

## 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

1x4 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	1500		3106
Minimum Luminaire Efficacy (lm/W) (Goniophotometer – Section 4.2)	ANSI/IES LM-79:2019	Standard	Premium	120.9
		110	125	
Power (Input Wattage) (W) (Goniophotometer – Section 4.2)	ANSI/IES LM-79:2019	Worst Case		25.7
Total Harmonic Distortion (A%) (THD & PF – Section 4.3)	ANSI C82.77:2002 ANSI C82-77-10:2020	20.00%	120V	11.15
			277V	9.28
Power Factor (THD & PF – Section 4.3)	ANSI C82.77:2002 ANSI C82-77-10:2020	0.9	120V	0.993
			277V	0.924
Allowable CCTs* (K) (Integrating Sphere – Section 4.1)	ANSI/IES LM-79:2019	7 steps	3985±275	4005
		4 steps	3985±154	
Minimum CRI (Integrating Sphere – Section 4.1)	ANSI/IES LM-79:2019 CIE13.3-1995	≥80		84.6
Minimum R9 (Integrating Sphere – Section 4.1)	ANSI/IES LM-79:2019 CIE13.3-1995	≥0		15
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%		77.9%
Discomfort Glare (UGR) (Goniophotometer – Section 4.2)	ANSI/IES LM-79:2019	Standard	Premium	20.1
		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	1.26
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		0.100
(Goniophotometer – Section 4.2)		Non-Worst Case		0.207
Power (Input Wattage – W)				
(Goniophotometer – Section 4.2)	ANSI/IES LM-79:2019	Worst Case		25.7
(Goniophotometer – Section 4.2)		Non-Worst Case		24.7

## 2.0 Test List

Test Item	Test	Test Date	Model Number	Build Level	Sample No.
1	Integrating Sphere Test	2025-01-20	EZP1X4 @25W4000K	-	250117001-S1
2	Goniophotometer Test	2025-01-20	EZP1X4 @25W4000K	-	250117001-S1
3	THD and PF Test	2025-01-20	EZP1X4 @25W4000K	-	250117001-S1

### Remark (If any):

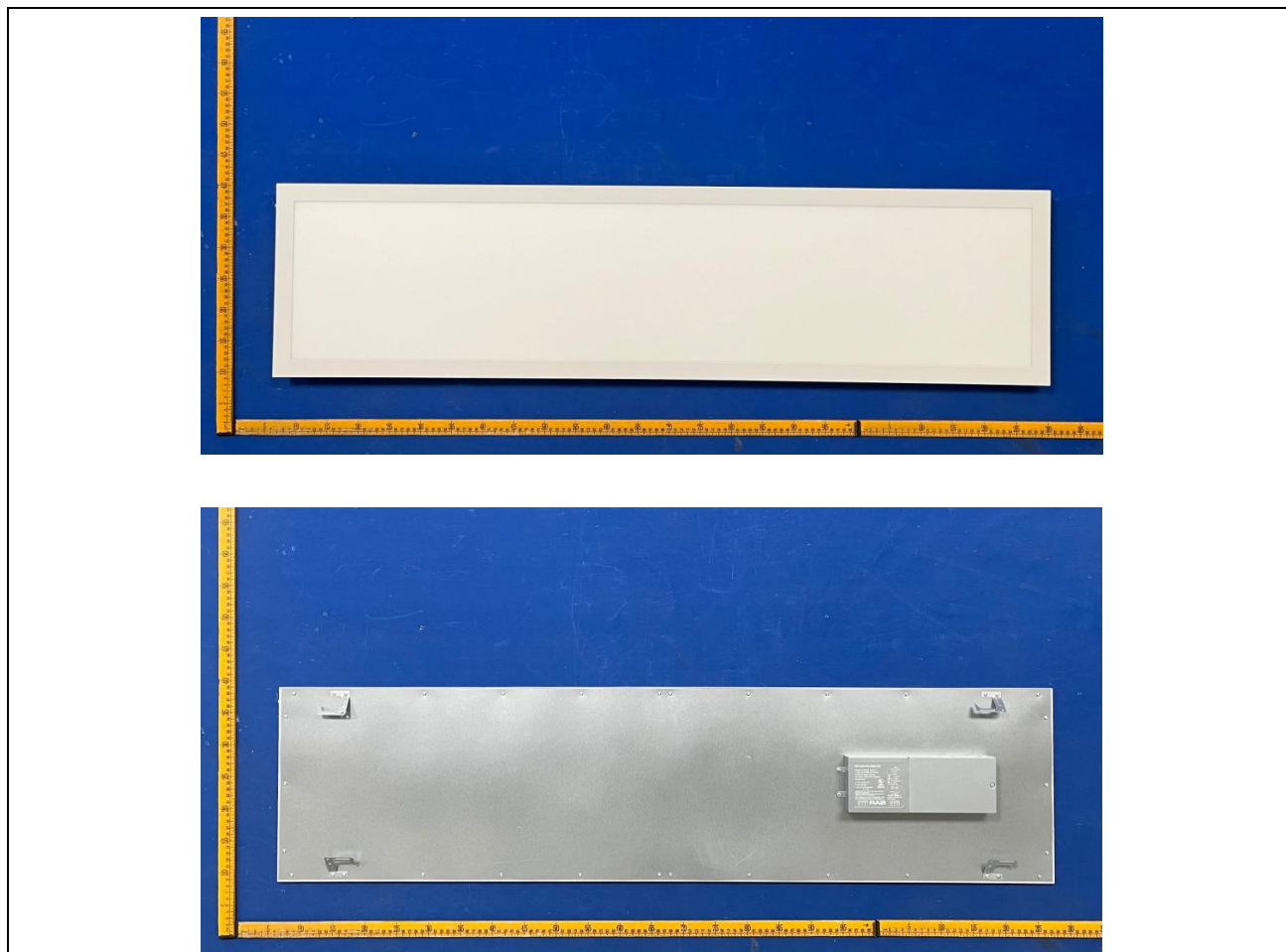
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3. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST or any agency of the U.S. Government.

