

Photometric Test Report

Relevant Standards

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

Prepared For

RAB Lighting Inc.

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Issue Date: 2024-07-15

Revised Date: N/A

1.0 Test Summary

DLC Technical Requirements V5.1

Stairwell and Passageway Luminaires					
Requirement Category		Test Method	Requirements		Test Value
Luminaire Output (lm) (Goniophotometer – Section 4.2)		ANSI/IES LM-79:2019	750		2294
Minimum Luminaire Efficacy (lm/W) (Goniophotometer – Section 4.2)		ANSI/IES LM-79:2019	Standard	Premium	119.5
			105	120	
Power (Input Wattage) (W) (Goniophotometer – Section 4.2)		ANSI/IES LM-79:2019	Worst Case		19.2
Total Harmonic Distortion (A%) (THD & PF – Section 4.3)		ANSI C82.77:2002 ANSI C82-77-10:2020	20.00%	120V	4.91
				277V	17.77
Power Factor (THD & PF – Section 4.3)		ANSI C82.77:2002 ANSI C82-77-10:2020	0.9	120V	0.989
				277V	0.858
Allowable CCTs* (K) (Integrating Sphere – Section 4.1)		ANSI/IES LM-79:2019	7 steps	5029±283	5028
			4 steps	5029±220	
Minimum CRI (Integrating Sphere – Section 4.1)		ANSI/IES LM-79:2019 CIE13.3-1995	≥70		83.8
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		84
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%		-12%
Zonal Lumen Requirement (0°-90°) (Goniophotometer – Section 4.2)		ANSI/IES LM-79:2019	≥85%		83.1%
Backlight, Uplight and Glare (BUG) Ratings (Goniophotometer – Section 4.2)		ANSI/IES LM-79:2019 IES TM-15-11	N/A		B1-U3-G1
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		0.081
(Goniophotometer – Section 4.2)			Non-Worst Case		0.156
Power (Input Wattage – W)					
(Goniophotometer – Section 4.2)		ANSI/IES LM-79:2019	Worst Case		19.2
(Goniophotometer – Section 4.2)			Non-Worst Case		18.5

2.0 Test List

Test Item	Test	Test Date	Model Number	Build Level	Sample No.
1	Integrating Sphere Test	2024-07-15	VXRGB @18W5000K	-	240715001-S1
2	Goniophotometer Test	2024-07-15	VXRGB @18W5000K	-	240715001-S1
3	THD and PF Test	2024-07-15	VXRGB @18W5000K	-	240715001-S1

Remark (If any):

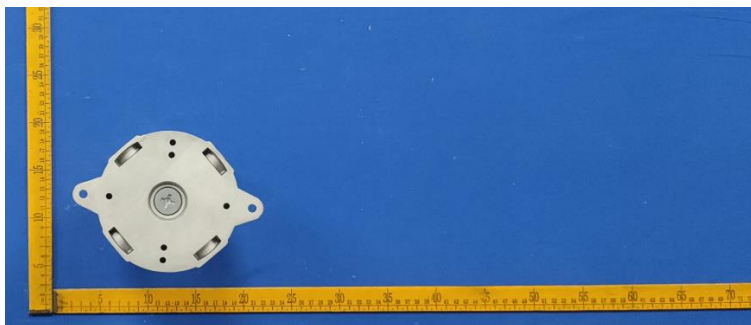
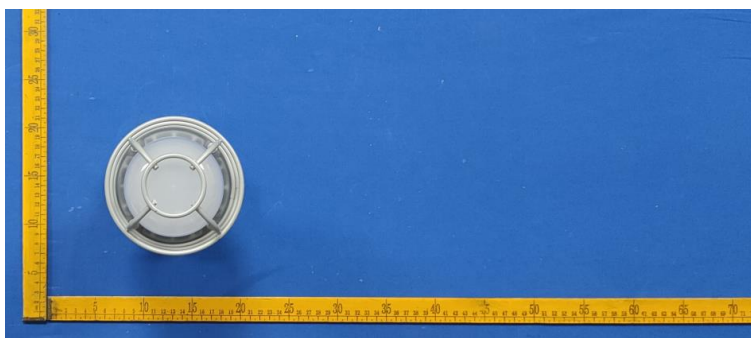
1. The results contained in this report pertain only to the tested samples.
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3. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST or any agency of the U.S. Government.

3.0 Product Description

Luminaire Description: Model No. VXRGB @18W5000K.

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.	VXRGB @18W5000K	Sample ID	240715001-S1
Operate time (Min.)	10	Stabilization time (Min.)	60
Temperature (°C)	25.4	Humidity (%RH)	41.0

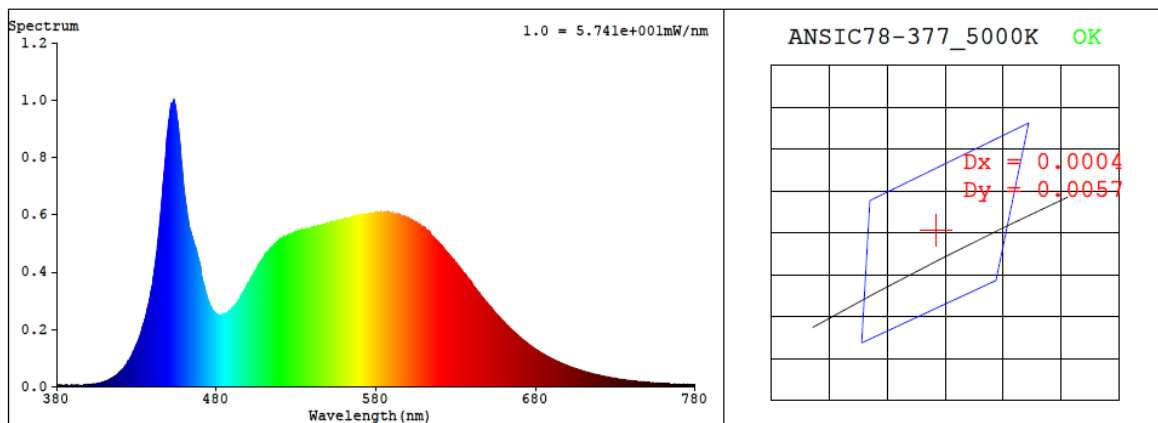
Test Method
<p>The Samples were tested according to the ANSI/IES LM-79:2019.</p> <p>Photometric parameters were measured using an integrating sphere, a spectroradiometer and software. The ambient temperature condition inside the sphere was maintained at 25±1°C.</p> <p>The sample measurements were made 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	0.156	18.5	0.989
277.0	60	0.081	19.2	0.858

CCT (K)	CRI	R9	Duv	Rf	Rg	IES Rcs,h1
5028	83.8	11	0.0027	84	96	-12%

4.1 Integrating Sphere Test



Colorimetric Parameters

Chromaticity Coordinate: $x = 0.3448$ $y = 0.3567$ / $u' = 0.2093$ $v' = 0.4871$ ($duv=2.66e-03$)

