

## Photometric Test Report

### Relevant Standards

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

Prepared For

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Prepared By

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Revised Date: N/A

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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		8922
Minimum Luminaire Efficacy (lm/W) (Goniophotometer – Section 4.2) (0°-180° zones)	ANSI/IES LM-79:2019	N/A		130.6
Luminaire Output (lm) (Goniophotometer – Section 4.2) (0°-90° zones)	ANSI/IES LM-79:2019	300		8698
Minimum Luminaire Efficacy (lm/W) (Goniophotometer – Section 4.2) (0°-90° zones)	ANSI/IES LM-79:2019	Standard	Premium	127.3
		105	120	
Power (Input Wattage) (W) (Goniophotometer – Section 4.2)	ANSI/IES LM-79:2019	Worst Case		68.3
Total Harmonic Distortion (A%) (THD & PF – Section 4.3)	ANSI C82.77:2002 ANSI C82-77-10:2020	20.00%	120V	10.07
			277V	9.64
Power Factor (THD & PF – Section 4.3)	ANSI C82.77:2002 ANSI C82-77-10:2020	0.9	120V	0.993
			277V	0.974
Allowable CCTs* (K) (Integrating Sphere – Section 4.1)	ANSI/IES LM-79:2019	7 steps	3045±175	3028
		4 steps	3045±100	
Minimum CRI (Integrating Sphere – Section 4.1)	ANSI/IES LM-79:2019 CIE13.3-1995	≥70		81.3
Minimum R9 (Integrating Sphere – Section 4.1)	ANSI/IES LM-79-2019 CIE13.3-1995	N/A		11
Minimum Rf (Integrating Sphere – Section 4.1)	ANSI/IES TM-30-18	≥70		82
Minimum Rg (Integrating Sphere – Section 4.1)	ANSI/IES TM-30-18	≥89		98
IES Rcs,h1 (Integrating Sphere – Section 4.1)	ANSI/IES TM-30-18	-18%≤IES Rcs,h1≤+23%		-11%
Zonal Lumen Requirement (80°-90°) (Goniophotometer – Section 4.2)	ANSI/IES LM-79:2019	≤10%		5.1%
Input Voltage (V)				
(Goniophotometer – Section 4.2)	ANSI/IES LM-79:2019	Worst Cast		120.0
(Goniophotometer – Section 4.2)		Non-Worst Case		277.0
Input Current (A)				
(Goniophotometer – Section 4.2)	ANSI/IES LM-79:2019	Worst Case		0.573
(Goniophotometer – Section 4.2)		Non-Worst Case		0.253
Power (Input Wattage – W)				
(Goniophotometer – Section 4.2)	ANSI/IES LM-79:2019	Worst Case		68.3
(Goniophotometer – Section 4.2)		Non-Worst Case		68.2

## 2.0 Test List

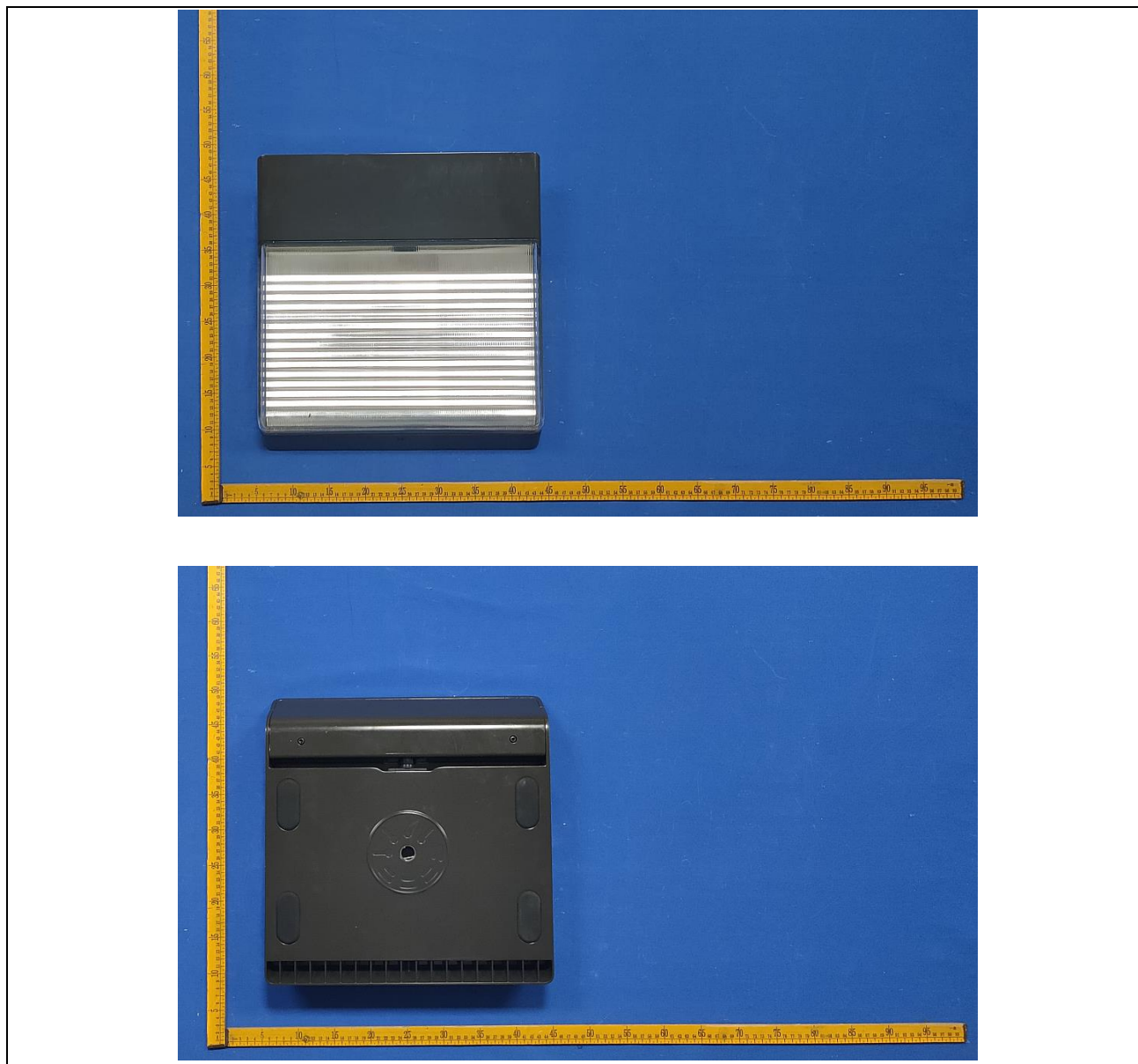
Test Item	Test	Test Date	Model Number	Build Level	Sample No.
1	Integrating Sphere Test	2024-10-09	PWLED @72W3000K	-	241009001-S1
2	Goniophotometer Test	2024-10-09	PWLED @72W3000K	-	241009001-S1
3	THD and PF Test	2024-10-09	PWLED @72W3000K	-	241009001-S1
<b>Remark (If any):</b>					
<ol style="list-style-type: none"> <li>The results contained in this report pertain only to the tested samples.</li> <li>This report shall not be reproduced, no limited part or full, without approval of Dongguan New Testing Centre Co., Ltd.</li> <li>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.</li> </ol>					

