

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: 2025-01-06

Revised Date: N/A

1.0 Test Summary

DLC Technical Requirements V5.1

Direct Linear Ambient Luminaires					
Requirement Category		Test Method	Requirements		Test Value
Luminaire Output (lm) (Goniophotometer – Section 4.2)		ANSI/IES LM-79:2019	375 lm/ft		777
Minimum Luminaire Efficacy (lm/W) (Goniophotometer – Section 4.2)		ANSI/IES LM-79:2019	Standard	Premium	161.1
			115	130	
Power (Input Wattage) (W) (Goniophotometer – Section 4.2)		ANSI/IES LM-79:2019	Worst Case		19.3
Total Harmonic Distortion (A%) (THD & PF – Section 4.3)		ANSI C82.77:2002 ANSI C82-77-10:2020	20.00%	120V	7.74
				277V	8.68
Power Factor (THD & PF – Section 4.3)		ANSI C82.77:2002 ANSI C82-77-10:2020	0.9	120V	0.994
				277V	0.951
Allowable CCTs* (K) (Integrating Sphere – Section 4.1)		ANSI/IES LM-79:2019	7 steps	3985±275	4098
			4 steps	3985±154	
Minimum CRI (Integrating Sphere – Section 4.1)		ANSI/IES LM-79:2019 CIE13.3-1995	≥80		84.8
Minimum R9 (Integrating Sphere – Section 4.1)		ANSI/IES LM-79-2019 CIE13.3-1995	≥0		17
Minimum Rf (Integrating Sphere – Section 4.1)		ANSI/IES TM-30-18	≥70		85
Minimum Rg (Integrating Sphere – Section 4.1)		ANSI/IES TM-30-18	≥89		95
IES Rcs,h1 (Integrating Sphere – Section 4.1)		ANSI/IES TM-30-18	-12%≤IES Rcs,h1≤+23%		-11%
Zonal Lumen Requirement (0°-60°) (Goniophotometer – Section 4.2)		ANSI/IES LM-79:2019	≥40%		56.5%
Discomfort Glare (UGR) (Goniophotometer – Section 4.2)		ANSI/IES LM-79:2019	Standard	Premium	30.4
			N/A	<22	
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		0.162
(Goniophotometer – Section 4.2)			Non-Worst Case		0.073
Power (Input Wattage – W)					
(Goniophotometer – Section 4.2)		ANSI/IES LM-79:2019	Worst Case		19.3
(Goniophotometer – Section 4.2)			Non-Worst Case		19.2

2.0 Test List

Test Item	Test	Test Date	Model Number	Build Level	Sample No.
1	Integrating Sphere Test	2025-01-03	STRP4 @20W4000K	-	241225005-S1
2	Goniophotometer Test	2025-01-03	STRP4 @20W4000K	-	241225005-S1
3	THD and PF Test	2025-01-03	STRP4 @20W4000K	-	241225005-S1

Remark (If any):

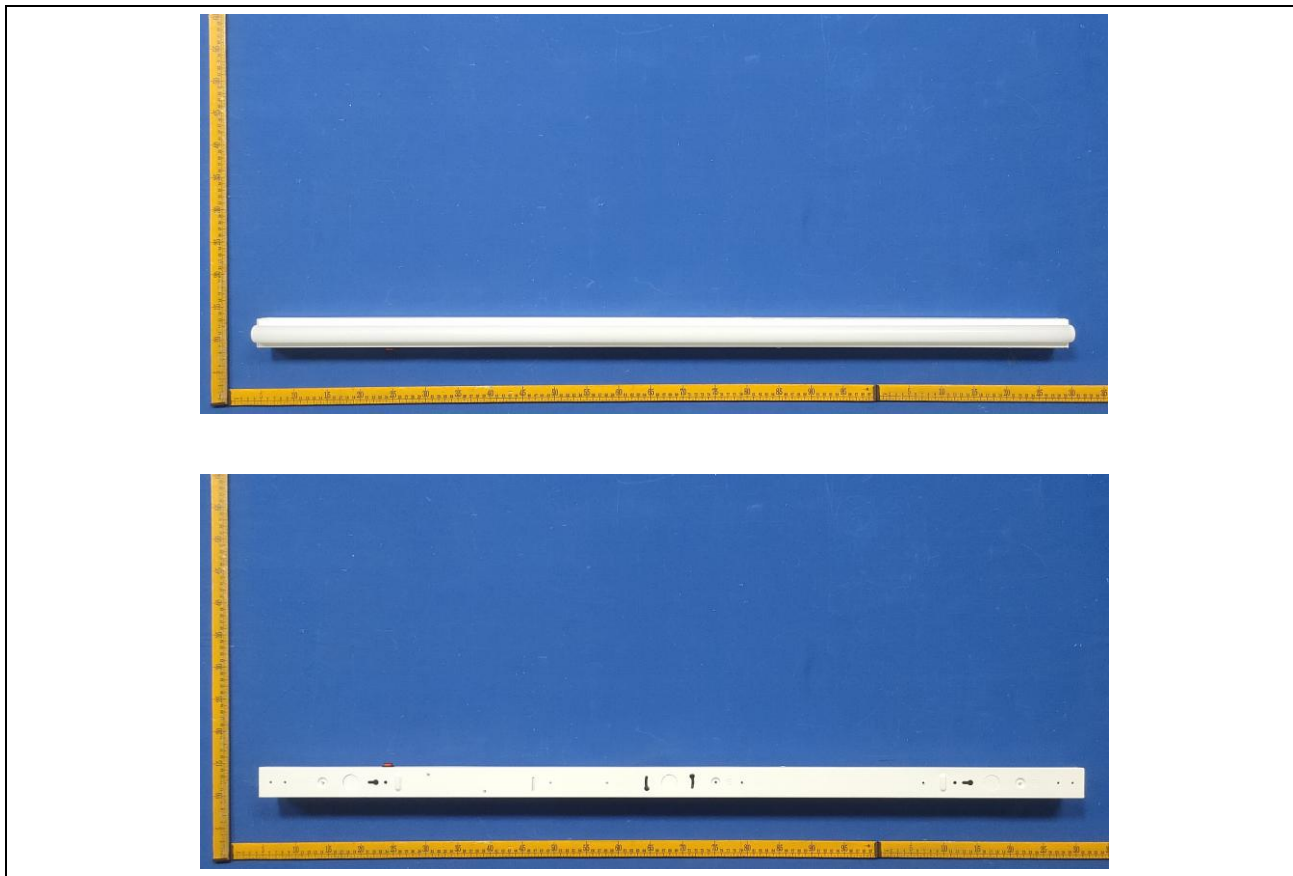
1. The results contained in this report pertain only to the tested samples.
2. This report shall not be reproduced, no limited part or full, without approval of Dongguan New Testing Centre Co., Ltd.
3. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST or any agency of the U.S. Government.