### 3.0 Product Description

Luminaire Description: Model No. EZP1X4 @25W4000K, 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>	EZP1X4 @25W4000K	<b>Sample ID</b>	250117001-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

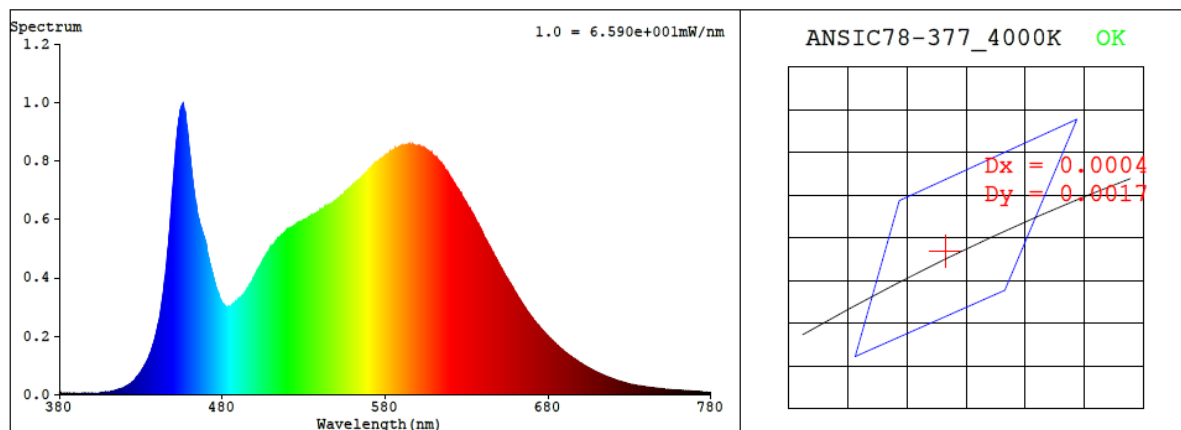
<b>Test Method</b>
<p>The Samples were tested according to the ANSI/IES LM-79:2019.</p> <p>Photometric parameters were measured using an integrating sphere, a spectroradiometer and software. The ambient temperature condition inside the sphere was maintained at 25±1°C.</p> <p>The sample measurements were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

<b>Voltage (Vac)</b>	<b>Frequency (Hz)</b>	<b>Current (A)</b>	<b>Power (W)</b>	<b>Power Factor</b>
120.0	60	0.207	24.7	0.993
277.0	60	0.100	25.7	0.924

<b>CCT (K)</b>	<b>CRI</b>	<b>R9</b>	<b>Duv</b>	<b>Rf</b>	<b>Rg</b>	<b>IES Rcs,h1</b>
4005	84.6	15	0.0007	84	93	-11%

#### 4.1 Integrating Sphere Test



#### Colorimetric Parameters

Chromaticity Coordinate:  $x = 0.3806$   $y = 0.3783$  /  $u' = 0.2246$   $v' = 0.5023$  ( $duv=6.81e-04$ )

