

## Photometric Test Report

### Relevant Standards

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

Prepared For

**RAB Lighting Inc.**

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Date: 2025-01-21

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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		3645
Minimum Luminaire Efficacy (lm/W) (Goniophotometer – Section 4.2)	ANSI/IES LM-79:2019	Standard	Premium	120.7
		110	125	
Power (Input Wattage) (W) (Goniophotometer – Section 4.2)	ANSI/IES LM-79:2019	Worst Case		30.2
Total Harmonic Distortion (A%) (THD & PF – Section 4.3)	ANSI C82.77:2002 ANSI C82-77-10:2020	20.00%	120V	12.02
			277V	11.27
Power Factor (THD & PF – Section 4.3)	ANSI C82.77:2002 ANSI C82-77-10:2020	0.9	120V	0.993
			277V	0.951
Allowable CCTs* (K) (Integrating Sphere – Section 4.1)	ANSI/IES LM-79:2019	7 steps	3985±275	4003
		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	20.7
		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	1.26
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		0.115
(Goniophotometer – Section 4.2)		Non-Worst Case		0.244
Power (Input Wattage – W)				
(Goniophotometer – Section 4.2)	ANSI/IES LM-79:2019	Worst Case		30.2
(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	EZP1X4 @30W4000K	-	250117001-S1
2	Goniophotometer Test	2025-01-20	EZP1X4 @30W4000K	-	250117001-S1
3	THD and PF Test	2025-01-20	EZP1X4 @30W4000K	-	250117001-S1

### Remark (If any):

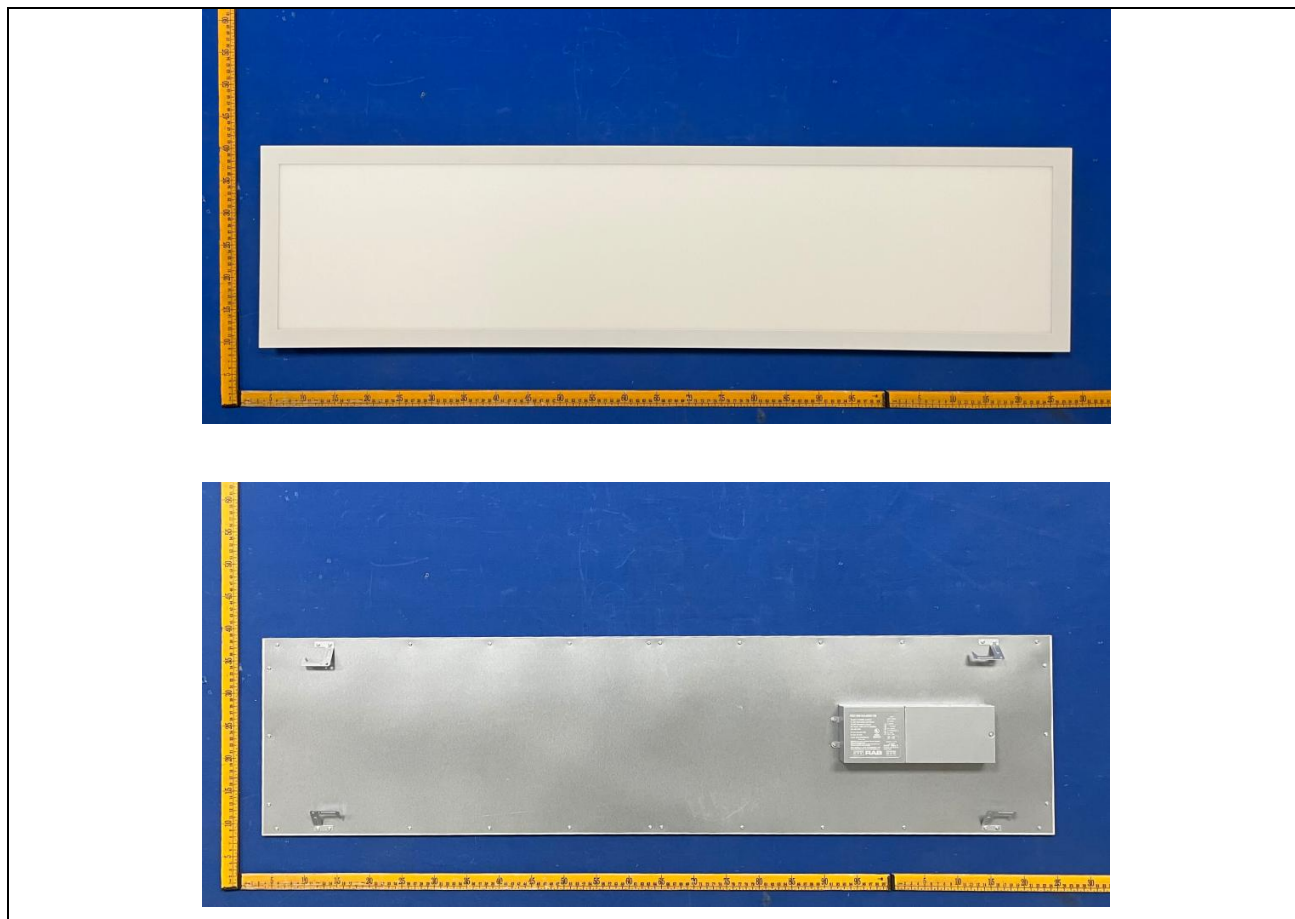
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3. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST or any agency of the U.S. Government.