3.0 Product Description

Luminaire Description: Model No. STRP4 @20W4000K, color tunable from 3500K, 4000K and 5000K.

Electrical Specification: 120-277Vac, 50/60Hz

Photos of Luminaire Characteristics



4.0 LM-79 Measurement and Test Results

4.1 Integrating Sphere Test

Model No.	STRP4 @20W4000K	Sample ID	241225005-S1
Operate time (Min.)	10	Stabilization time (Min.)	60
Temperature (°C)	25.4	Humidity (%RH)	41.0

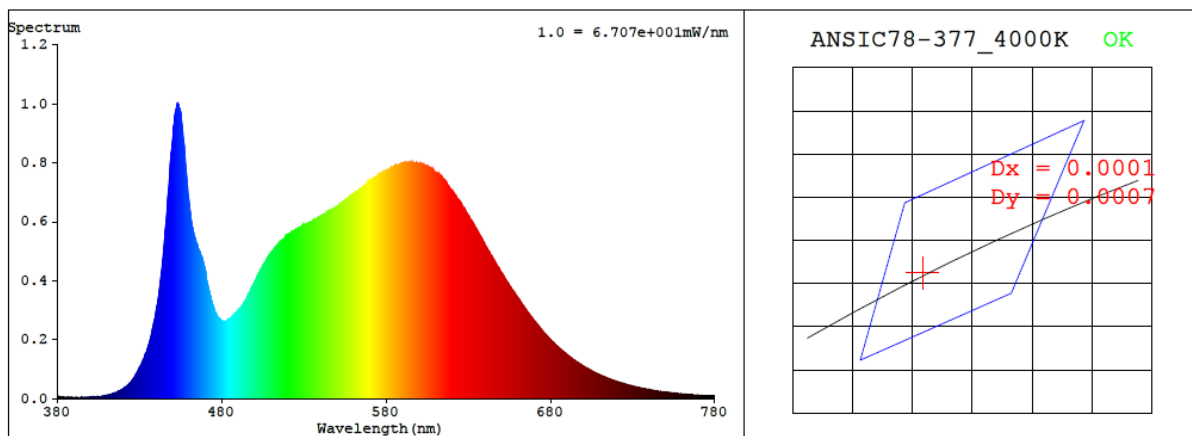
Test Method
<p>The Samples were tested according to the ANSI/IES LM-79:2019.</p> <p>Photometric parameters were measured using an integrating sphere, a spectroradiometer and software. The ambient temperature condition inside the sphere was maintained at 25±1°C.</p> <p>The sample measurements were made 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	0.162	19.3	0.994
277.0	60	0.073	19.2	0.951

CCT (K)	CRI	R9	Duv	Rf	Rg	IES Rcs,h1
4098	84.8	17	0.0003	85	95	-11%

4.1 Integrating Sphere Test



Colorimetric Parameters

Chromaticity Coordinate: $x = 0.3764$ $y = 0.3748$ / $u' = 0.2232$ $v' = 0.5001$ ($duv=2.87e-04$)

