LM-79-19 Test Report

For

LED One Corporation

12437 Bellegrave Ave Eastvale, CA 91752

High Bay Luminaires for Commercial and Industrial Buildings

Model Name(s):

LOC-4FTHLHB-MW310W3CCT-[PJ,5P,7P,ZG,IR,MS,BR,BS]-[blank, EM]

Representative (Tested) Model:

LOC-4FTHLHB-MW310W3CCT

Model Difference: N/A

Prepared by:

Alan Wang

Engineer: Alan Wang
Date: 2026-01-23

Reviewed by:

Vincent Yuan

Technical Lead: Vincent Yuan
Issue Date: 2026-01-26
Revised Date: 2026-03-03

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.

Client Information:

Applicant Name:	LED One Corporation
Brand Name:	LED One
Manufacturer Name:	LED One Corporation
Manufacturer Address:	12437 Bellegrave Ave Eastvale, CA 91752

Product Information:

Model Number:	LOC-4FTHLHB-MW310W3CCT
Product Type:	High Bay Luminaires for Commercial and Industrial Buildings
Rating Input:	120-277Vac, 50/60Hz, 310W
Declared CCT:	3500K, 4000K and 5000K
LED Manufacturer:	Seoul Semiconductor Co., LTD
LED Model:	STW8A32E-H3(C78)
LED Quantity:	960 pcs
LED Driver Manufacturer:	Jiangsu Hanna New Energy Co., Ltd
LED Driver Model:	HN-N320-1150-U-AC

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:	2025-12-27
Quantity of Receipt Samples:	1 pc
Sample Number:	251227007-S1
Test Representation:	N/A

Laboratory Information:

Test Laboratory:	Dongguan New Testing Centre Co., Ltd
Laboratory Address:	3F, No. 1 the 1st 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:	2026-01-26
Revised Date of Test Report:	2026-03-03
Test Report No.:	NTCLR26042328-R1
Remark *(If applicable)*:	This report is copied from NTCLR26010231-R1 ,due to the same product.

Report Revision History:

The latest revision report replaced all previous reports, and all previous reports will be invalid.		
Report Number	Revised Date	Revised Contents
NTCLR26010231	N/A	1. Initial version.
NTCLR26010231-R1	2026-03-03	1. Per client's request, update model number, 2. Update tested model number

Test Specification:	
Date of Test	2026-01-14
Test Item	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-30-24 IES Method for Evaluating Light Source Color Rendition IES TM-15-20 Luminaire Classification System for Outdoor Luminaires Addendum A for IES TM-15-20 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:

1. Photometric and Electrical Measurements – Light Distribution Method:

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° horizonal intervals.

2. Photometric and Electrical Measurements – Integrating Sphere Method:

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.

3. THD and PF Measurements:

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.

Integrating Sphere Test Results:

Test Condition:

Test Ambient (°C)	Test Humidity (%)	Orientation	Stabilization Time (minute)	Test Time (minute)
25.0	44.6	Face Down	90	10

Electrical Data:

CCT Setting	Voltage (V)	Frequency (Hz)	Current (A)	Wattage (W)	Power Factor
3500K	120.0	60	2.5477	305.30	0.9986
4000K	120.0	60	2.4555	294.60	0.9998
5000K	120.0	60	2.5526	306.00	0.9990

Output Data:

CCT Setting	Luminous (lm)	Efficacy (lm/W)
3500K	47602.0	155.92
4000K	50988.0	173.08
5000K	49126.0	160.54

Color Data:

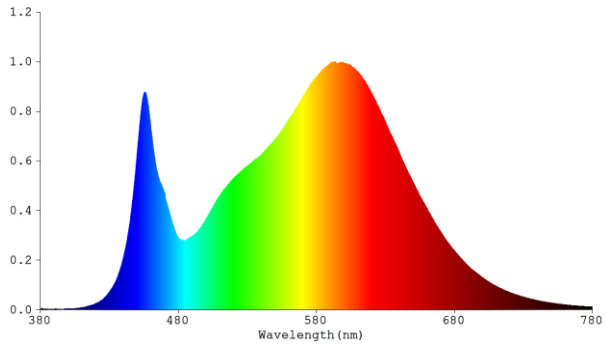
CCT Setting	Test CCT (K)	R_a	R_9	R_f	R_g	$R_{cs,h1}$	Chromaticity		
							(x, y)	(u', v')	Duv
3500K	3485	81.7	3	83	93	-13%	(0.4052, 0.3886)	(0.2365, 0.5104)	-0.0009
4000K	4112	82.9	4	84	94	-13%	(0.3755, 0.3734)	(0.2232, 0.4994)	-0.0001
5000K	5125	83.2	8	83	95	-13%	(0.3420, 0.3512)	(0.2095, 0.4840)	0.0011

Specify Color Rendering:

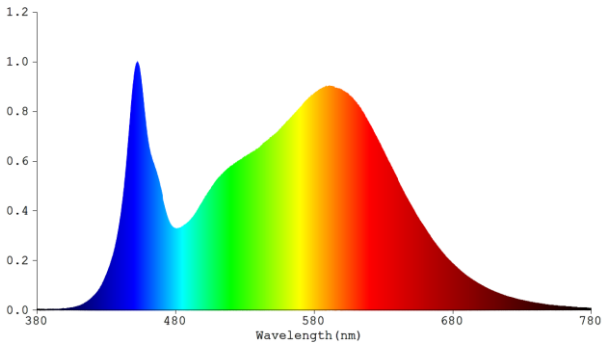
CCT Setting	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15
3500K	80	92	95	77	80	88	82	58	3	80	76	64	83	98	74
4000K	81	91	96	80	82	87	84	62	4	78	79	64	84	98	75
5000K	82	89	93	82	82	84	86	67	8	73	81	61	84	96	77

Spectrum Diagram:

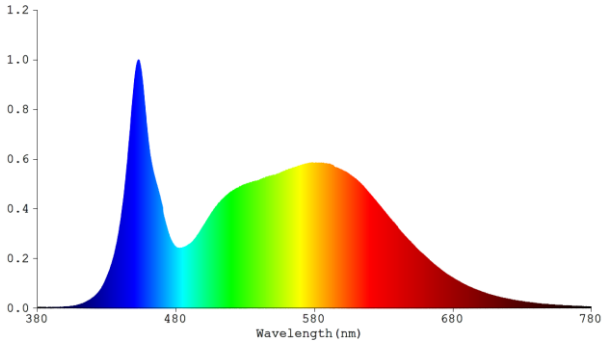
CCT Setting=3500K



CCT Setting=4000K



CCT Setting=5000K



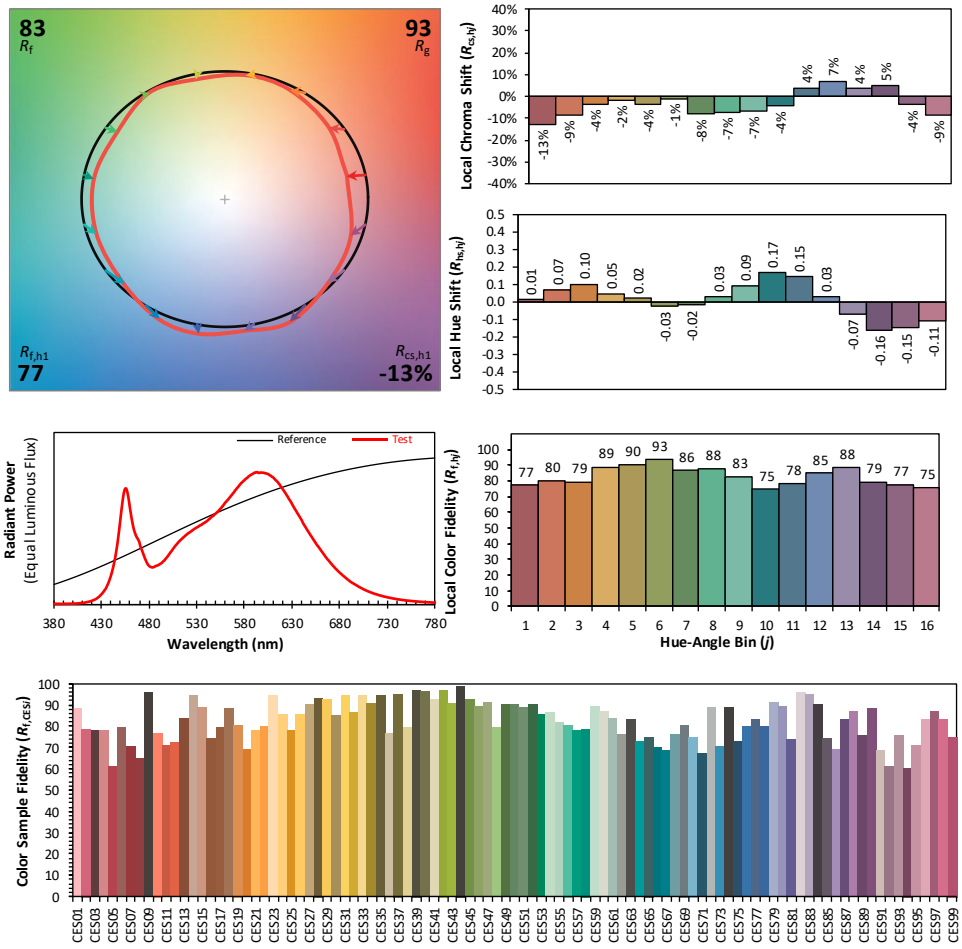
IES TM-30-18 Color Rendition Result (CCT Setting=3500K):

ANSI/IES TM-30-24 Color Rendition Report

Source:	STW8A2PD-H4	Make:	LED One Corporation
Date:	2026/1/23	Model:	LOC-4FTHLHB-MW310W3CCT
Notes:	N/A	Other	N/A