CCT= 5028K Prcp WL: $L_d=569.8nm$ Purity=10.5%

Peak WL: $L_p=453nm$ FWHM: $=22.8nm$ Ratio:R=15.8% G=79.7% B=4.6%

Render Index: $R_a = 83.8$ AvgR = 77.1 TM30:Rf=84 Rg=95

EEL: 0.11859 A+

R1 =82	R2 =89	R3 =93	R4 =83	R5 =83	R6 =85	R7 =87
R8 =68	R9 =11	R10=73	R11=83	R12=62	R13=84	R14=96 R15=77

4.1 Integrating Sphere Test

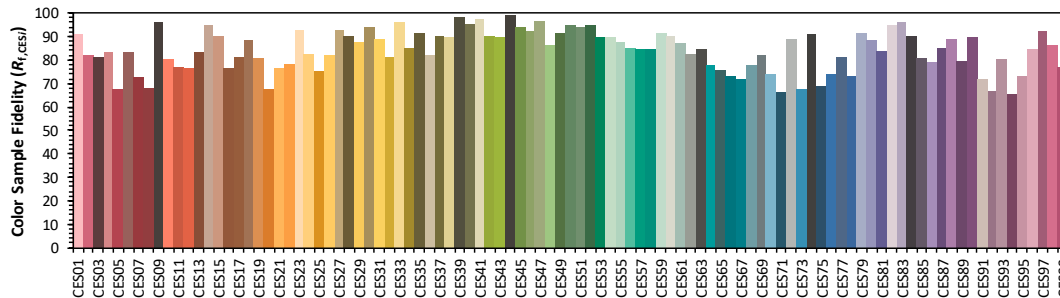
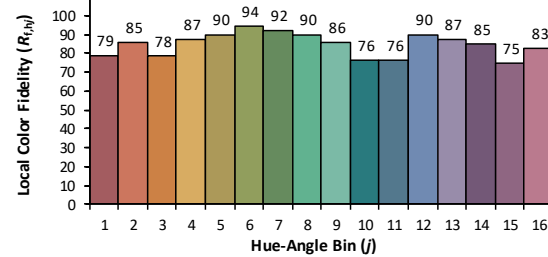
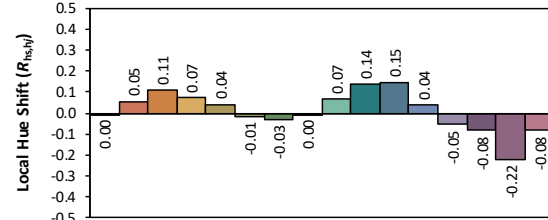
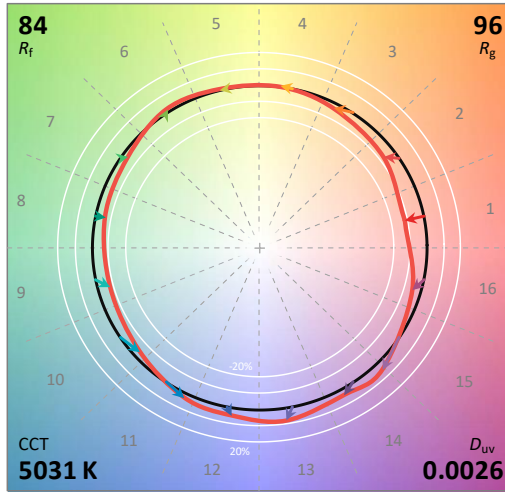
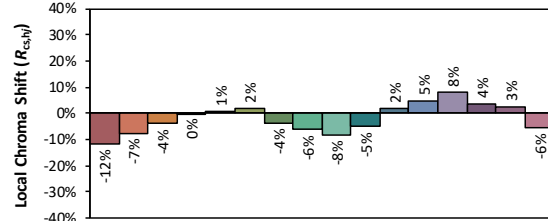
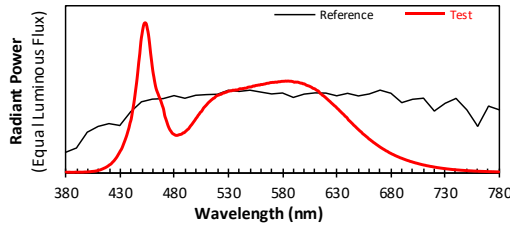
ANSI/IES TM-30-18 Color Rendition Report

Source: 1 CIE F1

Manufacturer: RAB Lighting Inc.

