

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

1x4 Luminaires for Ambient Lighting of Interior Commercial Spaces

Model Name(s):

SWISH34-1X4[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 18W, 25W and 30W.

Prepared by:

Alan Wang

Engineer: Alan Wang

Date: 2024-07-31

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.
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.

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:	SWISH34-1X4[blank, /LC, /MVS, /LCBS/MVS, /PIR, /LCBS][blank, /E]
Product Type:	1x4 Luminaires for Ambient Lighting of Interior Commercial Spaces
Rating Input:	120-277Vac, 50/60Hz, 18W/25W/30W
Declared CCT:	3500K, 4000K and 5000K
Declared Light Output:	3900 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-A0600-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:	2024-07-05
Quantity of Receipt Samples:	1 pc
Sample Number:	240705006-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.:	NTCLR24070540
Remark (If applicable):	N/A

Test Specification:	
Date of Test	2024-07-25
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 °C ± 1°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 °C± 1°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	0.2429	29.06	0.9970
4000K	120.0	60	0.2346	28.06	0.9967
5000K	120.0	60	0.2440	29.17	0.9962

Output Data:

CCT Setting	Luminous (lm)	Efficacy (lm/W)
3500K	3942.2	135.66
4000K	4104.1	146.26
5000K	4093.5	140.33

Color Data:

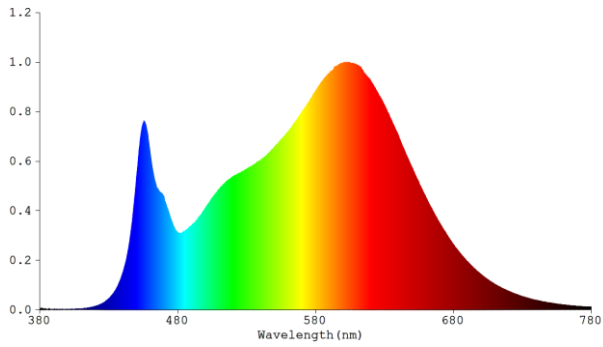
CCT Setting	Test CCT (K)	R _a	R ₉	R _f	R _g	R _{cs, h1}	Chromaticity		
							(x, y)	(u', v')	Duv
3500K	3344	85.6	19	85	93	-11%	(0.4147, 0.3958)	(0.2397, 0.5147)	0.0003
4000K	4028	87.2	26	86	95	-10%	(0.3790, 0.3749)	(0.2249, 0.5006)	-0.0004
5000K	5046	85.4	17	86	97	-11%	(0.3443, 0.3567)	(0.2090, 0.4870)	0.0028

Specify Color Rendering:

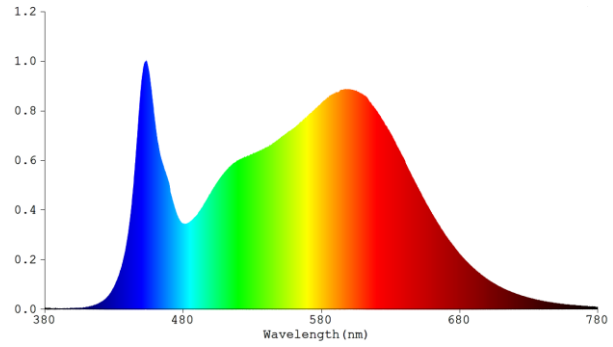
CCT Setting	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15
3500K	86	95	94	83	86	94	84	64	19	89	83	72	89	97	78
4000K	87	94	96	85	87	91	87	70	26	86	86	68	89	99	81
5000K	84	90	94	86	85	86	88	70	17	76	86	66	86	97	79

Spectrum Diagram:

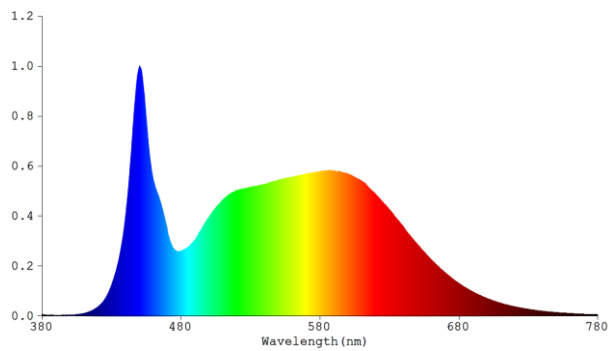
CCT Setting=3500K



CCT Setting=4000K



CCT Setting=5000K

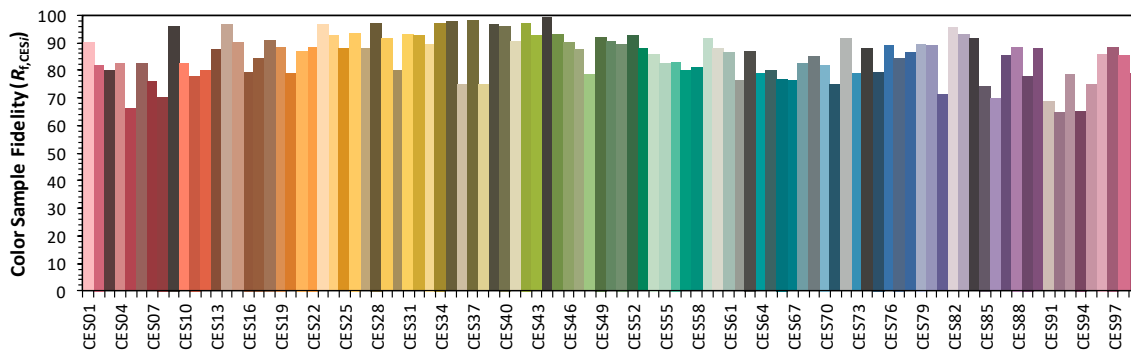
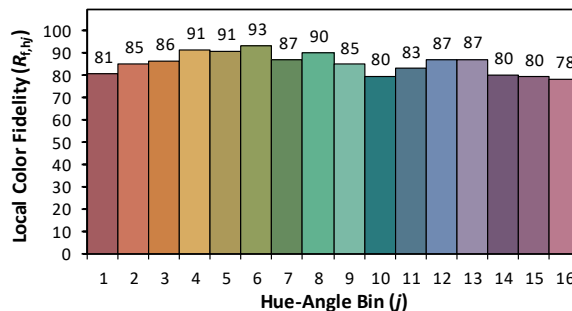
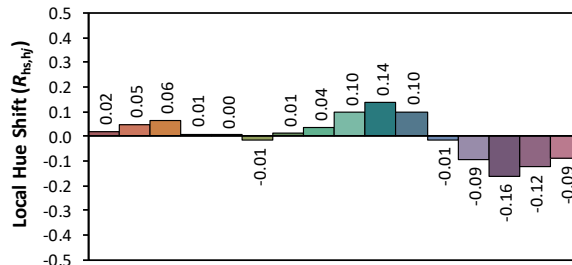
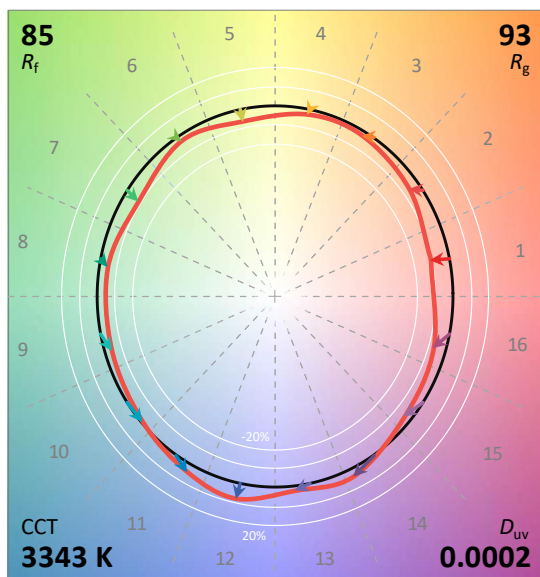
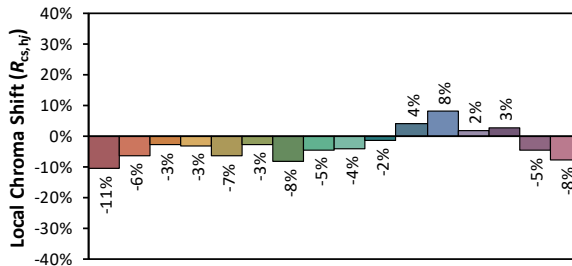
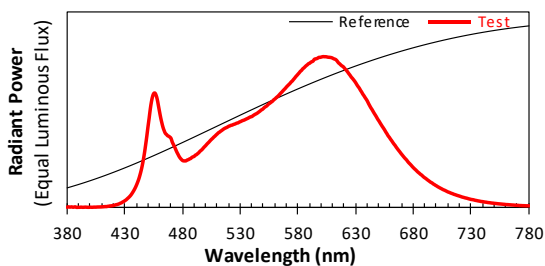


