

Photometric Test Report

Relevant Standards

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

Prepared For

RAB Lighting Inc.

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Prepared By

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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		3151
Minimum Luminaire Efficacy (lm/W) (Goniophotometer – Section 4.2)		ANSI/IES LM-79:2019	Standard	Premium	112.9
			105	120	
Power (Input Wattage) (W) (Goniophotometer – Section 4.2)		ANSI/IES LM-79:2019	Worst Case		27.9
Total Harmonic Distortion (A%) (THD & PF – Section 4.3)		ANSI C82.77:2002 ANSI C82-77-10:2020	20.00%	120V	7.43
				277V	12.70
Power Factor (THD & PF – Section 4.3)		ANSI C82.77:2002 ANSI C82-77-10:2020	0.9	120V	0.993
				277V	0.908
Allowable CCTs* (K) (Integrating Sphere – Section 4.1)		ANSI/IES LM-79:2019	7 steps	5029±283	5060
			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%		83.2%
Backlight, Uplight and Glare (BUG) Ratings (Goniophotometer – Section 4.2)		ANSI/IES LM-79:2019 IES TM-15-11	N/A		B1-U3-G2
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		0.111
(Goniophotometer – Section 4.2)			Non-Worst Case		0.231
Power (Input Wattage – W)					
(Goniophotometer – Section 4.2)		ANSI/IES LM-79:2019	Worst Case		27.9
(Goniophotometer – Section 4.2)			Non-Worst Case		27.5

2.0 Test List

Test Item	Test	Test Date	Model Number	Build Level	Sample No.
1	Integrating Sphere Test	2024-07-15	VXRGB @26W5000K	-	240715001-S1
2	Goniophotometer Test	2024-07-15	VXRGB @26W5000K	-	240715001-S1
3	THD and PF Test	2024-07-15	VXRGB @26W5000K	-	240715001-S1

Remark (If any):

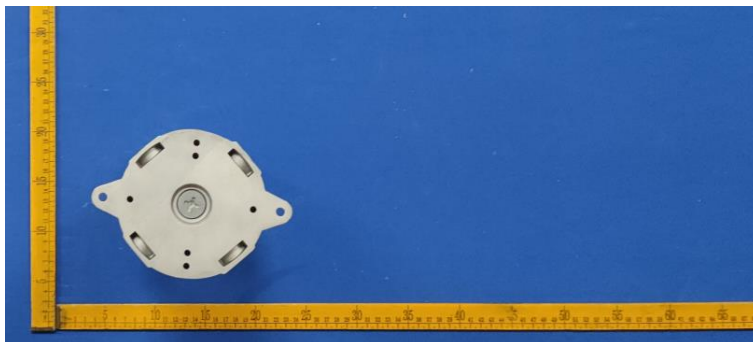
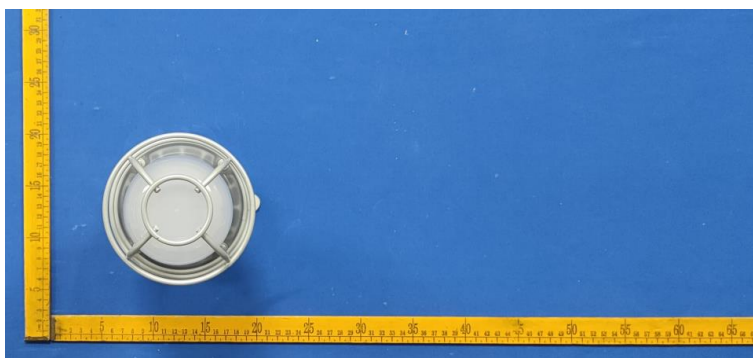
1. The results contained in this report pertain only to the tested samples.
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3. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST or any agency of the U.S. Government.

3.0 Product Description

Luminaire Description: Model No. VXRGB @26W5000K.

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 @26W5000K	Sample ID	240715001-S1
Operate time (Min.)	10	Stabilization time (Min.)	60
Temperature (°C)	25.4	Humidity (%RH)	41.0

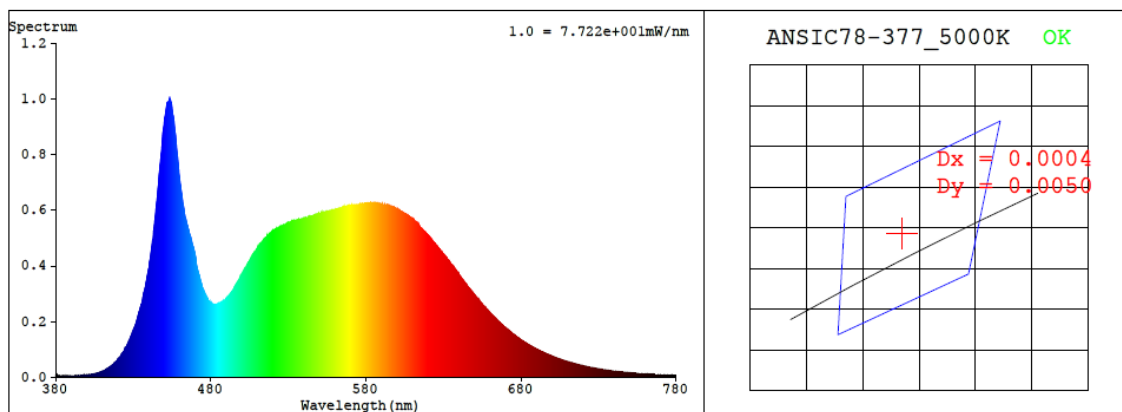
Test Method
<p>The Samples were tested according to the ANSI/IES LM-79:2019.</p> <p>Photometric parameters were measured using an integrating sphere, a spectroradiometer and software. The ambient temperature condition inside the sphere was maintained at 25±1°C.</p> <p>The sample measurements were made 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	0.231	27.5	0.993
277.0	60	0.111	27.9	0.908

CCT (K)	CRI	R9	Duv	Rf	Rg	IES Rcs,h1
5060	83.8	11	0.0024	84	96	-12%

4.1 Integrating Sphere Test



Colorimetric Parameters

Chromaticity Coordinate: $x = 0.3438$ $y = 0.3553$ / $u' = 0.2091$ $v' = 0.4863$ ($duv=2.36e-03$)

