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LM-79-19 Test Report

For

LEDVANCE LLC

(Brand Name:  LEDVANCE)

200 Ballardvale Street, Wilmington, MA 01887, U.S.A

Model name(s):

LNSLOT1A34UNHD8SC148CWH

Report Type: Testing and Report According to IES LM-79-2008

Type of Luminaire: LED Linear Light

Report Date: 2022-07-14

Ningbo TengLi Testing Co., Ltd

Prepared By: 2nd floor, Block B, Ningbo Testing and Certification Base,
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Engineer: Nick Song

Review By:

Garman Mo

Manager: Garman Mo

Note: 1. The results contained in this report pertain only to the tested samples

2. This report does not imply product certification, approval, or endorsement by A2LA, or any agency of the Federal Government.

Report No.: JAE220201-D

Report Format Number STD/QP019-409-A/0-NB

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1.1 Product Information:

Model Number	LNSLOT1A34UNHD8SC148CWH	
Remark	N/A	
Representative (Tested) Model	LNSLOT1A34UNHD8SC148CWH(3000K) LNSLOT1A34UNHD8SC148CWH(3500K) LNSLOT1A34UNHD8SC148CWH(4000K)	
Model Difference	N/A	
SKU (if available)	N/A	
Type of Luminaire (for integral lamps, list base type and lamp type)	LED Linear Light	
LED Manufacturer	Bridgelux, Inc.	
LED Model	BXEN-XXX-11L-37A-00-0-0	
Dimming	Dimmable	
Integral Controls	N/A	
Sample Number	JAE220201-D1	
Date of Receipt	Jul. 11. 2021	
Luminaire Aperture (for downlights)	--	in.
Luminaire Length	--	mm
Luminaires Width	--	mm
Number of Units (modular products)	N/A	s

1.2 Rated Values:

Rated Voltage / Frequency	120-347Vac, 50/60Hz
Nominal Power	34W
Rated Initial Lamp Lumen	3400lm
Declared CCT	3000K, 3500K, 4000K

1.3 Test Specifications:

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. Electrical Parameters
Reference Standard	<ol style="list-style-type: none"> 1. IES LM-79-2019 Electrical and Photometric Measurements of Solid-State Lighting Products 2. ANSI C78.377-2008 Specifications for the Chromaticity of Solid State Lighting Products 3. CIE 13.3-1995 Method of Measuring and Specifying Colour Rendering Properties of Light Sources 4. CIE 15-2004 Technical Report Colorimetry 5. IESNA LM-16-93 Practical Guide to Colorimetry of Light Source

1.4 Test Methods

1) Photometric and Light Distribution Measurement – Goniophotometer Method:

Photometric parameters were measured using the goniophotometer and software. The ambient temperature shall be maintained at $25^{\circ}\text{C} \pm 1^{\circ}\text{C}$, 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 120 or rated Volts AC, 60Hz. It was stabilized before measurement was made. Luminous flux, luminaire efficacy, zonal lumen were calculated from the software taken at 1° vertical intervals and 22.5° horizontal intervals.

2) Chromaticity Measurement – Sphere-Spectroradiometer Method:

Chromaticity parameters were measured using an integrating sphere, a spectroradiometer and software. The ambient temperature condition inside the sphere was maintained at $25^{\circ}\text{C} \pm 1^{\circ}\text{C}$. 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 120 or rated Volts AC, 60Hz. It was stabilized before measurement was made. Chromaticity coordinates, correlated color temperature and color rendering index were calculated from the spectral power distribution taken at 5 nm intervals over the range of 380 to 780 nm.

3) Electrical Measurements:

Electrical parameters were measured using power meters incorporated in goniophotometer or sphere-spectroradiometer system. The ambient temperature surrounding the sample was maintained at $25^{\circ}\text{C} \pm 1^{\circ}\text{C}$. The sample was operated at 120 or rated Volts AC, 60Hz. It was stabilized before measurement was made. Voltage, frequency, current, power, power factor and total harmonic distortion were measured by and read from the power meter.



2.1 Electrical, Photometric and Chromaticity Measurements

Test date	2022-07-13	Test Ambient:	25 ± 1 ° C
Test Orientation	As intended	Stabilization Time (min)	60
Model Number	LNSLOT1A34UNHD8SC148CWH (3000K)	Total Operating Time(min)	75

Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	THD %
JAE220201-D1	120.2	60.01	0.2774	32.88	0.9858	13.40
	347.1	60.01	0.1017	33.45	0.9477	14.10

Photometric Measurement – Goniophotometer Method(Tset Distance: 26.00m):

Parameter	Result	
Test Voltage (V)	120	347
Frequency (Hz)	60	60
Total Luminous (lm)	3585.9	3582.6
Luminous Efficacy (lm/W)	109.07	107.09
Beam Angle (°)	101.7	--
Center Beam Candle Power (cd)	1412	--



