

LM-79-19 Test Report

For

RAB Lighting Inc.

(Brand Name: RAB Lighting)

Room 609, Building C, MixC, No. 1799 Wuzhong Road,
Minhang District, Shanghai, China

Xiao Xiang, 15921313292, gary.xiao@rablighting.com

2x4 Luminaires for Ambient Lighting of Interior Commercial Spaces

Model Name(s):

SWISH34-2X4[blank, /LC, /MVS, /LCBS/MVS, /PIR, /LCBS][blank, /E]

Model Difference:

1. Product is CCT tunable, can be tunable from 3500K, 4000K and 5000K;
2. Product is wattage tunable, can be tunable from 30W, 35W and 40W.

Prepared by:

Alan Wang

Engineer: Alan Wang

Date: 2024-07-25

Reviewed by:

Vincent Yuan

Technical Lead: Vincent Yuan

Issue Date: 2024-08-01

Revised Date: N/A

Note:

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.

Laboratory: Dongguan New Testing Centre Co., Ltd

Address: 3F, No. 1 the 1st North Industry Road, Songshan Lake Science & Technology Park, Dongguan, Guangdong, China

Tel: 86-769-22212079

Website: <http://www.ntc-cert.com>

Product Information:

Model Number:	SWISH34-2X4[blank, /LC, /MVS, /LCBS/MVS, /PIR, /LCBS][blank, /E]
Product Type:	2x4 Luminaires for Ambient Lighting of Interior Commercial Spaces
Rating Input:	120-277Vac, 50/60Hz, 30W/35W/40W
Declared CCT:	3500K, 4000K and 5000K
Declared Light Output:	5200 lm
LED Manufacturer:	Seoul Semiconductor Co., LTD
LED Model:	STW8A2PD-XX
LED Quantity:	300 pcs
LED Driver Manufacturer:	RAB Lighting Inc.
LED Driver Model:	RDD-HN-050-A0850-S3

Test Information:

Standard Lamp:	Total Spectral Radiant Flux Standard Lamp, trace to NIST. 1. D908S for Gonio 2. D215S for Integrating Sphere
Date of Receipt Samples:	2024-05-29
Quantity of Receipt Samples:	1 pc
Sample Number:	240529006-S1
Test Representation:	N/A

Laboratory Information:

Test Laboratory:	Dongguan New Testing Centre Co., Ltd
Laboratory Address:	3F, No. 1 the 1 st North Industry Road, Songshan Lake Science & Technology Park, Dongguan, Guangdong, China
Laboratory Contact Name:	Neil Zhong
Laboratory Contact E-mail:	Neil_zhong@ntc-cert.com

Report Information:

Test Report Form:	LM-79_TRF_V1.5
Issued Date of Test Report:	2024-08-01
Revised Date of Test Report:	N/A
Test Report No.:	NTCLR24070353
Remark (If applicable):	N/A

Test Specification:	
Date of Test	2024-07-06
Test Item	<ol style="list-style-type: none"> 1. Total Luminous Flux 2. Luminous Distribution Intensity 3. Luminous Efficacy 4. Correlated Color Temperature 5. Color Rendering Index 6. Chromaticity Coordinate 7. Fidelity Index 8. Gamut Index 9. Local Chroma Shift 10. THD and PF
Reference Standard	ANSI/IES LM-79:2019 Optical and Electrical Measurements of Solid-State Lighting Products – Chromaticity Uniformity Measurements ANSI C78.377-2017 Specifications for the Chromaticity of Solid State Lighting Products CIE 13.3-1995 Method of Measuring and Specifying Color Rendering Properties of Light Sources CIE 15-2018 Technical Report Colorimetry ANSI IES TM-30-18 IES Method for Evaluating Light Source Color Rendition IES TM-15-11 Luminaire Classification System for Outdoor Luminaires Addendum A for IES TM-15-11 Backlight, Uplight, and Glare (BUG) Ratings ANSI C82.77-10:2020 Harmonic Emission Limits – Related Power Quality Requirements for Lighting Equipment – Solid State

Test Methods:
<p>1. Photometric and Electrical Measurements – Light Distribution Method:</p> <p>Photometric parameters were measured using the goniophotometer and software. The ambient temperature shall be maintained at $25\text{ }^{\circ}\text{C} \pm 1\text{ }^{\circ}\text{C}$, measured at a point not more than 1 m from the sample and at the same height as the sample. The sample was operated at required Voltage and Frequency. It was stabilized before measurement was made. Luminous Flux, Luminaire Efficacy and Zonal Lumen were calculated from the software taken at 1° vertical intervals and 15° horizontal intervals.</p>
<p>2. Photometric and Electrical Measurements – Integrating Sphere Method:</p> <p>Photometric parameters were measured using an integrating sphere, as spectroradiometer and software. The ambient temperature condition inside the sphere was measured at $25\text{ }^{\circ}\text{C} \pm 1\text{ }^{\circ}\text{C}$. The sample measurements were made using a spectroradiometer connected by a fiber optic cable and detector through the detector port of the integrating sphere. The sample was operated at require Voltage and Frequency. It was stabilized before measurement was made. Chromaticity Coordinates, Correlated Color Temperature and Color Rendering Index were calculated from the spectral radiant flux measurements taken at least 1 nm intervals over the rage of 380 to 780 nm.</p>
<p>3. THD and PF Measurements:</p> <p>The sample was tested according to the ANSI C82.77, the sample was operated at requirement Voltage and Frequency, and was stabilized before measurement. The Total Harmonic Distortion was calculated from the Digital Power Meter.</p>

Integrating Sphere Test Results:

Test Condition:

Test Ambient (°C)	Test Humidity (%)	Orientation	Stabilization Time (minute)	Test Time (minute)
25.4	41.0	Face Down	90	10

Electrical Data:

CCT Setting	Voltage (V)	Frequency (Hz)	Current (A)	Wattage (W)	Power Factor
3500K	120.0	60	0.3343	39.93	0.9953
4000K	120.0	60	0.3281	39.20	0.9957
5000K	120.0	60	0.3337	39.87	0.9957

Output Data:

CCT Setting	Luminous (lm)	Efficacy (lm/W)
3500K	5235.0	131.10
4000K	5509.2	140.54
5000K	5387.2	135.12

Color Data:

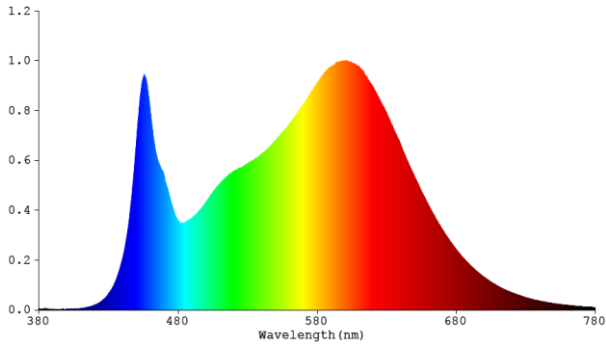
CCT Setting	Test CCT (K)	R _a	R ₉	R _f	R _g	R _{cs, h1}	Chromaticity		
							(x, y)	(u', v')	Duv
3500K	3580	85.1	17	85	93	-11%	(0.3986, 0.3820)	(0.2349, 0.5066)	-0.0024
4000K	4181	85.2	17	84	94	-11%	(0.3719, 0.3681)	(0.2229, 0.4964)	-0.0015
5000K	5089	84.2	8	84	95	-12%	(0.3429, 0.3532)	(0.2093, 0.4851)	0.0017

Specify Color Rendering:

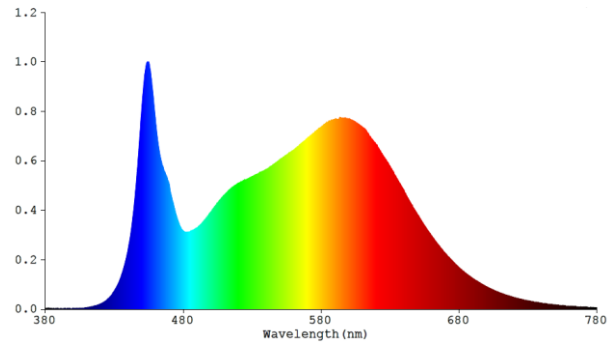
CCT Setting	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15
3500K	86	96	93	82	86	93	83	64	17	90	82	71	89	97	79
4000K	85	94	95	82	85	90	85	66	17	85	82	64	88	98	79
5000K	83	91	95	83	83	86	86	66	8	77	82	64	85	98	77

Spectrum Diagram:

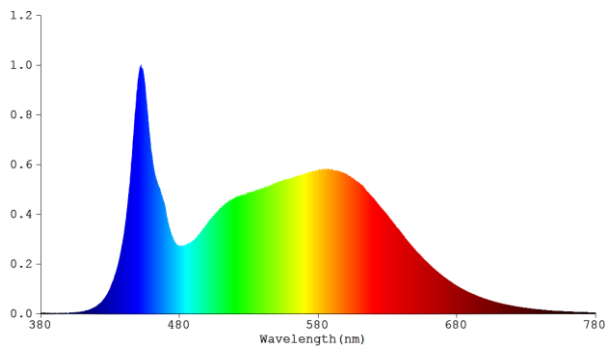
CCT Setting=3500K



CCT Setting=4000K



CCT Setting=5000K



IES TM-30-18 Color Rendition Result (CCT Setting=3500K):

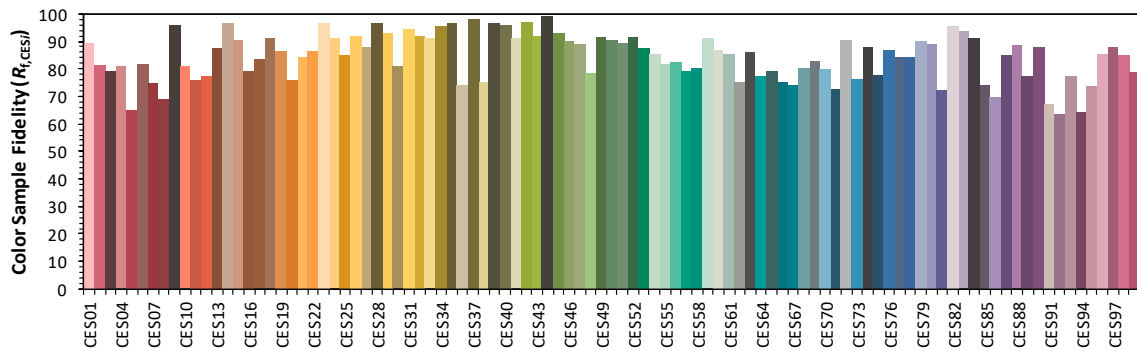
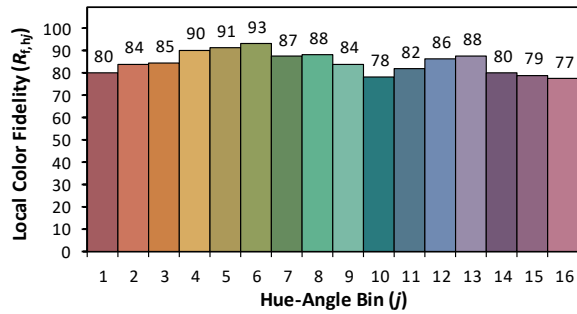
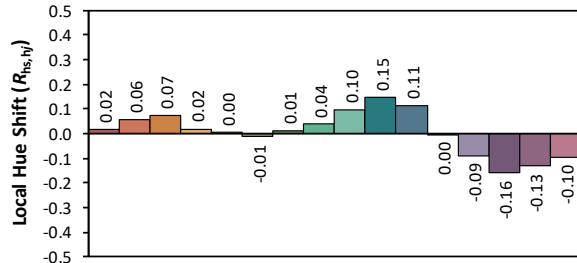
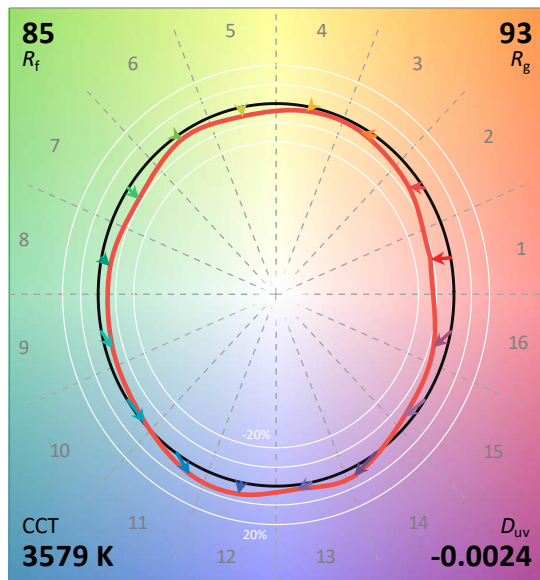
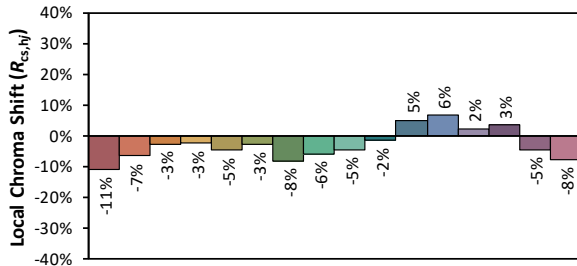
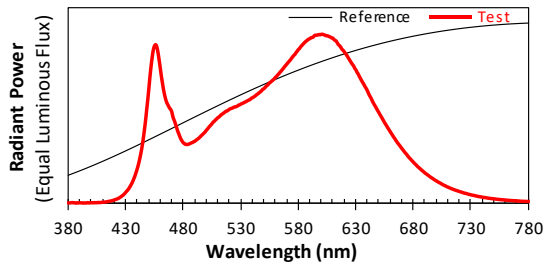
ANSI/IES TM-30-18 Color Rendition Report

Source: 1 CIE F1

Manufacturer: Jiangsu Hanna New Energy Co., Ltd

Date: 2024/7/25

Model: HNSVPAN24-
A2/040/035/030/UNV/83550/D10/FL/
WT/US01



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

x 0.3986
 y 0.3819
 u' 0.2350
 v' 0.5065

CIE 13.3-1995
(CRI)
 R_a 85
 R_g 17

Spectrum Data (CCT Setting=3500K):