### 3.0 Product Description

Luminaire Description: Model No. EZP1X4 @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>	EZP1X4 @30W4000K	<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

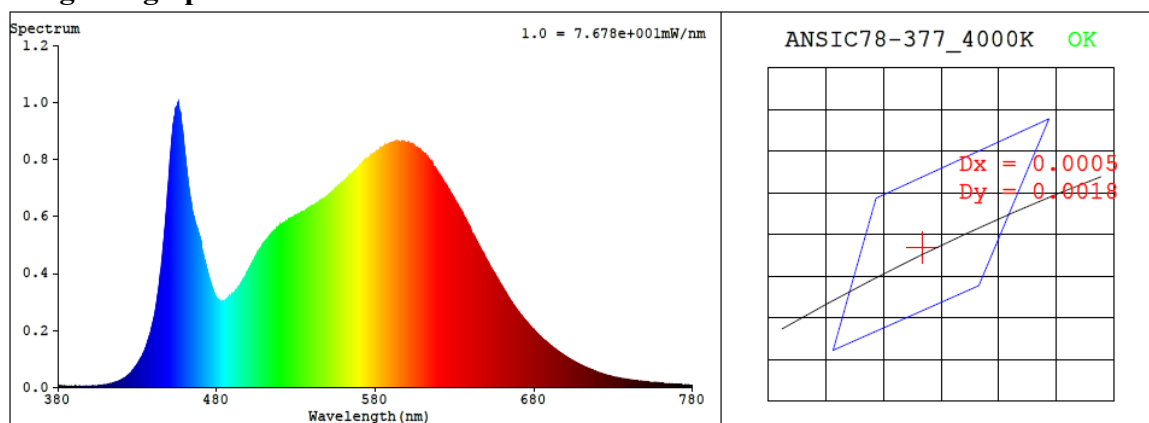
<b>Test Method</b>
<p>The Samples were tested according to the ANSI/IES LM-79:2019.</p> <p>Photometric parameters were measured using an integrating sphere, a spectroradiometer and software. The ambient temperature condition inside the sphere was maintained at 25±1°C.</p> <p>The sample measurements were 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	0.244	29.1	0.993
277.0	60	0.115	30.2	0.951

<b>CCT (K)</b>	<b>CRI</b>	<b>R9</b>	<b>Duv</b>	<b>Rf</b>	<b>Rg</b>	<b>IES Rcs,h1</b>
4003	84.6	15	0.0007	84	93	-11%

## 4.1 Integrating Sphere Test



### Colorimetric Parameters

Chromaticity Coordinate:  $x = 0.3808$   $y = 0.3785$  /  $u' = 0.2247$   $v' = 0.5024$  ( $duv=6.92e-04$ )

CCT= 4003K Prcp WL:  $L_d=578.7nm$  Purity=27.9%

Peak WL:  $L_p=456nm$  FWHM:  $=24.1nm$  Ratio:R=18.6% G=77.4% B=4.1%

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

EEL: 0.11071 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=86 R14=99 R15=77

