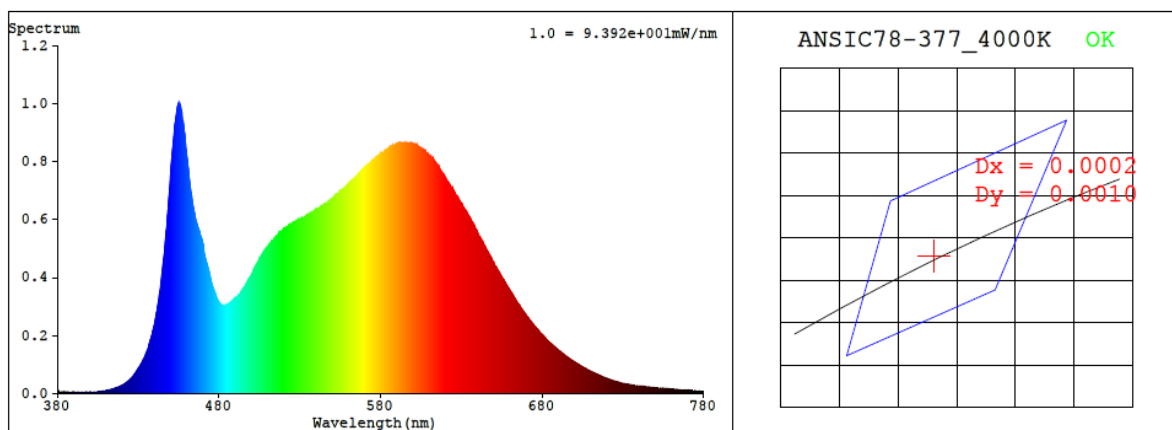
Test Method
<p>The Samples were tested according to the ANSI/IES LM-79:2019.</p> <p>Photometric parameters were measured using an integrating sphere, a spectroradiometer and software. The ambient temperature condition inside the sphere was maintained at <math>25\pm1^{\circ}\text{C}</math>.</p> <p>The 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 <math>\pm 0.2</math> percent under load.</p> <p>The sample was measured using <math>4\pi</math> 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	0.244	29.1	0.992
277.0	60	0.117	29.5	0.909

CCT (K)	CRI	R9	Duv	Rf	Rg	IES Rcs,h1
4010	84.5	14	0.0004	84	93	-11%

## 4.1 Integrating Sphere Test



### Colorimetric Parameters

Chromaticity Coordinate: x = 0.3802 y = 0.3775 / u' = 0.2247 v' = 0.5019 (duv=3.92e-04)

