

Photometric Test Report

Relevant Standards

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

Prepared For

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1.0 Test Summary

DLC Technical Requirements V5.1

Outdoor Non-Cutoff and Semi-Cutoff Wall-Mounted Area Luminaires				
Requirement Category	Test Method	Requirements		Test Value
Luminaire Output (lm) (Goniophotometer – Section 4.2) (0°-180° zones)	ANSI/IES LM-79:2019	N/A		1904
Minimum Luminaire Efficacy (lm/W) (Goniophotometer – Section 4.2) (0°-180° zones)	ANSI/IES LM-79:2019	N/A		147.6
Luminaire Output (lm) (Goniophotometer – Section 4.2) (0°-90° zones)	ANSI/IES LM-79:2019	300		1859
Minimum Luminaire Efficacy (lm/W) (Goniophotometer – Section 4.2) (0°-90° zones)	ANSI/IES LM-79:2019	Standard	Premium	144.1
		105	120	
Power (Input Wattage) (W) (Goniophotometer – Section 4.2)	ANSI/IES LM-79:2019	Worst Case		12.9
Total Harmonic Distortion (A%) (THD & PF – Section 4.3)	ANSI C82.77:2002 ANSI C82-77-10:2020	20.00%	120V	26.74
			277V	48.14
Power Factor (THD & PF – Section 4.3)	ANSI C82.77:2002 ANSI C82-77-10:2020	0.9	120V	0.893
			277V	0.580
Allowable CCTs* (K) (Integrating Sphere – Section 4.1)	ANSI/IES LM-79:2019	7 steps	5029±283	5064
		4 steps	5029±220	
Minimum CRI (Integrating Sphere – Section 4.1)	ANSI/IES LM-79:2019 CIE13.3-1995	≥70		82.2
Minimum R9 (Integrating Sphere – Section 4.1)	ANSI/IES LM-79-2019 CIE13.3-1995	N/A		8
Minimum Rf (Integrating Sphere – Section 4.1)	ANSI/IES TM-30-18	≥70		83
Minimum Rg (Integrating Sphere – Section 4.1)	ANSI/IES TM-30-18	≥89		96
IES Rcs,h1 (Integrating Sphere – Section 4.1)	ANSI/IES TM-30-18	-18%≤IES Rcs,h1≤+23%		-13%
Zonal Lumen Requirement (80°-90°) (Goniophotometer – Section 4.2)	ANSI/IES LM-79:2019	≤10%		5.0%
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		0.080
(Goniophotometer – Section 4.2)		Non-Worst Case		0.111
Power (Input Wattage – W)				
(Goniophotometer – Section 4.2)	ANSI/IES LM-79:2019	Worst Case		12.9
(Goniophotometer – Section 4.2)		Non-Worst Case		11.9

2.0 Test List

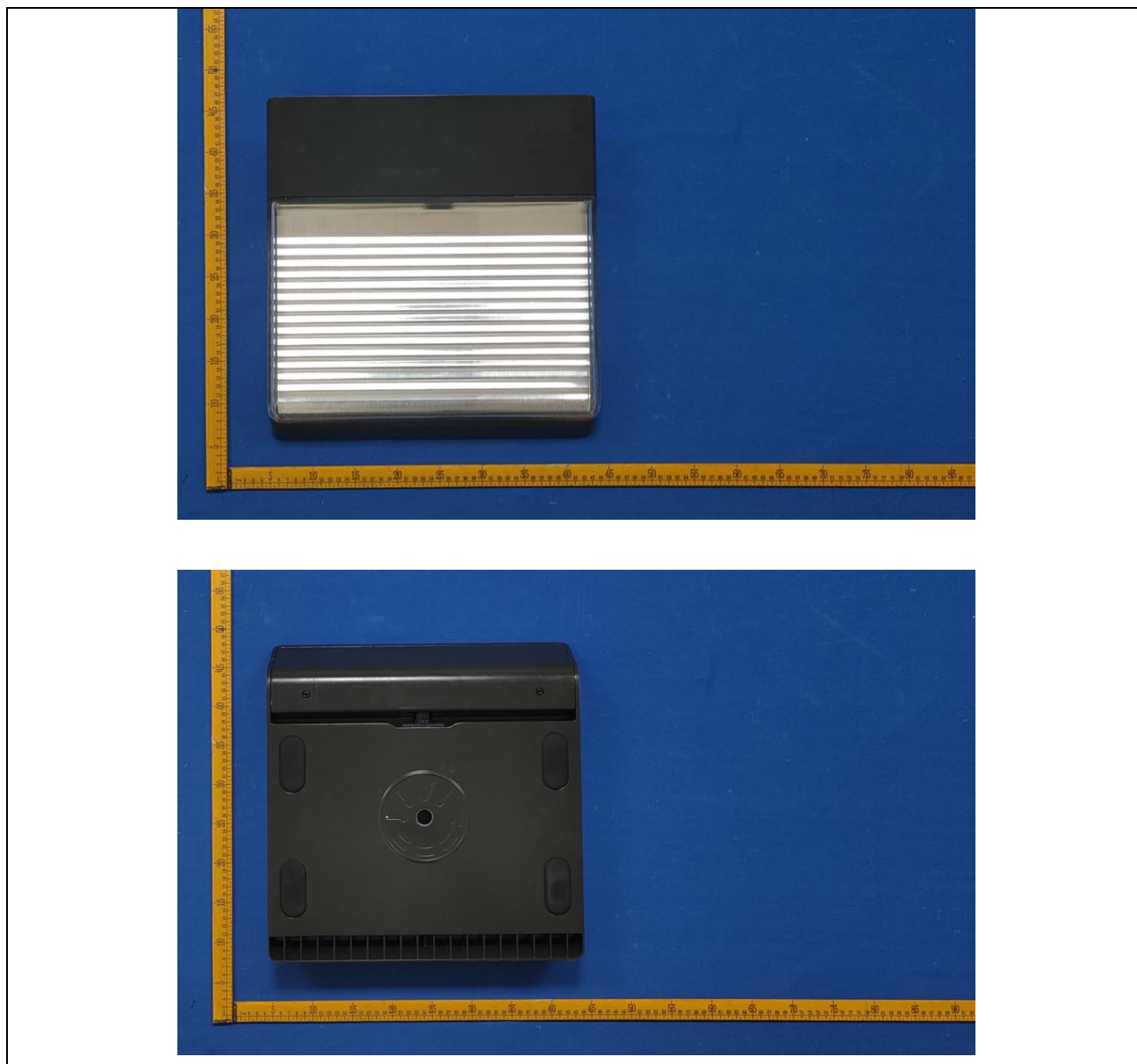
Test Item	Test	Test Date	Model Number	Build Level	Sample No.
1	Integrating Sphere Test	2024-10-31	PWLED @13W5000K	-	241031001-S1
2	Goniophotometer Test	2024-10-31	PWLED @13W5000K	-	241031001-S1
3	THD and PF Test	2024-10-31	PWLED @13W5000K	-	241031001-S1
Remark (If any):					
<ol style="list-style-type: none"> The results contained in this report pertain only to the tested samples. This report shall not be reproduced, no limited part or full, without approval of Dongguan New Testing Centre Co., Ltd. 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. PWLED @13W5000K, color tunable from 3000K, 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.	PWLED @13W5000K	Sample ID	241031001-S1
Operate time (Min.)	10	Stabilization time (Min.)	60
Temperature (°C)	25.4	Humidity (%RH)	41.0