CCT: 3483 K
D_{uv}: -0.0010

P- V- F-



TM-30 Advanced Calculator Version 2.04 Created 2026/1/23

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	2.30E-06	447	4.53E-04	514	4.90E-04	581	9.46E-04	648	5.38E-04	715	8.22E-05
381	3.60E-06	448	5.08E-04	515	4.98E-04	582	9.52E-04	649	5.26E-04	716	7.92E-05
382	2.70E-06	449	5.67E-04	516	5.05E-04	583	9.56E-04	650	5.16E-04	717	7.69E-05
383	3.30E-06	450	6.29E-04	517	5.11E-04	584	9.65E-04	651	5.04E-04	718	7.44E-05
384	1.40E-06	451	6.93E-04	518	5.18E-04	585	9.69E-04	652	4.93E-04	719	7.28E-05
385	3.20E-06	452	7.52E-04	519	5.24E-04	586	9.76E-04	653	4.82E-04	720	6.99E-05
386	2.00E-06	453	8.06E-04	520	5.29E-04	587	9.80E-04	654	4.71E-04	721	6.78E-05
387	2.50E-06	454	8.48E-04	521	5.36E-04	588	9.83E-04	655	4.59E-04	722	6.61E-05
388	1.60E-06	455	8.72E-04	522	5.40E-04	589	9.89E-04	656	4.49E-04	723	6.39E-05
389	2.00E-06	456	8.77E-04	523	5.45E-04	590	9.92E-04	657	4.40E-04	724	6.21E-05
390	2.20E-06	457	8.62E-04	524	5.51E-04	591	9.97E-04	658	4.30E-04	725	6.01E-05
391	3.30E-06	458	8.31E-04	525	5.56E-04	592	9.96E-04	659	4.20E-04	726	5.80E-05
392	2.70E-06	459	7.90E-04	526	5.61E-04	593	1.00E-03	660	4.10E-04	727	5.65E-05
393	2.50E-06	460	7.38E-04	527	5.67E-04	594	9.98E-04	661	3.99E-04	728	5.49E-05
394	2.60E-06	461	6.93E-04	528	5.71E-04	595	9.94E-04	662	3.90E-04	729	5.29E-05
395	2.80E-06	462	6.47E-04	529	5.76E-04	596	9.95E-04	663	3.79E-04	730	5.10E-05
396	2.90E-06	463	6.10E-04	530	5.80E-04	597	9.97E-04	664	3.70E-04	731	5.01E-05
397	3.00E-06	464	5.75E-04	531	5.84E-04	598	9.97E-04	665	3.59E-04	732	4.81E-05
398	3.50E-06	465	5.50E-04	532	5.89E-04	599	9.96E-04	666	3.50E-04	733	4.71E-05
399	3.60E-06	466	5.29E-04	533	5.94E-04	600	9.96E-04	667	3.40E-04	734	4.55E-05
400	3.40E-06	467	5.11E-04	534	5.98E-04	601	9.93E-04	668	3.33E-04	735	4.38E-05
401	3.80E-06	468	5.00E-04	535	6.00E-04	602	9.92E-04	669	3.24E-04	736	4.25E-05
402	4.20E-06	469	4.86E-04	536	6.07E-04	603	9.89E-04	670	3.15E-04	737	4.15E-05
403	4.40E-06	470	4.71E-04	537	6.12E-04	604	9.88E-04	671	3.06E-04	738	4.00E-05
404	4.80E-06	471	4.41E-04	538	6.14E-04	605	9.85E-04	672	2.98E-04	739	3.89E-05
405	5.20E-06	472	4.23E-04	539	6.21E-04	606	9.79E-04	673	2.89E-04	740	3.72E-05
406	5.80E-06	473	4.04E-04	540	6.24E-04	607	9.75E-04	674	2.82E-04	741	3.64E-05
407	6.80E-06	474	3.84E-04	541	6.30E-04	608	9.71E-04	675	2.73E-04	742	3.50E-05
408	7.10E-06	475	3.65E-04	542	6.36E-04	609	9.64E-04	676	2.66E-04	743	3.42E-05
409	8.10E-06	476	3.45E-04	543	6.44E-04	610	9.61E-04	677	2.59E-04	744	3.32E-05
410	8.90E-06	477	3.29E-04	544	6.48E-04	611	9.54E-04	678	2.51E-04	745	3.22E-05
411	9.40E-06	478	3.13E-04	545	6.56E-04	612	9.46E-04	679	2.44E-04	746	3.07E-05
412	1.02E-05	479	3.00E-04	546	6.62E-04	613	9.38E-04	680	2.38E-04	747	3.00E-05
413	1.17E-05	480	2.92E-04	547	6.68E-04	614	9.32E-04	681	2.31E-04	748	2.93E-05
414	1.34E-05	481	2.85E-04	548	6.73E-04	615	9.24E-04	682	2.25E-04	749	2.79E-05
415	1.51E-05	482	2.82E-04	549	6.80E-04	616	9.14E-04	683	2.18E-04	750	2.73E-05
416	1.61E-05	483	2.79E-04	550	6.86E-04	617	9.05E-04	684	2.12E-04	751	2.67E-05
417	1.84E-05	484	2.79E-04	551	6.93E-04	618	8.94E-04	685	2.06E-04	752	2.60E-05
418	1.97E-05	485	2.80E-04	552	7.00E-04	619	8.85E-04	686	2.00E-04	753	2.52E-05
419	2.18E-05	486	2.84E-04	553	7.06E-04	620	8.73E-04	687	1.94E-04	754	2.43E-05
420	2.48E-05	487	2.87E-04	554	7.15E-04	621	8.63E-04	688	1.88E-04	755	2.36E-05
421	2.72E-05	488	2.91E-04	555	7.23E-04	622	8.52E-04	689	1.82E-04	756	2.30E-05
422	3.01E-05	489	2.93E-04	556	7.31E-04	623	8.42E-04	690	1.76E-04	757	2.23E-05
423	3.30E-05	490	2.96E-04	557	7.40E-04	624	8.29E-04	691	1.71E-04	758	2.17E-05
424	3.70E-05	491	3.01E-04	558	7.49E-04	625	8.19E-04	692	1.66E-04	759	2.06E-05
425	4.07E-05	492	3.05E-04	559	7.59E-04	626	8.05E-04	693	1.61E-04	760	2.01E-05
426	4.58E-05	493	3.09E-04	560	7.69E-04	627	7.93E-04	694	1.57E-04	761	1.97E-05
427	5.16E-05	494	3.16E-04	561	7.76E-04	628	7.83E-04	695	1.53E-04	762	1.93E-05
428	5.67E-05	495	3.23E-04	562	7.84E-04	629	7.72E-04	696	1.49E-04	763	1.87E-05
429	6.45E-05	496	3.30E-04	563	7.93E-04	630	7.58E-04	697	1.44E-04	764	1.83E-05
430	7.17E-05	497	3.38E-04	564	8.01E-04	631	7.45E-04	698	1.40E-04	765	1.75E-05
431	7.98E-05	498	3.48E-04	565	8.11E-04	632	7.32E-04	699	1.36E-04	766	1.73E-05
432	8.80E-05	499	3.55E-04	566	8.20E-04	633	7.20E-04	700	1.31E-04	767	1.66E-05
433	9.86E-05	500	3.65E-04	567	8.28E-04	634	7.09E-04	701	1.28E-04	768	1.59E-05
434	1.08E-04	501	3.75E-04	568	8.38E-04	635	6.96E-04	702	1.23E-04	769	1.54E-05
435	1.19E-04	502	3.86E-04	569	8.46E-04	636	6.84E-04	703	1.20E-04	770	1.50E-05
436	1.34E-04	503	3.95E-04	570	8.58E-04	637	6.72E-04	704	1.16E-04	771	1.47E-05
437	1.50E-04	504	4.05E-04	571	8.67E-04	638	6.61E-04	705	1.12E-04	772	1.41E-05
438	1.67E-04	505	4.15E-04	572	8.76E-04	639	6.49E-04	706	1.09E-04	773	1.34E-05
439	1.87E-04	506	4.25E-04	573	8.84E-04	640	6.37E-04	707	1.05E-04	774	1.34E-05
440	2.09E-04	507	4.35E-04	574	8.93E-04	641	6.21E-04	708	1.02E-04	775	1.29E-05
441	2.33E-04	508	4.44E-04	575	9.02E-04	642	6.07E-04	709	9.88E-05	776	1.28E-05
442	2.60E-04	509	4.52E-04	576	9.10E-04	643	5.95E-04	710	9.55E-05	777	1.20E-05
443	2.91E-04	510	4.61E-04	577	9.19E-04	644	5.85E-04	711	9.29E-05	778	1.20E-05
444	3.25E-04	511	4.70E-04	578	9.25E-04	645	5.72E-04	712	9.00E-05	779	1.20E-05
445	3.61E-04	512	4.77E-04	579	9.32E-04	646	5.61E-04	713	8.71E-05	780	1.20E-05
446	4.07E-04	513	4.85E-04	580	9.39E-04	647	5.49E-04	714	8.43E-05	N/A	0.00E+00

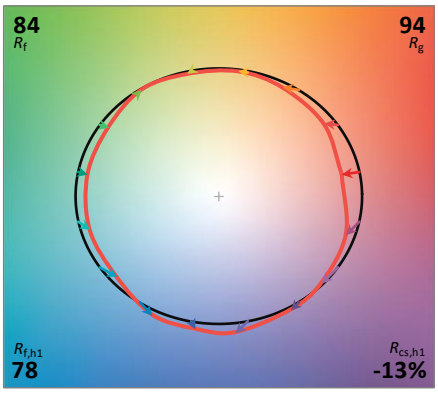
IES TM-30-18 Color Rendition Result (CCT Setting=4000K):

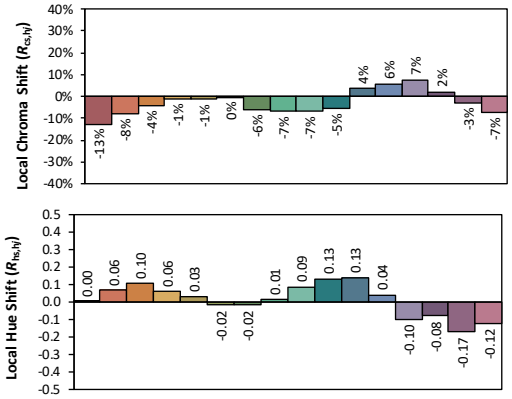
ANSI/IES TM-30-24 Color Rendition Report

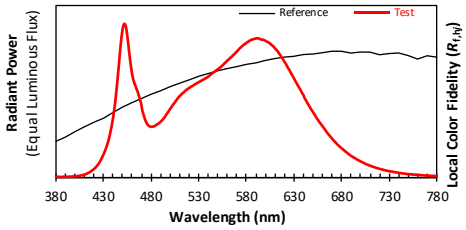
Source:	STW8A2PD-H4	Make:	LED One Corporation
Date:	2026/1/23	Model:	LOC-4FTHLHB-MW310W3CCT
Notes:	N/A	Other	N/A

