

Photometric Test Report

Relevant Standards

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

Prepared For

RAB Lighting Inc.

Address: 408 W 14th St New York, NY 10014

Prepared By

Dongguan New Testing Centre Co., Ltd.

Address: 3F No. 1 the 1st North Industry Road, Songshan Lake Science & Technology Park, Dongguan, Guangdong, China

Prepare by:

Alan Wang

Engineer: Alan Wang

Date: 2024-07-30

Review by:

Vincent Yuan

Technical Lead: Vincent Yuan

Issue Date: 2024-07-30

Revised Date: N/A

1.0 Test Summary

DLC Technical Requirements V5.1

Architectural Flood and Spot Luminaires				
Requirement Category	Test Method	Requirements		Test Value
Luminaire Output (lm) (Goniophotometer – Section 4.2)	ANSI/IES LM-79:2019	1000		4184
Minimum Luminaire Efficacy (lm/W) (Goniophotometer – Section 4.2)	ANSI/IES LM-79:2019	Standard	Premium	135.8
		105	120	
Power (Input Wattage) (W) (Goniophotometer – Section 4.2)	ANSI/IES LM-79:2019	Worst Case		30.8
Total Harmonic Distortion (A%) (THD & PF – Section 4.3)	ANSI C82.77:2002 ANSI C82-77-10:2020	20.00%	120V	15.07
Power Factor (THD & PF – Section 4.3)	ANSI C82.77:2002 ANSI C82-77-10:2020	0.9	120V	0.983
Allowable CCTs* (K) (Integrating Sphere – Section 4.1)	ANSI/IES LM-79:2019	7 steps	3045±175	3035
		4 steps	3045±100	
Minimum CRI (Integrating Sphere – Section 4.1)	ANSI/IES LM-79:2019 CIE13.3-1995	≥70		82.8
Minimum R9 (Integrating Sphere – Section 4.1)	ANSI/IES LM-79-2019 CIE13.3-1995	N/A		14
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		98
IES Rcs,h1 (Integrating Sphere – Section 4.1)	ANSI/IES TM-30-18	-18%≤IES Rcs,h1≤+23%		-11%
Zonal Lumen Requirement (0°-90°) (Goniophotometer – Section 4.2)	ANSI/IES LM-79:2019	≥85%		100.0%
Input Voltage (V)				
(Goniophotometer – Section 4.2)	ANSI/IES LM-79:2019	Worst Cast		120.0
(Goniophotometer – Section 4.2)		Non-Worst Case		N/A
Input Current (A)				
(Goniophotometer – Section 4.2)	ANSI/IES LM-79:2019	Worst Case		0.261
(Goniophotometer – Section 4.2)		Non-Worst Case		N/A
Power (Input Wattage – W)				
(Goniophotometer – Section 4.2)	ANSI/IES LM-79:2019	Worst Case		30.8
(Goniophotometer – Section 4.2)		Non-Worst Case		N/A

2.0 Test List

Test Item	Test	Test Date	Model Number	Build Level	Sample No.
1	Integrating Sphere Test	2024-07-27	LF34LW @3000K	ES#3	240726003-S1
2	Goniophotometer Test	2024-07-27	LF34LW @3000K	ES#3	240726003-S1
3	THD and PF Test	2024-07-27	LF34LW @3000K	ES#3	240726003-S1

Remark (If any):

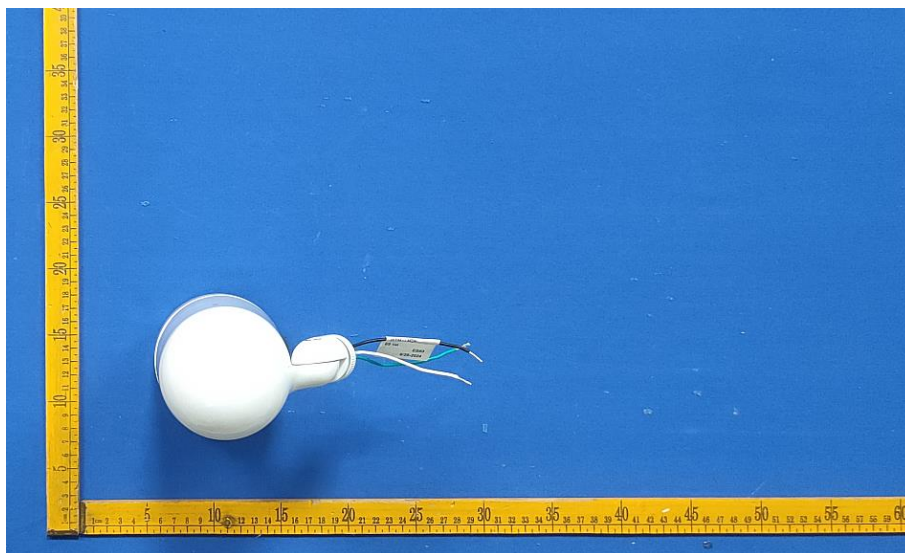
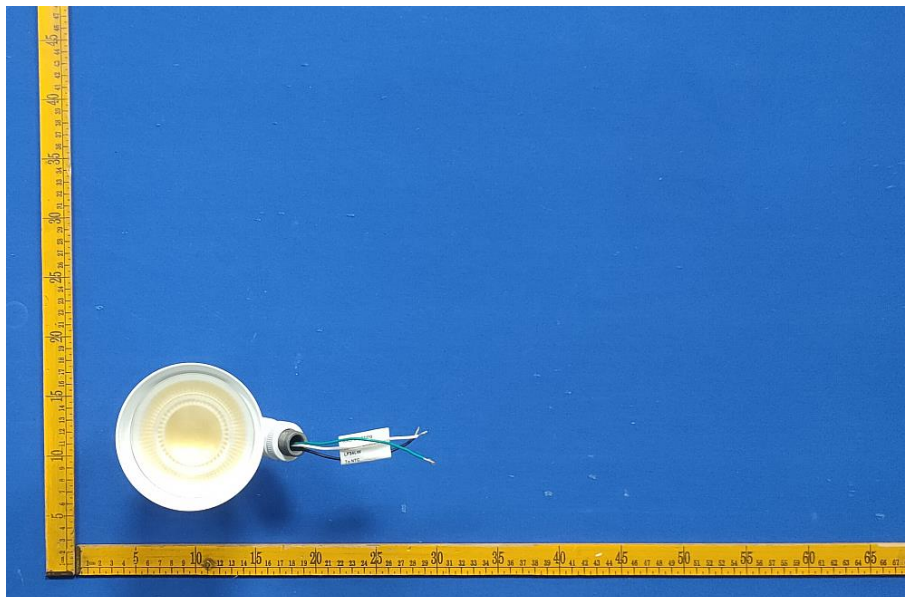
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3. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST or any agency of the U.S. Government.