CCT= 4098K Prcp WL: Ld=578.5nm Purity=25.4%

Peak WL: Lp=453nm FWHM: =21.8nm Ratio:R=18.3% G=77.8% B=3.9%

Render Index: Ra = 84.8 AvgR = 78.7 TM30:Rf=85 Rg=95

EEl: 0.08348 A++ Highest

R1 =84 R2 =91 R3 =96 R4 =83 R5 =83 R6 =87 R7 =87

R8 =68 R9 =17 R10=79 R11=82 R12=62 R13=86 R14=98 R15=78

4.1 Integrating Sphere Test

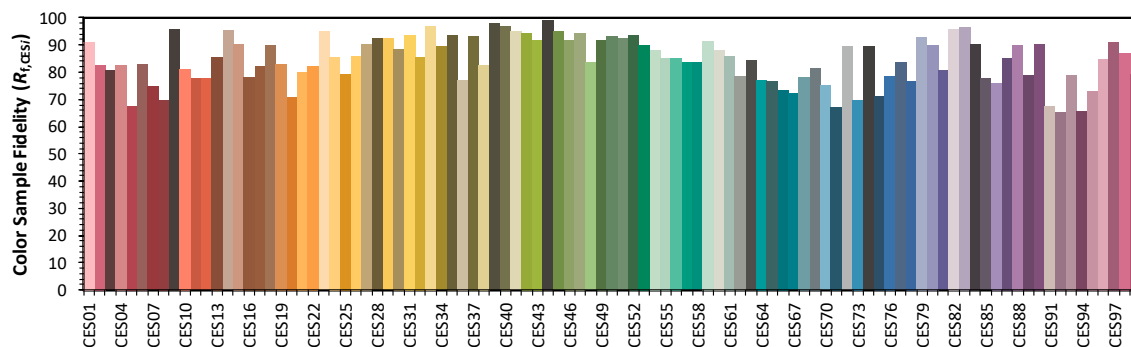
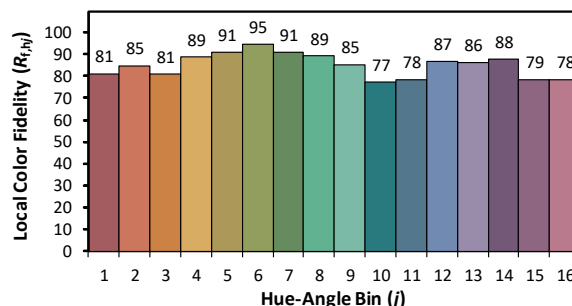
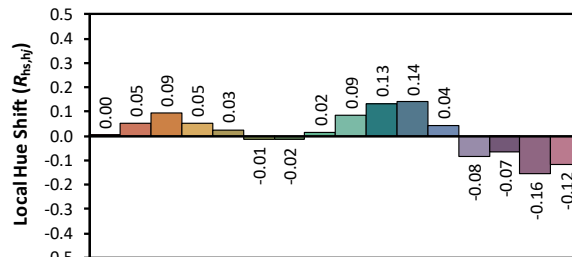
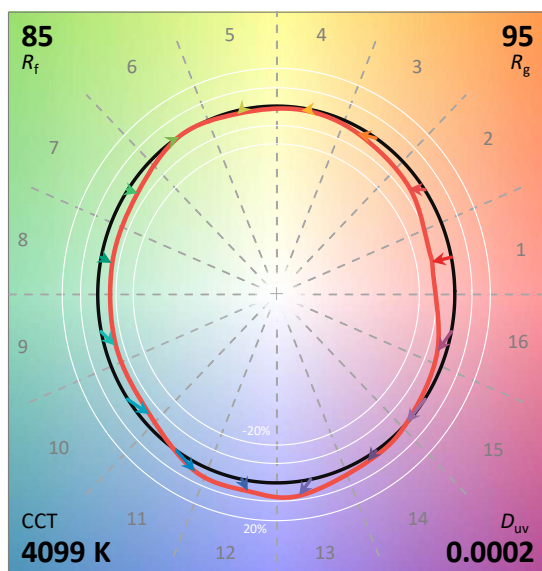
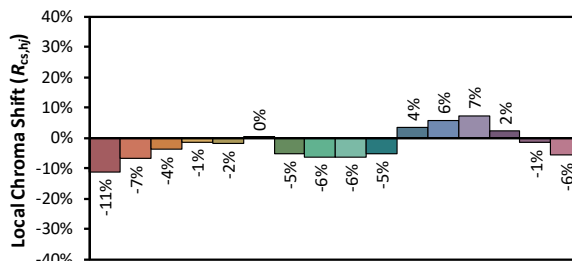
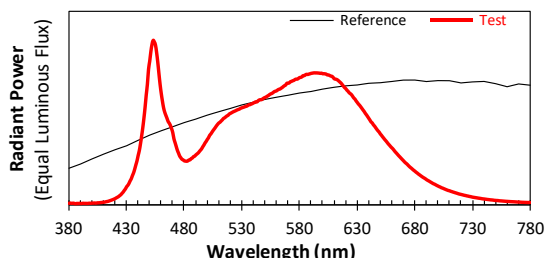
ANSI/IES TM-30-18 Color Rendition Report

Source: 1 CIE F1

Manufacturer: RAB Lighting Inc.

Date: 2025/1/6

Model: STRP4 @20W4000K



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

x 0.3763
 y 0.3746
 u' 0.2232
 v' 0.5000

CIE 13.3-1995
(CRI)

