

## 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

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		3521
Minimum Luminaire Efficacy (lm/W) (Goniophotometer – Section 4.2)	ANSI/IES LM-79:2019	Standard	Premium	113.6
		110	125	
Power (Input Wattage) (W) (Goniophotometer – Section 4.2)	ANSI/IES LM-79:2019	Worst Case		31.0
Total Harmonic Distortion (A%) (THD & PF – Section 4.3)	ANSI C82.77:2002 ANSI C82-77-10:2020	20.00%	120V	11.71
			277V	11.65
Power Factor (THD & PF – Section 4.3)	ANSI C82.77:2002 ANSI C82-77-10:2020	0.9	120V	0.993
			277V	0.956
Allowable CCTs* (K) (Integrating Sphere – Section 4.1)	ANSI/IES LM-79:2019	7 steps	3465±245	3362
		4 steps	3465±124	
Minimum CRI (Integrating Sphere – Section 4.1)	ANSI/IES LM-79:2019 CIE13.3-1995	≥80		83.5
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%		77.9%
Discomfort Glare (UGR) (Goniophotometer – Section 4.2)	ANSI/IES LM-79:2019	Standard	Premium	20.6
		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	1.26
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		0.117
(Goniophotometer – Section 4.2)		Non-Worst Case		0.250
Power (Input Wattage – W)				
(Goniophotometer – Section 4.2)	ANSI/IES LM-79:2019	Worst Case		31.0
(Goniophotometer – Section 4.2)		Non-Worst Case		29.8

## 2.0 Test List

Test Item	Test	Test Date	Model Number	Build Level	Sample No.
1	Integrating Sphere Test	2025-01-20	EZP1X4 @30W3500K	-	250117001-S1
2	Goniophotometer Test	2025-01-20	EZP1X4 @30W3500K	-	250117001-S1
3	THD and PF Test	2025-01-20	EZP1X4 @30W3500K	-	250117001-S1

### Remark (If any):

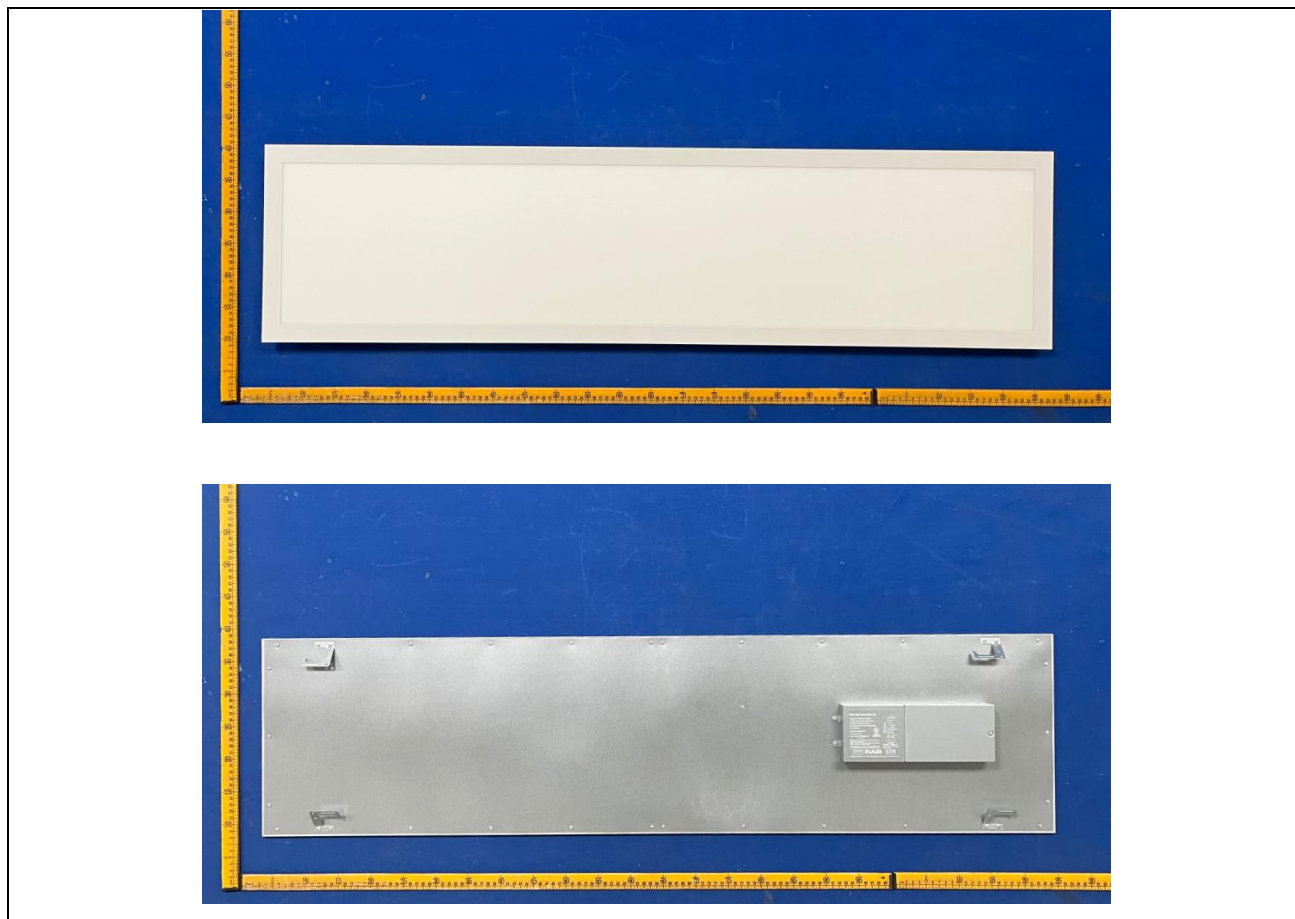
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3. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST or any agency of the U.S. Government.

