

## 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: 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		401
Minimum Luminaire Efficacy (lm/W) (Goniophotometer – Section 4.2)		ANSI/IES LM-79:2019	Standard	Premium	152.8
			115	130	
Power (Input Wattage) (W) (Goniophotometer – Section 4.2)		ANSI/IES LM-79:2019	Worst Case		10.5
Total Harmonic Distortion (A%) (THD & PF – Section 4.3)		ANSI C82.77:2002 ANSI C82-77-10:2020	20.00%	120V	9.09
				277V	21.88
Power Factor (THD & PF – Section 4.3)		ANSI C82.77:2002 ANSI C82-77-10:2020	0.9	120V	0.983
				277V	0.852
Allowable CCTs* (K) (Integrating Sphere – Section 4.1)		ANSI/IES LM-79:2019	7 steps	5029±283	4922
			4 steps	5029±220	
Minimum CRI (Integrating Sphere – Section 4.1)		ANSI/IES LM-79:2019 CIE13.3-1995	≥80		83.8
Minimum R9 (Integrating Sphere – Section 4.1)		ANSI/IES LM-79-2019 CIE13.3-1995	≥0		15
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%		56.3%
Discomfort Glare (UGR) (Goniophotometer – Section 4.2)		ANSI/IES LM-79:2019	Standard	Premium	28.1
			N/A	<22	
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		0.045
(Goniophotometer – Section 4.2)			Non-Worst Case		0.083
Power (Input Wattage – W)					
(Goniophotometer – Section 4.2)		ANSI/IES LM-79:2019	Worst Case		10.5
(Goniophotometer – Section 4.2)			Non-Worst Case		9.8

## 2.0 Test List

Test Item	Test	Test Date	Model Number	Build Level	Sample No.
1	Integrating Sphere Test	2025-01-03	STRP4 @10W5000K	-	241225005-S1
2	Goniophotometer Test	2025-01-03	STRP4 @10W5000K	-	241225005-S1
3	THD and PF Test	2025-01-03	STRP4 @10W5000K	-	241225005-S1

### Remark (If any):

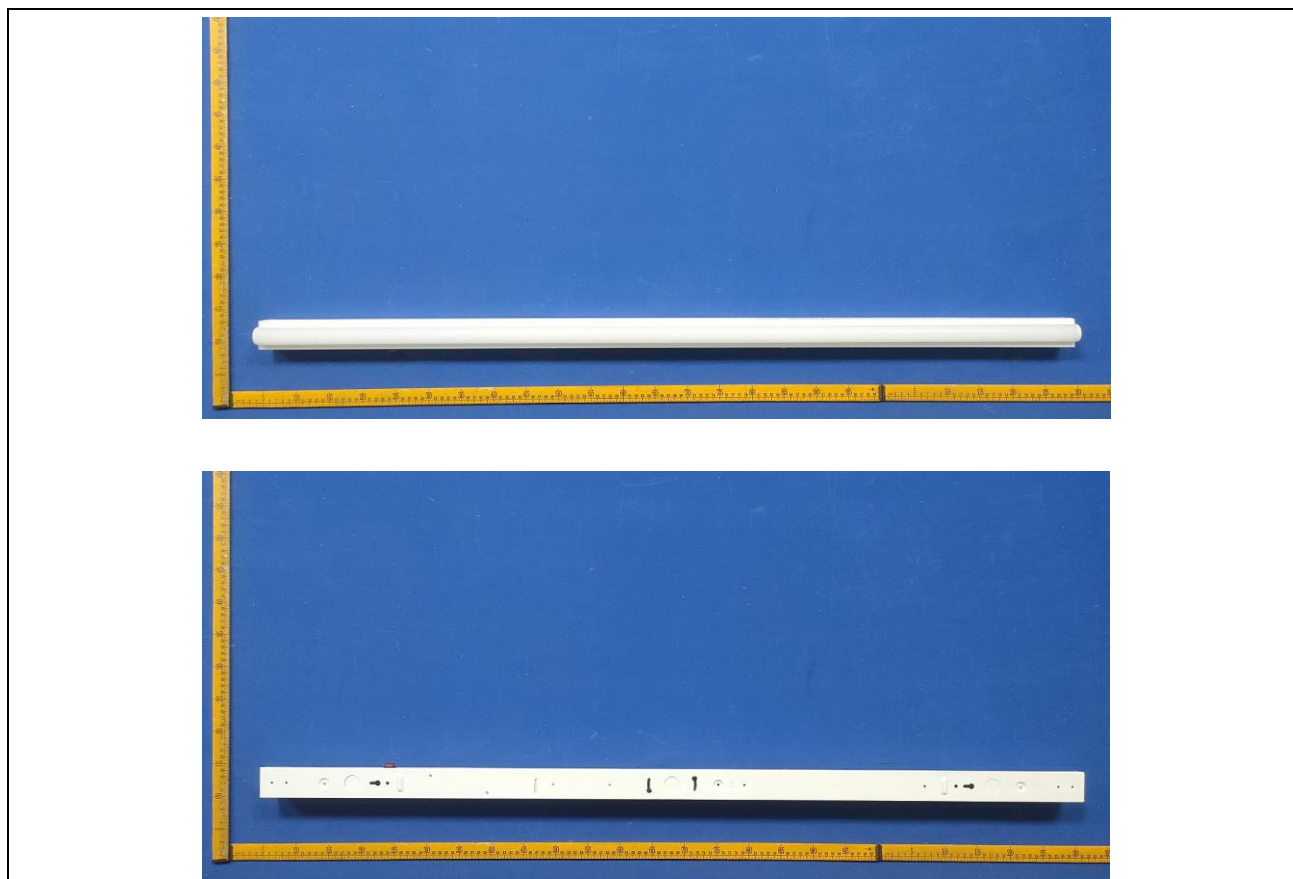
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3. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST or any agency of the U.S. Government.