3.0 Product Description

Luminaire Description: Model No. LF34LW @3000K, color tunable from 2700K, 3000K, 3500K, 4000K and 5000K.

Electrical Specification: 120Vac, 50/60Hz

Photos of Luminaire Characteristics



4.0 LM-79 Measurement and Test Results

4.1 Integrating Sphere Test

Model No.	LF34LW @3000K	Sample ID	240726003-S1
Operate time (Min.)	10	Stabilization time (Min.)	60
Temperature (°C)	25.4	Humidity (%RH)	41.0

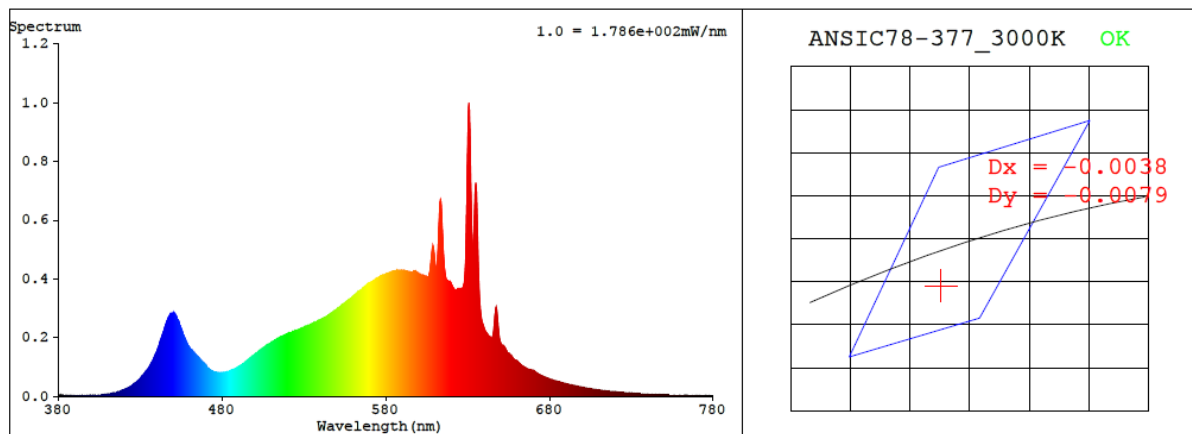
Test Method
<p>The Samples were tested according to the ANSI/IES LM-79:2019.</p> <p>Photometric parameters were measured using an integrating sphere, a spectroradiometer and software. The ambient temperature condition inside the sphere was maintained at 25±1°C.</p> <p>The sample measurements were made 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	0.261	30.8	0.983

CCT (K)	CRI	R9	Duv	Rf	Rg	IES Rcs,h1
3035	82.8	14	-0.0027	83	98	-11%

4.1 Integrating Sphere Test



Colorimetric Parameters

Chromaticity Coordinate: $x = 0.4307$ $y = 0.3953$ / $u' = 0.2503$ $v' = 0.5170$ ($duv = -2.67e-03$)

CCT= 3035K Prcp WL: $L_d = 583.7\text{nm}$ Purity=47.9%

Peak WL: $L_p = 631\text{nm}$ FWHM: $= 7.7\text{nm}$ Ratio: R=22.9% G=74.6% B=2.5%