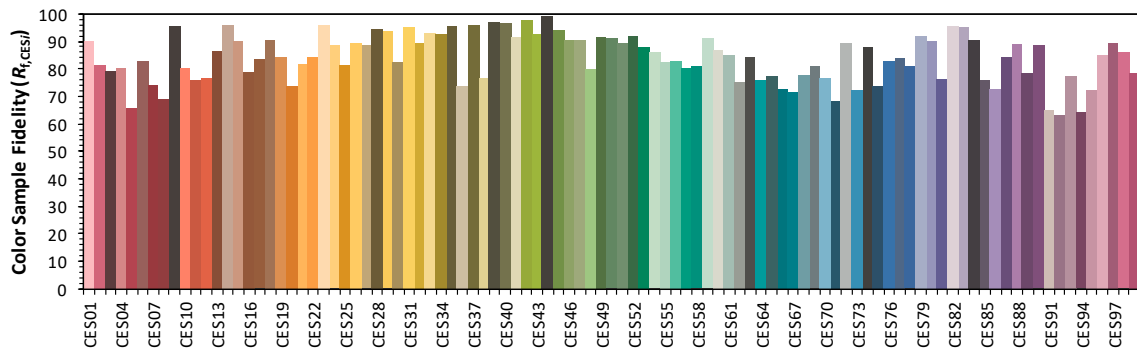
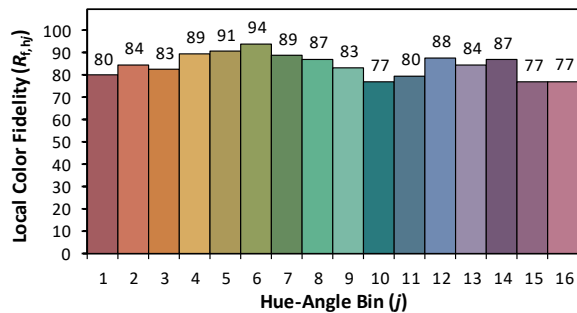
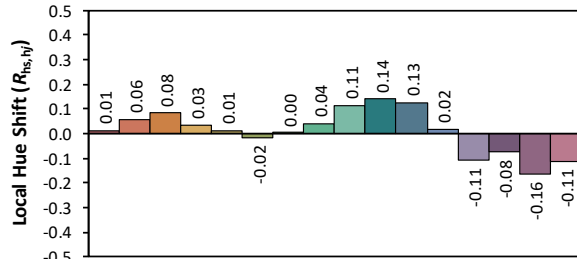
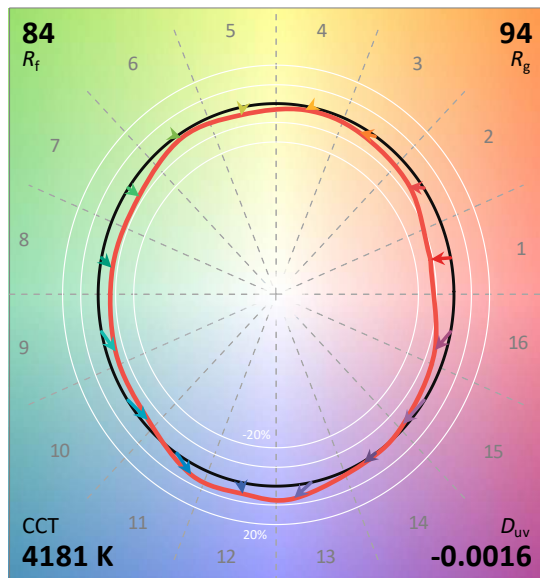
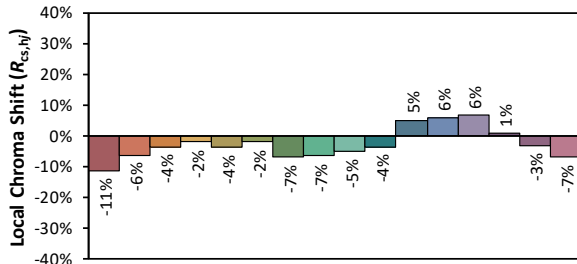
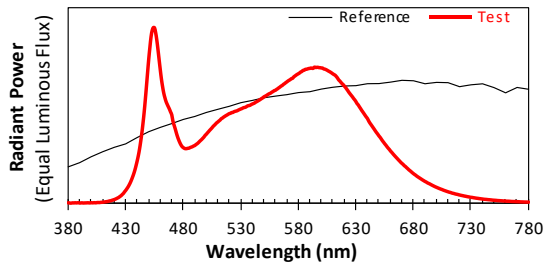
Spectral Distribution over Visible Wavelength											
WL (nm)	Radiant (W/nm)	WL (nm)	Radiant (W/nm)	WL (nm)	Radiant (W/nm)	WL (nm)	Radiant (W/nm)	WL (nm)	Radiant (W/nm)	WL (nm)	Radiant (W/nm)
380	2.70E-06	447	4.76E-04	514	5.29E-04	581	9.16E-04	648	5.59E-04	715	8.11E-05
381	1.90E-06	448	5.39E-04	515	5.33E-04	582	9.26E-04	649	5.47E-04	716	7.87E-05
382	2.80E-06	449	6.03E-04	516	5.39E-04	583	9.33E-04	650	5.35E-04	717	7.60E-05
383	3.60E-06	450	6.72E-04	517	5.45E-04	584	9.41E-04	651	5.23E-04	718	7.41E-05
384	3.80E-06	451	7.45E-04	518	5.46E-04	585	9.49E-04	652	5.12E-04	719	7.17E-05
385	2.60E-06	452	8.09E-04	519	5.51E-04	586	9.55E-04	653	5.00E-04	720	6.93E-05
386	2.80E-06	453	8.65E-04	520	5.56E-04	587	9.61E-04	654	4.88E-04	721	6.72E-05
387	6.00E-07	454	9.08E-04	521	5.59E-04	588	9.66E-04	655	4.76E-04	722	6.50E-05
388	2.90E-06	455	9.31E-04	522	5.62E-04	589	9.71E-04	656	4.66E-04	723	6.29E-05
389	2.10E-06	456	9.39E-04	523	5.64E-04	590	9.74E-04	657	4.54E-04	724	6.04E-05
390	2.70E-06	457	9.26E-04	524	5.69E-04	591	9.79E-04	658	4.43E-04	725	5.92E-05
391	2.50E-06	458	8.93E-04	525	5.70E-04	592	9.81E-04	659	4.32E-04	726	5.72E-05
392	2.30E-06	459	8.49E-04	526	5.72E-04	593	9.84E-04	660	4.21E-04	727	5.50E-05
393	1.10E-06	460	8.01E-04	527	5.75E-04	594	9.93E-04	661	4.11E-04	728	5.32E-05
394	2.40E-06	461	7.51E-04	528	5.80E-04	595	9.94E-04	662	4.00E-04	729	5.16E-05
395	1.50E-06	462	7.07E-04	529	5.83E-04	596	9.95E-04	663	3.89E-04	730	4.98E-05
396	1.70E-06	463	6.67E-04	530	5.87E-04	597	9.96E-04	664	3.80E-04	731	4.81E-05
397	4.10E-06	464	6.34E-04	531	5.90E-04	598	9.98E-04	665	3.69E-04	732	4.73E-05
398	2.00E-06	465	6.08E-04	532	5.93E-04	599	9.97E-04	666	3.59E-04	733	4.49E-05
399	2.40E-06	466	5.90E-04	533	5.97E-04	600	1.00E-03	667	3.50E-04	734	4.42E-05
400	3.00E-06	467	5.78E-04	534	6.00E-04	601	1.00E-03	668	3.42E-04	735	4.22E-05
401	3.20E-06	468	5.64E-04	535	6.03E-04	602	9.97E-04	669	3.32E-04	736	4.08E-05
402	2.90E-06	469	5.55E-04	536	6.08E-04	603	9.95E-04	670	3.23E-04	737	3.95E-05
403	3.60E-06	470	5.41E-04	537	6.11E-04	604	9.91E-04	671	3.14E-04	738	3.85E-05
404	3.30E-06	471	5.11E-04	538	6.14E-04	605	9.91E-04	672	3.05E-04	739	3.72E-05
405	3.50E-06	472	4.93E-04	539	6.20E-04	606	9.89E-04	673	2.97E-04	740	3.61E-05
406	4.60E-06	473	4.74E-04	540	6.24E-04	607	9.86E-04	674	2.89E-04	741	3.45E-05
407	4.00E-06	474	4.53E-04	541	6.28E-04	608	9.83E-04	675	2.81E-04	742	3.38E-05
408	4.50E-06	475	4.31E-04	542	6.33E-04	609	9.78E-04	676	2.72E-04	743	3.27E-05
409	5.30E-06	476	4.13E-04	543	6.38E-04	610	9.77E-04	677	2.65E-04	744	3.16E-05
410	5.90E-06	477	3.95E-04	544	6.44E-04	611	9.68E-04	678	2.57E-04	745	3.01E-05
411	6.70E-06	478	3.79E-04	545	6.48E-04	612	9.64E-04	679	2.50E-04	746	2.93E-05
412	7.50E-06	479	3.68E-04	546	6.55E-04	613	9.58E-04	680	2.42E-04	747	2.84E-05
413	7.80E-06	480	3.58E-04	547	6.60E-04	614	9.47E-04	681	2.35E-04	748	2.76E-05
414	9.50E-06	481	3.53E-04	548	6.66E-04	615	9.37E-04	682	2.29E-04	749	2.68E-05
415	1.09E-05	482	3.48E-04	549	6.74E-04	616	9.31E-04	683	2.21E-04	750	2.63E-05
416	1.20E-05	483	3.48E-04	550	6.78E-04	617	9.21E-04	684	2.14E-04	751	2.52E-05
417	1.35E-05	484	3.48E-04	551	6.85E-04	618	9.10E-04	685	2.09E-04	752	2.42E-05
418	1.53E-05	485	3.51E-04	552	6.93E-04	619	9.04E-04	686	2.03E-04	753	2.36E-05
419	1.70E-05	486	3.54E-04	553	6.98E-04	620	8.95E-04	687	1.96E-04	754	2.25E-05
420	1.96E-05	487	3.57E-04	554	7.05E-04	621	8.86E-04	688	1.91E-04	755	2.23E-05
421	2.19E-05	488	3.60E-04	555	7.13E-04	622	8.76E-04	689	1.85E-04	756	2.13E-05
422	2.41E-05	489	3.64E-04	556	7.18E-04	623	8.64E-04	690	1.79E-04	757	2.08E-05
423	2.70E-05	490	3.67E-04	557	7.24E-04	624	8.53E-04	691	1.74E-04	758	2.02E-05
424	3.04E-05	491	3.73E-04	558	7.30E-04	625	8.42E-04	692	1.69E-04	759	1.99E-05
425	3.50E-05	492	3.78E-04	559	7.36E-04	626	8.31E-04	693	1.64E-04	760	1.90E-05
426	3.93E-05	493	3.83E-04	560	7.45E-04	627	8.21E-04	694	1.59E-04	761	1.79E-05
427	4.46E-05	494	3.89E-04	561	7.51E-04	628	8.12E-04	695	1.54E-04	762	1.76E-05
428	4.98E-05	495	3.96E-04	562	7.60E-04	629	7.98E-04	696	1.49E-04	763	1.74E-05
429	5.70E-05	496	4.02E-04	563	7.66E-04	630	7.89E-04	697	1.45E-04	764	1.65E-05
430	6.48E-05	497	4.09E-04	564	7.75E-04	631	7.75E-04	698	1.40E-04	765	1.62E-05
431	7.28E-05	498	4.15E-04	565	7.82E-04	632	7.64E-04	699	1.36E-04	766	1.58E-05
432	8.02E-05	499	4.23E-04	566	7.91E-04	633	7.50E-04	700	1.32E-04	767	1.52E-05
433	9.06E-05	500	4.32E-04	567	7.99E-04	634	7.38E-04	701	1.28E-04	768	1.51E-05
434	1.02E-04	501	4.39E-04	568	8.08E-04	635	7.25E-04	702	1.24E-04	769	1.40E-05
435	1.14E-04	502	4.48E-04	569	8.16E-04	636	7.13E-04	703	1.20E-04	770	1.40E-05
436	1.28E-04	503	4.56E-04	570	8.24E-04	637	7.02E-04	704	1.16E-04	771	1.34E-05
437	1.44E-04	504	4.63E-04	571	8.32E-04	638	6.89E-04	705	1.12E-04	772	1.32E-05
438	1.62E-04	505	4.71E-04	572	8.40E-04	639	6.78E-04	706	1.08E-04	773	1.23E-05
439	1.82E-04	506	4.80E-04	573	8.48E-04	640	6.65E-04	707	1.05E-04	774	1.19E-05
440	2.04E-04	507	4.86E-04	574	8.58E-04	641	6.49E-04	708	1.02E-04	775	1.17E-05
441	2.29E-04	508	4.94E-04	575	8.67E-04	642	6.35E-04	709	9.81E-05	776	1.15E-05
442	2.58E-04	509	4.99E-04	576	8.75E-04	643	6.23E-04	710	9.53E-05	777	1.12E-05
443	2.90E-04	510	5.07E-04	577	8.81E-04	644	6.09E-04	711	9.25E-05	778	1.09E-05
444	3.27E-04	511	5.11E-04	578	8.92E-04	645	5.95E-04	712	8.92E-05	779	1.06E-05
445	3.70E-04	512	5.17E-04	579	9.00E-04	646	5.83E-04	713	8.66E-05	780	1.06E-05
446	4.21E-04	513	5.24E-04	580	9.10E-04	647	5.72E-04	714	8.37E-05	N/A	N/A