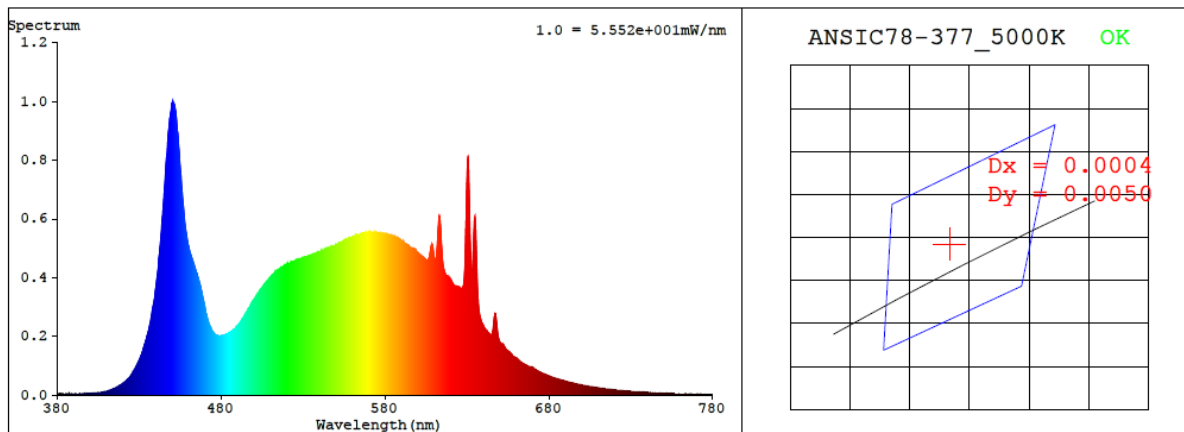
Test Method
<p>The Samples were tested according to the ANSI/IES LM-79:2019.</p> <p>Photometric parameters were measured using an integrating sphere, a spectroradiometer and software. The ambient temperature condition inside the sphere was maintained at 25±1°C.</p> <p>The sample measurements were made 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	0.111	11.9	0.893
277.0	60	0.080	12.9	0.580

CCT (K)	CRI	R9	Duv	Rf	Rg	IES Rcs,h1
5064	82.2	8	0.0023	83	96	-13%

4.1 Integrating Sphere Test



Colorimetric Parameters

Chromaticity Coordinate: $x = 0.3437$ $y = 0.3552$ / $u' = 0.2091$ $v' = 0.4862$ ($duv=2.34e-03$)