R_a 85
 R_g 17

4.1 Integrating Sphere Test

Spectral Distribution over Visible Wavelength											
WL (nm)	Radiant (W/nm)	WL (nm)	Radiant (W/nm)	WL (nm)	Radiant (W/nm)	WL (nm)	Radiant (W/nm)	WL (nm)	Radiant (W/nm)	WL (nm)	Radiant (W/nm)
380	4.20E-06	447	6.67E-04	514	5.23E-04	581	7.74E-04	648	4.47E-04	715	6.91E-05
381	6.10E-06	448	7.32E-04	515	5.27E-04	582	7.77E-04	649	4.40E-04	716	6.70E-05
382	4.70E-06	449	8.24E-04	516	5.33E-04	583	7.85E-04	650	4.29E-04	717	6.47E-05
383	4.90E-06	450	8.72E-04	517	5.39E-04	584	7.84E-04	651	4.20E-04	718	6.22E-05
384	5.20E-06	451	9.31E-04	518	5.42E-04	585	7.89E-04	652	4.11E-04	719	6.04E-05
385	3.10E-06	452	9.76E-04	519	5.50E-04	586	7.93E-04	653	4.02E-04	720	5.88E-05
386	2.20E-06	453	1.00E-03	520	5.54E-04	587	7.92E-04	654	3.93E-04	721	5.70E-05
387	4.20E-06	454	9.90E-04	521	5.58E-04	588	7.94E-04	655	3.85E-04	722	5.52E-05
388	2.90E-06	455	9.72E-04	522	5.62E-04	589	7.96E-04	656	3.76E-04	723	5.33E-05
389	4.50E-06	456	9.25E-04	523	5.65E-04	590	7.98E-04	657	3.67E-04	724	5.20E-05
390	3.40E-06	457	8.66E-04	524	5.69E-04	591	8.00E-04	658	3.59E-04	725	5.01E-05
391	3.20E-06	458	7.98E-04	525	5.72E-04	592	8.01E-04	659	3.51E-04	726	4.88E-05
392	4.70E-06	459	7.32E-04	526	5.76E-04	593	8.02E-04	660	3.44E-04	727	4.70E-05
393	4.30E-06	460	6.77E-04	527	5.78E-04	594	8.01E-04	661	3.37E-04	728	4.57E-05
394	4.10E-06	461	6.30E-04	528	5.81E-04	595	8.01E-04	662	3.27E-04	729	4.41E-05
395	4.10E-06	462	5.90E-04	529	5.86E-04	596	8.01E-04	663	3.19E-04	730	4.22E-05
396	3.80E-06	463	5.62E-04	530	5.88E-04	597	8.00E-04	664	3.11E-04	731	4.11E-05
397	4.70E-06	464	5.42E-04	531	5.91E-04	598	7.98E-04	665	3.03E-04	732	3.99E-05
398	5.20E-06	465	5.24E-04	532	5.93E-04	599	8.00E-04	666	2.95E-04	733	3.87E-05
399	4.70E-06	466	5.04E-04	533	5.96E-04	600	7.96E-04	667	2.88E-04	734	3.76E-05
400	5.80E-06	467	4.94E-04	534	5.98E-04	601	7.96E-04	668	2.80E-04	735	3.63E-05
401	5.70E-06	468	4.79E-04	535	6.02E-04	602	7.95E-04	669	2.73E-04	736	3.53E-05
402	6.60E-06	469	4.60E-04	536	6.06E-04	603	7.94E-04	670	2.65E-04	737	3.42E-05
403	5.80E-06	470	4.37E-04	537	6.07E-04	604	7.89E-04	671	2.58E-04	738	3.29E-05
404	6.40E-06	471	3.99E-04	538	6.11E-04	605	7.89E-04	672	2.51E-04	739	3.17E-05
405	7.60E-06	472	3.75E-04	539	6.13E-04	606	7.86E-04	673	2.45E-04	740	3.10E-05
406	7.60E-06	473	3.52E-04	540	6.18E-04	607	7.82E-04	674	2.38E-04	741	3.00E-05
407	8.70E-06	474	3.28E-04	541	6.21E-04	608	7.80E-04	675	2.31E-04	742	2.90E-05
408	9.40E-06	475	3.11E-04	542	6.25E-04	609	7.75E-04	676	2.24E-04	743	2.79E-05
409	1.02E-05	476	2.93E-04	543	6.24E-04	610	7.66E-04	677	2.19E-04	744	2.72E-05
410	1.09E-05	477	2.83E-04	544	6.31E-04	611	7.63E-04	678	2.12E-04	745	2.62E-05
411	1.21E-05	478	2.74E-04	545	6.36E-04	612	7.62E-04	679	2.06E-04	746	2.55E-05
412	1.39E-05	479	2.70E-04	546	6.37E-04	613	7.58E-04	680	2.01E-04	747	2.49E-05
413	1.54E-05	480	2.64E-04	547	6.38E-04	614	7.52E-04	681	1.95E-04	748	2.40E-05
414	1.69E-05	481	2.63E-04	548	6.43E-04	615	7.45E-04	682	1.90E-04	749	2.28E-05
415	1.94E-05	482	2.62E-04	549	6.48E-04	616	7.39E-04	683	1.84E-04	750	2.23E-05
416	2.18E-05	483	2.64E-04	550	6.51E-04	617	7.29E-04	684	1.79E-04	751	2.17E-05
417	2.45E-05	484	2.69E-04	551	6.54E-04	618	7.21E-04	685	1.73E-04	752	2.14E-05
418	2.71E-05	485	2.70E-04	552	6.59E-04	619	7.12E-04	686	1.68E-04	753	2.02E-05
419	3.02E-05	486	2.78E-04	553	6.63E-04	620	7.06E-04	687	1.63E-04	754	1.96E-05
420	3.34E-05	487	2.82E-04	554	6.69E-04	621	6.96E-04	688	1.59E-04	755	1.92E-05
421	3.77E-05	488	2.90E-04	555	6.73E-04	622	6.89E-04	689	1.55E-04	756	1.85E-05
422	4.16E-05	489	2.93E-04	556	6.76E-04	623	6.80E-04	690	1.50E-04	757	1.79E-05
423	4.59E-05	490	3.00E-04	557	6.81E-04	624	6.74E-04	691	1.45E-04	758	1.73E-05
424	5.18E-05	491	3.06E-04	558	6.87E-04	625	6.68E-04	692	1.41E-04	759	1.67E-05
425	5.74E-05	492	3.12E-04	559	6.89E-04	626	6.58E-04	693	1.37E-04	760	1.63E-05
426	6.54E-05	493	3.20E-04	560	6.92E-04	627	6.48E-04	694	1.33E-04	761	1.58E-05
427	7.33E-05	494	3.29E-04	561	6.97E-04	628	6.41E-04	695	1.29E-04	762	1.54E-05
428	8.37E-05	495	3.37E-04	562	7.01E-04	629	6.30E-04	696	1.24E-04	763	1.48E-05
429	9.30E-05	496	3.50E-04	563	7.03E-04	630	6.21E-04	697	1.22E-04	764	1.45E-05
430	1.06E-04	497	3.60E-04	564	7.08E-04	631	6.11E-04	698	1.18E-04	765	1.41E-05
431	1.14E-04	498	3.73E-04	565	7.12E-04	632	6.04E-04	699	1.14E-04	766	1.38E-05
432	1.26E-04	499	3.83E-04	566	7.19E-04	633	5.94E-04	700	1.10E-04	767	1.33E-05
433	1.41E-04	500	3.95E-04	567	7.24E-04	634	5.85E-04	701	1.07E-04	768	1.29E-05
434	1.54E-04	501	4.05E-04	568	7.28E-04	635	5.75E-04	702	1.04E-04	769	1.23E-05
435	1.74E-04	502	4.20E-04	569	7.38E-04	636	5.66E-04	703	9.98E-05	770	1.20E-05
436	1.90E-04	503	4.28E-04	570	7.38E-04	637	5.54E-04	704	9.75E-05	771	1.17E-05
437	2.13E-04	504	4.39E-04	571	7.40E-04	638	5.45E-04	705	9.43E-05	772	1.13E-05
438	2.39E-04	505	4.49E-04	572	7.47E-04	639	5.34E-04	706	9.14E-05	773	1.07E-05
439	2.64E-04	506	4.59E-04	573	7.50E-04	640	5.24E-04	707	8.83E-05	774	1.06E-05
440	2.97E-04	507	4.69E-04	574	7.53E-04	641	5.13E-04	708	8.55E-05	775	1.02E-05
441	3.27E-04	508	4.79E-04	575	7.55E-04	642	5.02E-04	709	8.28E-05	776	1.00E-05
442	3.68E-04	509	4.88E-04	576	7.61E-04	643	4.96E-04	710	8.12E-05	777	9.70E-06
443	4.15E-04	510	4.96E-04	577	7.63E-04	644	4.84E-04	711	7.82E-05	778	9.50E-06
444	4.66E-04	511	5.00E-04	578	7.63E-04	645	4.76E-04	712	7.61E-05	779	9.50E-06
445	5.26E-04	512	5.08E-04	579	7.68E-04	646	4.66E-04	713	7.35E-05	780	9.60E-06
446	5.91E-04	513	5.14E-04	580	7.73E-04	647	4.56E-04	714	7.14E-05	N/A	N/A