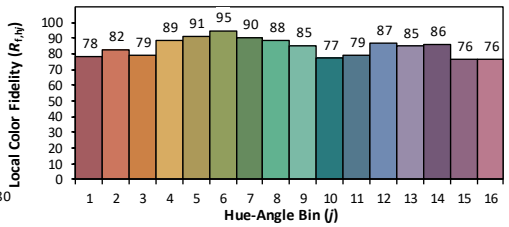
CCT: 4112 K
D_{uv}: -0.0002

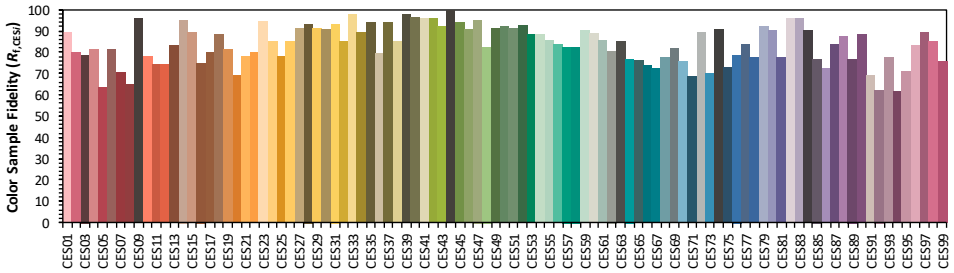
P- V- F-











TM-30 Advanced Calculator Version 2.04 Created 2026/1/23

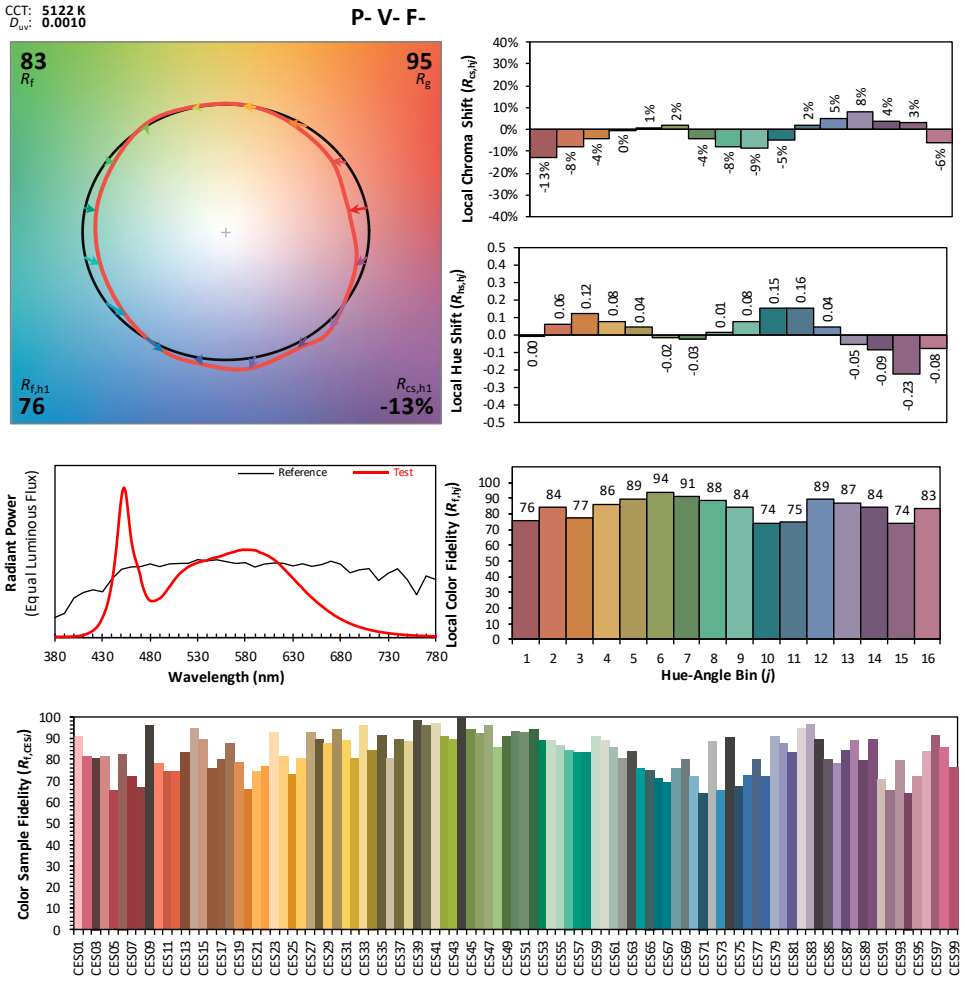
Spectrum Data (CCT Setting=4000K):