IES TM-30-18 Color Rendition Result (CCT Setting=3500K):

ANSI/IES TM-30-18 Color Rendition Report

Source: 1 CIE F1
Date: 2024/7/31

Manufacturer: Jiangsu Hanna New Energy Co., Ltd
Model: HNSVPAN14- A2/030/025/018/UNV/83550/D10/FL/WT/US01



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

x 0.4147
 y 0.3957
 u' 0.2397
 v' 0.5147

CIE 13.3-1995
(CRI)
 R_a 86
 R_9 19

Spectrum Data (CCT Setting=3500K):

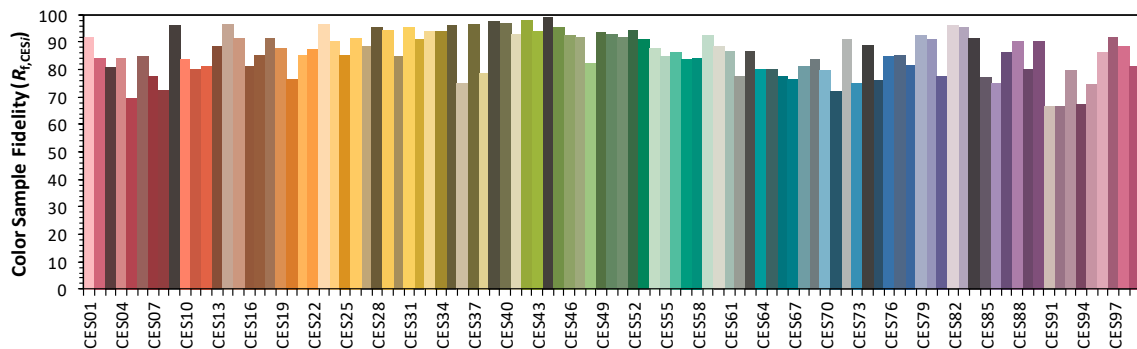
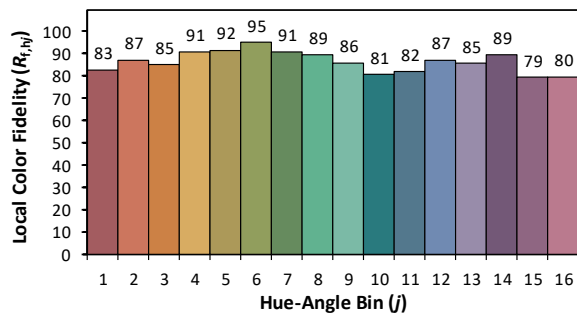
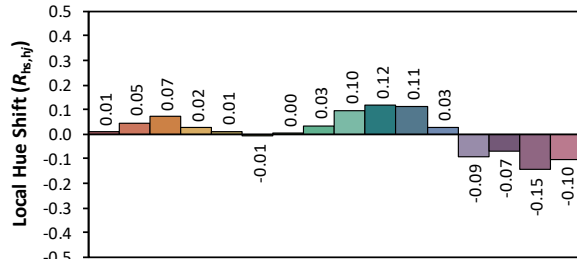
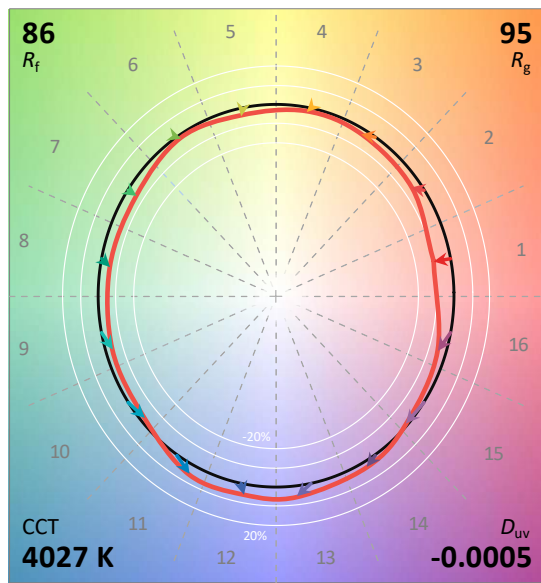
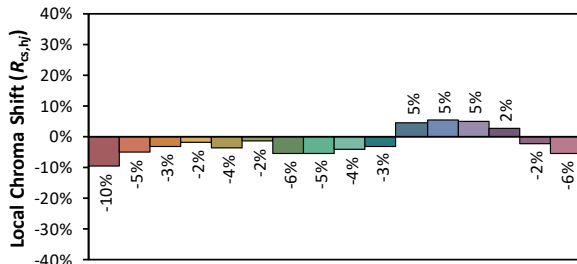
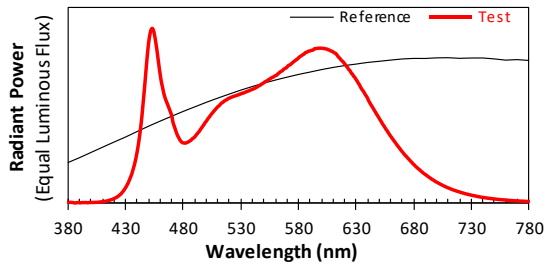
Spectral Distribution over Visible Wavelength											
WL (nm)	Radiant (W/nm)	WL (nm)	Radiant (W/nm)	WL (nm)	Radiant (W/nm)	WL (nm)	Radiant (W/nm)	WL (nm)	Radiant (W/nm)	WL (nm)	Radiant (W/nm)
380	2.10E-06	447	3.64E-04	514	5.11E-04	581	8.93E-04	648	5.98E-04	715	8.77E-05
381	5.10E-06	448	4.17E-04	515	5.17E-04	582	9.02E-04	649	5.85E-04	716	8.56E-05
382	3.30E-06	449	4.74E-04	516	5.22E-04	583	9.09E-04	650	5.74E-04	717	8.28E-05
383	3.60E-06	450	5.35E-04	517	5.27E-04	584	9.19E-04	651	5.61E-04	718	8.01E-05
384	4.50E-06	451	5.92E-04	518	5.30E-04	585	9.25E-04	652	5.49E-04	719	7.79E-05
385	2.30E-06	452	6.53E-04	519	5.34E-04	586	9.32E-04	653	5.37E-04	720	7.54E-05
386	3.40E-06	453	7.01E-04	520	5.39E-04	587	9.40E-04	654	5.25E-04	721	7.27E-05
387	4.80E-06	454	7.37E-04	521	5.41E-04	588	9.45E-04	655	5.13E-04	722	7.00E-05
388	1.50E-06	455	7.55E-04	522	5.45E-04	589	9.53E-04	656	5.00E-04	723	6.80E-05
389	1.60E-06	456	7.58E-04	523	5.46E-04	590	9.56E-04	657	4.88E-04	724	6.59E-05
390	1.90E-06	457	7.44E-04	524	5.50E-04	591	9.62E-04	658	4.75E-04	725	6.36E-05
391	1.90E-06	458	7.17E-04	525	5.52E-04	592	9.66E-04	659	4.66E-04	726	6.22E-05
392	2.90E-06	459	6.76E-04	526	5.56E-04	593	9.70E-04	660	4.54E-04	727	5.98E-05
393	2.00E-06	460	6.35E-04	527	5.59E-04	594	9.81E-04	661	4.43E-04	728	5.77E-05
394	1.80E-06	461	5.95E-04	528	5.61E-04	595	9.84E-04	662	4.32E-04	729	5.56E-05
395	2.50E-06	462	5.61E-04	529	5.66E-04	596	9.86E-04	663	4.21E-04	730	5.37E-05
396	3.00E-06	463	5.31E-04	530	5.69E-04	597	9.90E-04	664	4.12E-04	731	5.26E-05
397	2.10E-06	464	5.10E-04	531	5.73E-04	598	9.95E-04	665	4.00E-04	732	5.12E-05
398	1.80E-06	465	4.92E-04	532	5.76E-04	599	9.95E-04	666	3.90E-04	733	4.89E-05
399	1.70E-06	466	4.85E-04	533	5.79E-04	600	9.97E-04	667	3.79E-04	734	4.73E-05
400	2.60E-06	467	4.76E-04	534	5.82E-04	601	9.99E-04	668	3.70E-04	735	4.58E-05
401	2.10E-06	468	4.72E-04	535	5.86E-04	602	1.00E-03	669	3.60E-04	736	4.41E-05
402	2.00E-06	469	4.66E-04	536	5.89E-04	603	9.99E-04	670	3.50E-04	737	4.28E-05
403	2.70E-06	470	4.57E-04	537	5.93E-04	604	9.99E-04	671	3.41E-04	738	4.12E-05
404	2.90E-06	471	4.34E-04	538	5.98E-04	605	9.98E-04	672	3.31E-04	739	3.99E-05
405	2.80E-06	472	4.18E-04	539	6.01E-04	606	9.96E-04	673	3.23E-04	740	3.91E-05
406	3.70E-06	473	4.03E-04	540	6.03E-04	607	9.95E-04	674	3.15E-04	741	3.76E-05
407	3.80E-06	474	3.85E-04	541	6.09E-04	608	9.94E-04	675	3.04E-04	742	3.62E-05
408	4.00E-06	475	3.67E-04	542	6.14E-04	609	9.93E-04	676	2.96E-04	743	3.55E-05