4.0 LM-79 Measurement and Test Results

4.2 Goniophotometer Test

Model No.	STRP4 @20W4000K	Sample ID	241225005-S1
Operate time (Min.)	30	Stabilization time (Min.)	60
Temperature (°C)	24.8	Humidity (%RH)	41.3

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	120.0	60	0.162	19.3	0.994
NON-WORST CASE	277.0	60	0.073	19.2	0.951

Test Result

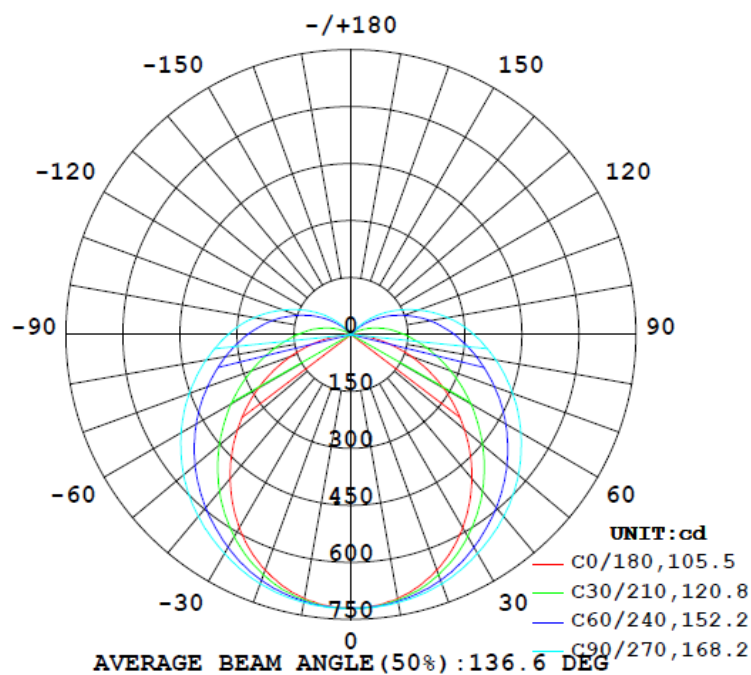
Flux (lm)	Flux per feet (lm/ft)	Field Angle (10%)		Beam Angle (50%)		Luminous Efficacy (lm/W)
		C0-180	C90-270	C0-180	C90-270	
3109	777	159.7	159.7	105.4	168.2	161.1