CCT= 4010K Prcp WL: Ld=578.8nm Purity=27.4%

Peak WL: Lp=455nm FWHM: =24.1nm Ratio:R=18.5% G=77.4% B=4.1%

Render Index: Ra = 84.5 AvgR = 78.5 TM30:Rf=84 Rg=94

EEL: 0.08982 A++ Highest

R1 =84 R2 =93 R3 =96 R4 =81 R5 =83 R6 =89 R7 =85

R8 =65 R9 =14 R10=82 R11=81 R12=63 R13=86 R14=98 R15=77

## 4.1 Integrating Sphere Test

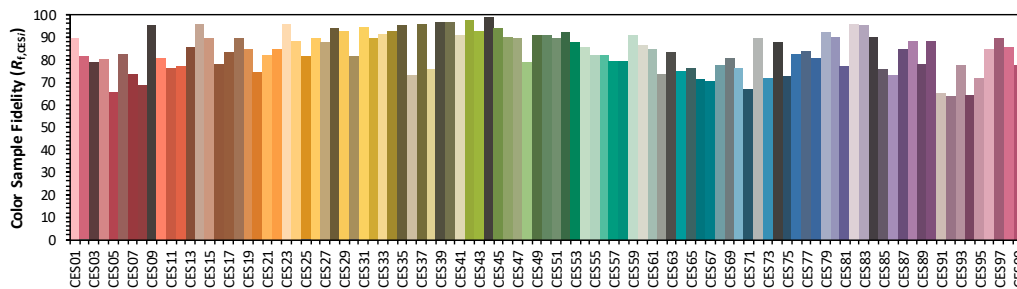
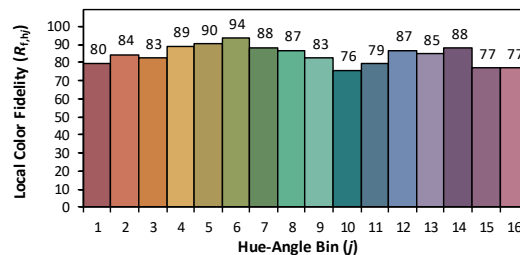
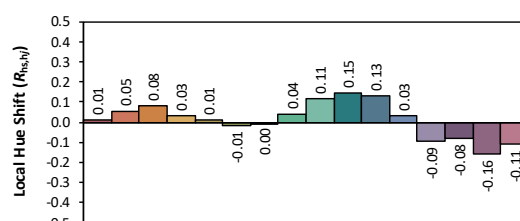
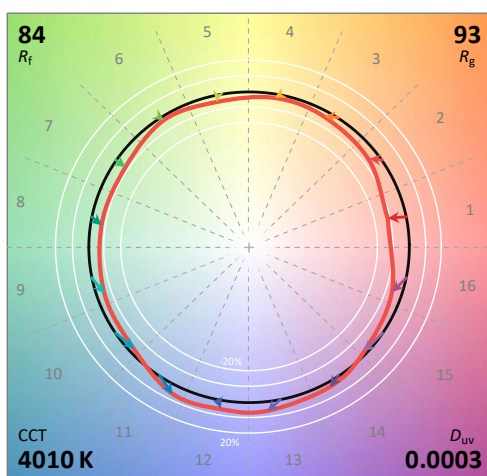
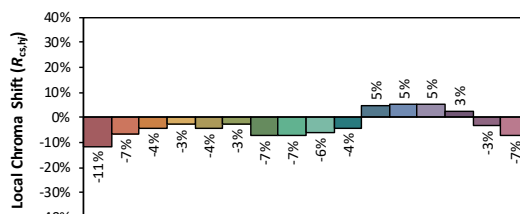
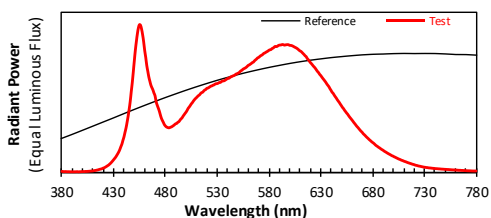
### ANSI/IES TM-30-18 Color Rendition Report

Source: 1 CIE F1

Manufacturer: RAB Lighting Inc.