## 4.1 Integrating Sphere Test

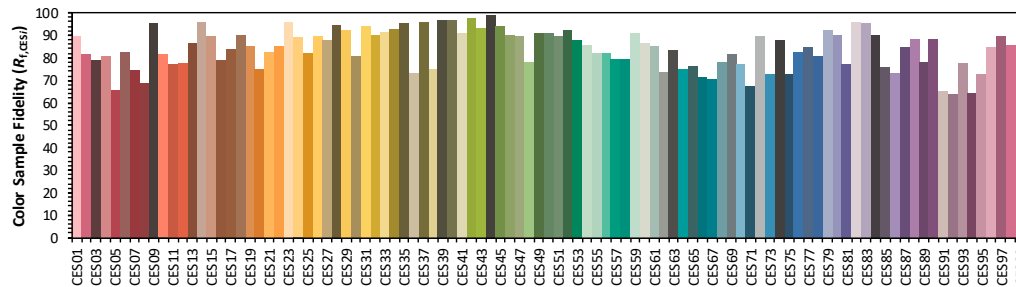
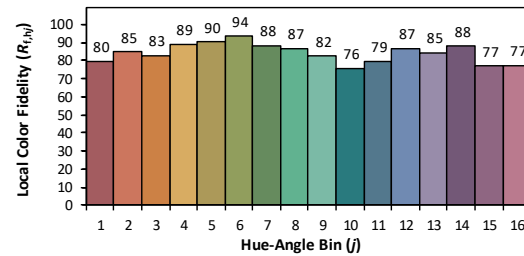
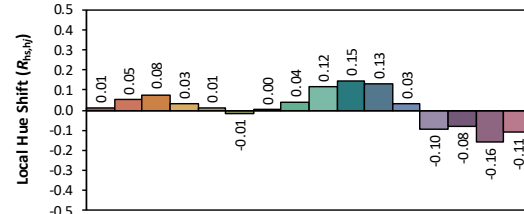
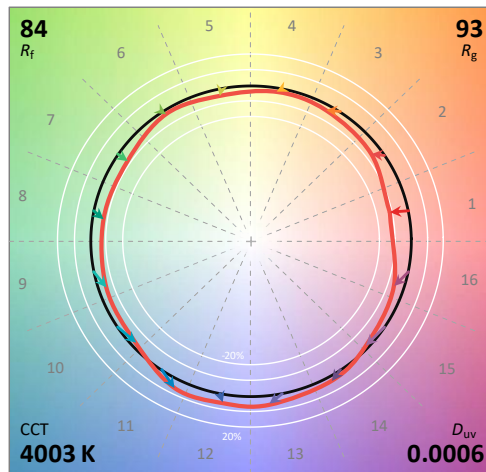
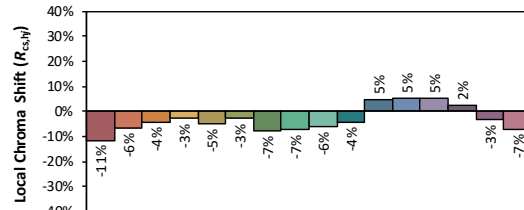
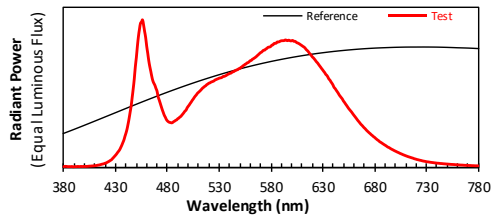
### ANSI/IES TM-30-18 Color Rendition Report

Source: 1 CIE F1

Manufacturer: RAB Lighting Inc.