Zonal Lumen Tabulation

Zonal Lumen Summary		
Zone	Lumens	% Luminaire
0-30	1,062.2	29.6%
0-40	1,705.3	47.6%
0-60	2,900.5	80.9%
60-90	681.7	19%
70-100	272.7	7.6%
90-120	0.2	0%
0-90	3,582.2	99.9%
90-180	3.3	0.1%
0-180	3,585.5	100%

Lumens Per Zone					
Zone	Lumens	% Total	Zone	Lumens	% Total
0-10	133.1	3.7%	90-100	0.0	0%
10-20	375.6	10.5%	100-110	0.1	0%
20-30	553.6	15.4%	110-120	0.1	0%
30-40	643.1	17.9%	120-130	0.3	0%
40-50	639.7	17.8%	130-140	0.6	0%
50-60	555.5	15.5%	140-150	0.7	0%
60-70	409.0	11.4%	150-160	0.7	0%
70-80	222.4	6.2%	160-170	0.5	0%
80-90	50.3	1.4%	170-180	0.2	0%

Photometric Data

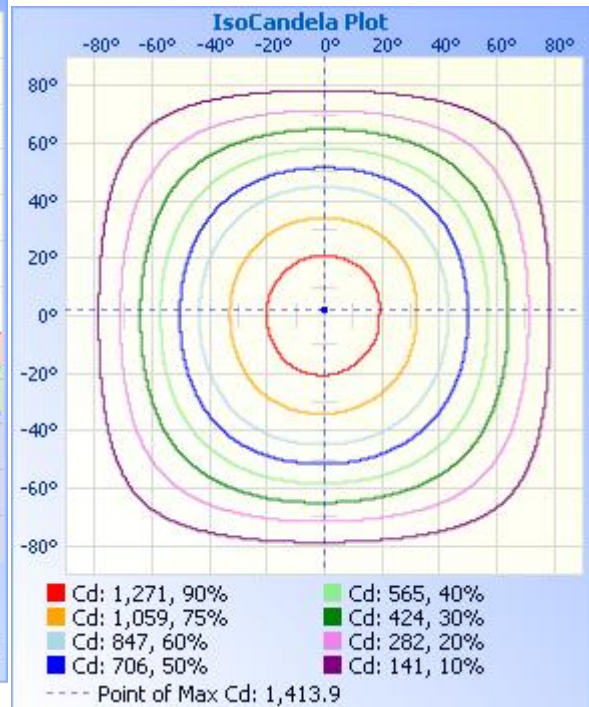
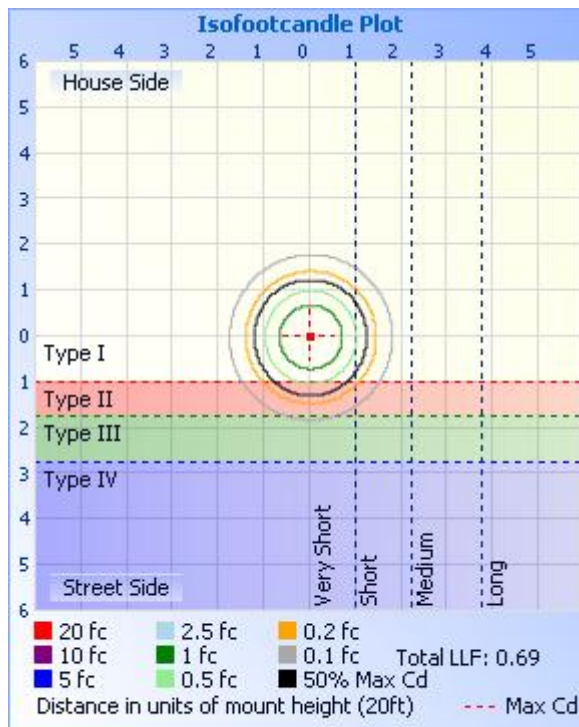
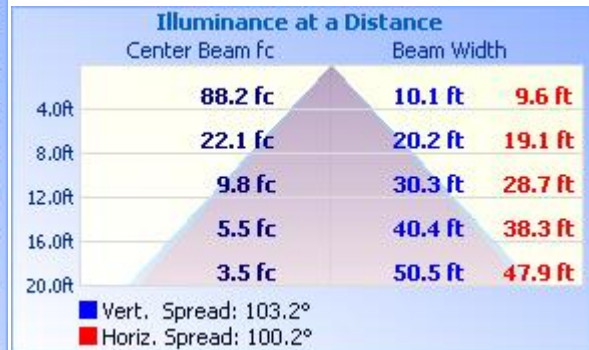
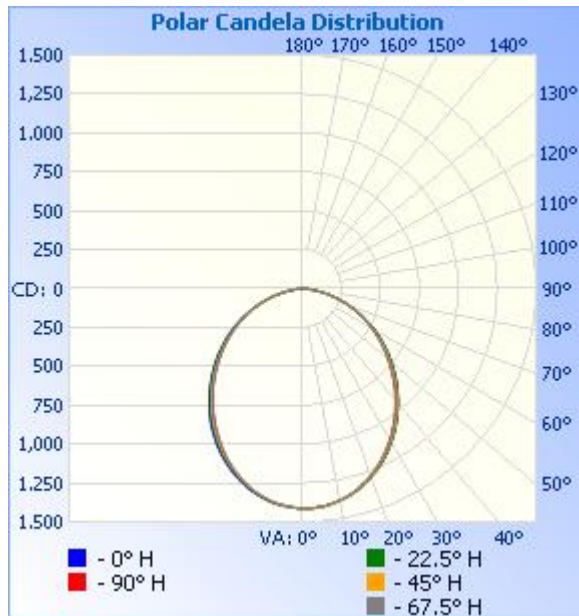