Date: 2025/1/21

Model: EZP2X4 @30W4000K



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

$x$  0.3802  
 $y$  0.3773  
 $u'$  0.2247  
 $v'$  0.5018

CIE 13.3-1995  
(CRI)  
 $R_a$  84  
 $R_g$  14



## 4.1 Integrating Sphere Test

Spectral Distribution over Visible Wavelength											
WL (nm)	Radiant (W/nm)	WL (nm)	Radiant (W/nm)	WL (nm)	Radiant (W/nm)	WL (nm)	Radiant (W/nm)	WL (nm)	Radiant (W/nm)	WL (nm)	Radiant (W/nm)
380	6.10E-06	447	5.45E-04	514	5.33E-04	581	8.29E-04	648	4.72E-04	715	6.36E-05
381	5.60E-06	448	6.07E-04	515	5.39E-04	582	8.31E-04	649	4.61E-04	716	6.12E-05
382	4.10E-06	449	6.81E-04	516	5.42E-04	583	8.38E-04	650	4.51E-04	717	5.90E-05
383	4.90E-06	450	7.57E-04	517	5.51E-04	584	8.41E-04	651	4.40E-04	718	5.64E-05
384	4.70E-06	451	8.28E-04	518	5.57E-04	585	8.46E-04	652	4.32E-04	719	5.41E-05
385	4.00E-06	452	8.88E-04	519	5.61E-04	586	8.52E-04	653	4.20E-04	720	5.23E-05
386	4.10E-06	453	9.41E-04	520	5.68E-04	587	8.51E-04	654	4.11E-04	721	4.97E-05
387	4.00E-06	454	9.80E-04	521	5.70E-04	588	8.53E-04	655	4.02E-04	722	4.74E-05
388	3.40E-06	455	1.00E-03	522	5.74E-04	589	8.58E-04	656	3.94E-04	723	4.61E-05
389	3.80E-06	456	9.95E-04	523	5.79E-04	590	8.61E-04	657	3.83E-04	724	4.38E-05
390	3.50E-06	457	9.69E-04	524	5.83E-04	591	8.61E-04	658	3.74E-04	725	4.21E-05
391	3.20E-06	458	9.31E-04	525	5.85E-04	592	8.63E-04	659	3.65E-04	726	4.09E-05
392	3.50E-06	459	8.83E-04	526	5.90E-04	593	8.65E-04	660	3.56E-04	727	3.92E-05
393	3.60E-06	460	8.24E-04	527	5.92E-04	594	8.64E-04	661	3.47E-04	728	3.76E-05
394	3.90E-06	461	7.78E-04	528	5.97E-04	595	8.61E-04	662	3.37E-04	729	3.61E-05
395	4.30E-06	462	7.23E-04	529	6.00E-04	596	8.62E-04	663	3.29E-04	730	3.47E-05
396	3.00E-06	463	6.84E-04	530	6.01E-04	597	8.64E-04	664	3.20E-04	731	3.38E-05
397	3.90E-06	464	6.45E-04	531	6.03E-04	598	8.64E-04	665	3.10E-04	732	3.24E-05
398	4.00E-06	465	6.17E-04	532	6.08E-04	599	8.63E-04	666	3.03E-04	733	3.20E-05
399	4.80E-06	466	5.90E-04	533	6.08E-04	600	8.59E-04	667	2.94E-04	734	3.05E-05
400	4.70E-06	467	5.73E-04	534	6.13E-04	601	8.59E-04	668	2.86E-04	735	2.97E-05
401	5.30E-06	468	5.57E-04	535	6.18E-04	602	8.58E-04	669	2.78E-04	736	2.91E-05
402	5.10E-06	469	5.35E-04	536	6.19E-04	603	8.55E-04	670	2.71E-04	737	2.82E-05
403	6.00E-06	470	5.18E-04	537	6.21E-04	604	8.51E-04	671	2.62E-04	738	2.72E-05
404	5.80E-06	471	4.80E-04	538	6.25E-04	605	8.47E-04	672	2.55E-04	739	2.67E-05
405	6.40E-06	472	4.56E-04	539	6.30E-04	606	8.43E-04	673	2.48E-04	740	2.59E-05
406	6.90E-06	473	4.37E-04	540	6.35E-04	607	8.39E-04	674	2.41E-04	741	2.50E-05
407	7.70E-06	474	4.17E-04	541	6.36E-04	608	8.34E-04	675	2.34E-04	742	2.46E-05
408	8.40E-06	475	3.92E-04	542	6.40E-04	609	8.27E-04	676	2.28E-04	743	2.41E-05
409	8.70E-06	476	3.69E-04	543	6.46E-04	610	8.22E-04	677	2.21E-04	744	2.33E-05
410	9.50E-06	477	3.52E-04	544	6.48E-04	611	8.18E-04	678	2.15E-04	745	2.30E-05