IES TM-30-18 Color Rendition Result (CCT Setting=4000K):

ANSI/IES TM-30-18 Color Rendition Report

Source: 1 CIE F1
Date: 2024/7/25

Manufacturer: Jiangsu Hanna New Energy Co., Ltd
Model: HNSVPAN24- A2/040/035/030/UNV/83550/D10/FL/WT/USO1



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

x 0.3719
 y 0.3679
 u' 0.2230
 v' 0.4963

CIE 13.3-1995
(CRI)
 R_a 85
 R_g 17

Spectrum Data (CCT Setting=4000K):

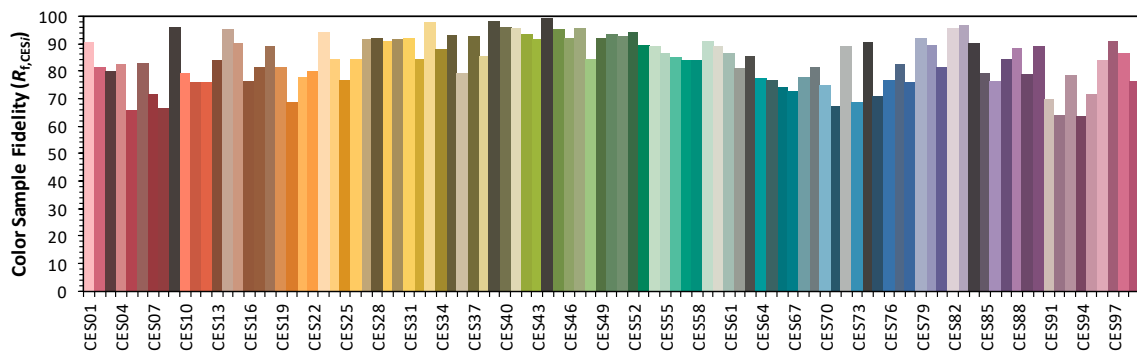
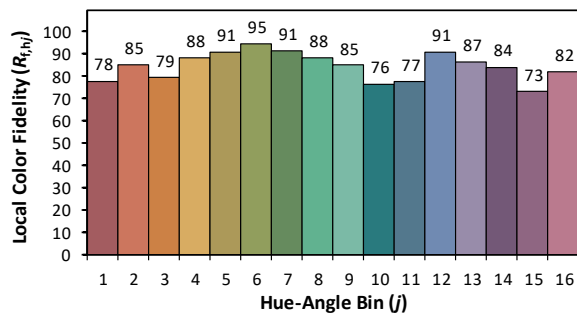
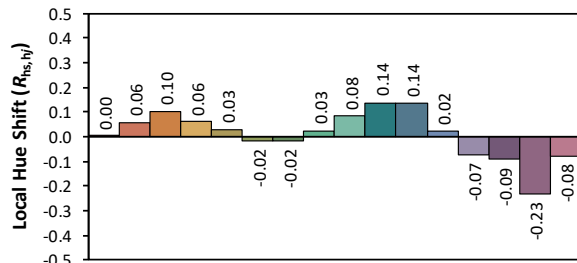
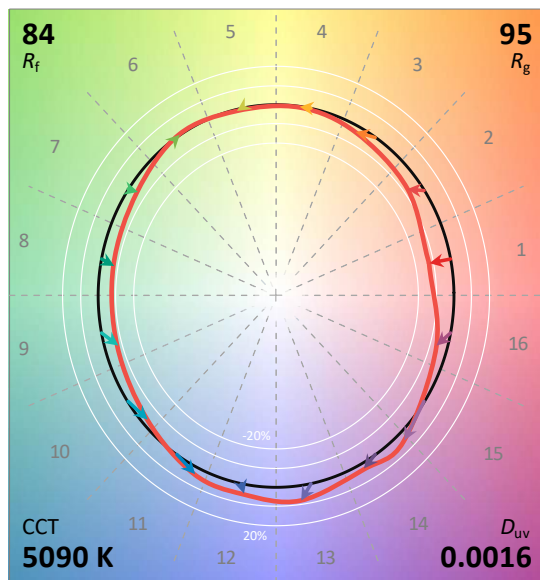
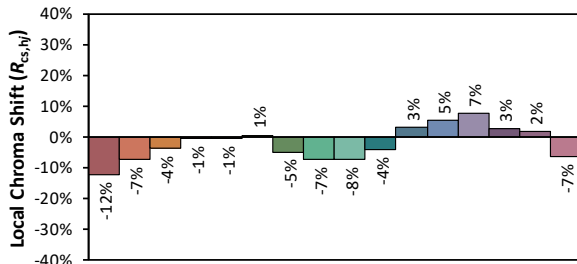
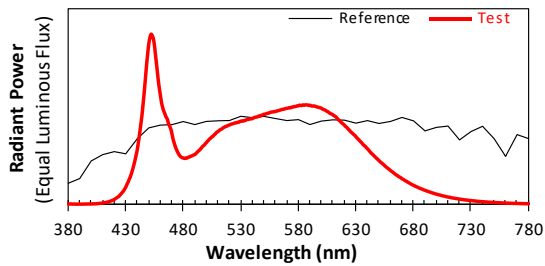
Spectral Distribution over Visible Wavelength											
WL (nm)	Radiant (W/nm)	WL (nm)	Radiant (W/nm)	WL (nm)	Radiant (W/nm)	WL (nm)	Radiant (W/nm)	WL (nm)	Radiant (W/nm)	WL (nm)	Radiant (W/nm)
380	3.20E-06	447	5.88E-04	514	4.85E-04	581	7.41E-04	648	4.01E-04	715	5.63E-05
381	2.50E-06	448	6.65E-04	515	4.90E-04	582	7.47E-04	649	3.93E-04	716	5.41E-05
382	1.20E-06	449	7.44E-04	516	4.94E-04	583	7.50E-04	650	3.83E-04	717	5.25E-05
383	1.80E-06	450	8.21E-04	517	4.99E-04	584	7.56E-04	651	3.76E-04	718	5.13E-05
384	2.90E-06	451	8.87E-04	518	5.02E-04	585	7.57E-04	652	3.66E-04	719	4.95E-05
385	2.40E-06	452	9.47E-04	519	5.06E-04	586	7.62E-04	653	3.56E-04	720	4.77E-05
386	3.40E-06	453	9.83E-04	520	5.10E-04	587	7.62E-04	654	3.48E-04	721	4.62E-05
387	2.60E-06	454	9.99E-04	521	5.12E-04	588	7.64E-04	655	3.39E-04	722	4.47E-05
388	3.20E-06	455	9.98E-04	522	5.16E-04	589	7.67E-04	656	3.31E-04	723	4.35E-05
389	3.40E-06	456	9.70E-04	523	5.17E-04	590	7.67E-04	657	3.22E-04	724	4.18E-05
390	1.80E-06	457	9.28E-04	524	5.21E-04	591	7.69E-04	658	3.14E-04	725	4.07E-05
391	2.40E-06	458	8.75E-04	525	5.23E-04	592	7.68E-04	659	3.07E-04	726	3.93E-05
392	3.00E-06	459	8.17E-04	526	5.25E-04	593	7.68E-04	660	2.98E-04	727	3.79E-05
393	2.00E-06	460	7.61E-04	527	5.27E-04	594	7.75E-04	661	2.91E-04	728	3.68E-05
394	2.30E-06	461	7.07E-04	528	5.31E-04	595	7.72E-04	662	2.83E-04	729	3.53E-05
395	2.60E-06	462	6.64E-04	529	5.34E-04	596	7.73E-04	663	2.75E-04	730	3.43E-05
396	2.80E-06	463	6.28E-04	530	5.37E-04	597	7.73E-04	664	2.68E-04	731	3.36E-05
397	3.30E-06	464	6.02E-04	531	5.39E-04	598	7.72E-04	665	2.61E-04	732	3.23E-05
398	2.80E-06	465	5.79E-04	532	5.43E-04	599	7.71E-04	666	2.54E-04	733	3.13E-05
399	2.50E-06	466	5.64E-04	533	5.45E-04	600	7.70E-04	667	2.47E-04	734	3.01E-05
400	3.60E-06	467	5.49E-04	534	5.46E-04	601	7.69E-04	668	2.40E-04	735	2.91E-05
401	3.00E-06	468	5.36E-04	535	5.50E-04	602	7.64E-04	669	2.33E-04	736	2.84E-05
402	3.40E-06	469	5.19E-04	536	5.54E-04	603	7.63E-04	670	2.27E-04	737	2.72E-05
403	3.70E-06	470	5.03E-04	537	5.56E-04	604	7.60E-04	671	2.21E-04	738	2.65E-05
404	3.10E-06	471	4.68E-04	538	5.58E-04	605	7.57E-04	672	2.14E-04	739	2.54E-05
405	4.30E-06	472	4.45E-04	539	5.62E-04	606	7.53E-04	673	2.09E-04	740	2.47E-05
406	4.90E-06	473	4.24E-04	540	5.65E-04	607	7.49E-04	674	2.03E-04	741	2.36E-05
407	4.40E-06	474	4.00E-04	541	5.68E-04	608	7.45E-04	675	1.97E-04	742	2.30E-05
408	5.30E-06	475	3.79E-04	542	5.71E-04	609	7.41E-04	676	1.91E-04	743	2.25E-05
409	6.00E-06	476	3.61E-04	543	5.76E-04	610	7.36E-04	677	1.86E-04	744	2.18E-05
410	6.20E-06	477	3.46E-04	544	5.79E-04	611	7.32E-04	678	1.80E-04	745	2.10E-05