Table--1

UNIT: cd

C (DEG) □ (DEG)	0	22.5	45	67.5	90	112.5	135	157.5	180	202.5	225	247.5	270	292.5	315	337.5			
0	1412	1412	1412	1412	1412	1412	1412	1412	1412	1412	1412	1412	1412	1412	1412	1412			
5	1397	1403	1403	1406	1406	1408	1408	1407	1404	1402	1404	1403	1402	1399	1400	1398			
10	1368	1373	1382	1379	1382	1383	1383	1383	1380	1379	1375	1376	1375	1371	1367	1367			
15	1318	1328	1341	1341	1344	1344	1340	1340	1339	1335	1335	1334	1333	1325	1317	1320			
20	1253	1266	1282	1285	1286	1289	1285	1281	1278	1276	1278	1277	1274	1265	1255	1256			
25	1175	1191	1209	1215	1220	1222	1213	1209	1204	1202	1208	1213	1205	1194	1183	1179			
30	1087	1107	1126	1134	1140	1140	1134	1126	1119	1120	1126	1133	1123	1113	1099	1094			
35	993	1015	1033	1045	1048	1050	1043	1033	1027	1026	1040	1041	1033	1021	1008	1001			
40	898	916	935	948	955	955	945	936	928	929	941	942	933	924	911	904			
45	797	815	833	846	853	853	842	833	825	827	837	841	832	825	810	802			
50	696	711	728	744	748	748	736	729	721	725	733	736	730	722	705	700			
55	597	608	622	639	643	641	630	623	617	621	627	631	625	618	602	597			
60	497	507	518	533	537	534	525	519	515	517	520	526	520	513	501	497			
65	397	403	414	427	430	427	422	417	413	413	415	419	413	407	399	396			
70	297	302	310	320	323	321	319	314	314	313	310	314	308	303	300	297			
75	199	204	209	215	218	217	217	215	215	215	210	210	205	203	201	202			
80	109	114	116	117	119	120	121	123	124	122	118	114	111	109	110	111			
85	39.7	41.0	40.0	38.4	38.7	40.5	43.8	46.3	47.5	44.9	40.3	35.1	31.9	32.7	35.6	39.1			
90	0.24	0.04	0.12	0.00	0.03	0.00	0.08	0.02	0.00	0.06	0.02	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			
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	0.10	0.00	0.00	0.00			
105	0.00	0.00	0.00	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.80	0.00	0.00	0.00			
110	0.00	0.00	0.00	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.22	1.14	0.00	0.00	0.00			
115	0.00	0.00	0.00	0.10	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.31	1.20	0.00	0.00	0.00			
120	0.00	0.00	0.00	0.10	0.10	0.00	0.10	0.00	0.00	0.00	0.10	0.40	1.27	0.00	0.00	0.00			
125	0.00	0.00	0.00	1.29	0.99	0.64	0.10	0.20	0.00	0.00	0.20	0.64	1.36	0.29	0.00	0.00			
130	0.30	0.00	0.00	1.68	1.47	1.46	0.10	0.10	0.00	0.10	0.42	1.48	1.87	1.36	0.00	0.00			
135	0.30	0.00	0.00	1.91	1.52	1.61	0.10	0.10	0.00	0.30	0.67	2.08	2.56	2.34	0.39	0.10			
140	0.30	0.00	0.00	2.04	1.65	1.67	0.10	0.10	0.00	0.54	0.87	2.09	2.82	2.47	0.46	0.40			
145	0.30	0.00	0.39	2.17	1.87	1.72	0.10	0.10	0.40	0.76	1.25	2.11	2.75	2.51	0.78	0.60			
150	0.30	0.00	1.48	2.29	2.46	1.78	0.49	0.10	0.68	0.97	1.45	2.12	2.68	2.56	1.77	0.96			
155	0.33	0.20	1.68	2.32	2.46	1.84	1.28	0.20	0.77	1.04	1.51	2.14	2.37	2.60	2.26	1.16			
160	0.37	0.53	1.75	2.34	2.46	1.90	1.52	0.77	0.79	1.11	1.57	2.16	2.37	2.74	2.42	1.26			
165	0.40	1.10	1.86	2.37	2.66	1.96	1.65	1.19	0.88	1.18	1.56	2.17	2.56	3.27	2.52	1.29			
170	1.59	1.26	2.60	3.16	3.64	2.84	2.38	1.61	1.40	1.49	1.53	2.58	2.88	4.01	3.06	2.59			
175	1.59	1.43	2.91	3.32	4.40	3.04	2.95	1.67	1.79	1.59	1.50	2.85	3.22	4.50	3.13	2.94			
180	1.89	1.49	2.97	3.36	4.44	3.13	2.95	1.69	1.60	1.59	1.48	2.96	3.35	4.40	3.15	2.98			