CCT= 5064K Prcp WL: $L_d=569.5nm$ Purity=9.7%

Peak WL: $L_p=451nm$ FWHM: $=17.7nm$ Ratio:R=15.5% G=80.1% B=4.4%

Render Index: $R_a = 82.2$ AvgR = 75.1 TM30:Rf=83 Rg=95

EEL: 0.09539 A++ Highest

R1 =80 R2 =87 R3 =91 R4 =82 R5 =81 R6 =82 R7 =87

R8 =67 R9 =8 R10=69 R11=81 R12=59 R13=82 R14=95 R15=75

4.1 Integrating Sphere Test

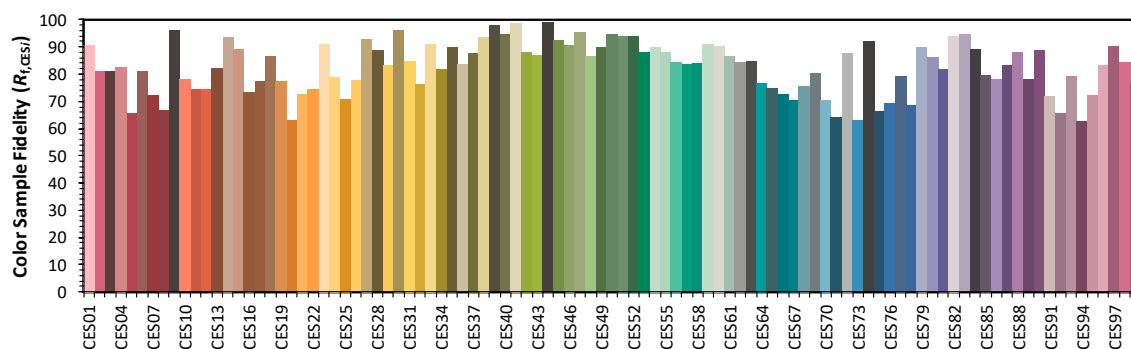
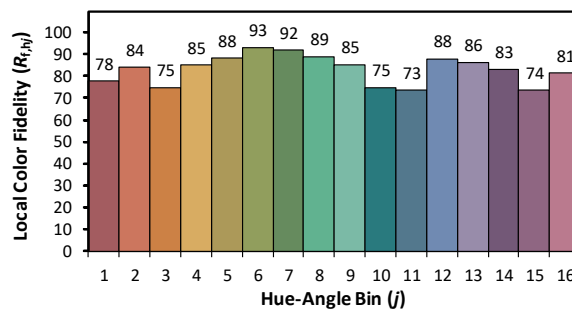
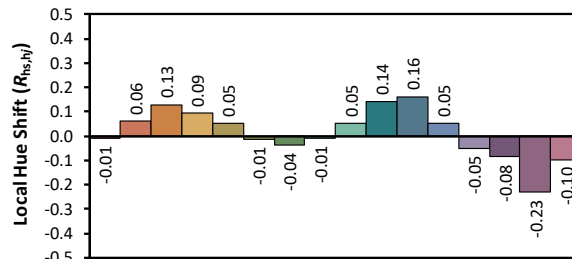
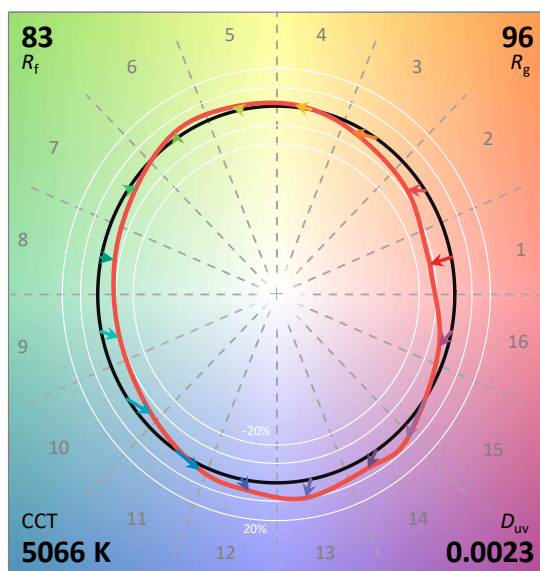
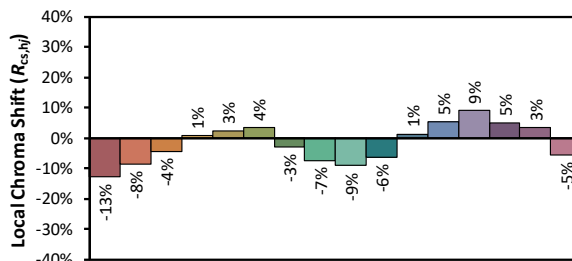
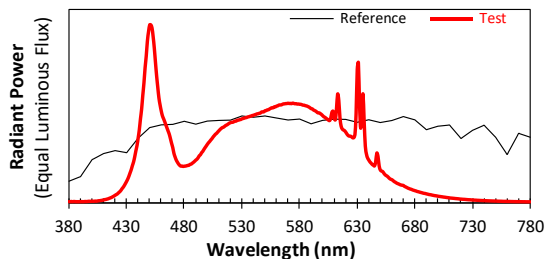
ANSI/IES TM-30-18 Color Rendition Report

Source: 1 CIE F1

Manufacturer: RAB Lighting Inc.

Date: 2024/11/1

Model: PWLED @13W5000K



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

x 0.3436
 y 0.3550
 u' 0.2091
 v' 0.4861

CIE 13.3-1995
(CRI)