CCT= 4005K Prcp WL: Ld=578.7nm Purity=27.8%

Peak WL: Lp=456nm FWHM: =23.9nm Ratio:R=18.6% G=77.4% B=4.1%

Render Index: Ra = 84.6 AvgR = 78.6 TM30:Rf=84 Rg=94

EEL: 0.11021 A+

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

R8 =65 R9 =15 R10=82 R11=81 R12=63 R13=87 R14=99 R15=77

## 4.1 Integrating Sphere Test

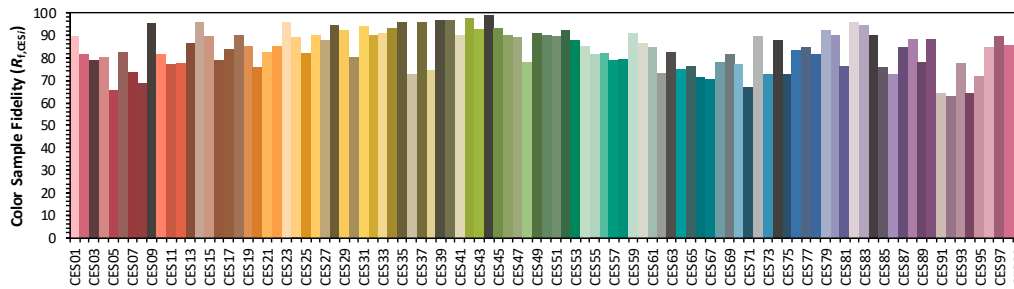
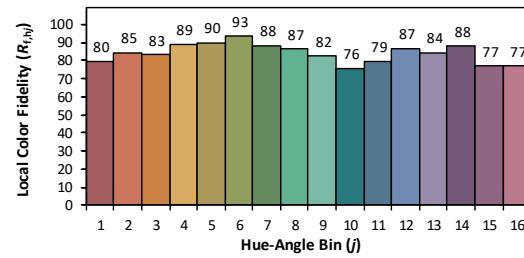
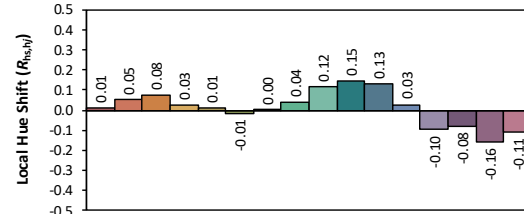
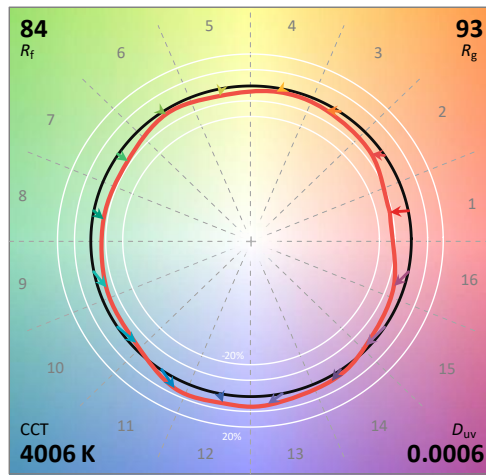
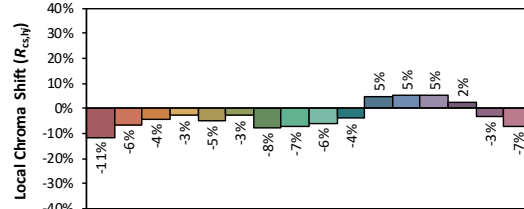
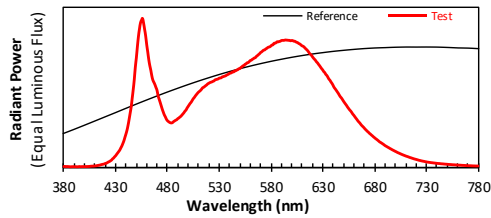
### ANSI/IES TM-30-18 Color Rendition Report

Source: 1 CIE F1

Manufacturer: RAB Lighting Inc.