2.2 Electrical, Photometric and Chromaticity Measurements

Test date	2022-07-13	Test Ambient:	25 ± 1 ° C
Test Orientation	As intended	Stabilization Time (min)	60
Model Number	LNSLOT1A34UNHD8SC148CWH (3000K)	Total Operating Time(min)	61

Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	THD %
JAE220201-D1	120.0	60	0.2819	33.15	0.9800	13.85
	347.0	60	0.1032	33.72	0.9419	14.55

Chromaticity Measurement - Sphere-Spectroradiometer

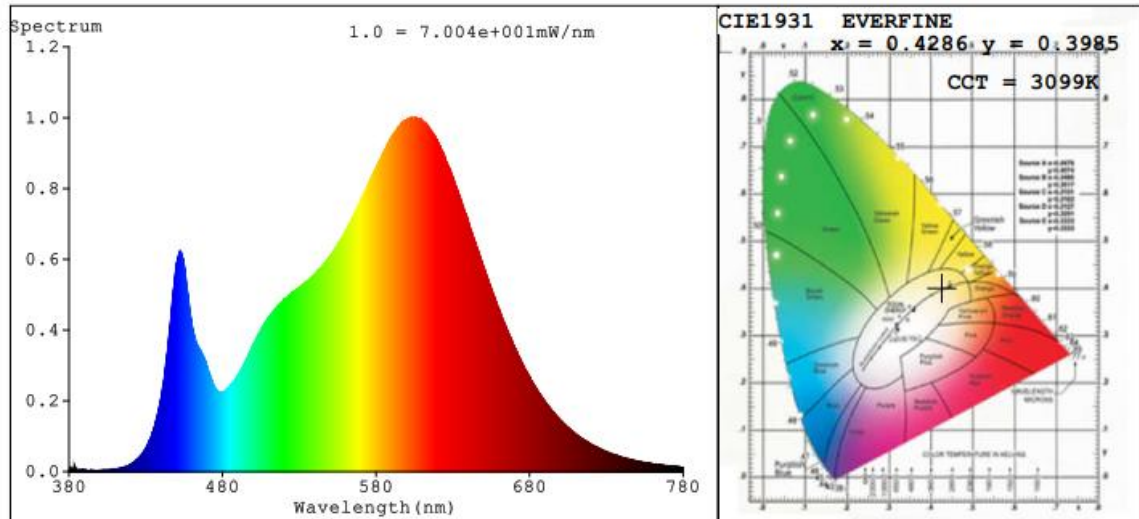
Method(Self-absorption:1.1315)(4π geometry):

Parameter	Result
Test Voltage (V)	120
Frequency (Hz)	60
CCT (K)	3099
Duv	-0.0010
Chromaticity (x, y)	x=0.4286 y=0.3985
Chromaticity (u', v')	u'=0.2476 v'=0.5179
Color Rendering Index (CRI)	84.6
R9	14
Rg	96
Rf	85
Rcs,h1	-11

Photometric Measurement –Sphere-Spectroradiometer Method:

Parameter	Result	
Test Voltage (V)	120	347
Frequency (Hz)	60	60
Total Luminous (lm)	3621	3616
Luminous Efficacy (lm/W)	109.23	107.24

