

## 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: 2025-01-06

Review by:

*Vincent Yuan*

Technical Lead: Vincent Yuan

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		1433
Minimum Luminaire Efficacy (lm/W) (Goniophotometer – Section 4.2)		ANSI/IES LM-79:2019	Standard	Premium	150.4
			115	130	
Power (Input Wattage) (W) (Goniophotometer – Section 4.2)		ANSI/IES LM-79:2019	Worst Case		38.1
Total Harmonic Distortion (A%) (THD & PF – Section 4.3)		ANSI C82.77:2002 ANSI C82-77-10:2020	20.00%	120V	9.45
				277V	6.55
Power Factor (THD & PF – Section 4.3)		ANSI C82.77:2002 ANSI C82-77-10:2020	0.9	120V	0.994
				277V	0.956
Allowable CCTs* (K) (Integrating Sphere – Section 4.1)		ANSI/IES LM-79:2019	7 steps	5029±283	4927
			4 steps	5029±220	
Minimum CRI (Integrating Sphere – Section 4.1)		ANSI/IES LM-79:2019 CIE13.3-1995	≥80		83.6
Minimum R9 (Integrating Sphere – Section 4.1)		ANSI/IES LM-79-2019 CIE13.3-1995	≥0		14
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	-12%≤IES Rcs,h1≤+23%		-12%
Zonal Lumen Requirement (0°-60°) (Goniophotometer – Section 4.2)		ANSI/IES LM-79:2019	≥40%		63.3%
Discomfort Glare (UGR) (Goniophotometer – Section 4.2)		ANSI/IES LM-79:2019	Standard	Premium	29.2
			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		0.319
(Goniophotometer – Section 4.2)			Non-Worst Case		0.139
Power (Input Wattage – W)					
(Goniophotometer – Section 4.2)		ANSI/IES LM-79:2019	Worst Case		38.1
(Goniophotometer – Section 4.2)			Non-Worst Case		36.8

## 2.0 Test List

Test Item	Test	Test Date	Model Number	Build Level	Sample No.
1	Integrating Sphere Test	2025-01-05	STRP4H @40W5000K	-	241225006-S1
2	Goniophotometer Test	2025-01-05	STRP4H @40W5000K	-	241225006-S1
3	THD and PF Test	2025-01-05	STRP4H @40W5000K	-	241225006-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. STRP4H @40W5000K, 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

<b>Model No.</b>	STRP4H @40W5000K	<b>Sample ID</b>	241225006-S1
<b>Operate time (Min.)</b>	10	<b>Stabilization time (Min.)</b>	60
<b>Temperature (°C)</b>	25.4	<b>Humidity (%RH)</b>	41.0

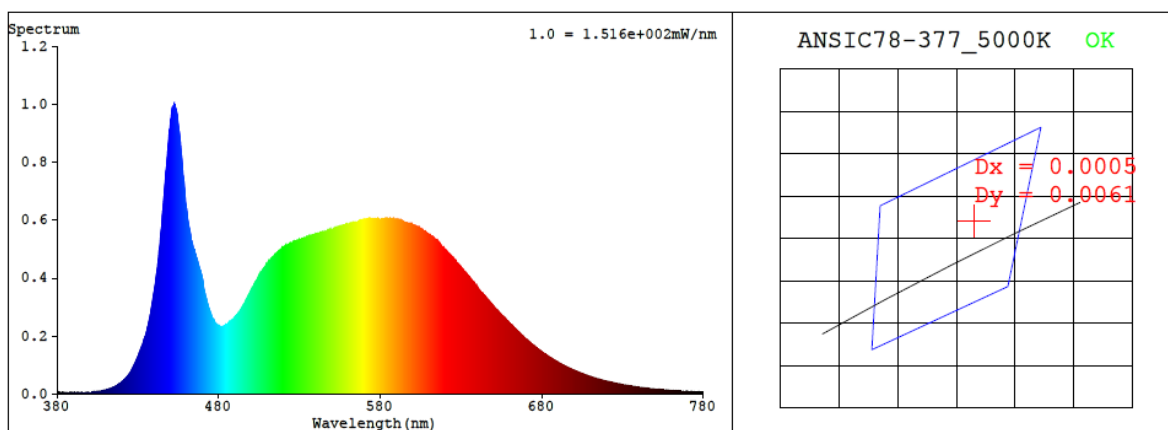
<b>Test Method</b>
<p>The Samples were tested according to the ANSI/IES LM-79:2019.</p> <p>Photometric parameters were measured using an integrating sphere, a spectroradiometer and software. The ambient temperature condition inside the sphere was maintained at 25±1°C.</p> <p>The sample measurements were 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	0.319	38.1	0.994
277.0	60	0.139	36.8	0.956