### 3.0 Product Description

Luminaire Description: Model No. EZP1X4 @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

<b>Model No.</b>	EZP1X4 @30W3500K	<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

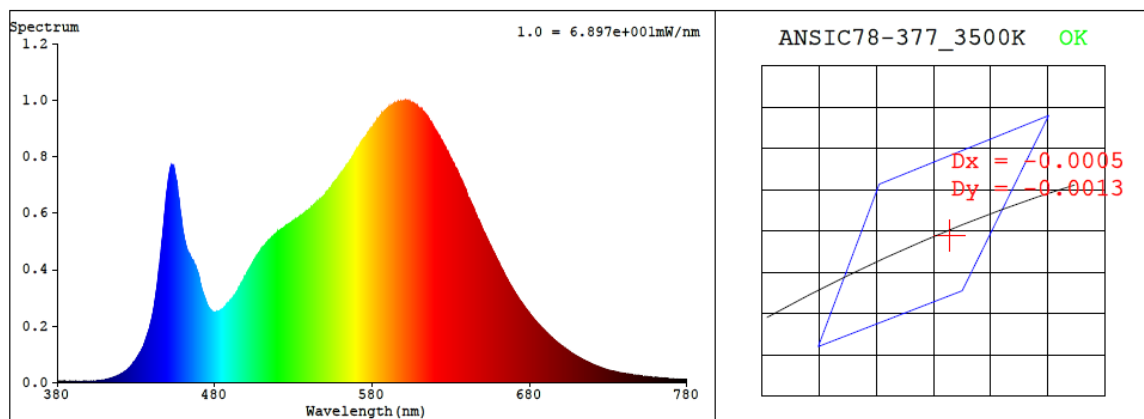
Test Method
<p>The Samples were tested according to the ANSI/IES LM-79:2019.</p> <p>Photometric parameters were measured using an integrating sphere, a spectroradiometer and software. The ambient temperature condition inside the sphere was maintained at 25±1°C.</p> <p>The sample measurements were made 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	0.250	29.8	0.993
277.0	60	0.117	31.0	0.956

CCT (K)	CRI	R9	Duv	Rf	Rg	IES Rcs,h1
3362	83.5	9	-0.0005	85	95	-12%

#### 4.1 Integrating Sphere Test



#### Colorimetric Parameters

Chromaticity Coordinate:  $x = 0.4128$   $y = 0.3933$  /  $u' = 0.2395$   $v' = 0.5134$  ( $duv = -4.58e-04$ )