CCT= 5060K Prcp WL: $L_d=569.5nm$ Purity=9.8%

Peak WL: $L_p=454nm$ FWHM: $=24.4nm$ Ratio:R=15.7% G=79.7% B=4.6%

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

EEL: 0.12496 A+

R1 =82 R2 =89 R3 =93 R4 =83 R5 =83 R6 =85 R7 =87

R8 =68 R9 =11 R10=73 R11=82 R12=63 R13=84 R14=96 R15=77

4.1 Integrating Sphere Test

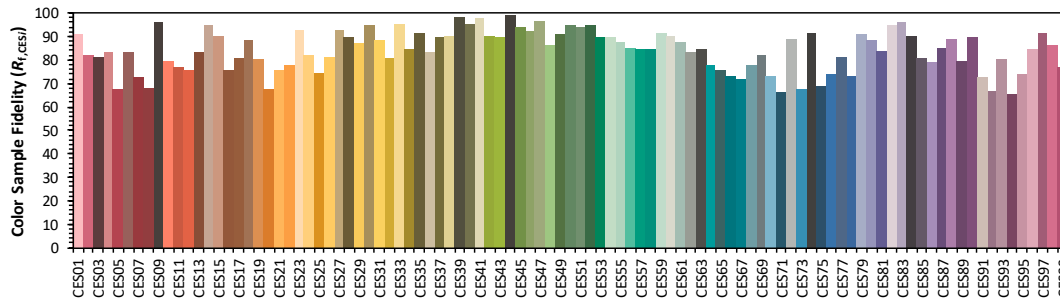
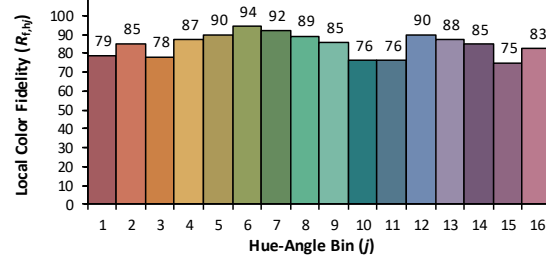
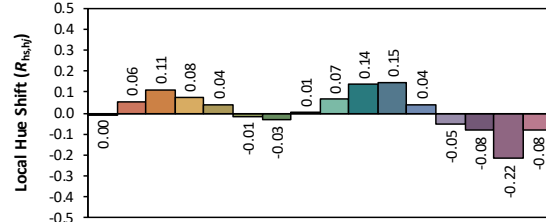
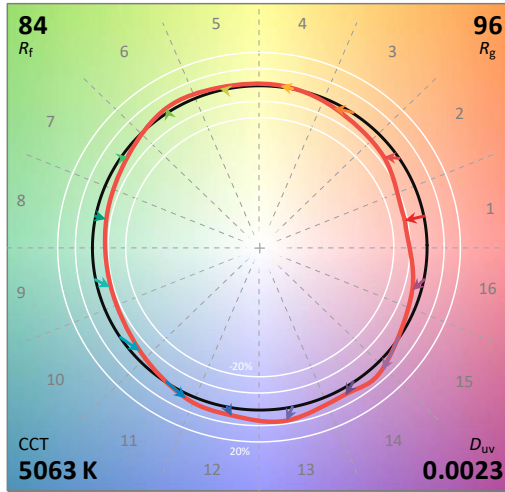
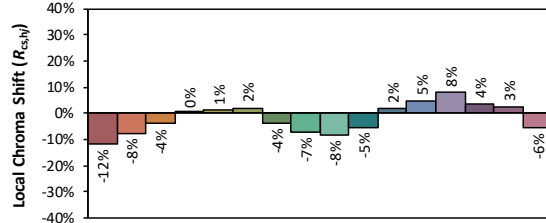
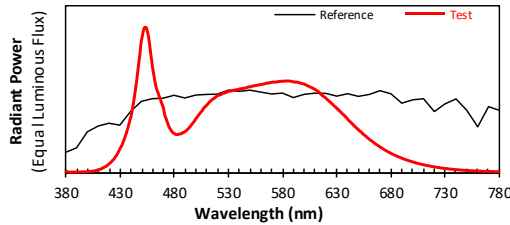
ANSI/IES TM-30-18 Color Rendition Report

Source: 1 CIE F1

Manufacturer: RAB Lighting Inc.