CCT (K)	CRI	R9	Duv	Rf	Rg	IES Rcs,h1
4927	83.6	14	0.0028	84	96	-12%

## 4.1 Integrating Sphere Test



### Colorimetric Parameters

Chromaticity Coordinate:  $x = 0.3477$   $y = 0.3594$  /  $u' = 0.2102$   $v' = 0.4888$  ( $duv=2.82e-03$ )

CCT= 4927K Prcp WL:  $L_d=571.1nm$  Purity=12.2%

Peak WL:  $L_p=453nm$  FWHM:  $=21.6nm$  Ratio: R=15.9% G=79.7% B=4.4%

Render Index:  $R_a = 83.6$  AvgR = 76.6 TM30:  $R_f=84$   $R_g=96$

EEL: 0.08934 A++ Highest

R1 =82	R2 =89	R3 =93	R4 =82	R5 =81	R6 =83	R7 =89
R8 =69	R9 =14	R10=73	R11=81	R12=56	R13=84	R14=96 R15=77

## 4.1 Integrating Sphere Test

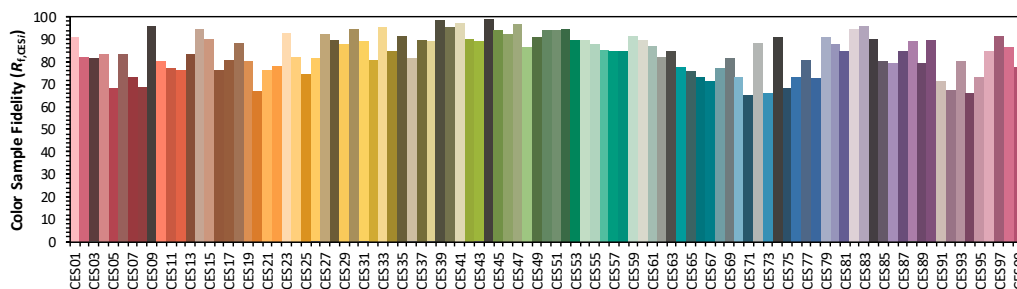
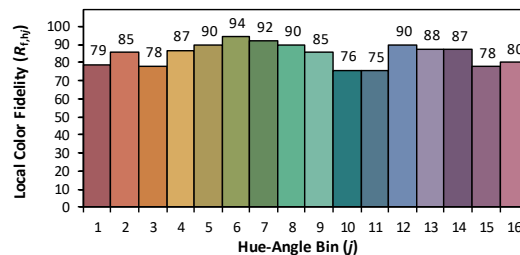
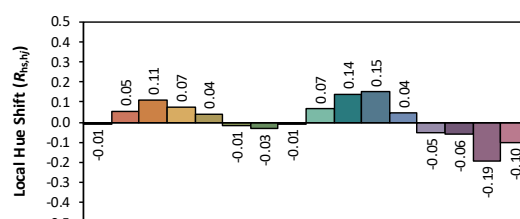
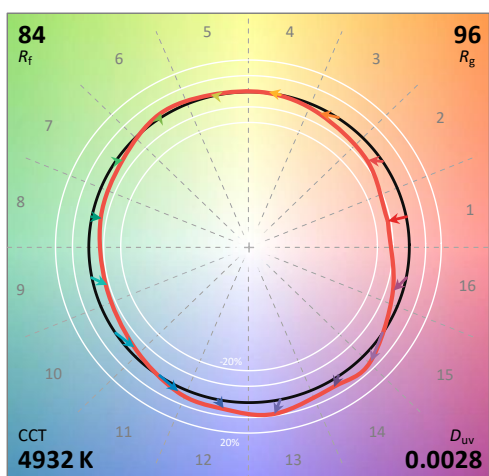
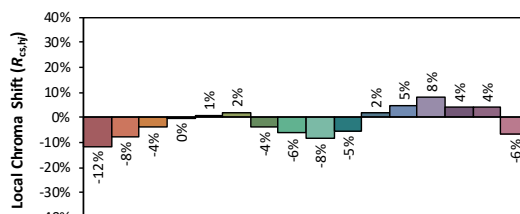
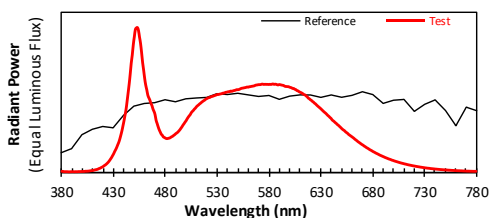
### ANSI/IES TM-30-18 Color Rendition Report

Source: 1 CIE F1

Manufacturer: RAB Lighting Inc.

