

## 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: 2025-04-03

Review by:

*Vincent Yuan*

Technical Lead: Vincent Yuan

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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		796
Minimum Luminaire Efficacy (lm/W) (Goniophotometer – Section 4.2)		ANSI/IES LM-79:2019	Standard	Premium	161.7
			115	130	
Power (Input Wattage) (W) (Goniophotometer – Section 4.2)		ANSI/IES LM-79:2019	Worst Case		19.7
Total Harmonic Distortion (A%) (THD & PF – Section 4.3)		ANSI C82.77:2002 ANSI C82-77-10:2020	20.00%	120V	7.77
				277V	8.22
Power Factor (THD & PF – Section 4.3)		ANSI C82.77:2002 ANSI C82-77-10:2020	0.9	120V	0.994
				277V	0.952
Allowable CCTs* (K) (Integrating Sphere – Section 4.1)		ANSI/IES LM-79:2019	7 steps	3985±275	4087
			4 steps	3985±154	
Minimum CRI (Integrating Sphere – Section 4.1)		ANSI/IES LM-79:2019 CIE13.3-1995	≥80		84.9
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%		56.0%
Discomfort Glare (UGR) (Goniophotometer – Section 4.2)		ANSI/IES LM-79:2019	Standard	Premium	30.6
			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		0.165
(Goniophotometer – Section 4.2)			Non-Worst Case		0.074
Power (Input Wattage – W)					
(Goniophotometer – Section 4.2)		ANSI/IES LM-79:2019	Worst Case		19.7
(Goniophotometer – Section 4.2)			Non-Worst Case		19.6

## 2.0 Test List

Test Item	Test	Test Date	Model Number	Build Level	Sample No.
1	Integrating Sphere Test	2025-04-03	STRP4/MVS @20W4000K	-	250402001-S1
2	Goniophotometer Test	2025-04-03	STRP4/MVS @20W4000K	-	250402001-S1
3	THD and PF Test	2025-04-03	STRP4/MVS @20W4000K	-	250402001-S1

### Remark (If any):

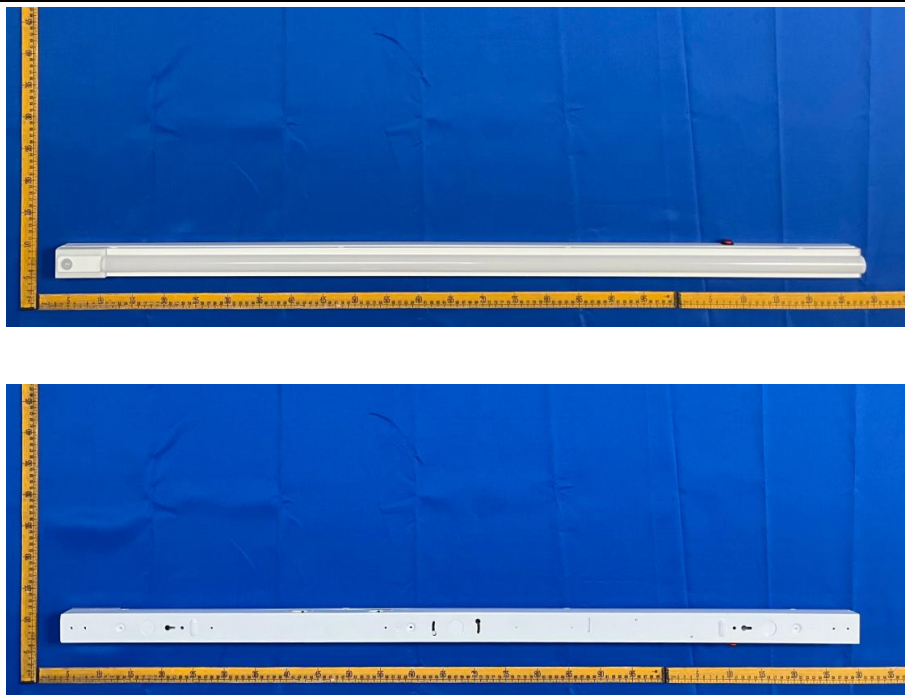
1. The results contained in this report pertain only to the tested samples.
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3. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST or any agency of the U.S. Government.

### 3.0 Product Description

Luminaire Description: Model No. STRP4/MVS @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/MVS @20W4000K	Sample ID	250402001-S1
Operate time (Min.)	10	Stabilization time (Min.)	60
Temperature (°C)	25.4	Humidity (%RH)	41.0