411	7.50E-06	478	3.32E-04	545	5.83E-04	612	7.28E-04	679	1.74E-04	746	2.05E-05
412	8.40E-06	479	3.23E-04	546	5.87E-04	613	7.21E-04	680	1.69E-04	747	1.98E-05
413	9.50E-06	480	3.17E-04	547	5.91E-04	614	7.12E-04	681	1.64E-04	748	1.91E-05
414	1.04E-05	481	3.13E-04	548	5.96E-04	615	7.02E-04	682	1.60E-04	749	1.82E-05
415	1.20E-05	482	3.11E-04	549	6.00E-04	616	6.96E-04	683	1.54E-04	750	1.78E-05
416	1.40E-05	483	3.12E-04	550	6.05E-04	617	6.88E-04	684	1.50E-04	751	1.74E-05
417	1.48E-05	484	3.13E-04	551	6.09E-04	618	6.80E-04	685	1.45E-04	752	1.68E-05
418	1.72E-05	485	3.14E-04	552	6.12E-04	619	6.74E-04	686	1.41E-04	753	1.60E-05
419	1.94E-05	486	3.17E-04	553	6.17E-04	620	6.66E-04	687	1.37E-04	754	1.57E-05
420	2.15E-05	487	3.20E-04	554	6.21E-04	621	6.59E-04	688	1.33E-04	755	1.52E-05
421	2.41E-05	488	3.22E-04	555	6.24E-04	622	6.49E-04	689	1.29E-04	756	1.48E-05
422	2.73E-05	489	3.26E-04	556	6.27E-04	623	6.40E-04	690	1.25E-04	757	1.43E-05
423	3.07E-05	490	3.29E-04	557	6.33E-04	624	6.30E-04	691	1.22E-04	758	1.37E-05
424	3.42E-05	491	3.34E-04	558	6.36E-04	625	6.22E-04	692	1.17E-04	759	1.35E-05
425	3.93E-05	492	3.39E-04	559	6.41E-04	626	6.13E-04	693	1.14E-04	760	1.31E-05
426	4.38E-05	493	3.44E-04	560	6.43E-04	627	6.05E-04	694	1.11E-04	761	1.23E-05
427	5.05E-05	494	3.51E-04	561	6.48E-04	628	5.96E-04	695	1.07E-04	762	1.24E-05
428	5.67E-05	495	3.57E-04	562	6.52E-04	629	5.88E-04	696	1.04E-04	763	1.19E-05
429	6.59E-05	496	3.63E-04	563	6.57E-04	630	5.78E-04	697	1.00E-04	764	1.16E-05
430	7.39E-05	497	3.70E-04	564	6.61E-04	631	5.67E-04	698	9.72E-05	765	1.09E-05
431	8.32E-05	498	3.78E-04	565	6.67E-04	632	5.60E-04	699	9.40E-05	766	1.06E-05
432	9.32E-05	499	3.87E-04	566	6.70E-04	633	5.49E-04	700	9.12E-05	767	1.04E-05
433	1.05E-04	500	3.93E-04	567	6.76E-04	634	5.39E-04	701	8.83E-05	768	1.02E-05
434	1.18E-04	501	4.01E-04	568	6.81E-04	635	5.29E-04	702	8.56E-05	769	9.70E-06
435	1.33E-04	502	4.08E-04	569	6.86E-04	636	5.19E-04	703	8.28E-05	770	9.60E-06
436	1.50E-04	503	4.16E-04	570	6.91E-04	637	5.10E-04	704	8.03E-05	771	9.40E-06
437	1.69E-04	504	4.23E-04	571	6.96E-04	638	5.00E-04	705	7.80E-05	772	9.00E-06
438	1.90E-04	505	4.30E-04	572	7.00E-04	639	4.91E-04	706	7.51E-05	773	8.50E-06
439	2.15E-04	506	4.38E-04	573	7.04E-04	640	4.82E-04	707	7.27E-05	774	8.30E-06
440	2.43E-04	507	4.44E-04	574	7.09E-04	641	4.69E-04	708	7.04E-05	775	8.10E-06
441	2.73E-04	508	4.51E-04	575	7.11E-04	642	4.58E-04	709	6.80E-05	776	7.70E-06
442	3.09E-04	509	4.58E-04	576	7.19E-04	643	4.49E-04	710	6.59E-05	777	7.40E-06
443	3.52E-04	510	4.63E-04	577	7.24E-04	644	4.39E-04	711	6.37E-05	778	7.40E-06
444	3.99E-04	511	4.69E-04	578	7.29E-04	645	4.30E-04	712	6.21E-05	779	7.10E-06
445	4.55E-04	512	4.74E-04	579	7.33E-04	646	4.20E-04	713	5.97E-05	780	7.10E-06
446	5.17E-04	513	4.81E-04	580	7.37E-04	647	4.10E-04	714	5.76E-05	N/A	N/A

IES TM-30-18 Color Rendition Result (CCT Setting=5000K):

ANSI/IES TM-30-18 Color Rendition Report

Source: 1 CIE F1
Date: 2024/7/25

Manufacturer: Jiangsu Hanna New Energy Co., Ltd
Model: A2/040/035/030/UNV/83550/D10/FL/WT/USO1



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

x 0.3429
 y 0.3530
 u' 0.2094
 v' 0.4850

CIE 13.3-1995
(CRI)
 R_a 84
 R_9 8

Spectrum Data (CCT Setting=5000K):