Date: 2024/7/15

Model: VXRGB @26W5000K



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

x 0.3438
 y 0.3551
 u' 0.2092
 v' 0.4862

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	8.50E-06	447	7.49E-04	514	4.94E-04	581	6.25E-04	648	3.10E-04	715	4.82E-05
381	8.30E-06	448	8.03E-04	515	5.00E-04	582	6.25E-04	649	3.02E-04	716	4.67E-05
382	4.30E-06	449	8.78E-04	516	5.05E-04	583	6.27E-04	650	2.97E-04	717	4.54E-05
383	4.10E-06	450	9.21E-04	517	5.09E-04	584	6.26E-04	651	2.89E-04	718	4.39E-05
384	5.20E-06	451	9.58E-04	518	5.16E-04	585	6.27E-04	652	2.83E-04	719	4.23E-05
385	4.80E-06	452	9.86E-04	519	5.22E-04	586	6.26E-04	653	2.77E-04	720	4.12E-05
386	5.60E-06	453	9.93E-04	520	5.27E-04	587	6.25E-04	654	2.68E-04	721	3.98E-05
387	4.50E-06	454	9.89E-04	521	5.29E-04	588	6.25E-04	655	2.62E-04	722	3.86E-05
388	5.20E-06	455	9.64E-04	522	5.32E-04	589	6.23E-04	656	2.56E-04	723	3.78E-05
389	4.60E-06	456	9.31E-04	523	5.34E-04	590	6.21E-04	657	2.51E-04	724	3.66E-05
390	5.10E-06	457	8.77E-04	524	5.38E-04	591	6.18E-04	658	2.44E-04	725	3.55E-05
391	5.20E-06	458	8.18E-04	525	5.43E-04	592	6.21E-04	659	2.37E-04	726	3.42E-05
392	5.90E-06	459	7.66E-04	526	5.43E-04	593	6.18E-04	660	2.31E-04	727	3.31E-05
393	5.80E-06	460	7.09E-04	527	5.48E-04	594	6.18E-04	661	2.26E-04	728	3.20E-05
394	6.30E-06	461	6.66E-04	528	5.48E-04	595	6.16E-04	662	2.21E-04	729	3.13E-05
395	6.70E-06	462	6.23E-04	529	5.54E-04	596	6.14E-04	663	2.15E-04	730	3.01E-05
396	6.60E-06	463	5.87E-04	530	5.56E-04	597	6.10E-04	664	2.09E-04	731	2.93E-05
397	6.40E-06	464	5.63E-04	531	5.57E-04	598	6.10E-04	665	2.03E-04	732	2.87E-05
398	6.60E-06	465	5.43E-04	532	5.61E-04	599	6.07E-04	666	1.98E-04	733	2.74E-05
399	8.40E-06	466	5.21E-04	533	5.59E-04	600	6.06E-04	667	1.93E-04	734	2.67E-05
400	8.50E-06	467	5.02E-04	534	5.63E-04	601	6.02E-04	668	1.88E-04	735	2.59E-05
401	8.90E-06	468	4.79E-04	535	5.62E-04	602	5.98E-04	669	1.83E-04	736	2.52E-05
402	9.50E-06	469	4.60E-04	536	5.65E-04	603	5.96E-04	670	1.78E-04	737	2.44E-05
403	1.06E-05	470	4.36E-04	537	5.66E-04	604	5.91E-04	671	1.72E-04	738	2.36E-05
404	1.08E-05	471	3.97E-04	538	5.67E-04	605	5.88E-04	672	1.69E-04	739	2.28E-05
405	1.24E-05	472	3.76E-04	539	5.67E-04	606	5.84E-04	673	1.64E-04	740	2.20E-05
406	1.37E-05	473	3.55E-04	540	5.72E-04	607	5.82E-04	674	1.59E-04	741	2.16E-05
407	1.49E-05	474	3.35E-04	541	5.74E-04	608	5.77E-04	675	1.55E-04	742	2.09E-05
408	1.70E-05	475	3.14E-04	542	5.73E-04	609	5.73E-04	676	1.51E-04	743	2.04E-05
409	1.83E-05	476	3.01E-04	543	5.77E-04	610	5.70E-04	677	1.46E-04	744	1.97E-05
410	2.14E-05	477	2.90E-04	544	5.76E-04	611	5.65E-04	678	1.42E-04	745	1.93E-05
411	2.37E-05	478	2.78E-04	545	5.78E-04	612	5.60E-04	679	1.38E-04	746	1.84E-05
412	2.61E-05	479	2.72E-04	546	5.79E-04	613	5.56E-04	680	1.34E-04	747	1.78E-05
413	2.98E-05	480	2.68E-04	547	5.81E-04	614	5.49E-04	681	1.31E-04	748	1.72E-05
414	3.40E-05	481	2.62E-04	548	5.85E-04	615	5.39E-04	682	1.27E-04	749	1.69E-05
415	3.78E-05	482	2.62E-04	549	5.86E-04	616	5.34E-04	683	1.24E-04	750	1.65E-05
416	4.15E-05	483	2.61E-04	550	5.87E-04	617	5.26E-04	684	1.20E-04	751	1.59E-05
417	4.59E-05	484	2.63E-04	551	5.87E-04	618	5.22E-04	685	1.17E-04	752	1.55E-05
418	5.16E-05	485	2.65E-04	552	5.92E-04	619	5.16E-04	686	1.13E-04	753	1.53E-05
419	5.74E-05	486	2.66E-04	553	5.93E-04	620	5.11E-04	687	1.10E-04	754	1.48E-05
420	6.39E-05	487	2.70E-04	554	5.93E-04	621	5.03E-04	688	1.07E-04	755	1.44E-05
421	6.99E-05	488	2.75E-04	555	5.96E-04	622	4.97E-04	689	1.04E-04	756	1.38E-05
422	7.74E-05	489	2.77E-04	556	5.97E-04	623	4.89E-04	690	1.01E-04	757	1.36E-05
423	8.66E-05	490	2.83E-04	557	5.98E-04	624	4.84E-04	691	9.82E-05	758	1.32E-05
424	9.29E-05	491	2.88E-04	558	6.00E-04	625	4.76E-04	692	9.54E-05	759	1.28E-05
425	1.05E-04	492	2.96E-04	559	6.00E-04	626	4.70E-04	693	9.24E-05	760	1.24E-05
426	1.15E-04	493	3.02E-04	560	6.03E-04	627	4.63E-04	694	9.01E-05	761	1.21E-05
427	1.26E-04	494	3.10E-04	561	6.04E-04	628	4.55E-04	695	8.74E-05	762	1.19E-05
428	1.40E-04	495	3.20E-04	562	6.04E-04	629	4.50E-04	696	8.51E-05	763	1.15E-05
429	1.54E-04	496	3.29E-04	563	6.08E-04	630	4.42E-04	697	8.26E-05	764	1.13E-05
430	1.70E-04	497	3.39E-04	564	6.08E-04	631	4.35E-04	698	8.04E-05	765	1.09E-05
431	1.81E-04	498	3.48E-04	565	6.11E-04	632	4.29E-04	699	7.81E-05	766	1.04E-05
432	1.99E-04	499	3.59E-04	566	6.13E-04	633	4.21E-04	700	7.56E-05	767	1.03E-05
433	2.19E-04	500	3.71E-04	567	6.11E-04	634	4.14E-04	701	7.34E-05	768	1.01E-05
434	2.38E-04	501	3.79E-04	568	6.15E-04	635	4.06E-04	702	7.13E-05	769	9.90E-06
435	2.59E-04	502	3.90E-04	569	6.18E-04	636	4.00E-04	703	6.91E-05	770	9.50E-06
436	2.82E-04	503	4.00E-04	570	6.16E-04	637	3.94E-04	704	6.69E-05	771	9.20E-06
437	3.07E-04	504	4.10E-04	571	6.19E-04	638	3.85E-04	705	6.51E-05	772	9.30E-06
438	3.34E-04	505	4.18E-04	572	6.19E-04	639	3.77E-04	706	6.32E-05	773	8.90E-06
439	3.65E-04	506	4.27E-04	573	6.19E-04	640	3.70E-04	707	6.09E-05	774	8.70E-06
440	3.89E-04	507	4.40E-04	574	6.20E-04	641	3.59E-04	708	5.91E-05	775	8.30E-06
441	4.30E-04	508	4.48E-04	575	6.20E-04	642	3.53E-04	709	5.76E-05	776	8.20E-06
442	4.73E-04	509	4.54E-04	576	6.23E-04	643	3.46E-04	710	5.59E-05	777	7.80E-06
443	5.18E-04	510	4.62E-04	577	6.23E-04	644	3.38E-04	711	5.44E-05	778	7.70E-06
444	5.71E-04	511	4.70E-04	578	6.24E-04	645	3.31E-04	712	5.19E-05	779	7.60E-06
445	6.23E-04	512	4.81E-04	579	6.25E-04	646	3.24E-04	713	5.10E-05	780	7.70E-06
446	6.83E-04	513	4.86E-04	580	6.25E-04	647	3.17E-04	714	4.96E-05	N/A	N/A

4.0 LM-79 Measurement and Test Results

4.2 Goniophotometer Test

Model No.	VXRGB @26W5000K	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	0.111	27.9	0.908
NON-WORST CASE	120.0	60	0.231	27.5	0.993