Date: 2025/1/6

Model: STRP4H @40W5000K



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

$x$  0.3476  
 $y$  0.3592  
 $u'$  0.2102  
 $v'$  0.4887

CIE 13.3-1995  
(CRI)  
 $R_a$  84  
 $R_g$  14

## 4.1 Integrating Sphere Test

Spectral Distribution over Visible Wavelength											
WL (nm)	Radiant (W/nm)	WL (nm)	Radiant (W/nm)	WL (nm)	Radiant (W/nm)	WL (nm)	Radiant (W/nm)	WL (nm)	Radiant (W/nm)	WL (nm)	Radiant (W/nm)
380	7.20E-06	447	7.50E-04	514	4.75E-04	581	6.05E-04	648	3.17E-04	715	5.16E-05
381	6.90E-06	448	8.06E-04	515	4.82E-04	582	6.03E-04	649	3.10E-04	716	5.00E-05
382	5.00E-06	449	8.77E-04	516	4.87E-04	583	6.06E-04	650	3.03E-04	717	4.87E-05
383	4.80E-06	450	9.32E-04	517	4.92E-04	584	6.07E-04	651	2.96E-04	718	4.71E-05
384	4.90E-06	451	9.81E-04	518	4.96E-04	585	6.04E-04	652	2.91E-04	719	4.56E-05
385	4.70E-06	452	9.91E-04	519	5.03E-04	586	6.05E-04	653	2.86E-04	720	4.43E-05
386	4.30E-06	453	9.94E-04	520	5.06E-04	587	6.04E-04	654	2.79E-04	721	4.30E-05
387	3.60E-06	454	9.74E-04	521	5.10E-04	588	6.02E-04	655	2.73E-04	722	4.16E-05
388	4.40E-06	455	9.28E-04	522	5.13E-04	589	6.00E-04	656	2.68E-04	723	4.04E-05
389	4.60E-06	456	8.85E-04	523	5.15E-04	590	6.03E-04	657	2.61E-04	724	3.91E-05
390	5.00E-06	457	8.22E-04	524	5.19E-04	591	6.01E-04	658	2.56E-04	725	3.81E-05
391	5.00E-06	458	7.54E-04	525	5.21E-04	592	6.00E-04	659	2.50E-04	726	3.66E-05
392	4.10E-06	459	7.01E-04	526	5.23E-04	593	5.98E-04	660	2.45E-04	727	3.56E-05
393	4.90E-06	460	6.44E-04	527	5.26E-04	594	5.97E-04	661	2.40E-04	728	3.44E-05
394	4.70E-06	461	5.99E-04	528	5.29E-04	595	5.93E-04	662	2.35E-04	729	3.34E-05
395	4.60E-06	462	5.67E-04	529	5.31E-04	596	5.90E-04	663	2.28E-04	730	3.22E-05
396	5.50E-06	463	5.31E-04	530	5.34E-04	597	5.89E-04	664	2.23E-04	731	3.11E-05
397	5.40E-06	464	5.12E-04	531	5.34E-04	598	5.89E-04	665	2.17E-04	732	3.03E-05
398	5.80E-06	465	4.96E-04	532	5.36E-04	599	5.88E-04	666	2.11E-04	733	2.92E-05
399	6.00E-06	466	4.74E-04	533	5.38E-04	600	5.85E-04	667	2.06E-04	734	2.85E-05
400	6.30E-06	467	4.59E-04	534	5.40E-04	601	5.83E-04	668	2.01E-04	735	2.78E-05
401	6.40E-06	468	4.35E-04	535	5.42E-04	602	5.80E-04	669	1.96E-04	736	2.66E-05
402	7.00E-06	469	4.18E-04	536	5.45E-04	603	5.76E-04	670	1.91E-04	737	2.58E-05
403	8.10E-06	470	3.97E-04	537	5.45E-04	604	5.76E-04	671	1.87E-04	738	2.51E-05
404	7.90E-06	471	3.58E-04	538	5.49E-04	605	5.70E-04	672	1.81E-04	739	2.43E-05
405	8.40E-06	472	3.36E-04	539	5.50E-04	606	5.68E-04	673	1.77E-04	740	2.36E-05
406	9.10E-06	473	3.13E-04	540	5.52E-04	607	5.62E-04	674	1.71E-04	741	2.27E-05
407	1.03E-05	474	2.93E-04	541	5.54E-04	608	5.60E-04	675	1.67E-04	742	2.22E-05
408	1.14E-05	475	2.78E-04	542	5.54E-04	609	5.54E-04	676	1.63E-04	743	2.13E-05
409	1.26E-05	476	2.62E-04	543	5.58E-04	610	5.51E-04	677	1.58E-04	744	2.08E-05
410	1.32E-05	477	2.55E-04	544	5.56E-04	611	5.48E-04	678	1.54E-04	745	2.00E-05