Spectral Power Distribution & Chromaticity Diagram



R1 =84	R2 =93	R3 =95	R4 =83	R5 =84	R6 =92	R7 =83	
R8 =62	R9 =14	R10=85	R11=83	R12=75	R13=86	R14=98	R15=76



TM30

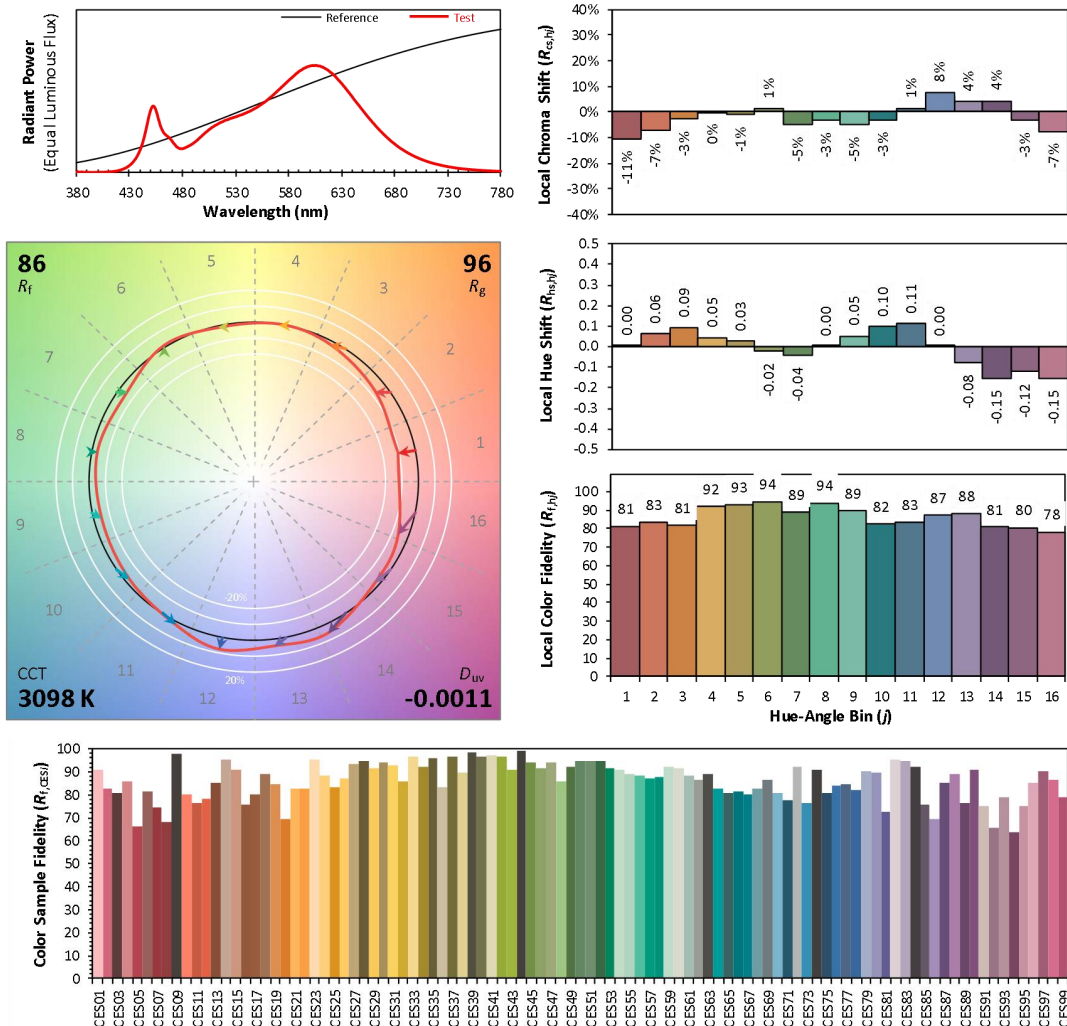
ANSI/IES TM-30-18 Color Rendition Report

Source: BXEN-XXX-11L-37A-00-0-0

Manufacturer: LEDVANCE LLC

Date: 2022-07-13

Model: LNSLOT1A34UNHD8SC148CWH(3000K)



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

x 0.4286
 y 0.3984
 u' 0.2477
 v' 0.5179

CIE 13.3-1995
(CRI)

R_a 85
 R_g 14

Colors are for visual orientation purposes only. Created with the ANSI/IES TM-30-18 Calculator Version 2.0



2.3 Electrical, Photometric and Chromaticity Measurements

Test date	2022-07-13	Test Ambient:	25 ± 1 ° C
Test Orientation	As intended	Stabilization Time (min)	60
Model Number	LNSLOT1A34UNHD8SC148CWH (3500K)	Total Operating Time(min)	61

Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	THD %
JAE220201-D1	120.0	60	0.2705	32.06	0.9875	13.20
	347.0	60	0.0990	32.62	0.9494	13.90