### 3.0 Product Description

Luminaire Description: Model No. PWLED @72W3000K, 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

<b>Model No.</b>	PWLED @72W3000K	<b>Sample ID</b>	241009001-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

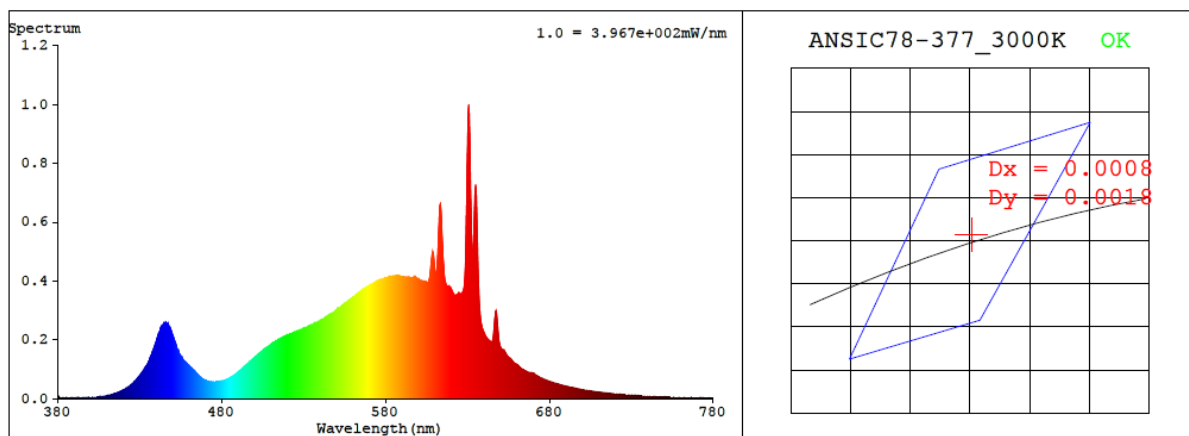
<b>Test Method</b>
<p>The Samples were tested according to the ANSI/IES LM-79:2019.</p> <p>Photometric parameters were measured using an integrating sphere, a spectroradiometer and software. The ambient temperature condition inside the sphere was maintained at 25±1°C.</p> <p>The sample measurements were 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	0.573	68.3	0.993
277.0	60	0.253	68.2	0.974

<b>CCT (K)</b>	<b>CRI</b>	<b>R9</b>	<b>Duv</b>	<b>Rf</b>	<b>Rg</b>	<b>IES Rcs,h1</b>
3028	81.3	11	0.0006	82	98	-11%

## 4.1 Integrating Sphere Test



### Colorimetric Parameters

Chromaticity Coordinate:  $x = 0.4358$   $y = 0.4052$  /  $u' = 0.2494$   $v' = 0.5217$  ( $duv=5.93e-04$ )