R_a 82
 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	4.00E-06	447	8.19E-04	514	4.21E-04	581	5.49E-04	648	2.57E-04	715	2.14E-05
381	3.40E-06	448	9.03E-04	515	4.26E-04	582	5.47E-04	649	2.04E-04	716	2.08E-05
382	5.00E-06	449	9.56E-04	516	4.31E-04	583	5.44E-04	650	1.82E-04	717	2.02E-05
383	3.40E-06	450	9.94E-04	517	4.34E-04	584	5.44E-04	651	1.75E-04	718	1.96E-05
384	4.60E-06	451	9.94E-04	518	4.38E-04	585	5.41E-04	652	1.73E-04	719	1.86E-05
385	4.50E-06	452	9.77E-04	519	4.43E-04	586	5.40E-04	653	1.64E-04	720	1.81E-05
386	3.60E-06	453	9.27E-04	520	4.46E-04	587	5.37E-04	654	1.56E-04	721	1.75E-05
387	3.80E-06	454	8.63E-04	521	4.49E-04	588	5.34E-04	655	1.50E-04	722	1.70E-05
388	3.30E-06	455	7.84E-04	522	4.48E-04	589	5.30E-04	656	1.46E-04	723	1.67E-05
389	4.20E-06	456	7.09E-04	523	4.52E-04	590	5.25E-04	657	1.40E-04	724	1.61E-05
390	3.30E-06	457	6.44E-04	524	4.55E-04	591	5.23E-04	658	1.34E-04	725	1.55E-05
391	4.60E-06	458	5.85E-04	525	4.55E-04	592	5.18E-04	659	1.30E-04	726	1.49E-05
392	3.40E-06	459	5.45E-04	526	4.60E-04	593	5.14E-04	660	1.27E-04	727	1.45E-05
393	4.10E-06	460	5.12E-04	527	4.60E-04	594	5.11E-04	661	1.22E-04	728	1.43E-05
394	4.80E-06	461	4.85E-04	528	4.63E-04	595	5.06E-04	662	1.17E-04	729	1.36E-05
395	4.40E-06	462	4.69E-04	529	4.64E-04	596	5.01E-04	663	1.13E-04	730	1.33E-05
396	4.80E-06	463	4.52E-04	530	4.68E-04	597	5.01E-04	664	1.09E-04	731	1.28E-05
397	5.90E-06	464	4.34E-04	531	4.70E-04	598	4.97E-04	665	1.05E-04	732	1.22E-05
398	5.70E-06	465	4.16E-04	532	4.72E-04	599	4.92E-04	666	1.03E-04	733	1.21E-05
399	5.70E-06	466	3.99E-04	533	4.74E-04	600	4.86E-04	667	9.94E-05	734	1.15E-05
400	6.20E-06	467	3.81E-04	534	4.75E-04	601	4.80E-04	668	9.71E-05	735	1.12E-05
401	6.00E-06	468	3.56E-04	535	4.78E-04	602	4.76E-04	669	9.57E-05	736	1.09E-05
402	6.40E-06	469	3.30E-04	536	4.80E-04	603	4.71E-04	670	9.44E-05	737	1.05E-05
403	7.00E-06	470	3.07E-04	537	4.82E-04	604	4.66E-04	671	8.95E-05	738	1.02E-05
404	6.60E-06	471	2.75E-04	538	4.84E-04	605	4.61E-04	672	8.64E-05	739	9.80E-06
405	8.00E-06	472	2.55E-04	539	4.86E-04	606	4.58E-04	673	8.31E-05	740	9.60E-06
406	9.10E-06	473	2.37E-04	540	4.88E-04	607	4.71E-04	674	7.96E-05	741	9.20E-06
407	9.50E-06	474	2.25E-04	541	4.90E-04	608	5.04E-04	675	7.71E-05	742	9.00E-06
408	1.09E-05	475	2.15E-04	542	4.92E-04	609	5.10E-04	676	7.44E-05	743	8.70E-06
409	1.16E-05	476	2.07E-04	543	4.95E-04	610	4.70E-04	677	7.27E-05	744	8.40E-06
410	1.31E-05	477	2.03E-04	544	4.96E-04	611	4.62E-04	678	6.96E-05	745	8.20E-06
411	1.52E-05	478	2.03E-04	545	4.99E-04	612	5.23E-04	679	6.75E-05	746	8.00E-06
412	1.62E-05	479	2.01E-04	546	5.00E-04	613	6.07E-04	680	6.53E-05	747	7.70E-06
413	1.82E-05	480	2.03E-04	547	5.06E-04	614	5.70E-04	681	6.35E-05	748	7.50E-06
414	2.00E-05	481	2.03E-04	548	5.07E-04	615	4.74E-04	682	6.08E-05	749	7.30E-06
415	2.28E-05	482	2.05E-04	549	5.07E-04	616	4.28E-04	683	5.95E-05	750	7.00E-06
416	2.52E-05	483	2.07E-04	550	5.13E-04	617	4.11E-04	684	5.74E-05	751	7.00E-06
417	2.79E-05	484	2.08E-04	551	5.14E-04	618	4.05E-04	685	5.56E-05	752	6.50E-06
418	3.16E-05	485	2.13E-04	552	5.18E-04	619	4.01E-04	686	5.39E-05	753	6.30E-06
419	3.52E-05	486	2.14E-04	553	5.19E-04	620	3.93E-04	687	5.19E-05	754	6.20E-06
420	3.96E-05	487	2.20E-04	554	5.23E-04	621	3.83E-04	688	5.04E-05	755	6.10E-06
421	4.35E-05	488	2.24E-04	555	5.27E-04	622	3.75E-04	689	4.95E-05	756	5.70E-06
422	4.75E-05	489	2.30E-04	556	5.30E-04	623	3.71E-04	690	4.75E-05	757	5.40E-06
423	5.38E-05	490	2.37E-04	557	5.29E-04	624	3.71E-04	691	4.61E-05	758	5.40E-06
424	5.95E-05	491	2.42E-04	558	5.35E-04	625	3.67E-04	692	4.42E-05	759	5.40E-06
425	6.67E-05	492	2.50E-04	559	5.34E-04	626	3.62E-04	693	4.32E-05	760	5.00E-06
426	7.64E-05	493	2.61E-04	560	5.39E-04	627	3.62E-04	694	4.21E-05	761	4.90E-06
427	8.43E-05	494	2.67E-04	561	5.40E-04	628	3.79E-04	695	4.05E-05	762	4.90E-06
428	9.44E-05	495	2.78E-04	562	5.45E-04	629	4.97E-04	696	3.91E-05	763	4.70E-06
429	1.06E-04	496	2.85E-04	563	5.46E-04	630	7.44E-04	697	3.78E-05	764	4.50E-06
430	1.18E-04	497	2.96E-04	564	5.46E-04	631	7.81E-04	698	3.69E-05	765	4.50E-06
431	1.31E-04	498	3.06E-04	565	5.49E-04	632	5.48E-04	699	3.58E-05	766	4.00E-06
432	1.47E-04	499	3.15E-04	566	5.51E-04	633	4.15E-04	700	3.44E-05	767	4.20E-06
433	1.65E-04	500	3.25E-04	567	5.52E-04	634	5.21E-04	701	3.33E-05	768	3.90E-06
434	1.83E-04	501	3.34E-04	568	5.53E-04	635	6.07E-04	702	3.25E-05	769	3.80E-06
435	2.06E-04	502	3.41E-04	569	5.53E-04	636	4.52E-04	703	3.15E-05	770	3.90E-06
436	2.26E-04	503	3.49E-04	570	5.55E-04	637	3.15E-04	704	3.06E-05	771	3.70E-06
437	2.55E-04	504	3.57E-04	571	5.53E-04	638	2.70E-04	705	2.95E-05	772	3.60E-06
438	2.88E-04	505	3.66E-04	572	5.54E-04	639	2.48E-04	706	2.88E-05	773	3.50E-06
439	3.18E-04	506	3.74E-04	573	5.53E-04	640	2.37E-04	707	2.76E-05	774	3.30E-06
440	3.61E-04	507	3.81E-04	574	5.56E-04	641	2.27E-04	708	2.68E-05	775	3.40E-06
441	4.07E-04	508	3.87E-04	575	5.54E-04	642	2.20E-04	709	2.60E-05	776	3.10E-06
442	4.68E-04	509	3.94E-04	576	5.52E-04	643	2.12E-04	710	2.49E-05	777	3.00E-06
443	5.23E-04	510	4.01E-04	577	5.52E-04	644	2.08E-04	711	2.40E-05	778	3.00E-06
444	5.99E-04	511	4.08E-04	578	5.50E-04	645	2.04E-04	712	2.35E-05	779	3.00E-06
445	6.68E-04	512	4.14E-04	579	5.51E-04	646	2.28E-04	713	2.29E-05	780	3.00E-06
446	7.53E-04	513	4.19E-04	580	5.49E-04	647	2.76E-04	714	2.22E-05	N/A	N/A

4.0 LM-79 Measurement and Test Results

4.2 Goniophotometer Test

Model No.	PWLED @13W5000K	Sample ID	241031001-S1
Operate time (Min.)	30	Stabilization time (Min.)	60
Temperature (°C)	24.9	Humidity (%RH)	41.5

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	0.080	12.9	0.580
NON-WORST CASE	120.0	60	0.111	11.9	0.893