Render Index: $R_a = 82.8$ AvgR = 77.3 TM30: $R_f = 82$ $R_g = 98$

EEL: 0.10062 A++ Highest

R1 =81 R2 =90 R3 =96 R4 =80 R5 =81 R6 =87 R7 =84

R8 =63 R9 =14 R10=77 R11=79 R12=71 R13=83 R14=98 R15=76

4.1 Integrating Sphere Test

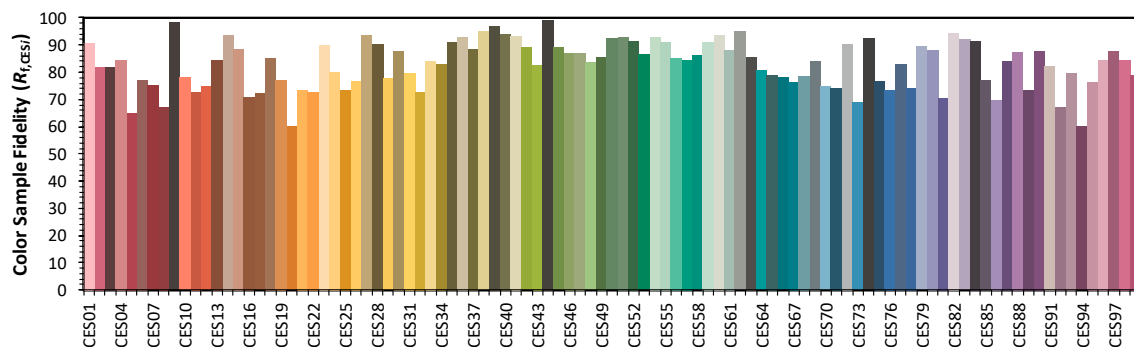
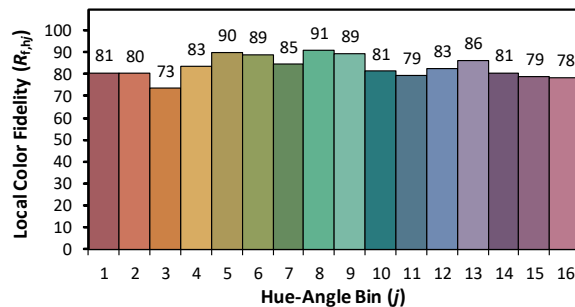
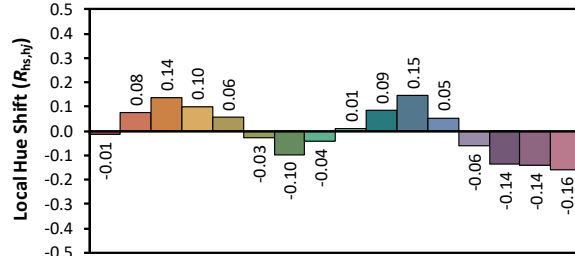
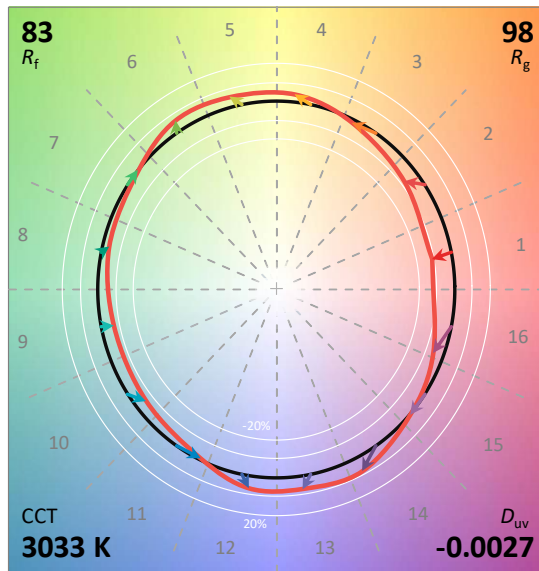
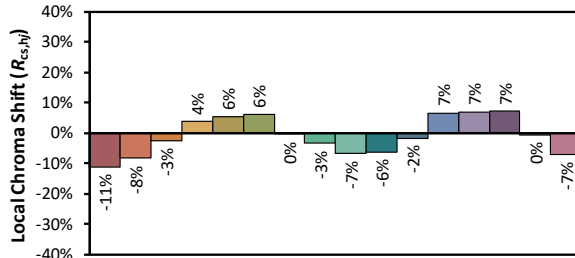
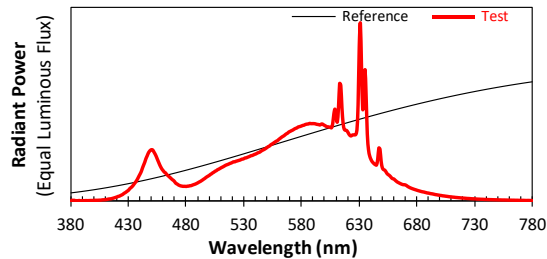
ANSI/IES TM-30-18 Color Rendition Report

Source: 1 CIE F1

Manufacturer: RAB Lighting Inc.

Date: 2024/7/30

Model: LF34LW @3000K



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

x 0.4307
 y 0.3952
 u' 0.2504
 v' 0.5169

CIE 13.3-1995
(CRI)