Chromaticity Measurement - Sphere-Spectroradiometer

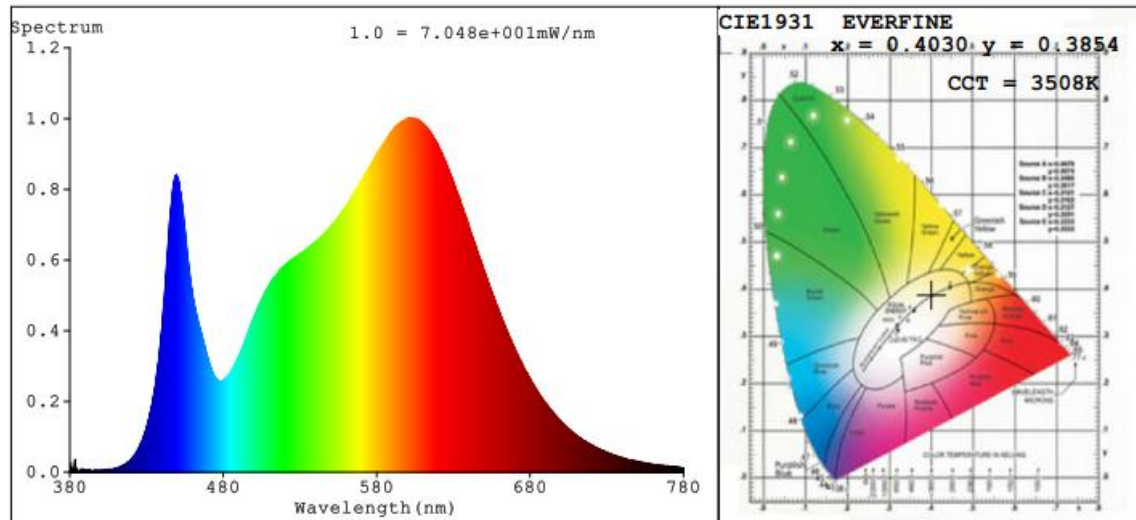
Method(Self-absorption:1.1319)(4π geometry):

Parameter	Result
Test Voltage (V)	120.0
Frequency (Hz)	60
CCT (K)	3508
Duv	-0.0018
Chromaticity (x, y)	x=0.4030 y=0.3854
Chromaticity (u', v')	u'=0.2364 v'=0.5087
Color Rendering Index (CRI)	86.2
R9	21
Rg	97
Rf	86
Rcs,h1	-10

Photometric Measurement – Sphere-Spectroradiometer Method:

Parameter	Result	
Test Voltage (V)	120	347
Frequency (Hz)	60	60
Total Luminous (lm)	3943	3939
Luminous Efficacy (lm/W)	122.99	120.75

Spectral Power Distribution & Chromaticity Diagram



R1 =85	R2 =93	R3 =97	R4 =86	R5 =86	R6 =90	R7 =86	
R8 =67	R9 =21	R10=83	R11=86	R12=73	R13=87	R14=99	R15=79



TM30

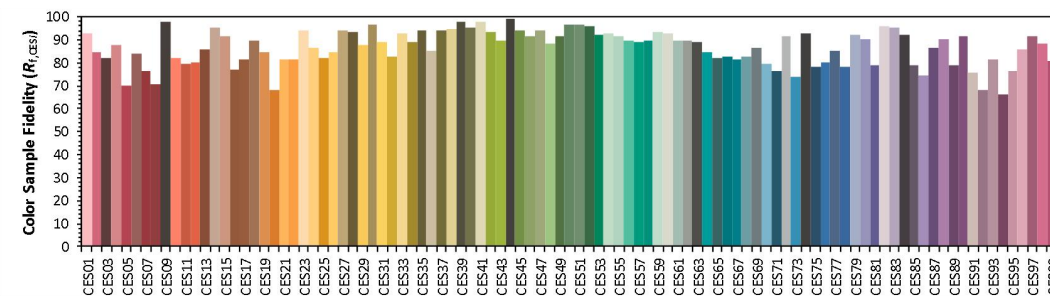
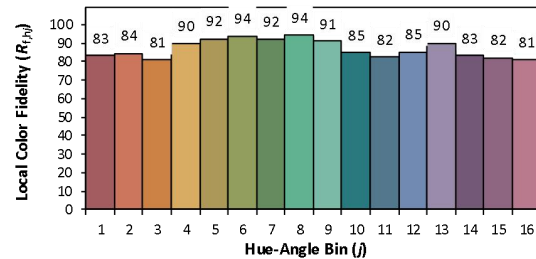
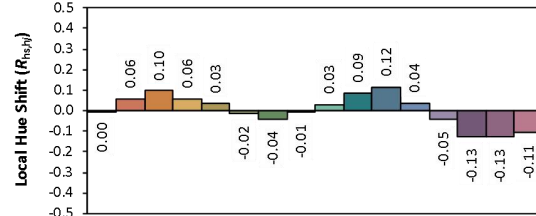
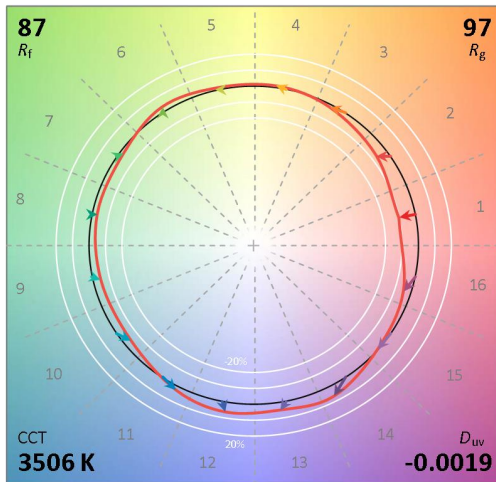
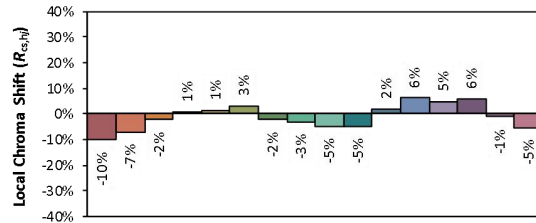
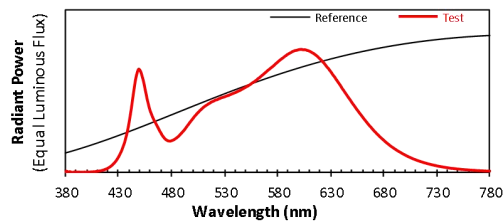
ANSI/IES TM-30-18 Color Rendition Report