411	1.12E-05	478	3.38E-04	545	6.52E-04	612	8.11E-04	679	2.08E-04	746	2.21E-05
412	1.21E-05	479	3.23E-04	546	6.55E-04	613	8.04E-04	680	2.03E-04	747	2.16E-05
413	1.34E-05	480	3.14E-04	547	6.57E-04	614	7.97E-04	681	1.98E-04	748	2.12E-05
414	1.51E-05	481	3.07E-04	548	6.64E-04	615	7.88E-04	682	1.91E-04	749	2.06E-05
415	1.67E-05	482	3.04E-04	549	6.67E-04	616	7.83E-04	683	1.84E-04	750	2.01E-05
416	1.91E-05	483	3.01E-04	550	6.70E-04	617	7.70E-04	684	1.79E-04	751	1.98E-05
417	2.10E-05	484	3.02E-04	551	6.74E-04	618	7.62E-04	685	1.74E-04	752	1.91E-05
418	2.25E-05	485	3.05E-04	552	6.81E-04	619	7.53E-04	686	1.69E-04	753	1.90E-05
419	2.51E-05	486	3.08E-04	553	6.87E-04	620	7.43E-04	687	1.65E-04	754	1.83E-05
420	2.86E-05	487	3.13E-04	554	6.91E-04	621	7.36E-04	688	1.59E-04	755	1.78E-05
421	3.10E-05	488	3.17E-04	555	6.98E-04	622	7.27E-04	689	1.54E-04	756	1.73E-05
422	3.49E-05	489	3.23E-04	556	7.02E-04	623	7.18E-04	690	1.50E-04	757	1.66E-05
423	3.92E-05	490	3.29E-04	557	7.06E-04	624	7.11E-04	691	1.45E-04	758	1.64E-05
424	4.40E-05	491	3.31E-04	558	7.10E-04	625	7.02E-04	692	1.40E-04	759	1.58E-05
425	4.84E-05	492	3.39E-04	559	7.17E-04	626	6.92E-04	693	1.37E-04	760	1.54E-05
426	5.46E-05	493	3.43E-04	560	7.24E-04	627	6.82E-04	694	1.32E-04	761	1.51E-05
427	6.10E-05	494	3.52E-04	561	7.27E-04	628	6.74E-04	695	1.28E-04	762	1.46E-05
428	6.86E-05	495	3.61E-04	562	7.32E-04	629	6.63E-04	696	1.24E-04	763	1.39E-05
429	7.68E-05	496	3.68E-04	563	7.37E-04	630	6.55E-04	697	1.20E-04	764	1.36E-05
430	8.53E-05	497	3.79E-04	564	7.43E-04	631	6.46E-04	698	1.16E-04	765	1.35E-05
431	9.41E-05	498	3.89E-04	565	7.46E-04	632	6.36E-04	699	1.12E-04	766	1.26E-05
432	1.03E-04	499	3.99E-04	566	7.54E-04	633	6.27E-04	700	1.09E-04	767	1.27E-05
433	1.14E-04	500	4.08E-04	567	7.61E-04	634	6.18E-04	701	1.05E-04	768	1.21E-05
434	1.26E-04	501	4.20E-04	568	7.66E-04	635	6.09E-04	702	1.02E-04	769	1.17E-05
435	1.39E-04	502	4.33E-04	569	7.74E-04	636	5.97E-04	703	9.81E-05	770	1.14E-05
436	1.55E-04	503	4.42E-04	570	7.77E-04	637	5.88E-04	704	9.50E-05	771	1.11E-05
437	1.74E-04	504	4.52E-04	571	7.83E-04	638	5.79E-04	705	9.12E-05	772	1.05E-05
438	1.91E-04	505	4.63E-04	572	7.89E-04	639	5.66E-04	706	8.84E-05	773	1.03E-05
439	2.17E-04	506	4.71E-04	573	7.93E-04	640	5.55E-04	707	8.56E-05	774	1.01E-05
440	2.40E-04	507	4.82E-04	574	7.98E-04	641	5.42E-04	708	8.19E-05	775	9.70E-06
441	2.71E-04	508	4.91E-04	575	8.05E-04	642	5.35E-04	709	7.98E-05	776	9.20E-06
442	3.01E-04	509	4.99E-04	576	8.08E-04	643	5.23E-04	710	7.67E-05	777	9.00E-06
443	3.39E-04	510	5.05E-04	577	8.12E-04	644	5.13E-04	711	7.38E-05	778	8.80E-06
444	3.80E-04	511	5.13E-04	578	8.16E-04	645	5.03E-04	712	7.17E-05	779	8.80E-06
445	4.27E-04	512	5.20E-04	579	8.21E-04	646	4.92E-04	713	6.89E-05	780	8.80E-06
446	4.78E-04	513	5.25E-04	580	8.26E-04	647	4.82E-04	714	6.59E-05	N/A	N/A