### 3.0 Product Description

Luminaire Description: Model No. STRP4 @10W5000K, 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>	STRP4 @10W5000K	<b>Sample ID</b>	241225005-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

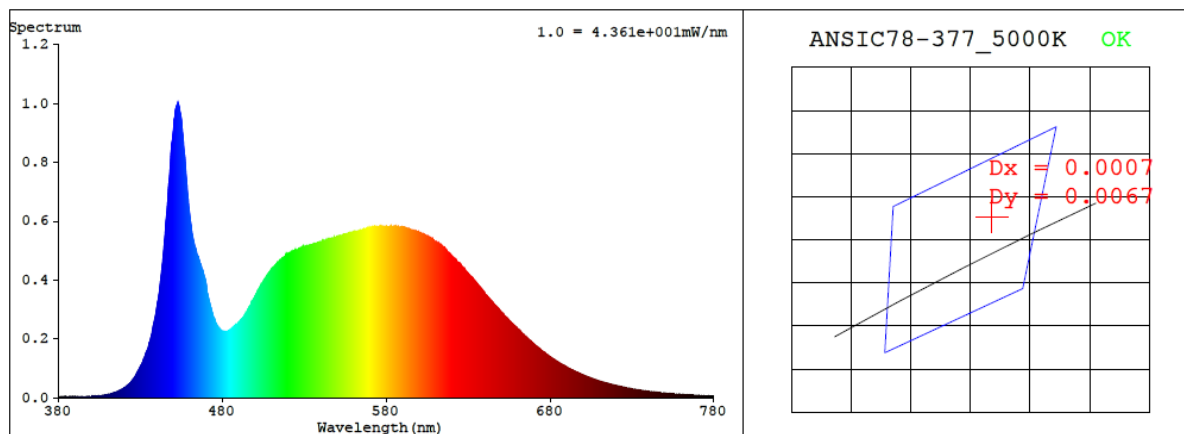
<b>Test Method</b>
<p>The Samples were tested according to the ANSI/IES LM-79:2019.</p> <p>Photometric parameters were measured using an integrating sphere, a spectroradiometer and software. The ambient temperature condition inside the sphere was maintained at 25±1°C.</p> <p>The sample measurements were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

<b>Voltage (Vac)</b>	<b>Frequency (Hz)</b>	<b>Current (A)</b>	<b>Power (W)</b>	<b>Power Factor</b>
120.0	60	0.083	9.8	0.983
277.0	60	0.045	10.5	0.852

<b>CCT (K)</b>	<b>CRI</b>	<b>R9</b>	<b>Duv</b>	<b>Rf</b>	<b>Rg</b>	<b>IES Rcs,h1</b>
4922	83.8	15	0.0031	84	96	-12%

## 4.1 Integrating Sphere Test



### Colorimetric Parameters

Chromaticity Coordinate:  $x = 0.3481$   $y = 0.3601$  /  $u' = 0.2102$   $v' = 0.4892$  ( $duv=3.05e-03$ )