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	7.27E-04	514	4.44E-04	581	5.80E-04	648	2.69E-04	715	3.76E-05
381	3.30E-06	448	8.07E-04	515	4.49E-04	582	5.78E-04	649	2.63E-04	716	3.63E-05
382	3.70E-06	449	8.74E-04	516	4.53E-04	583	5.78E-04	650	2.57E-04	717	3.54E-05
383	3.30E-06	450	9.36E-04	517	4.56E-04	584	5.82E-04	651	2.50E-04	718	3.43E-05
384	2.50E-06	451	9.74E-04	518	4.58E-04	585	5.79E-04	652	2.44E-04	719	3.30E-05
385	3.30E-06	452	9.94E-04	519	4.62E-04	586	5.81E-04	653	2.39E-04	720	3.21E-05
386	3.20E-06	453	9.86E-04	520	4.64E-04	587	5.82E-04	654	2.33E-04	721	3.09E-05
387	2.00E-06	454	9.67E-04	521	4.67E-04	588	5.81E-04	655	2.27E-04	722	2.98E-05
388	2.60E-06	455	9.27E-04	522	4.70E-04	589	5.78E-04	656	2.21E-04	723	2.90E-05
389	2.20E-06	456	8.64E-04	523	4.71E-04	590	5.80E-04	657	2.15E-04	724	2.82E-05
390	3.10E-06	457	8.06E-04	524	4.74E-04	591	5.76E-04	658	2.10E-04	725	2.71E-05
391	2.30E-06	458	7.41E-04	525	4.76E-04	592	5.75E-04	659	2.05E-04	726	2.66E-05
392	2.70E-06	459	6.87E-04	526	4.77E-04	593	5.76E-04	660	1.99E-04	727	2.55E-05
393	2.60E-06	460	6.43E-04	527	4.80E-04	594	5.74E-04	661	1.94E-04	728	2.47E-05
394	3.00E-06	461	5.99E-04	528	4.80E-04	595	5.73E-04	662	1.89E-04	729	2.37E-05
395	3.10E-06	462	5.69E-04	529	4.85E-04	596	5.70E-04	663	1.83E-04	730	2.36E-05
396	3.00E-06	463	5.46E-04	530	4.85E-04	597	5.68E-04	664	1.78E-04	731	2.23E-05
397	3.50E-06	464	5.30E-04	531	4.89E-04	598	5.66E-04	665	1.73E-04	732	2.19E-05
398	3.70E-06	465	5.11E-04	532	4.87E-04	599	5.65E-04	666	1.69E-04	733	2.13E-05
399	3.20E-06	466	5.01E-04	533	4.90E-04	600	5.62E-04	667	1.64E-04	734	2.02E-05
400	3.30E-06	467	4.77E-04	534	4.91E-04	601	5.57E-04	668	1.60E-04	735	1.95E-05
401	4.20E-06	468	4.59E-04	535	4.95E-04	602	5.54E-04	669	1.56E-04	736	1.91E-05
402	4.20E-06	469	4.44E-04	536	4.98E-04	603	5.52E-04	670	1.51E-04	737	1.82E-05
403	4.60E-06	470	4.19E-04	537	4.97E-04	604	5.47E-04	671	1.47E-04	738	1.77E-05
404	4.20E-06	471	3.86E-04	538	5.00E-04	605	5.44E-04	672	1.43E-04	739	1.72E-05
405	5.30E-06	472	3.61E-04	539	5.01E-04	606	5.40E-04	673	1.38E-04	740	1.67E-05
406	5.90E-06	473	3.40E-04	540	5.01E-04	607	5.34E-04	674	1.35E-04	741	1.63E-05
407	6.70E-06	474	3.22E-04	541	5.06E-04	608	5.30E-04	675	1.31E-04	742	1.56E-05
408	7.40E-06	475	3.08E-04	542	5.08E-04	609	5.28E-04	676	1.27E-04	743	1.52E-05
409	8.10E-06	476	2.95E-04	543	5.10E-04	610	5.23E-04	677	1.23E-04	744	1.48E-05
410	9.10E-06	477	2.85E-04	544	5.11E-04	611	5.19E-04	678	1.19E-04	745	1.41E-05
411	9.70E-06	478	2.78E-04	545	5.14E-04	612	5.14E-04	679	1.16E-04	746	1.37E-05
412	1.14E-05	479	2.74E-04	546	5.18E-04	613	5.09E-04	680	1.12E-04	747	1.34E-05
413	1.30E-05	480	2.72E-04	547	5.17E-04	614	5.01E-04	681	1.09E-04	748	1.30E-05
414	1.42E-05	481	2.69E-04	548	5.22E-04	615	4.93E-04	682	1.06E-04	749	1.24E-05
415	1.62E-05	482	2.71E-04	549	5.23E-04	616	4.89E-04	683	1.03E-04	750	1.22E-05
416	1.82E-05	483	2.70E-04	550	5.27E-04	617	4.80E-04	684	9.96E-05	751	1.18E-05
417	2.08E-05	484	2.76E-04	551	5.27E-04	618	4.75E-04	685	9.66E-05	752	1.14E-05
418	2.34E-05	485	2.77E-04	552	5.30E-04	619	4.69E-04	686	9.35E-05	753	1.12E-05
419	2.63E-05	486	2.81E-04	553	5.33E-04	620	4.63E-04	687	9.14E-05	754	1.08E-05
420	2.95E-05	487	2.83E-04	554	5.33E-04	621	4.56E-04	688	8.83E-05	755	1.04E-05
421	3.43E-05	488	2.86E-04	555	5.37E-04	622	4.50E-04	689	8.54E-05	756	1.00E-05
422	3.87E-05	489	2.89E-04	556	5.38E-04	623	4.42E-04	690	8.31E-05	757	9.60E-06
423	4.33E-05	490	2.92E-04	557	5.40E-04	624	4.36E-04	691	8.07E-05	758	9.40E-06
424	4.78E-05	491	2.98E-04	558	5.40E-04	625	4.28E-04	692	7.81E-05	759	9.00E-06
425	5.54E-05	492	3.05E-04	559	5.43E-04	626	4.21E-04	693	7.58E-05	760	9.10E-06
426	6.28E-05	493	3.12E-04	560	5.43E-04	627	4.16E-04	694	7.34E-05	761	8.60E-06
427	7.09E-05	494	3.17E-04	561	5.45E-04	628	4.09E-04	695	7.13E-05	762	8.30E-06
428	7.92E-05	495	3.25E-04	562	5.47E-04	629	4.04E-04	696	6.88E-05	763	8.20E-06
429	8.97E-05	496	3.32E-04	563	5.49E-04	630	3.96E-04	697	6.69E-05	764	8.00E-06
430	1.01E-04	497	3.41E-04	564	5.51E-04	631	3.88E-04	698	6.49E-05	765	7.50E-06
431	1.17E-04	498	3.46E-04	565	5.53E-04	632	3.81E-04	699	6.25E-05	766	7.20E-06
432	1.30E-04	499	3.54E-04	566	5.56E-04	633	3.74E-04	700	6.06E-05	767	7.10E-06
433	1.47E-04	500	3.61E-04	567	5.56E-04	634	3.67E-04	701	5.89E-05	768	6.90E-06
434	1.62E-04	501	3.69E-04	568	5.58E-04	635	3.61E-04	702	5.71E-05	769	6.70E-06
435	1.82E-04	502	3.76E-04	569	5.60E-04	636	3.52E-04	703	5.53E-05	770	6.60E-06
436	2.05E-04	503	3.84E-04	570	5.62E-04	637	3.45E-04	704	5.35E-05	771	6.60E-06
437	2.29E-04	504	3.89E-04	571	5.63E-04	638	3.40E-04	705	5.15E-05	772	6.00E-06
438	2.57E-04	505	3.96E-04	572	5.65E-04	639	3.33E-04	706	5.03E-05	773	5.90E-06
439	2.87E-04	506	4.00E-04	573	5.64E-04	640	3.26E-04	707	4.84E-05	774	5.80E-06
440	3.20E-04	507	4.08E-04	574	5.68E-04	641	3.18E-04	708	4.71E-05	775	5.40E-06
441	3.62E-04	508	4.13E-04	575	5.68E-04	642	3.10E-04	709	4.53E-05	776	5.20E-06
442	4.09E-04	509	4.22E-04	576	5.72E-04	643	3.02E-04	710	4.41E-05	777	5.30E-06
443	4.63E-04	510	4.25E-04	577	5.72E-04	644	2.96E-04	711	4.30E-05	778	5.00E-06
444	5.14E-04	511	4.31E-04	578	5.73E-04	645	2.90E-04	712	4.14E-05	779	5.10E-06
445	5.80E-04	512	4.36E-04	579	5.76E-04	646	2.82E-04	713	3.98E-05	780	5.10E-06
446	6.51E-04	513	4.39E-04	580	5.76E-04	647	2.76E-04	714	3.85E-05	N/A	N/A