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	4.90E-06	447	7.62E-04	514	5.49E-04	581	8.77E-04	648	4.41E-04	715	6.41E-05
381	5.40E-06	448	8.32E-04	515	5.56E-04	582	8.81E-04	649	4.32E-04	716	6.21E-05
382	3.40E-06	449	8.95E-04	516	5.61E-04	583	8.86E-04	650	4.22E-04	717	5.98E-05
383	3.80E-06	450	9.43E-04	517	5.66E-04	584	8.89E-04	651	4.12E-04	718	5.85E-05
384	3.60E-06	451	9.79E-04	518	5.71E-04	585	8.91E-04	652	4.02E-04	719	5.65E-05
385	3.20E-06	452	9.96E-04	519	5.76E-04	586	8.95E-04	653	3.92E-04	720	5.47E-05
386	2.90E-06	453	9.93E-04	520	5.80E-04	587	8.96E-04	654	3.82E-04	721	5.32E-05
387	3.20E-06	454	9.74E-04	521	5.83E-04	588	8.98E-04	655	3.73E-04	722	5.17E-05
388	4.50E-06	455	9.35E-04	522	5.88E-04	589	9.00E-04	656	3.63E-04	723	5.01E-05
389	4.20E-06	456	8.86E-04	523	5.92E-04	590	9.01E-04	657	3.55E-04	724	4.82E-05
390	4.40E-06	457	8.30E-04	524	5.94E-04	591	9.03E-04	658	3.47E-04	725	4.70E-05
391	4.30E-06	458	7.77E-04	525	6.00E-04	592	9.02E-04	659	3.39E-04	726	4.52E-05
392	4.00E-06	459	7.29E-04	526	6.03E-04	593	9.02E-04	660	3.31E-04	727	4.37E-05
393	4.20E-06	460	6.87E-04	527	6.07E-04	594	9.00E-04	661	3.22E-04	728	4.25E-05
394	4.50E-06	461	6.52E-04	528	6.10E-04	595	8.95E-04	662	3.13E-04	729	4.11E-05
395	4.80E-06	462	6.28E-04	529	6.15E-04	596	8.95E-04	663	3.05E-04	730	3.97E-05
396	5.10E-06	463	6.08E-04	530	6.18E-04	597	8.93E-04	664	2.95E-04	731	3.87E-05
397	5.10E-06	464	5.92E-04	531	6.20E-04	598	8.92E-04	665	2.87E-04	732	3.77E-05
398	5.90E-06	465	5.75E-04	532	6.25E-04	599	8.89E-04	666	2.79E-04	733	3.67E-05
399	7.00E-06	466	5.59E-04	533	6.27E-04	600	8.87E-04	667	2.72E-04	734	3.56E-05
400	6.10E-06	467	5.40E-04	534	6.32E-04	601	8.83E-04	668	2.65E-04	735	3.43E-05
401	6.90E-06	468	5.20E-04	535	6.35E-04	602	8.80E-04	669	2.58E-04	736	3.30E-05
402	7.60E-06	469	4.97E-04	536	6.38E-04	603	8.76E-04	670	2.50E-04	737	3.23E-05
403	8.50E-06	470	4.74E-04	537	6.42E-04	604	8.73E-04	671	2.43E-04	738	3.13E-05
404	9.60E-06	471	4.36E-04	538	6.46E-04	605	8.68E-04	672	2.36E-04	739	3.03E-05
405	1.01E-05	472	4.15E-04	539	6.49E-04	606	8.62E-04	673	2.30E-04	740	2.92E-05
406	1.12E-05	473	3.94E-04	540	6.53E-04	607	8.56E-04	674	2.23E-04	741	2.83E-05
407	1.27E-05	474	3.76E-04	541	6.57E-04	608	8.52E-04	675	2.16E-04	742	2.75E-05
408	1.38E-05	475	3.61E-04	542	6.63E-04	609	8.45E-04	676	2.10E-04	743	2.67E-05
409	1.53E-05	476	3.49E-04	543	6.69E-04	610	8.38E-04	677	2.04E-04	744	2.56E-05
410	1.69E-05	477	3.40E-04	544	6.74E-04	611	8.30E-04	678	1.99E-04	745	2.50E-05
411	1.85E-05	478	3.34E-04	545	6.78E-04	612	8.25E-04	679	1.93E-04	746	2.40E-05
412	2.15E-05	479	3.31E-04	546	6.83E-04	613	8.17E-04	680	1.88E-04	747	2.31E-05
413	2.40E-05	480	3.29E-04	547	6.87E-04	614	8.07E-04	681	1.83E-04	748	2.23E-05
414	2.73E-05	481	3.28E-04	548	6.93E-04	615	7.98E-04	682	1.77E-04	749	2.17E-05
415	3.08E-05	482	3.30E-04	549	6.96E-04	616	7.90E-04	683	1.72E-04	750	2.11E-05
416	3.36E-05	483	3.31E-04	550	7.02E-04	617	7.77E-04	684	1.67E-04	751	2.09E-05
417	3.83E-05	484	3.33E-04	551	7.06E-04	618	7.70E-04	685	1.62E-04	752	2.01E-05
418	4.25E-05	485	3.37E-04	552	7.10E-04	619	7.60E-04	686	1.57E-04	753	1.96E-05
419	4.71E-05	486	3.42E-04	553	7.15E-04	620	7.50E-04	687	1.52E-04	754	1.88E-05
420	5.21E-05	487	3.45E-04	554	7.20E-04	621	7.40E-04	688	1.48E-04	755	1.83E-05
421	5.75E-05	488	3.49E-04	555	7.27E-04	622	7.30E-04	689	1.42E-04	756	1.77E-05
422	6.35E-05	489	3.55E-04	556	7.32E-04	623	7.18E-04	690	1.38E-04	757	1.70E-05
423	7.03E-05	490	3.59E-04	557	7.39E-04	624	7.07E-04	691	1.35E-04	758	1.66E-05
424	7.72E-05	491	3.66E-04	558	7.45E-04	625	6.98E-04	692	1.31E-04	759	1.60E-05
425	8.52E-05	492	3.72E-04	559	7.50E-04	626	6.86E-04	693	1.27E-04	760	1.56E-05
426	9.54E-05	493	3.79E-04	560	7.58E-04	627	6.74E-04	694	1.24E-04	761	1.54E-05
427	1.05E-04	494	3.88E-04	561	7.62E-04	628	6.64E-04	695	1.19E-04	762	1.48E-05
428	1.17E-04	495	3.95E-04	562	7.68E-04	629	6.52E-04	696	1.16E-04	763	1.45E-05
429	1.30E-04	496	4.06E-04	563	7.74E-04	630	6.41E-04	697	1.13E-04	764	1.39E-05
430	1.43E-04	497	4.15E-04	564	7.80E-04	631	6.30E-04	698	1.09E-04	765	1.37E-05
431	1.57E-04	498	4.24E-04	565	7.85E-04	632	6.18E-04	699	1.06E-04	766	1.30E-05
432	1.72E-04	499	4.33E-04	566	7.93E-04	633	6.07E-04	700	1.03E-04	767	1.25E-05
433	1.89E-04	500	4.43E-04	567	7.97E-04	634	5.96E-04	701	9.95E-05	768	1.21E-05
434	2.07E-04	501	4.51E-04	568	8.04E-04	635	5.86E-04	702	9.67E-05	769	1.18E-05
435	2.26E-04	502	4.60E-04	569	8.09E-04	636	5.75E-04	703	9.34E-05	770	1.14E-05
436	2.48E-04	503	4.70E-04	570	8.18E-04	637	5.64E-04	704	9.05E-05	771	1.12E-05
437	2.74E-04	504	4.78E-04	571	8.22E-04	638	5.52E-04	705	8.78E-05	772	1.09E-05
438	3.03E-04	505	4.86E-04	572	8.30E-04	639	5.42E-04	706	8.46E-05	773	1.07E-05
439	3.34E-04	506	4.95E-04	573	8.37E-04	640	5.31E-04	707	8.25E-05	774	1.02E-05
440	3.70E-04	507	5.03E-04	574	8.42E-04	641	5.15E-04	708	7.99E-05	775	1.01E-05
441	4.10E-04	508	5.12E-04	575	8.48E-04	642	5.04E-04	709	7.75E-05	776	9.80E-06
442	4.54E-04	509	5.19E-04	576	8.54E-04	643	4.93E-04	710	7.51E-05	777	9.40E-06
443	5.06E-04	510	5.26E-04	577	8.58E-04	644	4.82E-04	711	7.28E-05	778	8.80E-06
444	5.64E-04	511	5.33E-04	578	8.65E-04	645	4.72E-04	712	7.05E-05	779	8.70E-06
445	6.27E-04	512	5.39E-04	579	8.67E-04	646	4.61E-04	713	6.83E-05	780	8.70E-06
446	6.93E-04	513	5.45E-04	580	8.72E-04	647	4.51E-04	714	6.61E-05	N/A	0.00E+00

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

ANSI/IES TM-30-24 Color Rendition Report

Source:	STW8A2PD-H4	Make:	LED One Corporation
Date:	2026/1/23	Model:	HNRAY4B-LOC-4FTHLHB-MW310W3CCT
Notes:	N/A	Other	N/A