CCT= 3028K Prcp WL:  $L_d=582.5nm$  Purity=52.4%

Peak WL:  $L_p=631nm$  FWHM:  $=7.6nm$  Ratio:R=22.6% G=75.3% B=2.1%

Render Index:  $R_a = 81.3$  AvgR = 75.0 TM30:Rf=81 Rg=97

EEL: 0.10282 A++ Highest

R1 =79 R2 =87 R3 =94 R4 =80 R5 =79 R6 =84 R7 =85

R8 =62 R9 =11 R10=70 R11=79 R12=66 R13=80 R14=96 R15=73

## 4.1 Integrating Sphere Test

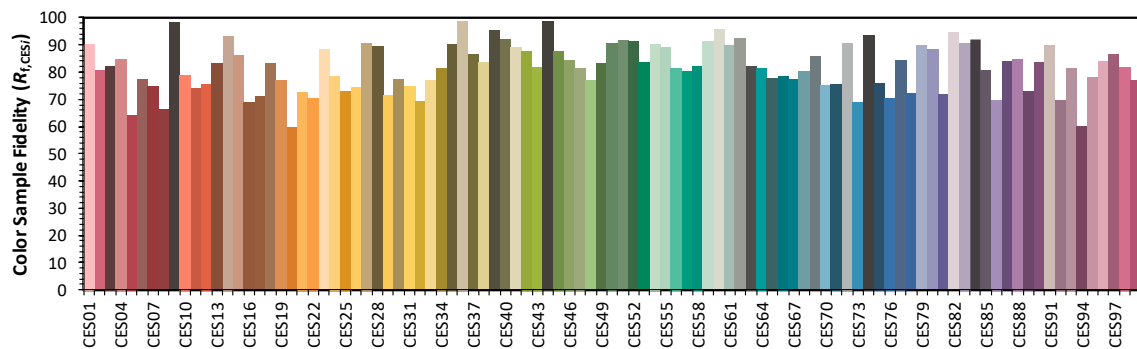
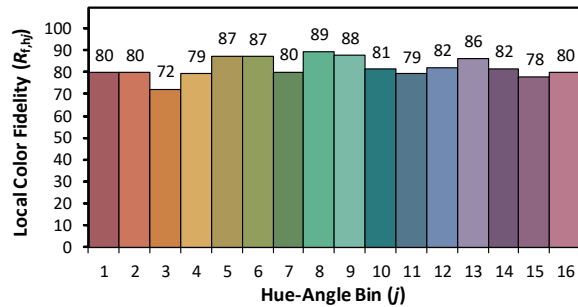
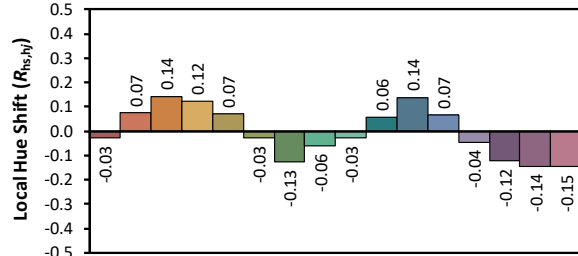
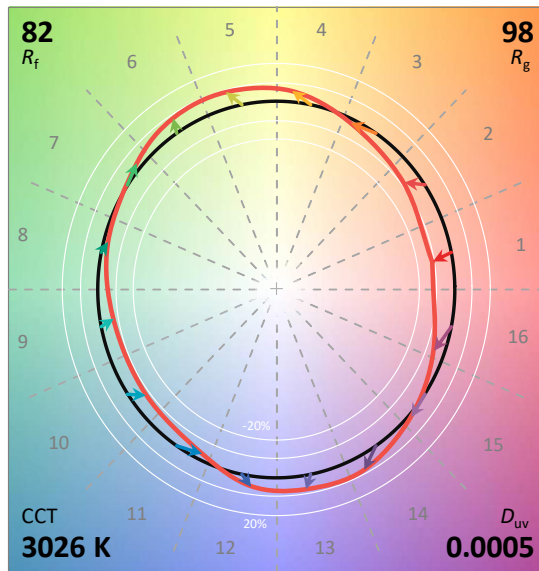
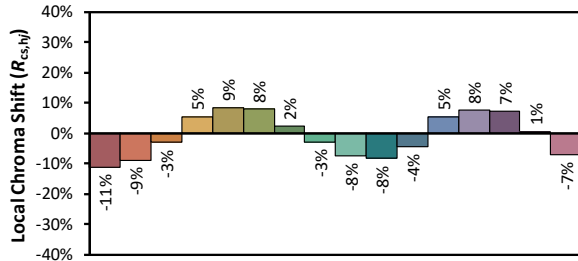
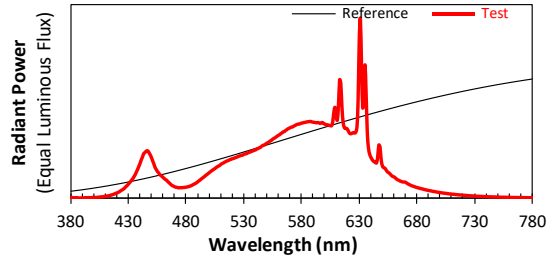
### ANSI/IES TM-30-18 Color Rendition Report

Source: 1 CIE F1

Manufacturer: RAB Lighting Inc.

Date: 2024/10/10

Model: PWLED @72W3000K



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

$x$  0.4358  
 $y$  0.4050  
 $u'$  0.2494  
 $v'$  0.5216

CIE 13.3-1995  
(CRI)