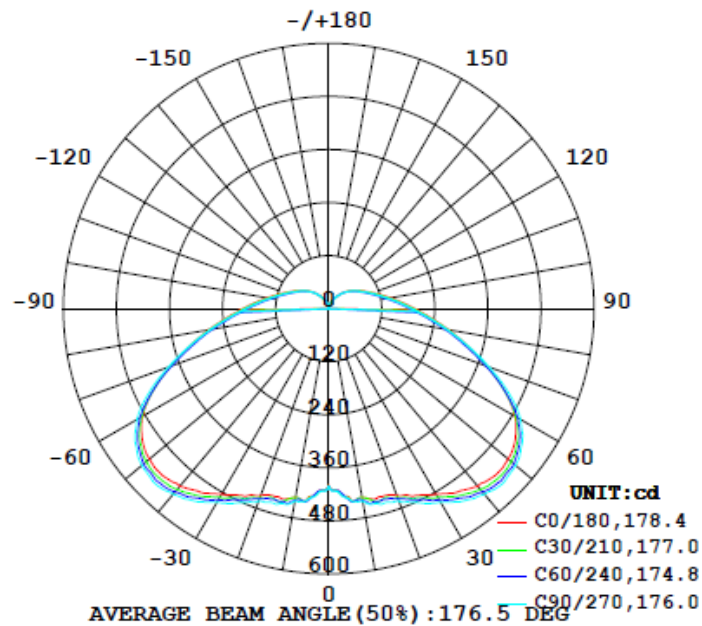
Test Result

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°)	
3151	180.0	180.0	149.1	159.6	112.9	83.2%	B1-U3-G2

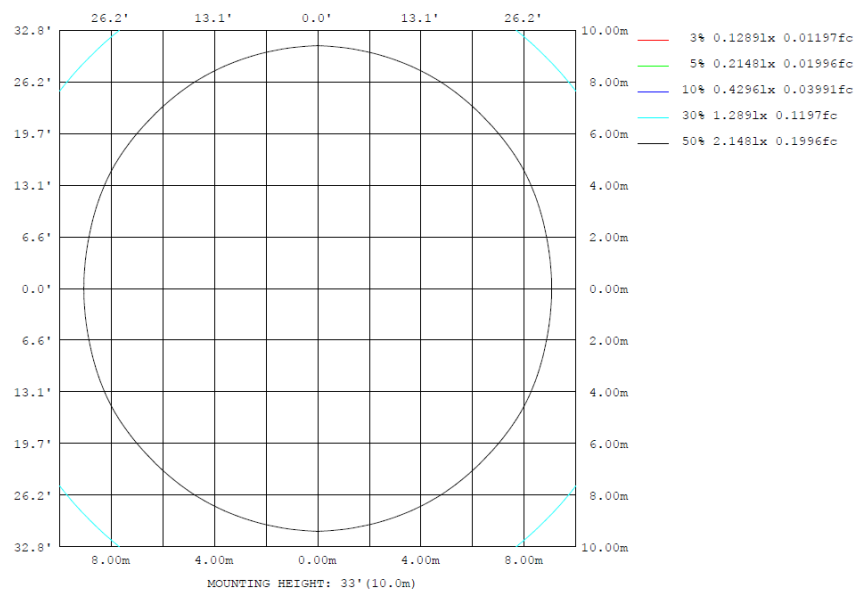
4.2 Goniophotometer Test

Lighting Distribution Curve

LUMINOUS INTENSITY DISTRIBUTION DIAGRAM



Isolux Plot



4.2 Goniophotometer Test

Zonal Lumen Summary

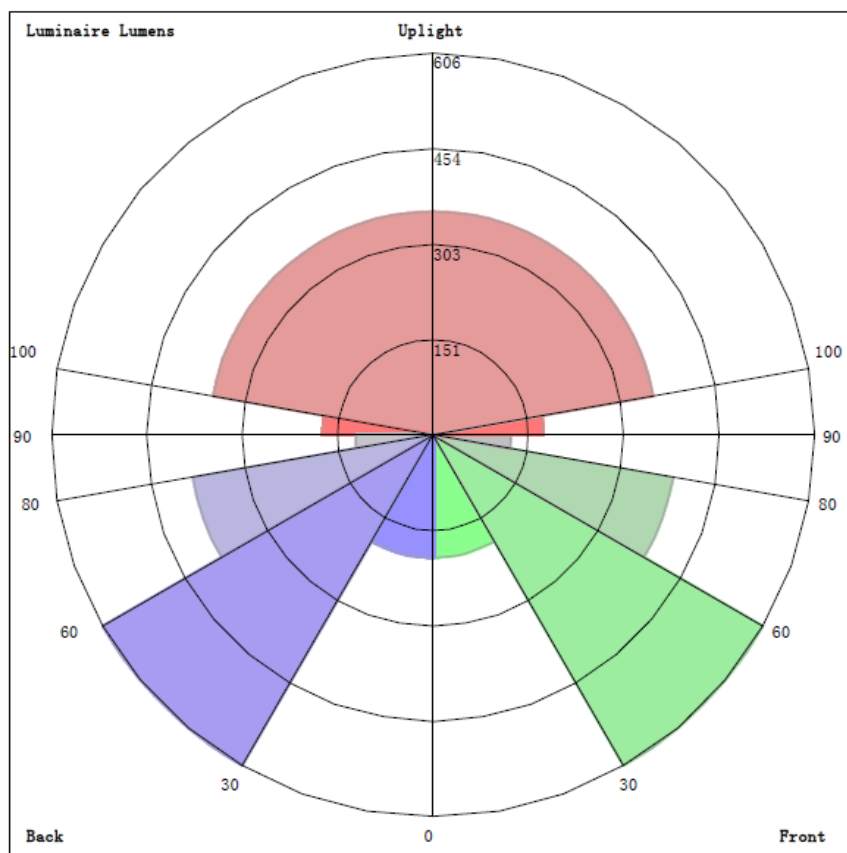
ZONAL FLUX DIAGRAM:

γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	Φ zone	Φ total	$\%lum, lamp$
10	433.3	436.3	441.7	436.3	433.3	436.3	441.7	436.3	0- 10	41.13	41.13	1.31,1.31
20	449.6	456.0	463.0	456.0	449.6	456.0	463.0	456.0	10- 20	127.3	168.4	5.34,5.34
30	484.3	491.9	505.4	491.9	484.3	491.9	505.4	491.9	20- 30	220.6	389.0	12.3,12.3
40	524.0	535.2	547.5	535.2	524.0	535.2	547.5	535.2	30- 40	325.5	714.6	22.7,22.7
50	528.8	539.4	551.4	539.4	528.8	539.4	551.4	539.4	40- 50	420.0	1135	36,36
60	486.4	485.9	500.7	485.9	486.4	485.9	500.7	485.9	50- 60	466.4	1601	50.8,50.8
70	381.6	372.4	385.9	372.4	381.6	372.4	385.9	372.4	60- 70	433.6	2035	64.6,64.6
80	275.0	262.8	271.1	262.8	275.0	262.8	271.1	262.8	70- 80	340.8	2375	75.4,75.4
90	194.6	181.7	187.8	181.7	194.6	181.7	187.8	181.7	80- 90	246.0	2621	83.2,83.2
100	142.3	131.3	136.0	131.3	142.3	131.3	136.0	131.3	90-100	175.3	2797	88.7,88.7
110	106.4	98.22	101.4	98.22	106.4	98.22	101.4	98.22	100-110	124.8	2922	92.7,92.7
120	82.06	76.74	78.75	76.74	82.06	76.74	78.75	76.74	110-120	89.34	3011	95.5,95.5
130	63.26	60.04	60.80	60.04	63.26	60.04	60.80	60.04	120-130	63.09	3074	97.5,97.5
140	44.97	44.14	43.60	44.14	44.97	44.14	43.60	44.14	130-140	41.30	3115	98.9,98.9
150	27.80	28.03	27.62	28.03	27.80	28.03	27.62	28.03	140-150	22.64	3138	99.6,99.6
160	14.49	14.77	14.98	14.77	14.49	14.77	14.98	14.77	150-160	9.875	3148	99.9,99.9
170	7.131	6.690	7.020	6.690	7.131	6.690	7.020	6.690	160-170	3.124	3151	100,100
180	0.6194	0.6193	0.5462	0.6193	0.6194	0.6193	0.5462	0.6193	170-180	0.3799	3151	100,100
DEG	LUMINOUS INTENSITY:cd									UNIT:lm		

	Zonal (lm)		Total (lm)	Percent
0-10	41.13	0-10	41.13	1.31%
10-20	127.27	0-20	168.40	5.34%
20-30	220.65	0-30	389.05	12.35%
30-40	325.51	0-40	714.56	22.68%
40-50	419.97	0-50	1134.53	36.01%
50-60	466.39	0-60	1600.92	50.81%
60-70	433.61	0-70	2034.53	64.57%
70-80	340.81	0-80	2375.34	75.39%
80-90	246.01	0-90	2621.35	83.19%
90-100	175.31	0-100	2796.66	88.76%
100-110	124.84	0-110	2921.50	92.72%
110-120	89.34	0-120	3010.84	95.56%
120-130	63.09	0-130	3073.93	97.56%
130-140	41.30	0-140	3115.23	98.87%
140-150	22.64	0-150	3137.87	99.59%
150-160	9.88	0-160	3147.75	99.90%
160-170	3.12	0-170	3150.87	100.00%
170-180	0.38	0-180	3151.25	100.01%

4.2 Goniophotometer Test

LCS/BUG

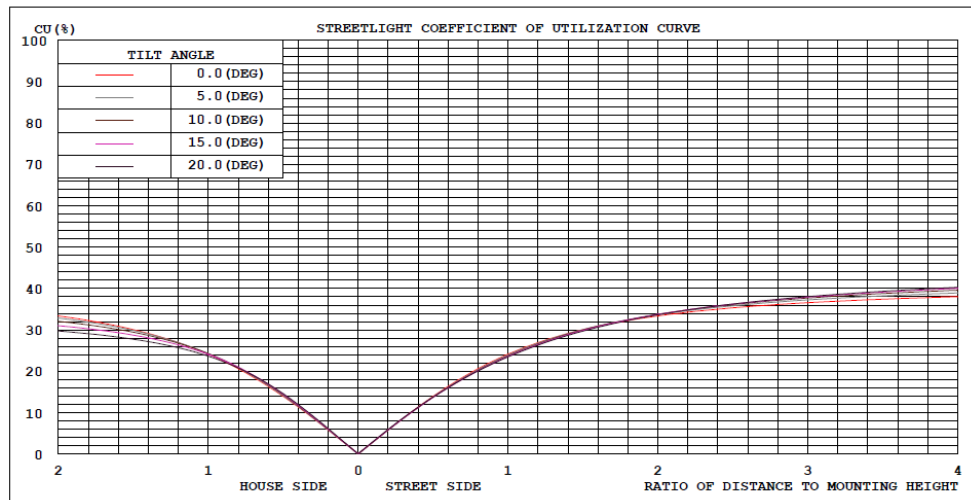


LUMINAIRE CLASSIFICATION SYSTEM (LCS)

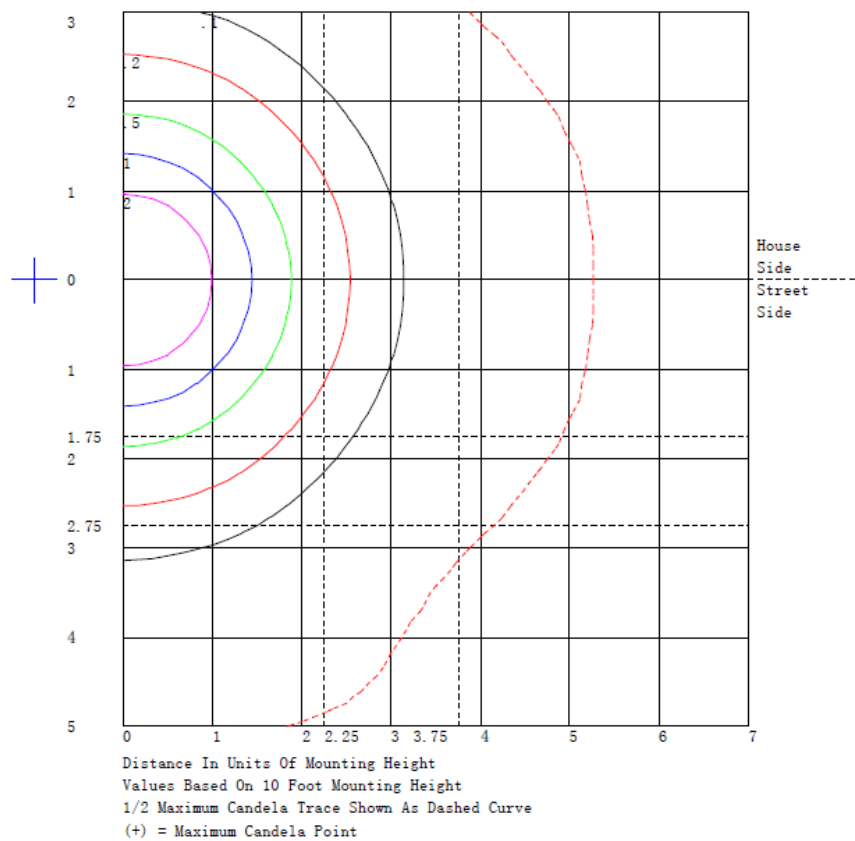
	Lumens	% Lamp	% Luminaire
FL - Front-Low (0-30)	194.5	N.A.	6.2
FM - Front-Medium (30-60)	605.9	N.A.	19.2
FH - Front-High (60-80)	387.2	N.A.	12.3
FVH - Front-Very High (80-90)	123.0	N.A.	3.9
BL - Back-Low (0-30)	194.5	N.A.	6.2
BM - Back-Medium (30-60)	605.9	N.A.	19.2
BH - Back-High (60-80)	387.2	N.A.	12.3
BVH - Back-Very High (80-90)	123.0	N.A.	3.9
UL - Uplight-Low (90-100)	175.3	N.A.	5.6
UH - Uplight-High (100-180)	354.6	N.A.	11.3
Total	3151.1	N.A.	100.0
BUG Rating	B1-U3-G2		