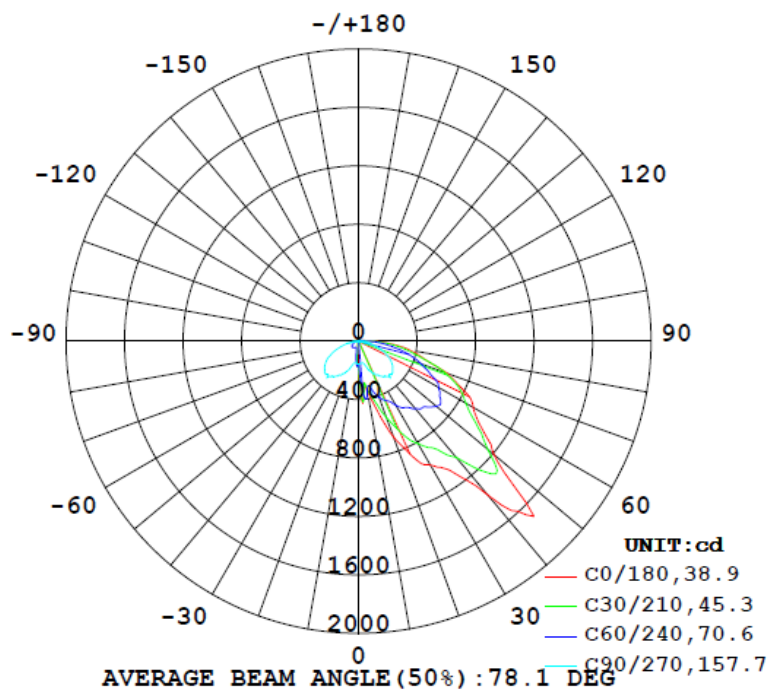
Test Result

Result Type	Flux (lm)	Field Angle (10%)		Beam Angle (50%)		Luminous Efficacy (lm/W)	Zonal Lumen Requirement (80°-90°)	BUG
		C0-180	C90-270	C0-180	C90-270			
0°-180° zones	1904	90.8	147.8	42.3	81.0	147.6	4.9%	B0-U2-G1
0°-90° zones	1859	90.8	147.8	42.3	81.0	144.1	5.0%	B0-U2-G1

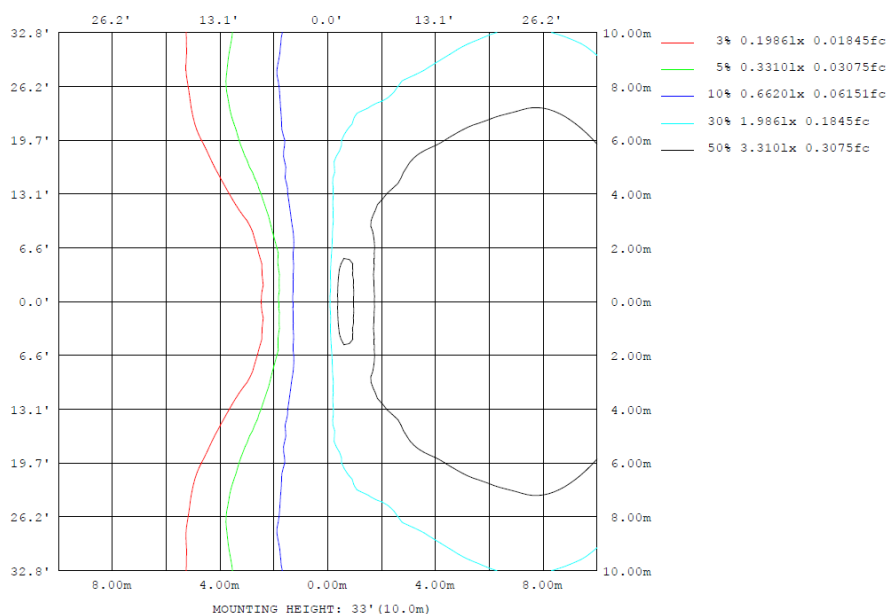
4.2 Goniophotometer Test

Lighting Distribution Curve

LUMINOUS INTENSITY DISTRIBUTION DIAGRAM



Isolux Plot



4.2 Goniophotometer Test

Zonal Lumen Summary

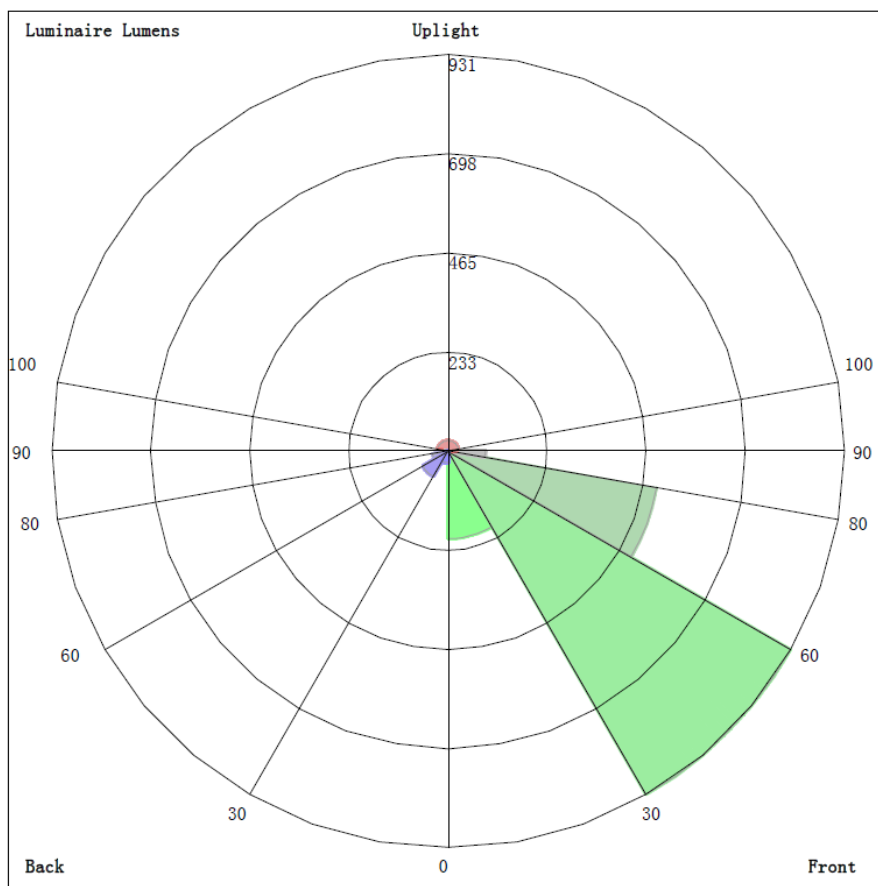
ZONAL FLUX DIAGRAM:

γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	Φ zone	Φ total	\$lum,lamp
10	351.3	301.1	150.7	69.50	36.85	69.50	150.7	301.1	0- 10	20.87	20.87	1.1,1.1
20	697.7	455.8	214.8	26.10	12.82	26.10	214.8	455.8	10- 20	65.32	86.19	4.53,4.53
30	978.0	658.7	265.6	24.73	8.666	24.73	265.6	658.7	20- 30	146.5	232.7	12.2,12.2
40	1378	826.2	316.4	23.83	3.712	23.83	316.4	826.2	30- 40	247.4	480.0	25.2,25.2
50	1207	1004	303.7	20.09	0.5999	20.09	303.7	1004	40- 50	378.9	858.9	45.1,45.1
60	904.4	769.7	248.9	16.00	0.0486	16.00	248.9	769.7	50- 60	373.6	1233	64.7,64.7
70	643.5	585.2	155.1	12.16	0.1173	12.16	155.1	585.2	60- 70	320.9	1553	81.6,81.6
80	356.5	308.9	67.95	7.494	0.2535	7.494	67.95	308.9	70- 80	212.8	1766	92.7,92.7
90	84.81	78.57	8.322	2.948	0.4398	2.948	8.322	78.57	80- 90	92.84	1859	97.6,97.6
100	37.13	26.50	2.718	1.464	0.6460	1.464	2.718	26.50	90-100	20.57	1880	98.7,98.7
110	21.05	14.14	1.795	1.116	0.7875	1.116	1.795	14.14	100-110	10.03	1890	99.2,99.2
120	12.87	9.427	1.491	1.060	0.8633	1.060	1.491	9.427	110-120	5.746	1895	99.5,99.5
130	9.108	6.967	1.221	1.053	0.9609	1.053	1.221	6.967	120-130	3.727	1899	99.7,99.7
140	7.420	5.288	0.9264	0.9307	0.9411	0.9307	0.9264	5.288	130-140	2.492	1902	99.9,99.9
150	5.767	3.832	0.7277	0.7251	0.8556	0.7251	0.7277	3.832	140-150	1.565	1903	99.9,99.9
160	3.780	2.391	0.6193	0.5766	0.6248	0.5766	0.6193	2.391	150-160	0.8366	1904	100,100
170	1.378	0.9458	0.5333	0.4967	0.4375	0.4967	0.5333	0.9458	160-170	0.3139	1904	100,100
180	0.3675	0.4119	0.4697	0.4761	0.3641	0.4761	0.4697	0.4119	170-180	0.0543	1904	100,100
DEG	LUMINOUS INTENSITY:cd									UNIT:lm		

Zonal (lm)		Total (lm)		Percent
0-10	20.87	0-10	20.87	1.10%
10-20	65.32	0-20	86.19	4.53%
20-30	146.47	0-30	232.66	12.22%
30-40	247.36	0-40	480.02	25.21%
40-50	378.89	0-50	858.91	45.10%
50-60	373.64	0-60	1232.55	64.72%
60-70	320.88	0-70	1553.43	81.57%
70-80	212.79	0-80	1766.22	92.75%
80-90	92.84	0-90	1859.06	97.62%
90-100	20.57	0-100	1879.63	98.70%
100-110	10.03	0-110	1889.66	99.23%
110-120	5.75	0-120	1895.41	99.53%
120-130	3.73	0-130	1899.14	99.73%
130-140	2.49	0-140	1901.63	99.86%
140-150	1.56	0-150	1903.19	99.94%
150-160	0.84	0-160	1904.03	99.98%
160-170	0.31	0-170	1904.34	100.00%
170-180	0.05	0-180	1904.39	100.00%

4.2 Goniophotometer Test

LCS/BUG

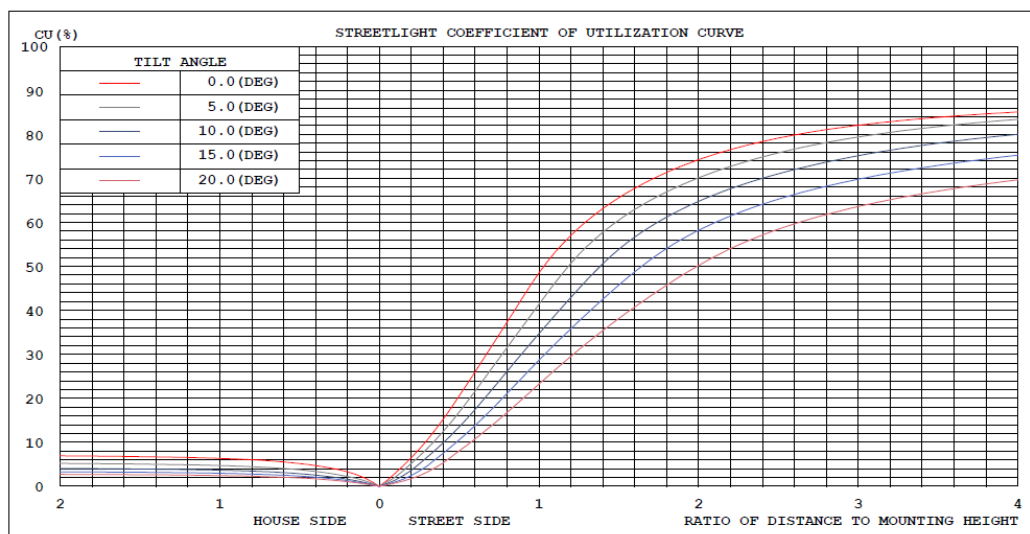


LUMINAIRE CLASSIFICATION SYSTEM (LCS)