$R_a$  81  
 $R_g$  11



## 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	3.60E-06	447	2.56E-04	514	1.99E-04	581	4.11E-04	648	2.79E-04	715	1.90E-05
381	3.70E-06	448	2.44E-04	515	2.03E-04	582	4.13E-04	649	2.12E-04	716	1.83E-05
382	1.20E-06	449	2.33E-04	516	2.05E-04	583	4.14E-04	650	1.78E-04	717	1.79E-05
383	2.50E-06	450	2.18E-04	517	2.08E-04	584	4.16E-04	651	1.67E-04	718	1.73E-05
384	2.30E-06	451	2.01E-04	518	2.11E-04	585	4.17E-04	652	1.65E-04	719	1.68E-05
385	2.90E-06	452	1.85E-04	519	2.13E-04	586	4.18E-04	653	1.57E-04	720	1.61E-05
386	1.90E-06	453	1.67E-04	520	2.16E-04	587	4.18E-04	654	1.47E-04	721	1.58E-05
387	7.00E-07	454	1.56E-04	521	2.17E-04	588	4.19E-04	655	1.41E-04	722	1.53E-05
388	1.00E-06	455	1.45E-04	522	2.20E-04	589	4.16E-04	656	1.37E-04	723	1.49E-05
389	1.50E-06	456	1.39E-04	523	2.22E-04	590	4.15E-04	657	1.30E-04	724	1.42E-05
390	9.00E-07	457	1.29E-04	524	2.25E-04	591	4.14E-04	658	1.24E-04	725	1.37E-05
391	1.80E-06	458	1.24E-04	525	2.27E-04	592	4.13E-04	659	1.19E-04	726	1.33E-05
392	2.70E-06	459	1.18E-04	526	2.30E-04	593	4.12E-04	660	1.17E-04	727	1.27E-05
393	2.60E-06	460	1.12E-04	527	2.32E-04	594	4.13E-04	661	1.12E-04	728	1.26E-05
394	2.40E-06	461	1.07E-04	528	2.34E-04	595	4.11E-04	662	1.06E-04	729	1.20E-05
395	3.20E-06	462	1.02E-04	529	2.36E-04	596	4.08E-04	663	1.02E-04	730	1.14E-05
396	2.70E-06	463	9.72E-05	530	2.39E-04	597	4.11E-04	664	9.85E-05	731	1.12E-05
397	2.60E-06	464	9.05E-05	531	2.42E-04	598	4.13E-04	665	9.51E-05	732	1.08E-05
398	3.30E-06	465	8.44E-05	532	2.43E-04	599	4.08E-04	666	9.23E-05	733	1.04E-05
399	4.30E-06	466	7.86E-05	533	2.46E-04	600	4.05E-04	667	8.98E-05	734	1.06E-05
400	3.70E-06	467	7.29E-05	534	2.49E-04	601	4.01E-04	668	8.83E-05	735	9.70E-06
401	4.20E-06	468	6.84E-05	535	2.51E-04	602	4.01E-04	669	8.82E-05	736	9.70E-06
402	4.10E-06	469	6.53E-05	536	2.54E-04	603	4.00E-04	670	8.73E-05	737	9.30E-06
403	4.80E-06	470	6.20E-05	537	2.57E-04	604	3.97E-04	671	8.32E-05	738	9.00E-06
404	5.60E-06	471	5.97E-05	538	2.59E-04	605	3.96E-04	672	7.87E-05	739	8.80E-06
405	5.90E-06	472	5.91E-05	539	2.62E-04	606	3.96E-04	673	7.59E-05	740	8.50E-06
406	7.30E-06	473	5.70E-05	540	2.63E-04	607	4.17E-04	674	7.22E-05	741	8.30E-06
407	7.10E-06	474	5.67E-05	541	2.68E-04	608	4.71E-04	675	6.97E-05	742	7.70E-06
408	8.20E-06	475	5.75E-05	542	2.70E-04	609	4.96E-04	676	6.66E-05	743	7.60E-06
409	9.40E-06	476	5.72E-05	543	2.74E-04	610	4.49E-04	677	6.50E-05	744	7.40E-06
410	9.90E-06	477	5.81E-05	544	2.76E-04	611	4.27E-04	678	6.25E-05	745	7.20E-06
411	1.13E-05	478	5.86E-05	545	2.82E-04	612	5.11E-04	679	6.01E-05	746	7.00E-06
412	1.25E-05	479	5.91E-05	546	2.86E-04	613	6.46E-04	680	5.86E-05	747	6.80E-06
413	1.34E-05	480	6.06E-05	547	2.89E-04	614	6.26E-04	681	5.66E-05	748	6.70E-06
414	1.50E-05	481	6.16E-05	548	2.91E-04	615	4.97E-04	682	5.48E-05	749	6.40E-06
415	1.75E-05	482	6.29E-05	549	2.97E-04	616	4.15E-04	683	5.31E-05	750	6.20E-06
416	1.92E-05	483	6.55E-05	550	3.01E-04	617	3.87E-04	684	5.15E-05	751	5.90E-06
417	2.11E-05	484	6.75E-05	551	3.04E-04	618	3.80E-04	685	5.01E-05	752	5.70E-06
418	2.41E-05	485	7.09E-05	552	3.09E-04	619	3.81E-04	686	4.82E-05	753	5.30E-06
419	2.70E-05	486	7.42E-05	553	3.13E-04	620	3.73E-04	687	4.67E-05	754	5.40E-06
420	2.92E-05	487	7.77E-05	554	3.17E-04	621	3.61E-04	688	4.51E-05	755	5.30E-06
421	3.18E-05	488	8.08E-05	555	3.22E-04	622	3.52E-04	689	4.39E-05	756	5.10E-06
422	3.55E-05	489	8.49E-05	556	3.27E-04	623	3.52E-04	690	4.22E-05	757	5.00E-06
423	3.99E-05	490	8.97E-05	557	3.30E-04	624	3.55E-04	691	4.12E-05	758	4.80E-06
424	4.38E-05	491	9.50E-05	558	3.35E-04	625	3.58E-04	692	4.01E-05	759	4.70E-06
425	4.79E-05	492	9.94E-05	559	3.39E-04	626	3.55E-04	693	3.86E-05	760	4.30E-06
426	5.21E-05	493	1.05E-04	560	3.44E-04	627	3.60E-04	694	3.71E-05	761	4.50E-06
427	5.90E-05	494	1.10E-04	561	3.47E-04	628	3.86E-04	695	3.65E-05	762	4.20E-06
428	6.51E-05	495	1.14E-04	562	3.53E-04	629	5.32E-04	696	3.52E-05	763	3.80E-06
429	7.13E-05	496	1.20E-04	563	3.56E-04	630	8.63E-04	697	3.39E-05	764	3.90E-06
430	7.86E-05	497	1.25E-04	564	3.62E-04	631	9.80E-04	698	3.26E-05	765	4.00E-06
431	8.60E-05	498	1.30E-04	565	3.64E-04	632	7.12E-04	699	3.18E-05	766	3.70E-06
432	9.34E-05	499	1.35E-04	566	3.69E-04	633	4.94E-04	700	3.06E-05	767	3.50E-06
433	1.01E-04	500	1.40E-04	567	3.73E-04	634	5.95E-04	701	2.97E-05	768	3.60E-06
434	1.11E-04	501	1.45E-04	568	3.78E-04	635	7.28E-04	702	2.88E-05	769	3.50E-06
435	1.21E-04	502	1.50E-04	569	3.81E-04	636	5.61E-04	703	2.77E-05	770	3.30E-06
436	1.33E-04	503	1.54E-04	570	3.84E-04	637	3.58E-04	704	2.71E-05	771	3.40E-06
437	1.47E-04	504	1.58E-04	571	3.88E-04	638	2.74E-04	705	2.63E-05	772	3.10E-06
438	1.60E-04	505	1.63E-04	572	3.89E-04	639	2.41E-04	706	2.53E-05	773	3.00E-06
439	1.76E-04	506	1.68E-04	573	3.92E-04	640	2.25E-04	707	2.46E-05	774	3.00E-06
440	1.92E-04	507	1.72E-04	574	3.96E-04	641	2.12E-04	708	2.35E-05	775	2.90E-06
441	2.11E-04	508	1.76E-04	575	3.99E-04	642	2.04E-04	709	2.31E-05	776	2.80E-06
442	2.25E-04	509	1.79E-04	576	4.02E-04	643	1.99E-04	710	2.24E-05	777	2.70E-06
443	2.42E-04	510	1.85E-04	577	4.04E-04	644	1.94E-04	711	2.15E-05	778	2.60E-06
444	2.49E-04	511	1.89E-04	578	4.05E-04	645	1.93E-04	712	2.13E-05	779	2.50E-06
445	2.55E-04	512	1.92E-04	579	4.07E-04	646	2.25E-04	713	2.04E-05	780	2.50E-06
446	2.59E-04	513	1.96E-04	580	4.10E-04	647	2.90E-04	714	1.94E-05	N/A	N/A