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	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
0	400	401	402	402	402	402	401	401	401	401	401	401	401	401	401	401	401	402	402
5	426	424	423	423	424	425	427	427	427	426	426	426	427	427	427	427	428	428	429
10	433	436	437	438	437	435	434	434	435	436	437	438	440	442	443	445	444	443	442
15	441	442	444	445	447	449	450	449	448	447	448	449	450	452	453	454	456	457	459
20	450	449	449	450	451	453	454	455	456	456	456	457	458	461	463	465	465	464	463
25	466	467	468	469	470	471	472	472	472	472	474	475	477	479	482	483	484	484	484
30	484	484	485	486	488	490	492	492	492	492	494	496	499	501	504	505	505	505	505
35	507	507	507	509	511	514	516	517	517	517	519	520	522	525	527	529	529	530	531
40	524	523	523	524	527	531	534	535	535	535	537	539	541	543	544	546	546	547	547
45	533	532	531	532	535	539	542	543	543	544	546	548	550	552	553	554	555	556	558
50	529	528	529	530	533	535	538	539	539	539	542	544	546	547	548	549	549	550	551
55	515	514	514	514	517	519	522	521	521	520	522	525	527	529	530	531	531	532	534
60	486	485	485	485	486	487	489	488	486	486	488	490	493	495	496	498	499	499	501
65	438	437	436	436	437	438	438	436	434	432	434	436	439	441	443	445	446	447	448
70	382	380	379	379	379	380	380	377	374	372	373	375	377	379	382	384	385	385	386
75	325	324	323	323	324	324	324	321	317	314	315	316	318	321	323	325	325	325	326
80	275	274	273	272	273	273	272	269	266	263	263	264	266	268	270	271	271	271	271
85	230	229	228	228	228	228	227	224	221	218	218	219	220	222	223	225	225	225	224
90	195	193	193	192	192	192	191	188	185	182	181	182	183	185	187	189	189	188	188
95	166	165	165	164	164	163	163	160	157	155	154	154	155	157	159	160	160	160	159
100	142	142	141	140	140	140	139	136	134	131	131	131	132	133	135	136	136	136	136
105	123	122	122	121	121	120	119	117	115	113	112	113	113	115	116	117	117	117	117
110	106	106	106	105	105	105	104	102	100	98.2	97.9	98.1	98.8	100	101	102	102	102	101
115	92.9	92.5	92.2	91.9	91.9	91.7	91.2	89.5	87.8	86.3	86.1	86.3	86.9	87.9	88.9	89.7	89.5	89.2	88.8
120	82.1	81.8	81.5	81.2	81.0	80.8	80.4	79.1	77.8	76.7	76.6	76.9	77.4	78.0	78.7	79.2	79.1	79.0	78.8
125	72.3	72.1	71.9	71.6	71.4	71.2	70.7	69.8	68.8	68.0	68.0	68.3	68.7	69.1	69.5	69.8	69.8	69.8	69.6
130	63.3	63.0	62.8	62.7	62.7	62.6	62.4	61.6	60.8	60.0	60.0	60.1	60.4	60.8	61.2	61.4	61.3	61.0	60.8
135	54.3	54.2	54.0	53.8	53.7	53.6	53.5	53.2	52.8	52.6	52.6	52.7	52.8	52.9	53.0	53.1	53.0	53.0	52.9
140	45.0	44.7	44.5	44.4	44.5	44.6	44.6	44.5	44.3	44.1	44.2	44.2	44.3	44.3	44.2	44.2	44.0	43.8	43.6
145	35.6	35.4	35.3	35.3	35.4	35.5	35.6	35.6	35.6	35.6	35.7	35.7	35.7	35.7	35.6	35.5	35.3	35.2	35.1
150	27.8	27.6	27.5	27.4	27.5	27.6	27.8	27.9	28.0	28.0	28.1	28.1	28.0	27.9	27.8	27.7	27.7	27.6	27.6
155	20.6	20.5	20.4	20.4	20.5	20.6	20.7	20.8	20.9	21.0	21.0	21.1	21.1	21.0	20.9	20.8	20.8	20.8	20.8
160	14.5	14.5	14.5	14.5	14.5	14.6	14.6	14.7	14.7	14.8	14.8	14.9	14.9	14.9	14.9	14.9	14.9	15.0	15.0
165	10.4	10.4	10.3	10.3	10.3	10.3	10.4	10.4	10.5	10.6	10.6	10.6	10.6	10.6	10.6	10.6	10.6	10.7	10.8
170	7.13	6.97	6.85	6.79	6.81	6.85	6.88	6.83	6.75	6.69	6.67	6.69	6.73	6.84	6.96	7.06	7.05	7.03	7.02
175	1.88	1.91	1.91	1.89	1.83	1.76	1.68	1.58	1.49	1.42	1.39	1.38	1.39	1.44	1.50	1.56	1.61	1.65	1.67
180	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.61	0.60	0.59	0.58	0.58	0.57	0.56	0.55	0.55