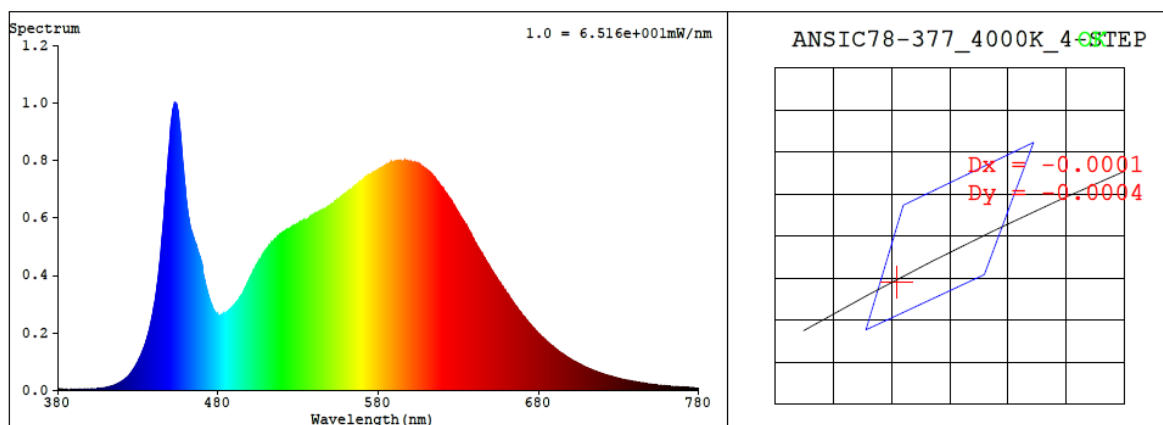
Test Method
<p>The Samples were tested according to the ANSI/IES LM-79:2019.</p> <p>Photometric parameters were measured using an integrating sphere, a spectroradiometer and software. The ambient temperature condition inside the sphere was maintained at 25±1°C.</p> <p>The sample measurements were made 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 4<math>\pi</math> 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	0.165	19.7	0.994
277.0	60	0.074	19.6	0.952

CCT (K)	CRI	R9	Duv	SDCM	Rf	Rg	IES Rcs,h1
4087	84.9	17	-0.0001	2.5	85	95	-11%

#### 4.1 Integrating Sphere Test



## Colorimetric Parameters

Chromaticity Coordinate:  $x = 0.3766$   $y = 0.3740$   $u' = 0.2237$   $v' = 0.4998$  ( $duv = -1.43e-04$ )

CCT= 4087K      Prcp WL:   Ld=578.8nm      Purity=25.3%

Peak WL: Lp=453nm FWHM: =22.2nm Ratio:R=18.4% G=77.7% B=3.9%

Render Index: Ra = 84.9 AvgR = 78.8 TM30:Rf=85 Rg=95

EEl: 0.08771 A++ Highest

R1 =84    R2 =92    R3 =96    R4 =83    R5 =83    R6 =87    R7 =87

R8 =67      R9 =17      R10=79      R11=82      R12=62      R13=86      R14=98      R15=78

## 4.1 Integrating Sphere Test

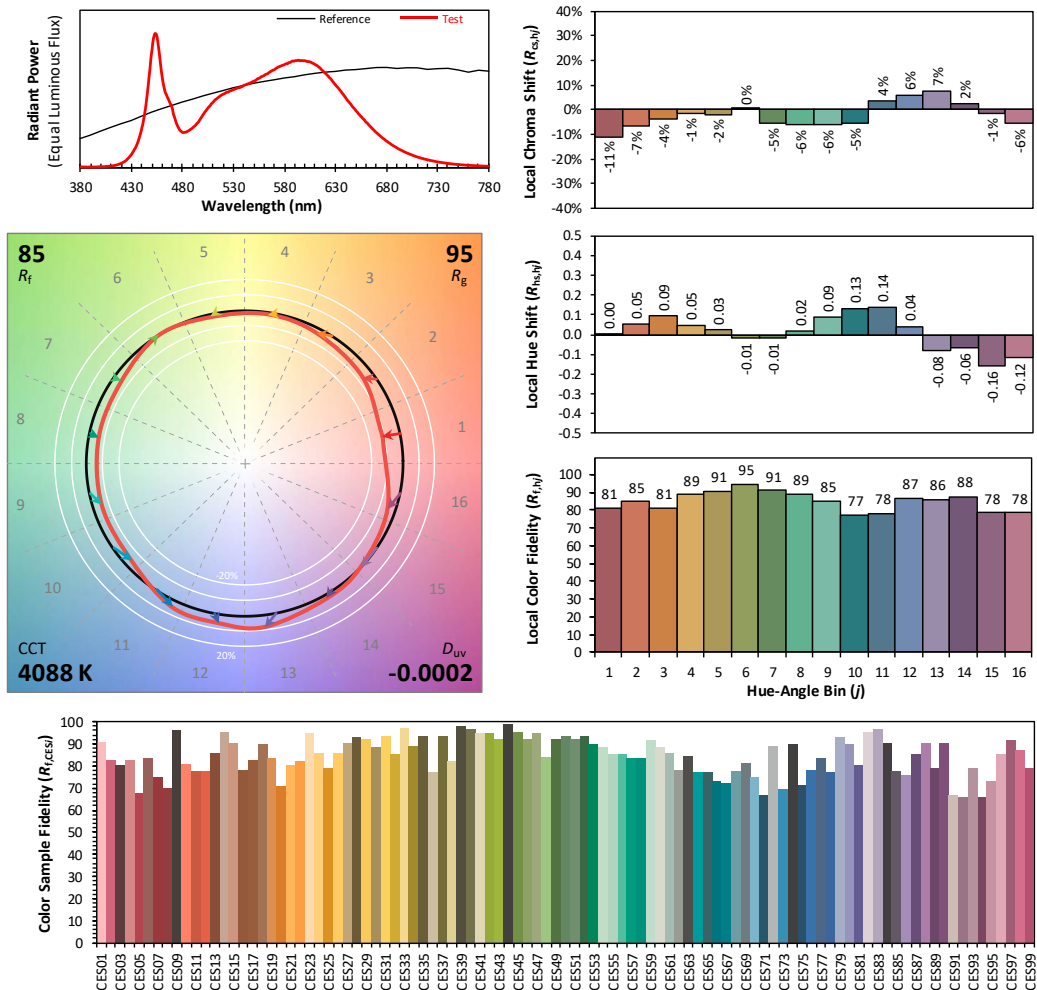
### ANSI/IES TM-30-18 Color Rendition Report