409	4.20E-06	476	3.53E-04	543	6.18E-04	610	9.89E-04	677	2.88E-04	744	3.37E-05
410	4.60E-06	477	3.38E-04	544	6.22E-04	611	9.85E-04	678	2.80E-04	745	3.28E-05
411	5.30E-06	478	3.27E-04	545	6.27E-04	612	9.82E-04	679	2.71E-04	746	3.20E-05
412	5.80E-06	479	3.18E-04	546	6.33E-04	613	9.78E-04	680	2.63E-04	747	3.08E-05
413	6.60E-06	480	3.12E-04	547	6.39E-04	614	9.69E-04	681	2.55E-04	748	2.97E-05
414	6.40E-06	481	3.09E-04	548	6.46E-04	615	9.58E-04	682	2.49E-04	749	2.92E-05
415	8.00E-06	482	3.09E-04	549	6.50E-04	616	9.52E-04	683	2.41E-04	750	2.79E-05
416	9.00E-06	483	3.10E-04	550	6.57E-04	617	9.44E-04	684	2.34E-04	751	2.73E-05
417	1.06E-05	484	3.15E-04	551	6.64E-04	618	9.38E-04	685	2.28E-04	752	2.63E-05
418	1.13E-05	485	3.17E-04	552	6.69E-04	619	9.33E-04	686	2.20E-04	753	2.54E-05
419	1.24E-05	486	3.22E-04	553	6.74E-04	620	9.25E-04	687	2.15E-04	754	2.46E-05
420	1.38E-05	487	3.25E-04	554	6.82E-04	621	9.15E-04	688	2.08E-04	755	2.40E-05
421	1.55E-05	488	3.32E-04	555	6.89E-04	622	9.07E-04	689	2.01E-04	756	2.33E-05
422	1.82E-05	489	3.36E-04	556	6.94E-04	623	8.97E-04	690	1.96E-04	757	2.25E-05
423	1.97E-05	490	3.39E-04	557	7.00E-04	624	8.86E-04	691	1.90E-04	758	2.18E-05
424	2.20E-05	491	3.47E-04	558	7.06E-04	625	8.76E-04	692	1.84E-04	759	2.11E-05
425	2.47E-05	492	3.51E-04	559	7.14E-04	626	8.65E-04	693	1.78E-04	760	1.99E-05
426	2.87E-05	493	3.57E-04	560	7.19E-04	627	8.56E-04	694	1.73E-04	761	1.97E-05
427	3.14E-05	494	3.64E-04	561	7.27E-04	628	8.47E-04	695	1.67E-04	762	1.92E-05
428	3.66E-05	495	3.73E-04	562	7.34E-04	629	8.37E-04	696	1.63E-04	763	1.85E-05
429	4.04E-05	496	3.79E-04	563	7.41E-04	630	8.25E-04	697	1.57E-04	764	1.81E-05
430	4.58E-05	497	3.86E-04	564	7.50E-04	631	8.13E-04	698	1.53E-04	765	1.73E-05
431	5.08E-05	498	3.95E-04	565	7.58E-04	632	8.01E-04	699	1.47E-04	766	1.69E-05
432	5.79E-05	499	4.03E-04	566	7.65E-04	633	7.91E-04	700	1.43E-04	767	1.63E-05
433	6.48E-05	500	4.11E-04	567	7.74E-04	634	7.77E-04	701	1.38E-04	768	1.57E-05
434	7.23E-05	501	4.20E-04	568	7.82E-04	635	7.66E-04	702	1.34E-04	769	1.50E-05
435	8.09E-05	502	4.28E-04	569	7.90E-04	636	7.52E-04	703	1.30E-04	770	1.49E-05
436	9.15E-05	503	4.35E-04	570	7.99E-04	637	7.41E-04	704	1.26E-04	771	1.43E-05
437	1.04E-04	504	4.44E-04	571	8.07E-04	638	7.29E-04	705	1.21E-04	772	1.34E-05
438	1.17E-04	505	4.52E-04	572	8.15E-04	639	7.18E-04	706	1.18E-04	773	1.34E-05
439	1.31E-04	506	4.59E-04	573	8.22E-04	640	7.05E-04	707	1.14E-04	774	1.28E-05
440	1.48E-04	507	4.67E-04	574	8.32E-04	641	6.89E-04	708	1.11E-04	775	1.26E-05
441	1.67E-04	508	4.73E-04	575	8.38E-04	642	6.75E-04	709	1.07E-04	776	1.24E-05
442	1.88E-04	509	4.81E-04	576	8.48E-04	643	6.61E-04	710	1.03E-04	777	1.18E-05
443	2.14E-04	510	4.88E-04	577	8.57E-04	644	6.50E-04	711	1.00E-04	778	1.15E-05
444	2.43E-04	511	4.95E-04	578	8.67E-04	645	6.36E-04	712	9.68E-05	779	1.17E-05
445	2.77E-04	512	5.00E-04	579	8.75E-04	646	6.23E-04	713	9.39E-05	780	1.17E-05
446	3.18E-04	513	5.06E-04	580	8.84E-04	647	6.11E-04	714	9.13E-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: 2024/7/31

Manufacturer: Jiangsu Hanna New Energy Co., Ltd
Model: A2/030/025/018/UNV/83550/D10/FL/WT/US01