C (DEG) Y (DEG)		UNIT: cd																		
		95	100	105	110	115	120	125	130	135	140	145	150	155	160	165	170	175	180	185
0	402	401	401	401	401	401	401	401	401	401	401	401	401	402	402	402	402	401	400	401
5	428	428	427	427	427	427	426	426	426	427	427	427	427	425	424	423	423	424	426	424
10	443	444	445	445	443	442	440	438	437	436	435	434	434	435	437	438	437	436	433	436
15	457	456	454	453	452	450	449	448	447	448	449	450	449	447	445	444	442	441	443	441
20	464	465	465	463	461	458	457	456	456	456	455	454	453	451	450	449	449	450	445	445
25	484	484	483	482	479	477	475	474	472	472	472	472	471	470	469	468	467	466	467	466
30	505	505	505	504	501	499	496	494	492	492	492	492	490	488	486	485	484	484	484	484
35	530	529	529	527	525	522	520	519	517	517	517	516	514	511	509	507	507	507	507	507
40	547	546	546	544	543	541	539	537	535	535	535	534	531	527	524	523	523	524	523	523
45	556	555	554	553	552	550	548	546	544	543	543	542	539	535	532	531	532	533	532	532
50	550	549	549	548	547	546	544	542	539	539	539	538	535	533	530	529	528	529	528	528
55	532	531	531	530	529	527	525	522	520	521	521	522	519	517	514	514	514	515	514	514
60	499	499	498	496	495	493	490	488	486	486	488	489	487	486	485	485	485	486	485	485
65	447	446	445	443	441	439	436	434	432	434	436	438	438	437	436	436	437	438	437	437
70	385	385	384	382	379	377	375	373	372	374	377	380	380	379	379	379	380	382	380	382
75	325	325	325	323	321	318	316	315	314	317	321	324	324	324	323	323	323	324	325	324
80	271	271	271	270	268	266	264	263	263	266	269	272	273	273	272	273	274	275	274	274
85	225	225	225	223	222	220	219	218	218	221	224	227	228	228	228	228	229	230	229	229
90	188	189	189	187	185	183	182	181	182	185	188	191	192	192	192	193	193	195	193	195
95	160	160	160	159	157	155	154	154	155	157	160	163	163	164	164	165	165	166	165	166
100	136	136	136	135	133	132	131	131	131	134	136	139	140	140	140	141	142	142	142	142
105	117	117	117	116	115	113	113	112	113	115	117	119	120	121	121	122	122	123	122	122
110	102	102	102	101	100	98.8	98.1	97.9	98.2	100	102	104	105	105	105	106	106	106	106	106
115	89.2	89.5	89.7	88.9	87.9	86.9	86.3	86.1	86.3	87.8	89.5	91.2	91.7	91.9	91.9	92.2	92.5	92.9	92.5	92.9
120	79.0	79.1	79.2	78.7	78.0	77.4	76.9	76.6	76.7	77.8	79.1	80.4	80.8	81.0	81.2	81.5	81.8	82.1	81.8	82.1
125	69.8	69.8	69.8	69.5	69.1	68.7	68.3	68.0	68.0	68.8	69.8	70.7	71.2	71.4	71.6	71.9	72.1	72.3	72.1	72.3
130	61.0	61.3	61.4	61.2	60.8	60.4	60.1	60.0	60.0	60.8	61.6	62.4	62.6	62.7	62.7	62.8	63.0	63.3	63.0	63.3
135	53.0	53.0	53.1	53.0	52.9	52.8	52.7	52.6	52.6	52.8	53.2	53.5	53.6	53.7	53.8	54.0	54.2	54.3	54.2	54.3
140	43.8	44.0	44.2	44.2	44.3	44.3	44.2	44.2	44.1	44.3	44.5	44.6	44.6	44.5	44.4	44.5	44.7	45.0	44.7	45.0
145	35.2	35.3	35.5	35.6	35.7	35.7	35.7	35.6	35.6	35.6	35.6	35.6	35.5	35.4	35.3	35.3	35.4	35.6	35.4	35.6
150	27.6	27.7	27.7	27.8	27.9	28.0	28.1	28.1	28.0	28.0	27.9	27.8	27.6	27.5	27.4	27.5	27.6	27.8	27.6	27.8
155	20.8	20.8	20.8	20.9	21.0	21.1	21.1	21.1	21.0	20.9	20.8	20.7	20.6	20.5	20.4	20.4	20.5	20.6	20.5	20.6
160	15.0	14.9	14.9	14.9	14.9	14.9	14.9	14.9	14.8	14.8	14.7	14.7	14.6	14.6	14.5	14.5	14.5	14.5	14.4	14.5
165	10.7	10.6	10.6	10.6	10.6	10.6	10.6	10.6	10.6	10.5	10.4	10.4	10.3	10.3	10.3	10.3	10.4	10.4	10.4	10.4
170	7.03	7.05	7.06	7.06	7.06	7.06	7.06	7.06	7.06	7.05	7.03	7.03	7.02	7.01	7.01	7.01	7.02	7.03	7.03	7.03
175	1.65	1.61	1.56	1.50	1.44	1.39	1.38	1.39	1.42	1.49	1.58	1.68	1.76	1.83	1.89	1.91	1.91	1.88	1.91	1.88
180	0.55	0.56	0.57	0.58	0.58	0.59	0.60	0.61	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.61	0.61

Table--3

UNIT: cd

C (DBG)	190	195	200	205	210	215	220	225	230	235	240	245	250	255	260	265	270	275	280
γ (DBG)	0	402	402	402	402	401	401	401	401	401	401	401	401	401	401	402	402	402	401
5	423	423	424	425	427	427	427	426	426	426	427	427	427	427	428	428	429	428	428
10	437	438	437	435	434	434	435	436	437	438	440	442	443	445	444	443	442	443	444
15	444	445	447	449	450	449	448	447	448	449	450	452	453	454	456	457	459	457	456
20	449	450	451	453	454	455	456	456	456	457	458	461	463	465	465	464	463	464	465
25	468	469	470	471	472	472	472	472	474	475	477	479	482	483	484	484	484	484	484
30	485	486	488	490	492	492	492	492	494	496	499	501	504	505	505	505	505	505	505
35	507	509	511	514	516	517	517	517	519	520	522	525	527	529	529	530	531	530	529
40	523	524	527	531	534	535	535	535	537	539	541	543	544	546	546	547	547	547	546
45	531	532	535	539	542	543	543	544	546	548	550	552	553	554	555	556	558	556	555
50	529	530	533	535	538	539	539	539	542	544	546	547	548	549	549	550	551	550	549
55	514	514	517	519	522	521	521	520	522	525	527	529	530	531	531	532	534	532	531
60	485	485	486	487	489	488	486	486	488	490	493	495	496	498	499	499	501	499	499
65	436	436	437	438	438	436	434	432	434	436	439	441	443	445	446	447	448	447	446
70	379	379	379	380	380	377	374	372	373	375	377	379	382	384	385	385	386	385	385
75	323	323	324	324	324	321	317	314	315	316	318	321	323	325	325	325	326	325	325
80	273	272	273	273	272	269	266	263	263	264	266	268	270	271	271	271	271	271	271
85	228	228	228	228	227	224	221	218	218	219	220	222	223	225	225	225	224	225	225
90	193	192	192	192	191	188	185	182	181	182	183	185	187	189	189	188	188	188	189
95	165	164	164	163	163	160	157	155	154	154	155	157	159	160	160	160	159	160	160
100	141	140	140	140	139	136	134	131	131	131	132	133	135	136	136	136	136	136	136
105	122	121	121	120	119	117	115	113	112	113	113	115	116	117	117	117	117	117	117
110	106	105	105	105	104	102	100	98.2	97.9	98.1	98.8	100	101	102	102	102	101	102	102
115	92.2	91.9	91.9	91.7	91.2	89.5	87.8	86.3	86.1	86.3	86.9	87.9	88.9	89.7	89.5	89.2	88.8	89.2	89.5
120	81.5	81.2	81.0	80.8	80.4	79.1	77.8	76.7	76.6	76.9	77.4	78.0	78.7	79.2	79.1	79.0	78.8	79.0	79.1
125	71.9	71.6	71.4	71.2	70.7	69.8	68.8	68.0	68.0	68.3	68.7	69.1	69.5	69.8	69.8	69.8	69.6	69.8	69.8
130	62.8	62.7	62.7	62.6	62.4	61.6	60.8	60.0	60.0	60.1	60.4	60.8	61.2	61.4	61.3	61.0	60.8	61.0	61.3
135	54.0	53.8	53.7	53.6	53.5	53.2	52.8	52.6	52.6	52.7	52.8	52.9	53.0	53.1	53.0	53.0	52.9	53.0	53.0
140	44.5	44.4	44.5	44.6	44.6	44.5	44.3	44.1	44.2	44.2	44.3	44.3	44.2	44.2	44.0	43.8	43.6	43.8	44.0
145	35.3	35.3	35.4	35.5	35.6	35.6	35.6	35.6	35.6	35.7	35.7	35.7	35.6	35.5	35.5	35.3	35.2	35.1	35.2
150	27.5	27.4	27.5	27.6	27.8	27.9	28.0	28.0	28.1	28.1	28.0	27.9	27.8	27.7	27.7	27.6	27.6	27.6	27.7
155	20.4	20.4	20.5	20.6	20.7	20.8	20.9	21.0	21.0	21.1	21.1	21.0	20.9	20.8	20.8	20.8	20.8	20.8	20.8
160	14.5	14.5	14.5	14.6	14.6	14.7	14.7	14.8	14.8	14.9	14.9	14.9	14.9	14.9	14.9	15.0	15.0	15.0	14.9
165	10.3	10.3	10.3	10.3	10.4	10.4	10.5	10.6	10.6	10.6	10.6	10.6	10.6	10.6	10.6	10.7	10.8	10.7	10.6
170	6.85	6.79	6.81	6.85	6.88	6.83	6.75	6.69	6.67	6.69	6.73	6.84	6.96	7.06	7.05	7.03	7.02	7.03	7.05
175	1.91	1.89	1.83	1.76	1.68	1.58	1.49	1.42	1.39	1.38	1.39	1.44	1.50	1.56	1.61	1.65	1.67	1.65	1.61
180	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.61	0.60	0.59	0.58	0.58	0.57	0.56	0.55	0.55	0.56