CCT= 4922K Prcp WL: Ld=571.0nm Purity=12.5%

Peak WL: Lp=453nm FWHM: =19.8nm Ratio:R=15.9% G=79.6% B=4.5%

Render Index: Ra = 83.8 AvgR = 76.8 TM30:Rf=84 Rg=95

EEL: 0.08922 A++ Highest

R1 =82 R2 =89 R3 =94 R4 =82 R5 =82 R6 =84 R7 =89

R8 =70 R9 =15 R10=73 R11=81 R12=55 R13=84 R14=97 R15=77

## 4.1 Integrating Sphere Test

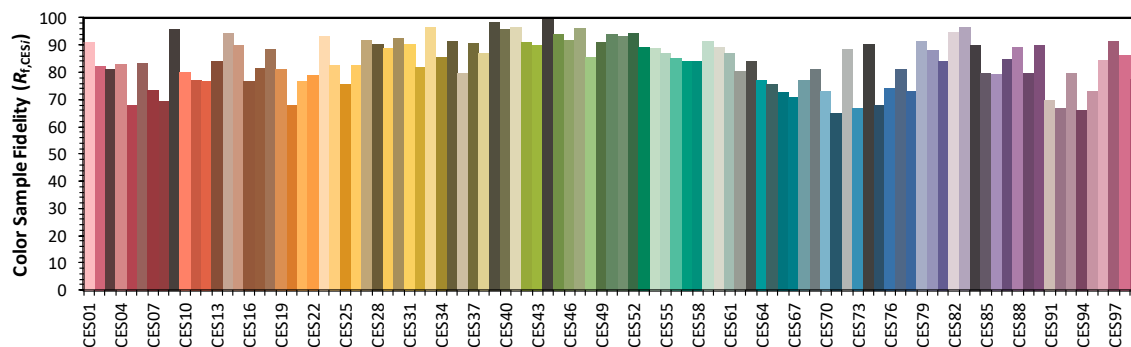
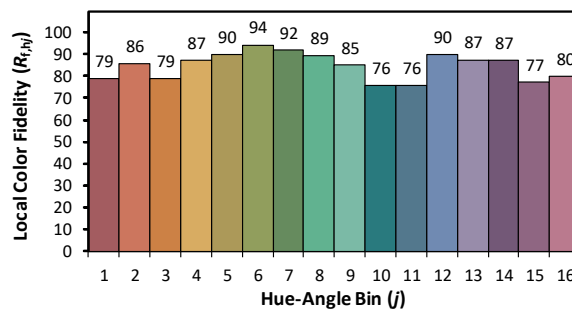
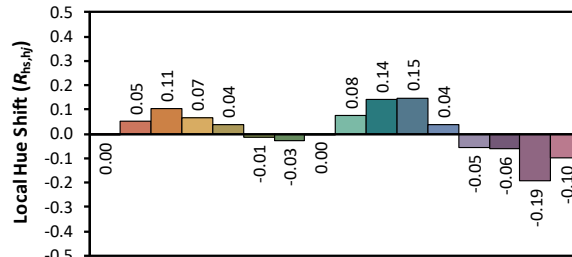
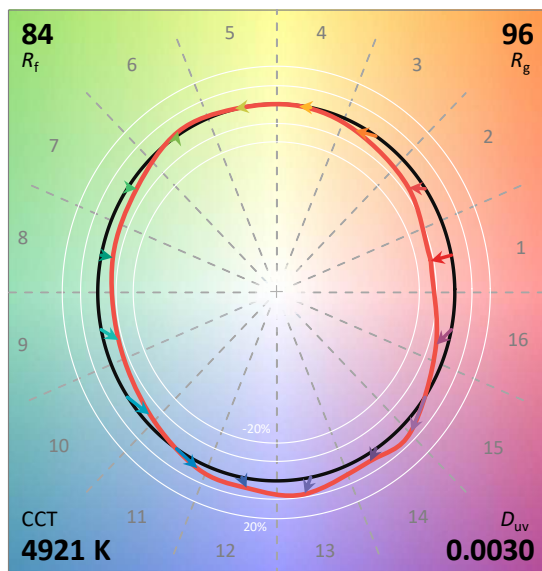
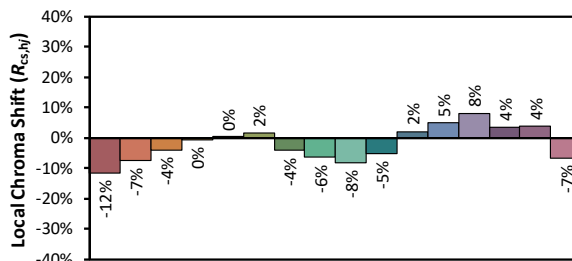
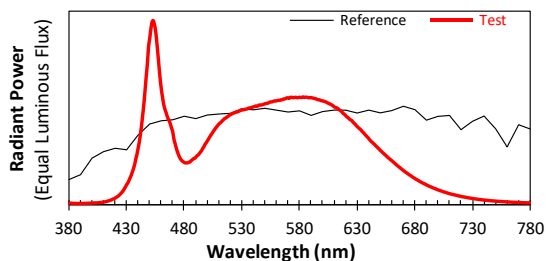
### ANSI/IES TM-30-18 Color Rendition Report

Source: 1 CIE F1

Manufacturer: RAB Lighting Inc.

Date: 2025/1/6

Model: STRP4 @10W5000K



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

$x$  0.3480  
 $y$  0.3600  
 $u'$  0.2102  
 $v'$  0.4891

CIE 13.3-1995  
(CRI)

