

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		4448
Minimum Luminaire Efficacy (lm/W) (Goniophotometer – Section 4.2)	ANSI/IES LM-79:2019	Standard	Premium	110.1
		110	125	
Power (Input Wattage) (W) (Goniophotometer – Section 4.2)	ANSI/IES LM-79:2019	Worst Case		40.4
Total Harmonic Distortion (A%) (THD & PF – Section 4.3)	ANSI C82.77:2002 ANSI C82-77-10:2020	20.00%	120V	11.84
			277V	15.27
Power Factor (THD & PF – Section 4.3)	ANSI C82.77:2002 ANSI C82-77-10:2020	0.9	120V	0.993
			277V	0.977
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		83.2
Minimum R9 (Integrating Sphere – Section 4.1)	ANSI/IES LM-79:2019 CIE13.3-1995	≥0		8
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	21.4
		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		0.149
(Goniophotometer – Section 4.2)		Non-Worst Case		0.331
Power (Input Wattage – W)				
(Goniophotometer – Section 4.2)	ANSI/IES LM-79:2019	Worst Case		40.4
(Goniophotometer – Section 4.2)		Non-Worst Case		39.5

2.0 Test List

Test Item	Test	Test Date	Model Number	Build Level	Sample No.
1	Integrating Sphere Test	2025-01-20	EZP1X4 @40W3500K	-	250117001-S1
2	Goniophotometer Test	2025-01-20	EZP1X4 @40W3500K	-	250117001-S1
3	THD and PF Test	2025-01-20	EZP1X4 @40W3500K	-	250117001-S1

Remark (If any):

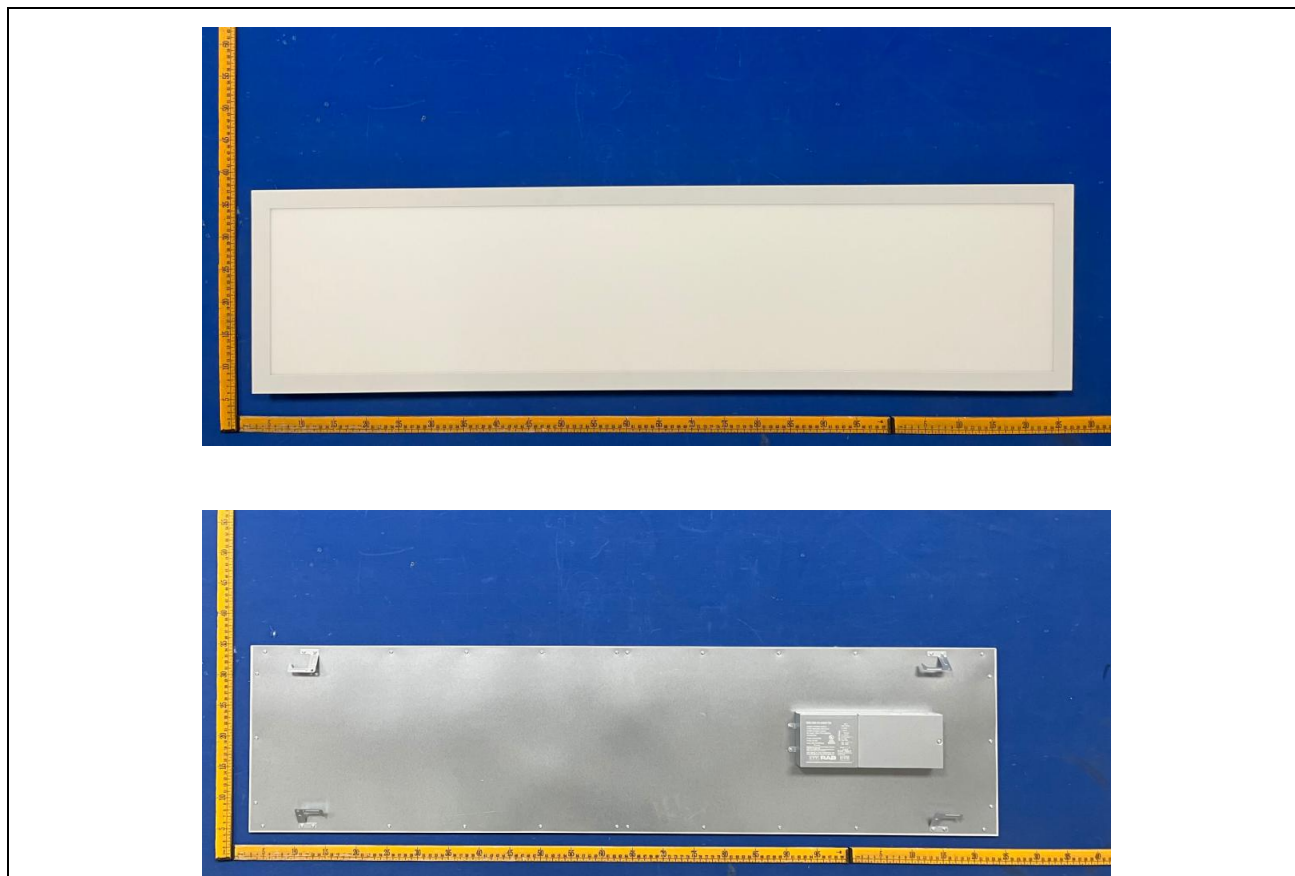
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3. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST or any agency of the U.S. Government.