Date: 2025/1/21

Model: EZP1X4 @25W4000K



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

$x$  0.3806  
 $y$  0.3782  
 $u'$  0.2246  
 $v'$  0.5022

CIE 13.3-1995  
(CRI)  
 $R_a$  85  
 $R_g$  15



## 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	5.10E-06	447	5.23E-04	514	5.34E-04	581	8.21E-04	648	4.67E-04	715	6.44E-05
381	6.20E-06	448	5.89E-04	515	5.38E-04	582	8.23E-04	649	4.56E-04	716	6.20E-05
382	4.30E-06	449	6.72E-04	516	5.43E-04	583	8.33E-04	650	4.45E-04	717	5.96E-05
383	5.50E-06	450	7.35E-04	517	5.49E-04	584	8.34E-04	651	4.35E-04	718	5.73E-05
384	4.60E-06	451	8.09E-04	518	5.54E-04	585	8.37E-04	652	4.25E-04	719	5.53E-05
385	4.70E-06	452	8.77E-04	519	5.61E-04	586	8.44E-04	653	4.16E-04	720	5.34E-05
386	3.00E-06	453	9.29E-04	520	5.64E-04	587	8.42E-04	654	4.05E-04	721	5.15E-05
387	4.00E-06	454	9.71E-04	521	5.69E-04	588	8.45E-04	655	3.96E-04	722	4.94E-05
388	3.60E-06	455	9.88E-04	522	5.71E-04	589	8.47E-04	656	3.86E-04	723	4.72E-05
389	4.70E-06	456	1.00E-03	523	5.74E-04	590	8.51E-04	657	3.79E-04	724	4.58E-05
390	3.50E-06	457	9.68E-04	524	5.78E-04	591	8.53E-04	658	3.69E-04	725	4.39E-05
391	4.40E-06	458	9.26E-04	525	5.80E-04	592	8.52E-04	659	3.58E-04	726	4.24E-05
392	3.90E-06	459	8.83E-04	526	5.87E-04	593	8.53E-04	660	3.50E-04	727	4.09E-05
393	3.50E-06	460	8.24E-04	527	5.89E-04	594	8.55E-04	661	3.40E-04	728	3.97E-05
394	4.00E-06	461	7.76E-04	528	5.91E-04	595	8.54E-04	662	3.31E-04	729	3.79E-05
395	5.10E-06	462	7.23E-04	529	5.94E-04	596	8.54E-04	663	3.22E-04	730	3.67E-05
396	4.10E-06	463	6.83E-04	530	5.98E-04	597	8.53E-04	664	3.12E-04	731	3.52E-05
397	4.40E-06	464	6.51E-04	531	6.00E-04	598	8.53E-04	665	3.04E-04	732	3.41E-05
398	4.80E-06	465	6.13E-04	532	6.02E-04	599	8.50E-04	666	2.96E-04	733	3.30E-05
399	4.30E-06	466	5.85E-04	533	6.08E-04	600	8.52E-04	667	2.87E-04	734	3.21E-05
400	4.90E-06	467	5.70E-04	534	6.09E-04	601	8.51E-04	668	2.79E-04	735	3.11E-05
401	5.00E-06	468	5.55E-04	535	6.12E-04	602	8.47E-04	669	2.72E-04	736	3.05E-05
402	5.10E-06	469	5.35E-04	536	6.14E-04	603	8.47E-04	670	2.65E-04	737	2.94E-05
403	5.30E-06	470	5.17E-04	537	6.18E-04	604	8.43E-04	671	2.57E-04	738	2.86E-05
404	5.70E-06	471	4.81E-04	538	6.22E-04	605	8.40E-04	672	2.50E-04	739	2.78E-05
405	6.20E-06	472	4.59E-04	539	6.25E-04	606	8.37E-04	673	2.42E-04	740	2.69E-05
406	7.30E-06	473	4.36E-04	540	6.31E-04	607	8.31E-04	674	2.37E-04	741	2.61E-05
407	7.70E-06	474	4.14E-04	541	6.33E-04	608	8.28E-04	675	2.29E-04	742	2.55E-05
408	8.10E-06	475	3.91E-04	542	6.36E-04	609	8.22E-04	676	2.24E-04	743	2.51E-05
409	8.10E-06	476	3.71E-04	543	6.42E-04	610	8.16E-04	677	2.17E-04	744	2.39E-05
410	9.50E-06	477	3.53E-04	544	6.40E-04	611	8.13E-04	678	2.12E-04	745	2.34E-05
411	9.80E-06	478	3.39E-04	545	6.47E-04	612	8.08E-04	679	2.05E-04	746	2.29E-05