Date: 2025/1/21

Model: EZP1X4 @30W4000K



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

$x$  0.3808  
 $y$  0.3783  
 $u'$  0.2247  
 $v'$  0.5023

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	3.10E-06	447	5.33E-04	514	5.37E-04	581	8.29E-04	648	4.71E-04	715	6.54E-05
381	5.10E-06	448	5.99E-04	515	5.42E-04	582	8.30E-04	649	4.62E-04	716	6.29E-05
382	4.80E-06	449	6.81E-04	516	5.48E-04	583	8.39E-04	650	4.49E-04	717	6.11E-05
383	4.20E-06	450	7.44E-04	517	5.53E-04	584	8.41E-04	651	4.40E-04	718	5.81E-05
384	2.80E-06	451	8.20E-04	518	5.60E-04	585	8.41E-04	652	4.29E-04	719	5.59E-05
385	3.50E-06	452	8.86E-04	519	5.64E-04	586	8.50E-04	653	4.20E-04	720	5.40E-05
386	3.00E-06	453	9.36E-04	520	5.70E-04	587	8.50E-04	654	4.09E-04	721	5.16E-05
387	3.40E-06	454	9.77E-04	521	5.72E-04	588	8.51E-04	655	3.99E-04	722	5.00E-05
388	3.70E-06	455	9.85E-04	522	5.77E-04	589	8.55E-04	656	3.90E-04	723	4.82E-05
389	1.60E-06	456	1.00E-03	523	5.80E-04	590	8.58E-04	657	3.82E-04	724	4.64E-05
390	2.70E-06	457	9.65E-04	524	5.82E-04	591	8.59E-04	658	3.73E-04	725	4.50E-05
391	3.60E-06	458	9.21E-04	525	5.86E-04	592	8.59E-04	659	3.63E-04	726	4.29E-05
392	3.10E-06	459	8.80E-04	526	5.92E-04	593	8.60E-04	660	3.54E-04	727	4.12E-05
393	4.10E-06	460	8.21E-04	527	5.94E-04	594	8.64E-04	661	3.44E-04	728	3.99E-05
394	4.10E-06	461	7.74E-04	528	5.98E-04	595	8.61E-04	662	3.35E-04	729	3.87E-05
395	3.40E-06	462	7.22E-04	529	6.00E-04	596	8.59E-04	663	3.26E-04	730	3.70E-05
396	4.20E-06	463	6.83E-04	530	6.04E-04	597	8.62E-04	664	3.16E-04	731	3.58E-05
397	4.30E-06	464	6.49E-04	531	6.06E-04	598	8.60E-04	665	3.08E-04	732	3.51E-05
398	3.70E-06	465	6.13E-04	532	6.07E-04	599	8.57E-04	666	2.99E-04	733	3.38E-05
399	4.40E-06	466	5.85E-04	533	6.11E-04	600	8.58E-04	667	2.90E-04	734	3.27E-05
400	4.40E-06	467	5.69E-04	534	6.16E-04	601	8.61E-04	668	2.84E-04	735	3.17E-05
401	4.40E-06	468	5.55E-04	535	6.16E-04	602	8.54E-04	669	2.75E-04	736	3.08E-05
402	4.90E-06	469	5.33E-04	536	6.20E-04	603	8.55E-04	670	2.67E-04	737	3.00E-05
403	5.10E-06	470	5.16E-04	537	6.23E-04	604	8.51E-04	671	2.61E-04	738	2.88E-05
404	6.10E-06	471	4.79E-04	538	6.29E-04	605	8.45E-04	672	2.53E-04	739	2.81E-05
405	6.60E-06	472	4.58E-04	539	6.31E-04	606	8.43E-04	673	2.46E-04	740	2.71E-05
406	6.80E-06	473	4.35E-04	540	6.36E-04	607	8.39E-04	674	2.39E-04	741	2.64E-05
407	7.60E-06	474	4.13E-04	541	6.37E-04	608	8.35E-04	675	2.32E-04	742	2.59E-05
408	7.90E-06	475	3.91E-04	542	6.41E-04	609	8.29E-04	676	2.27E-04	743	2.50E-05
409	8.60E-06	476	3.71E-04	543	6.47E-04	610	8.25E-04	677	2.19E-04	744	2.42E-05
410	9.20E-06	477	3.52E-04	544	6.48E-04	611	8.20E-04	678	2.14E-04	745	2.39E-05
411	1.05E-05	478	3.39E-04	545	6.53E-04	612	8.15E-04	679	2.07E-04	746	2.30E-05