3.0 Product Description

Luminaire Description: Model No. EZP1X4 @40W3500K, color tunable from 3500K, 4000K and 5000K.

Electrical Specification: 120-277Vac, 50/60Hz

Photos of Luminaire Characteristics



4.0 LM-79 Measurement and Test Results

4.1 Integrating Sphere Test

Model No.	EZP1X4 @40W3500K	Sample ID	250117001-S1
Operate time (Min.)	10	Stabilization time (Min.)	60
Temperature (°C)	25.4	Humidity (%RH)	41.0

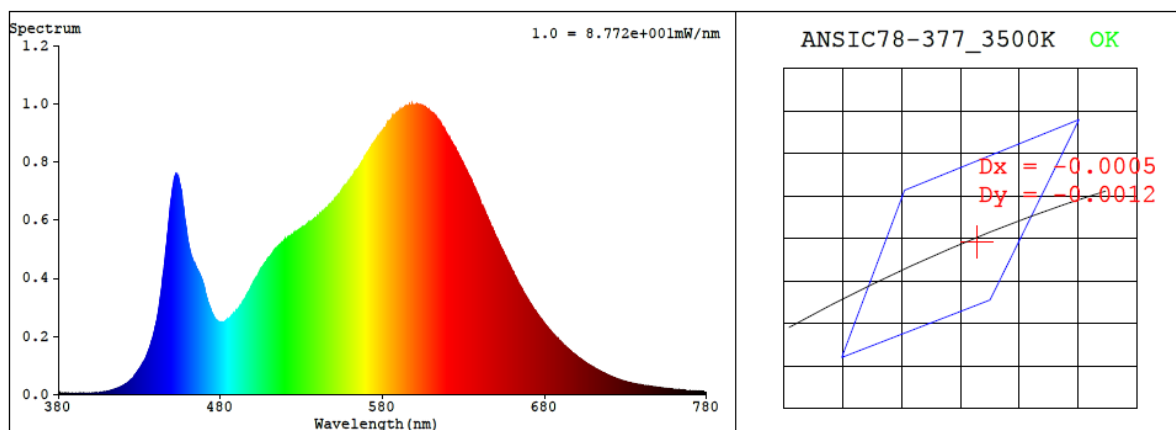
Test Method
<p>The Samples were tested according to the ANSI/IES LM-79:2019.</p> <p>Photometric parameters were measured using an integrating sphere, a spectroradiometer and software. The ambient temperature condition inside the sphere was maintained at 25±1°C.</p> <p>The sample measurements were made using a spectroradiometer connected by a fiber optic cable and detector through the detector port of the integrating sphere.</p> <p>The voltage of an AC power supply (RMS voltage) or DC power supply (instantaneous voltage) applied to the device under test shall be regulated to within ±0.2 percent under load.</p> <p>The sample was measured using 4π geometry and operated at rated voltage and was stabilized before measurement. Chromaticity coordinates, correlated color temperature and color rendering index were calculated from the spectral radiant flux measurements taken at 1 nm intervals over the range of 380 to 780nm.</p>

Test Result

Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor
120.0	60	0.331	39.5	0.993
277.0	60	0.149	40.4	0.977

CCT (K)	CRI	R9	Duv	Rf	Rg	IES Rcs,h1
3362	83.2	8	-0.0004	85	95	-12%

4.1 Integrating Sphere Test



Colorimetric Parameters

Chromaticity Coordinate: $x = 0.4128$ $y = 0.3934$ / $u' = 0.2395$ $v' = 0.5135$ ($duv = -4.26e-04$)

CCT= 3362K Prcp WL: $L_d = 581.5\text{nm}$ Purity=42.0%

Peak WL: $L_p = 601\text{nm}$ FWHM: $\approx 140.5\text{nm}$ Ratio: R=21.0% G=75.9% B=3.2%