## 4.0 LM-79 Measurement and Test Results

### 4.2 Goniophotometer Test

<b>Model No.</b>	EZP2X4 @30W4000K	<b>Sample ID</b>	250117003-S1
<b>Operate time (Min.)</b>	30	<b>Stabilization time (Min.)</b>	60
<b>Temperature (°C)</b>	24.8	<b>Humidity (%RH)</b>	41.3

<b>Test Method</b>
<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 <math>25 \pm 1^\circ\text{C}</math>, 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 <math>\pm 0.2</math> 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 <math>1.0^\circ</math> vertical intervals and <math>15^\circ</math> horizontal intervals.</p>

#### Test Conditions

Condition	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor
<b>WORST CASE</b>	277.0	60	0.117	29.5	0.909
<b>NON-WORST CASE</b>	120.0	60	0.244	29.1	0.992

#### Test Result

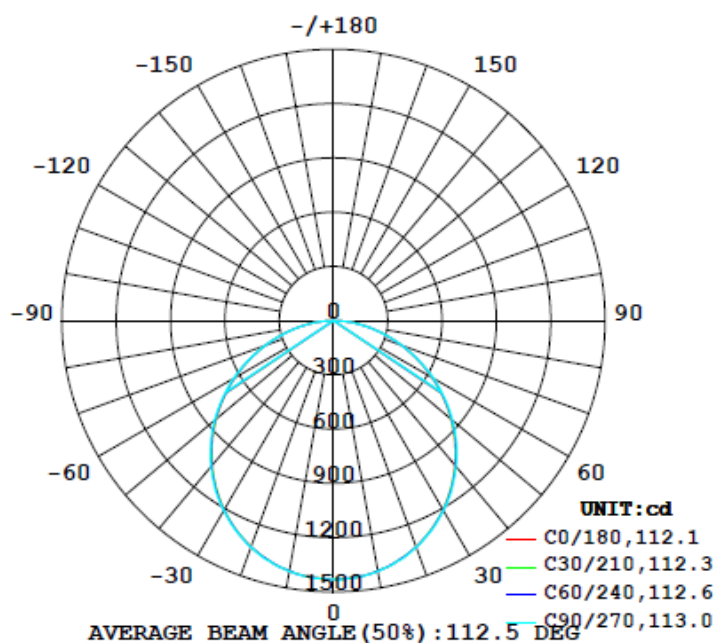
Flux (lm)	Field Angle (10%)		Beam Angle (50%)		Luminous Efficacy (lm/W)	Zonal Lumen Requirement
	C0-180	C90-270	C0-180	C90-270		(0°-60°)
4131	164.5	164.0	112.0	112.9	140.0	78.0%

UGR		Spacing Criterion	
Crosswise	Endwise	(0°-180°)	(90°-270°)
18.7	18.7	1.26	1.28