411	1.53E-05	478	2.44E-04	545	5.59E-04	612	5.44E-04	679	1.50E-04	746	1.94E-05
412	1.72E-05	479	2.40E-04	546	5.61E-04	613	5.39E-04	680	1.46E-04	747	1.89E-05
413	1.88E-05	480	2.35E-04	547	5.63E-04	614	5.34E-04	681	1.41E-04	748	1.83E-05
414	2.03E-05	481	2.32E-04	548	5.65E-04	615	5.31E-04	682	1.38E-04	749	1.77E-05
415	2.32E-05	482	2.32E-04	549	5.68E-04	616	5.24E-04	683	1.34E-04	750	1.71E-05
416	2.67E-05	483	2.34E-04	550	5.68E-04	617	5.19E-04	684	1.30E-04	751	1.67E-05
417	2.91E-05	484	2.36E-04	551	5.69E-04	618	5.10E-04	685	1.27E-04	752	1.63E-05
418	3.32E-05	485	2.40E-04	552	5.72E-04	619	5.06E-04	686	1.23E-04	753	1.57E-05
419	3.67E-05	486	2.44E-04	553	5.76E-04	620	4.99E-04	687	1.19E-04	754	1.52E-05
420	4.11E-05	487	2.48E-04	554	5.78E-04	621	4.94E-04	688	1.16E-04	755	1.48E-05
421	4.67E-05	488	2.54E-04	555	5.79E-04	622	4.87E-04	689	1.13E-04	756	1.43E-05
422	5.13E-05	489	2.59E-04	556	5.81E-04	623	4.82E-04	690	1.10E-04	757	1.38E-05
423	5.72E-05	490	2.66E-04	557	5.82E-04	624	4.75E-04	691	1.07E-04	758	1.35E-05
424	6.40E-05	491	2.71E-04	558	5.84E-04	625	4.70E-04	692	1.03E-04	759	1.28E-05
425	7.17E-05	492	2.76E-04	559	5.86E-04	626	4.63E-04	693	1.00E-04	760	1.26E-05
426	8.09E-05	493	2.84E-04	560	5.85E-04	627	4.56E-04	694	9.75E-05	761	1.21E-05
427	9.15E-05	494	2.93E-04	561	5.88E-04	628	4.50E-04	695	9.45E-05	762	1.17E-05
428	1.02E-04	495	3.03E-04	562	5.88E-04	629	4.44E-04	696	9.17E-05	763	1.14E-05
429	1.15E-04	496	3.13E-04	563	5.90E-04	630	4.38E-04	697	8.95E-05	764	1.13E-05
430	1.28E-04	497	3.25E-04	564	5.91E-04	631	4.31E-04	698	8.67E-05	765	1.09E-05
431	1.43E-04	498	3.34E-04	565	5.93E-04	632	4.24E-04	699	8.37E-05	766	1.07E-05
432	1.57E-04	499	3.45E-04	566	5.95E-04	633	4.17E-04	700	8.18E-05	767	1.02E-05
433	1.72E-04	500	3.55E-04	567	5.98E-04	634	4.11E-04	701	7.90E-05	768	9.80E-06
434	1.90E-04	501	3.67E-04	568	6.00E-04	635	4.05E-04	702	7.68E-05	769	9.50E-06
435	2.07E-04	502	3.78E-04	569	6.01E-04	636	3.98E-04	703	7.45E-05	770	9.40E-06
436	2.30E-04	503	3.88E-04	570	6.02E-04	637	3.90E-04	704	7.25E-05	771	8.80E-06
437	2.57E-04	504	3.97E-04	571	6.02E-04	638	3.84E-04	705	7.01E-05	772	8.60E-06
438	2.85E-04	505	4.10E-04	572	6.03E-04	639	3.77E-04	706	6.81E-05	773	8.60E-06
439	3.19E-04	506	4.18E-04	573	6.05E-04	640	3.71E-04	707	6.58E-05	774	8.20E-06
440	3.54E-04	507	4.25E-04	574	6.06E-04	641	3.61E-04	708	6.39E-05	775	7.90E-06
441	3.93E-04	508	4.34E-04	575	6.04E-04	642	3.55E-04	709	6.21E-05	776	7.80E-06
442	4.32E-04	509	4.41E-04	576	6.05E-04	643	3.49E-04	710	6.03E-05	777	7.40E-06
443	4.88E-04	510	4.51E-04	577	6.04E-04	644	3.42E-04	711	5.83E-05	778	7.30E-06
444	5.46E-04	511	4.57E-04	578	6.04E-04	645	3.37E-04	712	5.69E-05	779	7.30E-06
445	6.06E-04	512	4.63E-04	579	6.04E-04	646	3.29E-04	713	5.50E-05	780	7.30E-06
446	6.74E-04	513	4.70E-04	580	6.03E-04	647	3.24E-04	714	5.31E-05	N/A	N/A