Zonal Lumen Requirement (0°-60°)	UGR	
	Crosswise	Endwise
56.5%	22.1	30.4

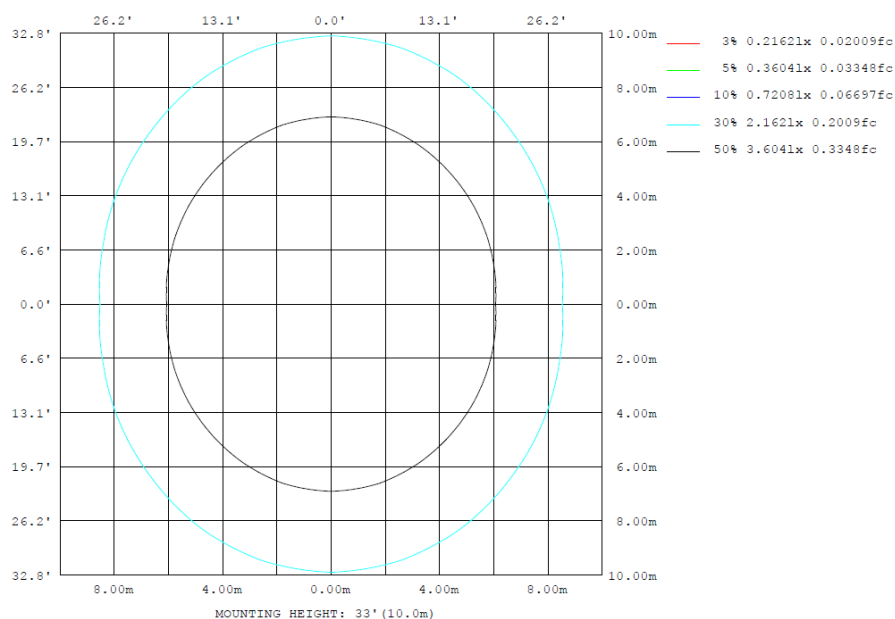
4.2 Goniophotometer Test

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	705.7	710.4	716.1	710.4	705.7	710.4	716.1	710.4	0- 10	68.35	68.35	2.2,2.2
20	659.7	680.4	698.4	680.4	659.7	680.4	698.4	680.4	10- 20	197.2	265.6	8.54,8.54
30	588.0	629.4	665.3	629.4	588.0	629.4	665.3	629.4	20- 30	303.2	568.8	18.3,18.3
40	494.9	564.9	625.2	564.9	494.9	564.9	625.2	564.9	30- 40	374.8	943.5	30.3,30.3
50	390.3	494.3	574.6	494.3	390.3	494.3	574.6	494.3	40- 50	408.2	1352	43.5,43.5
60	280.5	419.1	516.2	419.1	280.5	419.1	516.2	419.1	50- 60	403.9	1756	56.5,56.5
70	169.7	345.1	452.6	345.1	169.7	345.1	452.6	345.1	60- 70	367.5	2123	68.3,68.3
80	66.01	274.6	387.0	274.6	66.01	274.6	387.0	274.6	70- 80	309.0	2432	78.2,78.2
90	4.438	213.8	323.5	213.8	4.438	213.8	323.5	213.8	80- 90	242.7	2675	86,86
100	3.001	157.6	258.5	157.6	3.001	157.6	258.5	157.6	90-100	183.4	2858	91.9,91.9
110	4.185	102.7	189.6	102.7	4.185	102.7	189.6	102.7	100-110	126.2	2984	96,96
120	4.185	53.75	124.2	53.75	4.185	53.75	124.2	53.75	110-120	75.53	3060	98.4,98.4
130	4.187	11.57	64.29	11.57	4.187	11.57	64.29	11.57	120-130	35.67	3096	99.6,99.6
140	4.188	2.011	12.94	2.011	4.188	2.011	12.94	2.011	130-140	10.44	3106	99.9,99.9
150	4.164	1.582	1.311	1.582	4.164	1.582	1.311	1.582	140-150	1.606	3108	99.9,99.9
160	3.934	1.512	1.270	1.512	3.934	1.512	1.270	1.512	150-160	0.9857	3109	100,100
170	4.730	1.556	1.229	1.556	4.730	1.556	1.229	1.556	160-170	0.6109	3109	100,100
180	5.095	1.739	1.496	1.739	5.095	1.739	1.496	1.739	170-180	0.2196	3109	100,100
DEG	LUMINOUS INTENSITY:cd									UNIT:lm		

Zonal (lm)		Total (lm)		Percent
0-10	68.35	0-10	68.35	2.20%
10-20	197.25	0-20	265.60	8.54%
20-30	303.15	0-30	568.75	18.29%
30-40	374.76	0-40	943.51	30.35%
40-50	408.22	0-50	1351.73	43.47%
50-60	403.89	0-60	1755.62	56.46%
60-70	367.49	0-70	2123.11	68.28%
70-80	309.02	0-80	2432.13	78.22%
80-90	242.65	0-90	2674.78	86.03%
90-100	183.40	0-100	2858.18	91.92%
100-110	126.23	0-110	2984.41	95.98%
110-120	75.53	0-120	3059.94	98.41%
120-130	35.67	0-130	3095.61	99.56%
130-140	10.44	0-140	3106.05	99.90%
140-150	1.61	0-150	3107.66	99.95%
150-160	0.99	0-160	3108.65	99.98%
160-170	0.61	0-170	3109.26	100.00%
170-180	0.22	0-180	3109.48	100.01%

4.2 Goniophotometer Test

UGR – Uncorrected Table:

UGR TABLE - UNCORRECTED

Reflectances											
Ceiling Cavity		70	70	50	50	30	70	70	50	50	30
Walls		50	30	50	30	30	50	30	50	30	30
Floor Cavity		20	20	20	20	20	20	20	20	20	20
Room Size		UGR Viewed Crosswise					UGR Viewed Endwise				
X=2H	Y=2H	14.1	15.6	14.7	16.2	16.8	18.4	19.8	18.9	20.4	21.0
	3H	15.5	16.8	16.1	17.4	18.1	21.4	22.7	22.0	23.3	24.0
	4H	15.9	17.2	16.5	17.8	18.5	22.9	24.2	23.5	24.8	25.5
	6H	16.2	17.3	16.8	18.0	18.7	24.6	25.8	25.2	26.4	27.1
	8H	16.2	17.3	16.8	18.0	18.7	25.5	26.6	26.1	27.2	27.9
	12H	16.2	17.3	16.8	17.9	18.7	26.5	27.6	27.1	28.2	28.9
4H	2H	15.5	16.8	16.1	17.4	18.0	18.7	19.9	19.3	20.5	21.2
	3H	17.1	18.2	17.8	18.9	19.6	21.9	23.0	22.5	23.6	24.3
	4H	17.8	18.8	18.4	19.4	20.1	23.6	24.6	24.2	25.3	26.0
	6H	18.1	19.0	18.8	19.7	20.4	25.5	26.4	26.1	27.0	27.8
	8H	18.2	19.1	18.9	19.7	20.5	26.5	27.3	27.1	28.0	28.7
	12H	18.3	19.0	18.9	19.7	20.5	27.6	28.3	28.2	29.0	29.8
8H	4H	18.9	19.8	19.6	20.4	21.2	23.8	24.6	24.4	25.3	26.0
	6H	19.6	20.3	20.3	21.0	21.8	25.8	26.5	26.5	27.2	28.0
	8H	19.8	20.5	20.5	21.2	21.9	26.9	27.6	27.6	28.3	29.0
	12H	19.9	20.5	20.6	21.2	22.1	28.2	28.8	28.9	29.5	30.3
12H	4H	19.3	20.1	20.0	20.8	21.5	23.8	24.5	24.4	25.2	26.0
	6H	20.1	20.8	20.8	21.5	22.3	25.8	26.5	26.5	27.2	28.0
	8H	20.5	21.1	21.2	21.8	22.6	27.0	27.6	27.7	28.3	29.1