Date: 2024/7/15

Model: VXRGB @18W5000K



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

x 0.3447
 y 0.3565
 u' 0.2093
 v' 0.4870

CIE 13.3-1995
(CRI)
 R_a 84
 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	6.00E-06	447	7.31E-04	514	4.82E-04	581	6.07E-04	648	3.03E-04	715	4.61E-05
381	4.70E-06	448	7.91E-04	515	4.88E-04	582	6.07E-04	649	2.96E-04	716	4.47E-05
382	4.90E-06	449	8.70E-04	516	4.94E-04	583	6.09E-04	650	2.89E-04	717	4.31E-05
383	5.10E-06	450	9.18E-04	517	4.97E-04	584	6.07E-04	651	2.82E-04	718	4.23E-05
384	4.30E-06	451	9.61E-04	518	5.05E-04	585	6.09E-04	652	2.76E-04	719	4.08E-05
385	4.20E-06	452	9.89E-04	519	5.10E-04	586	6.08E-04	653	2.70E-04	720	3.97E-05
386	4.30E-06	453	9.94E-04	520	5.14E-04	587	6.07E-04	654	2.62E-04	721	3.80E-05
387	4.30E-06	454	9.87E-04	521	5.16E-04	588	6.07E-04	655	2.56E-04	722	3.71E-05
388	4.80E-06	455	9.54E-04	522	5.20E-04	589	6.06E-04	656	2.51E-04	723	3.57E-05
389	5.50E-06	456	9.17E-04	523	5.20E-04	590	6.04E-04	657	2.44E-04	724	3.47E-05
390	4.60E-06	457	8.59E-04	524	5.24E-04	591	6.00E-04	658	2.38E-04	725	3.37E-05
391	4.70E-06	458	7.93E-04	525	5.29E-04	592	6.02E-04	659	2.33E-04	726	3.25E-05
392	5.20E-06	459	7.35E-04	526	5.30E-04	593	6.01E-04	660	2.25E-04	727	3.16E-05
393	5.20E-06	460	6.78E-04	527	5.33E-04	594	6.02E-04	661	2.21E-04	728	3.06E-05
394	4.90E-06	461	6.36E-04	528	5.35E-04	595	5.99E-04	662	2.15E-04	729	2.97E-05
395	5.10E-06	462	5.94E-04	529	5.38E-04	596	5.97E-04	663	2.09E-04	730	2.89E-05
396	5.40E-06	463	5.61E-04	530	5.41E-04	597	5.95E-04	664	2.03E-04	731	2.80E-05
397	6.20E-06	464	5.39E-04	531	5.42E-04	598	5.95E-04	665	1.99E-04	732	2.69E-05
398	6.30E-06	465	5.22E-04	532	5.44E-04	599	5.90E-04	666	1.93E-04	733	2.61E-05
399	6.50E-06	466	5.02E-04	533	5.44E-04	600	5.90E-04	667	1.88E-04	734	2.54E-05
400	7.00E-06	467	4.86E-04	534	5.48E-04	601	5.86E-04	668	1.83E-04	735	2.44E-05
401	7.80E-06	468	4.65E-04	535	5.47E-04	602	5.82E-04	669	1.78E-04	736	2.38E-05
402	7.90E-06	469	4.43E-04	536	5.49E-04	603	5.79E-04	670	1.73E-04	737	2.29E-05
403	9.10E-06	470	4.22E-04	537	5.50E-04	604	5.77E-04	671	1.68E-04	738	2.23E-05
404	9.80E-06	471	3.81E-04	538	5.49E-04	605	5.74E-04	672	1.64E-04	739	2.17E-05
405	1.05E-05	472	3.59E-04	539	5.52E-04	606	5.70E-04	673	1.59E-04	740	2.11E-05
406	1.12E-05	473	3.38E-04	540	5.56E-04	607	5.67E-04	674	1.55E-04	741	2.04E-05
407	1.25E-05	474	3.16E-04	541	5.58E-04	608	5.61E-04	675	1.51E-04	742	1.97E-05
408	1.39E-05	475	2.98E-04	542	5.56E-04	609	5.59E-04	676	1.46E-04	743	1.93E-05
409	1.55E-05	476	2.84E-04	543	5.59E-04	610	5.56E-04	677	1.43E-04	744	1.86E-05
410	1.77E-05	477	2.74E-04	544	5.59E-04	611	5.51E-04	678	1.38E-04	745	1.80E-05
411	1.94E-05	478	2.63E-04	545	5.61E-04	612	5.46E-04	679	1.34E-04	746	1.75E-05
412	2.19E-05	479	2.58E-04	546	5.61E-04	613	5.43E-04	680	1.31E-04	747	1.71E-05
413	2.50E-05	480	2.54E-04	547	5.63E-04	614	5.36E-04	681	1.26E-04	748	1.66E-05
414	2.80E-05	481	2.50E-04	548	5.67E-04	615	5.26E-04	682	1.23E-04	749	1.61E-05
415	3.15E-05	482	2.49E-04	549	5.69E-04	616	5.22E-04	683	1.20E-04	750	1.57E-05
416	3.45E-05	483	2.49E-04	550	5.70E-04	617	5.14E-04	684	1.16E-04	751	1.52E-05
417	3.86E-05	484	2.52E-04	551	5.69E-04	618	5.11E-04	685	1.13E-04	752	1.46E-05
418	4.27E-05	485	2.54E-04	552	5.72E-04	619	5.04E-04	686	1.10E-04	753	1.44E-05
419	4.80E-05	486	2.56E-04	553	5.76E-04	620	4.99E-04	687	1.07E-04	754	1.38E-05
420	5.36E-05	487	2.59E-04	554	5.75E-04	621	4.92E-04	688	1.04E-04	755	1.36E-05
421	5.75E-05	488	2.65E-04	555	5.79E-04	622	4.85E-04	689	1.00E-04	756	1.31E-05
422	6.44E-05	489	2.66E-04	556	5.80E-04	623	4.78E-04	690	9.80E-05	757	1.25E-05
423	7.25E-05	490	2.73E-04	557	5.81E-04	624	4.73E-04	691	9.51E-05	758	1.23E-05
424	7.92E-05	491	2.79E-04	558	5.83E-04	625	4.65E-04	692	9.23E-05	759	1.20E-05
425	8.85E-05	492	2.86E-04	559	5.82E-04	626	4.59E-04	693	8.97E-05	760	1.16E-05
426	9.77E-05	493	2.91E-04	560	5.86E-04	627	4.52E-04	694	8.69E-05	761	1.14E-05
427	1.08E-04	494	3.02E-04	561	5.85E-04	628	4.46E-04	695	8.43E-05	762	1.09E-05
428	1.21E-04	495	3.12E-04	562	5.87E-04	629	4.40E-04	696	8.20E-05	763	1.08E-05
429	1.33E-04	496	3.20E-04	563	5.89E-04	630	4.33E-04	697	7.98E-05	764	1.04E-05
430	1.46E-04	497	3.30E-04	564	5.89E-04	631	4.26E-04	698	7.69E-05	765	1.03E-05
431	1.57E-04	498	3.40E-04	565	5.92E-04	632	4.20E-04	699	7.50E-05	766	1.01E-05
432	1.73E-04	499	3.50E-04	566	5.94E-04	633	4.11E-04	700	7.30E-05	767	9.70E-06
433	1.92E-04	500	3.61E-04	567	5.94E-04	634	4.05E-04	701	7.05E-05	768	9.50E-06
434	2.11E-04	501	3.70E-04	568	5.96E-04	635	3.97E-04	702	6.87E-05	769	9.10E-06
435	2.30E-04	502	3.81E-04	569	5.98E-04	636	3.91E-04	703	6.63E-05	770	8.80E-06
436	2.51E-04	503	3.90E-04	570	5.99E-04	637	3.84E-04	704	6.48E-05	771	8.60E-06
437	2.76E-04	504	4.01E-04	571	6.00E-04	638	3.76E-04	705	6.28E-05	772	8.30E-06
438	3.00E-04	505	4.07E-04	572	5.99E-04	639	3.70E-04	706	6.08E-05	773	8.60E-06
439	3.31E-04	506	4.18E-04	573	6.01E-04	640	3.63E-04	707	5.88E-05	774	8.00E-06
440	3.55E-04	507	4.30E-04	574	6.01E-04	641	3.51E-04	708	5.71E-05	775	8.20E-06
441	3.98E-04	508	4.38E-04	575	6.01E-04	642	3.45E-04	709	5.52E-05	776	7.70E-06
442	4.39E-04	509	4.45E-04	576	6.04E-04	643	3.38E-04	710	5.36E-05	777	7.60E-06
443	4.86E-04	510	4.53E-04	577	6.04E-04	644	3.31E-04	711	5.20E-05	778	7.10E-06
444	5.41E-04	511	4.62E-04	578	6.04E-04	645	3.24E-04	712	5.08E-05	779	7.10E-06
445	5.96E-04	512	4.69E-04	579	6.06E-04	646	3.16E-04	713	4.87E-05	780	7.10E-06
446	6.59E-04	513	4.75E-04	580	6.07E-04	647	3.10E-04	714	4.74E-05	N/A	N/A

4.0 LM-79 Measurement and Test Results

4.2 Goniophotometer Test

Model No.	VXRGB @18W5000K	Sample ID	240715001-S1
Operate time (Min.)	30	Stabilization time (Min.)	60
Temperature (°C)	25.0	Humidity (%RH)	42.0

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	0.081	19.2	0.858
NON-WORST CASE	120.0	60	0.156	18.5	0.989