## 4.0 LM-79 Measurement and Test Results

### 4.2 Goniophotometer Test

<b>Model No.</b>	STRP4H @40W5000K	<b>Sample ID</b>	241225006-S1
<b>Operate time (Min.)</b>	30	<b>Stabilization time (Min.)</b>	60
<b>Temperature (°C)</b>	25.0	<b>Humidity (%RH)</b>	42.1

<b>Test Method</b>
<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
<b>WORST CASE</b>	120.0	60	0.319	38.1	0.994
<b>NON-WORST CASE</b>	277.0	60	0.139	36.8	0.956

#### Test Result

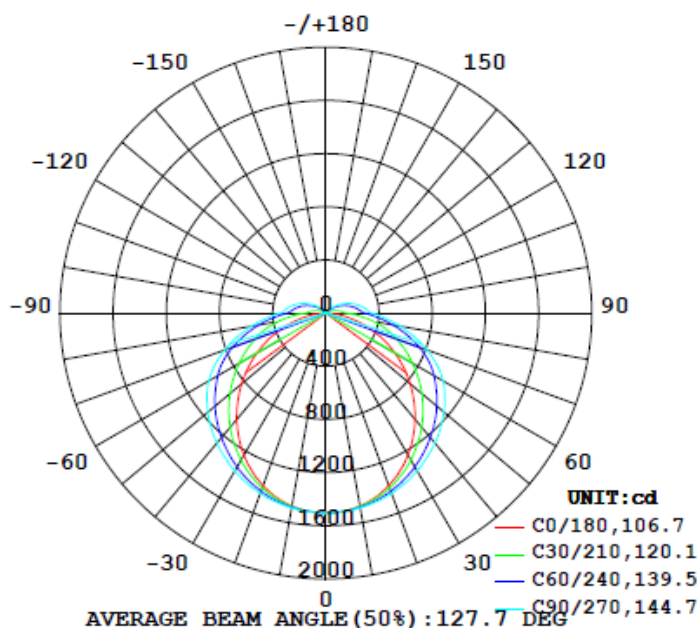
Flux (lm)	Flux per feet (lm/ft)	Field Angle (10%)		Beam Angle (50%)		Luminous Efficacy (lm/W)
		C0-180	C90-270	C0-180	C90-270	
5730	1433	161.1	161.1	106.9	144.5	150.4