Maximum UGR = 30.3

UGR – Corrected Table:

UGR TABLE - CORRECTED

Reflectances											
Ceiling Cavity		70	70	50	50	30	70	70	50	50	30
Walls		50	30	50	30	30	50	30	50	30	30
Floor Cavity		20	20	20	20	20	20	20	20	20	20
Room Size		UGR Viewed Crosswise					UGR Viewed Endwise				
X=2H	Y=2H	18.0	19.5	18.6	20.1	20.7	22.3	23.7	22.8	24.3	24.9
	3H	19.4	20.7	20.0	21.3	22.0	25.3	26.6	25.9	27.2	27.9
	4H	19.8	21.1	20.4	21.7	22.4	26.8	28.1	27.4	28.7	29.4
	6H	20.1	21.2	20.7	21.9	22.6	28.5	29.7	29.1	30.3	31.0
	8H	20.1	21.2	20.7	21.9	22.6	29.4	30.5	30.0	31.1	31.8
	12H	20.1	21.2	20.7	21.8	22.6	30.4	31.5	31.0	32.1	32.8
4H	2H	19.4	20.7	20.0	21.3	21.9	22.6	23.8	23.2	24.4	25.1
	3H	21.0	22.1	21.7	22.8	23.5	25.8	26.9	26.4	27.5	28.2
	4H	21.7	22.7	22.3	23.3	24.0	27.5	28.5	28.1	29.2	29.9
	6H	22.0	22.9	22.7	23.6	24.3	29.4	30.3	30.0	30.9	31.7
	8H	22.1	23.0	22.8	23.6	24.4	30.4	31.2	31.0	31.9	32.6
	12H	22.2	22.9	22.8	23.6	24.4	31.5	32.2	32.1	32.9	33.7
8H	4H	22.8	23.7	23.5	24.3	25.1	27.7	28.5	28.3	29.2	29.9
	6H	23.5	24.2	24.2	24.9	25.7	29.7	30.4	30.4	31.1	31.9
	8H	23.7	24.4	24.4	25.1	25.8	30.8	31.5	31.5	32.2	32.9
	12H	23.8	24.4	24.5	25.1	26.0	32.1	32.7	32.8	33.4	34.2
12H	4H	23.2	24.0	23.9	24.7	25.4	27.7	28.4	28.3	29.1	29.9
	6H	24.0	24.7	24.7	25.4	26.2	29.7	30.4	30.4	31.1	31.9
	8H	24.4	25.0	25.1	25.7	26.5	30.9	31.5	31.6	32.2	33.0