412	1.15E-05	479	3.24E-04	546	6.49E-04	613	8.01E-04	680	1.99E-04	747	2.22E-05
413	1.27E-05	480	3.13E-04	547	6.53E-04	614	7.94E-04	681	1.93E-04	748	2.15E-05
414	1.40E-05	481	3.07E-04	548	6.56E-04	615	7.87E-04	682	1.88E-04	749	2.09E-05
415	1.53E-05	482	3.02E-04	549	6.62E-04	616	7.79E-04	683	1.83E-04	750	2.05E-05
416	1.76E-05	483	2.99E-04	550	6.63E-04	617	7.68E-04	684	1.77E-04	751	1.96E-05
417	1.93E-05	484	2.98E-04	551	6.70E-04	618	7.60E-04	685	1.71E-04	752	1.91E-05
418	2.08E-05	485	3.01E-04	552	6.75E-04	619	7.54E-04	686	1.67E-04	753	1.88E-05
419	2.24E-05	486	3.07E-04	553	6.82E-04	620	7.44E-04	687	1.62E-04	754	1.83E-05
420	2.57E-05	487	3.12E-04	554	6.84E-04	621	7.34E-04	688	1.58E-04	755	1.76E-05
421	2.76E-05	488	3.16E-04	555	6.92E-04	622	7.26E-04	689	1.53E-04	756	1.71E-05
422	3.15E-05	489	3.20E-04	556	6.95E-04	623	7.19E-04	690	1.47E-04	757	1.68E-05
423	3.56E-05	490	3.27E-04	557	7.02E-04	624	7.09E-04	691	1.43E-04	758	1.63E-05
424	3.89E-05	491	3.31E-04	558	7.03E-04	625	7.02E-04	692	1.39E-04	759	1.55E-05
425	4.36E-05	492	3.37E-04	559	7.09E-04	626	6.91E-04	693	1.35E-04	760	1.53E-05
426	4.82E-05	493	3.43E-04	560	7.17E-04	627	6.83E-04	694	1.31E-04	761	1.48E-05
427	5.65E-05	494	3.51E-04	561	7.19E-04	628	6.72E-04	695	1.26E-04	762	1.44E-05
428	6.21E-05	495	3.59E-04	562	7.25E-04	629	6.63E-04	696	1.23E-04	763	1.43E-05
429	7.07E-05	496	3.67E-04	563	7.29E-04	630	6.54E-04	697	1.19E-04	764	1.37E-05
430	7.77E-05	497	3.78E-04	564	7.34E-04	631	6.43E-04	698	1.15E-04	765	1.32E-05
431	8.75E-05	498	3.85E-04	565	7.37E-04	632	6.36E-04	699	1.11E-04	766	1.29E-05
432	9.67E-05	499	3.98E-04	566	7.45E-04	633	6.24E-04	700	1.08E-04	767	1.25E-05
433	1.06E-04	500	4.09E-04	567	7.51E-04	634	6.17E-04	701	1.04E-04	768	1.22E-05
434	1.16E-04	501	4.19E-04	568	7.57E-04	635	6.05E-04	702	1.00E-04	769	1.14E-05
435	1.30E-04	502	4.29E-04	569	7.63E-04	636	5.93E-04	703	9.73E-05	770	1.13E-05
436	1.43E-04	503	4.38E-04	570	7.71E-04	637	5.85E-04	704	9.43E-05	771	1.08E-05
437	1.60E-04	504	4.50E-04	571	7.75E-04	638	5.73E-04	705	9.10E-05	772	1.06E-05
438	1.79E-04	505	4.61E-04	572	7.82E-04	639	5.63E-04	706	8.80E-05	773	1.05E-05
439	2.02E-04	506	4.69E-04	573	7.87E-04	640	5.51E-04	707	8.49E-05	774	1.00E-05
440	2.25E-04	507	4.79E-04	574	7.89E-04	641	5.37E-04	708	8.21E-05	775	9.60E-06
441	2.50E-04	508	4.88E-04	575	7.95E-04	642	5.28E-04	709	7.94E-05	776	9.40E-06
442	2.82E-04	509	4.97E-04	576	7.99E-04	643	5.18E-04	710	7.66E-05	777	9.20E-06
443	3.21E-04	510	5.05E-04	577	8.05E-04	644	5.08E-04	711	7.40E-05	778	8.80E-06
444	3.63E-04	511	5.10E-04	578	8.08E-04	645	4.98E-04	712	7.19E-05	779	8.80E-06
445	4.05E-04	512	5.17E-04	579	8.10E-04	646	4.86E-04	713	6.93E-05	780	8.90E-06
446	4.63E-04	513	5.25E-04	580	8.15E-04	647	4.75E-04	714	6.64E-05	N/A	N/A