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

x 0.3790
 y 0.3748
 u' 0.2249
 v' 0.5005

CIE 13.3-1995
(CRI)
 R_a 87
 R_g 26

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	4.10E-06	447	7.10E-04	514	5.75E-04	581	8.36E-04	648	5.08E-04	715	7.41E-05
381	3.70E-06	448	7.89E-04	515	5.80E-04	582	8.41E-04	649	4.98E-04	716	7.20E-05
382	4.50E-06	449	8.61E-04	516	5.86E-04	583	8.44E-04	650	4.87E-04	717	6.97E-05
383	3.50E-06	450	9.22E-04	517	5.89E-04	584	8.50E-04	651	4.76E-04	718	6.73E-05
384	3.20E-06	451	9.65E-04	518	5.92E-04	585	8.53E-04	652	4.66E-04	719	6.54E-05
385	1.70E-06	452	9.91E-04	519	5.98E-04	586	8.60E-04	653	4.54E-04	720	6.35E-05
386	8.00E-07	453	9.99E-04	520	6.00E-04	587	8.62E-04	654	4.44E-04	721	6.12E-05
387	1.20E-06	454	9.90E-04	521	6.03E-04	588	8.66E-04	655	4.34E-04	722	5.94E-05
388	2.80E-06	455	9.62E-04	522	6.06E-04	589	8.69E-04	656	4.23E-04	723	5.73E-05
389	2.90E-06	456	9.23E-04	523	6.09E-04	590	8.70E-04	657	4.14E-04	724	5.56E-05
390	1.30E-06	457	8.80E-04	524	6.11E-04	591	8.73E-04	658	4.04E-04	725	5.34E-05
391	1.90E-06	458	8.30E-04	525	6.13E-04	592	8.74E-04	659	3.94E-04	726	5.21E-05
392	2.60E-06	459	7.79E-04	526	6.15E-04	593	8.77E-04	660	3.84E-04	727	5.03E-05
393	3.00E-06	460	7.33E-04	527	6.18E-04	594	8.83E-04	661	3.75E-04	728	4.89E-05
394	2.70E-06	461	6.92E-04	528	6.19E-04	595	8.84E-04	662	3.66E-04	729	4.72E-05
395	2.90E-06	462	6.62E-04	529	6.23E-04	596	8.85E-04	663	3.57E-04	730	4.56E-05
396	2.80E-06	463	6.30E-04	530	6.24E-04	597	8.85E-04	664	3.48E-04	731	4.43E-05
397	1.70E-06	464	6.06E-04	531	6.29E-04	598	8.86E-04	665	3.39E-04	732	4.25E-05
398	3.10E-06	465	5.87E-04	532	6.29E-04	599	8.86E-04	666	3.29E-04	733	4.16E-05
399	3.30E-06	466	5.70E-04	533	6.32E-04	600	8.86E-04	667	3.21E-04	734	4.01E-05
400	3.60E-06	467	5.53E-04	534	6.35E-04	601	8.85E-04	668	3.13E-04	735	3.87E-05
401	3.40E-06	468	5.36E-04	535	6.37E-04	602	8.85E-04	669	3.04E-04	736	3.72E-05
402	3.60E-06	469	5.18E-04	536	6.40E-04	603	8.83E-04	670	2.95E-04	737	3.60E-05
403	4.20E-06	470	4.99E-04	537	6.42E-04	604	8.82E-04	671	2.88E-04	738	3.46E-05
404	4.00E-06	471	4.63E-04	538	6.45E-04	605	8.80E-04	672	2.79E-04	739	3.37E-05
405	4.30E-06	472	4.43E-04	539	6.48E-04	606	8.77E-04	673	2.72E-04	740	3.28E-05
406	5.20E-06	473	4.23E-04	540	6.51E-04	607	8.75E-04	674	2.65E-04	741	3.17E-05
407	5.40E-06	474	4.04E-04	541	6.53E-04	608	8.71E-04	675	2.58E-04	742	3.06E-05
408	6.60E-06	475	3.87E-04	542	6.56E-04	609	8.69E-04	676	2.51E-04	743	2.97E-05
409	6.80E-06	476	3.75E-04	543	6.60E-04	610	8.65E-04	677	2.43E-04	744	2.85E-05
410	8.00E-06	477	3.62E-04	544	6.63E-04	611	8.60E-04	678	2.36E-04	745	2.77E-05
411	8.90E-06	478	3.53E-04	545	6.69E-04	612	8.58E-04	679	2.29E-04	746	2.73E-05
412	1.03E-05	479	3.47E-04	546	6.71E-04	613	8.52E-04	680	2.22E-04	747	2.60E-05
413	1.11E-05	480	3.44E-04	547	6.75E-04	614	8.43E-04	681	2.16E-04	748	2.53E-05
414	1.27E-05	481	3.44E-04	548	6.80E-04	615	8.34E-04	682	2.09E-04	749	2.45E-05
415	1.44E-05	482	3.43E-04	549	6.84E-04	616	8.28E-04	683	2.03E-04	750	2.37E-05
416	1.63E-05	483	3.46E-04	550	6.88E-04	617	8.19E-04	684	1.97E-04	751	2.30E-05
417	1.83E-05	484	3.49E-04	551	6.94E-04	618	8.13E-04	685	1.92E-04	752	2.22E-05
418	2.07E-05	485	3.52E-04	552	6.97E-04	619	8.06E-04	686	1.86E-04	753	2.15E-05
419	2.32E-05	486	3.57E-04	553	7.01E-04	620	7.98E-04	687	1.80E-04	754	2.05E-05
420	2.61E-05	487	3.62E-04	554	7.06E-04	621	7.89E-04	688	1.75E-04	755	2.01E-05
421	2.96E-05	488	3.69E-04	555	7.09E-04	622	7.82E-04	689	1.69E-04	756	1.94E-05
422	3.27E-05	489	3.73E-04	556	7.14E-04	623	7.72E-04	690	1.65E-04	757	1.88E-05
423	3.73E-05	490	3.79E-04	557	7.18E-04	624	7.62E-04	691	1.60E-04	758	1.85E-05
424	4.20E-05	491	3.88E-04	558	7.20E-04	625	7.55E-04	692	1.55E-04	759	1.78E-05
425	4.77E-05	492	3.96E-04	559	7.25E-04	626	7.43E-04	693	1.50E-04	760	1.72E-05
426	5.33E-05	493	4.04E-04	560	7.29E-04	627	7.37E-04	694	1.46E-04	761	1.66E-05
427	6.16E-05	494	4.11E-04	561	7.31E-04	628	7.26E-04	695	1.41E-04	762	1.62E-05
428	6.94E-05	495	4.22E-04	562	7.38E-04	629	7.19E-04	696	1.36E-04	763	1.57E-05
429	7.94E-05	496	4.31E-04	563	7.43E-04	630	7.08E-04	697	1.32E-04	764	1.52E-05
430	8.92E-05	497	4.41E-04	564	7.49E-04	631	6.98E-04	698	1.29E-04	765	1.46E-05
431	1.01E-04	498	4.50E-04	565	7.54E-04	632	6.87E-04	699	1.24E-04	766	1.43E-05
432	1.14E-04	499	4.61E-04	566	7.56E-04	633	6.77E-04	700	1.20E-04	767	1.38E-05
433	1.29E-04	500	4.68E-04	567	7.64E-04	634	6.64E-04	701	1.17E-04	768	1.32E-05
434	1.45E-04	501	4.79E-04	568	7.69E-04	635	6.52E-04	702	1.13E-04	769	1.28E-05
435	1.61E-04	502	4.88E-04	569	7.72E-04	636	6.44E-04	703	1.09E-04	770	1.25E-05
436	1.83E-04	503	4.96E-04	570	7.77E-04	637	6.34E-04	704	1.06E-04	771	1.21E-05
437	2.07E-04	504	5.05E-04	571	7.85E-04	638	6.22E-04	705	1.03E-04	772	1.16E-05
438	2.31E-04	505	5.13E-04	572	7.89E-04	639	6.12E-04	706	9.93E-05	773	1.11E-05
439	2.62E-04	506	5.21E-04	573	7.92E-04	640	6.01E-04	707	9.62E-05	774	1.10E-05
440	2.96E-04	507	5.29E-04	574	7.98E-04	641	5.86E-04	708	9.29E-05	775	1.09E-05
441	3.36E-04	508	5.36E-04	575	8.03E-04	642	5.74E-04	709	9.01E-05	776	1.04E-05
442	3.81E-04	509	5.44E-04	576	8.09E-04	643	5.63E-04	710	8.71E-05	777	1.01E-05
443	4.34E-04	510	5.51E-04	577	8.14E-04	644	5.53E-04	711	8.46E-05	778	9.40E-06
444	4.92E-04	511	5.56E-04	578	8.20E-04	645	5.41E-04	712	8.16E-05	779	9.30E-06
445	5.64E-04	512	5.64E-04	579	8.23E-04	646	5.30E-04	713	7.91E-05	780	9.30E-06
446	6.35E-04	513	5.70E-04	580	8.30E-04	647	5.20E-04	714	7.63E-05	N/A	N/A