Source: 1 CIE F1

Manufacturer: RAB Lighting Inc.

Date: 2025/4/3

Model: STRP4/MVS @20W4000K



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

$x$  0.3765  
 $y$  0.3739  
 $u'$  0.2237  
 $v'$  0.4997

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	4.10E-06	447	6.66E-04	514	5.16E-04	581	7.72E-04	648	4.44E-04	715	6.75E-05
381	4.00E-06	448	7.36E-04	515	5.22E-04	582	7.74E-04	649	4.36E-04	716	6.58E-05
382	3.40E-06	449	8.18E-04	516	5.27E-04	583	7.74E-04	650	4.25E-04	717	6.32E-05
383	3.20E-06	450	8.78E-04	517	5.34E-04	584	7.81E-04	651	4.17E-04	718	6.14E-05
384	3.30E-06	451	9.42E-04	518	5.38E-04	585	7.83E-04	652	4.08E-04	719	5.96E-05
385	3.30E-06	452	9.80E-04	519	5.43E-04	586	7.85E-04	653	3.98E-04	720	5.78E-05
386	2.70E-06	453	9.99E-04	520	5.47E-04	587	7.91E-04	654	3.91E-04	721	5.58E-05
387	2.00E-06	454	9.95E-04	521	5.50E-04	588	7.95E-04	655	3.81E-04	722	5.42E-05
388	3.30E-06	455	9.74E-04	522	5.54E-04	589	7.93E-04	656	3.74E-04	723	5.24E-05
389	3.30E-06	456	9.19E-04	523	5.60E-04	590	7.95E-04	657	3.65E-04	724	5.10E-05
390	2.90E-06	457	8.64E-04	524	5.61E-04	591	7.97E-04	658	3.58E-04	725	4.96E-05
391	3.30E-06	458	7.97E-04	525	5.63E-04	592	7.97E-04	659	3.49E-04	726	4.78E-05
392	3.10E-06	459	7.31E-04	526	5.69E-04	593	7.99E-04	660	3.38E-04	727	4.61E-05
393	3.40E-06	460	6.74E-04	527	5.72E-04	594	8.00E-04	661	3.33E-04	728	4.47E-05
394	3.30E-06	461	6.30E-04	528	5.74E-04	595	7.96E-04	662	3.25E-04	729	4.32E-05
395	3.30E-06	462	5.92E-04	529	5.78E-04	596	7.98E-04	663	3.16E-04	730	4.15E-05
396	3.80E-06	463	5.61E-04	530	5.80E-04	597	7.97E-04	664	3.08E-04	731	4.03E-05
397	4.30E-06	464	5.45E-04	531	5.85E-04	598	7.96E-04	665	3.00E-04	732	3.89E-05
398	4.60E-06	465	5.26E-04	532	5.87E-04	599	7.97E-04	666	2.92E-04	733	3.80E-05
399	4.30E-06	466	5.10E-04	533	5.90E-04	600	7.97E-04	667	2.85E-04	734	3.70E-05
400	4.40E-06	467	4.93E-04	534	5.94E-04	601	7.93E-04	668	2.77E-04	735	3.57E-05
401	5.30E-06	468	4.75E-04	535	5.94E-04	602	7.93E-04	669	2.70E-04	736	3.45E-05
402	5.10E-06	469	4.60E-04	536	5.95E-04	603	7.89E-04	670	2.62E-04	737	3.36E-05
403	5.70E-06	470	4.40E-04	537	5.99E-04	604	7.90E-04	671	2.56E-04	738	3.25E-05
404	6.00E-06	471	3.99E-04	538	6.03E-04	605	7.88E-04	672	2.48E-04	739	3.15E-05
405	7.00E-06	472	3.78E-04	539	6.05E-04	606	7.86E-04	673	2.42E-04	740	3.03E-05
406	7.10E-06	473	3.53E-04	540	6.13E-04	607	7.80E-04	674	2.35E-04	741	2.95E-05
407	7.90E-06	474	3.29E-04	541	6.14E-04	608	7.78E-04	675	2.28E-04	742	2.86E-05
408	8.60E-06	475	3.12E-04	542	6.17E-04	609	7.73E-04	676	2.22E-04	743	2.75E-05
409	8.90E-06	476	2.96E-04	543	6.20E-04	610	7.69E-04	677	2.16E-04	744	2.64E-05
410	1.03E-05	477	2.83E-04	544	6.23E-04	611	7.64E-04	678	2.11E-04	745	2.60E-05
411	1.15E-05	478	2.73E-04	545	6.26E-04	612	7.60E-04	679	2.04E-04	746	2.47E-05