## 4.0 LM-79 Measurement and Test Results

### 4.2 Goniophotometer Test

<b>Model No.</b>	EZP1X4 @25W4000K	<b>Sample ID</b>	250117001-S1
<b>Operate time (Min.)</b>	30	<b>Stabilization time (Min.)</b>	60
<b>Temperature (°C)</b>	24.9	<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\pm1^{\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	0.100	25.7	0.924
<b>NON-WORST CASE</b>	120.0	60	0.207	24.7	0.993

#### Test Result

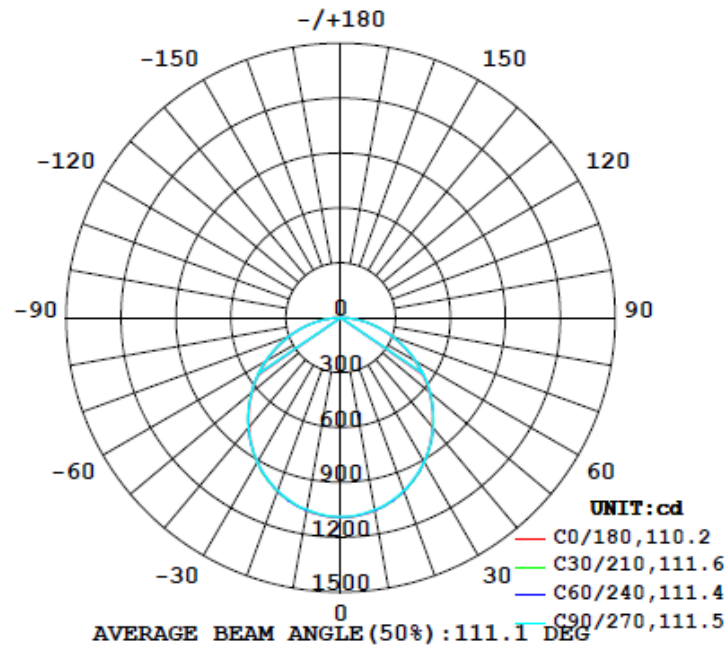
Flux (lm)	Field Angle (10%)		Beam Angle (50%)		Luminous Efficacy (lm/W)	Zonal Lumen Requirement
	C0-180	C90-270	C0-180	C90-270		(0°-60°)
3106	164.3	164.3	110.2	111.2	120.9	77.9%

UGR		Spacing Criterion	
Crosswise	Endwise	(0°-180°)	(90°-270°)
20.1	20.1	1.26	1.26

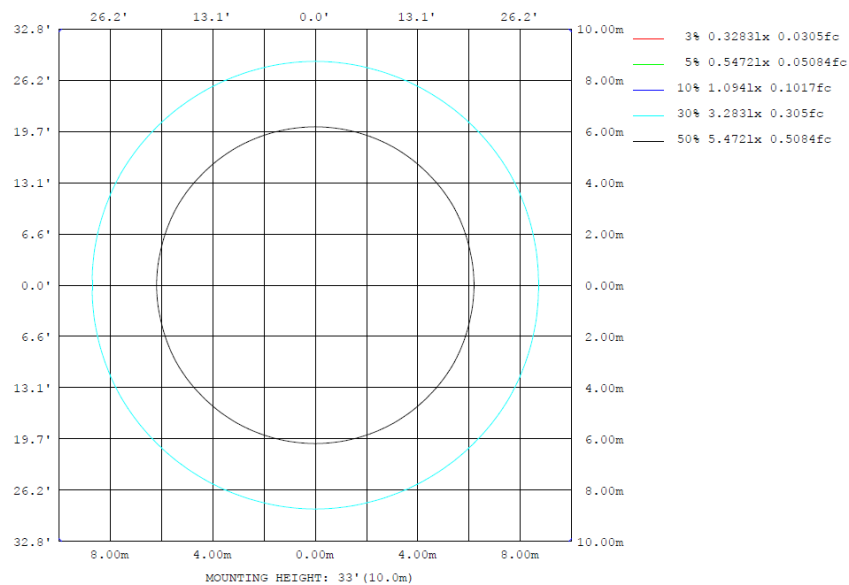
## 4.2 Goniophotometer Test

### 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	1071	1072	1065	1072	1071	1072	1065	1072	0- 10	103.0	103.0	3.32,3.32
20	1010	1003	1006	1003	1010	1003	1006	1003	10- 20	294.3	397.3	12.8,12.8
30	910.4	914.4	909.1	914.4	910.4	914.4	909.1	914.4	20- 30	443.9	841.2	27.1,27.1
40	780.0	784.2	785.0	784.2	780.0	784.2	785.0	784.2	30- 40	532.1	1373	44.2,44.2
50	628.2	637.6	634.6	637.6	628.2	637.6	634.6	637.6	40- 50	549.3	1923	61.9,61.9
60	464.6	472.8	473.2	472.8	464.6	472.8	473.2	472.8	50- 60	496.0	2419	77.9,77.9
70	299.6	300.9	301.7	300.9	299.6	300.9	301.7	300.9	60- 70	382.6	2801	90.2,90.2
80	138.3	140.1	138.3	140.1	138.3	140.1	138.3	140.1	70- 80	231.1	3032	97.6,97.6
90	0	0	0	0	0	0	0	0	80- 90	73.85	3106	100,100
100	0	0	0	0	0	0	0	0	90-100	0	3106	100,100
110	0	0	0	0	0	0	0	0	100-110	0	3106	100,100
120	0	0	0	0	0	0	0	0	110-120	0	3106	100,100
130	0	0	0	0	0	0	0	0	120-130	0	3106	100,100
140	0	0	0	0	0	0	0	0	130-140	0	3106	100,100
150	0	0	0	0	0	0	0	0	140-150	0	3106	100,100
160	0	0	0	0	0	0	0	0	150-160	0	3106	100,100
170	0	0	0	0	0	0	0	0	160-170	0	3106	100,100
180	0	0	0	0	0	0	0	0	170-180	0	3106	100,100
DEG	LUMINOUS INTENSITY:cd									UNIT:lm		