$R_a$  84  
 $R_g$  15



## 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	5.00E-06	447	6.96E-04	514	4.60E-04	581	5.81E-04	648	3.06E-04	715	4.94E-05
381	5.30E-06	448	7.65E-04	515	4.66E-04	582	5.81E-04	649	3.00E-04	716	4.78E-05
382	5.10E-06	449	8.57E-04	516	4.69E-04	583	5.84E-04	650	2.93E-04	717	4.65E-05
383	4.50E-06	450	9.01E-04	517	4.74E-04	584	5.81E-04	651	2.87E-04	718	4.45E-05
384	3.80E-06	451	9.53E-04	518	4.79E-04	585	5.82E-04	652	2.81E-04	719	4.35E-05
385	3.90E-06	452	9.90E-04	519	4.83E-04	586	5.83E-04	653	2.75E-04	720	4.19E-05
386	3.70E-06	453	1.00E-03	520	4.87E-04	587	5.81E-04	654	2.69E-04	721	4.03E-05
387	3.70E-06	454	9.81E-04	521	4.91E-04	588	5.79E-04	655	2.64E-04	722	3.94E-05
388	2.70E-06	455	9.49E-04	522	4.94E-04	589	5.80E-04	656	2.57E-04	723	3.85E-05
389	3.90E-06	456	8.92E-04	523	4.97E-04	590	5.80E-04	657	2.52E-04	724	3.70E-05
390	4.70E-06	457	8.25E-04	524	4.99E-04	591	5.79E-04	658	2.47E-04	725	3.61E-05
391	4.00E-06	458	7.55E-04	525	5.01E-04	592	5.77E-04	659	2.41E-04	726	3.47E-05
392	3.70E-06	459	6.87E-04	526	5.02E-04	593	5.75E-04	660	2.37E-04	727	3.36E-05
393	4.00E-06	460	6.31E-04	527	5.05E-04	594	5.74E-04	661	2.31E-04	728	3.28E-05
394	4.10E-06	461	5.87E-04	528	5.08E-04	595	5.71E-04	662	2.25E-04	729	3.17E-05
395	4.40E-06	462	5.49E-04	529	5.12E-04	596	5.69E-04	663	2.20E-04	730	3.05E-05
396	4.30E-06	463	5.21E-04	530	5.12E-04	597	5.68E-04	664	2.14E-04	731	2.97E-05
397	4.80E-06	464	5.03E-04	531	5.14E-04	598	5.66E-04	665	2.09E-04	732	2.86E-05
398	5.20E-06	465	4.82E-04	532	5.15E-04	599	5.63E-04	666	2.04E-04	733	2.78E-05
399	5.10E-06	466	4.65E-04	533	5.17E-04	600	5.63E-04	667	1.98E-04	734	2.69E-05
400	5.20E-06	467	4.52E-04	534	5.18E-04	601	5.60E-04	668	1.94E-04	735	2.58E-05
401	5.90E-06	468	4.34E-04	535	5.20E-04	602	5.58E-04	669	1.88E-04	736	2.51E-05
402	6.50E-06	469	4.13E-04	536	5.23E-04	603	5.56E-04	670	1.83E-04	737	2.46E-05
403	6.40E-06	470	3.93E-04	537	5.24E-04	604	5.52E-04	671	1.78E-04	738	2.37E-05
404	6.50E-06	471	3.54E-04	538	5.26E-04	605	5.50E-04	672	1.73E-04	739	2.27E-05
405	7.50E-06	472	3.31E-04	539	5.28E-04	606	5.46E-04	673	1.70E-04	740	2.22E-05
406	7.70E-06	473	3.07E-04	540	5.30E-04	607	5.44E-04	674	1.65E-04	741	2.14E-05
407	8.30E-06	474	2.86E-04	541	5.32E-04	608	5.40E-04	675	1.60E-04	742	2.10E-05
408	9.40E-06	475	2.69E-04	542	5.35E-04	609	5.36E-04	676	1.57E-04	743	2.02E-05
409	9.60E-06	476	2.54E-04	543	5.33E-04	610	5.30E-04	677	1.52E-04	744	1.94E-05
410	1.11E-05	477	2.43E-04	544	5.36E-04	611	5.27E-04	678	1.48E-04	745	1.89E-05
411	1.20E-05	478	2.36E-04	545	5.40E-04	612	5.25E-04	679	1.44E-04	746	1.81E-05
412	1.36E-05	479	2.31E-04	546	5.40E-04	613	5.21E-04	680	1.40E-04	747	1.78E-05
413	1.50E-05	480	2.27E-04	547	5.40E-04	614	5.16E-04	681	1.36E-04	748	1.72E-05
414	1.70E-05	481	2.25E-04	548	5.42E-04	615	5.11E-04	682	1.32E-04	749	1.68E-05
415	1.88E-05	482	2.24E-04	549	5.44E-04	616	5.07E-04	683	1.29E-04	750	1.63E-05
416	2.13E-05	483	2.25E-04	550	5.47E-04	617	5.00E-04	684	1.24E-04	751	1.56E-05
417	2.36E-05	484	2.28E-04	551	5.47E-04	618	4.93E-04	685	1.21E-04	752	1.51E-05
418	2.71E-05	485	2.30E-04	552	5.50E-04	619	4.89E-04	686	1.17E-04	753	1.48E-05
419	2.92E-05	486	2.37E-04	553	5.51E-04	620	4.82E-04	687	1.14E-04	754	1.43E-05
420	3.28E-05	487	2.42E-04	554	5.55E-04	621	4.75E-04	688	1.11E-04	755	1.38E-05
421	3.65E-05	488	2.48E-04	555	5.56E-04	622	4.72E-04	689	1.08E-04	756	1.34E-05
422	4.11E-05	489	2.49E-04	556	5.57E-04	623	4.65E-04	690	1.05E-04	757	1.31E-05
423	4.55E-05	490	2.56E-04	557	5.59E-04	624	4.60E-04	691	1.01E-04	758	1.26E-05
424	5.13E-05	491	2.63E-04	558	5.62E-04	625	4.56E-04	692	9.89E-05	759	1.24E-05
425	5.80E-05	492	2.68E-04	559	5.62E-04	626	4.49E-04	693	9.57E-05	760	1.16E-05
426	6.52E-05	493	2.75E-04	560	5.63E-04	627	4.42E-04	694	9.33E-05	761	1.14E-05
427	7.30E-05	494	2.83E-04	561	5.65E-04	628	4.37E-04	695	9.06E-05	762	1.12E-05
428	8.40E-05	495	2.91E-04	562	5.65E-04	629	4.29E-04	696	8.76E-05	763	1.08E-05
429	9.36E-05	496	3.03E-04	563	5.65E-04	630	4.23E-04	697	8.57E-05	764	1.04E-05
430	1.06E-04	497	3.12E-04	564	5.68E-04	631	4.16E-04	698	8.27E-05	765	1.01E-05
431	1.15E-04	498	3.25E-04	565	5.69E-04	632	4.11E-04	699	8.03E-05	766	9.90E-06
432	1.28E-04	499	3.34E-04	566	5.72E-04	633	4.05E-04	700	7.76E-05	767	9.60E-06
433	1.43E-04	500	3.45E-04	567	5.73E-04	634	3.98E-04	701	7.55E-05	768	9.40E-06
434	1.57E-04	501	3.54E-04	568	5.75E-04	635	3.92E-04	702	7.32E-05	769	9.00E-06
435	1.76E-04	502	3.66E-04	569	5.79E-04	636	3.85E-04	703	7.13E-05	770	8.70E-06
436	1.95E-04	503	3.75E-04	570	5.78E-04	637	3.77E-04	704	6.89E-05	771	8.50E-06
437	2.17E-04	504	3.84E-04	571	5.76E-04	638	3.71E-04	705	6.68E-05	772	8.30E-06
438	2.47E-04	505	3.94E-04	572	5.81E-04	639	3.64E-04	706	6.48E-05	773	7.90E-06
439	2.72E-04	506	4.03E-04	573	5.82E-04	640	3.57E-04	707	6.29E-05	774	7.60E-06
440	3.06E-04	507	4.12E-04	574	5.80E-04	641	3.49E-04	708	6.09E-05	775	7.40E-06
441	3.39E-04	508	4.21E-04	575	5.80E-04	642	3.42E-04	709	5.89E-05	776	7.30E-06
442	3.83E-04	509	4.28E-04	576	5.82E-04	643	3.37E-04	710	5.70E-05	777	7.00E-06
443	4.32E-04	510	4.36E-04	577	5.81E-04	644	3.30E-04	711	5.54E-05	778	6.90E-06
444	4.88E-04	511	4.42E-04	578	5.80E-04	645	3.25E-04	712	5.37E-05	779	6.90E-06
445	5.49E-04	512	4.47E-04	579	5.81E-04	646	3.18E-04	713	5.21E-05	780	6.90E-06
446	6.20E-04	513	4.54E-04	580	5.82E-04	647	3.12E-04	714	5.07E-05	N/A	N/A