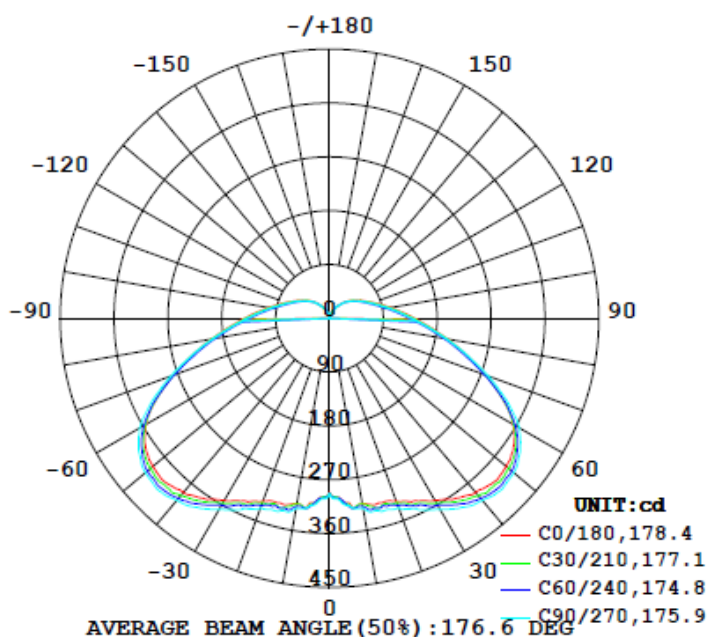
Test Result

Flux (lm)	Field Angle (10%)		Beam Angle (50%)		Luminous Efficacy (lm/W)	Zonal Lumen Requirement	BUG
	C0-180	C90-270	C0-180	C90-270		(0°-90°)	
2294	180.0	180.0	146.1	159.8	119.5	83.1%	B1-U3-G1

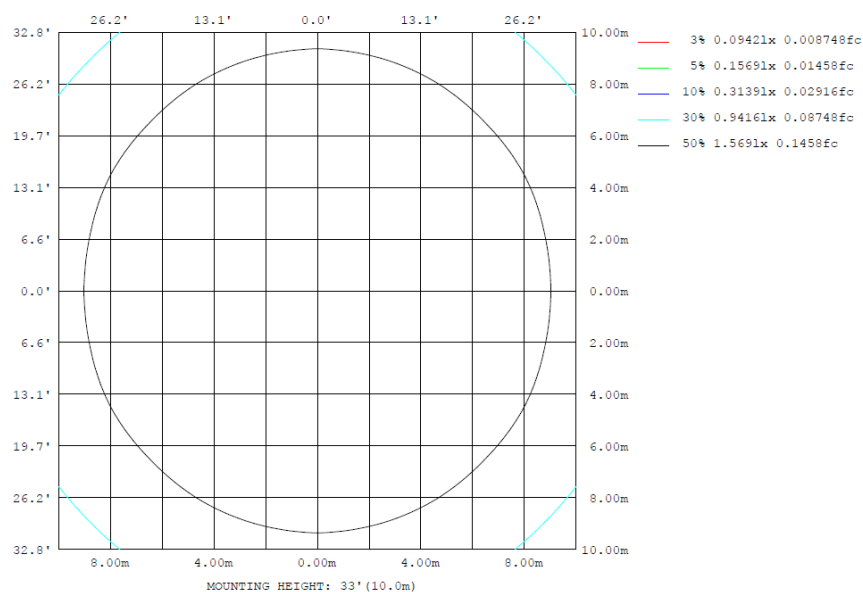
4.2 Goniophotometer Test

Lighting Distribution Curve

LUMINOUS INTENSITY DISTRIBUTION DIAGRAM



Isolux Plot



4.2 Goniophotometer Test

Zonal Lumen Summary

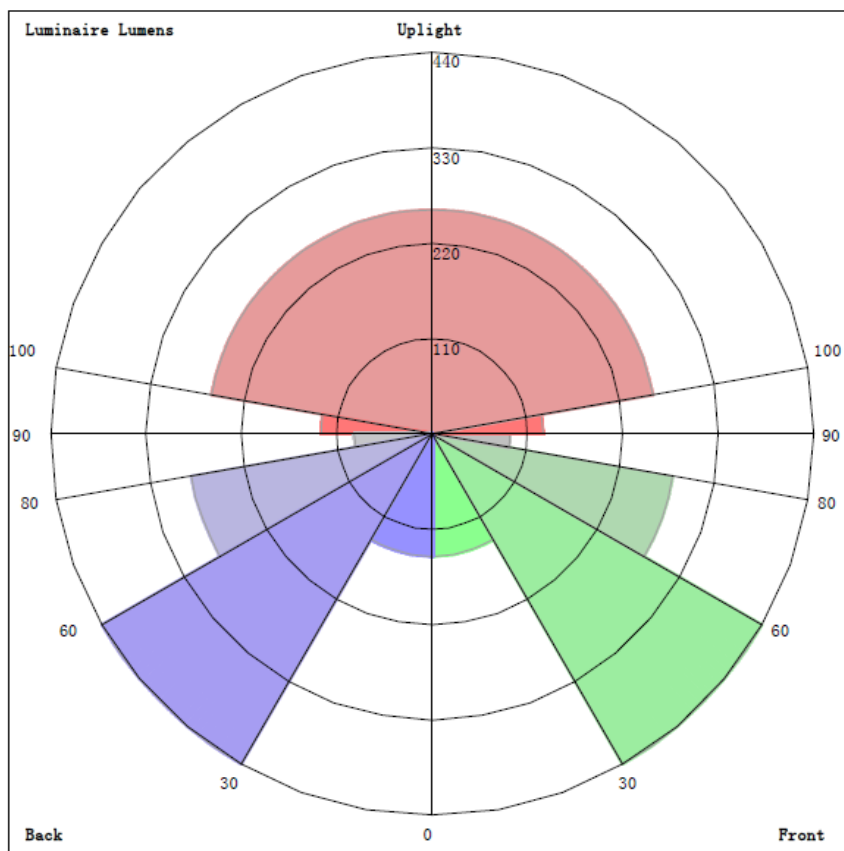
ZONAL FLUX DIAGRAM:

γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	zone	total	lum, lamp
10	315.2	318.1	322.5	318.1	315.2	318.1	322.5	318.1	0- 10	29.97	29.97	1.31,1.31
20	325.5	331.4	337.6	331.4	325.5	331.4	337.6	331.4	10- 20	92.55	122.5	5.34,5.34
30	351.7	356.7	368.9	356.7	351.7	356.7	368.9	356.7	20- 30	159.9	282.4	12.3,12.3
40	380.1	387.8	397.5	387.8	380.1	387.8	397.5	387.8	30- 40	236.1	518.5	22.6,22.6
50	385.4	392.0	401.7	392.0	385.4	392.0	401.7	392.0	40- 50	305.2	823.7	35.9,35.9
60	354.1	353.4	366.2	353.4	354.1	353.4	366.2	353.4	50- 60	339.5	1163	50.7,50.7
70	277.8	271.5	282.1	271.5	277.8	271.5	282.1	271.5	60- 70	316.1	1479	64.5,64.5
80	200.5	191.2	198.2	191.2	200.5	191.2	198.2	191.2	70- 80	248.7	1728	75.3,75.3
90	141.9	132.8	137.6	132.8	141.9	132.8	137.6	132.8	80- 90	179.6	1908	83.1,83.1
100	104.2	95.67	99.64	95.67	104.2	95.67	99.64	95.67	90-100	128.0	2036	88.7,88.7
110	77.53	71.54	74.04	71.54	77.53	71.54	74.04	71.54	100-110	90.95	2127	92.7,92.7
120	60.02	56.03	57.66	56.03	60.02	56.03	57.66	56.03	110-120	65.19	2192	95.5,95.5
130	46.22	43.95	44.56	43.95	46.22	43.95	44.56	43.95	120-130	46.08	2238	97.5,97.5
140	32.83	32.33	32.05	32.33	32.83	32.33	32.05	32.33	130-140	30.19	2268	98.9,98.9
150	20.31	20.52	20.24	20.52	20.31	20.52	20.24	20.52	140-150	16.56	2285	99.6,99.6
160	10.70	10.93	10.96	10.93	10.70	10.93	10.96	10.93	150-160	7.226	2292	99.9,99.9
170	5.197	4.885	5.128	4.885	5.197	4.885	5.128	4.885	160-170	2.283	2294	100,100
180	0.4473	0.4503	0.4476	0.4503	0.4473	0.4503	0.4476	0.4503	170-180	0.2781	2294	100,100
DEG	LUMINOUS INTENSITY:cd									UNIT:lm		

	Zonal (lm)		Total (lm)	Percent
0-10	29.97	0-10	29.97	1.31%
10-20	92.55	0-20	122.52	5.34%
20-30	159.90	0-30	282.42	12.31%
30-40	236.11	0-40	518.53	22.60%
40-50	305.17	0-50	823.70	35.91%
50-60	339.53	0-60	1163.23	50.71%
60-70	316.11	0-70	1479.34	64.49%
70-80	248.67	0-80	1728.01	75.33%
80-90	179.55	0-90	1907.56	83.15%
90-100	127.98	0-100	2035.54	88.73%
100-110	90.95	0-110	2126.49	92.70%
110-120	65.19	0-120	2191.68	95.54%
120-130	46.08	0-130	2237.76	97.55%
130-140	30.19	0-140	2267.95	98.86%
140-150	16.56	0-150	2284.51	99.59%
150-160	7.23	0-160	2291.74	99.90%
160-170	2.28	0-170	2294.02	100.00%
170-180	0.28	0-180	2294.30	100.01%

4.2 Goniophotometer Test

LCS/BUG

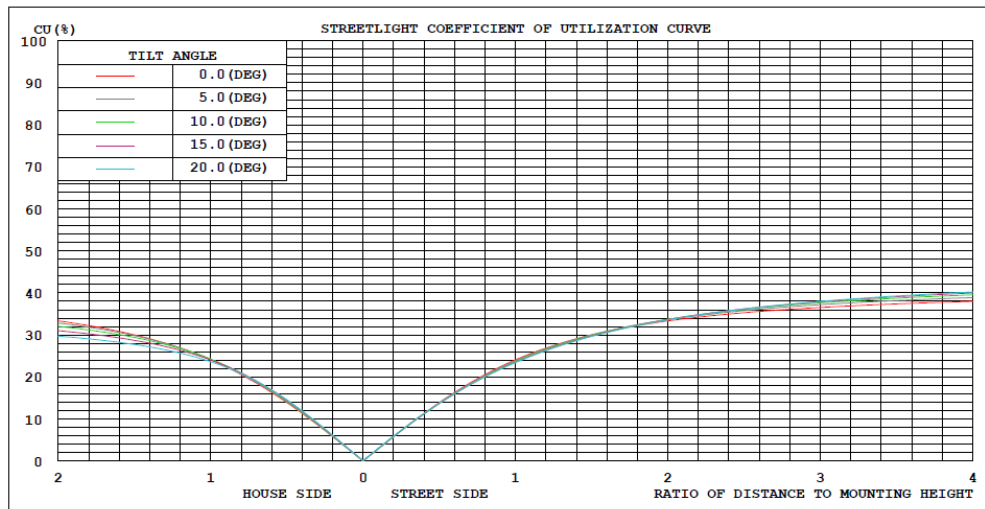


LUMINAIRE CLASSIFICATION SYSTEM (LCS)

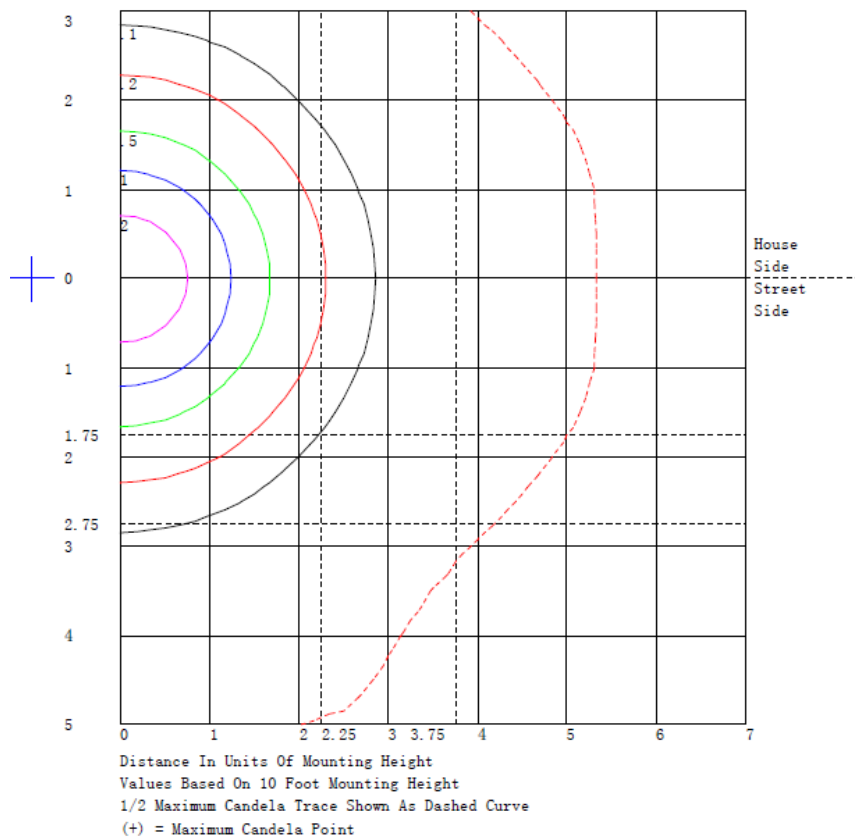
	Lumens	% Lamp	% Luminaire
FL - Front-Low (0-30)	141.2	N.A.	6.2
FM - Front-Medium (30-60)	440.4	N.A.	19.2
FH - Front-High (60-80)	282.4	N.A.	12.3
FVH - Front-Very High (80-90)	89.8	N.A.	3.9
BL - Back-Low (0-30)	141.2	N.A.	6.2
BM - Back-Medium (30-60)	440.4	N.A.	19.2
BH - Back-High (60-80)	282.4	N.A.	12.3
BVH - Back-Very High (80-90)	89.8	N.A.	3.9
UL - Uplight-Low (90-100)	128.0	N.A.	5.6
UH - Uplight-High (100-180)	258.8	N.A.	11.3
Total	2294.4	N.A.	100.0
BUG Rating	B1-U3-G1		