412	1.24E-05	479	2.67E-04	546	6.28E-04	613	7.54E-04	680	1.97E-04	747	2.40E-05
413	1.44E-05	480	2.62E-04	547	6.32E-04	614	7.48E-04	681	1.93E-04	748	2.33E-05
414	1.57E-05	481	2.60E-04	548	6.36E-04	615	7.42E-04	682	1.87E-04	749	2.27E-05
415	1.78E-05	482	2.62E-04	549	6.41E-04	616	7.33E-04	683	1.83E-04	750	2.19E-05
416	2.02E-05	483	2.63E-04	550	6.43E-04	617	7.25E-04	684	1.77E-04	751	2.15E-05
417	2.22E-05	484	2.65E-04	551	6.47E-04	618	7.19E-04	685	1.71E-04	752	2.07E-05
418	2.50E-05	485	2.70E-04	552	6.50E-04	619	7.10E-04	686	1.66E-04	753	1.98E-05
419	2.82E-05	486	2.74E-04	553	6.59E-04	620	7.04E-04	687	1.61E-04	754	1.93E-05
420	3.14E-05	487	2.80E-04	554	6.62E-04	621	6.98E-04	688	1.57E-04	755	1.86E-05
421	3.49E-05	488	2.85E-04	555	6.65E-04	622	6.88E-04	689	1.53E-04	756	1.84E-05
422	3.95E-05	489	2.89E-04	556	6.70E-04	623	6.82E-04	690	1.48E-04	757	1.76E-05
423	4.37E-05	490	2.96E-04	557	6.75E-04	624	6.71E-04	691	1.43E-04	758	1.69E-05
424	4.88E-05	491	3.03E-04	558	6.79E-04	625	6.66E-04	692	1.39E-04	759	1.63E-05
425	5.52E-05	492	3.09E-04	559	6.82E-04	626	6.57E-04	693	1.35E-04	760	1.61E-05
426	6.30E-05	493	3.17E-04	560	6.85E-04	627	6.46E-04	694	1.30E-04	761	1.56E-05
427	7.09E-05	494	3.27E-04	561	6.91E-04	628	6.36E-04	695	1.27E-04	762	1.51E-05
428	7.93E-05	495	3.33E-04	562	6.96E-04	629	6.26E-04	696	1.24E-04	763	1.45E-05
429	8.88E-05	496	3.44E-04	563	6.97E-04	630	6.17E-04	697	1.19E-04	764	1.41E-05
430	9.86E-05	497	3.57E-04	564	7.03E-04	631	6.08E-04	698	1.15E-04	765	1.40E-05
431	1.11E-04	498	3.68E-04	565	7.09E-04	632	6.00E-04	699	1.12E-04	766	1.35E-05
432	1.23E-04	499	3.79E-04	566	7.14E-04	633	5.91E-04	700	1.09E-04	767	1.27E-05
433	1.37E-04	500	3.92E-04	567	7.18E-04	634	5.81E-04	701	1.05E-04	768	1.24E-05
434	1.50E-04	501	4.02E-04	568	7.23E-04	635	5.73E-04	702	1.02E-04	769	1.22E-05
435	1.67E-04	502	4.15E-04	569	7.27E-04	636	5.63E-04	703	9.94E-05	770	1.17E-05
436	1.86E-04	503	4.23E-04	570	7.29E-04	637	5.52E-04	704	9.62E-05	771	1.16E-05
437	2.08E-04	504	4.34E-04	571	7.35E-04	638	5.43E-04	705	9.35E-05	772	1.10E-05
438	2.34E-04	505	4.44E-04	572	7.40E-04	639	5.31E-04	706	9.01E-05	773	1.05E-05
439	2.61E-04	506	4.53E-04	573	7.45E-04	640	5.22E-04	707	8.69E-05	774	1.04E-05
440	2.93E-04	507	4.59E-04	574	7.50E-04	641	5.10E-04	708	8.47E-05	775	9.80E-06
441	3.24E-04	508	4.73E-04	575	7.51E-04	642	4.99E-04	709	8.15E-05	776	9.70E-06
442	3.66E-04	509	4.79E-04	576	7.56E-04	643	4.91E-04	710	7.89E-05	777	9.60E-06
443	4.11E-04	510	4.88E-04	577	7.59E-04	644	4.82E-04	711	7.65E-05	778	9.10E-06
444	4.63E-04	511	4.95E-04	578	7.62E-04	645	4.74E-04	712	7.46E-05	779	9.20E-06
445	5.27E-04	512	5.06E-04	579	7.64E-04	646	4.62E-04	713	7.22E-05	780	9.20E-06
446	5.91E-04	513	5.09E-04	580	7.67E-04	647	4.52E-04	714	6.96E-05	N/A	N/A