CCT= 3362K Prcp WL: Ld=581.6nm Purity=41.9%

Peak WL: Lp=601nm FWHM: =140.9nm Ratio:R=21.0% G=75.8% B=3.2%

Render Index: Ra = 83.5 AvgR = 77.7 TM30:Rf=84 Rg=95

EEL: 0.11769 A+

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

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

## 4.1 Integrating Sphere Test

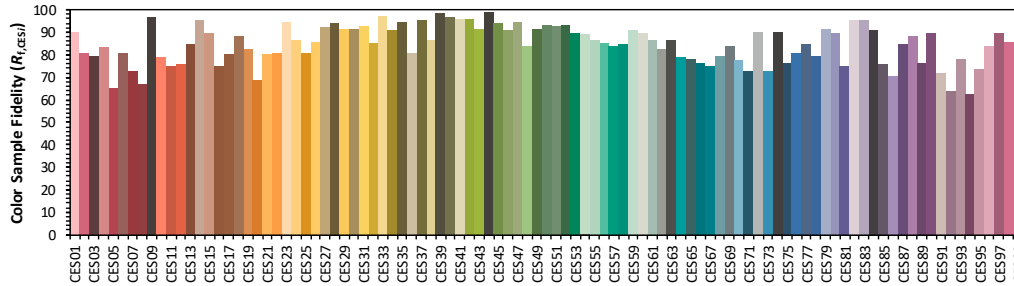
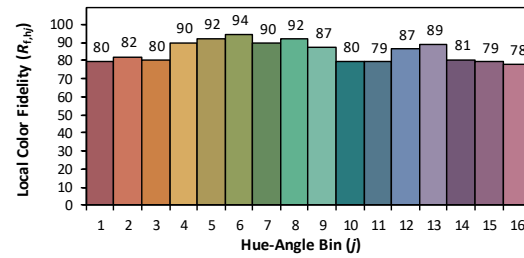
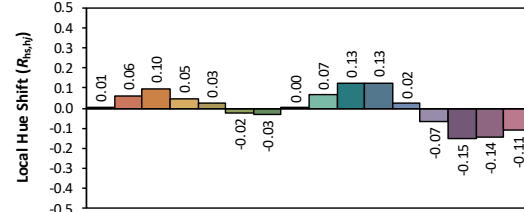
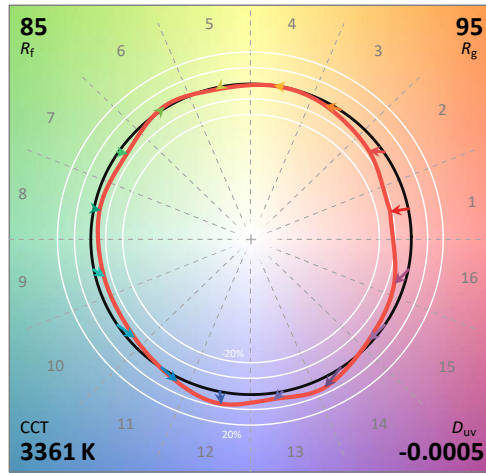
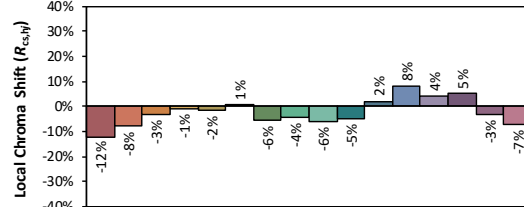
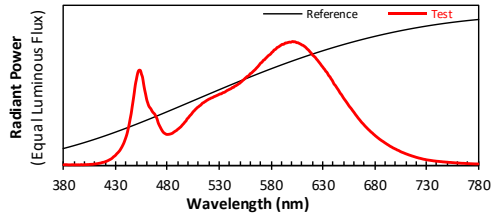
### ANSI/IES TM-30-18 Color Rendition Report

Source: 1 CIE F1

Manufacturer: RAB Lighting Inc.

