Ningbo TengLi Testing Co., Ltd

2nd floor, Block B, Ningbo Testing and Certification Base, No. 66
Qingyi Road, Ningbo National Hi-Tech Zone, Ningbo, Zhejiang
Tel: 86574-8783 6802
Fax: 86574-8783 5902

ACCREDITED
Certificate#4703.02

LM-79-08 Test Report

For

LEDVANCE LLC

(Brand Name: N/A)

200 Ballardvale St. Wilmington MA 01887, USA

Model name(s): LED8A15DIM950F13YTL

Report Type:	Testing and Report According to IES LM-79-2008
Type of Luminaire:	Lamps
Report Date:	2020-06-04
Prepared By:	Ningbo TengLi Testing Co., Ltd 2nd floor, Block B, Ningbo Testing and Certification Base, No. 66 Qingyi Road, Ningbo National Hi-Tech Zone, Ningbo, Zhejiang

Test & Report By:

Xeon Ren

Engineer: Xeon Ren

Review By:

Johnson Sun

Manager: Johnson Sun

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.

1.1 Product Information:		
Model Number	LED8A15DIM950F13YTL	
Remark	This is a multiple listed report, the Project Number of the original report is STD200465NB-AA	
Representative (Tested) Model	LED8A15DIM950F13YTL	
Model Difference	N/A	
SKU (if available)	N/A	
Type of Luminaire (for integral lamps, list base type and lamp type)	Lamps	
LED Manufacturer	N/A	
LED Model	N/A	
Dimming	N/A	
Sample Number	STD200465NB-AA1(5000K)	
Date of Receipt	May.24, 2020	
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	120Vac,60 Hz
Nominal Power	8W
Rated Initial Lamp Lumen	--
Declared CCT	5000K

1.3 Test Specifications:

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. Electrical Parameters
Reference Standard	1. IES LM-79-2008 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 6. IESNA TM-16-05 Technical Memorandum on Light Emitting Diode (LED) Sources and Systems
Reference Work Instruction	QD25

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 ℃ ±1 ℃, 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 ºC ±1 ºC. 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 ºC ±1 ºC. 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.

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2.1 Electrical, Photometric and Chromaticity Measurements

Test date	2020-05-25	**Test Ambient:**	25.2 ºC
Test Orientation	As intended	**Stabilization Time (min)**	45
Model Number	LED8A15DIM950F13YTL	**Total Operating Time(min)**	60

Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor
STD200465 NB-AA1	120.0	60	0.0746	7.141	0.7958

Chromaticity Measurement - Sphere-Spectroradiometer Method(Self-absorption:1.0009):

Parameter	Result
Test Voltage (V)	120.0
Frequency (Hz)	60
CCT (K)	5091
Duv	0.0017
Chromaticity (x, y)	x=0.3428 y=0.3532
Chromaticity (u', v')	u'=0.2093 v'=0.4851
Color Rendering Index (CRI)	92.7
R9	51

Special Color Rendering Indices			
R1	94	R9	51
R2	99	R10	98
R3	93	R11	94
R4	93	R12	96
R5	96	R13	97
R6	96	R14	96
R7	90	R15	89
R8	80	--	--

Photometric Measurement – Goniophotometer Method(Test distance: 1.877m):

Parameter	Result
Test Voltage (V)	120.0
Frequency (Hz)	60
Total Luminous (lm)	869.95
Luminous Efficacy (lm/W)	121.82
Beam Angle ( )	323.2
Center Beam Candle Power (cd)	42.2