412	1.15E-05	479	3.24E-04	546	6.56E-04	613	8.08E-04	680	2.03E-04	747	2.23E-05
413	1.34E-05	480	3.14E-04	547	6.61E-04	614	7.99E-04	681	1.96E-04	748	2.19E-05
414	1.41E-05	481	3.08E-04	548	6.62E-04	615	7.92E-04	682	1.90E-04	749	2.12E-05
415	1.61E-05	482	3.04E-04	549	6.69E-04	616	7.85E-04	683	1.84E-04	750	2.07E-05
416	1.80E-05	483	3.03E-04	550	6.70E-04	617	7.75E-04	684	1.80E-04	751	2.02E-05
417	2.00E-05	484	3.01E-04	551	6.77E-04	618	7.67E-04	685	1.73E-04	752	1.95E-05
418	2.15E-05	485	3.03E-04	552	6.81E-04	619	7.59E-04	686	1.69E-04	753	1.90E-05
419	2.36E-05	486	3.09E-04	553	6.88E-04	620	7.49E-04	687	1.64E-04	754	1.82E-05
420	2.66E-05	487	3.12E-04	554	6.92E-04	621	7.42E-04	688	1.59E-04	755	1.81E-05
421	2.88E-05	488	3.18E-04	555	6.98E-04	622	7.34E-04	689	1.54E-04	756	1.75E-05
422	3.30E-05	489	3.21E-04	556	7.01E-04	623	7.25E-04	690	1.50E-04	757	1.73E-05
423	3.66E-05	490	3.29E-04	557	7.08E-04	624	7.15E-04	691	1.46E-04	758	1.63E-05
424	4.09E-05	491	3.32E-04	558	7.10E-04	625	7.08E-04	692	1.40E-04	759	1.61E-05
425	4.57E-05	492	3.40E-04	559	7.16E-04	626	6.98E-04	693	1.36E-04	760	1.55E-05
426	5.00E-05	493	3.44E-04	560	7.23E-04	627	6.88E-04	694	1.33E-04	761	1.51E-05
427	5.79E-05	494	3.53E-04	561	7.24E-04	628	6.79E-04	695	1.28E-04	762	1.45E-05
428	6.54E-05	495	3.62E-04	562	7.32E-04	629	6.69E-04	696	1.24E-04	763	1.40E-05
429	7.34E-05	496	3.71E-04	563	7.36E-04	630	6.60E-04	697	1.20E-04	764	1.37E-05
430	8.12E-05	497	3.81E-04	564	7.41E-04	631	6.50E-04	698	1.17E-04	765	1.35E-05
431	9.00E-05	498	3.87E-04	565	7.46E-04	632	6.41E-04	699	1.13E-04	766	1.28E-05
432	1.00E-04	499	4.02E-04	566	7.52E-04	633	6.30E-04	700	1.09E-04	767	1.23E-05
433	1.09E-04	500	4.12E-04	567	7.58E-04	634	6.23E-04	701	1.06E-04	768	1.19E-05
434	1.20E-04	501	4.21E-04	568	7.65E-04	635	6.12E-04	702	1.02E-04	769	1.16E-05
435	1.34E-04	502	4.32E-04	569	7.71E-04	636	5.98E-04	703	9.92E-05	770	1.13E-05
436	1.49E-04	503	4.42E-04	570	7.78E-04	637	5.91E-04	704	9.57E-05	771	1.09E-05
437	1.67E-04	504	4.53E-04	571	7.81E-04	638	5.79E-04	705	9.21E-05	772	1.07E-05
438	1.84E-04	505	4.63E-04	572	7.88E-04	639	5.69E-04	706	8.95E-05	773	1.06E-05
439	2.09E-04	506	4.74E-04	573	7.94E-04	640	5.57E-04	707	8.62E-05	774	9.80E-06
440	2.31E-04	507	4.83E-04	574	7.95E-04	641	5.41E-04	708	8.31E-05	775	9.70E-06
441	2.58E-04	508	4.91E-04	575	8.02E-04	642	5.34E-04	709	8.05E-05	776	9.50E-06
442	2.92E-04	509	5.01E-04	576	8.06E-04	643	5.23E-04	710	7.75E-05	777	8.90E-06
443	3.30E-04	510	5.08E-04	577	8.12E-04	644	5.13E-04	711	7.50E-05	778	8.80E-06
444	3.73E-04	511	5.14E-04	578	8.15E-04	645	5.02E-04	712	7.22E-05	779	8.70E-06
445	4.16E-04	512	5.21E-04	579	8.16E-04	646	4.90E-04	713	6.99E-05	780	8.80E-06
446	4.74E-04	513	5.29E-04	580	8.21E-04	647	4.81E-04	714	6.76E-05	N/A	N/A