Render Index: $R_a = 83.2$ AvgR = 77.4 TM30: $R_f = 84$ $R_g = 95$

EEL: 0.12001 A+

R1 =82 R2 =92 R3 =96 R4 =81 R5 =82 R6 =89 R7 =83

R8 =61 R9 =8 R10=81 R11=80 R12=69 R13=85 R14=98 R15=75

4.1 Integrating Sphere Test

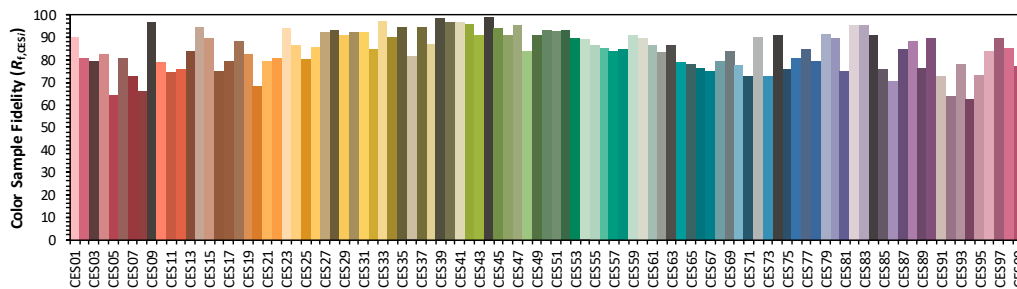
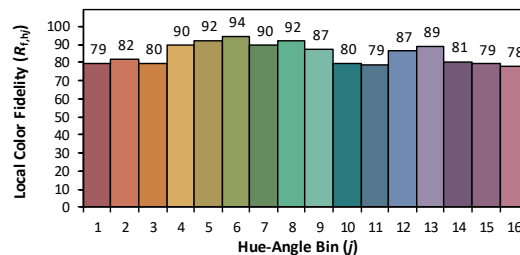
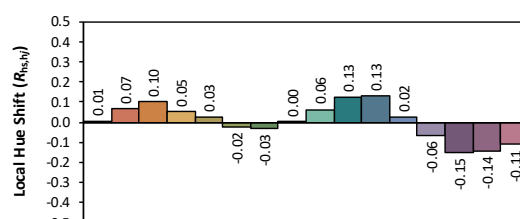
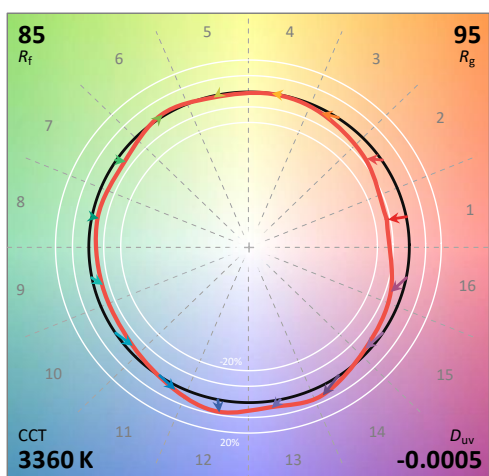
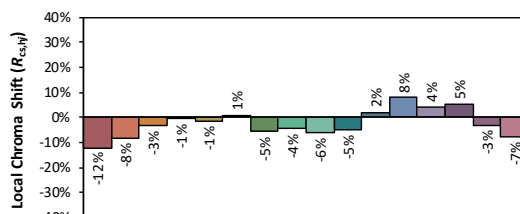
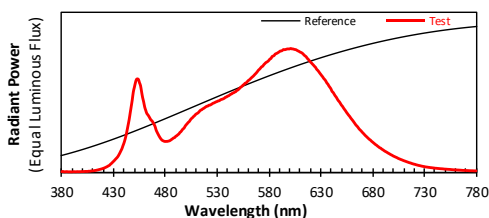
ANSI/IES TM-30-18 Color Rendition Report

Source: 1 CIE F1

Manufacturer: RAB Lighting Inc.