Date: 2025/1/21

Model: EZP1X4 @30W3500K



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

$x$  0.4128  
 $y$  0.3931  
 $u'$  0.2396  
 $v'$  0.5134

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	3.80E-06	447	5.27E-04	514	5.02E-04	581	9.13E-04	648	5.72E-04	715	7.85E-05
381	4.50E-06	448	5.86E-04	515	5.06E-04	582	9.19E-04	649	5.59E-04	716	7.54E-05
382	4.70E-06	449	6.49E-04	516	5.12E-04	583	9.31E-04	650	5.45E-04	717	7.29E-05
383	4.10E-06	450	6.91E-04	517	5.17E-04	584	9.35E-04	651	5.33E-04	718	7.02E-05
384	3.10E-06	451	7.33E-04	518	5.24E-04	585	9.41E-04	652	5.22E-04	719	6.76E-05
385	2.90E-06	452	7.61E-04	519	5.28E-04	586	9.52E-04	653	5.10E-04	720	6.48E-05
386	2.90E-06	453	7.68E-04	520	5.34E-04	587	9.54E-04	654	4.98E-04	721	6.24E-05
387	3.30E-06	454	7.64E-04	521	5.37E-04	588	9.60E-04	655	4.85E-04	722	6.00E-05
388	4.20E-06	455	7.35E-04	522	5.42E-04	589	9.66E-04	656	4.73E-04	723	5.76E-05
389	3.60E-06	456	7.10E-04	523	5.45E-04	590	9.72E-04	657	4.63E-04	724	5.60E-05
390	3.20E-06	457	6.58E-04	524	5.48E-04	591	9.77E-04	658	4.53E-04	725	5.38E-05
391	2.90E-06	458	6.11E-04	525	5.54E-04	592	9.77E-04	659	4.41E-04	726	5.17E-05
392	3.70E-06	459	5.73E-04	526	5.57E-04	593	9.82E-04	660	4.30E-04	727	4.94E-05
393	3.10E-06	460	5.31E-04	527	5.61E-04	594	9.88E-04	661	4.18E-04	728	4.77E-05
394	3.60E-06	461	5.04E-04	528	5.64E-04	595	9.88E-04	662	4.06E-04	729	4.63E-05
395	2.80E-06	462	4.80E-04	529	5.68E-04	596	9.91E-04	663	3.96E-04	730	4.42E-05
396	3.80E-06	463	4.66E-04	530	5.73E-04	597	9.93E-04	664	3.84E-04	731	4.28E-05
397	4.90E-06	464	4.56E-04	531	5.76E-04	598	9.95E-04	665	3.74E-04	732	4.16E-05
398	3.40E-06	465	4.41E-04	532	5.77E-04	599	9.94E-04	666	3.64E-04	733	4.03E-05
399	3.60E-06	466	4.28E-04	533	5.83E-04	600	9.97E-04	667	3.53E-04	734	3.93E-05
400	4.30E-06	467	4.20E-04	534	5.87E-04	601	1.00E-03	668	3.43E-04	735	3.79E-05
401	4.80E-06	468	4.10E-04	535	5.89E-04	602	9.97E-04	669	3.35E-04	736	3.67E-05
402	4.60E-06	469	3.92E-04	536	5.94E-04	603	9.98E-04	670	3.25E-04	737	3.53E-05
403	5.50E-06	470	3.75E-04	537	6.00E-04	604	9.95E-04	671	3.16E-04	738	3.44E-05
404	5.30E-06	471	3.46E-04	538	6.05E-04	605	9.90E-04	672	3.07E-04	739	3.33E-05
405	6.60E-06	472	3.26E-04	539	6.09E-04	606	9.90E-04	673	2.99E-04	740	3.23E-05
406	6.90E-06	473	3.09E-04	540	6.14E-04	607	9.86E-04	674	2.90E-04	741	3.16E-05
407	7.40E-06	474	2.93E-04	541	6.17E-04	608	9.82E-04	675	2.83E-04	742	3.10E-05
408	7.50E-06	475	2.79E-04	542	6.22E-04	609	9.77E-04	676	2.74E-04	743	2.99E-05
409	9.20E-06	476	2.67E-04	543	6.29E-04	610	9.72E-04	677	2.66E-04	744	2.90E-05
410	9.80E-06	477	2.59E-04	544	6.30E-04	611	9.69E-04	678	2.60E-04	745	2.84E-05
411	1.12E-05	478	2.54E-04	545	6.39E-04	612	9.63E-04	679	2.52E-04	746	2.71E-05