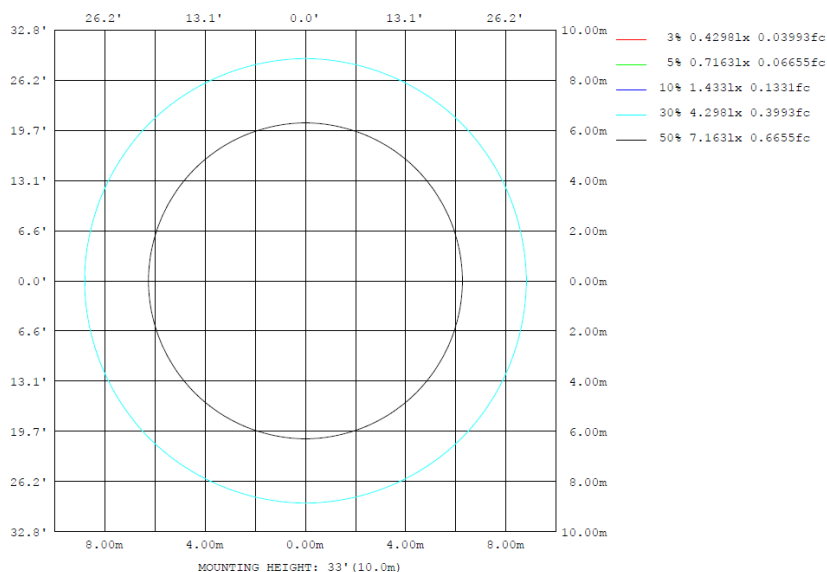
## 4.2 Goniophotometer Test

### 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	1408	1407	1410	1407	1408	1407	1410	1407	0- 10	135.5	135.5	3.28,3.28
20	1331	1331	1333	1331	1331	1331	1333	1331	10- 20	388.3	523.8	12.7,12.7
30	1210	1211	1215	1211	1210	1211	1215	1211	20- 30	588.5	1112	26.9,26.9
40	1042	1050	1054	1050	1042	1050	1054	1050	30- 40	709.0	1821	44.1,44.1
50	845.7	855.1	858.8	855.1	845.7	855.1	858.8	855.1	40- 50	734.6	2556	61.9,61.9
60	628.1	633.6	637.4	633.6	628.1	633.6	637.4	633.6	50- 60	664.5	3221	78,78
70	402.3	402.1	401.9	402.1	402.3	402.1	401.9	402.1	60- 70	511.1	3732	90.3,90.3
80	185.1	181.2	178.5	181.2	185.1	181.2	178.5	181.2	70- 80	305.0	4037	97.7,97.7
90	0	0	0	0	0	0	0	0	80- 90	94.00	4131	100,100
100	0	0	0	0	0	0	0	0	90-100	0	4131	100,100
110	0	0	0	0	0	0	0	0	100-110	0	4131	100,100
120	0	0	0	0	0	0	0	0	110-120	0	4131	100,100
130	0	0	0	0	0	0	0	0	120-130	0	4131	100,100
140	0	0	0	0	0	0	0	0	130-140	0	4131	100,100
150	0	0	0	0	0	0	0	0	140-150	0	4131	100,100
160	0	0	0	0	0	0	0	0	150-160	0	4131	100,100
170	0	0	0	0	0	0	0	0	160-170	0	4131	100,100
180	0	0	0	0	0	0	0	0	170-180	0	4131	100,100
DEG	LUMINOUS INTENSITY:cd									UNIT:lm		

	Zonal (lm)		Total (lm)	Percent
0-10	135.51	0-10	135.51	3.28%
10-20	388.32	0-20	523.83	12.68%
20-30	588.54	0-30	1112.37	26.93%
30-40	709.04	0-40	1821.41	44.09%
40-50	734.65	0-50	2556.06	61.88%
50-60	664.53	0-60	3220.59	77.97%
60-70	511.13	0-70	3731.72	90.34%
70-80	304.96	0-80	4036.68	97.72%
80-90	94.00	0-90	4130.68	100.00%
90-100	0.00	0-100	4130.68	100.00%
100-110	0.00	0-110	4130.68	100.00%
110-120	0.00	0-120	4130.68	100.00%
120-130	0.00	0-130	4130.68	100.00%
130-140	0.00	0-140	4130.68	100.00%
140-150	0.00	0-150	4130.68	100.00%
150-160	0.00	0-160	4130.68	100.00%
160-170	0.00	0-170	4130.68	100.00%
170-180	0.00	0-180	4130.68	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		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	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	13.9	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	14.5
	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	12.9	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	14.8	14.4	15.2	15.7
8H	4H	13.2	14.1	13.6	14.5	15.0	13.2	14.1	13.6	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	15.1	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		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	14.1	15.8	14.5	16.1	16.4	14.2	15.8	14.5	16.1	16.5
	3H	16.0	17.5	16.4	17.8	18.2	16.0	17.5	16.4	17.9	18.2
	4H	16.7	18.1	17.1	18.5	18.8	16.7	18.2	17.1	18.5	18.9
	6H	17.3	18.6	17.7	19.0	19.4	17.3	18.6	17.7	19.0	19.4
	8H	17.5	18.8	17.9	19.1	19.5	17.5	18.7	17.9	19.1	19.5
	12H	17.6	18.9	18.1	19.2	19.7	17.6	18.8	18.0	19.2	19.6
4H	2H	14.8	16.2	15.2	16.5	16.9	14.8	16.2	15.2	16.6	17.0
	3H	16.9	18.1	17.3	18.5	18.9	16.9	18.1	17.3	18.5	18.9
	4H	17.7	18.8	18.2	19.2	19.7	17.8	18.8	18.2	19.2	19.7
	6H	18.5	19.4	18.9	19.8	20.3	18.4	19.4	18.9	19.8	20.3
	8H	18.7	19.6	19.2	20.0	20.5	18.7	19.6	19.1	20.0	20.5
	12H	18.9	19.7	19.4	20.2	20.7	18.9	19.7	19.3	20.1	20.6
8H	4H	18.1	19.0	18.5	19.4	19.9	18.1	19.0	18.5	19.4	19.9
	6H	18.9	19.7	19.4	20.2	20.6	18.9	19.6	19.4	20.1	20.6
	8H	19.3	19.9	19.8	20.5	20.9	19.2	19.9	19.7	20.4	20.9
	12H	19.6	20.2	20.1	20.7	21.2	19.5	20.1	20.0	20.6	21.1
12H	4H	18.1	18.9	18.6	19.4	19.9	18.1	18.9	18.6	19.4	19.9
	6H	19.0	19.7	19.5	20.1	20.7	19.0	19.7	19.5	20.1	20.7
	8H	19.4	20.0	19.9	20.5	21.1	19.4	20.0	19.9	20.4	21.0