Zonal Lumen Requirement (0°-60°)	UGR	
	Crosswise	Endwise
63.3%	23.7	29.2

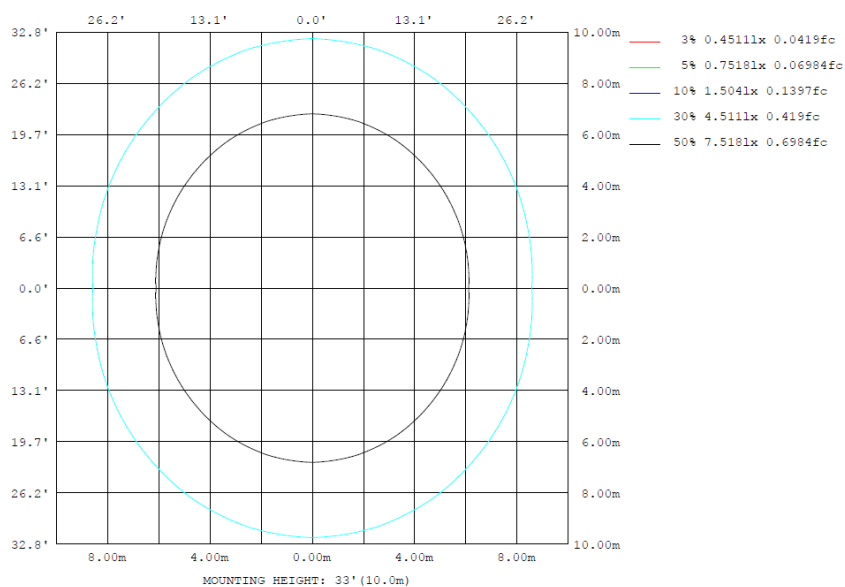
## 4.2 Goniophotometer Test

### 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	1473	1478	1489	1478	1473	1478	1489	1478	0- 10	142.4	142.4	2.49, 2.49
20	1382	1410	1444	1410	1382	1410	1444	1410	10- 20	410.0	552.5	9.64, 9.64
30	1234	1305	1371	1305	1234	1305	1371	1305	20- 30	629.1	1182	20.6, 20.6
40	1044	1169	1277	1169	1044	1169	1277	1169	30- 40	776.6	1958	34.2, 34.2
50	828.0	1016	1159	1016	828.0	1016	1159	1016	40- 50	842.3	2800	48.9, 48.9
60	599.0	850.0	1018	850.0	599.0	850.0	1018	850.0	50- 60	825.9	3626	63.3, 63.3
70	365.6	672.1	807.9	672.1	365.6	672.1	807.9	672.1	60- 70	730.2	4357	76, 76
80	145.5	446.7	568.6	446.7	145.5	446.7	568.6	446.7	70- 80	553.8	4910	85.7, 85.7
90	8.239	231.6	344.0	231.6	8.239	231.6	344.0	231.6	80- 90	334.9	5245	91.5, 91.5
100	5.782	171.7	277.8	171.7	5.782	171.7	277.8	171.7	90-100	195.9	5441	95, 95
110	7.231	116.3	210.8	116.3	7.231	116.3	210.8	116.3	100-110	139.8	5581	97.4, 97.4
120	7.504	63.00	140.2	63.00	7.504	63.00	140.2	63.00	110-120	86.42	5667	98.9, 98.9
130	7.502	15.88	74.52	15.88	7.502	15.88	74.52	15.88	120-130	42.49	5710	99.7, 99.7
140	7.321	3.461	16.93	3.461	7.321	3.461	16.93	3.461	130-140	13.69	5724	99.9, 99.9
150	7.321	3.004	2.144	3.004	7.321	3.004	2.144	3.004	140-150	2.974	5727	99.9, 99.9
160	6.328	2.822	2.144	2.822	6.328	2.822	2.144	2.822	150-160	1.717	5728	100, 100
170	8.224	3.454	2.795	3.454	8.224	3.454	2.795	3.454	160-170	1.074	5729	100, 100
180	8.586	4.096	3.261	4.096	8.586	4.096	3.261	4.096	170-180	0.4542	5730	100, 100
DEG	LUMINOUS INTENSITY:cd									UNIT:lm		

	Zonal (lm)		Total (lm)	Percent
0-10	142.42	0-10	142.42	2.49%
10-20	410.05	0-20	552.47	9.64%
20-30	629.09	0-30	1181.56	20.62%
30-40	776.60	0-40	1958.16	34.18%
40-50	842.30	0-50	2800.46	48.88%
50-60	825.93	0-60	3626.39	63.30%
60-70	730.18	0-70	4356.57	76.04%
70-80	553.75	0-80	4910.32	85.71%
80-90	334.91	0-90	5245.23	91.55%
90-100	195.86	0-100	5441.09	94.97%
100-110	139.85	0-110	5580.94	97.41%
110-120	86.42	0-120	5667.36	98.92%
120-130	42.49	0-130	5709.85	99.66%
130-140	13.69	0-140	5723.54	99.90%
140-150	2.97	0-150	5726.51	99.95%
150-160	1.72	0-160	5728.23	99.98%
160-170	1.07	0-170	5729.30	100.00%
170-180	0.46	0-180	5729.76	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	13.2	14.7	13.6	15.2	15.7	16.2	17.7	16.7	18.2	18.8
	3H	14.7	16.1	15.2	16.6	17.2	18.9	20.3	19.4	20.8	21.4
	4H	15.2	16.6	15.8	17.1	17.7	20.1	21.5	20.7	22.0	22.6
	6H	15.6	16.8	16.1	17.3	17.9	21.4	22.6	21.9	23.1	23.7
	8H	15.6	16.8	16.2	17.4	18.0	22.0	23.2	22.5	23.7	24.3
	12H	15.7	16.8	16.2	17.3	18.0	22.6	23.8	23.2	24.3	24.9
4H	2H	14.4	15.7	14.9	16.2	16.8	16.7	18.0	17.2	18.5	19.1
	3H	16.3	17.4	16.8	18.0	18.6	19.6	20.7	20.2	21.3	21.9
	4H	17.0	18.0	17.5	18.6	19.2	21.0	22.0	21.6	22.6	23.2
	6H	17.4	18.4	18.0	18.9	19.6	22.4	23.3	23.0	23.9	24.6
	8H	17.6	18.4	18.2	19.0	19.7	23.1	24.0	23.7	24.6	25.3
	12H	17.6	18.4	18.2	19.0	19.7	23.9	24.7	24.5	25.3	26.0
8H	4H	17.9	18.8	18.5	19.4	20.0	21.3	22.1	21.8	22.7	23.4
	6H	18.6	19.4	19.3	20.0	20.7	22.9	23.6	23.5	24.2	24.9
	8H	18.9	19.5	19.5	20.2	20.9	23.7	24.3	24.3	25.0	25.7
	12H	19.0	19.6	19.7	20.3	21.0	24.6	25.2	25.3	25.9	26.6
12H	4H	18.1	18.9	18.7	19.5	20.2	21.3	22.0	21.9	22.7	23.3
	6H	19.0	19.7	19.6	20.3	21.0	22.9	23.6	23.5	24.2	24.9
	8H	19.3	19.9	20.0	20.6	21.3	23.8	24.4	24.4	25.0	25.8