412	1.21E-05	479	2.50E-04	546	6.42E-04	613	9.57E-04	680	2.45E-04	747	2.67E-05
413	1.37E-05	480	2.49E-04	547	6.47E-04	614	9.49E-04	681	2.37E-04	748	2.60E-05
414	1.55E-05	481	2.50E-04	548	6.52E-04	615	9.40E-04	682	2.30E-04	749	2.51E-05
415	1.69E-05	482	2.51E-04	549	6.59E-04	616	9.33E-04	683	2.23E-04	750	2.46E-05
416	1.88E-05	483	2.53E-04	550	6.64E-04	617	9.24E-04	684	2.17E-04	751	2.39E-05
417	2.18E-05	484	2.56E-04	551	6.72E-04	618	9.14E-04	685	2.10E-04	752	2.28E-05
418	2.34E-05	485	2.59E-04	552	6.78E-04	619	9.05E-04	686	2.04E-04	753	2.26E-05
419	2.50E-05	486	2.66E-04	553	6.87E-04	620	8.93E-04	687	1.98E-04	754	2.22E-05
420	2.85E-05	487	2.72E-04	554	6.93E-04	621	8.85E-04	688	1.93E-04	755	2.12E-05
421	3.15E-05	488	2.77E-04	555	7.02E-04	622	8.78E-04	689	1.88E-04	756	2.07E-05
422	3.50E-05	489	2.82E-04	556	7.09E-04	623	8.70E-04	690	1.82E-04	757	2.01E-05
423	3.90E-05	490	2.91E-04	557	7.17E-04	624	8.58E-04	691	1.76E-04	758	1.92E-05
424	4.35E-05	491	2.96E-04	558	7.21E-04	625	8.49E-04	692	1.70E-04	759	1.86E-05
425	4.78E-05	492	3.04E-04	559	7.28E-04	626	8.38E-04	693	1.65E-04	760	1.86E-05
426	5.27E-05	493	3.11E-04	560	7.39E-04	627	8.27E-04	694	1.60E-04	761	1.77E-05
427	5.98E-05	494	3.21E-04	561	7.44E-04	628	8.16E-04	695	1.54E-04	762	1.71E-05
428	6.80E-05	495	3.30E-04	562	7.51E-04	629	8.04E-04	696	1.50E-04	763	1.66E-05
429	7.39E-05	496	3.39E-04	563	7.60E-04	630	7.94E-04	697	1.45E-04	764	1.59E-05
430	8.13E-05	497	3.50E-04	564	7.67E-04	631	7.82E-04	698	1.40E-04	765	1.56E-05
431	9.17E-05	498	3.58E-04	565	7.75E-04	632	7.73E-04	699	1.36E-04	766	1.54E-05
432	9.96E-05	499	3.74E-04	566	7.85E-04	633	7.59E-04	700	1.32E-04	767	1.51E-05
433	1.09E-04	500	3.81E-04	567	7.93E-04	634	7.52E-04	701	1.28E-04	768	1.42E-05
434	1.19E-04	501	3.92E-04	568	8.03E-04	635	7.37E-04	702	1.23E-04	769	1.38E-05
435	1.33E-04	502	4.02E-04	569	8.14E-04	636	7.23E-04	703	1.20E-04	770	1.33E-05
436	1.47E-04	503	4.11E-04	570	8.25E-04	637	7.15E-04	704	1.16E-04	771	1.27E-05
437	1.63E-04	504	4.22E-04	571	8.30E-04	638	7.00E-04	705	1.11E-04	772	1.26E-05
438	1.81E-04	505	4.33E-04	572	8.40E-04	639	6.88E-04	706	1.07E-04	773	1.20E-05
439	2.03E-04	506	4.41E-04	573	8.50E-04	640	6.73E-04	707	1.04E-04	774	1.18E-05
440	2.27E-04	507	4.50E-04	574	8.54E-04	641	6.56E-04	708	1.01E-04	775	1.13E-05
441	2.54E-04	508	4.58E-04	575	8.65E-04	642	6.47E-04	709	9.69E-05	776	1.10E-05
442	2.90E-04	509	4.67E-04	576	8.72E-04	643	6.35E-04	710	9.35E-05	777	1.06E-05
443	3.27E-04	510	4.72E-04	577	8.81E-04	644	6.22E-04	711	9.03E-05	778	1.04E-05
444	3.72E-04	511	4.79E-04	578	8.89E-04	645	6.10E-04	712	8.74E-05	779	1.04E-05
445	4.16E-04	512	4.85E-04	579	8.94E-04	646	5.96E-04	713	8.40E-05	780	1.05E-05
446	4.73E-04	513	4.93E-04	580	9.02E-04	647	5.82E-04	714	8.11E-05	N/A	N/A