R_a 83
 R_g 14

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	7.00E-07	447	2.64E-04	514	1.97E-04	581	4.19E-04	648	2.86E-04	715	1.88E-05
381	3.70E-06	448	2.75E-04	515	2.00E-04	582	4.20E-04	649	2.20E-04	716	1.81E-05
382	3.40E-06	449	2.81E-04	516	2.03E-04	583	4.23E-04	650	1.85E-04	717	1.76E-05
383	3.30E-06	450	2.84E-04	517	2.05E-04	584	4.25E-04	651	1.74E-04	718	1.70E-05
384	1.00E-06	451	2.82E-04	518	2.08E-04	585	4.26E-04	652	1.71E-04	719	1.62E-05
385	1.60E-06	452	2.71E-04	519	2.10E-04	586	4.27E-04	653	1.64E-04	720	1.60E-05
386	1.20E-06	453	2.59E-04	520	2.14E-04	587	4.30E-04	654	1.53E-04	721	1.54E-05
387	2.40E-06	454	2.46E-04	521	2.17E-04	588	4.29E-04	655	1.47E-04	722	1.49E-05
388	1.30E-06	455	2.30E-04	522	2.17E-04	589	4.29E-04	656	1.42E-04	723	1.42E-05
389	4.00E-07	456	2.15E-04	523	2.20E-04	590	4.29E-04	657	1.36E-04	724	1.38E-05
390	2.20E-06	457	1.99E-04	524	2.22E-04	591	4.29E-04	658	1.28E-04	725	1.35E-05
391	1.40E-06	458	1.87E-04	525	2.24E-04	592	4.27E-04	659	1.24E-04	726	1.30E-05
392	1.80E-06	459	1.76E-04	526	2.26E-04	593	4.25E-04	660	1.22E-04	727	1.25E-05
393	2.20E-06	460	1.68E-04	527	2.28E-04	594	4.24E-04	661	1.16E-04	728	1.20E-05
394	1.20E-06	461	1.60E-04	528	2.31E-04	595	4.23E-04	662	1.10E-04	729	1.19E-05
395	1.90E-06	462	1.55E-04	529	2.32E-04	596	4.21E-04	663	1.05E-04	730	1.13E-05
396	2.10E-06	463	1.47E-04	530	2.35E-04	597	4.26E-04	664	1.02E-04	731	1.11E-05
397	2.60E-06	464	1.41E-04	531	2.38E-04	598	4.27E-04	665	9.83E-05	732	1.05E-05
398	2.50E-06	465	1.35E-04	532	2.39E-04	599	4.22E-04	666	9.52E-05	733	1.02E-05
399	2.70E-06	466	1.30E-04	533	2.42E-04	600	4.19E-04	667	9.23E-05	734	9.90E-06
400	3.40E-06	467	1.23E-04	534	2.45E-04	601	4.15E-04	668	9.04E-05	735	9.60E-06
401	3.50E-06	468	1.18E-04	535	2.47E-04	602	4.11E-04	669	8.99E-05	736	9.30E-06
402	3.70E-06	469	1.13E-04	536	2.50E-04	603	4.11E-04	670	8.87E-05	737	9.20E-06
403	3.70E-06	470	1.06E-04	537	2.52E-04	604	4.09E-04	671	8.53E-05	738	8.80E-06
404	4.10E-06	471	9.76E-05	538	2.54E-04	605	4.08E-04	672	8.06E-05	739	8.30E-06
405	4.40E-06	472	9.42E-05	539	2.58E-04	606	4.06E-04	673	7.69E-05	740	8.30E-06
406	4.50E-06	473	8.94E-05	540	2.60E-04	607	4.29E-04	674	7.36E-05	741	7.90E-06
407	5.80E-06	474	8.62E-05	541	2.63E-04	608	4.84E-04	675	7.08E-05	742	7.70E-06
408	6.30E-06	475	8.37E-05	542	2.67E-04	609	5.09E-04	676	6.82E-05	743	7.40E-06
409	6.50E-06	476	8.24E-05	543	2.69E-04	610	4.63E-04	677	6.59E-05	744	7.30E-06
410	7.10E-06	477	8.12E-05	544	2.72E-04	611	4.39E-04	678	6.37E-05	745	7.10E-06
411	8.30E-06	478	8.11E-05	545	2.77E-04	612	5.18E-04	679	6.17E-05	746	6.80E-06
412	9.70E-06	479	8.11E-05	546	2.81E-04	613	6.51E-04	680	5.95E-05	747	6.70E-06
413	1.10E-05	480	8.04E-05	547	2.84E-04	614	6.39E-04	681	5.74E-05	748	6.50E-06
414	1.15E-05	481	8.20E-05	548	2.87E-04	615	5.17E-04	682	5.57E-05	749	6.30E-06
415	1.26E-05	482	8.22E-05	549	2.92E-04	616	4.31E-04	683	5.38E-05	750	6.00E-06
416	1.42E-05	483	8.41E-05	550	2.96E-04	617	3.97E-04	684	5.20E-05	751	5.80E-06
417	1.62E-05	484	8.47E-05	551	3.01E-04	618	3.92E-04	685	5.06E-05	752	5.70E-06
418	1.81E-05	485	8.70E-05	552	3.04E-04	619	3.91E-04	686	4.95E-05	753	5.50E-06
419	2.03E-05	486	8.96E-05	553	3.10E-04	620	3.82E-04	687	4.76E-05	754	5.20E-06
420	2.26E-05	487	9.17E-05	554	3.14E-04	621	3.71E-04	688	4.61E-05	755	5.20E-06
421	2.54E-05	488	9.40E-05	555	3.18E-04	622	3.63E-04	689	4.43E-05	756	5.20E-06
422	2.68E-05	489	9.72E-05	556	3.23E-04	623	3.61E-04	690	4.36E-05	757	5.00E-06
423	3.03E-05	490	1.01E-04	557	3.27E-04	624	3.66E-04	691	4.20E-05	758	4.80E-06
424	3.32E-05	491	1.04E-04	558	3.31E-04	625	3.66E-04	692	4.05E-05	759	4.60E-06
425	3.69E-05	492	1.08E-04	559	3.34E-04	626	3.67E-04	693	3.96E-05	760	4.40E-06
426	4.22E-05	493	1.12E-04	560	3.40E-04	627	3.68E-04	694	3.84E-05	761	4.40E-06
427	4.57E-05	494	1.16E-04	561	3.45E-04	628	3.93E-04	695	3.69E-05	762	4.30E-06
428	5.05E-05	495	1.21E-04	562	3.50E-04	629	5.33E-04	696	3.54E-05	763	4.10E-06
429	5.53E-05	496	1.25E-04	563	3.55E-04	630	8.55E-04	697	3.45E-05	764	4.20E-06
430	6.02E-05	497	1.30E-04	564	3.59E-04	631	9.85E-04	698	3.32E-05	765	3.90E-06
431	6.85E-05	498	1.34E-04	565	3.63E-04	632	7.29E-04	699	3.23E-05	766	3.70E-06
432	7.37E-05	499	1.38E-04	566	3.69E-04	633	5.09E-04	700	3.09E-05	767	3.80E-06
433	7.97E-05	500	1.42E-04	567	3.73E-04	634	5.96E-04	701	3.03E-05	768	3.50E-06
434	8.72E-05	501	1.47E-04	568	3.77E-04	635	7.28E-04	702	2.89E-05	769	3.30E-06
435	9.61E-05	502	1.51E-04	569	3.83E-04	636	5.73E-04	703	2.81E-05	770	3.30E-06
436	1.04E-04	503	1.56E-04	570	3.85E-04	637	3.71E-04	704	2.73E-05	771	3.20E-06
437	1.14E-04	504	1.60E-04	571	3.89E-04	638	2.86E-04	705	2.63E-05	772	3.30E-06
438	1.26E-04	505	1.65E-04	572	3.92E-04	639	2.51E-04	706	2.55E-05	773	3.10E-06
439	1.38E-04	506	1.68E-04	573	3.96E-04	640	2.33E-04	707	2.45E-05	774	2.80E-06
440	1.50E-04	507	1.73E-04	574	4.00E-04	641	2.20E-04	708	2.35E-05	775	2.60E-06
441	1.64E-04	508	1.76E-04	575	4.03E-04	642	2.12E-04	709	2.29E-05	776	2.80E-06
442	1.83E-04	509	1.79E-04	576	4.05E-04	643	2.06E-04	710	2.24E-05	777	2.80E-06
443	1.99E-04	510	1.83E-04	577	4.10E-04	644	2.01E-04	711	2.13E-05	778	2.60E-06
444	2.15E-04	511	1.87E-04	578	4.12E-04	645	2.00E-04	712	2.09E-05	779	2.50E-06
445	2.35E-04	512	1.90E-04	579	4.14E-04	646	2.30E-04	713	2.00E-05	780	2.50E-06
446	2.49E-04	513	1.94E-04	580	4.16E-04	647	2.93E-04	714	1.93E-05	N/A	N/A