Maximum UGR = 26.6

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	19.3	20.8	19.7	21.3	21.8	22.3	23.8	22.8	24.3	24.9
	3H	20.8	22.2	21.3	22.7	23.3	25.0	26.4	25.5	26.9	27.5
	4H	21.3	22.7	21.9	23.2	23.8	26.2	27.6	26.8	28.1	28.7
	6H	21.7	22.9	22.2	23.4	24.0	27.5	28.7	28.0	29.2	29.8
	8H	21.7	22.9	22.3	23.5	24.1	28.1	29.3	28.6	29.8	30.4
	12H	21.8	22.9	22.3	23.4	24.1	28.7	29.9	29.3	30.4	31.0
4H	2H	20.5	21.8	21.0	22.3	22.9	22.8	24.1	23.3	24.6	25.2
	3H	22.4	23.5	22.9	24.1	24.7	25.7	26.8	26.3	27.4	28.0
	4H	23.1	24.1	23.6	24.7	25.3	27.1	28.1	27.7	28.7	29.3
	6H	23.5	24.5	24.1	25.0	25.7	28.5	29.4	29.1	30.0	30.7
	8H	23.7	24.5	24.3	25.1	25.8	29.2	30.1	29.8	30.7	31.4
	12H	23.7	24.5	24.3	25.1	25.8	30.0	30.8	30.6	31.4	32.1
8H	4H	24.0	24.9	24.6	25.5	26.1	27.4	28.2	27.9	28.8	29.5
	6H	24.7	25.5	25.4	26.1	26.8	29.0	29.7	29.6	30.3	31.0
	8H	25.0	25.6	25.6	26.3	27.0	29.8	30.4	30.4	31.1	31.8
	12H	25.1	25.7	25.8	26.4	27.1	30.7	31.3	31.4	32.0	32.7
12H	4H	24.2	25.0	24.8	25.6	26.3	27.4	28.1	28.0	28.8	29.4
	6H	25.1	25.8	25.7	26.4	27.1	29.0	29.7	29.6	30.3	31.0
	8H	25.4	26.0	26.1	26.7	27.4	29.9	30.5	30.5	31.1	31.9

Maximum UGR = 32.7

## 4.2 Goniophotometer Test

### Luminous Distribution Intensity Data

Table--1

UNIT: cd

C (DEG) γ (DEG)	0	15	30	45	60	75	90	105	120	135	150	165	180	195	210	225	240	255	270
0	1504	1504	1504	1505	1504	1503	1505	1503	1504	1505	1504	1504	1504	1504	1504	1505	1504	1503	1505
5	1497	1498	1497	1498	1497	1499	1500	1499	1497	1498	1497	1498	1497	1498	1497	1498	1497	1499	1500
10	1473	1477	1477	1478	1483	1487	1489	1487	1483	1478	1477	1477	1473	1477	1477	1478	1483	1487	1489
15	1435	1440	1444	1449	1459	1466	1470	1466	1459	1449	1444	1440	1435	1440	1444	1449	1459	1466	1470
20	1382	1390	1400	1410	1427	1438	1444	1438	1427	1410	1400	1390	1382	1390	1400	1410	1427	1438	1444
25	1314	1328	1344	1361	1385	1403	1411	1403	1385	1361	1344	1328	1314	1328	1344	1361	1385	1403	1411
30	1234	1254	1278	1305	1337	1360	1371	1360	1337	1305	1278	1254	1234	1254	1278	1305	1337	1360	1371
35	1142	1169	1203	1241	1282	1312	1325	1312	1282	1241	1203	1169	1142	1169	1203	1241	1282	1312	1325
40	1044	1076	1121	1169	1221	1261	1277	1261	1221	1169	1121	1076	1044	1076	1121	1169	1221	1261	1277
45	937	977	1034	1093	1158	1202	1221	1202	1158	1093	1034	977	937	977	1034	1093	1158	1202	1221
50	828	873	943	1016	1089	1139	1159	1139	1089	1016	943	873	828	873	943	1016	1089	1139	1159
55	714	765	848	934	1015	1071	1093	1071	1015	934	848	765	714	765	848	934	1015	1071	1093
60	599	657	753	850	939	997	1018	997	939	850	753	657	599	657	753	850	939	997	1018
65	483	550	658	766	853	902	920	902	853	766	658	550	483	550	658	766	853	902	920
70	366	444	565	672	746	791	808	791	746	672	565	444	366	444	565	672	746	791	808
75	252	342	472	563	630	672	689	672	630	563	472	342	252	342	472	563	630	672	689
80	146	246	364	447	513	553	569	553	513	447	364	246	146	246	364	447	513	553	569
85	57.5	155	255	335	398	437	452	437	398	335	255	155	57.5	155	255	335	398	437	452
90	8.24	69.4	156	232	292	331	344	331	292	232	156	69.4	8.24	69.4	156	232	292	331	344
95	4.88	45.9	126	198	255	293	308	293	255	198	126	45.9	4.88	45.9	126	198	255	293	308
100	5.78	28.8	102	172	228	262	278	262	228	172	102	28.8	5.78	28.8	102	172	228	262	278
105	7.13	14.0	78.3	144	198	231	245	231	198	144	78.3	14.0	7.13	14.0	78.3	144	198	231	245
110	7.23	5.85	55.8	116	166	199	211	199	166	116	55.8	5.85	7.23	5.85	55.8	116	166	199	211
115	7.41	5.57	34.6	89.2	135	164	175	164	135	89.2	34.6	5.57	7.41	5.57	34.6	89.2	135	164	175
120	7.50	5.66	15.9	63.0	104	130	140	130	104	63.0	15.9	5.66	7.50	5.66	15.9	63.0	104	130	140
125	7.59	5.94	5.84	38.0	74.3	98.1	107	98.1	74.3	38.0	5.84	5.94	7.59	5.94	5.84	38.0	74.3	98.1	107
130	7.50	6.30	4.74	15.9	46.0	67.2	74.5	67.2	46.0	15.9	4.74	6.30	7.50	6.30	4.74	15.9	46.0	67.2	74.5
135	7.32	6.66	4.65	4.93	20.2	37.7	44.2	37.7	20.2	4.93	4.65	6.66	7.32	6.66	4.65	4.93	20.2	37.7	44.2
140	7.32	6.76	4.56	3.46	4.88	12.4	16.9	12.4	4.88	3.46	4.56	6.76	7.32	6.76	4.56	3.46	4.88	12.4	16.9
145	7.32	6.76	4.28	2.66	2.97	3.45	2.97	2.66	3.28	4.28	6.76	7.32	6.76	4.28	2.66	2.97	3.45	2.97	3.45
150	7.32	6.76	3.92	3.00	2.66	2.40	2.14	2.40	2.66	3.00	3.92	6.76	7.32	6.76	3.92	3.00	2.66	2.40	2.14
155	6.78	6.12	3.55	3.00	2.57	2.40	2.14	2.40	2.57	3.00	3.55	6.12	6.78	6.12	3.55	3.00	2.57	2.40	2.14
160	6.33	5.66	3.28	2.82	2.57	2.40	2.14	2.40	2.57	2.82	3.28	5.66	6.33	5.66	3.28	2.82	2.57	2.40	2.14
165	6.87	6.39	3.37	2.82	2.75	2.49	2.50	2.49	2.75	2.82	3.37	6.39	6.87	6.39	3.37	2.82	2.75	2.49	2.50
170	8.22	7.21	4.01	3.45	3.20	3.14	2.79	3.14	3.20	3.45	4.01	7.21	8.22	7.21	4.01	3.45	3.20	3.14	2.79
175	8.67	7.67	4.56	4.00	3.66	3.51	3.07	3.51	3.66	4.00	4.56	7.67	8.67	7.67	4.56	4.00	3.66	3.51	3.07
180	8.59	7.67	4.56	4.10	3.85	3.97	3.26	3.97	3.85	4.10	4.56	7.67	8.59	7.67	4.56	4.10	3.85	3.97	3.26