Maximum UGR = 21.2

## 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	1431	1429	1431	1435	1431	1433	1429	1433	1431	1435	1431	1429	1431	1429	1431	1435	1431	1433	1429
5	1424	1426	1425	1427	1425	1427	1427	1427	1425	1427	1425	1426	1424	1426	1425	1427	1425	1427	1427
10	1408	1408	1405	1407	1405	1409	1410	1409	1405	1407	1405	1408	1408	1408	1405	1407	1405	1409	1410
15	1374	1377	1373	1376	1375	1377	1375	1377	1375	1376	1373	1377	1374	1377	1373	1376	1375	1377	1375
20	1331	1333	1332	1331	1332	1334	1333	1334	1332	1331	1332	1333	1331	1333	1332	1331	1332	1334	1333
25	1277	1276	1275	1278	1278	1279	1280	1279	1278	1278	1275	1276	1277	1276	1275	1278	1279	1279	1280
30	1210	1207	1210	1211	1211	1214	1215	1214	1211	1211	1210	1207	1210	1207	1210	1211	1211	1214	1215
35	1131	1130	1130	1134	1136	1137	1140	1137	1136	1134	1130	1130	1131	1130	1130	1134	1136	1137	1140
40	1042	1043	1045	1050	1049	1051	1054	1051	1049	1050	1045	1043	1042	1043	1045	1050	1049	1051	1054
45	948	947	950	955	955	955	960	955	955	955	950	947	948	947	950	955	955	955	960
50	846	845	848	855	853	855	859	855	853	855	848	845	846	845	848	855	853	855	859
55	739	741	741	746	744	747	750	747	744	746	741	741	739	741	741	746	744	747	750
60	628	627	629	634	632	635	637	635	632	634	629	627	628	627	629	634	632	635	637
65	516	514	514	518	517	518	520	518	517	518	514	514	516	514	514	518	517	518	520
70	402	401	401	402	400	401	402	401	400	402	401	401	402	401	401	402	400	401	402
75	291	290	289	289	287	286	287	286	287	289	289	290	291	290	289	289	287	286	287
80	185	183	183	181	179	178	178	178	179	181	183	183	185	183	183	181	179	178	178
85	88.0	86.6	85.4	84.0	82.1	81.0	81.4	81.0	82.1	84.0	85.4	86.6	88.0	86.6	85.4	84.0	82.1	81.0	81.4
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	1433	1431	1435	1431	1429														
5	1427	1425	1427	1425	1426														
10	1409	1405	1407	1405	1408														
15	1377	1375	1376	1373	1377														
20	1334	1332	1331	1332	1333														
25	1279	1278	1278	1275	1276														
30	1214	1211	1211	1210	1207														
35	1137	1136	1134	1130	1130														
40	1051	1049	1050	1045	1043														
45	955	955	955	950	947														
50	855	853	855	848	845														
55	747	744	746	741	741														
60	635	632	634	629	627														
65	518	517	518	514	514														
70	401	400	402	401	401														
75	286	287	289	289	290														
80	178	179	181	183	183														
85	81.0	82.1	84.0	85.4	86.6														
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

<b>Model No.</b>	EZP2X4 @30W4000K	<b>Sample ID</b>	250117003-S1
<b>Temperature (°C)</b>	25.4	<b>Humidity (%RH)</b>	41.0

<b>Test Method</b>
<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 <math>25 \pm 1^\circ\text{C}</math>. 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	0.244	29.1	0.992	10.42
277.0	60	0.117	29.5	0.909	6.59

## 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\*\*\*\*\*