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

ANSI/IES TM-30-18 Color Rendition Report

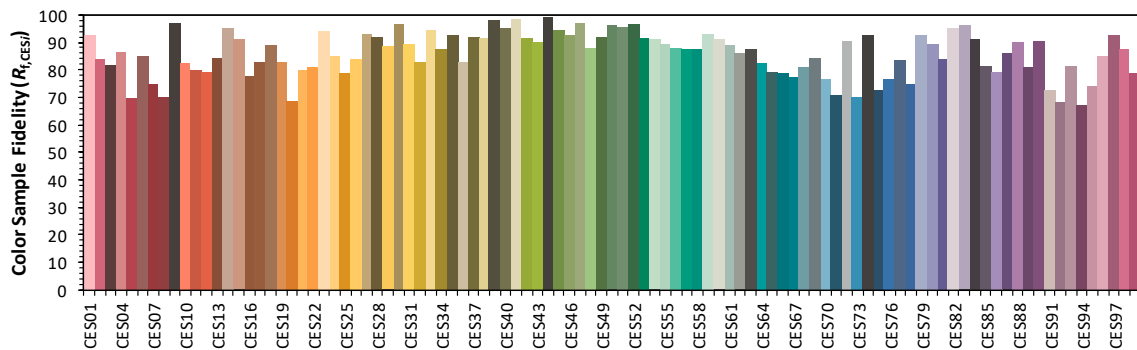
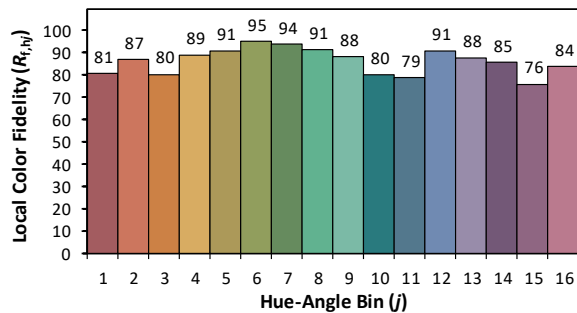
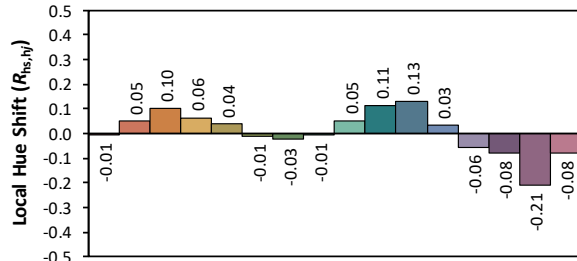
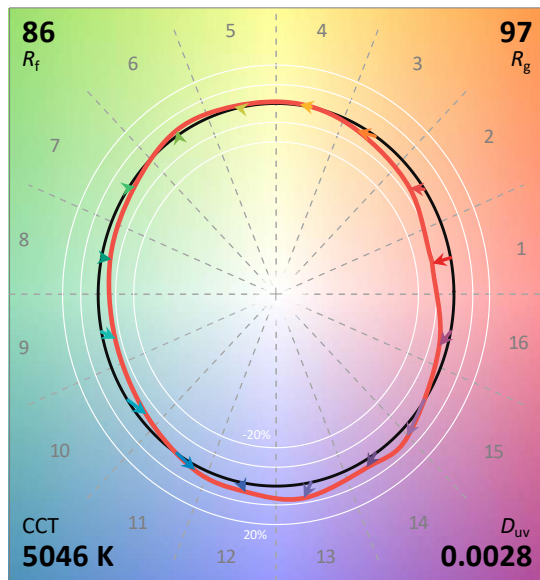
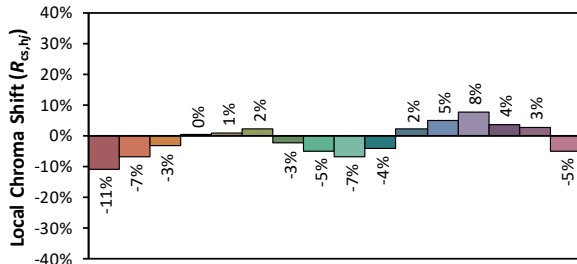
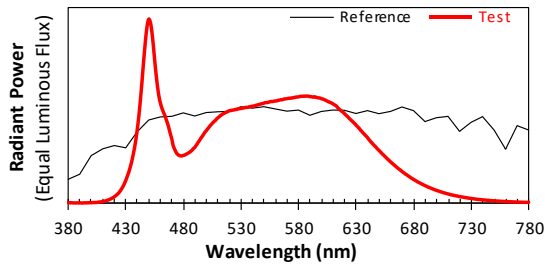
Source: 1 CIE F1