## 4.0 LM-79 Measurement and Test Results

### 4.2 Goniophotometer Test

<b>Model No.</b>	PWLED @72W3000K	<b>Sample ID</b>	241009001-S1
<b>Operate time (Min.)</b>	30	<b>Stabilization time (Min.)</b>	60
<b>Temperature (°C)</b>	25.0	<b>Humidity (%RH)</b>	42.2

<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>	120.0	60	0.573	68.3	0.993
<b>NON-WORST CASE</b>	277.0	60	0.253	68.2	0.974

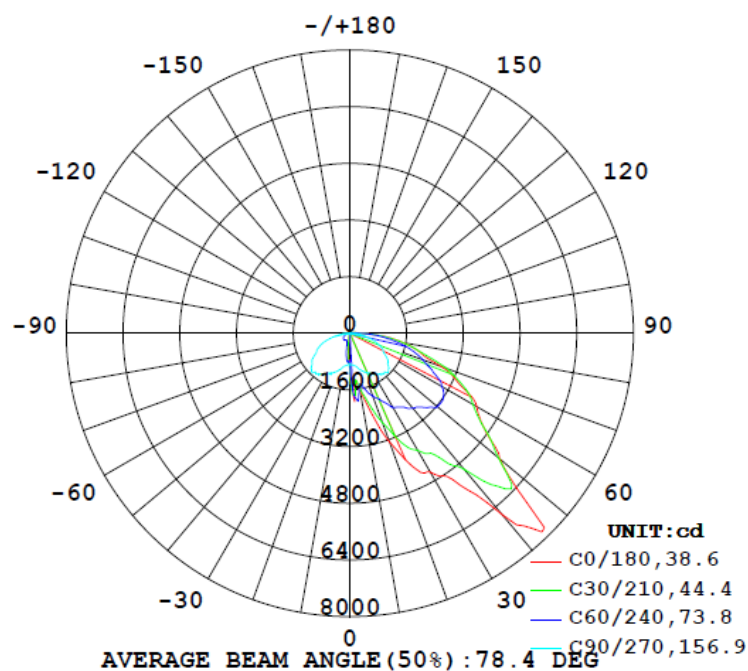
### Test Result

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			
<b>0°-180° zones</b>	8922	90.5	150.0	39.9	81.6	130.6	5.0%	B1-U3-G3
<b>0°-90° zones</b>	8698	90.5	150.0	39.9	81.6	127.3	5.1%	B1-U3-G3

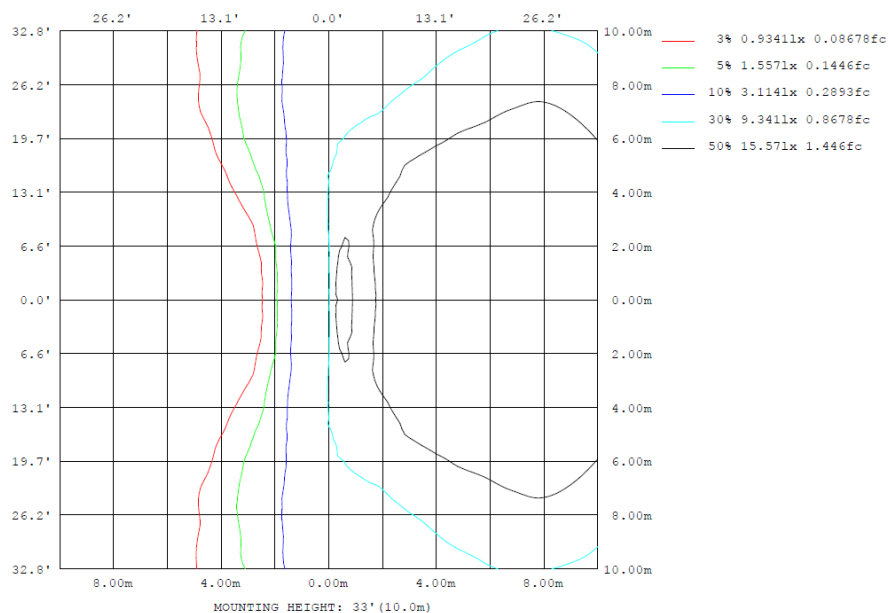
## 4.2 Goniophotometer Test

### Lighting Distribution Curve

#### LUMINOUS INTENSITY DISTRIBUTION DIAGRAM



### Isolux Plot



## 4.2 Goniophotometer Test

### Zonal Lumen Summary

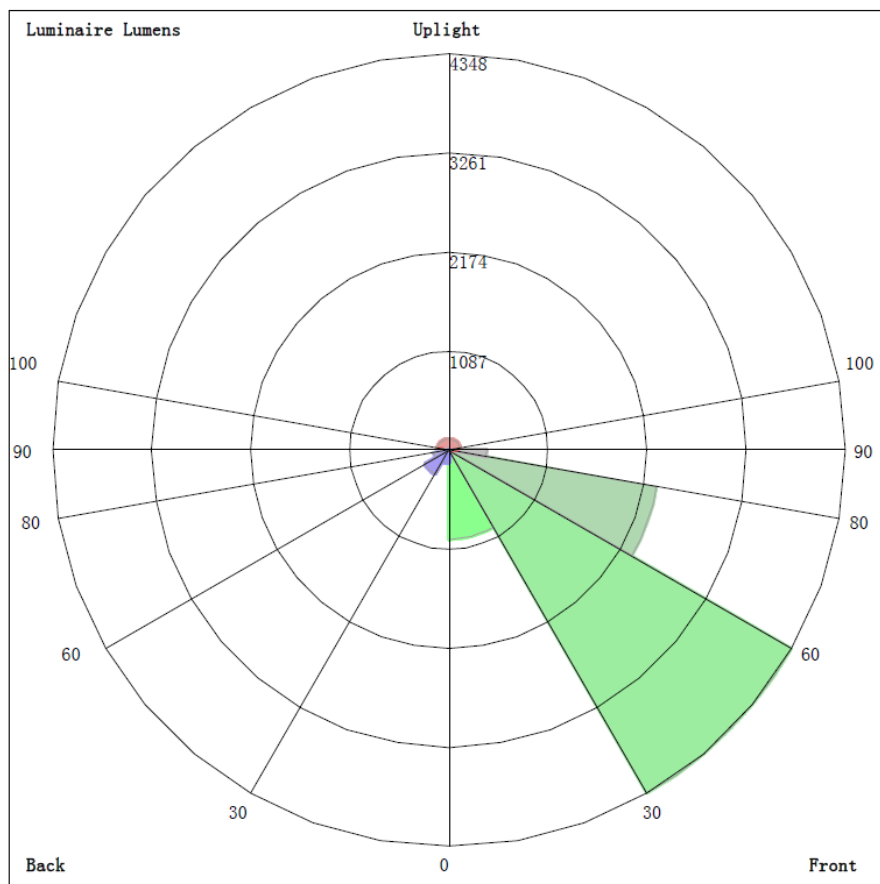
ZONAL FLUX DIAGRAM:

$\gamma$	C0	C45	C90	C135	C180	C225	C270	C315	$\gamma$	$\Phi$ zone	$\Phi$ total	%lum, lamp
10	1637	1428	944.3	391.2	206.7	391.2	944.3	1428	0- 10	103.2	103.2	1.16, 1.16
20	3261	2194	1163	122.8	58.79	122.8	1163	2194	10- 20	316.8	420.1	4.71, 4.71
30	4523	3128	1357	105.7	39.53	105.7	1357	3128	20- 30	696.0	1116	12.5, 12.5
40	6687	3820	1504	95.38	17.04	95.38	1504	3820	30- 40	1156	2272	25.5, 25.5
50	5512	4892	1415	81.71	3.089	81.71	1415	4892	40- 50	1772	4044	45.3, 45.3
60	4131	3655	1105	69.74	0.2112	69.74	1105	3655	50- 60	1723	5767	64.6, 64.6
70	2745	2788	822.0	52.50	0.4873	52.50	822.0	2788	60- 70	1483	7250	81.3, 81.3
80	1522	1507	385.4	35.00	1.073	35.00	385.4	1507	70- 80	1002	8252	92.5, 92.5
90	309.0	365.0	62.31	15.06	1.908	15.06	62.31	365.0	80- 90	445.7	8698	97.5, 97.5
100	161.1	130.4	12.99	6.651	2.849	6.651	12.99	130.4	90-100	99.89	8798	98.6, 98.6
110	97.02	69.36	8.414	5.037	3.517	5.037	8.414	69.36	100-110	48.02	8846	99.1, 99.1
120	58.66	47.57	7.278	4.885	3.896	4.885	7.278	47.57	110-120	27.66	8873	99.5, 99.5
130	50.54	35.99	6.130	4.995	4.426	4.995	6.130	35.99	120-130	19.13	8892	99.7, 99.7
140	36.73	28.41	4.745	4.668	4.320	4.668	4.745	28.41	130-140	13.04	8906	99.8, 99.8
150	29.55	21.84	3.893	3.860	3.954	3.860	3.893	21.84	140-150	8.578	8914	99.9, 99.9
160	21.40	16.39	3.584	3.269	2.972	3.269	3.584	16.39	150-160	5.018	8919	100, 100
170	12.12	11.83	3.354	3.035	2.024	3.035	3.354	11.83	160-170	2.273	8921	100, 100
180	1.711	1.894	2.156	2.104	1.694	2.104	2.156	1.894	170-180	0.4479	8922	100, 100
DEG	LUMINOUS INTENSITY:cd									UNIT:lm		

Zonal (lm)		Total (lm)		Percent
0-10	103.25	0-10	103.25	1.16%
10-20	316.85	0-20	420.10	4.71%
20-30	695.96	0-30	1116.06	12.51%
30-40	1155.61	0-40	2271.67	25.46%
40-50	1772.38	0-50	4044.05	45.33%
50-60	1722.92	0-60	5766.97	64.64%
60-70	1483.29	0-70	7250.26	81.27%
70-80	1001.86	0-80	8252.12	92.50%
80-90	445.67	0-90	8697.79	97.49%
90-100	99.89	0-100	8797.68	98.61%
100-110	48.02	0-110	8845.70	99.15%
110-120	27.66	0-120	8873.36	99.46%
120-130	19.13	0-130	8892.49	99.68%
130-140	13.04	0-140	8905.53	99.82%
140-150	8.58	0-150	8914.11	99.92%
150-160	5.02	0-160	8919.13	99.97%
160-170	2.27	0-170	8921.40	100.00%
170-180	0.45	0-180	8921.85	100.01%