Date: 2025/1/21

Model: EZP1X4 @40W3500K



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

x 0.4128
 y 0.3932
 u' 0.2396
 v' 0.5134

CIE 13.3-1995
(CRI)
 R_a 83
 R_g 8

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	4.10E-06	447	5.32E-04	514	5.01E-04	581	9.15E-04	648	5.69E-04	715	7.84E-05
381	5.80E-06	448	5.85E-04	515	5.04E-04	582	9.19E-04	649	5.57E-04	716	7.58E-05
382	3.10E-06	449	6.48E-04	516	5.12E-04	583	9.34E-04	650	5.43E-04	717	7.35E-05
383	2.70E-06	450	6.85E-04	517	5.16E-04	584	9.39E-04	651	5.33E-04	718	7.01E-05
384	3.80E-06	451	7.22E-04	518	5.22E-04	585	9.43E-04	652	5.20E-04	719	6.75E-05
385	4.00E-06	452	7.49E-04	519	5.28E-04	586	9.54E-04	653	5.08E-04	720	6.49E-05
386	2.70E-06	453	7.54E-04	520	5.33E-04	587	9.59E-04	654	4.96E-04	721	6.32E-05
387	2.50E-06	454	7.49E-04	521	5.34E-04	588	9.62E-04	655	4.83E-04	722	6.02E-05
388	2.90E-06	455	7.22E-04	522	5.41E-04	589	9.68E-04	656	4.72E-04	723	5.81E-05
389	2.30E-06	456	6.99E-04	523	5.42E-04	590	9.73E-04	657	4.61E-04	724	5.57E-05
390	2.50E-06	457	6.49E-04	524	5.46E-04	591	9.80E-04	658	4.51E-04	725	5.37E-05
391	3.60E-06	458	6.03E-04	525	5.51E-04	592	9.80E-04	659	4.38E-04	726	5.21E-05
392	3.70E-06	459	5.68E-04	526	5.57E-04	593	9.84E-04	660	4.28E-04	727	4.99E-05
393	2.90E-06	460	5.27E-04	527	5.60E-04	594	9.91E-04	661	4.17E-04	728	4.79E-05
394	3.30E-06	461	5.00E-04	528	5.64E-04	595	9.90E-04	662	4.05E-04	729	4.63E-05
395	4.20E-06	462	4.75E-04	529	5.69E-04	596	9.92E-04	663	3.94E-04	730	4.49E-05
396	3.40E-06	463	4.64E-04	530	5.72E-04	597	9.94E-04	664	3.82E-04	731	4.29E-05
397	3.80E-06	464	4.52E-04	531	5.76E-04	598	9.96E-04	665	3.73E-04	732	4.16E-05
398	3.80E-06	465	4.37E-04	532	5.77E-04	599	9.96E-04	666	3.63E-04	733	4.06E-05
399	4.80E-06	466	4.23E-04	533	5.84E-04	600	9.97E-04	667	3.51E-04	734	3.91E-05
400	4.40E-06	467	4.15E-04	534	5.88E-04	601	1.00E-03	668	3.42E-04	735	3.82E-05
401	5.00E-06	468	4.03E-04	535	5.90E-04	602	9.97E-04	669	3.34E-04	736	3.67E-05
402	5.40E-06	469	3.87E-04	536	5.94E-04	603	9.97E-04	670	3.24E-04	737	3.60E-05
403	5.90E-06	470	3.70E-04	537	5.98E-04	604	9.94E-04	671	3.15E-04	738	3.48E-05
404	5.70E-06	471	3.42E-04	538	6.06E-04	605	9.92E-04	672	3.07E-04	739	3.39E-05
405	5.80E-06	472	3.23E-04	539	6.08E-04	606	9.91E-04	673	2.97E-04	740	3.26E-05
406	7.80E-06	473	3.06E-04	540	6.15E-04	607	9.86E-04	674	2.89E-04	741	3.15E-05
407	7.10E-06	474	2.91E-04	541	6.17E-04	608	9.81E-04	675	2.81E-04	742	3.11E-05
408	9.30E-06	475	2.77E-04	542	6.23E-04	609	9.77E-04	676	2.73E-04	743	2.99E-05
409	9.90E-06	476	2.65E-04	543	6.29E-04	610	9.72E-04	677	2.65E-04	744	2.94E-05
410	1.07E-05	477	2.57E-04	544	6.33E-04	611	9.68E-04	678	2.60E-04	745	2.83E-05
411	1.16E-05	478	2.53E-04	545	6.40E-04	612	9.63E-04	679	2.51E-04	746	2.76E-05