4.0 LM-79 Measurement and Test Results

4.2 Goniophotometer Test

Model No.	LF34LW @3000K	Sample ID	240726003-S1
Operate time (Min.)	30	Stabilization time (Min.)	60
Temperature (°C)	24.8	Humidity (%RH)	45.1

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 $25\pm1^{\circ}\text{C}$, 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

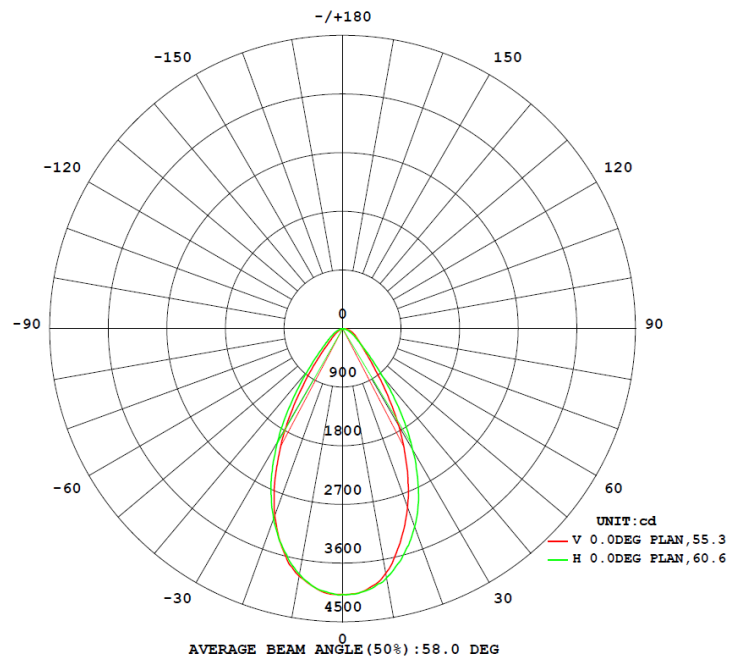
Condition	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor
WORST CASE	120.0	60	0.261	30.8	0.983
NON-WORST CASE	N/A	N/A	N/A	N/A	N/A

Test Result

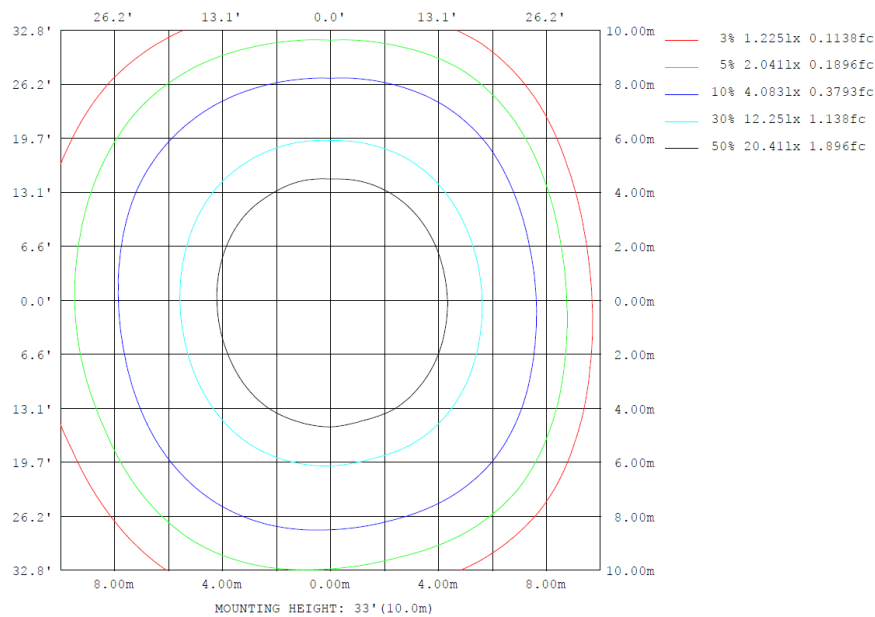
Flux (lm)	Field Angle (10%)		Beam Angle (50%)		Luminous Efficacy (lm/W)	Zonal Lumen Requirement	NEMA Type
	C0-180	C90-270	C0-180	C90-270		(0°-90°)	
4184	89.8	95.7	55.3	60.6	135.8	100.0%	5H x 5V