4.2 Goniophotometer Test

Coefficients of Utilization



Isolines



4.2 Goniophotometer Test

Luminous Distribution Intensity Data

Table--1

UNIT: cd

C (DEG)	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
γ (DEG)	0	291	291	291	291	291	292	292	292	292	292	293	293	293	293	293	293	293	294
5	310	309	308	308	308	310	311	311	311	311	311	311	311	311	312	312	313	313	314
10	315	317	318	318	317	317	316	316	317	318	319	319	320	321	322	322	323	323	323
15	320	321	322	323	325	326	327	327	326	326	326	327	328	329	330	331	332	333	334
20	325	325	326	326	327	328	328	329	330	331	332	332	333	335	336	338	338	338	338
25	337	337	338	339	340	341	342	342	342	343	344	345	346	348	349	351	352	352	353
30	352	351	351	352	353	355	357	357	357	357	358	359	361	363	364	366	367	368	369
35	367	368	369	370	371	373	374	374	375	375	376	378	379	381	382	384	384	385	386
40	380	379	379	380	382	385	387	387	388	388	389	391	393	394	395	396	396	397	398
45	388	387	387	387	388	390	392	393	394	395	397	398	400	401	401	402	403	404	406
50	385	385	385	386	387	389	391	391	391	392	394	396	397	398	399	400	400	401	402
55	375	374	374	375	376	378	380	379	378	378	379	381	383	385	386	387	388	388	389
60	354	353	353	353	354	355	356	355	354	353	355	356	358	360	362	363	364	365	366
65	319	319	318	318	319	320	320	318	316	314	316	318	320	322	324	325	325	326	327
70	278	277	276	276	276	277	277	275	273	271	272	273	275	277	279	280	281	282	282
75	237	236	236	236	236	237	236	234	232	230	230	231	232	234	236	238	238	238	238
80	200	200	199	199	199	200	199	197	194	191	191	192	194	196	198	199	199	199	198
85	168	167	167	166	166	166	166	164	161	159	159	159	161	162	163	164	164	164	164
90	142	141	141	140	140	140	140	138	135	133	132	133	134	135	137	138	138	138	138
95	121	121	120	120	120	119	119	117	115	113	112	112	113	114	116	117	117	117	116
100	104	103	103	102	102	102	102	99.9	97.6	95.7	95.3	95.6	96.3	97.4	98.5	99.5	99.7	99.7	99.6
105	89.2	88.7	88.3	87.9	87.7	87.5	87.0	85.3	83.6	82.1	81.8	81.9	82.5	83.4	84.5	85.4	85.4	85.3	85.2
110	77.5	77.1	76.7	76.5	76.5	76.4	76.0	74.5	72.9	71.5	71.3	71.4	71.9	72.9	73.8	74.6	74.6	74.3	74.0
115	67.9	67.5	67.1	66.9	67.0	67.0	66.8	65.6	64.2	63.0	62.8	63.0	63.4	64.2	64.9	65.5	65.5	65.2	65.0
120	60.0	59.6	59.3	59.1	59.1	59.1	58.9	57.9	56.9	56.0	55.9	56.1	56.4	56.9	57.3	57.7	57.8	57.7	57.7
125	52.8	52.5	52.3	52.1	52.0	51.9	51.7	51.0	50.2	49.6	49.6	49.8	50.2	50.4	50.7	50.9	51.0	51.1	51.1
130	46.2	45.9	45.7	45.6	45.7	45.7	45.7	45.1	44.5	43.9	43.9	44.0	44.2	44.5	44.7	45.0	44.9	44.7	44.6
135	39.7	39.5	39.4	39.3	39.2	39.2	39.1	38.8	38.6	38.3	38.4	38.5	38.7	38.7	38.8	38.8	38.8	38.8	38.7
140	32.8	32.6	32.5	32.5	32.5	32.6	32.7	32.6	32.5	32.3	32.3	32.4	32.4	32.4	32.4	32.4	32.2	32.2	32.1
145	26.0	25.9	25.8	25.8	25.9	26.0	26.1	26.1	26.0	26.0	26.0	26.1	26.2	26.1	26.0	25.9	25.8	25.8	25.7
150	20.3	20.2	20.1	20.1	20.1	20.2	20.3	20.4	20.5	20.5	20.5	20.6	20.5	20.5	20.4	20.3	20.3	20.3	20.2
155	15.0	14.9	14.9	14.9	15.0	15.1	15.2	15.2	15.3	15.3	15.4	15.4	15.4	15.4	15.3	15.3	15.2	15.2	15.2
160	10.7	10.7	10.7	10.7	10.7	10.8	10.8	10.8	10.9	10.9	10.9	10.9	10.9	10.9	10.9	10.9	10.9	10.9	11.0
165	7.56	7.54	7.52	7.51	7.50	7.50	7.52	7.58	7.65	7.72	7.75	7.76	7.75	7.73	7.70	7.69	7.74	7.80	7.87
170	5.20	5.08	5.00	4.95	4.97	5.00	5.03	4.99	4.93	4.89	4.87	4.88	4.91	4.99	5.08	5.16	5.15	5.14	5.13
175	1.38	1.41	1.42	1.41	1.37	1.31	1.24	1.18	1.11	1.06	1.04	1.03	1.04	1.07	1.11	1.16	1.19	1.22	1.24
180	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45