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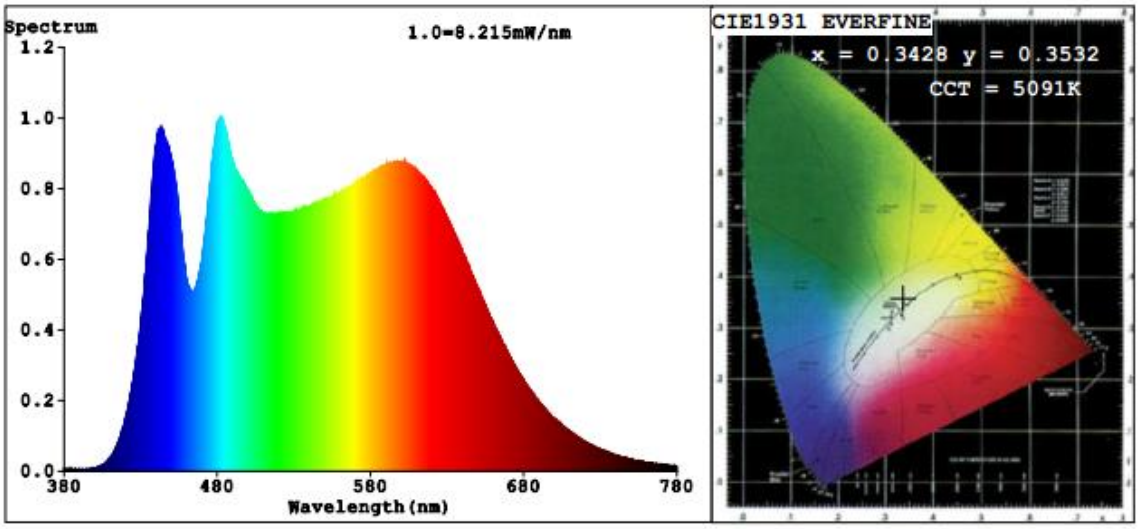
Spectral Power Distribution & Chromaticity Diagram

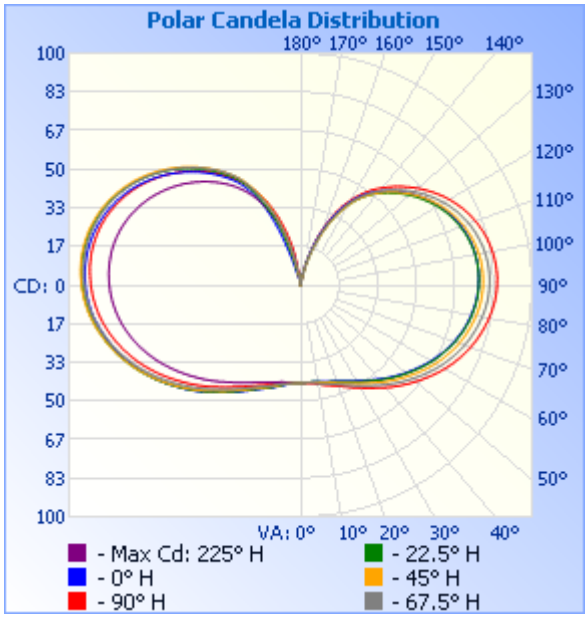


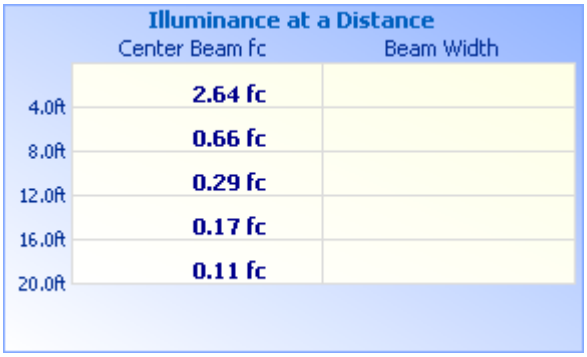
Zonal Lumen Tabulation

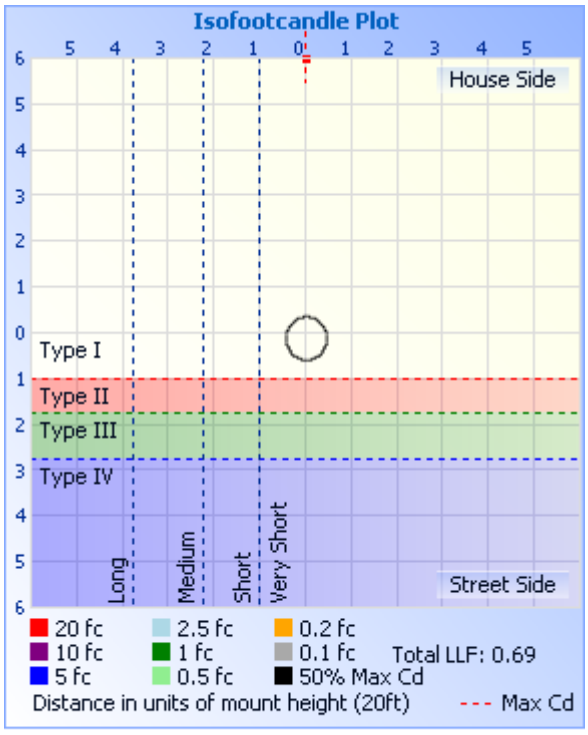
Zonal Lumen Summary		
Zone	Lumens	% Luminaire
0-30	39.0	4.5%
0-40	72.8	8.4%
0-60	181.2	20.8%
60-90	254.1	29.2%
70-100	273.7	31.5%
90-120	264.7	30.4%
0-90	435.3	50%
90-180	434.7	50%
0-180	870.0	100%