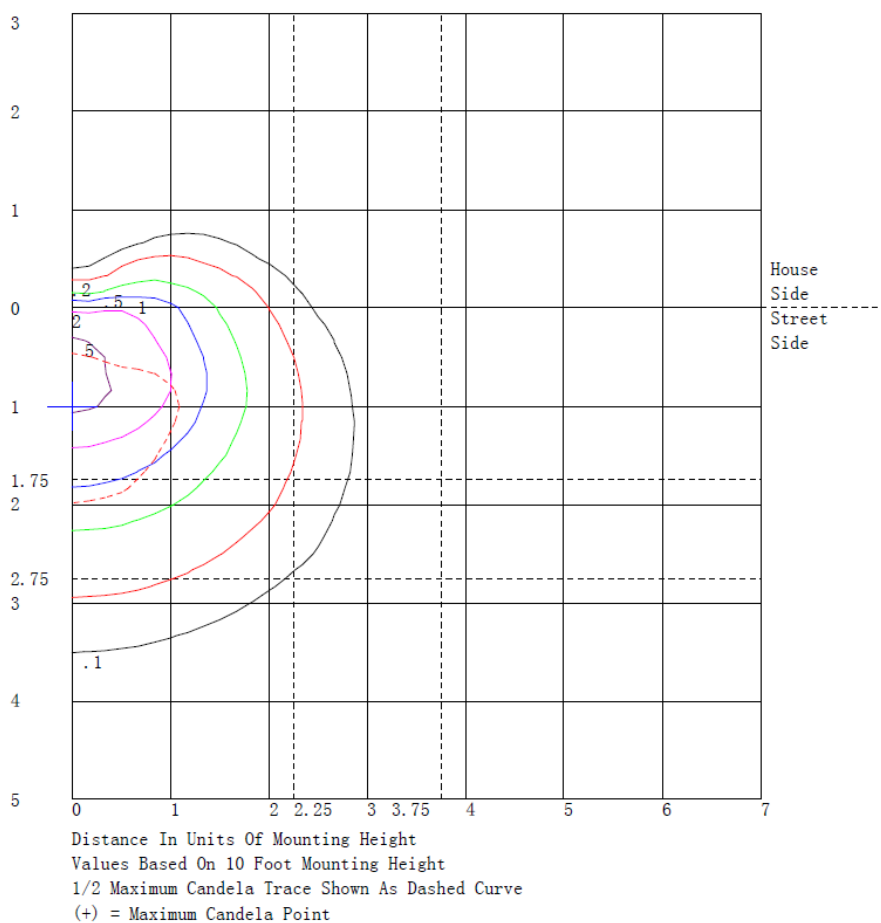
	Lumens	% Lamp	% Luminaire
FL - Front-Low (0-30)	205.1	N.A.	10.8
FM - Front-Medium (30-60)	930.9	N.A.	48.9
FH - Front-High (60-80)	497.2	N.A.	26.1
FVH - Front-Very High (80-90)	87.4	N.A.	4.6
BL - Back-Low (0-30)	27.5	N.A.	1.4
BM - Back-Medium (30-60)	69.0	N.A.	3.6
BH - Back-High (60-80)	36.5	N.A.	1.9
BVH - Back-Very High (80-90)	5.5	N.A.	0.3
UL - Uplight-Low (90-100)	20.6	N.A.	1.1
UH - Uplight-High (100-180)	24.8	N.A.	1.3
Total	1904.5	N.A.	100.0
BUG Rating	B0-U2-G1		