TM-30 Advanced Calculator Version 2.04 Created 2026/1/23

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	3.80E-06	447	7.32E-04	514	4.41E-04	581	5.86E-04	648	2.75E-04	715	4.29E-05
381	3.80E-06	448	8.04E-04	515	4.46E-04	582	5.85E-04	649	2.69E-04	716	4.16E-05
382	4.20E-06	449	8.65E-04	516	4.52E-04	583	5.84E-04	650	2.64E-04	717	4.04E-05
383	3.50E-06	450	9.21E-04	517	4.56E-04	584	5.85E-04	651	2.58E-04	718	3.93E-05
384	3.30E-06	451	9.64E-04	518	4.61E-04	585	5.85E-04	652	2.52E-04	719	3.82E-05
385	3.30E-06	452	9.91E-04	519	4.66E-04	586	5.85E-04	653	2.46E-04	720	3.70E-05
386	3.40E-06	453	1.00E-03	520	4.70E-04	587	5.83E-04	654	2.40E-04	721	3.59E-05
387	2.80E-06	454	9.87E-04	521	4.74E-04	588	5.83E-04	655	2.35E-04	722	3.50E-05
388	4.10E-06	455	9.56E-04	522	4.76E-04	589	5.82E-04	656	2.29E-04	723	3.38E-05
389	3.10E-06	456	9.09E-04	523	4.81E-04	590	5.81E-04	657	2.24E-04	724	3.29E-05
390	2.70E-06	457	8.51E-04	524	4.84E-04	591	5.81E-04	658	2.19E-04	725	3.18E-05
391	3.70E-06	458	7.90E-04	525	4.85E-04	592	5.78E-04	659	2.15E-04	726	3.09E-05
392	4.00E-06	459	7.32E-04	526	4.90E-04	593	5.76E-04	660	2.10E-04	727	2.99E-05
393	3.90E-06	460	6.79E-04	527	4.91E-04	594	5.72E-04	661	2.05E-04	728	2.90E-05
394	3.90E-06	461	6.34E-04	528	4.95E-04	595	5.67E-04	662	1.99E-04	729	2.79E-05
395	3.80E-06	462	5.98E-04	529	4.97E-04	596	5.66E-04	663	1.94E-04	730	2.76E-05
396	4.20E-06	463	5.69E-04	530	4.98E-04	597	5.64E-04	664	1.89E-04	731	2.65E-05
397	4.80E-06	464	5.42E-04	531	5.01E-04	598	5.61E-04	665	1.84E-04	732	2.57E-05
398	5.10E-06	465	5.21E-04	532	5.03E-04	599	5.59E-04	666	1.79E-04	733	2.50E-05
399	5.60E-06	466	5.00E-04	533	5.04E-04	600	5.56E-04	667	1.75E-04	734	2.42E-05
400	5.70E-06	467	4.80E-04	534	5.07E-04	601	5.53E-04	668	1.70E-04	735	2.37E-05
401	6.10E-06	468	4.59E-04	535	5.08E-04	602	5.50E-04	669	1.65E-04	736	2.27E-05
402	6.40E-06	469	4.38E-04	536	5.10E-04	603	5.48E-04	670	1.61E-04	737	2.22E-05
403	7.30E-06	470	4.15E-04	537	5.11E-04	604	5.44E-04	671	1.57E-04	738	2.13E-05
404	7.70E-06	471	3.77E-04	538	5.12E-04	605	5.40E-04	672	1.53E-04	739	2.09E-05
405	8.60E-06	472	3.55E-04	539	5.14E-04	606	5.36E-04	673	1.48E-04	740	2.02E-05
406	9.40E-06	473	3.33E-04	540	5.15E-04	607	5.32E-04	674	1.44E-04	741	1.95E-05
407	1.04E-05	474	3.13E-04	541	5.18E-04	608	5.28E-04	675	1.40E-04	742	1.90E-05
408	1.13E-05	475	2.97E-04	542	5.21E-04	609	5.23E-04	676	1.36E-04	743	1.84E-05
409	1.26E-05	476	2.81E-04	543	5.23E-04	610	5.20E-04	677	1.33E-04	744	1.77E-05
410	1.45E-05	477	2.69E-04	544	5.25E-04	611	5.14E-04	678	1.29E-04	745	1.71E-05
411	1.60E-05	478	2.60E-04	545	5.28E-04	612	5.09E-04	679	1.25E-04	746	1.68E-05
412	1.83E-05	479	2.51E-04	546	5.29E-04	613	5.04E-04	680	1.22E-04	747	1.60E-05
413	2.01E-05	480	2.46E-04	547	5.31E-04	614	4.99E-04	681	1.19E-04	748	1.59E-05
414	2.27E-05	481	2.43E-04	548	5.32E-04	615	4.93E-04	682	1.15E-04	749	1.53E-05
415	2.52E-05	482	2.43E-04	549	5.34E-04	616	4.87E-04	683	1.12E-04	750	1.47E-05
416	2.86E-05	483	2.42E-04	550	5.35E-04	617	4.81E-04	684	1.09E-04	751	1.45E-05
417	3.14E-05	484	2.43E-04	551	5.36E-04	618	4.74E-04	685	1.06E-04	752	1.41E-05
418	3.46E-05	485	2.44E-04	552	5.37E-04	619	4.67E-04	686	1.03E-04	753	1.35E-05
419	3.85E-05	486	2.46E-04	553	5.40E-04	620	4.61E-04	687	9.98E-05	754	1.32E-05
420	4.29E-05	487	2.49E-04	554	5.42E-04	621	4.54E-04	688	9.65E-05	755	1.28E-05
421	4.68E-05	488	2.52E-04	555	5.44E-04	622	4.49E-04	689	9.39E-05	756	1.23E-05
422	5.22E-05	489	2.56E-04	556	5.47E-04	623	4.41E-04	690	9.16E-05	757	1.19E-05
423	5.84E-05	490	2.59E-04	557	5.49E-04	624	4.34E-04	691	8.83E-05	758	1.17E-05
424	6.43E-05	491	2.63E-04	558	5.52E-04	625	4.28E-04	692	8.60E-05	759	1.16E-05
425	7.13E-05	492	2.68E-04	559	5.54E-04	626	4.21E-04	693	8.33E-05	760	1.10E-05
426	7.89E-05	493	2.76E-04	560	5.57E-04	627	4.15E-04	694	8.12E-05	761	1.07E-05
427	8.93E-05	494	2.82E-04	561	5.58E-04	628	4.08E-04	695	7.87E-05	762	1.04E-05
428	9.99E-05	495	2.90E-04	562	5.60E-04	629	4.01E-04	696	7.68E-05	763	1.03E-05
429	1.13E-04	496	2.98E-04	563	5.62E-04	630	3.94E-04	697	7.45E-05	764	1.00E-05
430	1.26E-04	497	3.06E-04	564	5.64E-04	631	3.88E-04	698	7.19E-05	765	9.60E-06
431	1.39E-04	498	3.15E-04	565	5.66E-04	632	3.80E-04	699	7.02E-05	766	9.50E-06
432	1.53E-04	499	3.24E-04	566	5.68E-04	633	3.74E-04	700	6.80E-05	767	9.20E-06
433	1.71E-04	500	3.33E-04	567	5.68E-04	634	3.66E-04	701	6.58E-05	768	8.90E-06
434	1.88E-04	501	3.41E-04	568	5.72E-04	635	3.60E-04	702	6.37E-05	769	8.40E-06
435	2.08E-04	502	3.50E-04	569	5.73E-04	636	3.53E-04	703	6.26E-05	770	8.40E-06
436	2.33E-04	503	3.60E-04	570	5.75E-04	637	3.47E-04	704	5.99E-05	771	8.10E-06
437	2.58E-04	504	3.69E-04	571	5.77E-04	638	3.41E-04	705	5.82E-05	772	7.90E-06
438	2.88E-04	505	3.78E-04	572	5.78E-04	639	3.34E-04	706	5.62E-05	773	7.70E-06
439	3.20E-04	506	3.86E-04	573	5.81E-04	640	3.28E-04	707	5.48E-05	774	7.50E-06
440	3.55E-04	507	3.94E-04	574	5.81E-04	641	3.19E-04	708	5.33E-05	775	7.10E-06
441	3.97E-04	508	4.02E-04	575	5.83E-04	642	3.12E-04	709	5.16E-05	776	7.00E-06
442	4.40E-04	509	4.10E-04	576	5.84E-04	643	3.05E-04	710	5.00E-05	777	6.90E-06
443	4.90E-04	510	4.17E-04	577	5.85E-04	644	3.00E-04	711	4.84E-05	778	6.50E-06
444	5.45E-04	511	4.24E-04	578	5.85E-04	645	2.93E-04	712	4.72E-05	779	6.40E-06
445	6.03E-04	512	4.30E-04	579	5.85E-04	646	2.87E-04	713	4.59E-05	780	6.40E-06
446	6.68E-04	513	4.36E-04	580	5.84E-04	647	2.81E-04	714	4.43E-05	N/A	0.00E+00