Source: BXEN-XXX-11L-37A-00-0-0

Manufacturer: LEDVANCE LLC

Date: 2022-07-13

Model: LNSLOT1A34UNHD8SC148CWH (3500K)



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

x 0.4030
 y 0.3853
 u' 0.2364
 v' 0.5086

CIE 13.3-1995
(CRI)
 R_a 86
 R_9 21

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2.4 Electrical, Photometric and Chromaticity Measurements

Test date	2022-07-13	Test Ambient:	25 ± 1 ° C
Test Orientation	As intended	Stabilization Time (min)	60
Model Number	LNSLOT1A34UNHD8SC148CWH (4000K)	Total Operating Time(min)	61

Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	THD %
JAE220201-D1	120.0	60	0.2826	33.24	0.9802	13.83
	347.0	60	0.1035	33.82	0.9421	14.53

Chromaticity Measurement - Sphere-Spectroradiometer

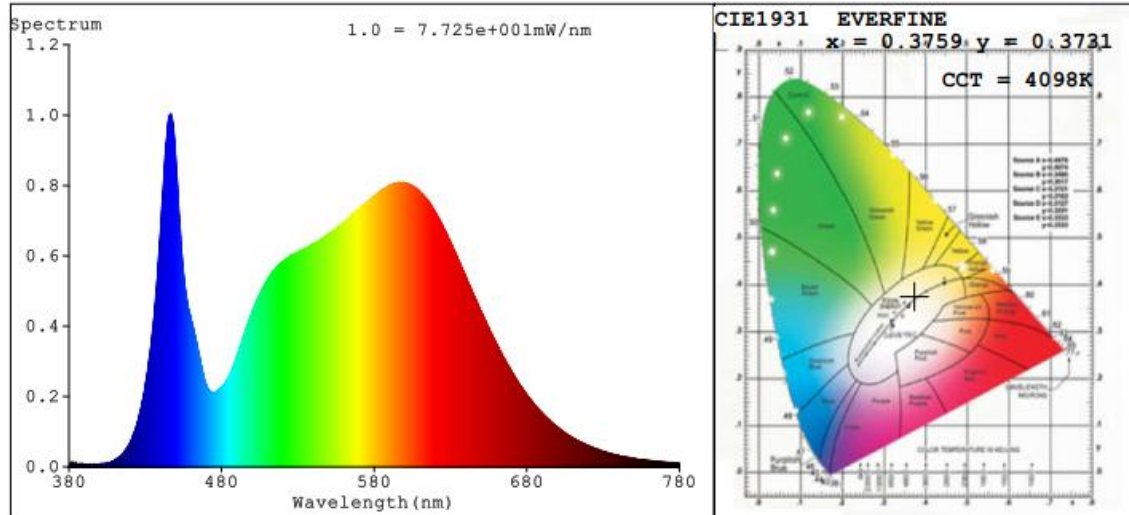
Method(Self-absorption:1.1312)(4π geometry):

Parameter	Result
Test Voltage (V)	120.0
Frequency (Hz)	60
CCT (K)	4098
Duv	-0.0004
Chromaticity (x, y)	x=0.3759 y=0.3731
Chromaticity (u', v')	u'=0.2236 v'=0.4993
Color Rendering Index (CRI)	85.0
R9	20
Rg	98
Rf	85
Rcs,h1	-11

Photometric Measurement – Sphere-Spectroradiometer Method:

Parameter	Result	
Test Voltage (V)	120	347
Frequency (Hz)	60	60
Total Luminous (lm)	3875	3871
Luminous Efficacy (lm/W)	116.58	114.46