## 4.0 LM-79 Measurement and Test Results

### 4.2 Goniophotometer Test

<b>Model No.</b>	STRP4 @10W5000K	<b>Sample ID</b>	241225005-S1
<b>Operate time (Min.)</b>	30	<b>Stabilization time (Min.)</b>	60
<b>Temperature (°C)</b>	24.8	<b>Humidity (%RH)</b>	41.3

<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>	277.0	60	0.045	10.5	0.852
<b>NON-WORST CASE</b>	120.0	60	0.083	9.8	0.983

#### Test Result

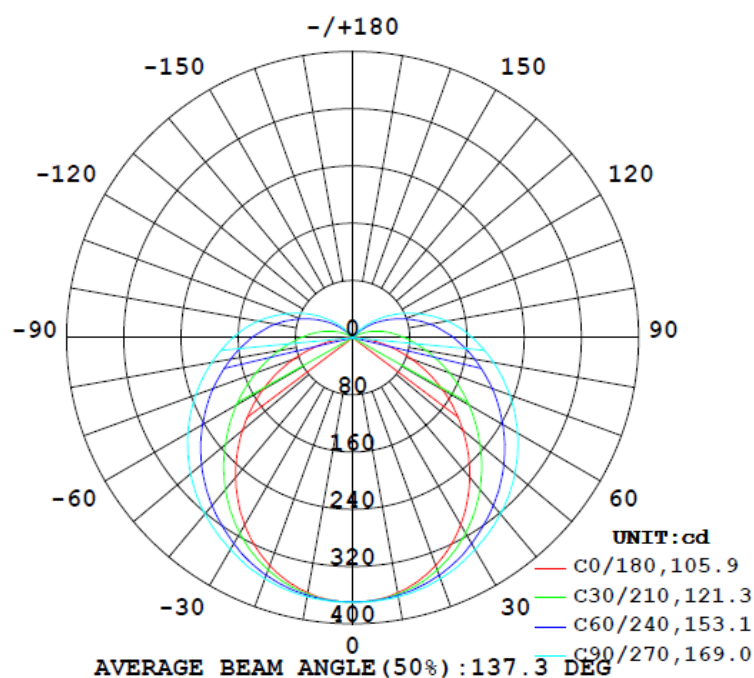
Flux (lm)	Flux per feet (lm/ft)	Field Angle (10%)		Beam Angle (50%)		Luminous Efficacy (lm/W)
		C0-180	C90-270	C0-180	C90-270	
1604	401	160.7	160.7	106.2	169.1	152.8