## 4.0 LM-79 Measurement and Test Results

### 4.2 Goniophotometer Test

Model No.	STRP4/MVS @20W4000K	Sample ID	250402001-S1
Operate time (Min.)	30	Stabilization time (Min.)	60
Temperature (°C)	25.0	Humidity (%RH)	42.6

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 <math>25 \pm 1^\circ\text{C}</math>, measured at a point not more than 1 m from the sample and at the same height as the sample.</p> <p>The voltage of an AC power supply (RMS voltage) or DC power supply (instantaneous voltage) applied to the device under test shall be regulated to within <math>\pm 0.2</math> percent under load.</p> <p>The samples were operated at rated voltage and was stabilized before measurement. Luminous flux, luminaire efficacy, zonal lumen were calculated from the software taken at <math>1.0^\circ</math> vertical intervals and <math>15^\circ</math> horizontal intervals.</p>

#### Test Conditions

Condition	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor
WORST CASE	120.0	60	0.165	19.7	0.994
NON-WORST CASE	277.0	60	0.074	19.6	0.952

#### Test Result

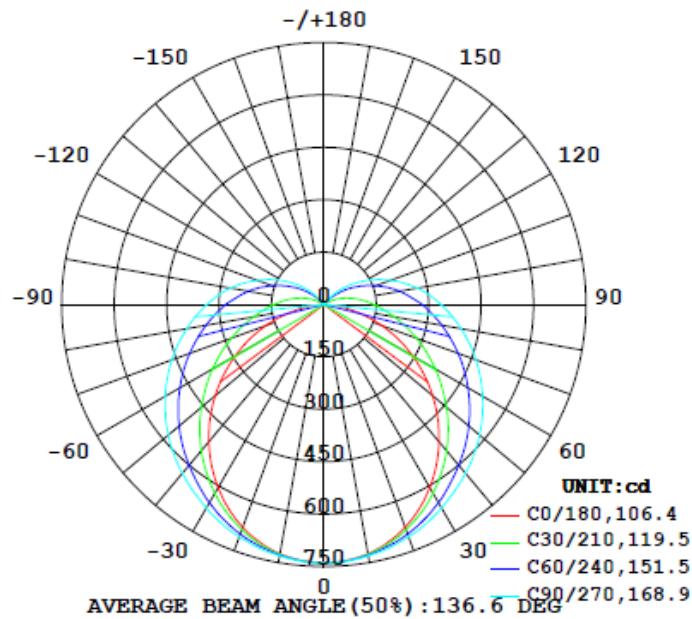
Flux (lm)	Flux per feet (lm/ft)	Field Angle (10%)		Beam Angle (50%)		Luminous Efficacy (lm/W)
		C0-180	C90-270	C0-180	C90-270	
3185	796	159.7	159.7	106.4	168.8	161.7

Zonal Lumen Requirement	UGR	
( $0^\circ$ - $60^\circ$ )	Crosswise	Endwise
56.0%	22.3	30.6