412	1.36E-05	479	2.49E-04	546	6.42E-04	613	9.56E-04	680	2.44E-04	747	2.71E-05
413	1.45E-05	480	2.48E-04	547	6.48E-04	614	9.47E-04	681	2.37E-04	748	2.65E-05
414	1.68E-05	481	2.49E-04	548	6.51E-04	615	9.40E-04	682	2.30E-04	749	2.53E-05
415	1.84E-05	482	2.49E-04	549	6.62E-04	616	9.33E-04	683	2.23E-04	750	2.45E-05
416	2.10E-05	483	2.52E-04	550	6.64E-04	617	9.21E-04	684	2.18E-04	751	2.42E-05
417	2.28E-05	484	2.54E-04	551	6.72E-04	618	9.12E-04	685	2.10E-04	752	2.34E-05
418	2.53E-05	485	2.59E-04	552	6.80E-04	619	9.02E-04	686	2.04E-04	753	2.29E-05
419	2.76E-05	486	2.65E-04	553	6.89E-04	620	8.92E-04	687	1.97E-04	754	2.22E-05
420	3.09E-05	487	2.71E-04	554	6.94E-04	621	8.84E-04	688	1.94E-04	755	2.19E-05
421	3.39E-05	488	2.77E-04	555	7.04E-04	622	8.75E-04	689	1.86E-04	756	2.09E-05
422	3.76E-05	489	2.80E-04	556	7.09E-04	623	8.66E-04	690	1.81E-04	757	2.01E-05
423	4.16E-05	490	2.90E-04	557	7.19E-04	624	8.56E-04	691	1.75E-04	758	1.93E-05
424	4.60E-05	491	2.95E-04	558	7.22E-04	625	8.48E-04	692	1.70E-04	759	1.86E-05
425	5.13E-05	492	3.03E-04	559	7.31E-04	626	8.33E-04	693	1.65E-04	760	1.85E-05
426	5.56E-05	493	3.09E-04	560	7.40E-04	627	8.24E-04	694	1.60E-04	761	1.79E-05
427	6.46E-05	494	3.21E-04	561	7.46E-04	628	8.14E-04	695	1.55E-04	762	1.73E-05
428	7.14E-05	495	3.27E-04	562	7.54E-04	629	8.02E-04	696	1.50E-04	763	1.70E-05
429	8.01E-05	496	3.39E-04	563	7.62E-04	630	7.91E-04	697	1.45E-04	764	1.65E-05
430	8.81E-05	497	3.49E-04	564	7.70E-04	631	7.80E-04	698	1.40E-04	765	1.60E-05
431	9.69E-05	498	3.56E-04	565	7.77E-04	632	7.70E-04	699	1.36E-04	766	1.53E-05
432	1.06E-04	499	3.71E-04	566	7.87E-04	633	7.57E-04	700	1.31E-04	767	1.46E-05
433	1.15E-04	500	3.82E-04	567	7.95E-04	634	7.48E-04	701	1.27E-04	768	1.41E-05
434	1.25E-04	501	3.91E-04	568	8.04E-04	635	7.36E-04	702	1.23E-04	769	1.40E-05
435	1.39E-04	502	4.02E-04	569	8.15E-04	636	7.21E-04	703	1.20E-04	770	1.35E-05
436	1.55E-04	503	4.09E-04	570	8.26E-04	637	7.11E-04	704	1.16E-04	771	1.30E-05
437	1.72E-04	504	4.21E-04	571	8.33E-04	638	6.96E-04	705	1.11E-04	772	1.28E-05
438	1.90E-04	505	4.32E-04	572	8.43E-04	639	6.85E-04	706	1.08E-04	773	1.21E-05
439	2.14E-04	506	4.39E-04	573	8.52E-04	640	6.72E-04	707	1.04E-04	774	1.17E-05
440	2.36E-04	507	4.48E-04	574	8.57E-04	641	6.53E-04	708	1.01E-04	775	1.14E-05
441	2.64E-04	508	4.55E-04	575	8.69E-04	642	6.45E-04	709	9.74E-05	776	1.12E-05
442	2.97E-04	509	4.65E-04	576	8.77E-04	643	6.31E-04	710	9.35E-05	777	1.11E-05
443	3.38E-04	510	4.72E-04	577	8.86E-04	644	6.17E-04	711	9.07E-05	778	1.04E-05
444	3.81E-04	511	4.76E-04	578	8.90E-04	645	6.07E-04	712	8.76E-05	779	1.04E-05
445	4.26E-04	512	4.83E-04	579	8.96E-04	646	5.92E-04	713	8.45E-05	780	1.04E-05
446	4.79E-04	513	4.93E-04	580	9.04E-04	647	5.79E-04	714	8.16E-05	N/A	N/A