Zonal Lumen Requirement (0°-60°)	UGR	
	Crosswise	Endwise
56.3%	19.8	28.1

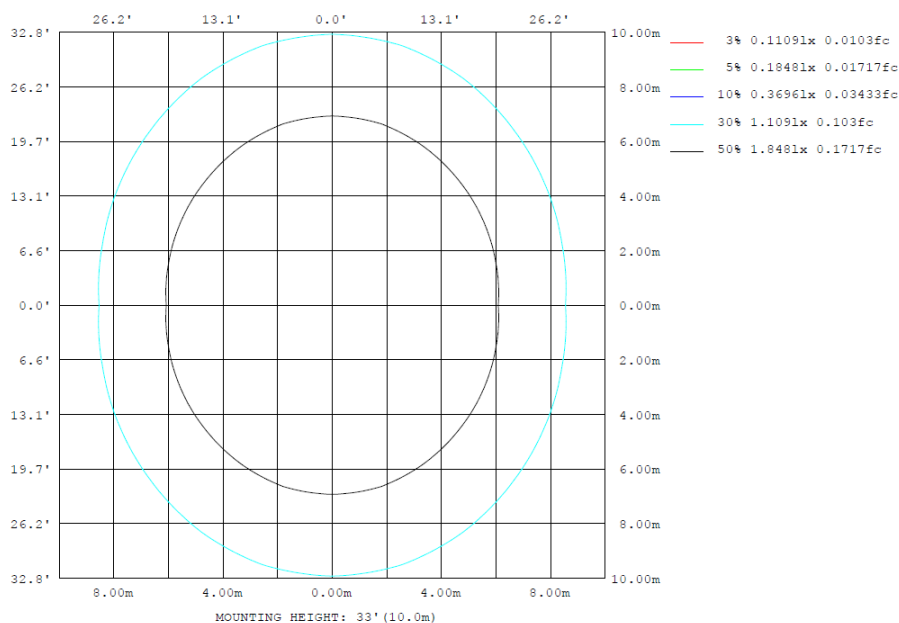
## 4.2 Goniophotometer Test

### 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	ℓlum, lamp
10	362.0	364.4	367.6	364.4	362.0	364.4	367.6	364.4	0- 10	35.06	35.06	2.19,2.19
20	339.0	349.3	358.7	349.3	339.0	349.3	358.7	349.3	10- 20	101.3	136.3	8.5,8.5
30	302.1	323.9	342.1	323.9	302.1	323.9	342.1	323.9	20- 30	155.8	292.1	18.2,18.2
40	254.6	290.8	321.4	290.8	254.6	290.8	321.4	290.8	30- 40	192.8	484.9	30.2,30.2
50	201.2	254.5	296.1	254.5	201.2	254.5	296.1	254.5	40- 50	210.2	695.1	43.3,43.3
60	144.7	216.3	266.4	216.3	144.7	216.3	266.4	216.3	50- 60	208.2	903.4	56.3,56.3
70	87.91	177.9	233.6	177.9	87.91	177.9	233.6	177.9	60- 70	189.7	1093	68.1,68.1
80	34.18	142.0	200.0	142.0	34.18	142.0	200.0	142.0	70- 80	159.8	1253	78.1,78.1
90	2.476	110.8	167.3	110.8	2.476	110.8	167.3	110.8	80- 90	125.7	1379	85.9,85.9
100	1.539	81.62	134.2	81.62	1.539	81.62	134.2	81.62	90-100	95.10	1474	91.9,91.9
110	1.718	53.29	98.29	53.29	1.718	53.29	98.29	53.29	100-110	65.52	1539	95.9,95.9
120	1.810	28.12	64.29	28.12	1.810	28.12	64.29	28.12	110-120	39.22	1578	98.4,98.4
130	1.810	6.323	33.30	6.323	1.810	6.323	33.30	6.323	120-130	18.61	1597	99.5,99.5
140	1.810	1.092	7.114	1.092	1.810	1.092	7.114	1.092	130-140	5.562	1603	99.9,99.9
150	1.810	1.090	0.7435	1.090	1.810	1.090	0.7435	1.090	140-150	0.8554	1603	99.9,99.9
160	1.810	0.9097	0.7435	0.9097	1.810	0.9097	0.7435	0.9097	150-160	0.5140	1604	100,100
170	2.534	0.9097	0.7435	0.9097	2.534	0.9097	0.7435	0.9097	160-170	0.3127	1604	100,100
180	2.625	1.183	0.7435	1.183	2.625	1.183	0.7435	1.183	170-180	0.1184	1604	100,100
DEG	LUMINOUS INTENSITY:cd									UNIT:lm		

Zonal (lm)		Total (lm)		Percent
0-10	35.06	0-10	35.06	2.19%
10-20	101.27	0-20	136.33	8.50%
20-30	155.79	0-30	292.12	18.21%
30-40	192.80	0-40	484.92	30.23%
40-50	210.21	0-50	695.13	43.33%
50-60	208.24	0-60	903.37	56.31%
60-70	189.71	0-70	1093.08	68.14%
70-80	159.81	0-80	1252.89	78.10%
80-90	125.65	0-90	1378.54	85.93%
90-100	95.10	0-100	1473.64	91.86%
100-110	65.52	0-110	1539.16	95.94%
110-120	39.22	0-120	1578.38	98.39%
120-130	18.61	0-130	1596.99	99.55%
130-140	5.56	0-140	1602.55	99.90%
140-150	0.86	0-150	1603.41	99.95%
150-160	0.51	0-160	1603.92	99.98%
160-170	0.31	0-170	1604.23	100.00%
170-180	0.12	0-180	1604.35	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										
X=2H	Y=2H	UGR Viewed Crosswise					UGR Viewed Endwise			
		14.1	15.6	14.7	16.2	16.8	18.4	19.8	18.9	20.4
	3H	15.5	16.8	16.1	17.4	18.1	21.4	22.7	21.9	23.3
	4H	15.9	17.2	16.5	17.8	18.5	22.9	24.2	23.5	24.8
	6H	16.2	17.4	16.8	18.0	18.7	24.6	25.8	25.2	26.4
	8H	16.2	17.4	16.8	18.0	18.7	25.5	26.6	26.1	27.3
	12H	16.2	17.3	16.9	18.0	18.7	26.5	27.6	27.1	28.2
4H	2H	15.5	16.8	16.1	17.4	18.0	18.7	20.0	19.3	20.5
	3H	17.2	18.2	17.8	18.9	19.6	21.9	23.0	22.5	23.6
	4H	17.8	18.8	18.4	19.4	20.1	23.6	24.6	24.2	25.3
	6H	18.1	19.0	18.8	19.7	20.4	25.5	26.4	26.1	27.0
	8H	18.2	19.1	18.9	19.7	20.5	26.5	27.3	27.1	28.0
	12H	18.3	19.0	18.9	19.7	20.5	27.6	28.4	28.3	29.1
8H	4H	18.9	19.8	19.6	20.5	21.2	23.8	24.6	24.4	25.3
	6H	19.6	20.3	20.3	21.0	21.8	25.8	26.5	26.5	27.2
	8H	19.8	20.5	20.5	21.2	22.0	26.9	27.6	27.6	28.3
	12H	20.0	20.5	20.7	21.2	22.1	28.2	28.8	28.9	29.5
12H	4H	19.3	20.1	20.0	20.8	21.6	23.8	24.6	24.5	25.2
	6H	20.2	20.8	20.9	21.5	22.3	25.8	26.5	26.5	27.2
	8H	20.5	21.1	21.2	21.8	22.6	27.0	27.6	27.7	28.3