## 4.2 Goniophotometer Test

LCS/BUG

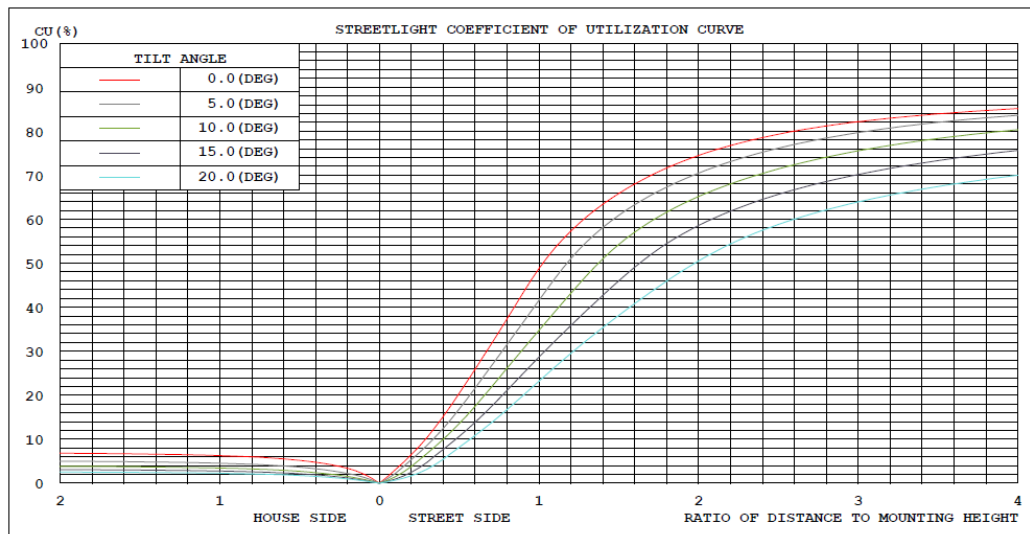


### LUMINAIRE CLASSIFICATION SYSTEM (LCS)

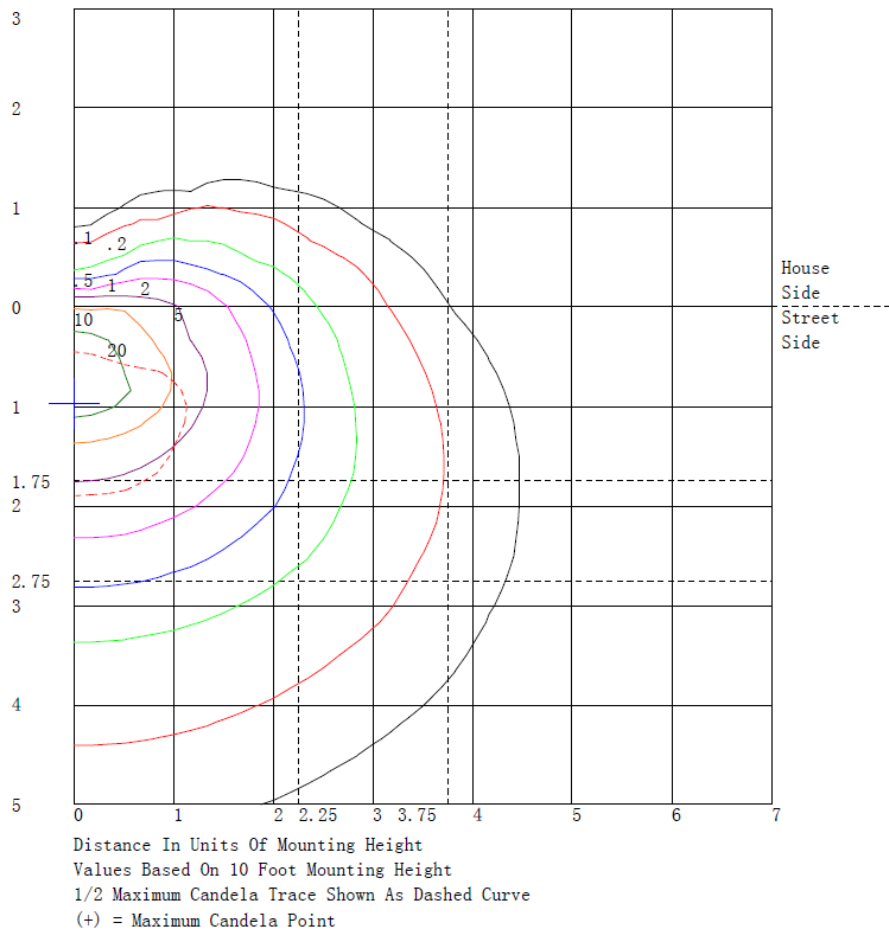
	Lumens	% Lamp	% Luminaire
FL - Front-Low (0-30)	976.5	N.A.	10.9
FM - Front-Medium (30-60)	4348.5	N.A.	48.7
FH - Front-High (60-80)	2316.4	N.A.	26.0
FVH - Front-Very High (80-90)	415.5	N.A.	4.7
BL - Back-Low (0-30)	139.6	N.A.	1.6
BM - Back-Medium (30-60)	302.4	N.A.	3.4
BH - Back-High (60-80)	168.7	N.A.	1.9
BVH - Back-Very High (80-90)	30.1	N.A.	0.3
UL - Uplight-Low (90-100)	99.9	N.A.	1.1
UH - Uplight-High (100-180)	124.2	N.A.	1.4
Total	8921.8	N.A.	100.0
BUG Rating	B1-U3-G3		