4.0 LM-79 Measurement and Test Results

4.2 Goniophotometer Test

Model No.	EZP1X4 @40W3500K	Sample ID	250117001-S1
Operate time (Min.)	30	Stabilization time (Min.)	60
Temperature (°C)	24.9	Humidity (%RH)	41.3

Test Method
<p>The Samples were tested according to the ANSI/IES LM-79:2019.</p> <p>Photometric parameters were measured using a type C goniophotometer and software.</p> <p>The ambient temperature shall be maintained at $25 \pm 1^\circ\text{C}$, measured at a point not more than 1 m from the sample and at the same height as the sample.</p> <p>The voltage of an AC power supply (RMS voltage) or DC power supply (instantaneous voltage) applied to the device under test shall be regulated to within ± 0.2 percent under load.</p> <p>The samples were operated at rated voltage and was stabilized before measurement. Luminous flux, luminaire efficacy, zonal lumen were calculated from the software taken at 1.0° vertical intervals and 15° horizontal intervals.</p>

Test Conditions

Condition	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor
WORST CASE	277.0	60	0.149	40.4	0.977
NON-WORST CASE	120.0	60	0.331	39.5	0.993

Test Result

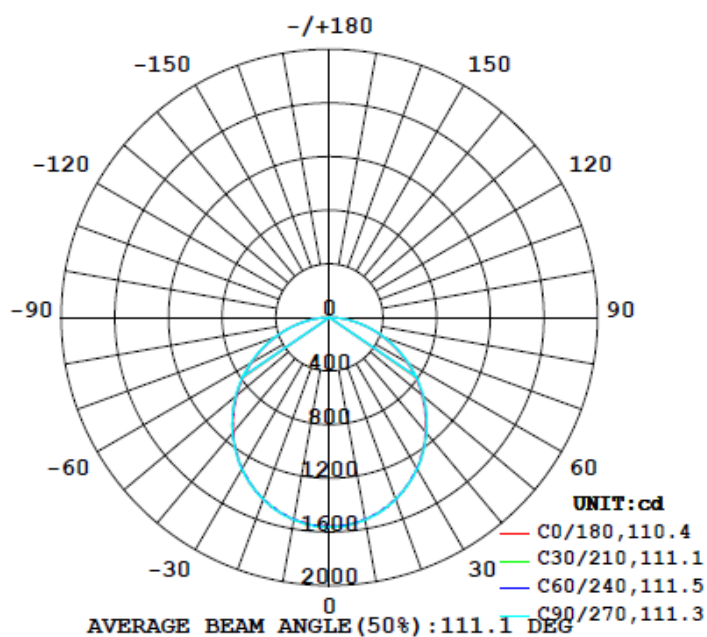
Flux (lm)	Field Angle (10%)		Beam Angle (50%)		Luminous Efficacy (lm/W)	Zonal Lumen Requirement (0°-60°)
	C0-180	C90-270	C0-180	C90-270		
4448	164.2	164.3	110.1	111.3	110.1	77.9%

UGR		Spacing Criterion	
Crosswise	Endwise	(0°-180°)	(90°-270°)
21.4	21.4	1.26	1.26