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										
X=2H	Y=2H	UGR Viewed Crosswise					UGR Viewed Endwise			
		15.7	17.2	16.3	17.8	18.4	20.0	21.4	20.5	22.0
	3H	17.1	18.4	17.7	19.0	19.7	23.0	24.3	23.5	24.9
	4H	17.5	18.8	18.1	19.4	20.1	24.5	25.8	25.1	26.4
	6H	17.8	19.0	18.4	19.6	20.3	26.2	27.4	26.8	28.0
	8H	17.8	19.0	18.4	19.6	20.3	27.1	28.2	27.7	28.9
	12H	17.8	18.9	18.5	19.6	20.3	28.1	29.2	28.7	29.8
4H	2H	17.1	18.4	17.7	19.0	19.6	20.3	21.6	20.9	22.1
	3H	18.8	19.8	19.4	20.5	21.2	23.5	24.6	24.1	25.2
	4H	19.4	20.4	20.0	21.0	21.7	25.2	26.2	25.8	26.9
	6H	19.7	20.6	20.4	21.3	22.0	27.1	28.0	27.7	28.6
	8H	19.8	20.7	20.5	21.3	22.1	28.1	28.9	28.7	29.6
	12H	19.9	20.6	20.5	21.3	22.1	29.2	30.0	29.9	30.7
8H	4H	20.5	21.4	21.2	22.1	22.8	25.4	26.2	26.0	26.9
	6H	21.2	21.9	21.9	22.6	23.4	27.4	28.1	28.1	28.8
	8H	21.4	22.1	22.1	22.8	23.6	28.5	29.2	29.2	29.9
	12H	21.6	22.1	22.3	22.8	23.7	29.8	30.4	30.5	31.1
12H	4H	20.9	21.7	21.6	22.4	23.2	25.4	26.2	26.1	26.8
	6H	21.8	22.4	22.5	23.1	23.9	27.4	28.1	28.1	28.8
	8H	22.1	22.7	22.8	23.4	24.2	28.6	29.2	29.3	29.9