Goniophotometer Test Results (CCT Setting=3500K):

Test Condition:

Test Ambient (°C)	Test Humidity (%)	Orientation	Stabilization Time (minute)	Test Time (minute)
25.2	46.6	Face Down	90	25

Electrical Data:

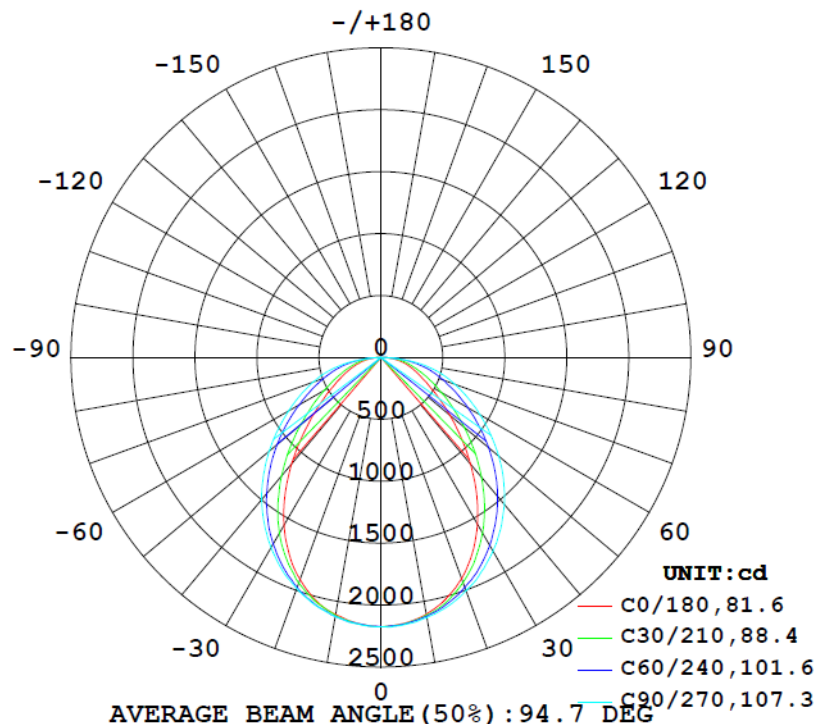
Voltage (V)	Frequency (Hz)	Current (A)	Wattage (W)	Power Factor
120.0	60	0.3348	39.96	0.9947

Goniophotometer Data:

Parameter	Results	
Total Luminous (lm)	5207.6	
Luminous Efficacy (lm/W)	130.32	
Zonal Lumens Distribution (0-60°)	80.8%	
Beam Angle (°)	94.7	
Spacing Criterion	0-180°	90-270°
	1.10	1.24
UGR	Viewed Crosswise	Viewed Endwise
	16.4	21.0

Luminous Intensity Distribution Diagram:

LUMINOUS INTENSITY DISTRIBUTION DIAGRAM

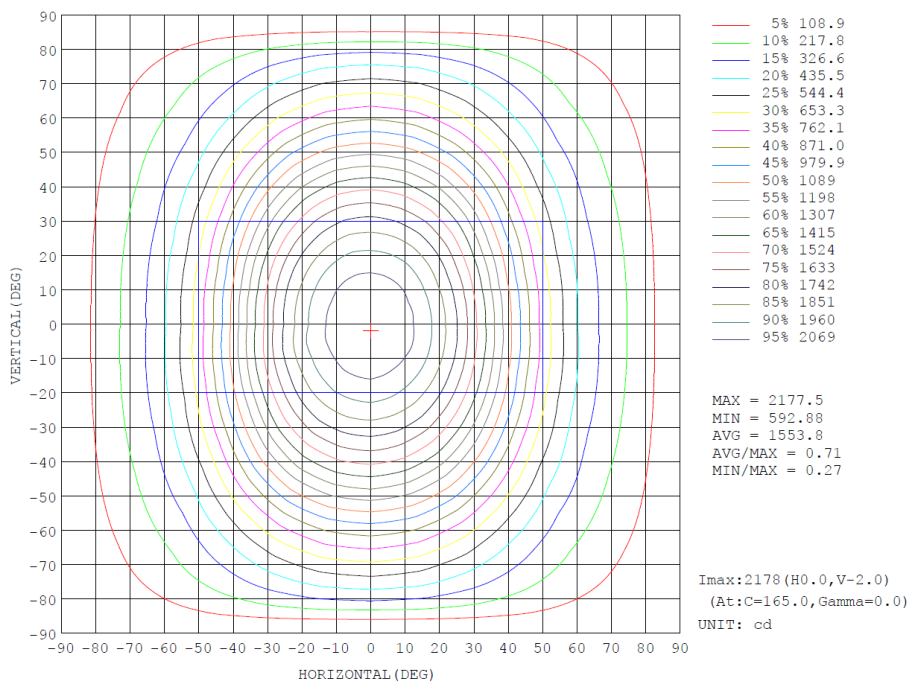


Zonal Flux Diagram:

ZONAL FLUX DIAGRAM:

γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	Φ zone	Φ total	%lum, lamp
10	2105	2119	2133	2130	2108	2120	2125	2115	0- 10	204.9	204.9	3.94,3.94
20	1900	1956	2004	1978	1908	1958	1986	1946	10- 20	577.8	782.7	15,15
30	1555	1699	1807	1732	1564	1690	1773	1679	20- 30	843.5	1626	31.2,31.2
40	1126	1369	1548	1408	1122	1349	1498	1338	30- 40	951.5	2578	49.5,49.5
50	727.5	1011	1241	1047	705.9	978.6	1179	971.5	40- 50	896.3	3474	66.7,66.7
60	440.0	683.2	921.1	706.8	425.0	641.7	859.2	645.1	50- 60	731.6	4206	80.8,80.8
70	276.0	431.1	636.2	442.7	257.6	393.7	582.7	403.9	60- 70	535.3	4741	91,91
80	146.2	239.4	344.9	246.6	128.1	210.0	297.3	219.7	70- 80	347.2	5088	97.7,97.7
90	0	0	0	0	0	0	0	0	80- 90	119.5	5208	100,100
100	0	0	0	0	0	0	0	0	90-100	0	5208	100,100
110	0	0	0	0	0	0	0	0	100-110	0	5208	100,100
120	0	0	0	0	0	0	0	0	110-120	0	5208	100,100
130	0	0	0	0	0	0	0	0	120-130	0	5208	100,100
140	0	0	0	0	0	0	0	0	130-140	0	5208	100,100
150	0	0	0	0	0	0	0	0	140-150	0	5208	100,100
160	0	0	0	0	0	0	0	0	150-160	0	5208	100,100
170	0	0	0	0	0	0	0	0	160-170	0	5208	100,100
180	0	0	0	0	0	0	0	0	170-180	0	5208	100,100
DEG										LUMINOUS INTENSITY:cd		UNIT:lm

Isocandela Diagram:



Uncorrected UGR 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	6.2	7.7	6.5	8.1	8.4	10.0	11.6	10.4	11.9	12.2
	3H	7.6	9.1	8.0	9.4	9.7	12.1	13.6	12.5	13.9	14.3
	4H	8.3	9.7	8.7	10.0	10.4	13.1	14.4	13.5	14.8	15.2
	6H	8.9	10.2	9.3	10.5	10.9	13.9	15.2	14.3	15.5	15.9
	8H	9.2	10.4	9.6	10.8	11.2	14.2	15.4	14.6	15.8	16.2
	12H	9.3	10.5	9.8	10.9	11.3	14.4	15.5	14.8	15.9	16.4
4H	2H	7.2	8.6	7.6	9.0	9.3	10.3	11.7	10.7	12.0	12.4
	3H	8.9	10.1	9.3	10.5	10.9	12.8	13.9	13.2	14.3	14.7
	4H	9.7	10.7	10.1	11.1	11.6	13.9	14.9	14.3	15.3	15.8
	6H	10.4	11.3	10.9	11.8	12.2	15.0	15.8	15.4	16.3	16.7
	8H	10.7	11.5	11.2	12.0	12.4	15.3	16.2	15.8	16.6	17.1
	12H	10.9	11.7	11.4	12.2	12.6	15.6	16.3	16.1	16.8	17.3
8H	4H	10.5	11.3	10.9	11.7	12.2	14.1	14.9	14.6	15.4	15.8
	6H	11.3	12.0	11.8	12.5	13.0	15.3	16.0	15.8	16.5	17.0
	8H	11.7	12.3	12.2	12.9	13.3	15.8	16.5	16.3	17.0	17.4
	12H	12.0	12.6	12.6	13.1	13.7	16.2	16.8	16.7	17.2	17.8
12H	4H	10.7	11.4	11.1	11.9	12.3	14.1	14.9	14.6	15.3	15.8
	6H	11.6	12.2	12.1	12.7	13.2	15.4	16.0	15.9	16.5	17.0
	8H	12.1	12.6	12.6	13.1	13.7	15.9	16.5	16.4	17.0	17.5