Table--2

UNIT: cd

C (DEG) γ (DEG)	285	300	315	330	345														
0	1503	1504	1505	1504	1504														
5	1499	1497	1498	1497	1498														
10	1487	1483	1478	1477	1477														
15	1466	1459	1449	1444	1440														
20	1438	1427	1410	1400	1390														
25	1403	1385	1361	1344	1328														
30	1360	1337	1305	1278	1254														
35	1312	1282	1241	1203	1169														
40	1261	1221	1169	1121	1076														
45	1202	1158	1093	1034	977														
50	1139	1089	1016	943	873														
55	1071	1015	934	848	765														
60	997	939	850	753	657														
65	902	853	766	658	550														
70	791	746	672	565	444														
75	672	630	563	472	342														
80	553	513	447	364	246														
85	437	398	335	255	155														
90	331	292	232	156	69.4														
95	293	255	198	126	45.9														
100	262	228	172	102	28.8														
105	231	198	144	78.3	14.0														
110	199	166	116	55.8	5.85														
115	164	135	89.2	34.6	5.57														
120	130	104	63.0	15.9	5.66														
125	98.1	74.3	38.0	5.84	5.94														
130	67.2	46.0	15.9	4.74	6.30														
135	37.7	20.2	4.93	4.65	6.66														
140	12.4	4.88	3.46	4.56	6.76														
145	2.97	2.66	3.28	4.28	6.76														
150	2.40	2.66	3.00	3.92	6.76														
155	2.40	2.57	3.00	3.55	6.12														
160	2.40	2.57	2.82	3.28	5.66														
165	2.49	2.75	2.82	3.37	6.39														
170	3.14	3.20	3.45	4.01	7.21														
175	3.51	3.66	4.00	4.56	7.67														
180	3.97	3.85	4.10	4.56	7.67														

## 4.0 LM-79 Measurement and Test Results

### 4.3 THD and PF Test

<b>Model No.</b>	STRP4H @40W5000K	<b>Sample ID</b>	241225006-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 <math>25 \pm 1^{\circ}\text{C}</math>. 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	0.319	38.1	0.994	9.45
277.0	60	0.139	36.8	0.956	6.55

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