																UNIT: cd			
C (DBG)		285	290	295	300	305	310	315	320	325	330	335	340	345	350	355			
γ (DBG)	0	401	401	401	401	401	401	401	401	401	401	402	402	402	402	401			
	5	427	427	427	427	426	426	426	427	427	427	427	425	424	423	423	424		
	10	445	443	442	440	438	437	436	435	434	434	435	437	437	438	437	436		
	15	454	453	452	450	449	448	447	448	449	450	449	447	445	444	444	442		
	20	465	463	461	458	457	456	456	456	455	454	453	451	450	449	449	449		
	25	483	482	479	477	475	474	472	472	472	472	471	470	469	468	467			
	30	505	504	501	499	496	494	492	492	492	492	490	488	486	485	484			
	35	529	527	525	522	520	519	517	517	517	516	514	511	509	507	507			
	40	546	544	543	541	539	537	535	535	535	534	531	527	524	523	523			
	45	554	553	552	550	548	546	544	543	543	542	539	535	532	531	532			
	50	549	548	547	546	544	542	539	539	539	538	535	533	530	529	528			
	55	531	530	529	527	525	522	520	521	521	522	519	517	514	514	514			
	60	498	496	495	493	490	488	486	486	488	489	487	486	485	485	485			
	65	445	443	441	439	436	434	432	434	436	438	438	437	436	436	437			
	70	384	382	379	377	375	373	372	374	377	380	380	379	379	379	380			
	75	325	323	321	318	316	315	314	317	321	324	324	324	323	323	324			
	80	271	270	268	266	264	263	263	266	269	272	273	273	272	273	274			
	85	225	223	222	220	219	218	218	221	224	227	228	228	228	228	229			
	90	189	187	185	183	182	181	182	185	188	191	192	192	192	192	193			
	95	160	159	157	155	154	154	155	157	160	163	163	164	164	165	165			
100	136	135	133	132	131	131	131	134	136	139	140	140	140	141	142				
105	117	116	115	113	113	112	113	115	117	119	120	121	121	122	122				
110	102	101	100	98.8	98.1	97.9	98.2	100	102	104	105	105	105	106	106				
115	89.7	88.9	87.9	86.9	86.3	86.1	86.3	87.8	89.5	91.2	91.7	91.9	91.9	92.2	92.5				
120	79.2	78.7	78.0	77.4	76.9	76.6	76.7	77.8	79.1	80.4	80.8	81.0	81.2	81.5	81.8				
125	69.8	69.5	69.1	68.7	68.3	68.0	68.0	68.8	69.8	70.7	71.2	71.4	71.6	71.9	72.1				
130	61.4	61.2	60.8	60.4	60.1	60.0	60.0	60.8	61.6	62.4	62.6	62.7	62.7	62.8	63.0				
135	53.1	53.0	52.9	52.8	52.7	52.6	52.6	52.8	53.2	53.5	53.6	53.7	53.8	54.0	54.2				
140	44.2	44.2	44.3	44.3	44.2	44.2	44.1	44.3	44.5	44.6	44.6	44.5	44.4	44.5	44.7				
145	35.5	35.6	35.7	35.7	35.7	35.7	35.6	35.6	35.6	35.6	35.5	35.4	35.3	35.3	35.4				
150	27.7	27.8	27.9	28.0	28.1	28.1	28.0	28.0	27.9	27.8	27.6	27.5	27.4	27.5	27.6				
155	20.8	20.9	21.0	21.1	21.1	21.0	21.0	20.9	20.8	20.7	20.6	20.5	20.4	20.4	20.5				
160	14.9	14.9	14.9	14.9	14.9	14.8	14.8	14.7	14.7	14.6	14.6	14.5	14.5	14.5	14.5				
165	10.6	10.6	10.6	10.6	10.6	10.6	10.6	10.5	10.4	10.4	10.3	10.3	10.3	10.3	10.4				
170	7.06	6.96	6.84	6.73	6.69	6.67	6.69	6.75	6.83	6.88	6.85	6.81	6.79	6.85	6.97				
175	1.56	1.50	1.44	1.39	1.38	1.39	1.42	1.49	1.58	1.68	1.76	1.83	1.89	1.91	1.91				
180	0.57	0.58	0.58	0.59	0.60	0.61	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62				

4.0 LM-79 Measurement and Test Results

4.3 THD and PF Test

Model No.	VXRGB @26W5000K	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	0.231	27.5	0.993	7.43
277.0	60	0.111	27.9	0.908	12.70

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*****