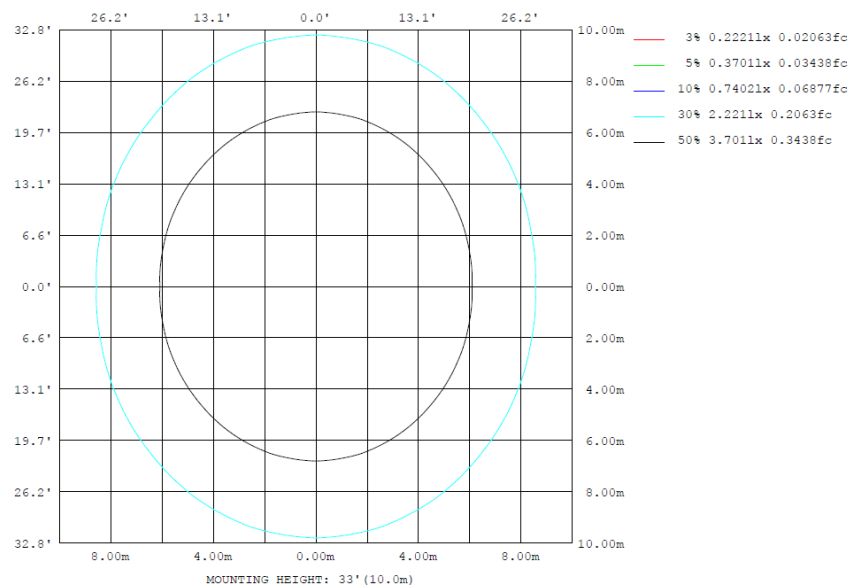
## 4.2 Goniophotometer Test

### Lighting Distribution Curve

#### LUMINOUS INTENSITY DISTRIBUTION DIAGRAM



### Isolux Plot



## 4.2 Goniophotometer Test

### Zonal Lumen Summary

γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	φ zone	φ total	%lum, lamp
10	724.6	726.2	730.7	726.2	724.6	726.2	730.7	726.2	0- 10	70.01	70.01	2.2,2.2
20	678.7	692.0	708.0	692.0	678.7	692.0	708.0	692.0	10- 20	201.3	271.3	8.52,8.52
30	605.5	638.5	672.8	638.5	605.5	638.5	672.8	638.5	20- 30	308.3	579.6	18.2,18.2
40	512.6	571.5	630.5	571.5	512.6	571.5	630.5	571.5	30- 40	380.3	959.9	30.1,30.1
50	405.8	499.2	581.5	499.2	405.8	499.2	581.5	499.2	40- 50	414.0	1374	43.1,43.1
60	292.9	424.5	524.6	424.5	292.9	424.5	524.6	424.5	50- 60	410.0	1784	56,56
70	176.4	349.9	462.9	349.9	176.4	349.9	462.9	349.9	60- 70	373.8	2158	67.8,67.8
80	67.24	280.4	398.7	280.4	67.24	280.4	398.7	280.4	70- 80	315.2	2473	77.7,77.7
90	3.889	219.8	335.3	219.8	3.889	219.8	335.3	219.8	80- 90	248.9	2722	85.5,85.5
100	2.973	163.4	272.2	163.4	2.973	163.4	272.2	163.4	90-100	189.7	2911	91.4,91.4
110	3.569	109.3	202.9	109.3	3.569	109.3	202.9	109.3	100-110	133.3	3045	95.6,95.6
120	4.010	60.16	136.2	60.16	4.010	60.16	136.2	60.16	110-120	82.12	3127	98.2,98.2
130	4.167	17.48	74.88	17.48	4.167	17.48	74.88	17.48	120-130	40.78	3168	99.5,99.5
140	4.160	2.065	20.72	2.065	4.160	2.065	20.72	2.065	130-140	13.28	3181	99.9,99.9
150	4.126	1.738	1.150	1.738	4.126	1.738	1.150	1.738	140-150	1.916	3183	99.9,99.9
160	3.513	1.551	1.148	1.551	3.513	1.551	1.148	1.551	150-160	0.9416	3184	100,100
170	4.482	1.486	1.435	1.486	4.482	1.486	1.435	1.486	160-170	0.5412	3184	100,100
180	1.053	1.053	1.053	1.053	1.053	1.053	1.053	1.053	170-180	0.1930	3185	100,100
DEG	LUMINOUS INTENSITY:cd									UNIT:lm		

	Zonal (lm)		Total (lm)	Percent
0-10	70.01	0-10	70.01	2.20%
10-20	201.29	0-20	271.30	8.52%
20-30	308.31	0-30	579.61	18.20%
30-40	380.32	0-40	959.93	30.15%
40-50	414.00	0-50	1373.93	43.15%
50-60	409.98	0-60	1783.91	56.02%
60-70	373.77	0-70	2157.68	67.76%
70-80	315.22	0-80	2472.90	77.66%
80-90	248.89	0-90	2721.79	85.47%
90-100	189.65	0-100	2911.44	91.43%
100-110	133.31	0-110	3044.75	95.62%
110-120	82.12	0-120	3126.87	98.20%
120-130	40.78	0-130	3167.65	99.48%
130-140	13.28	0-140	3180.93	99.89%
140-150	1.92	0-150	3182.85	99.95%
150-160	0.94	0-160	3183.79	99.98%
160-170	0.54	0-170	3184.33	100.00%
170-180	0.19	0-180	3184.52	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	14.3	15.7	14.9	16.3	17.0	18.5	19.9	19.1	20.5	21.2
	3H	15.6	17.0	16.2	17.6	18.3	21.5	22.8	22.1	23.4	24.1
	4H	16.1	17.3	16.7	17.9	18.6	23.1	24.3	23.7	24.9	25.6
	6H	16.3	17.5	17.0	18.1	18.8	24.8	25.9	25.4	26.6	27.3
	8H	16.4	17.5	17.0	18.1	18.9	25.7	26.8	26.3	27.4	28.2
	12H	16.4	17.5	17.0	18.1	18.9	26.7	27.7	27.3	28.4	29.1
4H	2H	15.6	16.9	16.2	17.5	18.2	18.8	20.0	19.4	20.7	21.4
	3H	17.3	18.4	17.9	19.0	19.7	22.1	23.1	22.7	23.8	24.5
	4H	17.9	18.9	18.5	19.5	20.3	23.8	24.8	24.4	25.4	26.2
	6H	18.3	19.1	18.9	19.8	20.6	25.6	26.5	26.3	27.2	28.0
	8H	18.3	19.2	19.0	19.9	20.6	26.6	27.5	27.3	28.2	28.9
	12H	18.4	19.2	19.1	19.9	20.6	27.8	28.5	28.5	29.2	30.0
8H	4H	19.1	19.9	19.7	20.6	21.4	23.9	24.8	24.6	25.4	26.2
	6H	19.7	20.4	20.4	21.2	21.9	26.0	26.7	26.7	27.4	28.2
	8H	19.9	20.6	20.6	21.3	22.1	27.1	27.7	27.8	28.5	29.3
	12H	20.1	20.6	20.8	21.4	22.2	28.4	29.0	29.1	29.7	30.5
12H	4H	19.5	20.2	20.1	20.9	21.7	23.9	24.7	24.6	25.4	26.2
	6H	20.3	20.9	21.0	21.6	22.5	26.0	26.6	26.7	27.3	28.2
	8H	20.6	21.2	21.3	21.9	22.8	27.2	27.8	27.9	28.5	29.3
Maximum UGR = 30.5											