## 4.0 LM-79 Measurement and Test Results

### 4.2 Goniophotometer Test

<b>Model No.</b>	EZP1X4 @30W4000K	<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	0.115	30.2	0.951
<b>NON-WORST CASE</b>	120.0	60	0.244	29.1	0.993

#### Test Result

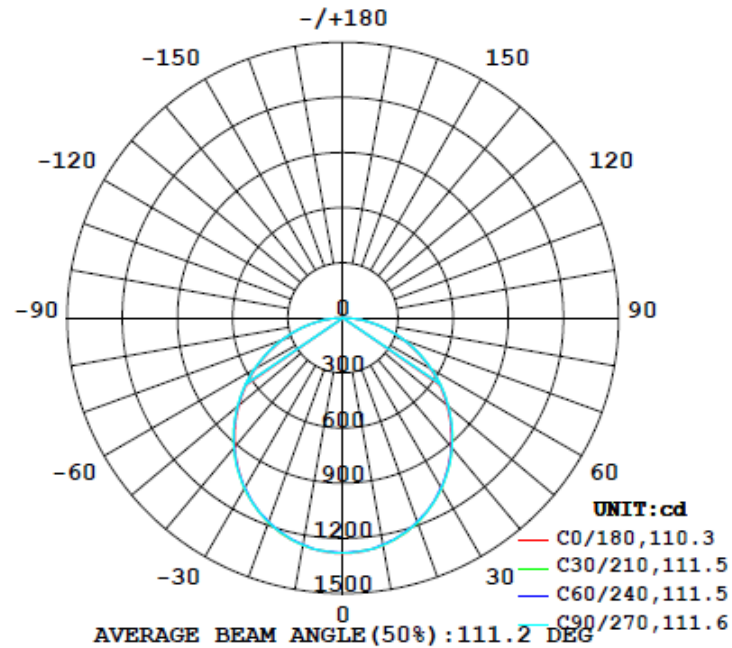
Flux (lm)	Field Angle (10%)		Beam Angle (50%)		Luminous Efficacy (lm/W)	Zonal Lumen Requirement
	C0-180	C90-270	C0-180	C90-270		(0°-60°)
3645	164.3	164.4	110.3	111.4	120.7	77.9%

UGR		Spacing Criterion	
Crosswise	Endwise	(0°-180°)	(90°-270°)
20.7	20.7	1.26	1.26