Spectral Power Distribution & Chromaticity Diagram



R1 =84	R2 =89	R3 =93	R4 =86	R5 =85	R6 =86	R7 =88	
R8 =70	R9 =20	R10=74	R11=87	R12=69	R13=85	R14=96	R15=78



TM30

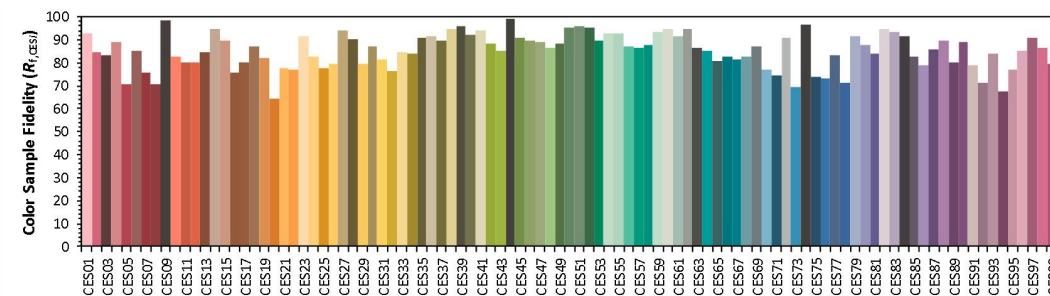
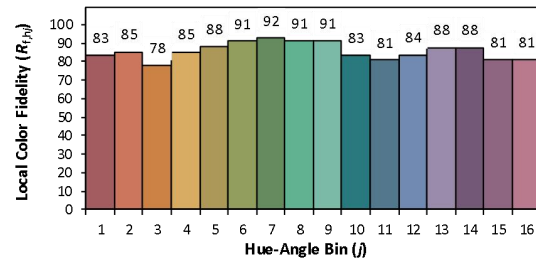
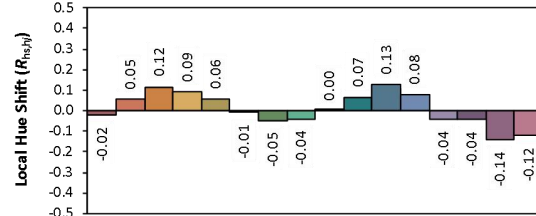
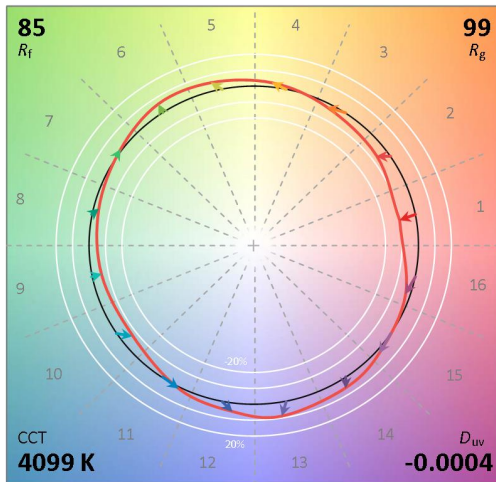
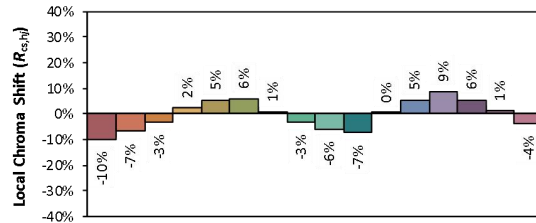
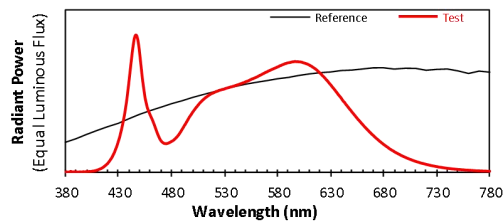
ANSI/IES TM-30-18 Color Rendition Report

Source: BXEN-XXX-11L-37A-00-0-0

Manufacturer: LEDVANCE LLC

Date: 2022-07-13

Model: LNSLOT1A34UNHD8SC148CWH(4000K)



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

x 0.3759
 y 0.3729
 u' 0.2236
 v' 0.4992

CIE 13.3-1995
(CRI)
 R_a 85
 R_g 20

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3. Test Equipment

Equipment ID	Equipment Name	Last Calibration Date	Next Calibration Date
ST-R-702	2 meter Integrating Sphere	Verified by D204 standard lamp	
ST-R-701	Spectral analysis system HAAS-1200	Verified by D204 standard lamp	
ST-R-703	Standard Lamp D204	2022-01-14	2023-01-13
ST-R-704	Power Meter for Integrating Sphere	2022-01-03	2023-01-02
ST-R-707	Temperature Probe for Integrating Sphere	2022-01-03	2023-01-02
ST-R-714	Goniophotometer system	Verified by D908S standard lamp	
ST-R-710	Standard Lamp D908S	2022-01-14	2023-01-13
ST-R-711	Power Meter for Goniophotometer	2022-01-03	2023-01-02
ST-R-709	Hygrothermograph for Goniophotometer	2022-01-03	2023-01-02
Uncertainty(K=2): Photometric Measurement (Sphere):3.40% Chromaticity Measurement(Sphere):44.8K Photometric Measurement(Goniophotometer):3.64%			

4. Product Photo



***** END OF REPORT *****