C (DEG)		UNIT: cd																		
y	(DEG)	95	100	105	110	115	120	125	130	135	140	145	150	155	160	165	170	175	180	185
	0	293	293	293	293	293	293	293	292	292	292	292	292	292	291	291	291	291	291	291
	5	313	313	312	312	311	311	311	311	311	311	311	311	310	308	308	308	309	310	309
	10	323	323	323	322	321	320	319	319	318	317	316	316	317	317	318	318	317	315	317
	15	333	332	331	330	329	328	327	326	326	327	327	327	326	325	323	322	321	320	321
	20	338	338	338	336	335	333	332	332	331	330	329	328	328	327	326	326	325	325	325
	25	352	352	351	349	348	346	345	344	343	342	342	342	341	340	339	338	337	337	337
	30	368	367	366	364	363	361	359	358	357	357	357	357	355	353	352	351	351	352	351
	35	385	384	384	382	381	379	378	376	375	375	374	374	373	371	370	369	368	367	368
	40	397	396	396	395	394	393	391	389	388	388	387	387	385	382	380	379	379	380	379
	45	404	403	402	401	401	400	398	397	395	395	394	393	392	390	388	387	387	388	387
	50	401	400	400	399	398	397	396	394	392	391	391	391	389	387	386	385	385	385	385
	55	388	388	387	386	385	383	381	379	378	378	379	380	378	376	375	374	374	375	374
	60	365	364	363	362	360	358	356	355	353	354	355	356	355	354	353	353	353	354	353
	65	326	325	325	324	322	320	318	316	314	316	318	320	320	319	318	318	319	319	319
	70	282	281	280	279	277	275	273	272	271	273	275	277	277	276	276	276	277	278	277
	75	238	238	238	236	234	232	231	230	230	232	234	236	237	236	236	236	236	237	236
	80	199	199	199	198	196	194	192	191	191	194	197	199	200	199	199	199	200	200	200
	85	164	164	164	163	162	161	159	159	159	161	164	166	166	166	166	167	167	168	167
	90	138	138	138	137	135	134	133	132	133	135	138	140	140	140	140	141	141	142	141
	95	117	117	117	116	114	113	112	112	113	115	117	119	120	120	120	120	121	121	121
	100	99.7	99.7	99.5	98.5	97.4	96.3	95.6	95.3	95.7	97.6	99.9	102	102	102	102	103	103	104	103
	105	85.3	85.4	85.4	84.5	83.4	82.5	81.9	81.8	82.1	83.6	85.3	87.0	87.5	87.7	87.9	88.3	88.7	89.2	88.7
	110	74.3	74.6	74.6	73.8	72.9	71.9	71.4	71.3	71.5	72.9	74.5	76.0	76.4	76.5	76.5	76.7	77.1	77.5	77.1
	115	65.2	65.5	65.5	64.9	64.2	63.4	63.0	62.8	63.0	64.2	65.6	66.8	67.0	67.0	66.9	67.1	67.5	67.9	67.5
	120	57.7	57.8	57.7	57.3	56.9	56.4	56.1	55.9	56.0	56.9	57.9	58.9	59.1	59.1	59.1	59.3	59.6	60.0	59.6
	125	51.1	51.0	50.9	50.7	50.4	50.2	49.8	49.6	49.6	50.2	51.0	51.7	51.9	52.0	52.1	52.3	52.5	52.8	52.5
	130	44.7	44.9	45.0	44.7	44.5	44.2	44.0	43.9	43.9	44.5	45.1	45.7	45.7	45.7	45.6	45.7	45.9	46.2	45.9
	135	38.8	38.8	38.8	38.8	38.7	38.7	38.5	38.4	38.3	38.6	38.8	39.1	39.2	39.2	39.3	39.4	39.5	39.7	39.5
	140	32.1	32.2	32.2	32.3	32.4	32.4	32.4	32.3	32.3	32.5	32.6	32.7	32.6	32.5	32.5	32.5	32.6	32.8	32.6
	145	25.8	25.8	25.9	26.0	26.1	26.2	26.1	26.0	26.0	26.0	26.1	26.1	26.0	25.9	25.8	25.8	25.9	26.0	25.9
	150	20.3	20.3	20.3	20.4	20.5	20.5	20.6	20.5	20.5	20.5	20.4	20.3	20.2	20.1	20.1	20.1	20.2	20.3	20.2
	155	15.2	15.2	15.3	15.3	15.4	15.4	15.4	15.4	15.3	15.3	15.2	15.2	15.1	15.0	14.9	14.9	14.9	15.0	14.9
	160	10.9	10.9	10.9	10.9	10.9	10.9	10.9	10.9	10.9	10.9	10.8	10.8	10.8	10.7	10.7	10.7	10.7	10.7	10.7
	165	7.80	7.74	7.69	7.70	7.73	7.75	7.76	7.75	7.72	7.65	7.58	7.52	7.50	7.50	7.51	7.52	7.54	7.56	7.54
	170	5.14	5.15	5.16	5.08	4.99	4.91	4.88	4.87	4.89	4.93	4.99	5.03	5.00	4.97	4.95	5.00	5.08	5.20	5.08
	175	1.22	1.19	1.16	1.11	1.07	1.04	1.03	1.04	1.06	1.11	1.18	1.24	1.31	1.37	1.41	1.42	1.41	1.38	1.41
	180	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45

Table--3

UNIT: cd

C (DEG) y (DEG)	190	195	200	205	210	215	220	225	230	235	240	245	250	255	260	265	270	275	280
0	291	291	291	292	292	292	292	292	292	293	293	293	293	293	293	293	293	293	293
5	308	308	308	310	311	311	311	311	311	311	311	312	312	312	313	313	314	313	313
10	318	318	317	317	316	316	317	318	319	319	320	321	322	323	323	323	323	323	323
15	322	323	325	326	327	327	326	326	326	327	328	329	330	331	332	333	333	333	332
20	326	326	327	328	328	329	330	331	332	332	333	335	336	338	338	338	338	338	338
25	338	339	340	341	342	342	343	344	345	346	348	349	351	352	352	353	352	352	352
30	351	352	353	355	357	357	357	358	359	361	363	364	366	367	368	369	368	368	367
35	369	370	371	373	374	374	375	375	376	378	379	381	382	384	384	385	386	385	384
40	379	380	382	385	387	387	388	388	389	391	393	394	395	396	396	397	398	397	396
45	387	387	388	390	392	393	394	395	397	398	400	401	401	402	403	404	406	404	403
50	385	386	387	389	391	391	391	392	394	396	397	398	399	400	400	401	402	401	400
55	374	375	376	378	380	379	378	378	379	381	383	385	386	387	388	388	389	388	388
60	353	353	354	355	356	355	354	353	355	356	358	360	362	363	364	365	366	365	364
65	318	318	319	320	320	318	316	314	316	318	320	322	324	325	325	326	327	326	325
70	276	276	276	277	277	275	273	271	272	273	275	277	279	280	281	282	282	282	281
75	236	236	236	237	236	234	232	230	230	231	232	234	236	238	238	238	238	238	238
80	199	199	199	200	199	197	194	191	191	192	194	196	198	199	199	199	199	199	199
85	167	166	166	166	166	164	161	159	159	159	161	162	163	164	164	164	164	164	164
90	141	140	140	140	140	138	135	133	132	133	134	135	137	138	138	138	138	138	138
95	120	120	120	119	119	117	115	113	112	112	113	114	116	117	117	117	116	116	117
100	103	102	102	102	102	99.9	97.6	95.7	95.3	95.6	96.3	97.4	98.5	99.5	99.7	99.7	99.6	99.7	99.7
105	88.3	87.9	87.7	87.5	87.0	85.3	83.6	82.1	81.8	81.9	82.5	83.4	84.5	85.4	85.4	85.3	85.2	85.3	85.4
110	76.7	76.5	76.5	76.4	76.0	74.5	72.9	71.5	71.3	71.4	71.9	72.9	73.8	74.6	74.6	74.3	74.0	74.3	74.6
115	67.1	66.9	67.0	67.0	66.8	65.6	64.2	63.0	62.8	63.0	63.4	64.2	64.9	65.5	65.5	65.2	65.0	65.2	65.5
120	59.3	59.1	59.1	59.1	58.9	57.9	56.9	56.0	55.9	56.1	56.4	56.9	57.3	57.7	57.8	57.7	57.7	57.7	57.8
125	52.3	52.1	52.0	51.9	51.7	51.0	50.2	49.6	49.6	49.8	50.2	50.4	50.7	50.9	51.0	51.1	51.1	51.1	51.0
130	45.7	45.6	45.7	45.7	45.7	45.1	44.5	43.9	43.9	44.0	44.2	44.5	44.7	45.0	44.9	44.7	44.6	44.7	44.9
135	39.4	39.3	39.2	39.2	39.1	38.8	38.6	38.3	38.4	38.5	38.7	38.7	38.8	38.8	38.8	38.8	38.7	38.8	38.8
140	32.5	32.5	32.5	32.6	32.7	32.6	32.5	32.3	32.3	32.4	32.4	32.4	32.3	32.2	32.2	32.1	32.1	32.1	32.2
145	25.8	25.8	25.9	26.0	26.1	26.1	26.0	26.0	26.0	26.1	26.2	26.1	26.0	25.9	25.8	25.8	25.7	25.8	25.8
150	20.1	20.1	20.1	20.2	20.3	20.4	20.5	20.5	20.5	20.6	20.5	20.5	20.4	20.3	20.3	20.3	20.2	20.3	20.3
155	14.9	14.9	15.0	15.1	15.2	15.2	15.3	15.3	15.4	15.4	15.4	15.4	15.3	15.3	15.2	15.2	15.2	15.2	15.2
160	10.7	10.7	10.7	10.8	10.8	10.8	10.9	10.9	10.9	10.9	10.9	10.9	10.9	10.9	10.9	10.9	11.0	10.9	10.9
165	7.52	7.51	7.50	7.50	7.52	7.58	7.65	7.72	7.75	7.76	7.75	7.73	7.70	7.69	7.74	7.80	7.87	7.80	7.74
170	5.00	4.95	4.97	5.00	5.03	4.99	4.93	4.89	4.87	4.88	4.91	4.99	5.08	5.16	5.15	5.14	5.13	5.14	5.15
175	1.42	1.41	1.37	1.31	1.24	1.18	1.11	1.06	1.04	1.03	1.04	1.07	1.11	1.16	1.19	1.22	1.24	1.22	1.19
180	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45