4.2 Goniophotometer Test

Lighting Distribution Curve



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	ℓlum, lamp
10	3855	3878	3887	3866	3815	3837	3829	3840	0- 10	379.3	379.3	9.07, 9.07
20	3056	3216	3238	3084	2915	3087	3106	3128	10- 20	984.8	1364	32.6, 32.6
30	1752	2094	2162	2004	1736	2007	2004	1950	20- 30	1168	2532	60.5, 60.5
40	562.9	939.3	954.8	914.7	703.9	910.3	836.9	820.5	30- 40	842.1	3374	80.6, 80.6
50	194.8	317.8	352.1	394.3	355.5	405.8	320.6	280.3	40- 50	401.1	3775	90.2, 90.2
60	82.43	122.4	180.2	231.0	232.9	230.9	166.3	108.0	50- 60	212.3	3987	95.3, 95.3
70	9.539	32.57	86.26	136.3	147.8	130.4	76.09	26.24	60- 70	120.3	4108	98.2, 98.2
80	0.0453	0.0725	26.13	62.57	74.12	57.16	21.14	0.0450	70- 80	54.70	4162	99.5, 99.5
90	0	0	0	0	0	0	0	0	80- 90	21.31	4184	100, 100
100	0	0	0	0	0	0	0	0	90-100	0.0000	4184	100, 100
110	0	0	0	0	0	0	0	0	100-110	0	4184	100, 100
120	0	0	0	0	0	0	0	0	110-120	0	4184	100, 100
130	0	0	0	0	0	0	0	0	120-130	0	4184	100, 100
140	0	0	0	0	0	0	0	0	130-140	0	4184	100, 100
150	0	0	0	0	0	0	0	0	140-150	0	4184	100, 100
160	0	0	0	0	0	0	0	0	150-160	0	4184	100, 100
170	0	0	0	0	0	0	0	0	160-170	0	4184	100, 100
180	0	0	0	0	0	0	0	0	170-180	0	4184	100, 100
DEG	LUMINOUS INTENSITY: cd									UNIT: lm		

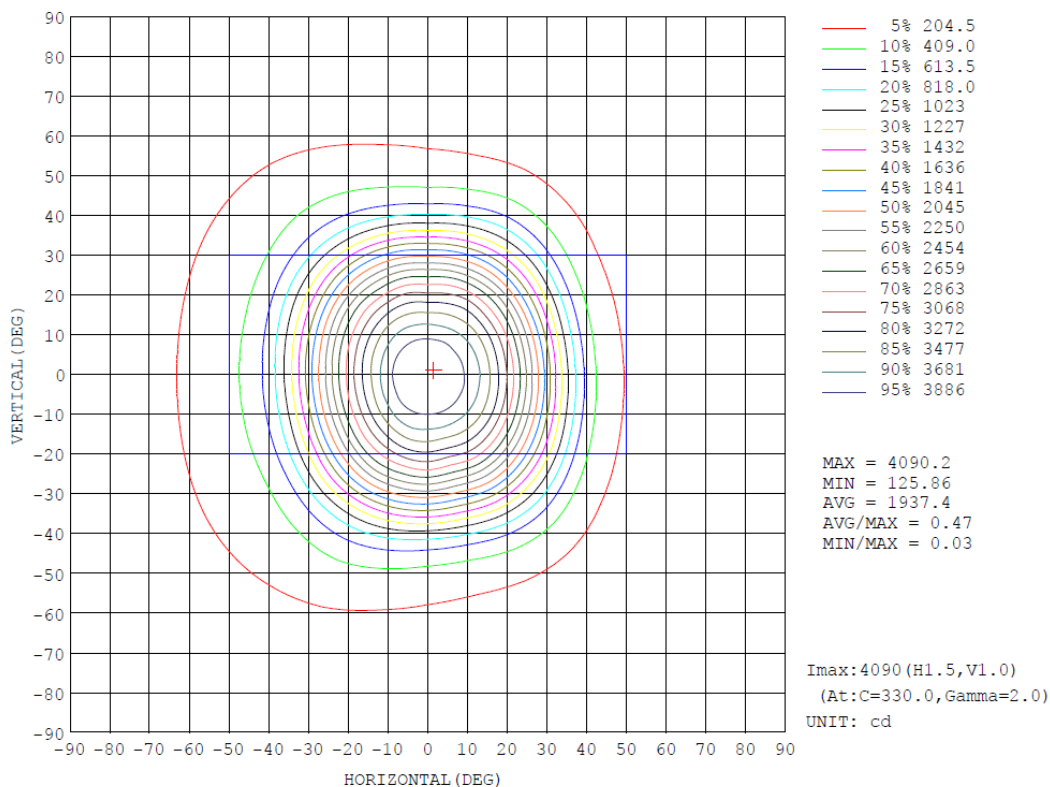
	Zonal (lm)		Total (lm)	Percent
0-10	379.26	0-10	379.26	9.07%
10-20	984.81	0-20	1364.07	32.61%
20-30	1167.62	0-30	2531.69	60.52%
30-40	842.14	0-40	3373.83	80.65%
40-50	401.11	0-50	3774.94	90.23%
50-60	212.27	0-60	3987.21	95.31%
60-70	120.29	0-70	4107.50	98.18%
70-80	54.70	0-80	4162.20	99.49%
80-90	21.31	0-90	4183.51	100.00%
90-100	0.00	0-100	4183.51	100.00%
100-110	0.00	0-110	4183.51	100.00%
110-120	0.00	0-120	4183.51	100.00%
120-130	0.00	0-130	4183.51	100.00%
130-140	0.00	0-140	4183.51	100.00%
140-150	0.00	0-150	4183.51	100.00%
150-160	0.00	0-160	4183.51	100.00%
160-170	0.00	0-170	4183.51	100.00%
170-180	0.00	0-180	4183.51	100.00%