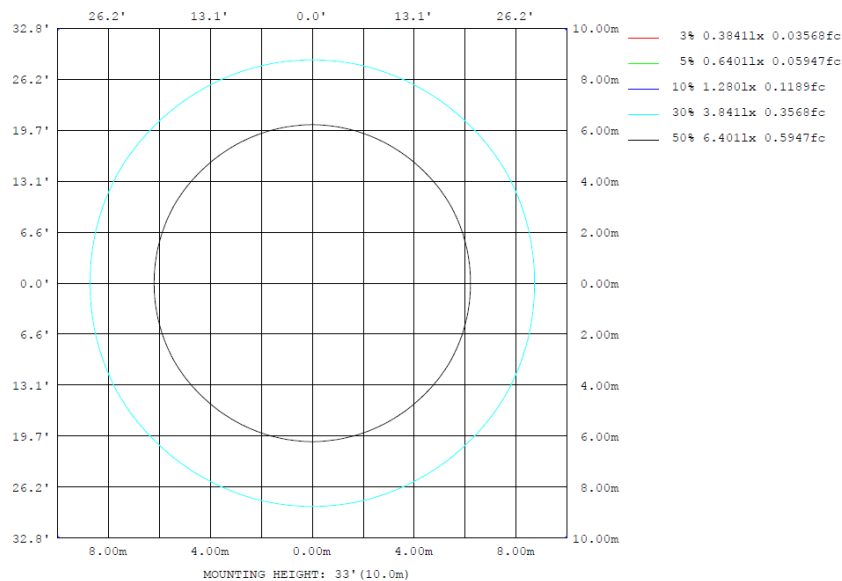
## 4.2 Goniophotometer Test

### 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	zone	total	lum, lamp
10	1256	1251	1254	1251	1256	1251	1254	1251	0- 10	120.9	120.9	3.32,3.32
20	1185	1179	1183	1179	1185	1179	1183	1179	10- 20	345.3	466.2	12.8,12.8
30	1070	1066	1071	1066	1070	1066	1071	1066	20- 30	521.1	987.3	27.1,27.1
40	916.1	920.4	922.8	920.4	916.1	920.4	922.8	920.4	30- 40	624.6	1612	44.2,44.2
50	738.2	745.5	749.0	745.5	738.2	745.5	749.0	745.5	40- 50	644.7	2257	61.9,61.9
60	547.3	553.9	556.1	553.9	547.3	553.9	556.1	553.9	50- 60	582.1	2839	77.9,77.9
70	350.5	353.7	355.2	353.7	350.5	353.7	355.2	353.7	60- 70	448.9	3288	90.2,90.2
80	162.3	163.4	162.9	163.4	162.3	163.4	162.9	163.4	70- 80	271.1	3559	97.6,97.6
90	0	0	0	0	0	0	0	0	80- 90	86.57	3645	100,100
100	0	0	0	0	0	0	0	0	90-100	0	3645	100,100
110	0	0	0	0	0	0	0	0	100-110	0	3645	100,100
120	0	0	0	0	0	0	0	0	110-120	0	3645	100,100
130	0	0	0	0	0	0	0	0	120-130	0	3645	100,100
140	0	0	0	0	0	0	0	0	130-140	0	3645	100,100
150	0	0	0	0	0	0	0	0	140-150	0	3645	100,100
160	0	0	0	0	0	0	0	0	150-160	0	3645	100,100
170	0	0	0	0	0	0	0	0	160-170	0	3645	100,100
180	0	0	0	0	0	0	0	0	170-180	0	3645	100,100
DEG	LUMINOUS INTENSITY:cd									UNIT:lm		

	Zonal (lm)		Total (lm)	Percent
0-10	120.86	0-10	120.86	3.32%
10-20	345.33	0-20	466.19	12.79%
20-30	521.11	0-30	987.30	27.09%
30-40	624.61	0-40	1611.91	44.22%
40-50	644.68	0-50	2256.59	61.91%
50-60	582.07	0-60	2838.66	77.87%
60-70	448.86	0-70	3287.52	90.19%
70-80	271.09	0-80	3558.61	97.63%
80-90	86.57	0-90	3645.18	100.00%
90-100	0.00	0-100	3645.18	100.00%
100-110	0.00	0-110	3645.18	100.00%
110-120	0.00	0-120	3645.18	100.00%
120-130	0.00	0-130	3645.18	100.00%
130-140	0.00	0-140	3645.18	100.00%
140-150	0.00	0-150	3645.18	100.00%
150-160	0.00	0-160	3645.18	100.00%
160-170	0.00	0-170	3645.18	100.00%
170-180	0.00	0-180	3645.18	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	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	15.7	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	15.5	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	14.3	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	17.1	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	16.1	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	18.8	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	16.5	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 = 18.8