Maximum UGR = 31.9

## 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	370	369	370	369	369	369	370	369	369	369	370	369	370	369	370	369	369	369	370
5	368	368	368	368	369	369	370	369	369	368	368	368	368	368	368	368	369	369	370
10	362	363	364	364	365	367	368	367	365	364	364	363	362	363	364	364	365	367	368
15	353	355	356	358	360	363	364	363	360	358	356	355	353	355	356	358	360	363	364
20	339	342	346	349	353	357	359	357	353	349	346	342	339	342	346	349	353	357	359
25	322	327	332	338	344	349	351	349	344	338	332	327	322	327	332	338	344	349	351
30	302	308	316	324	333	340	342	340	333	324	316	308	302	308	316	324	333	340	342
35	279	287	297	308	319	330	332	330	319	308	297	287	279	287	297	308	319	330	332
40	255	264	277	291	306	318	321	318	306	291	277	264	255	264	277	291	306	318	321
45	229	239	255	273	291	305	310	305	291	273	255	239	229	239	255	273	291	305	310
50	201	213	233	254	276	291	296	291	276	254	233	213	201	213	233	254	276	291	296
55	173	187	210	236	260	276	281	276	260	236	210	187	173	187	210	236	260	276	281
60	145	160	188	216	242	260	266	260	242	216	188	160	145	160	188	216	242	260	266
65	117	134	166	197	225	244	250	244	225	197	166	134	117	134	166	197	225	244	250
70	87.9	108	144	178	208	227	234	227	208	178	144	108	87.9	108	144	178	208	227	234
75	60.2	84.4	124	160	190	210	217	210	190	160	124	84.4	60.2	84.4	124	160	190	210	217
80	34.2	62.2	105	142	173	193	200	193	173	142	105	62.2	34.2	62.2	105	142	173	193	200
85	13.5	43.9	87.4	126	157	176	183	176	157	126	87.4	43.9	13.5	43.9	87.4	126	157	176	183
90	2.48	30.3	72.8	111	141	161	167	161	141	111	72.8	30.3	2.48	30.3	72.8	111	141	161	167
95	1.54	20.7	59.8	96.3	125	144	151	144	125	96.3	59.8	20.7	1.54	20.7	59.8	96.3	125	144	151
100	1.54	12.6	47.2	81.6	110	127	134	127	110	81.6	47.2	12.6	1.54	12.6	47.2	81.6	110	127	134
105	1.54	5.76	35.5	67.3	93.4	110	116	110	93.4	67.3	35.5	5.76	1.54	5.76	35.5	67.3	93.4	110	116
110	1.72	1.83	25.1	53.3	77.1	92.5	98.3	92.5	77.1	53.3	25.1	1.83	1.72	1.83	25.1	53.3	77.1	92.5	98.3
115	1.81	1.64	15.0	40.2	61.6	75.3	81.0	75.3	61.6	40.2	15.0	1.64	1.81	1.64	15.0	40.2	61.6	75.3	81.0
120	1.81	1.64	6.41	28.1	47.0	59.3	64.3	59.3	47.0	28.1	6.41	1.64	1.81	1.64	6.41	28.1	47.0	59.3	64.3
125	1.81	1.64	1.55	16.7	33.2	43.7	48.3	43.7	33.2	16.7	1.55	1.64	1.81	1.64	1.55	16.7	33.2	43.7	48.3
130	1.81	1.64	1.46	6.32	20.4	29.9	33.3	29.9	20.4	6.32	1.46	1.64	1.81	1.64	1.46	6.32	20.4	29.9	33.3
135	1.81	1.64	1.55	1.27	8.62	16.7	19.8	16.7	8.62	1.27	1.55	1.64	1.81	1.64	1.55	1.27	8.62	16.7	19.8
140	1.81	1.64	1.37	1.09	1.01	4.83	7.11	4.83	1.01	1.09	1.37	1.64	1.81	1.64	1.37	1.09	1.01	4.83	7.11
145	1.81	1.64	1.28	1.00	0.92	1.02	0.93	1.02	0.92	1.00	1.28	1.64	1.81	1.64	1.28	1.00	0.92	1.02	0.93
150	1.81	1.64	1.19	1.09	0.92	0.83	0.74	0.83	0.92	1.09	1.19	1.64	1.81	1.64	1.19	1.09	0.92	0.83	0.74
155	1.81	1.64	1.00	0.91	0.92	0.83	0.74	0.83	0.92	0.91	1.00	1.64	1.81	1.64	1.00	0.91	0.92	0.83	0.74
160	1.81	1.64	1.09	0.91	0.92	0.83	0.74	0.83	0.92	0.91	1.09	1.64	1.81	1.64	1.09	0.91	0.92	0.83	0.74
165	1.90	1.64	0.91	0.91	0.92	0.83	0.74	0.83	0.92	0.91	0.91	1.64	1.90	1.64	0.91	0.91	0.92	0.83	0.74
170	2.53	1.73	1.09	0.91	0.92	0.83	0.74	0.83	0.92	0.91	1.09	1.73	2.53	1.73	1.09	0.91	0.92	0.83	0.74
175	2.63	1.73	1.28	1.27	0.92	1.01	0.74	1.01	0.92	1.27	1.28	1.73	2.63	1.73	1.28	1.27	0.92	1.01	0.74
180	2.63	1.73	1.28	1.18	0.92	0.92	0.74	0.92	0.92	1.18	1.28	1.73	2.63	1.73	1.28	1.18	0.92	0.92	0.74

Table--2

UNIT: cd

C (DEG) y (DEG)	285	300	315	330	345														
0	369	369	369	370	369														
5	369	369	368	368	368														
10	367	365	364	364	363														
15	363	360	358	356	355														
20	357	353	349	346	342														
25	349	344	338	332	327														
30	340	333	324	316	308														
35	330	319	308	297	287														
40	318	306	291	277	264														
45	305	291	273	255	239														
50	291	276	254	233	213														
55	276	260	236	210	187														
60	260	242	216	188	160														
65	244	225	197	166	134														
70	227	208	178	144	108														
75	210	190	160	124	84.4														
80	193	173	142	105	62.2														
85	176	157	126	87.4	43.9														
90	161	141	111	72.8	30.3														
95	144	125	96.3	59.8	20.7														
100	127	110	81.6	47.2	12.6														
105	110	93.4	67.3	35.5	5.76														
110	92.5	77.1	53.3	25.1	1.83														
115	75.3	61.6	40.2	15.0	1.64														
120	59.3	47.0	28.1	6.41	1.64														
125	43.7	33.2	16.7	1.55	1.64														
130	29.9	20.4	6.32	1.46	1.64														
135	16.7	8.62	1.27	1.55	1.64														
140	4.83	1.01	1.09	1.37	1.64														
145	1.02	0.92	1.00	1.28	1.64														
150	0.83	0.92	1.09	1.19	1.64														
155	0.83	0.92	0.91	1.00	1.64														
160	0.83	0.92	0.91	1.09	1.64														
165	0.83	0.92	0.91	0.91	1.64														
170	0.83	0.92	0.91	1.09	1.73														
175	1.01	0.92	1.27	1.28	1.73														
180	0.92	0.92	1.18	1.28	1.73														

## 4.0 LM-79 Measurement and Test Results

### 4.3 THD and PF Test

<b>Model No.</b>	STRP4 @10W5000K	<b>Sample ID</b>	241225005-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	0.083	9.8	0.983	9.09
277.0	60	0.045	10.5	0.852	21.88

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