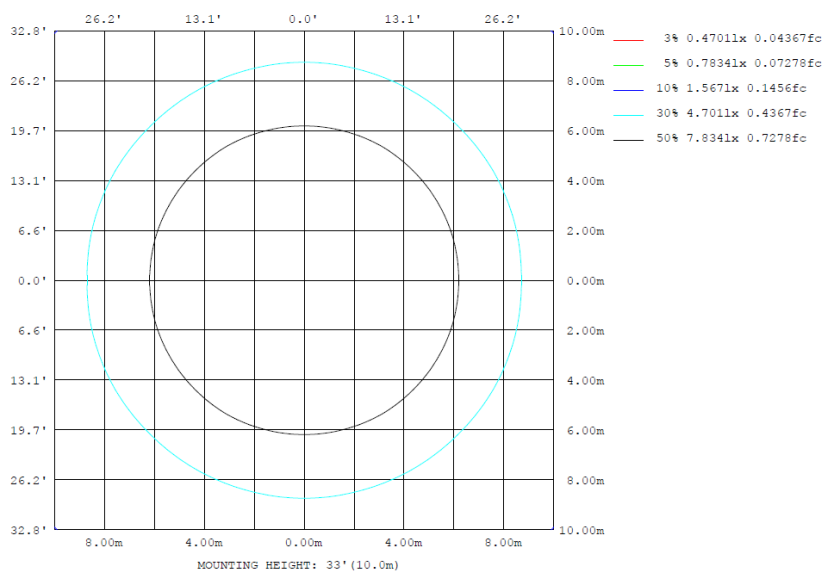
4.2 Goniophotometer Test

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	1525	1530	1535	1530	1525	1530	1535	1530	0- 10	147.5	147.5	3.32, 3.32
20	1448	1441	1443	1441	1448	1441	1443	1441	10- 20	421.4	568.9	12.8, 12.8
30	1301	1301	1309	1301	1301	1301	1309	1301	20- 30	635.8	1205	27.1, 27.1
40	1116	1126	1128	1126	1116	1126	1128	1126	30- 40	762.1	1967	44.2, 44.2
50	899.2	910.1	911.5	910.1	899.2	910.1	911.5	910.1	40- 50	786.7	2754	61.9, 61.9
60	663.9	676.0	680.5	676.0	663.9	676.0	680.5	676.0	50- 60	710.2	3464	77.9, 77.9
70	427.9	431.6	432.7	431.6	427.9	431.6	432.7	431.6	60- 70	547.9	4012	90.2, 90.2
80	197.6	199.4	199.1	199.4	197.6	199.4	199.1	199.4	70- 80	330.8	4343	97.6, 97.6
90	0	0	0	0	0	0	0	0	80- 90	105.5	4448	100, 100
100	0	0	0	0	0	0	0	0	90-100	0	4448	100, 100
110	0	0	0	0	0	0	0	0	100-110	0	4448	100, 100
120	0	0	0	0	0	0	0	0	110-120	0	4448	100, 100
130	0	0	0	0	0	0	0	0	120-130	0	4448	100, 100
140	0	0	0	0	0	0	0	0	130-140	0	4448	100, 100
150	0	0	0	0	0	0	0	0	140-150	0	4448	100, 100
160	0	0	0	0	0	0	0	0	150-160	0	4448	100, 100
170	0	0	0	0	0	0	0	0	160-170	0	4448	100, 100
180	0	0	0	0	0	0	0	0	170-180	0	4448	100, 100
DEG	LUMINOUS INTENSITY: cd									UNIT: lm		

Zonal (lm)		Total (lm)		Percent
0-10	147.51	0-10	147.51	3.32%
10-20	421.40	0-20	568.91	12.79%
20-30	635.78	0-30	1204.69	27.08%
30-40	762.14	0-40	1966.83	44.22%
40-50	786.75	0-50	2753.58	61.91%
50-60	710.23	0-60	3463.81	77.87%
60-70	547.90	0-70	4011.71	90.19%
70-80	330.79	0-80	4342.50	97.63%
80-90	105.53	0-90	4448.03	100.00%
90-100	0.00	0-100	4448.03	100.00%
100-110	0.00	0-110	4448.03	100.00%
110-120	0.00	0-120	4448.03	100.00%
120-130	0.00	0-130	4448.03	100.00%
130-140	0.00	0-140	4448.03	100.00%
140-150	0.00	0-150	4448.03	100.00%
150-160	0.00	0-160	4448.03	100.00%
160-170	0.00	0-170	4448.03	100.00%
170-180	0.00	0-180	4448.03	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											
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	16.0	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	15.5	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
UGR Viewed Endwise											
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	18.8
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 = 18.8

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											
X=2H	Y=2H	16.8	18.4	17.1	18.7	19.1	16.8	18.5	17.2	18.8	19.1
	3H	18.7	20.2	19.0	20.5	20.8	18.7	20.2	19.1	20.5	20.9
	4H	19.4	20.8	19.8	21.2	21.5	19.4	20.8	19.8	21.2	21.6
	6H	20.0	21.3	20.4	21.6	22.0	20.0	21.3	20.4	21.7	22.1
	8H	20.2	21.4	20.6	21.8	22.2	20.2	21.5	20.7	21.9	22.3
	12H	20.3	21.5	20.8	21.9	22.3	20.4	21.6	20.8	22.0	22.4
UGR Viewed Endwise											
4H	2H	17.4	18.8	17.8	19.2	19.6	17.5	18.9	17.9	19.2	19.6
	3H	19.6	20.7	20.0	21.1	21.5	19.6	20.8	20.0	21.2	21.6
	4H	20.4	21.5	20.9	21.9	22.4	20.5	21.5	20.9	21.9	22.4
	6H	21.1	22.1	21.6	22.5	23.0	21.2	22.1	21.6	22.6	23.0
	8H	21.4	22.3	21.9	22.7	23.2	21.4	22.3	21.9	22.8	23.2
	12H	21.6	22.4	22.1	22.9	23.4	21.7	22.4	22.1	22.9	23.4
8H	4H	20.8	21.7	21.2	22.1	22.6	20.8	21.7	21.2	22.1	22.6
	6H	21.6	22.4	22.1	22.9	23.3	21.7	22.4	22.1	22.9	23.4
	8H	22.0	22.7	22.5	23.2	23.7	22.0	22.7	22.5	23.2	23.7
	12H	22.3	22.9	22.8	23.4	23.9	22.3	22.9	22.8	23.4	24.0
12H	4H	20.8	21.6	21.3	22.1	22.6	20.9	21.6	21.3	22.1	22.6
	6H	21.7	22.4	22.3	22.9	23.4	21.8	22.4	22.3	22.9	23.4
	8H	22.2	22.7	22.7	23.2	23.8	22.2	22.7	22.7	23.2	23.8