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	16.1	17.7	16.4	18.0	18.4	16.1	17.8	16.5	18.1	18.4
	3H	18.0	19.4	18.3	19.8	20.1	18.0	19.5	18.4	19.8	20.2
	4H	18.7	20.1	19.1	20.4	20.8	18.7	20.2	19.1	20.5	20.9
	6H	19.3	20.6	19.7	20.9	21.3	19.3	20.6	19.7	21.0	21.4
	8H	19.5	20.7	19.9	21.1	21.5	19.5	20.8	20.0	21.2	21.6
	12H	19.6	20.8	20.1	21.2	21.6	19.7	20.9	20.1	21.3	21.7
4H	2H	16.7	18.1	17.1	18.5	18.9	16.8	18.2	17.2	18.5	18.9
	3H	18.8	20.0	19.3	20.4	20.8	18.9	20.1	19.3	20.5	20.9
	4H	19.7	20.8	20.2	21.2	21.6	19.8	20.8	20.2	21.2	21.7
	6H	20.4	21.4	20.9	21.8	22.3	20.5	21.4	20.9	21.9	22.3
	8H	20.7	21.6	21.2	22.0	22.5	20.7	21.6	21.2	22.1	22.5
	12H	20.9	21.7	21.4	22.2	22.7	21.0	21.7	21.4	22.2	22.7
8H	4H	20.1	21.0	20.5	21.4	21.9	20.1	21.0	20.6	21.4	21.9
	6H	20.9	21.7	21.4	22.2	22.6	21.0	21.7	21.4	22.2	22.7
	8H	21.3	22.0	21.8	22.5	23.0	21.3	22.0	21.8	22.5	23.0
	12H	21.6	22.2	22.1	22.7	23.3	21.6	22.2	22.1	22.7	23.3
12H	4H	20.1	20.9	20.6	21.4	21.9	20.2	21.0	20.6	21.4	21.9
	6H	21.0	21.7	21.6	22.2	22.7	21.1	21.7	21.6	22.2	22.7
	8H	21.5	22.0	22.0	22.5	23.1	21.5	22.0	22.0	22.5	23.1

Maximum UGR = 23.3

## 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	1280	1277	1278	1277	1278	1280	1278	1280	1277	1278	1277	1278	1280	1277	1278	1277	1278	1280	1278
5	1276	1270	1271	1270	1272	1273	1275	1273	1272	1270	1271	1270	1276	1270	1271	1270	1272	1273	1275
10	1256	1254	1255	1251	1251	1254	1254	1251	1251	1255	1254	1256	1254	1255	1251	1251	1254	1254	1254
15	1226	1224	1226	1223	1221	1226	1222	1221	1223	1226	1224	1226	1224	1226	1223	1221	1226	1223	1222
20	1185	1184	1186	1179	1181	1184	1183	1184	1181	1179	1186	1184	1185	1184	1186	1179	1181	1184	1183
25	1131	1131	1133	1127	1129	1132	1132	1132	1129	1127	1133	1131	1131	1131	1133	1127	1129	1132	1132
30	1070	1070	1072	1066	1067	1069	1071	1069	1067	1066	1072	1070	1070	1070	1072	1066	1067	1069	1071
35	994	998	1003	1000	998	998	1001	998	998	1000	1003	998	994	998	1003	1000	998	998	1001
40	916	919	924	920	920	922	923	922	920	920	924	919	916	919	924	920	920	922	923
45	829	832	839	835	836	838	839	838	836	835	839	832	829	832	839	835	836	838	839
50	738	743	748	746	746	748	749	748	746	746	748	743	738	743	748	746	746	748	749
55	643	647	654	651	653	654	654	654	653	651	654	647	643	647	654	651	653	654	654
60	547	549	555	554	554	556	556	556	554	554	555	549	547	549	555	554	554	556	556
65	449	451	456	453	454	455	456	455	454	453	456	451	449	451	456	453	454	455	456
70	351	352	355	354	354	355	355	355	354	354	355	352	351	352	355	354	354	355	355
75	255	256	258	256	256	256	257	256	256	256	258	256	255	256	258	256	256	256	257
80	162	164	165	163	163	163	163	163	163	163	165	164	162	164	165	163	163	163	163
85	77.7	78.3	78.8	78.3	77.8	77.5	78.0	77.5	77.8	78.3	78.8	78.3	77.7	78.3	78.8	78.3	77.8	77.5	78.0
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	1280	1278	1277	1278	1277														
5	1273	1272	1270	1271	1270														
10	1254	1251	1251	1255	1254														
15	1226	1221	1223	1226	1224														
20	1184	1181	1179	1186	1184														
25	1132	1129	1127	1133	1131														
30	1069	1067	1066	1072	1070														
35	998	998	1000	1003	998														
40	922	920	920	924	919														
45	839	836	835	839	832														
50	748	746	746	748	743														
55	654	653	651	654	647														
60	556	554	554	555	549														
65	455	454	453	456	451														
70	355	354	354	355	352														
75	256	256	256	258	256														
80	163	163	163	165	164														
85	77.5	77.8	78.3	78.8	78.3														
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 @30W4000K	<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	0.244	29.1	0.993	12.02
277.0	60	0.115	30.2	0.951	11.27

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