4.2 Goniophotometer Test

Area Flux Diagram

		AREA FLUX DIAGRAM																UNIT:lm			Φ t	Φ a
VERTICAL (DEG)	90	0.08	0.30	0.49	0.65	0.74	0.76	0.71	0.57	0.38	0.20	0.07	0.01	0.00	0.00	0.00	0.00	0.00	0.00	4.97	0.00	
	80	0.11	0.37	0.66	0.99	1.33	1.60	1.74	1.72	1.52	1.18	0.78	0.39	0.13	0.02	0.00	0.00	0.00	0.00	12.5	0.00	
	70	0.12	0.43	0.92	1.60	2.38	3.13	3.68	3.91	3.78	3.34	2.62	1.74	0.90	0.28	0.03	0.00	0.00	0.00	28.9	0.00	
	60	0.13	0.52	1.26	2.34	3.65	5.10	6.41	7.18	7.29	6.88	5.91	4.27	2.41	1.08	0.25	0.01	0.00	0.00	54.7	0.00	
	50	0.13	0.62	1.61	3.05	5.01	7.75	11.1	14.2	15.8	15.7	13.3	9.02	4.72	2.14	0.73	0.07	0.00	0.00	105	52.5	
	40	0.14	0.72	1.92	3.72	6.46	11.7	21.5	33.7	41.4	41.2	33.0	19.4	8.24	3.35	1.25	0.20	0.00	0.00	228	201	
	30	0.15	0.80	2.17	4.30	8.05	18.2	39.5	63.2	77.3	77.2	62.8	37.1	14.0	4.57	1.74	0.35	0.00	0.00	411	390	
	20	0.15	0.86	2.35	4.75	9.63	25.1	55.5	86.6	104	104	87.6	54.4	21.1	5.84	2.12	0.49	0.01	0.00	565	546	
	10	0.15	0.89	2.44	5.01	10.6	28.8	63.6	98.1	119	119	101	64.8	26.4	6.83	2.34	0.56	0.01	0.00	649	631	
	0	0.16	0.89	2.45	5.01	10.5	28.2	62.9	97.8	119	120	102	65.9	27.3	7.06	2.37	0.56	0.02	0.00	652	633	
	-10	0.15	0.86	2.36	4.76	9.37	23.7	54.3	86.5	106	106	90.1	57.5	23.5	6.38	2.19	0.50	0.01	0.00	575	555	
	-20	0.15	0.81	2.19	4.31	7.76	17.1	39.4	65.2	80.7	79.9	66.2	40.9	16.4	5.15	1.83	0.38	0.01	0.00	428	406	
	-30	0.14	0.73	1.94	3.75	6.30	11.3	22.3	36.8	45.9	44.5	35.7	21.8	9.58	3.75	1.33	0.22	0.00	0.00	246	219	
	-40	0.13	0.63	1.64	3.09	4.99	7.66	11.9	16.2	18.2	17.0	13.8	9.49	5.29	2.37	0.80	0.08	0.00	0.00	113	65.9	
	-50	0.13	0.53	1.29	2.40	3.72	5.25	6.88	7.92	7.99	7.24	6.05	4.49	2.66	1.22	0.31	0.02	0.00	0.00	58.1	0.00	
	-60	0.12	0.44	0.96	1.67	2.51	3.33	4.00	4.28	4.16	3.66	2.88	1.97	1.07	0.37	0.05	0.00	0.00	0.00	31.5	0.00	
	-70	0.12	0.38	0.69	1.06	1.44	1.76	1.95	1.96	1.77	1.41	0.95	0.52	0.19	0.03	0.00	0.00	0.00	0.00	14.2	0.00	
	-80	0.08	0.30	0.51	0.68	0.80	0.85	0.82	0.70	0.51	0.30	0.12	0.03	0.00	0.00	0.00	0.00	0.00	0.00	5.72	0.00	
	-90	0.08	0.30	0.49	0.65	0.74	0.76	0.71	0.57	0.38	0.20	0.07	0.01	0.00	0.00	0.00	0.00	0.00	0.00	4.97	0.00	
	HORIZONTAL (DEG)																					
Φ t	2.35	11.1	27.8	53.1	95.2	201	408	627	756	749	624	394	164	50.4	17.3	3.44	0.07	0.00	4183	---		
Φ a	0.00	0.00	0.00	0.00	33.3	159	372	593	723	719	596	367	132	6.25	0.00	0.00	0.00	0.00	---	3700		