Manufacturer: Jiangsu Hanna New Energy Co., Ltd

Date: 2024/7/31

HNSVPAN14-

Model: A2/030/025/018/UNV/83550/D10/FL/WT/US01



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

x 0.3443
 y 0.3565
 u' 0.2090
 v' 0.4869

CIE 13.3-1995
(CRI)
 R_a 85
 R_9 17

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	4.50E-06	447	8.73E-04	514	4.84E-04	581	5.80E-04	648	3.01E-04	715	4.40E-05
381	3.80E-06	448	9.35E-04	515	4.87E-04	582	5.81E-04	649	2.94E-04	716	4.29E-05
382	3.60E-06	449	9.77E-04	516	4.91E-04	583	5.81E-04	650	2.88E-04	717	4.13E-05
383	4.00E-06	450	1.00E-03	517	4.94E-04	584	5.82E-04	651	2.81E-04	718	4.02E-05
384	3.00E-06	451	9.92E-04	518	4.97E-04	585	5.81E-04	652	2.75E-04	719	3.86E-05
385	2.90E-06	452	9.65E-04	519	5.00E-04	586	5.82E-04	653	2.68E-04	720	3.73E-05
386	3.00E-06	453	9.16E-04	520	5.03E-04	587	5.83E-04	654	2.62E-04	721	3.63E-05
387	2.60E-06	454	8.56E-04	521	5.04E-04	588	5.82E-04	655	2.56E-04	722	3.52E-05
388	3.40E-06	455	7.88E-04	522	5.05E-04	589	5.82E-04	656	2.50E-04	723	3.43E-05
389	2.60E-06	456	7.23E-04	523	5.06E-04	590	5.79E-04	657	2.44E-04	724	3.31E-05
390	2.90E-06	457	6.66E-04	524	5.07E-04	591	5.80E-04	658	2.38E-04	725	3.19E-05
391	3.10E-06	458	6.16E-04	525	5.10E-04	592	5.78E-04	659	2.32E-04	726	3.09E-05
392	2.20E-06	459	5.77E-04	526	5.10E-04	593	5.77E-04	660	2.26E-04	727	3.00E-05
393	2.70E-06	460	5.48E-04	527	5.12E-04	594	5.79E-04	661	2.21E-04	728	2.87E-05
394	3.40E-06	461	5.25E-04	528	5.13E-04	595	5.76E-04	662	2.15E-04	729	2.82E-05
395	3.50E-06	462	5.07E-04	529	5.15E-04	596	5.75E-04	663	2.10E-04	730	2.74E-05
396	3.00E-06	463	4.91E-04	530	5.15E-04	597	5.73E-04	664	2.04E-04	731	2.61E-05
397	3.80E-06	464	4.77E-04	531	5.17E-04	598	5.72E-04	665	1.99E-04	732	2.53E-05
398	3.90E-06	465	4.58E-04	532	5.18E-04	599	5.71E-04	666	1.93E-04	733	2.46E-05
399	4.00E-06	466	4.40E-04	533	5.19E-04	600	5.68E-04	667	1.88E-04	734	2.38E-05
400	4.10E-06	467	4.20E-04	534	5.21E-04	601	5.67E-04	668	1.84E-04	735	2.28E-05
401	4.40E-06	468	3.97E-04	535	5.21E-04	602	5.65E-04	669	1.79E-04	736	2.21E-05
402	4.90E-06	469	3.72E-04	536	5.22E-04	603	5.62E-04	670	1.73E-04	737	2.13E-05
403	5.00E-06	470	3.51E-04	537	5.24E-04	604	5.58E-04	671	1.69E-04	738	2.10E-05
404	5.20E-06	471	3.20E-04	538	5.25E-04	605	5.55E-04	672	1.65E-04	739	2.01E-05
405	5.70E-06	472	3.01E-04	539	5.27E-04	606	5.53E-04	673	1.59E-04	740	1.96E-05
406	6.80E-06	473	2.87E-04	540	5.27E-04	607	5.49E-04	674	1.56E-04	741	1.90E-05
407	7.70E-06	474	2.74E-04	541	5.28E-04	608	5.47E-04	675	1.51E-04	742	1.85E-05
408	8.10E-06	475	2.67E-04	542	5.30E-04	609	5.44E-04	676	1.47E-04	743	1.79E-05
409	9.40E-06	476	2.62E-04	543	5.32E-04	610	5.41E-04	677	1.43E-04	744	1.71E-05
410	1.05E-05	477	2.59E-04	544	5.34E-04	611	5.36E-04	678	1.38E-04	745	1.69E-05
411	1.15E-05	478	2.58E-04	545	5.36E-04	612	5.33E-04	679	1.34E-04	746	1.62E-05
412	1.33E-05	479	2.59E-04	546	5.37E-04	613	5.28E-04	680	1.31E-04	747	1.56E-05
413	1.48E-05	480	2.61E-04	547	5.39E-04	614	5.21E-04	681	1.27E-04	748	1.52E-05
414	1.72E-05	481	2.62E-04	548	5.41E-04	615	5.14E-04	682	1.23E-04	749	1.47E-05
415	1.93E-05	482	2.65E-04	549	5.42E-04	616	5.09E-04	683	1.20E-04	750	1.42E-05
416	2.19E-05	483	2.69E-04	550	5.44E-04	617	5.03E-04	684	1.16E-04	751	1.38E-05
417	2.49E-05	484	2.72E-04	551	5.46E-04	618	4.99E-04	685	1.13E-04	752	1.33E-05
418	2.83E-05	485	2.76E-04	552	5.47E-04	619	4.94E-04	686	1.09E-04	753	1.28E-05
419	3.14E-05	486	2.80E-04	553	5.48E-04	620	4.87E-04	687	1.06E-04	754	1.28E-05
420	3.56E-05	487	2.85E-04	554	5.49E-04	621	4.81E-04	688	1.03E-04	755	1.22E-05
421	4.05E-05	488	2.92E-04	555	5.51E-04	622	4.75E-04	689	9.99E-05	756	1.18E-05
422	4.57E-05	489	2.99E-04	556	5.53E-04	623	4.70E-04	690	9.68E-05	757	1.15E-05
423	5.16E-05	490	3.04E-04	557	5.53E-04	624	4.63E-04	691	9.41E-05	758	1.11E-05
424	5.78E-05	491	3.13E-04	558	5.53E-04	625	4.57E-04	692	9.06E-05	759	1.06E-05
425	6.62E-05	492	3.22E-04	559	5.55E-04	626	4.50E-04	693	8.82E-05	760	1.03E-05
426	7.51E-05	493	3.33E-04	560	5.56E-04	627	4.45E-04	694	8.59E-05	761	1.01E-05
427	8.54E-05	494	3.41E-04	561	5.56E-04	628	4.39E-04	695	8.31E-05	762	9.70E-06
428	9.64E-05	495	3.52E-04	562	5.59E-04	629	4.33E-04	696	8.06E-05	763	9.40E-06
429	1.10E-04	496	3.60E-04	563	5.60E-04	630	4.25E-04	697	7.79E-05	764	9.10E-06
430	1.24E-04	497	3.69E-04	564	5.61E-04	631	4.19E-04	698	7.56E-05	765	9.00E-06
431	1.41E-04	498	3.79E-04	565	5.63E-04	632	4.12E-04	699	7.31E-05	766	8.60E-06
432	1.58E-04	499	3.88E-04	566	5.63E-04	633	4.06E-04	700	7.10E-05	767	8.20E-06
433	1.76E-04	500	3.95E-04	567	5.65E-04	634	3.97E-04	701	6.89E-05	768	8.10E-06
434	1.99E-04	501	4.03E-04	568	5.67E-04	635	3.92E-04	702	6.66E-05	769	7.60E-06
435	2.22E-04	502	4.11E-04	569	5.67E-04	636	3.84E-04	703	6.46E-05	770	7.60E-06
436	2.50E-04	503	4.19E-04	570	5.69E-04	637	3.78E-04	704	6.24E-05	771	7.40E-06
437	2.81E-04	504	4.26E-04	571	5.70E-04	638	3.70E-04	705	6.04E-05	772	7.20E-06
438	3.15E-04	505	4.33E-04	572	5.71E-04	639	3.64E-04	706	5.84E-05	773	6.90E-06
439	3.54E-04	506	4.40E-04	573	5.71E-04	640	3.58E-04	707	5.68E-05	774	6.70E-06
440	4.01E-04	507	4.46E-04	574	5.72E-04	641	3.49E-04	708	5.49E-05	775	6.60E-06
441	4.52E-04	508	4.51E-04	575	5.72E-04	642	3.42E-04	709	5.32E-05	776	6.30E-06
442	5.11E-04	509	4.59E-04	576	5.75E-04	643	3.34E-04	710	5.17E-05	777	6.10E-06
443	5.79E-04	510	4.64E-04	577	5.75E-04	644	3.28E-04	711	5.00E-05	778	6.00E-06
444	6.50E-04	511	4.69E-04	578	5.77E-04	645	3.20E-04	712	4.80E-05	779	6.00E-06
445	7.29E-04	512	4.75E-04	579	5.77E-04	646	3.14E-04	713	4.66E-05	780	6.00E-06
446	8.04E-04	513	4.79E-04	580	5.78E-04	647	3.08E-04	714	4.53E-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)
25.0	43.6	Face Down	90	25

Electrical Data:

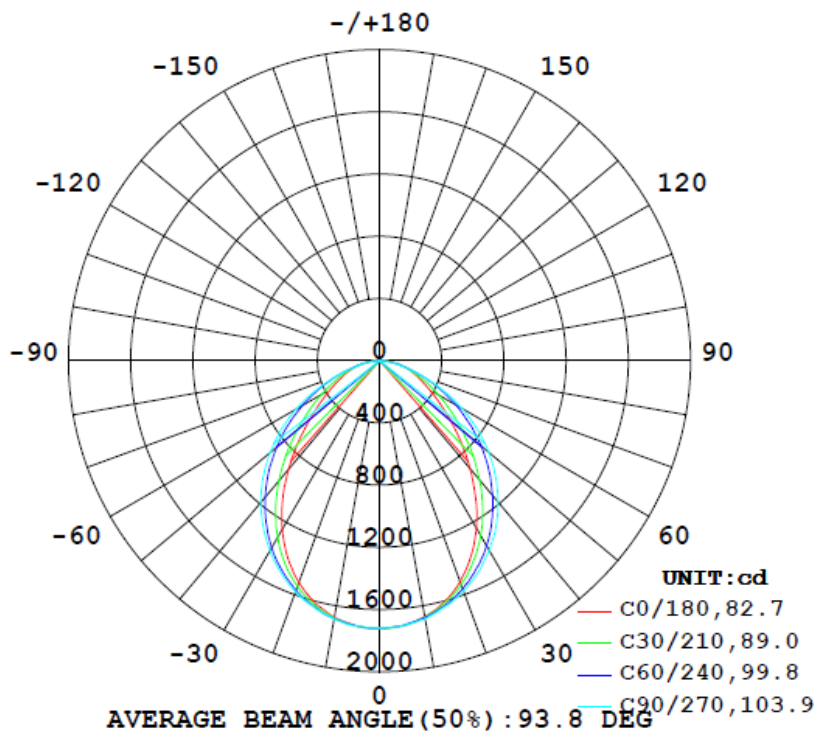
Voltage (V)	Frequency (Hz)	Current (A)	Wattage (W)	Power Factor
120.0	60	0.2427	29.00	0.9959

Goniophotometer Data:

Parameter	Results	
Total Luminous (lm)	3929.6	
Luminous Efficacy (lm/W)	135.50	
Zonal Lumens Distribution (0-60°)	84.3%	
Beam Angle (°)	93.8	
Spacing Criterion	0-180°	90-270°
	1.12	1.22
UGR	Viewed Crosswise	Viewed Endwise
	18.2	19.5

Luminous Intensity Distribution Diagram:

LUMINOUS INTENSITY DISTRIBUTION DIAGRAM

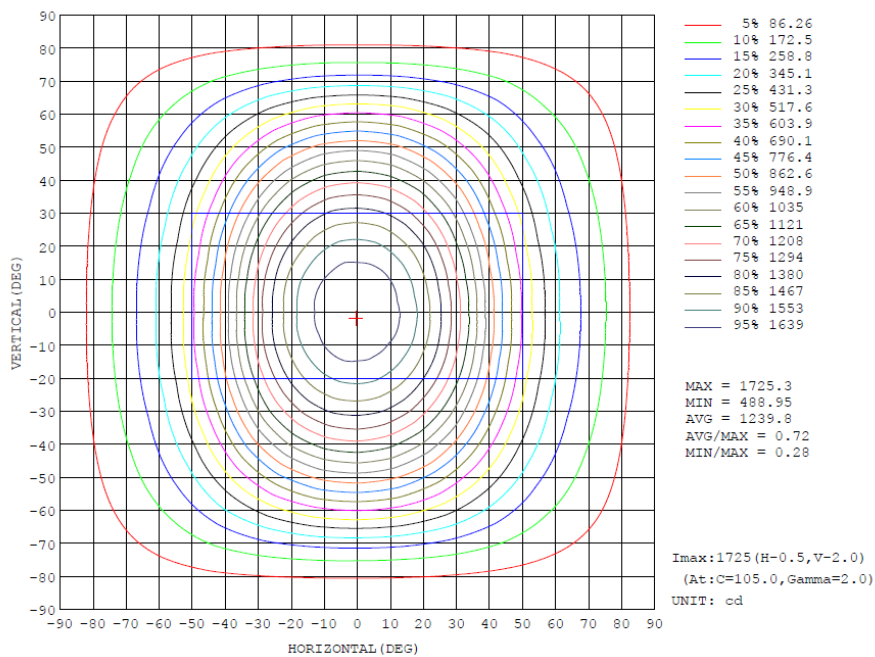


Zonal Flux Diagram:

ZONAL FLUX DIAGRAM:

γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	φ zone	φ total	lum, lamp
10	1670	1675	1686	1679	1675	1680	1685	1680	0- 10	162.3	162.3	4.13,4.13
20	1512	1546	1575	1557	1517	1557	1581	1550	10- 20	457.9	620.2	15.8,15.8
30	1244	1339	1410	1359	1252	1352	1410	1344	20- 30	669.0	1289	32.8,32.8
40	904.2	1068	1185	1098	911.4	1081	1189	1073	30- 40	754.2	2043	52,52
50	593.5	775.9	915.5	804.0	586.1	783.5	919.7	778.1	40- 50	706.8	2750	70,70
60	367.0	503.9	607.9	518.7	361.7	502.9	616.4	506.6	50- 60	563.5	3314	84.3,84.3
70	231.4	276.6	298.3	285.6	222.4	275.5	305.5	281.6	60- 70	375.5	3689	93.9,93.9
80	119.5	104.8	94.12	110.9	111.1	109.3	99.59	110.5	70- 80	192.4	3882	98.8,98.8
90	0	0	0	0	0	0	0	0	80- 90	48.03	3930	100,100
100	0	0	0	0	0	0	0	0	90-100	0	3930	100,100
110	0	0	0	0	0	0	0	0	100-110	0	3930	100,100
120	0	0	0	0	0	0	0	0	110-120	0	3930	100,100
130	0	0	0	0	0	0	0	0	120-130	0	3930	100,100
140	0	0	0	0	0	0	0	0	130-140	0	3930	100,100
150	0	0	0	0	0	0	0	0	140-150	0	3930	100,100
160	0	0	0	0	0	0	0	0	150-160	0	3930	100,100
170	0	0	0	0	0	0	0	0	160-170	0	3930	100,100
180	0	0	0	0	0	0	0	0	170-180	0	3930	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	9.1	10.7	9.5	11.0	11.3	11.9	13.5	12.3	13.8	14.1
	3H	10.6	12.0	11.0	12.3	12.7	13.2	14.6	13.6	14.9	15.3
	4H	11.3	12.6	11.7	13.0	13.3	13.6	14.9	14.0	15.2	15.6
	6H	11.9	13.1	12.3	13.5	13.8	13.8	15.0	14.2	15.4	15.8
	8H	12.1	13.2	12.5	13.6	14.0	13.8	15.0	14.3	15.4	15.8
	12H	12.2	13.3	12.7	13.7	14.2	13.9	15.0	14.3	15.3	15.8
4H	2H	10.0	11.3	10.4	11.7	12.0	12.3	13.6	12.7	13.9	14.3
	3H	11.7	12.8	12.1	13.2	13.6	13.8	14.9	14.2	15.3	15.7
	4H	12.4	13.4	12.9	13.8	14.3	14.3	15.2	14.7	15.7	16.1
	6H	13.1	14.0	13.6	14.4	14.9	14.6	15.4	15.0	15.9	16.3
	8H	13.4	14.2	13.8	14.6	15.1	14.7	15.4	15.1	15.9	16.4
	12H	13.6	14.3	14.1	14.8	15.2	14.7	15.4	15.2	15.9	16.3
8H	4H	12.8	13.6	13.3	14.0	14.5	14.4	15.2	14.9	15.7	16.1
	6H	13.6	14.2	14.1	14.7	15.2	14.8	15.5	15.3	16.0	16.4
	8H	13.9	14.5	14.4	15.0	15.5	14.9	15.5	15.4	16.0	16.5
	12H	14.2	14.7	14.7	15.2	15.8	15.0	15.5	15.5	16.0	16.6
12H	4H	12.8	13.5	13.3	14.0	14.5	14.4	15.1	14.9	15.6	16.1
	6H	13.6	14.2	14.2	14.7	15.2	14.8	15.4	15.4	15.9	16.4
	8H	14.0	14.5	14.5	15.0	15.6	15.0	15.5	15.5	16.0	16.6