4.2 Goniophotometer Test

Coefficients of Utilization



Isolines



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	159	159	159	160	159	159	160	160	159	159	158	159	159	159	158	159	159	160	160
5	373	382	413	412	363	257	154	165	167	149	131	118	119	118	131	149	167	165	154
10	351	346	326	301	344	344	151	151	110	69.5	46.7	37.6	36.9	37.6	46.7	69.5	110	151	151
15	492	475	422	379	338	365	172	127	65.4	34.4	23.6	19.3	18.8	19.3	23.6	34.4	65.4	127	172
20	698	655	558	456	409	344	215	111	49.0	26.1	17.3	13.1	12.8	13.1	17.3	26.1	49.0	111	215
25	870	815	693	568	453	371	247	105	47.1	25.4	15.0	10.6	10.2	10.6	15.0	25.4	47.1	105	247
30	978	931	809	659	505	386	266	108	50.6	24.7	13.9	9.37	8.67	9.37	13.9	24.7	50.6	108	266
35	1074	1026	893	718	554	414	303	110	54.6	24.2	13.3	7.48	6.02	7.48	13.3	24.2	54.6	110	303
40	1378	1251	1040	826	602	401	316	115	59.3	23.8	12.3	5.54	3.71	5.54	12.3	23.8	59.3	115	316
45	1696	1538	1285	937	635	398	322	118	60.7	22.5	11.4	4.19	1.93	4.19	11.4	22.5	60.7	118	322
50	1207	1187	1152	1004	694	437	304	124	57.8	20.1	10.9	3.35	0.60	3.35	10.9	20.1	57.8	124	304
55	1022	1012	979	897	683	425	279	117	57.7	17.8	10.6	3.32	0.04	3.32	10.6	17.8	57.7	117	279
60	904	895	846	770	632	408	249	110	51.2	16.0	10.6	3.80	0.05	3.80	10.6	16.0	51.2	110	249
65	789	789	758	685	545	349	204	97.9	42.5	14.5	11.1	3.85	0.07	3.85	11.1	14.5	42.5	97.9	204
70	644	642	627	585	457	308	155	79.2	35.2	12.2	9.90	3.67	0.12	3.67	9.90	12.2	35.2	79.2	155
75	461	455	449	448	359	229	110	59.0	24.5	10.1	8.40	3.02	0.18	3.02	8.40	10.1	24.5	59.0	110
80	357	344	324	309	246	149	68.0	39.4	17.3	7.49	6.65	2.24	0.25	2.24	6.65	7.49	17.3	39.4	68.0
85	227	216	202	192	150	77.6	30.8	21.1	10.7	5.07	4.07	1.46	0.34	1.46	4.07	5.07	10.7	21.1	30.8
90	84.8	82.6	79.3	78.6	57.7	25.1	8.32	9.98	5.43	2.95	2.26	0.94	0.44	0.94	2.26	2.95	5.43	9.98	8.32
95	48.1	45.5	42.4	39.2	31.1	12.5	3.89	5.03	3.23	1.86	1.39	0.70	0.54	0.70	1.39	1.86	3.23	5.03	3.89
100	37.1	34.3	30.5	26.5	20.5	8.59	2.72	3.46	2.32	1.46	1.10	0.65	0.65	0.65	1.10	1.46	2.32	3.46	2.72
105	27.0	25.3	22.2	19.0	14.5	6.61	2.10	2.61	1.80	1.24	0.98	0.65	0.73	0.65	0.98	1.24	1.80	2.61	2.10
110	21.1	19.6	16.8	14.1	10.9	5.27	1.79	2.12	1.50	1.12	0.94	0.69	0.79	0.69	0.94	1.12	1.50	2.12	1.79
115	16.0	14.9	12.9	11.3	8.62	4.39	1.62	1.79	1.33	1.08	0.94	0.76	0.83	0.76	0.94	1.08	1.33	1.79	1.62
120	12.9	12.2	10.8	9.43	7.14	3.75	1.49	1.57	1.24	1.06	0.98	0.83	0.86	0.83	0.98	1.06	1.24	1.57	1.49
125	10.8	10.3	9.13	7.97	6.01	3.23	1.35	1.40	1.19	1.07	1.01	0.89	0.92	0.89	1.01	1.07	1.19	1.40	1.35
130	9.11	8.77	7.94	6.97	5.13	2.74	1.22	1.26	1.14	1.05	1.02	0.91	0.96	0.91	1.02	1.05	1.14	1.26	1.22
135	8.18	7.88	7.12	6.12	4.38	2.29	1.07	1.12	1.06	1.01	0.98	0.89	0.97	0.89	0.98	1.01	1.06	1.12	1.07
140	7.42	7.06	6.35	5.29	3.71	1.90	0.93	0.99	0.96	0.93	0.90	0.82	0.94	0.82	0.90	0.93	0.96	0.99	0.93
145	6.64	6.26	5.57	4.55	3.11	1.56	0.81	0.86	0.84	0.82	0.79	0.73	0.91	0.73	0.79	0.82	0.84	0.86	0.81
150	5.77	5.44	4.79	3.83	2.59	1.29	0.73	0.76	0.75	0.73	0.70	0.65	0.86	0.65	0.70	0.73	0.75	0.76	0.73
155	4.83	4.56	4.01	3.11	2.06	1.07	0.67	0.70	0.67	0.65	0.60	0.56	0.76	0.56	0.60	0.65	0.67	0.70	0.67
160	3.78	3.58	3.10	2.39	1.56	0.87	0.62	0.64	0.61	0.58	0.53	0.50	0.62	0.50	0.53	0.58	0.61	0.64	0.62
165	2.59	2.46	2.13	1.64	1.10	0.67	0.57	0.59	0.57	0.53	0.50	0.48	0.51	0.48	0.50	0.53	0.57	0.59	0.57
170	1.38	1.32	1.17	0.95	0.71	0.52	0.53	0.53	0.52	0.50	0.47	0.46	0.44	0.46	0.47	0.50	0.52	0.53	0.53
175	0.54	0.53	0.51	0.48	0.47	0.50	0.52	0.53	0.53	0.52	0.51	0.49	0.41	0.49	0.51	0.52	0.53	0.53	0.52
180	0.37	0.36	0.38	0.41	0.44	0.46	0.47	0.47	0.48	0.48	0.47	0.47	0.36	0.47	0.47	0.48	0.48	0.47	0.47

Table--2

UNIT: cd

C (DEG) y (DEG)	285	300	315	330	345														
0	159	159	160	159	159														
5	257	363	412	413	382														
10	344	344	301	326	346														
15	365	338	379	422	475														
20	344	409	456	558	655														
25	371	453	568	693	815														
30	386	505	659	809	931														
35	414	554	718	893	1026														
40	401	602	826	1040	1251														
45	398	635	937	1285	1538														
50	437	694	1004	1152	1187														
55	425	683	897	979	1012														
60	408	632	770	846	895														
65	349	545	685	758	789														
70	308	457	585	627	642														
75	229	359	448	449	455														
80	149	246	309	324	344														
85	77.6	150	192	202	216														
90	25.1	57.7	78.6	79.3	82.6														
95	12.5	31.1	39.2	42.4	45.5														
100	8.59	20.5	26.5	30.5	34.3														
105	6.61	14.5	19.0	22.2	25.3														
110	5.27	10.9	14.1	16.8	19.6														
115	4.39	8.62	11.3	12.9	14.9														
120	3.75	7.14	9.43	10.8	12.2														
125	3.23	6.01	7.97	9.13	10.3														
130	2.74	5.13	6.97	7.94	8.77														
135	2.29	4.38	6.12	7.12	7.88														
140	1.90	3.71	5.29	6.35	7.06														
145	1.56	3.11	4.55	5.57	6.26														
150	1.29	2.59	3.83	4.79	5.44														
155	1.07	2.06	3.11	4.01	4.56														
160	0.87	1.56	2.39	3.10	3.58														
165	0.67	1.10	1.64	2.13	2.46														
170	0.52	0.71	0.95	1.17	1.32														
175	0.50	0.47	0.48	0.51	0.53														
180	0.46	0.44	0.41	0.38	0.36														

4.0 LM-79 Measurement and Test Results

4.3 THD and PF Test

Model No.	PWLED @13W5000K	Sample ID	241031001-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	0.111	11.9	0.893	26.74
277.0	60	0.080	12.9	0.580	48.14

5.0 Equipment List:

Equipment ID	Equipment Name	Last Cal.	Due Cal.
NTC-F01-001	Goniophotometer System	2023-11-08	2024-11-07
NTC-F01-006	2.0 meter Integrating Sphere	2023-11-08	2024-11-07
NTC-F01-012	Standard Lamp	2023-11-02	2024-11-01
NTC-F01-013	Standard Lamp	2023-11-02	2024-11-01
NTC-F01-031	Digital Power Meter	2024-08-06	2025-08-05
NTC-F01-019	Temperature & Humidity Meter	2023-11-06	2024-11-05

*****End of Report*****