## 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	868	877	885	893	890	886	885	876	983	1055	1106	1142	868	1142	1106	1055	983	876	885
5	1543	1596	1763	1971	1833	1545	899	754	824	773	692	636	634	636	692	773	824	754	899
10	1637	1623	1553	1428	1503	1778	944	751	600	391	257	198	207	198	257	391	600	751	944
15	2313	2228	2037	1806	1620	1618	1056	649	362	181	117	92.8	88.9	92.8	117	181	362	649	1056
20	3261	3078	2680	2194	1893	1551	1163	566	250	123	80.7	61.4	58.8	61.4	80.7	123	250	566	1163
25	4129	3948	3380	2698	2097	1665	1296	496	217	111	66.2	47.8	46.2	47.8	66.2	111	217	496	1296
30	4523	4366	3814	3128	2423	1783	1357	501	220	106	59.1	41.8	39.5	41.8	59.1	106	220	501	1357
35	5027	4830	4194	3408	2549	1745	1421	483	236	98.6	54.6	33.5	27.8	33.5	54.6	98.6	236	483	1421
40	6687	6082	5000	3820	2757	1699	1504	484	256	95.4	49.5	23.9	17.0	23.9	49.5	95.4	256	484	1504
45	7760	7310	6213	4470	2964	1784	1530	515	247	90.3	45.1	17.4	9.06	17.4	45.1	90.3	247	515	1530
50	5512	5474	5468	4892	3235	1846	1415	481	253	81.7	42.1	13.2	3.09	13.2	42.1	81.7	253	481	1415
55	4604	4587	4588	4240	3214	1854	1319	487	227	73.2	41.3	12.4	0.22	12.4	41.3	73.2	227	487	1319
60	4131	4128	4006	3655	2989	1825	1105	469	214	69.7	41.3	14.2	0.21	14.2	41.3	69.7	214	469	1105
65	3422	3503	3534	3269	2589	1627	993	423	181	63.0	42.7	15.3	0.31	15.3	42.7	63.0	181	423	993
70	2745	2830	2908	2788	2200	1412	822	352	156	52.5	41.9	15.2	0.49	15.2	41.9	52.5	156	352	822
75	2034	2063	2089	2132	1775	1181	597	268	112	44.2	34.9	13.3	0.74	13.3	34.9	44.2	112	268	597
80	1522	1542	1506	1507	1279	789	385	196	83.9	35.0	28.8	10.6	1.07	10.6	28.8	35.0	83.9	196	385
85	942	946	924	930	798	457	209	110	55.4	24.0	20.1	7.59	1.46	7.59	20.1	24.0	55.4	110	209
90	309	317	332	365	336	171	62.3	55.2	30.3	15.1	11.9	5.03	1.91	5.03	11.9	15.1	30.3	55.2	62.3
95	209	208	202	197	165	66.4	19.4	25.5	16.5	9.07	6.83	3.57	2.37	3.57	6.83	9.07	16.5	25.5	19.4
100	161	158	145	130	106	43.6	13.0	16.4	11.2	6.65	5.14	3.11	2.85	3.11	5.14	6.65	11.2	16.4	13.0
105	120	118	108	94.7	72.5	33.2	9.89	12.2	8.43	5.55	4.47	3.07	3.27	3.07	4.47	5.55	8.43	12.2	9.89
110	97.0	94.3	81.9	69.4	53.6	26.5	8.41	9.80	6.91	5.04	4.27	3.25	3.52	3.25	4.27	5.04	6.91	9.80	8.41
115	72.0	69.6	61.5	54.6	42.9	22.7	7.73	8.27	6.12	4.89	4.31	3.57	3.73	3.57	4.31	4.89	6.12	8.27	7.73
120	58.7	57.4	52.8	47.6	36.6	20.1	7.28	7.33	5.74	4.89	4.51	3.94	3.90	3.94	4.51	4.89	5.74	7.33	7.28
125	52.6	52.8	49.3	42.4	31.5	18.0	6.73	6.63	5.58	4.97	4.73	4.29	4.21	4.29	4.73	4.97	5.58	6.63	6.73
130	50.5	49.0	43.1	36.0	27.0	16.3	6.13	6.00	5.40	5.00	4.83	4.46	4.43	4.46	4.83	5.00	5.40	6.00	6.13
135	40.2	39.5	36.3	31.8	23.6	14.5	5.42	5.44	5.17	4.93	4.76	4.44	4.39	4.44	4.76	4.93	5.17	5.44	5.42
140	36.7	36.0	33.2	28.4	21.0	13.2	4.75	4.90	4.78	4.67	4.51	4.22	4.32	4.22	4.51	4.67	4.78	4.90	4.75
145	34.4	33.5	30.1	25.0	18.6	12.3	4.24	4.39	4.35	4.26	4.13	3.87	4.17	3.87	4.13	4.26	4.35	4.39	4.24
150	29.5	28.9	26.2	21.8	16.5	11.7	3.89	3.99	3.96	3.86	3.73	3.54	3.95	3.54	3.73	3.86	3.96	3.99	3.89
155	25.6	25.2	22.9	19.1	14.8	11.4	3.73	3.81	3.71	3.58	3.36	3.03	3.55	3.03	3.36	3.58	3.71	3.81	3.73
160	21.4	21.2	19.4	16.4	13.3	11.3	3.58	3.62	3.47	3.27	2.98	2.37	2.97	2.37	2.98	3.27	3.47	3.62	3.58
165	16.6	16.4	15.5	13.8	12.1	8.96	3.45	3.45	3.32	3.13	2.92	2.17	2.41	2.17	2.92	3.13	3.32	3.45	3.45
170	12.1	12.0	11.9	11.8	11.3	3.33	3.35	3.30	3.19	3.03	2.24	2.05	2.02	2.05	2.24	3.03	3.19	3.30	3.35
175	9.51	9.47	9.32	9.30	2.22	2.44	2.59	2.58	2.51	2.41	2.31	2.22	1.93	2.22	2.31	2.41	2.51	2.58	2.59
180	1.71	1.68	1.76	1.89	2.02	2.11	2.16	2.18	2.19	2.10	2.14	2.12	1.69	2.12	2.14	2.10	2.19	2.18	2.16

Table--2

UNIT: cd

C (DEG) y (DEG)	285	300	315	330	345														
0	886	890	893	885	877														
5	1545	1833	1971	1763	1596														
10	1778	1503	1428	1553	1623														
15	1618	1620	1806	2037	2228														
20	1551	1893	2194	2680	3078														
25	1665	2097	2698	3380	3948														
30	1783	2423	3128	3814	4366														
35	1745	2549	3408	4194	4830														
40	1699	2757	3820	5000	6082														
45	1784	2964	4470	6213	7310														
50	1846	3235	4892	5468	5474														
55	1854	3214	4240	4588	4587														
60	1825	2989	3655	4006	4128														
65	1627	2589	3269	3534	3503														
70	1412	2200	2788	2908	2830														
75	1181	1775	2132	2089	2063														
80	789	1279	1507	1506	1542														
85	457	798	930	924	946														
90	171	336	365	332	317														
95	66.4	165	197	202	208														
100	43.6	106	130	145	158														
105	33.2	72.5	94.7	108	118														
110	26.5	53.6	69.4	81.9	94.3														
115	22.7	42.9	54.6	61.5	69.6														
120	20.1	36.6	47.6	52.8	57.4														
125	18.0	31.5	42.4	49.3	52.8														
130	16.3	27.0	36.0	43.1	49.0														
135	14.5	23.6	31.8	36.3	39.5														
140	13.2	21.0	28.4	33.2	36.0														
145	12.3	18.6	25.0	30.1	33.5														
150	11.7	16.5	21.8	26.2	28.9														
155	11.4	14.8	19.1	22.9	25.2														
160	11.3	13.3	16.4	19.4	21.2														
165	8.96	12.1	13.8	15.5	16.4														
170	3.33	11.3	11.8	11.9	12.0														
175	2.44	2.22	3.60	8.92	9.47														
180	2.11	2.02	1.89	1.76	1.68														

## 4.0 LM-79 Measurement and Test Results

### 4.3 THD and PF Test

<b>Model No.</b>	PWLED @72W3000K	<b>Sample ID</b>	241009001-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	0.573	68.3	0.993	10.07
277.0	60	0.253	68.2	0.974	9.64



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