																UNIT: cd				
C (DEG) y (DEG)		285	290	295	300	305	310	315	320	325	330	335	340	345	350	355				
0		293	293	293	293	293	292	292	292	292	292	292	291	291	291	291				
5		312	312	311	311	311	311	311	311	311	311	310	308	308	308	309				
10		323	322	321	320	319	319	318	317	316	316	317	317	318	318	317				
15		331	330	329	328	327	326	326	326	327	327	326	325	323	322	321				
20		338	336	335	333	332	332	331	330	329	328	328	327	326	326	325				
25		351	349	348	346	345	344	343	342	342	342	341	340	339	338	337				
30		366	364	363	361	359	358	357	357	357	357	355	353	352	351	351				
35		384	382	381	379	378	376	375	375	374	374	373	371	370	369	368				
40		396	395	394	393	391	389	388	388	387	387	385	382	380	379	379				
45		402	401	401	400	398	397	395	394	393	392	390	388	387	387	387				
50		400	399	398	397	396	394	392	391	391	391	389	387	386	385	385				
55		387	386	385	383	381	379	378	378	379	380	378	376	375	374	374				
60		363	362	360	358	356	355	353	354	355	356	355	354	353	353	353				
65		325	324	322	320	318	316	314	316	318	320	320	319	318	318	319				
70		280	279	277	275	273	272	271	273	275	277	277	276	276	276	277				
75		238	236	234	232	231	230	230	232	234	236	237	236	236	236	236				
80		199	198	196	194	192	191	191	194	197	199	200	199	199	199	200				
85		164	163	162	161	159	159	159	161	164	166	166	166	166	167	167				
90		138	137	135	134	133	132	133	135	138	140	140	140	140	141	141				
95		117	116	114	113	112	112	113	115	117	119	119	120	120	120	121				
100		99.5	98.5	97.4	96.3	95.6	95.3	95.7	97.6	99.9	102	102	102	102	103	103				
105		85.4	84.5	83.4	82.5	81.9	81.8	82.1	83.6	85.3	87.0	87.5	87.7	87.9	88.3	88.7				
110		74.6	73.8	72.9	71.9	71.4	71.3	71.5	72.9	74.5	76.0	76.4	76.5	76.5	76.7	77.1				
115		65.5	64.9	64.2	63.4	63.0	62.8	63.0	64.2	65.6	66.8	67.0	67.0	66.9	67.1	67.5				
120		57.7	57.3	56.9	56.4	56.1	55.9	56.0	56.9	57.9	58.9	59.1	59.1	59.1	59.3	59.6				
125		50.9	50.7	50.4	50.2	49.8	49.6	49.6	50.2	51.0	51.7	51.9	52.0	52.1	52.3	52.5				
130		45.0	44.7	44.5	44.2	44.0	43.9	43.9	44.5	45.1	45.7	45.7	45.7	45.6	45.7	45.9				
135		38.8	38.8	38.7	38.7	38.5	38.4	38.3	38.6	38.8	39.1	39.2	39.2	39.3	39.4	39.5				
140		32.2	32.3	32.4	32.4	32.4	32.3	32.3	32.5	32.6	32.7	32.6	32.5	32.5	32.5	32.6				
145		25.9	26.0	26.1	26.2	26.1	26.0	26.0	26.0	26.0	26.0	25.9	25.9	25.8	25.8	25.9				
150		20.3	20.4	20.5	20.5	20.6	20.5	20.5	20.5	20.4	20.3	20.2	20.1	20.1	20.1	20.2				
155		15.3	15.3	15.4	15.4	15.4	15.4	15.3	15.3	15.2	15.2	15.1	15.0	14.9	14.9	14.9				
160		10.9	10.9	10.9	10.9	10.9	10.9	10.9	10.9	10.8	10.8	10.8	10.7	10.7	10.7	10.7				
165		7.69	7.70	7.73	7.75	7.76	7.75	7.72	7.65	7.58	7.52	7.50	7.50	7.51	7.52	7.54				
170		5.16	5.08	4.99	4.91	4.88	4.87	4.89	4.93	4.99	5.03	5.00	4.97	4.95	5.00	5.08				
175		1.16	1.11	1.07	1.04	1.03	1.04	1.06	1.11	1.18	1.24	1.31	1.37	1.41	1.42	1.41				
180		0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45				

4.0 LM-79 Measurement and Test Results

4.3 THD and PF Test

Model No.	VXRGB @18W5000K	Sample ID	240715001-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	0.156	18.5	0.989	4.91
277.0	60	0.081	19.2	0.858	17.77

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*****