## 4.0 LM-79 Measurement and Test Results

### 4.2 Goniophotometer Test

<b>Model No.</b>	EZP1X4 @30W3500K	<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 \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	31.0	0.956
<b>NON-WORST CASE</b>	120.0	60	0.250	29.8	0.993

#### Test Result

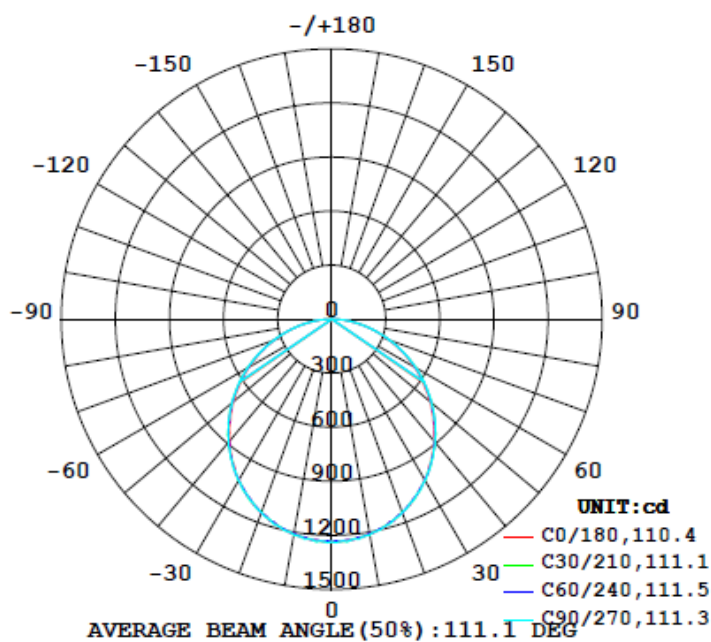
Flux (lm)	Field Angle (10%)		Beam Angle (50%)		Luminous Efficacy (lm/W)	Zonal Lumen Requirement (0°-60°)
	C0-180	C90-270	C0-180	C90-270		
3521	164.2	164.3	110.1	111.3	113.6	77.9%

UGR		Spacing Criterion	
Crosswise	Endwise	(0°-180°)	(90°-270°)
20.6	20.6	1.26	1.26

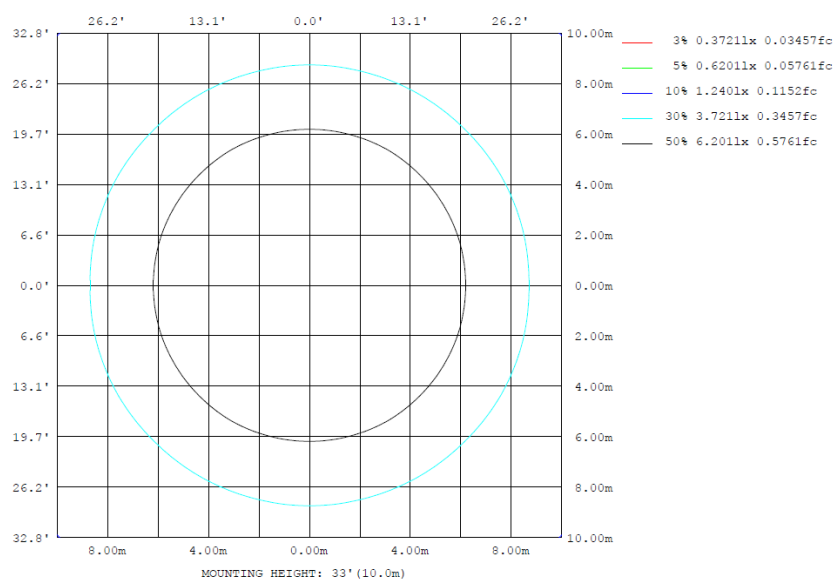
## 4.2 Goniophotometer Test

### Lighting Distribution Curve

**LUMINOUS INTENSITY DISTRIBUTION DIAGRAM**



### Isolux Plot



## 4.2 Goniophotometer Test

### Zonal Lumen Summary

ZONAL FLUX DIAGRAM:

$\gamma$	C0	C45	C90	C135	C180	C225	C270	C315	$\gamma$	$\Phi$ zone	$\Phi$ total	$\Phi$ lum, lamp
10	1207	1211	1215	1211	1207	1211	1215	1211	0- 10	116.8	116.8	3.32,3.32
20	1146	1140	1142	1140	1146	1140	1142	1140	10- 20	333.6	450.3	12.8,12.8
30	1030	1030	1036	1030	1030	1030	1036	1030	20- 30	503.2	953.6	27.1,27.1
40	883.4	891.6	892.8	891.6	883.4	891.6	892.8	891.6	30- 40	603.3	1557	44.2,44.2
50	711.7	720.4	721.5	720.4	711.7	720.4	721.5	720.4	40- 50	622.7	2180	61.9,61.9
60	525.5	535.1	538.7	535.1	525.5	535.1	538.7	535.1	50- 60	562.2	2742	77.9,77.9
70	338.7	341.7	342.5	341.7	338.7	341.7	342.5	341.7	60- 70	433.7	3175	90.2,90.2
80	156.4	157.8	157.6	157.8	156.4	157.8	157.6	157.8	70- 80	261.8	3437	97.6,97.6
90	0	0	0	0	0	0	0	0	80- 90	83.53	3521	100,100
100	0	0	0	0	0	0	0	0	90-100	0	3521	100,100
110	0	0	0	0	0	0	0	0	100-110	0	3521	100,100
120	0	0	0	0	0	0	0	0	110-120	0	3521	100,100
130	0	0	0	0	0	0	0	0	120-130	0	3521	100,100
140	0	0	0	0	0	0	0	0	130-140	0	3521	100,100
150	0	0	0	0	0	0	0	0	140-150	0	3521	100,100
160	0	0	0	0	0	0	0	0	150-160	0	3521	100,100
170	0	0	0	0	0	0	0	0	160-170	0	3521	100,100
180	0	0	0	0	0	0	0	0	170-180	0	3521	100,100
DEG	LUMINOUS INTENSITY:cd									UNIT:lm		

	Zonal (lm)		Total (lm)	Percent
0-10	116.76	0-10	116.76	3.32%
10-20	333.55	0-20	450.31	12.79%
20-30	503.24	0-30	953.55	27.08%
30-40	603.27	0-40	1556.82	44.22%
40-50	622.74	0-50	2179.56	61.91%
50-60	562.17	0-60	2741.73	77.87%
60-70	433.69	0-70	3175.42	90.19%
70-80	261.83	0-80	3437.25	97.63%
80-90	83.53	0-90	3520.78	100.00%
90-100	0.00	0-100	3520.78	100.00%
100-110	0.00	0-110	3520.78	100.00%
110-120	0.00	0-120	3520.78	100.00%
120-130	0.00	0-130	3520.78	100.00%
130-140	0.00	0-140	3520.78	100.00%
140-150	0.00	0-150	3520.78	100.00%
150-160	0.00	0-160	3520.78	100.00%
160-170	0.00	0-170	3520.78	100.00%
170-180	0.00	0-180	3520.78	100.00%

## 4.2 Goniophotometer Test

UGR – Uncorrected Table:

**UGR TABLE - UNCORRECTED**

Reflectances											
Ceiling Cavity		70	70	50	50	30	70	70	50	50	30
Walls		50	30	50	30	30	50	30	50	30	30
Floor Cavity		20	20	20	20	20	20	20	20	20	20
Room Size		UGR Viewed Crosswise					UGR Viewed Endwise				
X=2H	Y=2H	11.6	13.2	11.9	13.5	13.9	11.6	13.3	12.0	13.6	13.9
	3H	13.5	15.0	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	16.8	17.2
4H	2H	12.2	13.6	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	15.9	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	16.0	16.9	17.4
	6H	16.4	17.2	16.9	17.7	18.1	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	18.7	17.1	17.7	17.6	18.2	18.7
12H	4H	15.6	16.4	16.1	16.9	17.4	15.7	16.4	16.1	16.9	17.4
	6H	16.5	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 = 18.7

UGR – Corrected Table:

**UGR TABLE - CORRECTED**

Reflectances											
Ceiling Cavity	70	70	50	50	30	70	70	50	50	30	
Walls	50	30	50	30	30	50	30	50	30	30	
Floor Cavity	20	20	20	20	20	20	20	20	20	20	
Room Size		UGR Viewed Crosswise					UGR Viewed Endwise				
X=2H	Y=2H	16.0	17.6	16.3	17.9	18.3	16.0	17.7	16.4	18.0	18.3
	3H	17.9	19.4	18.2	19.7	20.0	17.9	19.4	18.3	19.7	20.1
	4H	18.6	20.0	19.0	20.3	20.7	18.6	20.0	19.0	20.4	20.8
	6H	19.2	20.5	19.6	20.8	21.2	19.2	20.5	19.6	20.9	21.3
	8H	19.4	20.6	19.8	21.0	21.4	19.4	20.7	19.8	21.1	21.5
	12H	19.5	20.7	20.0	21.1	21.5	19.6	20.8	20.0	21.2	21.6
4H	2H	16.6	18.0	17.0	18.4	18.8	16.7	18.1	17.1	18.4	18.8
	3H	18.8	19.9	19.2	20.3	20.7	18.8	20.0	19.2	20.4	20.8
	4H	19.6	20.7	20.1	21.1	21.6	19.7	20.7	20.1	21.1	21.6
	6H	20.3	21.3	20.8	21.7	22.2	20.4	21.3	20.8	21.8	22.2
	8H	20.6	21.5	21.1	21.9	22.4	20.6	21.5	21.1	22.0	22.4
	12H	20.8	21.6	21.3	22.1	22.6	20.9	21.6	21.3	22.1	22.6
8H	4H	20.0	20.9	20.4	21.3	21.8	20.0	20.9	20.4	21.3	21.8
	6H	20.8	21.6	21.3	22.1	22.5	20.9	21.6	21.3	22.1	22.6
	8H	21.2	21.9	21.7	22.4	22.9	21.2	21.9	21.7	22.4	22.9
	12H	21.5	22.1	22.0	22.6	23.1	21.5	22.1	22.0	22.6	23.1
12H	4H	20.0	20.8	20.5	21.3	21.8	20.1	20.8	20.5	21.3	21.8
	6H	20.9	21.6	21.5	22.1	22.6	21.0	21.6	21.5	22.1	22.6
	8H	21.4	21.9	21.9	22.4	23.0	21.4	21.9	21.9	22.4	23.0

Maximum UGR = 23.1

## 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	1236	1241	1235	1231	1235	1237	1235	1237	1235	1231	1235	1241	1236	1241	1235	1231	1235	1237	1235
5	1231	1228	1229	1232	1230	1224	1230	1224	1230	1232	1229	1228	1231	1228	1229	1232	1230	1224	1230
10	1207	1212	1215	1211	1207	1209	1215	1209	1207	1211	1215	1212	1207	1212	1215	1211	1207	1209	1215
15	1181	1188	1181	1177	1182	1188	1185	1188	1182	1177	1181	1188	1181	1188	1181	1177	1182	1188	1185
20	1146	1143	1140	1140	1145	1140	1142	1140	1145	1140	1140	1143	1146	1143	1140	1140	1145	1140	1142
25	1090	1090	1096	1093	1090	1090	1094	1090	1090	1093	1096	1090	1090	1090	1096	1093	1090	1090	1094
30	1030	1035	1036	1030	1030	1033	1036	1033	1030	1030	1036	1035	1030	1035	1036	1030	1030	1033	1036
35	963	964	963	963	967	965	963	965	967	963	963	964	963	964	963	963	967	965	963
40	883	887	892	892	888	887	893	887	888	892	892	887	883	887	892	892	888	887	893
45	796	807	813	807	805	810	814	810	805	807	813	807	796	807	813	807	805	810	814
50	712	721	723	720	721	723	721	723	721	720	723	721	712	721	723	720	721	723	721
55	622	624	630	631	631	629	633	629	631	631	630	624	622	624	630	631	631	629	633
60	526	531	539	535	533	535	539	535	533	535	539	531	526	531	539	535	533	535	539
65	432	439	440	437	438	441	441	441	438	437	440	439	432	439	440	437	438	441	441
70	339	340	343	342	343	342	342	342	343	342	343	340	339	340	343	342	343	342	342
75	245	247	249	248	247	247	248	247	247	248	249	247	245	247	249	248	247	247	248
80	156	158	160	158	157	157	158	157	157	158	160	158	156	158	160	158	157	157	158
85	75.0	75.5	75.6	75.4	75.3	74.8	74.8	74.8	75.3	75.4	75.6	75.5	75.0	75.5	75.6	75.4	75.3	74.8	74.8
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	1237	1235	1231	1235	1241														
5	1224	1230	1232	1229	1228														
10	1209	1207	1211	1215	1212														
15	1188	1182	1177	1181	1188														
20	1140	1145	1140	1140	1143														
25	1090	1090	1093	1096	1090														
30	1033	1030	1030	1036	1035														
35	965	967	963	963	964														
40	887	888	892	892	887														
45	810	805	807	813	807														
50	723	721	720	723	721														
55	629	631	631	630	624														
60	535	533	535	539	531														
65	441	438	437	440	439														
70	342	343	342	343	340														
75	247	247	248	249	247														
80	157	157	158	160	158														
85	74.8	75.3	75.4	75.6	75.5														
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 @30W3500K	<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	0.250	29.8	0.993	11.71
277.0	60	0.117	31.0	0.956	11.65

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