Isocandela



4.2 Goniophotometer Test

Luminous Distribution Intensity Data

Table--1

UNIT: cd

H (DEG)	-90	-85	-80	-75	-70	-65	-60	-55	-50	-45	-40	-35	-30	-25	-20	-15	-10	-5	0
V (DEG)	-180	-170	-160	-150	-140	-130	-120	-110	-100	-90	-80	-70	-60	-50	-40	-30	-20	-10	0
-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
-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
-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
-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
-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
-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
-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
-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
-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
-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
-80	0.00	42.6	43.9	44.9	45.8	46.5	47.2	47.7	48.1	48.4	48.1	47.4	46.1	44.1	41.5	38.3	34.6	30.5	26.1
-70	0.00	44.2	47.0	50.5	55.7	62.2	69.0	75.9	82.9	89.2	94.8	99.2	102	104	103	101	97.5	92.6	86.3
-60	0.00	45.5	50.7	59.8	71.8	85.8	101	116	131	144	157	170	182	191	196	197	194	189	180
-50	0.00	46.9	55.8	71.2	90.9	113	135	157	178	201	226	252	286	321	350	368	374	368	352
-40	0.00	48.1	61.4	83.0	110	138	166	195	226	259	302	361	451	568	700	818	914	959	955
-30	0.00	49.3	66.5	93.6	126	159	194	230	270	319	393	533	770	1093	1441	1760	1992	2128	2162
-20	0.00	50.2	70.6	102	138	175	215	258	310	386	524	793	1218	1729	2218	2661	2967	3172	3238
-10	0.00	50.7	73.2	107	145	185	228	277	342	447	647	1023	1574	2162	2726	3205	3596	3828	3887
0	0.00	50.9	74.1	109	148	188	233	285	355	474	704	1134	1736	2337	2915	3411	3815	4033	4079
10	0.00	50.7	73.0	107	145	184	228	276	343	456	675	1073	1618	2208	2762	3222	3571	3785	3829
20	0.00	50.0	70.2	101	137	174	213	257	311	398	559	854	1271	1756	2227	2623	2915	3103	3106
30	0.00	49.1	66.0	92.8	124	158	192	229	272	328	418	566	787	1074	1383	1665	1877	1992	2004
40	0.00	47.9	60.7	81.7	108	136	164	193	225	263	312	375	451	538	630	716	785	831	837
50	0.00	46.6	55.1	69.9	88.9	110	133	154	176	199	225	251	276	299	316	326	330	330	321
60	0.00	45.2	50.1	58.5	69.9	82.9	97.3	112	126	140	152	162	171	177	181	180	178	173	166
70	0.00	43.9	46.4	49.5	53.9	59.5	65.6	71.6	77.7	83.2	87.9	91.4	93.3	94.1	93.3	90.9	87.2	82.3	76.1
80	0.00	42.4	43.4	44.0	44.6	44.9	45.0	44.9	44.7	44.3	43.5	42.2	40.5	38.3	35.6	32.5	29.0	25.2	21.1
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
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
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
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
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
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
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
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
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
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

H (DEG)	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
V (DEG)	-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
-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
-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
-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
-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
-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
-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
-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
-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
-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
-80	21.7	17.3	13.1	9.14	5.34	2.00	0.30	0.01	0.05	0.05	0.05	0.05	0.06	0.06	0.06	0.07	0.07	0.00
-70	78.4	69.5	59.8	49.8	39.4	28.6	18.4	10.6	5.04	1.53	0.08	0.04	0.05	0.05	0.06	0.06	0.07	0.00
-60	170	157	143	127	108	88.6	69.7	51.6	33.4	16.9	6.64	1.22	0.00	0.05	0.05	0.06	0.06	0.00
-50	334	311	289	262	230	191	152	111	78.5	53.2	28.8	9.81	1.72	0.04	0.05	0.05	0.06	0.00
-40	915	839	745	631	501	379	277	197	138	92.3	59.6	29.6	7.89	0.42	0.04	0.05	0.06	0.00
-30	2073	1940	1754	1465	1117	773	483	300	198	136	87.5	51.5	18.5	2.54	0.03	0.05	0.06	0.00
-20	3140	3023	2743	2324	1826	1290	780	426	252	170	112	68.2	30.8	5.79	0.00	0.05	0.06	0.00
-10	3829	3662	3362	2883	2291	1650	1003	534	290	189	129	78.9	38.9	8.59	0.04	0.05	0.06	0.00
0	4035	3855	3532	3056	2427	1752	1061	563	298	195	133	82.4	41.4	9.54	0.05	0.05	0.06	0.00
10	3775	3614	3292	2824	2212	1563	929	493	271	184	126	77.8	38.1	8.28	0.03	0.05	0.06	0.00
20	3091	2949	2643	2203	1684	1143	669	370	228	161	108	66.1	29.2	5.29	0.02	0.05	0.06	0.00
30	1976	1854	1632	1327	991	661	408	254	178	126	83.7	48.7	16.7	2.17	0.04	0.05	0.06	0.00
40	834	779	701	594	463	340	242	174	124	86.7	55.6	26.3	6.51	0.19	0.04	0.05	0.06	0.00
50	319	307	288	260	222	178	136	99.0	72.4	48.1	24.4	7.60	1.06	0.04	0.05	0.05	0.06	0.00
60	159	148	135	118	97.9	79.7	62.2	45.0	27.4	12.7	4.32	0.42	0.02	0.05	0.05	0.06	0.06	0.00
70	69.0	60.9	52.0	42.4	32.3	22.2	13.7	7.39	3.21	0.46	0.01	0.04	0.05	0.05	0.06	0.06	0.07	0.00
80	17.3	13.4	9.66	5.80	2.40	0.19	0.00	0.00	0.05	0.05	0.05	0.05	0.06	0.06	0.06	0.07	0.07	0.00
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
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
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
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
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
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
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
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
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
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

4.0 LM-79 Measurement and Test Results

4.3 THD and PF Test

Model No.	LF34LW @3000K	Sample ID	240726003-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	0.261	30.8	0.983	15.07

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	2023-08-25	2024-08-24
NTC-F01-019	Temperature & Humidity Meter	2023-11-06	2024-11-05

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