Lumens Per Zone					
Zone	Lumens	%Total	Zone	Lumens	% Total
0-10	4.1	0.5%	90-100	94.5	10.9%
10-20	12.6	1.5%	100-110	90.1	10.4%
20-30	22.3	2.6%	110-120	80.1	9.2%
30-40	33.8	3.9%	120-130	65.9	7.6%
40-50	47.1	5.4%	130-140	49.7	5.7%
50-60	61.2	7.0%	140-150	33.3	3.8%
60-70	74.9	8.6%	150-160	17.0	2%
70-80	86.1	9.9%	160-170	4.1	0.5%
80-90	93.1	10.7%	170-180	0.1	0%

Photometric Data







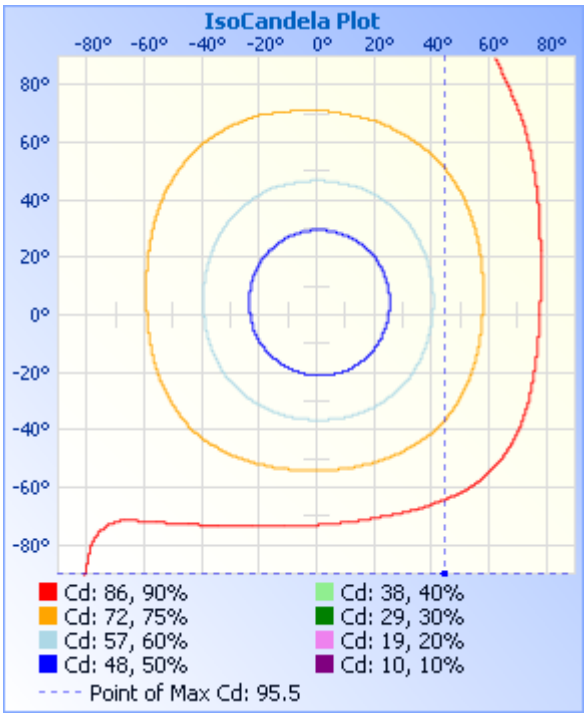


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Table--1 UNIT: cd

γ (DEG) \ C (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	42.2	42.2	42.2	42.2	42.2	42.2	42.2	42.2	42.2	42.2	42.2	42.2	42.2	42.2	42.2	42.2		
5	42.5	42.3	42.2	42.1	42.0	42.0	42.1	42.2	42.4	42.5	42.7	42.7	42.7	42.7	42.6	42.6		
10	42.9	42.6	42.4	42.2	42.2	42.3	42.6	43.0	43.3	43.6	43.8	43.8	43.8	43.7	43.4	43.2		
15	44.2	43.7	43.3	43.1	43.1	43.3	43.6	44.1	44.7	45.1	45.5	45.7	45.6	45.4	45.1	44.6		
20	45.8	45.1	44.5	44.2	44.1	44.3	44.9	45.6	46.3	46.9	47.3	47.5	47.5	47.2	46.9	46.4		
25	47.9	47.0	46.3	45.8	45.7	46.0	46.7	47.6	48.5	49.2	49.8	50.0	49.9	49.7	49.3	48.7		
30	50.5	49.4	48.6	47.9	47.7	48.1	48.9	50.0	51.1	52.0	52.7	53.0	53.0	52.7	52.3	51.5		
35	53.7	52.4	51.3	50.5	50.2	50.5	51.5	52.9	54.2	55.3	56.0	56.4	56.5	56.2	55.7	54.9		
40	57.3	55.7	54.3	53.3	52.9	53.3	54.5	56.1	57.6	58.9	59.7	60.2	60.3	60.0	59.6	58.6		
45	61.3	59.5	57.7	56.4	55.9	56.4	57.7	59.5	61.2	62.6	63.6	64.2	64.4	64.2	63.9	62.8		
50	65.3	63.3	61.2	59.6	59.0	59.3	60.9	62.8	64.8	66.4	67.5	68.1	68.5	68.5	68.2	67.0		
55	69.6	67.2	64.8	62.9	62.1	62.5	64.2	66.3	68.4	70.2	71.4	72.3	72.7	72.8	72.6	71.3		
60	73.8	71.1	68.4	66.1	65.2	65.6	67.4	69.7	72.0	73.9	75.3	76.2	76.9	77.1	77.0	75.8		
65	77.8	74.9	71.8	69.2	68.1	68.5	70.4	72.7	75.3	77.3	78.8	80.0	80.7	81.2	81.2	79.9		
70	81.4	78.4	75.0	72.0	70.7	71.1	73.0	75.4	78.2	80.3	82.0	83.3	84.2	85.0	85.0	83.8		
75	84.6	81.4	77.7	74.5	73.0	73.3	75.2	77.7	80.6	82.9	84.8	86.2	87.3	88.2	88.3	87.1		
80	87.3	83.8	80.0	76.5	74.8	75.1	76.9	79.6	82.6	85.1	87.0	88.7	89.9	91.0	91.2	89.9		
85	89.3	85.8	81.6	77.9	76.1	76.4	78.2	81.0	84.1	86.6	88.7	90.5	91.9	93.0	93.3	92.0		