Maximum UGR = 34.2

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	721	721	721	721	721	719	721	719	721	721	721	721	721	721	721	721	721	719	721
5	717	718	719	718	719	719	721	719	719	718	719	718	717	718	719	718	719	719	721
10	706	708	709	710	713	715	716	715	713	710	709	708	706	708	709	710	713	715	716
15	686	691	695	698	703	707	709	707	703	698	695	691	686	691	695	698	703	707	709
20	660	667	674	680	689	695	698	695	689	680	674	667	660	667	674	680	689	695	698
25	627	636	646	657	670	679	684	679	670	657	646	636	627	636	646	657	670	679	684
30	588	600	614	629	647	660	665	660	647	629	614	600	588	600	614	629	647	660	665
35	543	558	578	599	621	640	646	640	621	599	578	558	543	558	578	599	621	640	646
40	495	512	538	565	595	618	625	618	595	565	538	512	495	512	538	565	595	618	625
45	444	464	496	530	566	591	601	591	566	530	496	464	444	464	496	530	566	591	601
50	390	414	452	494	536	563	575	563	536	494	452	414	390	414	452	494	536	563	575
55	336	363	408	457	504	535	546	535	504	457	408	363	336	363	408	457	504	535	546
60	281	311	364	419	470	504	516	504	470	419	364	311	281	311	364	419	470	504	516
65	225	260	321	382	436	471	485	471	436	382	321	260	225	260	321	382	436	471	485
70	170	209	279	345	402	439	453	439	402	345	279	209	170	209	279	345	402	439	453
75	116	163	239	310	368	406	420	406	368	310	239	163	116	163	239	310	368	406	420
80	66.0	121	202	275	335	372	387	372	335	275	202	121	66.0	121	202	275	335	372	387
85	25.6	84.7	169	243	303	340	355	340	303	243	169	84.7	25.6	84.7	169	243	303	340	355
90	4.44	58.4	141	214	273	310	324	310	273	214	141	58.4	4.44	58.4	141	214	273	310	324
95	2.96	39.5	116	186	241	278	292	278	241	186	116	39.5	2.96	39.5	116	186	241	278	292
100	3.00	24.1	91.4	158	212	244	258	244	212	158	91.4	24.1	3.00	24.1	91.4	158	212	244	258
105	3.82	10.8	68.5	130	180	211	224	211	180	130	68.5	10.8	3.82	10.8	68.5	130	180	211	224
110	4.18	3.31	47.8	103	149	178	190	178	149	103	47.8	3.31	4.18	3.31	47.8	103	149	178	190
115	4.18	3.30	28.8	77.4	119	145	156	145	119	77.4	28.8	3.30	4.18	3.30	28.8	77.4	119	145	156
120	4.19	3.30	11.8	53.7	90.3	114	124	114	90.3	53.7	11.8	3.30	4.19	3.30	11.8	53.7	90.3	114	124
125	4.19	3.30	2.85	31.6	63.5	84.3	93.1	84.3	63.5	31.6	2.85	3.30	4.19	3.30	2.85	31.6	63.5	84.3	93.1
130	4.19	3.30	2.66	11.6	38.3	56.6	64.3	56.6	38.3	11.6	2.66	3.30	4.19	3.30	2.66	11.6	38.3	56.6	64.3
135	4.19	3.39	2.63	2.20	15.8	31.2	37.3	31.2	15.8	2.20	2.63	3.39	4.19	3.39	2.63	2.20	15.8	31.2	37.3
140	4.19	3.45	2.48	2.01	1.76	8.44	12.9	8.44	1.76	2.01	2.48	3.45	4.19	3.45	2.48	2.01	1.76	8.44	12.9
145	4.27	3.50	2.40	1.74	1.51	1.48	1.40	1.48	1.51	1.74	2.40	3.50	4.27	3.50	2.40	1.74	1.51	1.48	1.40
150	4.16	3.56	2.16	1.58	1.47	1.48	1.31	1.48	1.47	1.58	2.16	3.56	4.16	3.56	2.16	1.58	1.47	1.48	1.31
155	4.10	3.62	2.02	1.49	1.47	1.48	1.29	1.48	1.47	1.49	2.02	3.62	4.10	3.62	2.02	1.49	1.47	1.48	1.29
160	3.93	3.68	1.98	1.51	1.47	1.48	1.27	1.48	1.47	1.51	1.98	3.68	3.93	3.68	1.98	1.51	1.47	1.48	1.27
165	4.09	3.74	1.99	1.53	1.47	1.48	1.25	1.48	1.47	1.53	1.99	3.74	4.09	3.74	1.99	1.53	1.47	1.48	1.25
170	4.73	4.03	2.01	1.56	1.47	1.48	1.23	1.48	1.47	1.56	2.01	4.03	4.73	4.03	2.01	1.56	1.47	1.48	1.23
175	5.09	4.00	2.02	1.65	1.55	1.48	1.31	1.48	1.55	1.65	2.02	4.00	5.09	4.00	2.02	1.65	1.55	1.48	1.31
180	5.09	4.22	2.02	1.74	1.57	1.67	1.50	1.67	1.57	1.74	2.02	4.22	5.09	4.22	2.02	1.74	1.57	1.67	1.50

Table--2

UNIT: cd

C (DEG) y (DEG)	285	300	315	330	345														
0	719	721	721	721	721														
5	719	719	718	719	718														
10	715	713	710	709	708														
15	707	703	698	695	691														
20	695	689	680	674	667														
25	679	670	657	646	636														
30	660	647	629	614	600														
35	640	621	599	578	558														
40	618	595	565	538	512														
45	591	566	530	496	464														
50	563	536	494	452	414														
55	535	504	457	408	363														
60	504	470	419	364	311														
65	471	436	382	321	260														
70	439	402	345	279	209														
75	406	368	310	239	163														
80	372	335	275	202	121														
85	340	303	243	169	84.7														
90	310	273	214	141	58.4														
95	278	241	186	116	39.5														
100	244	212	158	91.4	24.1														
105	211	180	130	68.5	10.8														
110	178	149	103	47.8	3.31														
115	145	119	77.4	28.8	3.30														
120	114	90.3	53.7	11.8	3.30														
125	84.3	63.5	31.6	2.85	3.30														
130	56.6	38.3	11.6	2.66	3.30														
135	31.2	15.8	2.20	2.63	3.39														
140	8.44	1.76	2.01	2.48	3.45														
145	1.48	1.51	1.74	2.40	3.50														
150	1.48	1.47	1.58	2.16	3.56														
155	1.48	1.47	1.49	2.02	3.62														
160	1.48	1.47	1.51	1.98	3.68														
165	1.48	1.47	1.53	1.99	3.74														
170	1.48	1.47	1.56	2.01	4.03														
175	1.48	1.55	1.65	2.02	4.00														
180	1.67	1.57	1.74	2.02	4.22														

4.0 LM-79 Measurement and Test Results

4.3 THD and PF Test

Model No.	STRP4 @20W4000K	Sample ID	241225005-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	0.162	19.3	0.994	7.74
277.0	60	0.073	19.2	0.951	8.68

5.0 Equipment List:

Equipment ID	Equipment Name	Last Cal.	Due Cal.
NTC-F01-001	Goniophotometer System	2024-11-07	2025-11-06
NTC-F01-006	2.0 meter Integrating Sphere	2024-11-07	2025-11-06
NTC-F01-012	Standard Lamp	2024-10-28	2025-10-27
NTC-F01-013	Standard Lamp	2024-10-28	2025-10-27
NTC-F01-031	Digital Power Meter	2024-08-06	2025-08-05
NTC-F01-019	Temperature & Humidity Meter	2024-10-29	2025-10-28

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