Maximum UGR = 16.6

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	13.9	15.5	14.3	15.8	16.1	16.7	18.3	17.1	18.6	18.9
	3H	15.4	16.8	15.8	17.1	17.5	18.0	19.4	18.4	19.7	20.1
	4H	16.1	17.4	16.5	17.8	18.1	18.4	19.7	18.8	20.0	20.4
	6H	16.7	17.9	17.1	18.3	18.6	18.6	19.8	19.0	20.2	20.6
	8H	16.9	18.0	17.3	18.4	18.8	18.6	19.8	19.1	20.2	20.6
	12H	17.0	18.1	17.5	18.5	19.0	18.7	19.8	19.1	20.1	20.6
4H	2H	14.8	16.1	15.2	16.5	16.8	17.1	18.4	17.5	18.7	19.1
	3H	16.5	17.6	16.9	18.0	18.4	18.6	19.7	19.0	20.1	20.5
	4H	17.2	18.2	17.7	18.6	19.1	19.1	20.0	19.5	20.5	20.9
	6H	17.9	18.8	18.4	19.2	19.7	19.4	20.2	19.8	20.7	21.1
	8H	18.2	19.0	18.6	19.4	19.9	19.5	20.2	19.9	20.7	21.2
	12H	18.4	19.1	18.9	19.6	20.0	19.5	20.2	20.0	20.7	21.1
8H	4H	17.6	18.4	18.1	18.8	19.3	19.2	20.0	19.7	20.5	20.9
	6H	18.4	19.0	18.9	19.5	20.0	19.6	20.3	20.1	20.8	21.2
	8H	18.7	19.3	19.2	19.8	20.3	19.7	20.3	20.2	20.8	21.3
	12H	19.0	19.5	19.5	20.0	20.6	19.8	20.3	20.3	20.8	21.4
12H	4H	17.6	18.3	18.1	18.8	19.3	19.2	19.9	19.7	20.4	20.9
	6H	18.4	19.0	19.0	19.5	20.0	19.6	20.2	20.2	20.7	21.2
	8H	18.8	19.3	19.3	19.8	20.4	19.8	20.3	20.3	20.8	21.4

Maximum UGR = 21.4

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	1723	1723	1722	1721	1720	1721	1720	1725	1719	1723	1719	1721	1723	1723	1722	1721	1720	1721	1720
5	1711	1711	1709	1709	1709	1712	1708	1715	1712	1712	1710	1713	1712	1712	1713	1714	1712	1714	1712
10	1670	1675	1674	1675	1676	1681	1686	1688	1682	1679	1678	1674	1675	1676	1681	1680	1683	1691	1685
15	1608	1612	1614	1621	1628	1638	1637	1642	1638	1632	1621	1617	1610	1616	1622	1627	1636	1645	1639
20	1512	1521	1532	1546	1561	1577	1575	1577	1570	1557	1545	1533	1517	1530	1545	1557	1572	1580	1581
25	1389	1403	1425	1452	1474	1493	1500	1501	1490	1468	1442	1418	1399	1416	1440	1460	1489	1506	1503
30	1244	1261	1300	1339	1374	1398	1410	1408	1390	1359	1319	1283	1252	1276	1311	1352	1388	1411	1410
35	1077	1102	1156	1208	1258	1291	1305	1301	1279	1235	1174	1122	1089	1113	1166	1224	1274	1302	1306
40	904	936	999	1068	1132	1170	1185	1183	1152	1098	1017	952	911	943	1009	1081	1145	1182	1189
45	742	770	841	928	992	1039	1054	1049	1017	952	859	782	739	770	848	934	1009	1051	1061
50	593	623	692	776	854	900	915	911	874	804	704	625	586	614	689	784	864	910	920
55	469	491	556	634	707	750	765	763	728	657	563	494	461	484	550	641	716	760	772
60	367	385	436	504	563	597	608	602	575	519	440	383	362	377	429	503	571	609	616
65	291	298	335	381	423	444	448	449	435	394	336	298	284	293	327	382	429	453	457
70	231	229	247	277	294	298	298	304	302	286	251	227	222	222	244	275	299	306	305
75	176	170	173	184	183	180	178	183	190	191	175	165	166	163	172	185	188	187	184
80	120	111	107	105	99.7	96.3	94.1	96.9	103	111	112	108	111	106	109	109	105	101	99.6
85	51.0	51.0	43.4	37.9	32.4	29.3	27.3	30.0	35.0	41.8	47.6	52.8	51.8	51.6	47.0	43.0	37.6	33.9	31.0
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	1725	1719	1723	1719	1721														
5	1715	1708	1710	1705	1704														
10	1687	1684	1680	1671	1666														
15	1639	1633	1626	1614	1604														
20	1580	1563	1550	1527	1510														
25	1501	1479	1455	1420	1394														
30	1404	1380	1344	1293	1254														
35	1297	1266	1210	1146	1093														
40	1179	1139	1073	990	925														
45	1047	1000	927	830	763														
50	909	857	778	683	616														
55	760	715	638	550	488														
60	609	568	507	432	381														
65	454	431	387	331	297														
70	308	303	282	247	230														
75	187	191	189	175	171														
80	102	106	110	111	112														
85	33.4	36.3	41.3	45.3	51.9														
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:

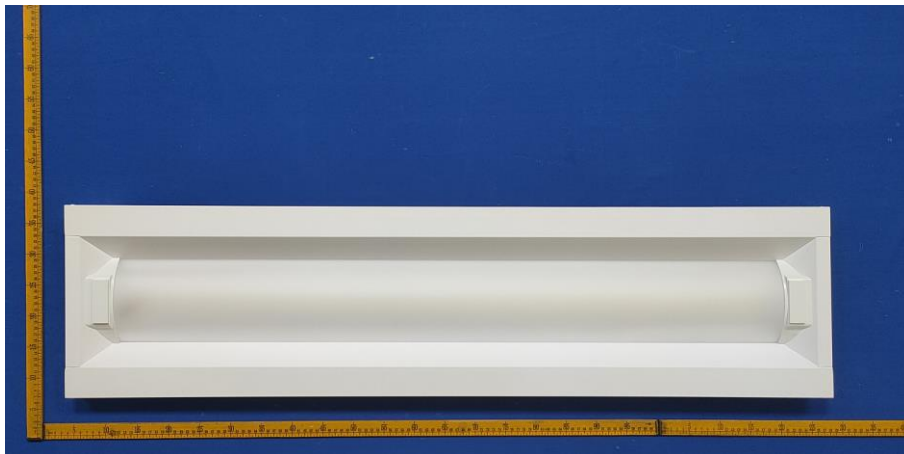
Electrical Measurement:

CCT Setting	Voltage (V)	Frequency (Hz)	Current (A)	Wattage (W)	Power Factor	iTHD(%)
3500K	120.0	60	0.2427	29.00	0.9959	3.86
	277.0	60	0.1097	28.98	0.9538	3.44
4000K	120.0	60	0.2346	28.06	0.9967	3.87
	277.0	60	0.1063	28.02	0.9513	3.41
5000K	120.0	60	0.2440	29.17	0.9962	3.75
	277.0	60	0.1100	29.08	0.9545	3.41

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	3344	29.00	3929.6	135.50	Set Switch 0% to 3500K
4000K	4028	28.06	4104.1	146.26	Set Switch 50% to 4000K
5000K	5046	29.17	4093.5	140.33	Set Switch 100% to 5000K
Lowest Efficacy	135.50 lm/W (@3500K)				
Maximum Power	29.17 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*******