Maximum UGR = 24.0

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	1562	1567	1561	1555	1560	1562	1560	1562	1560	1555	1561	1567	1562	1567	1561	1555	1560	1562	1560
5	1555	1551	1552	1557	1554	1547	1555	1547	1554	1557	1552	1551	1555	1551	1552	1557	1554	1547	1555
10	1525	1532	1535	1530	1524	1528	1535	1528	1524	1530	1535	1532	1525	1532	1535	1530	1524	1528	1535
15	1492	1501	1492	1487	1494	1501	1497	1501	1494	1487	1492	1501	1492	1501	1492	1487	1494	1501	1497
20	1448	1444	1440	1441	1447	1440	1443	1440	1447	1441	1440	1444	1448	1444	1440	1441	1447	1440	1443
25	1377	1378	1384	1381	1377	1377	1382	1377	1377	1381	1384	1378	1377	1378	1384	1381	1377	1377	1382
30	1301	1307	1308	1301	1301	1305	1309	1305	1301	1301	1308	1307	1301	1307	1308	1301	1301	1305	1309
35	1216	1218	1216	1217	1222	1219	1217	1222	1217	1216	1218	1216	1218	1216	1217	1222	1219	1217	1216
40	1116	1121	1127	1126	1121	1121	1128	1121	1121	1126	1127	1121	1116	1121	1127	1126	1121	1121	1128
45	1006	1019	1027	1020	1017	1023	1028	1023	1017	1020	1027	1019	1006	1019	1027	1020	1017	1023	1028
50	899	911	913	910	911	914	912	914	911	910	913	911	899	911	913	910	911	914	912
55	785	789	796	798	797	795	800	795	797	798	796	789	785	789	796	798	797	795	800
60	664	671	681	676	674	676	681	676	674	676	681	671	664	671	681	676	674	676	681
65	545	554	556	552	554	557	557	557	554	552	556	554	545	554	556	552	554	557	557
70	428	430	433	432	433	432	433	432	433	432	433	430	428	430	433	432	433	432	433
75	310	312	314	314	312	312	313	312	312	314	314	312	310	312	314	314	312	312	313
80	198	200	202	199	199	198	199	198	199	202	200	198	200	202	199	199	198	199	198
85	94.7	95.4	95.5	95.2	95.1	94.5	94.5	94.5	95.1	95.2	95.5	95.4	94.7	95.4	95.5	95.2	95.1	94.5	94.5
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	1562	1560	1555	1561	1567														
5	1547	1554	1557	1552	1551														
10	1528	1524	1530	1535	1532														
15	1501	1494	1487	1492	1501														
20	1440	1447	1441	1440	1444														
25	1377	1377	1381	1384	1378														
30	1305	1301	1301	1308	1307														
35	1219	1222	1217	1216	1218														
40	1121	1121	1126	1127	1121														
45	1023	1017	1020	1027	1019														
50	914	911	910	913	911														
55	795	797	798	796	789														
60	676	674	676	681	671														
65	557	554	552	556	554														
70	432	433	432	433	430														
75	312	312	314	314	312														
80	198	199	199	202	200														
85	94.5	95.1	95.2	95.5	95.4														
90	0.00	0.00	0.00	0.00	0.00														
95	0.00	0.00	0.00	0.00	0.00														
100	0.00	0.00	0.00	0.00	0.00														
105	0.00	0.00	0.00	0.00	0.00														
110	0.00	0.00	0.00	0.00	0.00														
115	0.00	0.00	0.00	0.00	0.00														
120	0.00	0.00	0.00	0.00	0.00														
125	0.00	0.00	0.00	0.00	0.00														
130	0.00	0.00	0.00	0.00	0.00														
135	0.00	0.00	0.00	0.00	0.00														
140	0.00	0.00	0.00	0.00	0.00														
145	0.00	0.00	0.00	0.00	0.00														
150	0.00	0.00	0.00	0.00	0.00														
155	0.00	0.00	0.00	0.00	0.00														
160	0.00	0.00	0.00	0.00	0.00														
165	0.00	0.00	0.00	0.00	0.00														
170	0.00	0.00	0.00	0.00	0.00														
175	0.00	0.00	0.00	0.00	0.00														
180	0.00	0.00	0.00	0.00	0.00														

4.0 LM-79 Measurement and Test Results

4.3 THD and PF Test

Model No.	EZP1X4 @40W3500K	Sample ID	250117001-S1
Temperature (°C)	25.4	Humidity (%RH)	41.0

Test Method
<p>The samples were tested according to the and Ansi C82.77: 2002 and ANSI C82.77-10:2020</p> <p>The total harmonic distortion shall be measured to the 40th order.</p> <p>The ambient temperature shall be maintained at $25 \pm 1^{\circ}\text{C}$. The sample measurements were made using a digital power meter and power supply. The sample was operated at rated voltage and was stabilized before measurement. The total harmonic distortion was calculated.</p>

Test Results

Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	iTHD(%)
120.0	60	0.331	39.5	0.993	11.84
277.0	60	0.149	40.4	0.977	15.27

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*****