Goniophotometer Test Results (CCT Setting=3500K):

Test Condition:

Test Ambient (°C)	Test Humidity (%)	Orientation	Stabilization Time (minute)	Test Time (minute)
24.9	42.0	Face Down	90	25

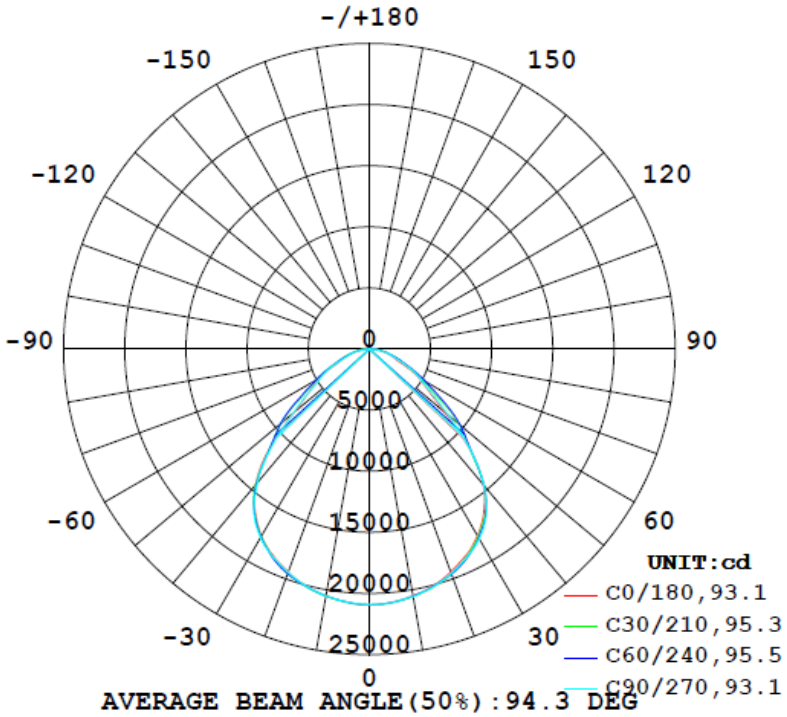
Electrical Data:

Voltage (V)	Frequency (Hz)	Current (A)	Wattage (W)	Power Factor
120.0	60	2.5468	305.28	0.9989

Goniophotometer Data:

Parameter	Results
Total Luminous (lm)	47503.1
Luminous Efficacy (lm/W)	155.61
Zonal Lumens Distribution (20-50°)	58.5%
Beam Angle (°)	94.3

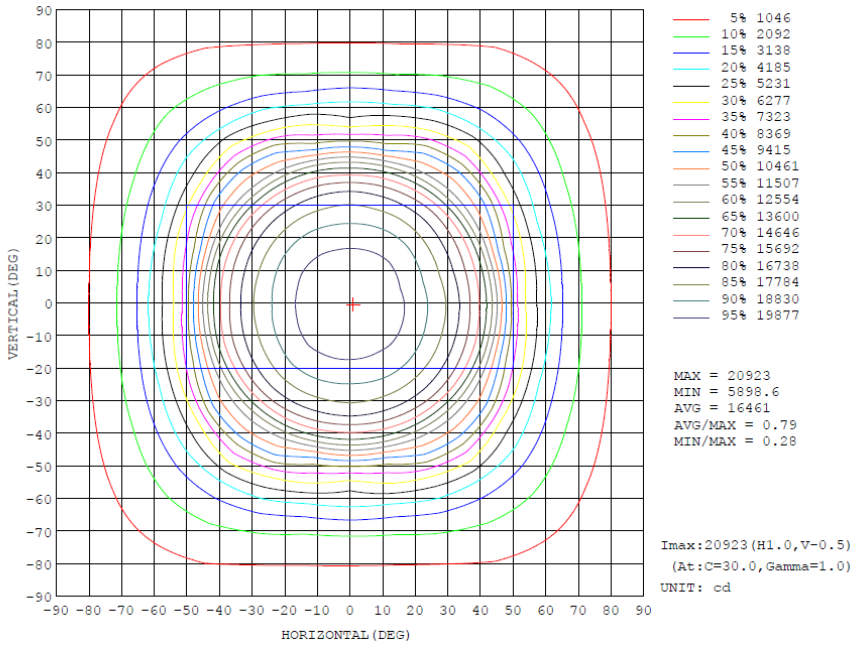
Luminous Intensity Distribution Diagram:



Zonal Flux Diagram:

γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	Φ zone	Φ total	%lum,lamp
10	2050	2054	2056	2056	2049	2051	2050	2048	0- 10	1976	1976	4.16,4.16
20	1942	1962	1954	1969	1941	1959	1945	1956	10- 20	5675	7651	16.1,16.1
30	1767	1781	1793	1791	1769	1772	1782	1765	20- 30	8638	16289	34.3,34.3
40	1450	1450	1454	1454	1448	1433	1427	1420	30- 40	10215	26504	55.8,55.8
50	807.6	985.8	846.5	993.7	806.2	968.4	816.5	958.7	40- 50	8946	35451	74.6,74.6
60	461.0	550.7	471.6	565.7	465.2	527.4	450.6	528.4	50- 60	6062	41512	87.4,87.4
70	219.2	269.2	235.1	273.2	222.9	257.0	220.4	258.5	60- 70	3522	45034	94.8,94.8
80	104.3	133.7	112.6	138.4	104.8	123.1	102.0	126.2	70- 80	1848	46883	98.7,98.7
90	0	0	0	0	0	0	0	0	80- 90	620.5	47503	100,100
100	0	0	0	0	0	0	0	0	90-100	0	47503	100,100
110	0	0	0	0	0	0	0	0	100-110	0	47503	100,100
120	0	0	0	0	0	0	0	0	110-120	0	47503	100,100
130	0	0	0	0	0	0	0	0	120-130	0	47503	100,100
140	0	0	0	0	0	0	0	0	130-140	0	47503	100,100
150	0	0	0	0	0	0	0	0	140-150	0	47503	100,100
160	0	0	0	0	0	0	0	0	150-160	0	47503	100,100
170	0	0	0	0	0	0	0	0	160-170	0	47503	100,100
180	0	0	0	0	0	0	0	0	170-180	0	47503	100,100
DEG	LUMINOUS INTENSITY:×10cd									UNIT:lm		

Isocandela Diagram:



Luminous Distribution Intensity Data:

Table--1 UNIT: ×10cd

γ (DEG) \ C (DEG)	0	15	30	45	60	75	90	105	120	135	150	165	180	195	210	225	240	255	270
0	2092	2091	2093	2092	2092	2090	2091	2091	2090	2090	2090	2090	2092	2091	2093	2092	2092	2090	2091
5	2079	2081	2083	2081	2081	2081	2082	2082	2082	2081	2081	2080	2078	2079	2080	2079	2079	2079	2077
10	2050	2052	2055	2054	2053	2052	2056	2056	2056	2056	2055	2052	2049	2049	2052	2051	2050	2048	2050
15	2007	2009	2015	2012	2012	2014	2014	2015	2014	2016	2015	2008	2005	2006	2012	2010	2008	2007	2007
20	1942	1945	1959	1962	1960	1954	1954	1958	1965	1969	1958	1950	1941	1947	1956	1959	1956	1950	1945
25	1865	1868	1878	1885	1887	1883	1881	1885	1892	1895	1881	1871	1865	1867	1875	1879	1879	1873	1873
30	1767	1768	1775	1781	1786	1788	1793	1791	1793	1791	1779	1770	1769	1764	1768	1772	1774	1775	1782
35	1632	1639	1648	1654	1657	1661	1666	1661	1664	1663	1651	1642	1630	1634	1638	1641	1641	1643	1647
40	1450	1464	1459	1450	1457	1459	1454	1459	1461	1454	1461	1471	1448	1460	1450	1433	1437	1440	1427
45	1163	1153	1166	1176	1177	1166	1169	1161	1179	1181	1174	1160	1162	1147	1158	1153	1155	1138	1133
50	808	844	958	986	969	860	847	860	975	994	974	863	806	836	946	968	947	830	816
55	586	643	681	753	728	671	608	671	729	762	699	651	594	649	672	730	699	648	581
60	461	455	496	551	529	502	472	495	535	566	514	472	465	456	495	527	503	476	451
65	318	331	364	368	376	349	359	349	377	376	369	343	319	334	357	350	356	327	340
70	219	234	260	269	266	238	235	235	270	273	264	236	223	233	252	257	248	224	220
75	166	165	184	192	178	169	169	170	180	198	191	172	167	166	179	180	165	158	158
80	104	108	124	134	121	113	113	114	125	138	129	113	105	107	119	123	111	104	102
85	51.5	53.6	61.9	70.8	63.2	57.7	57.1	59.3	67.0	75.1	66.9	57.3	51.5	51.6	57.0	62.0	54.2	48.4	46.7
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: ×10cd

γ (DEG) \ C (DEG)	285	300	315	330	345
0	2091	2090	2090	2090	2090
5	2078	2078	2076	2075	2075
10	2049	2048	2048	2046	2043
15	2005	2007	2008	2004	1999
20	1948	1955	1956	1948	1934
25	1874	1877	1872	1860	1852
30	1771	1771	1765	1755	1746
35	1640	1637	1636	1622	1616
40	1434	1426	1420	1427	1435
45	1122	1144	1142	1128	1112
50	825	942	959	921	807
55	640	697	722	653	622
60	468	512	528	485	438
65	334	356	355	349	322
70	221	250	258	250	224
75	158	166	185	178	160
80	103	113	126	115	102
85	48.2	54.3	60.9	53.3	47.9
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:

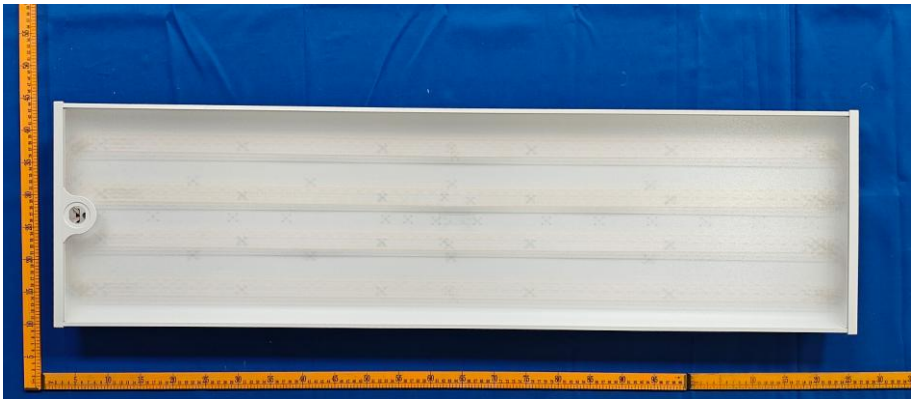
Electrical Measurement:

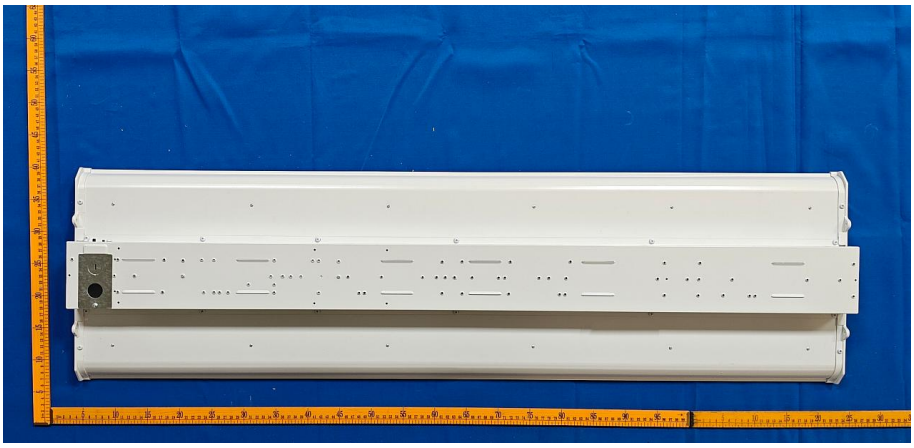
CCT Setting	Voltage (V)	Frequency (Hz)	Current (A)	Wattage (W)	Power Factor	iTHD(%)
3500K	120.0	60	2.5468	305.28	0.9989	3.55
	277.0	60	1.0883	296.40	0.9832	6.12
4000K	120.0	60	2.4555	294.60	0.9998	3.67
	277.0	60	1.0529	286.40	0.9820	6.63
5000K	120.0	60	2.5526	306.00	0.9990	3.72
	277.0	60	1.0894	296.70	0.9832	6.40

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	3485	305.28	47503.1	155.61	Set Switch 0% to 3500K
4000K	4112	294.60	50988.0	173.08	Set Switch 50% to 4000K
5000K	5125	306.00	49126.0	160.54	Set Switch 100% to 5000K
Lowest Efficacy	155.61 lm/W (@3500K)				
Maximum Power	306.00 W				

Photo of Sample:





Equipment List:

Equipment ID	Equipment Name	Last Cal.	Due Cal.
NTC-F01-001	Goniophotometer System	2025-11-06	2026-11-05
NTC-F01-006	2.0 meter Integrating Sphere	2025-11-06	2026-11-05
NTC-F01-012	Standard Lamp	2025-10-27	2026-10-26
NTC-F01-013	Standard Lamp	2025-10-27	2026-10-26
NTC-F01-031	Digital Power Meter	2025-08-04	2026-08-03
NTC-F01-020	Temperature & Humidity Meter	2025-10-23	2026-10-22

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