Maximum UGR = 17.8

Corrected UGR 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	11.9	13.4	12.2	13.8	14.1	15.7	17.3	16.1	17.6	17.9
	3H	13.3	14.8	13.7	15.1	15.4	17.8	19.3	18.2	19.6	20.0
	4H	14.0	15.4	14.4	15.7	16.1	18.8	20.1	19.2	20.5	20.9
	6H	14.6	15.9	15.0	16.2	16.6	19.6	20.9	20.0	21.2	21.6
	8H	14.9	16.1	15.3	16.5	16.9	19.9	21.1	20.3	21.5	21.9
	12H	15.0	16.2	15.5	16.6	17.0	20.1	21.2	20.5	21.6	22.1
4H	2H	12.9	14.3	13.3	14.7	15.0	16.0	17.4	16.4	17.7	18.1
	3H	14.6	15.8	15.0	16.2	16.6	18.5	19.6	18.9	20.0	20.4
	4H	15.4	16.4	15.8	16.8	17.3	19.6	20.6	20.0	21.0	21.5
	6H	16.1	17.0	16.6	17.5	17.9	20.7	21.5	21.1	22.0	22.4
	8H	16.4	17.2	16.9	17.7	18.1	21.0	21.9	21.5	22.3	22.8
	12H	16.6	17.4	17.1	17.9	18.3	21.3	22.0	21.8	22.5	23.0
8H	4H	16.2	17.0	16.6	17.4	17.9	19.8	20.6	20.3	21.1	21.5
	6H	17.0	17.7	17.5	18.2	18.7	21.0	21.7	21.5	22.2	22.7
	8H	17.4	18.0	17.9	18.6	19.0	21.5	22.2	22.0	22.7	23.1
	12H	17.7	18.3	18.3	18.8	19.4	21.9	22.5	22.4	22.9	23.5
12H	4H	16.4	17.1	16.8	17.6	18.0	19.8	20.6	20.3	21.0	21.5
	6H	17.3	17.9	17.8	18.4	18.9	21.1	21.7	21.6	22.2	22.7
	8H	17.8	18.3	18.3	18.8	19.4	21.6	22.2	22.1	22.7	23.2

Maximum UGR = 23.5

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	2175	2174	2175	2175	2173	2174	2175	2175	2177	2175	2171	2179	2175	2174	2175	2175	2173	2174	2175
5	2155	2164	2158	2162	2160	2164	2167	2164	2169	2165	2164	2165	2155	2156	2158	2162	2158	2163	2158
10	2105	2106	2113	2119	2123	2128	2133	2131	2133	2130	2121	2122	2108	2115	2115	2120	2124	2126	2125
15	2019	2029	2044	2052	2060	2073	2081	2078	2075	2063	2049	2049	2032	2035	2041	2052	2063	2068	2067
20	1900	1917	1934	1956	1976	1995	2004	2002	1996	1978	1955	1944	1908	1922	1940	1958	1977	1991	1986
25	1744	1767	1799	1839	1875	1901	1913	1911	1895	1863	1824	1796	1753	1772	1800	1836	1868	1890	1891
30	1555	1588	1638	1699	1754	1790	1807	1800	1784	1732	1668	1615	1564	1589	1640	1690	1739	1770	1773
35	1346	1384	1457	1542	1615	1659	1685	1675	1647	1576	1485	1414	1350	1380	1450	1529	1593	1635	1641
40	1126	1170	1262	1369	1465	1524	1548	1537	1492	1408	1288	1193	1122	1159	1248	1349	1435	1487	1498
45	915	959	1068	1192	1302	1369	1399	1385	1336	1229	1089	971	899	940	1044	1165	1265	1327	1341
50	727	771	878	1011	1136	1210	1241	1226	1164	1047	892	773	706	743	848	979	1094	1162	1179
55	569	611	708	840	967	1049	1078	1062	993	870	713	606	549	580	672	801	924	996	1015
60	440	476	560	683	809	891	921	903	831	707	565	469	425	450	526	642	760	837	859
65	348	370	438	546	664	743	774	757	684	565	440	363	331	348	405	505	619	693	717
70	276	289	338	431	536	611	636	618	550	443	339	280	258	268	309	394	491	560	583
75	213	220	256	334	418	477	499	486	428	343	256	212	190	197	232	302	376	432	450
80	146	154	185	239	295	333	345	338	301	247	186	145	128	132	168	210	255	287	297
85	68.4	88.3	109	133	144	146	144	148	148	137	109	82.8	57.3	73.7	92.9	111	114	114	112
90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
95	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
105	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
110	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
115	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
120	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
125	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
130	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
135	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
140	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
145	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
150	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
155	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
160	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
165	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
170	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
175	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
180	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Table--2 UNIT: cd

C (DEG) \ y (DEG)	285	300	315	330	345														
0	2175	2177	2175	2171	2179														
5	2162	2161	2159	2154	2159														
10	2123	2122	2115	2107	2105														
15	2063	2056	2046	2028	2023														
20	1980	1970	1946	1919	1904														
25	1879	1858	1823	1777	1749														
30	1758	1730	1679	1613	1567														
35	1622	1586	1516	1424	1362														
40	1476	1422	1338	1225	1145														
45	1317	1255	1154	1026	938														
50	1153	1083	971	842	751														
55	990	915	800	674	592														
60	834	755	645	532	461														
65	693	618	514	414	360														
70	562	495	404	319	281														
75	435	381	313	241	214														
80	290	263	220	176	146														
85	116	118	117	100	82.3														
90	0.00	0.00	0.00	0.00	0.00														
95	0.00	0.00	0.00	0.00	0.00														
100	0.00	0.00	0.00	0.00	0.00														
105	0.00	0.00	0.00	0.00	0.00														
110	0.00	0.00	0.00	0.00	0.00														
115	0.00	0.00	0.00	0.00	0.00														
120	0.00	0.00	0.00	0.00	0.00														
125	0.00	0.00	0.00	0.00	0.00														
130	0.00	0.00	0.00	0.00	0.00														
135	0.00	0.00	0.00	0.00	0.00														
140	0.00	0.00	0.00	0.00	0.00														
145	0.00	0.00	0.00	0.00	0.00														
150	0.00	0.00	0.00	0.00	0.00														
155	0.00	0.00	0.00	0.00	0.00														
160	0.00	0.00	0.00	0.00	0.00														
165	0.00	0.00	0.00	0.00	0.00														
170	0.00	0.00	0.00	0.00	0.00														
175	0.00	0.00	0.00	0.00	0.00														
180	0.00	0.00	0.00	0.00	0.00														

THD and PF Measurement Test Results:

Electrical Measurement:

CCT Setting	Voltage (V)	Frequency (Hz)	Current (A)	Wattage (W)	Power Factor	iTHD(%)
3500K	120.0	60	0.3348	39.96	0.9947	6.04
	277.0	60	0.1480	39.60	0.9657	4.37
4000K	120.0	60	0.3281	39.20	0.9957	6.22
	277.0	60	0.1425	38.05	0.9638	4.49
5000K	120.0	60	0.3337	39.87	0.9957	6.01
	277.0	60	0.1477	39.50	0.9656	4.39

Annex:

ANSI CCT Quadrangle (omit any outside product range)/Worst-Case Value	Actual CCT (K)	Power Consumption (W)	Lumen Output (lm)	Efficacy (lm/W)	Input Control Signal Applied
3500K	3580	39.96	5207.6	130.32	Set Switch 0% to 3500K
4000K	4181	39.20	5509.2	140.54	Set Switch 50% to 4000K
5000K	5108	39.87	5387.2	135.12	Set Switch 100% to 5000K
Lowest Efficacy	130.31 lm/W (@3500K)				
Maximum Power	39.96 W				

Photo of Sample:



Equipment List:

Equipment ID	Equipment Name	Last Cal.	Due Cal.
NTC-F01-001	Goniophotometer System	2023-11-08	2024-11-07
NTC-F01-006	2.0 meter Integrating Sphere	2023-11-08	2024-11-07
NTC-F01-012	Standard Lamp	2023-11-02	2024-11-01
NTC-F01-013	Standard Lamp	2023-11-02	2024-11-01
NTC-F01-031	Digital Power Meter	2023-08-25	2024-08-24
NTC-F01-020	Temperature & Humidity Meter	2023-11-06	2024-11-05

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