	Zonal (lm)		Total (lm)	Percent
0-10	103.01	0-10	103.01	3.32%
10-20	294.30	0-20	397.31	12.79%
20-30	443.88	0-30	841.19	27.08%
30-40	532.14	0-40	1373.33	44.21%
40-50	549.35	0-50	1922.68	61.90%
50-60	496.03	0-60	2418.71	77.86%
60-70	382.64	0-70	2801.35	90.18%
70-80	231.11	0-80	3032.46	97.62%
80-90	73.85	0-90	3106.31	100.00%
90-100	0.00	0-100	3106.31	100.00%
100-110	0.00	0-110	3106.31	100.00%
110-120	0.00	0-120	3106.31	100.00%
120-130	0.00	0-130	3106.31	100.00%
130-140	0.00	0-140	3106.31	100.00%
140-150	0.00	0-150	3106.31	100.00%
150-160	0.00	0-160	3106.31	100.00%
160-170	0.00	0-170	3106.31	100.00%
170-180	0.00	0-180	3106.31	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	11.6	13.2	11.9	13.5	13.9	11.6	13.3	12.0	13.6	13.9
	3H	13.5	14.9	13.8	15.3	15.6	13.5	15.0	13.9	15.3	15.7
	4H	14.2	15.6	14.6	15.9	16.3	14.2	15.6	14.6	16.0	16.4
	6H	14.8	16.1	15.2	16.4	16.8	14.8	16.1	15.2	16.5	16.9
	8H	15.0	16.2	15.4	16.6	17.0	15.0	16.3	15.4	16.7	17.1
	12H	15.1	16.3	15.6	16.7	17.1	15.2	16.4	15.6	16.7	17.2
4H	2H	12.2	13.7	12.6	14.0	14.4	12.3	13.7	12.7	14.0	14.4
	3H	14.4	15.5	14.8	15.9	16.3	14.4	15.6	14.8	16.0	16.4
	4H	15.2	16.3	15.7	16.7	17.2	15.3	16.3	15.7	16.7	17.2
	6H	16.0	16.9	16.4	17.3	17.8	16.0	16.9	16.4	17.4	17.8
	8H	16.2	17.1	16.7	17.5	18.0	16.2	17.1	16.7	17.6	18.0
	12H	16.4	17.2	16.9	17.7	18.2	16.5	17.2	16.9	17.7	18.2
8H	4H	15.6	16.5	16.0	16.9	17.4	15.6	16.5	16.1	16.9	17.4
	6H	16.4	17.2	16.9	17.7	18.2	16.5	17.2	16.9	17.7	18.2
	8H	16.8	17.5	17.3	18.0	18.5	16.8	17.5	17.3	18.0	18.5
	12H	17.1	17.7	17.6	18.2	18.8	17.1	17.7	17.6	18.2	18.8
12H	4H	15.6	16.4	16.1	16.9	17.4	15.7	16.5	16.1	16.9	17.4
	6H	16.6	17.2	17.1	17.7	18.2	16.6	17.2	17.1	17.7	18.2
	8H	17.0	17.5	17.5	18.0	18.6	17.0	17.5	17.5	18.0	18.6