Maximum UGR = 30.5

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	18.3	19.7	18.9	20.3	21.0	22.5	23.9	23.1	24.5	25.2
	3H	19.6	21.0	20.2	21.6	22.3	25.5	26.8	26.1	27.4	28.1
	4H	20.1	21.3	20.7	21.9	22.6	27.1	28.3	27.7	28.9	29.6
	6H	20.3	21.5	21.0	22.1	22.8	28.8	29.9	29.4	30.6	31.3
	8H	20.4	21.5	21.0	22.1	22.9	29.7	30.8	30.3	31.4	32.2
	12H	20.4	21.5	21.0	22.1	22.9	30.7	31.7	31.3	32.4	33.1
4H	2H	19.6	20.9	20.2	21.5	22.2	22.8	24.0	23.4	24.7	25.4
	3H	21.3	22.4	21.9	23.0	23.7	26.1	27.1	26.7	27.8	28.5
	4H	21.9	22.9	22.5	23.5	24.3	27.8	28.8	28.4	29.4	30.2
	6H	22.3	23.1	22.9	23.8	24.6	29.6	30.5	30.3	31.2	32.0
	8H	22.3	23.2	23.0	23.9	24.6	30.6	31.5	31.3	32.2	32.9
	12H	22.4	23.2	23.1	23.9	24.6	31.8	32.5	32.5	33.2	34.0
8H	4H	23.1	23.9	23.7	24.6	25.4	27.9	28.8	28.6	29.4	30.2
	6H	23.7	24.4	24.4	25.2	25.9	30.0	30.7	30.7	31.4	32.2
	8H	23.9	24.6	24.6	25.3	26.1	31.1	31.7	31.8	32.5	33.3
	12H	24.1	24.6	24.8	25.4	26.2	32.4	33.0	33.1	33.7	34.5
12H	4H	23.5	24.2	24.1	24.9	25.7	27.9	28.7	28.6	29.4	30.2
	6H	24.3	24.9	25.0	25.6	26.5	30.0	30.6	30.7	31.3	32.2
	8H	24.6	25.2	25.3	25.9	26.8	31.2	31.8	31.9	32.5	33.3