90	90.7	87.0	82.7	78.9	76.8	77.0	78.8	81.6	84.9	87.5	89.6	91.6	93.0	94.4	94.8	93.5		
95	91.4	87.6	83.2	79.2	77.1	77.1	78.8	81.6	84.9	87.5	89.9	91.9	93.5	95.0	95.4	94.1		
100	91.3	87.5	83.0	79.0	76.7	76.5	78.2	80.9	84.1	86.8	89.2	91.4	93.1	94.8	95.3	94.1		
105	90.4	86.6	82.1	78.1	75.6	75.4	76.9	79.5	82.7	85.4	87.8	90.2	91.9	93.8	94.4	93.1		
110	88.7	84.9	80.5	76.5	74.0	73.6	75.0	77.4	80.5	83.2	85.8	88.1	89.9	92.0	92.5	91.3		
115	86.2	82.5	78.1	74.2	71.7	71.1	72.4	74.7	77.6	80.2	82.8	85.2	87.2	89.3	89.9	88.8		
120	83.0	79.3	75.1	71.3	68.8	68.1	69.2	71.3	74.1	76.6	79.2	81.6	83.6	85.7	86.4	85.5		
125	79.0	75.6	71.6	67.8	65.5	64.6	65.5	67.3	69.9	72.4	74.9	77.4	79.4	81.5	82.3	81.4		
130	74.5	71.3	67.5	64.0	61.6	60.6	61.4	62.9	65.2	67.6	70.1	72.4	74.5	76.6	77.4	76.7		
135	69.4	66.5	63.0	59.6	57.3	56.3	56.8	58.2	60.2	62.4	64.7	67.1	69.1	71.2	72.1	71.5		
140	63.9	61.2	58.1	54.9	52.8	51.7	52.0	53.0	54.8	56.7	59.0	61.2	63.3	65.3	66.3	65.9		
145	58.0	55.6	52.7	49.7	47.5	46.3	46.3	47.1	48.9	50.5	52.7	54.9	56.9	58.9	60.1	59.9		
150	51.5	49.3	46.4	43.2	40.7	39.2	39.0	40.0	41.8	43.3	45.5	47.8	49.5	51.7	53.2	53.0		
155	44.0	41.7	38.5	34.9	31.9	30.1	29.6	30.6	32.9	34.3	34.0	37.8	38.0	40.5	44.1	43.0		
160	34.6	32.1	28.8	25.2	22.1	19.9	19.3	20.0	22.4	23.3	18.4	11.4	18.6	27.8	32.1	31.7		
165	23.4	21.1	18.2	14.9	12.2	10.2	9.39	9.86	11.9	12.3	10.3	4.26	3.86	10.0	17.3	18.1		
170	10.6	8.13	5.89	4.65	3.03	2.11	1.43	1.60	2.88	3.02	4.07	1.94	0.97	4.31	3.13	4.40		
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		
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		

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-2000	Verified by D204 standard lamp	
ST-R-705	Standard Lamp	2020-02-06	2021-02-05
ST-R-704	Power Meter for Integrating Sphere	2020-01-05	2021-01-04
ST-R-714	Goniophotometer system	Verified by D908S standard lamp	
ST-R-710	Standard Lamp	2020-02-11	2021-02-10
ST-R-711	Power Meter for Goniophotometer	2020-01-05	2021-01-04
Uncertainty: Photometric Measurement (Sphere):1.74% Chromaticity Measurement(Sphere):14.3K Photometric Measurement(Goniophotometer):1.62%			

4. Product Photo

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