Maximum UGR = 18.8

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	15.5	17.1	15.8	17.4	17.8	15.5	17.2	15.9	17.5	17.8
	3H	17.4	18.8	17.7	19.2	19.5	17.4	18.9	17.8	19.2	19.6
	4H	18.1	19.5	18.5	19.8	20.2	18.1	19.5	18.5	19.9	20.3
	6H	18.7	20.0	19.1	20.3	20.7	18.7	20.0	19.1	20.4	20.8
	8H	18.9	20.1	19.3	20.5	20.9	18.9	20.2	19.3	20.6	21.0
	12H	19.0	20.2	19.5	20.6	21.0	19.1	20.3	19.5	20.6	21.1
4H	2H	16.1	17.6	16.5	17.9	18.3	16.2	17.6	16.6	17.9	18.3
	3H	18.3	19.4	18.7	19.8	20.2	18.3	19.5	18.7	19.9	20.3
	4H	19.1	20.2	19.6	20.6	21.1	19.2	20.2	19.6	20.6	21.1
	6H	19.9	20.8	20.3	21.2	21.7	19.9	20.8	20.3	21.3	21.7
	8H	20.1	21.0	20.6	21.4	21.9	20.1	21.0	20.6	21.5	21.9
	12H	20.3	21.1	20.8	21.6	22.1	20.4	21.1	20.8	21.6	22.1
8H	4H	19.5	20.4	19.9	20.8	21.3	19.5	20.4	20.0	20.8	21.3
	6H	20.3	21.1	20.8	21.6	22.1	20.4	21.1	20.8	21.6	22.1
	8H	20.7	21.4	21.2	21.9	22.4	20.7	21.4	21.2	21.9	22.4
	12H	21.0	21.6	21.5	22.1	22.7	21.0	21.6	21.5	22.1	22.7
12H	4H	19.5	20.3	20.0	20.8	21.3	19.6	20.4	20.0	20.8	21.3
	6H	20.5	21.1	21.0	21.6	22.1	20.5	21.1	21.0	21.6	22.1
	8H	20.9	21.4	21.4	21.9	22.5	20.9	21.4	21.4	21.9	22.5

Maximum UGR = 22.7

## 4.2 Goniophotometer Test

### Luminous Distribution Intensity Data

Table--1

UNIT: cd

C (DEG) γ (DEG)	0	15	30	45	60	75	90	105	120	135	150	165	180	195	210	225	240	255	270
0	1094	1094	1090	1092	1090	1087	1088	1087	1090	1092	1090	1094	1094	1090	1092	1090	1087	1088	1087
5	1086	1081	1081	1083	1086	1084	1083	1084	1086	1083	1081	1081	1086	1081	1081	1083	1086	1084	1083
10	1071	1068	1068	1072	1073	1065	1065	1065	1073	1072	1068	1068	1071	1068	1068	1072	1073	1065	1065
15	1045	1048	1047	1044	1041	1039	1040	1039	1041	1044	1047	1048	1045	1048	1047	1044	1041	1039	1040
20	1010	1009	1008	1003	1007	1005	1006	1005	1007	1003	1008	1009	1010	1009	1008	1003	1007	1005	1006
25	962	962	965	965	964	963	962	963	964	965	965	962	962	962	965	965	964	963	962
30	910	912	915	914	909	909	909	909	914	915	912	910	912	915	914	909	909	909	910
35	850	851	854	850	852	850	851	850	852	850	854	851	850	851	854	850	852	850	851
40	780	780	784	784	785	784	785	784	785	784	784	780	780	780	784	784	785	784	785
45	706	710	715	716	715	713	712	713	715	716	715	710	706	710	715	716	715	713	712
50	628	636	638	638	637	637	635	637	637	638	638	636	628	636	638	638	637	637	635
55	548	551	555	555	556	556	557	556	556	555	555	551	548	551	555	555	556	556	557
60	465	469	473	473	473	471	473	471	473	473	473	469	465	469	473	473	473	471	473
65	383	387	390	388	387	387	387	387	388	390	387	383	387	390	388	387	387	387	387
70	300	301	303	301	302	302	302	302	302	301	303	301	300	301	303	301	302	302	302
75	217	217	219	218	219	218	218	218	219	218	219	217	217	217	219	218	219	218	218
80	138	140	141	140	139	138	138	139	140	141	140	138	140	141	140	139	138	138	138
85	66.1	66.8	66.9	66.5	66.4	65.7	66.1	65.7	66.4	66.5	66.9	66.8	66.1	66.8	66.9	66.5	66.4	65.7	66.1
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) γ (DEG)	285	300	315	330	345														
0	1087	1090	1092	1090	1094														
5	1084	1086	1083	1081	1081														
10	1065	1073	1072	1068	1068														
15	1039	1041	1044	1047	1048														
20	1005	1007	1003	1008	1009														
25	963	964	965	965	962														
30	909	909	914	915	912														
35	850	852	850	854	851														
40	784	785	784	784	780														
45	713	715	716	715	710														
50	637	637	638	638	636														
55	556	556	555	555	551														
60	471	473	473	473	469														
65	387	387	388	390	387														
70	302	302	301	303	301														
75	218	219	218	219	217														
80	138	139	140	141	140														
85	65.7	66.4	66.5	66.9	66.8														
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>	EZP1X4 @25W4000K	<b>Sample ID</b>	250117001-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	0.207	24.7	0.993	11.15
277.0	60	0.100	25.7	0.924	9.28

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