Maximum UGR = 34.5

## 4.2 Goniophotometer Test

### Luminous Distribution Intensity Data

Table--1

UNIT: cd

C (DBG) γ (DBG)	0	15	30	45	60	75	90	105	120	135	150	165	180	195	210	225	240	255	270
0	740	740	740	740	740	740	740	740	740	740	740	740	740	740	740	740	740	740	740
5	735	737	737	736	736	737	737	737	736	736	737	737	735	737	737	736	736	737	737
10	725	726	726	726	728	730	731	730	728	726	726	726	725	726	726	726	728	730	731
15	705	707	710	712	716	720	721	720	716	712	710	707	705	707	710	712	716	720	721
20	679	682	687	692	699	706	708	706	699	692	687	682	679	682	687	692	699	706	708
25	645	650	658	667	679	688	692	688	679	667	658	650	645	650	658	667	679	688	692
30	605	612	624	639	655	668	673	668	655	639	624	612	605	612	624	639	655	668	673
35	561	569	587	606	628	646	652	646	628	606	587	569	561	569	587	606	628	646	652
40	513	523	546	571	600	623	630	623	600	571	546	523	513	523	546	571	600	623	630
45	461	474	503	536	572	598	607	598	572	536	503	474	461	474	503	536	572	598	607
50	406	423	458	499	541	570	581	570	541	499	458	423	406	423	458	499	541	570	581
55	350	371	412	462	509	541	554	541	509	462	412	371	350	371	412	462	509	541	554
60	293	317	368	424	476	511	525	511	476	424	368	317	293	317	368	424	476	511	525
65	235	264	324	387	443	480	494	480	443	387	324	264	235	264	324	387	443	480	494
70	176	213	282	350	409	448	463	448	409	350	282	213	176	213	282	350	409	448	463
75	120	165	242	315	375	416	431	416	375	315	242	165	120	165	242	315	375	416	431
80	67.2	122	205	280	343	383	399	383	343	280	205	122	67.2	122	205	280	343	383	399
85	25.1	85.7	172	248	311	351	366	351	311	248	172	85.7	25.1	85.7	172	248	311	351	366
90	3.89	58.7	144	220	281	321	335	321	281	220	144	58.7	3.89	58.7	144	220	281	321	335
95	2.85	40.7	118	191	249	289	305	289	249	191	118	40.7	2.85	40.7	118	191	249	289	305
100	2.97	25.6	94.5	163	221	256	272	256	221	163	94.5	25.6	2.97	25.6	94.5	163	221	256	272
105	3.33	12.5	72.2	136	189	223	238	223	189	136	72.2	12.5	3.33	12.5	72.2	136	189	223	238
110	3.57	4.85	51.9	109	158	190	203	190	158	109	51.9	4.85	3.57	4.85	51.9	109	158	190	203
115	4.02	4.05	33.1	84.0	128	158	169	158	128	84.0	33.1	4.05	4.02	4.05	33.1	84.0	128	158	169
120	4.01	3.48	16.1	60.2	99.5	126	136	126	99.5	60.2	16.1	3.48	4.01	3.48	16.1	60.2	99.5	126	136
125	4.18	3.03	4.77	37.7	72.3	95.4	105	95.4	72.3	37.7	4.77	3.03	4.18	3.03	4.77	37.7	72.3	95.4	105
130	4.17	3.00	3.45	17.5	46.4	66.6	74.9	66.6	46.4	17.5	3.45	3.00	4.17	3.00	3.45	17.5	46.4	66.6	74.9
135	4.16	3.02	2.49	3.62	22.8	39.8	46.6	39.8	22.8	3.62	2.49	3.02	4.16	3.02	2.49	3.62	22.8	39.8	46.6
140	4.16	3.22	2.42	2.07	3.77	15.2	20.7	15.2	3.77	2.07	2.42	3.22	4.16	3.22	2.42	2.07	3.77	15.2	20.7
145	4.15	3.21	2.32	1.87	1.59	1.61	1.55	1.61	1.59	1.87	2.32	3.21	4.15	3.21	2.32	1.87	1.59	1.61	1.55
150	4.13	3.17	2.17	1.74	1.51	1.42	1.15	1.42	1.51	1.74	2.17	3.17	4.13	3.17	2.17	1.74	1.51	1.42	1.15
155	4.09	3.11	2.00	1.69	1.49	1.41	1.15	1.41	1.49	1.69	2.00	3.11	4.09	3.11	2.00	1.69	1.49	1.41	1.15
160	3.51	2.95	1.84	1.55	1.43	1.41	1.15	1.41	1.43	1.55	1.84	2.95	3.51	2.95	1.84	1.55	1.43	1.41	1.15
165	3.74	2.84	1.74	1.49	1.42	1.42	1.34	1.42	1.42	1.49	1.74	2.84	3.74	2.84	1.74	1.49	1.42	1.42	1.34
170	4.48	3.03	1.71	1.49	1.42	1.43	1.44	1.43	1.42	1.49	1.71	3.03	4.48	3.03	1.71	1.49	1.42	1.43	1.44
175	4.44	2.89	1.94	1.62	1.50	1.45	1.44	1.45	1.50	1.62	1.94	2.89	4.44	2.89	1.94	1.62	1.50	1.45	1.44
180	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05

Table--2

UNIT: cd

C (DBG) γ (DBG)	285	300	315	330	345														
0	740	740	740	740	740														
5	737	736	736	737	737														
10	730	728	726	726	726														
15	720	716	712	710	707														
20	706	699	692	687	682														
25	688	679	667	658	650														
30	668	655	639	624	612														
35	646	628	606	587	569														
40	623	600	571	546	523														
45	598	572	536	503	474														
50	570	541	499	458	423														
55	541	509	462	412	371														
60	511	476	424	368	317														
65	480	443	387	324	264														
70	448	409	350	282	213														
75	416	375	315	242	165														
80	383	343	280	205	122														
85	351	311	248	172	85.7														
90	321	281	220	144	58.7														
95	289	249	191	118	40.7														
100	256	221	163	94.5	25.6														
105	223	189	136	72.2	12.5														
110	190	158	109	51.9	4.85														
115	158	128	84.0	33.1	4.05														
120	126	99.5	60.2	16.1	3.48														
125	95.4	72.3	37.7	4.77	3.03														
130	66.6	46.4	17.5	3.45	3.00														
135	39.8	22.8	3.62	2.49	3.02														
140	15.2	3.77	2.07	2.42	3.22														
145	1.61	1.59	1.87	2.32	3.21														
150	1.42	1.51	1.74	2.17	3.17														
155	1.41	1.49	1.69	2.00	3.11														
160	1.41	1.43	1.55	1.84	2.95														
165	1.42	1.42	1.49	1.74	2.84														
170	1.43	1.42	1.49	1.71	3.03														
175	1.45	1.50	1.62	1.94	2.89														
180	1.05	1.05	1.05	1.05	1.05														

## 4.0 LM-79 Measurement and Test Results

### 4.3 THD and PF Test

<b>Model No.</b>	STRP4/MVS @20W4000K	<b>Sample ID</b>	250402001-S1
<b>Temperature (°C)</b>	25.4	<b>Humidity (%RH)</b>	41.0

<b>Test Method</b>
<p>The samples were tested according to the and ANSI C82.77: 2002 and ANSI C82.77-10:2020</p> <p>The total harmonic distortion shall be measured to the 40th order.</p> <p>The ambient temperature shall be maintained at 25±1°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	0.165	19.7	0.994	7.77
277.0	60	0.074	19.6	0.952	8.22

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