

LM-79-08 Test Report
For
RAB LIGHTING INC

(Brand Name: N/A)

170 Ludlow Ave, PO BOX 970, Northvale, NJ 07647-2305 USA

Model name(s):
DLS0109(DSKFA-6R159CCT120WS/PIR)

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

**Type of
Luminaire:** Downlights

Report Date: 2021-09-02

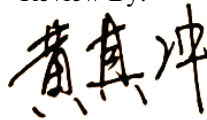
Prepared By:

Test & Report By:



Engineer: Sun Fangfang

Review By:



Manager: Huang Qichong

1.1 Rated Values:	
Rated Voltage / Frequency	120Vac, 60 Hz
Nominal Power	15.0W
Rated Initial Lamp Lumen	900 lm
Declared CCT	3000K/4000K/5000K

1.2 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-79-2008 Electrical and Photometric Measurements of Solid-State Lighting Products 2. ANSI C78.377-2015 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

1.3 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°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 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°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 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°C ±1°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.

2.1.1 Electrical, Photometric and Chromaticity Measurements

Test date	2021-09-02	Test Ambient:	25.3 °C
Test Orientation	As intended	Stabilization Time (min)	90
Model Number	DLS0109(DSKFA-6R159CCT120WS/PIR) 3000K		

Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor
202109020019	120.0	60	0.131	14.4	0.914

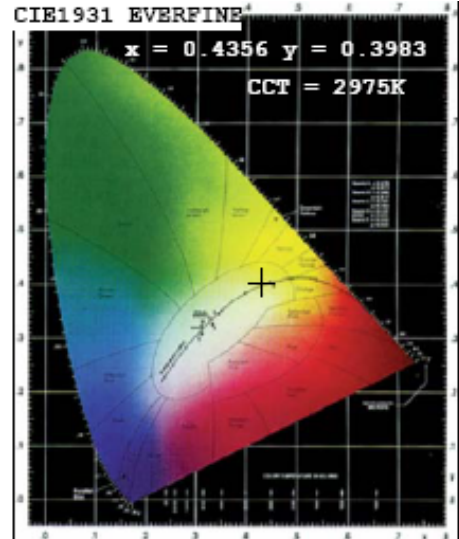
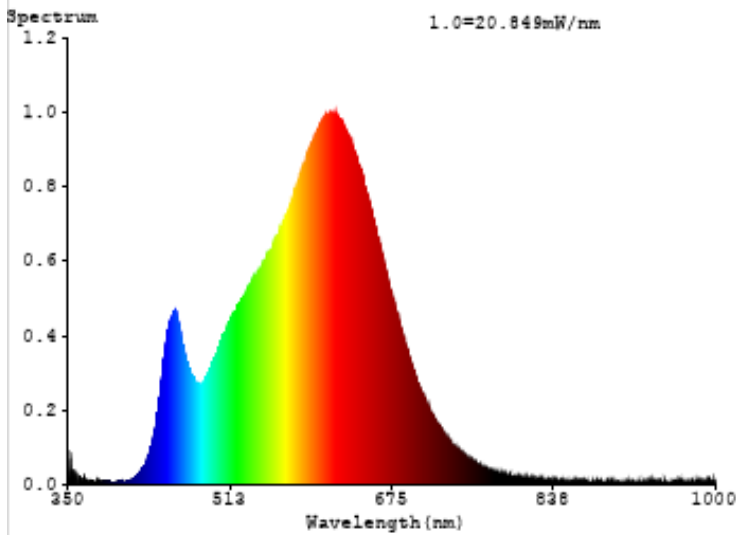
Chromaticity Measurement - Sphere-Spectroradiometer Method:

Parameter	Result	Special Color Rendering Indices			
Test Voltage (V)	120	R1	92	R9	51
Frequency (Hz)	60	R2	98	R10	94
CCT (K)	2975	R3	97	R11	92
Duv	-0.0021	R4	91	R12	84
Chromaticity (x, y)	x=0.4356 y=0.3983	R5	92	R13	94
Chromaticity (u', v')	u'=0.2522 v'=0.5189	R6	96	R14	99
Color Rendering Index (CRI)	91.5	R7	89	R15	87
R9	51	R8	77	--	--

Photometric Measurement – Goniophotometer Method:

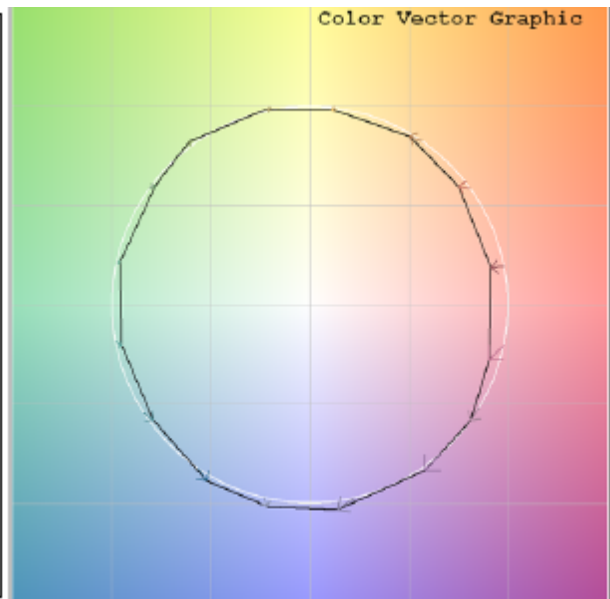
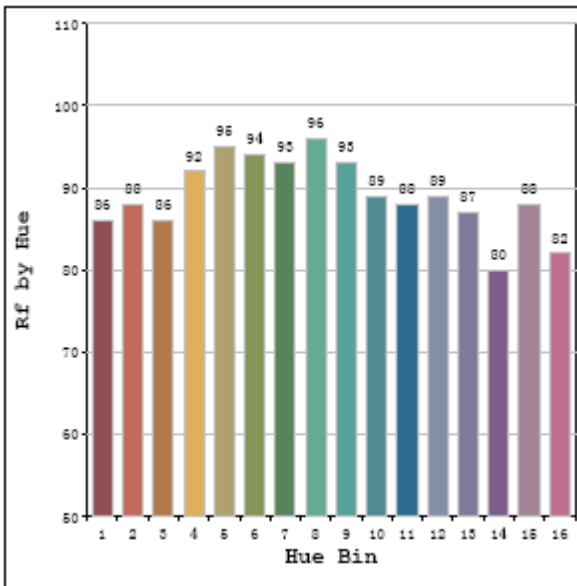
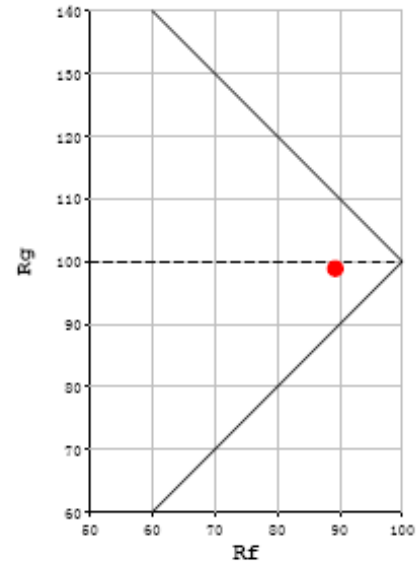
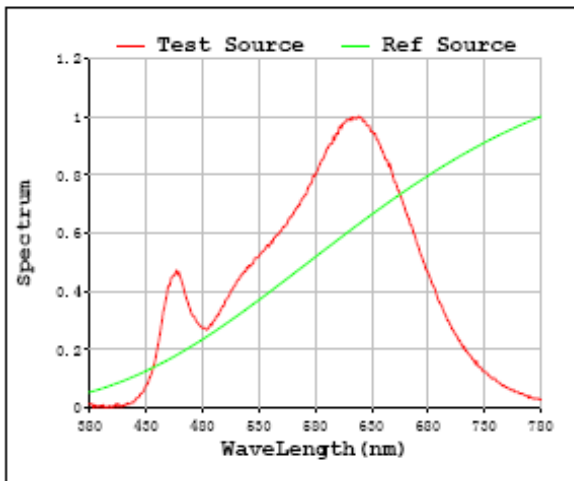
Parameter	Result
Test Voltage (V)	120.0
Frequency (Hz)	60
Total Luminous (lm)	1023.1
Luminous Efficacy (lm/W)	71.05
Beam Angle (°)	116.3
Center Beam Candle Power (cd)	331.9

Spectral Power Distribution & Chromaticity Diagram



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Rf: 89 CCT: 2975 K u': 0.2522
Rg: 99 Duv: -0.0021 v': 0.5189

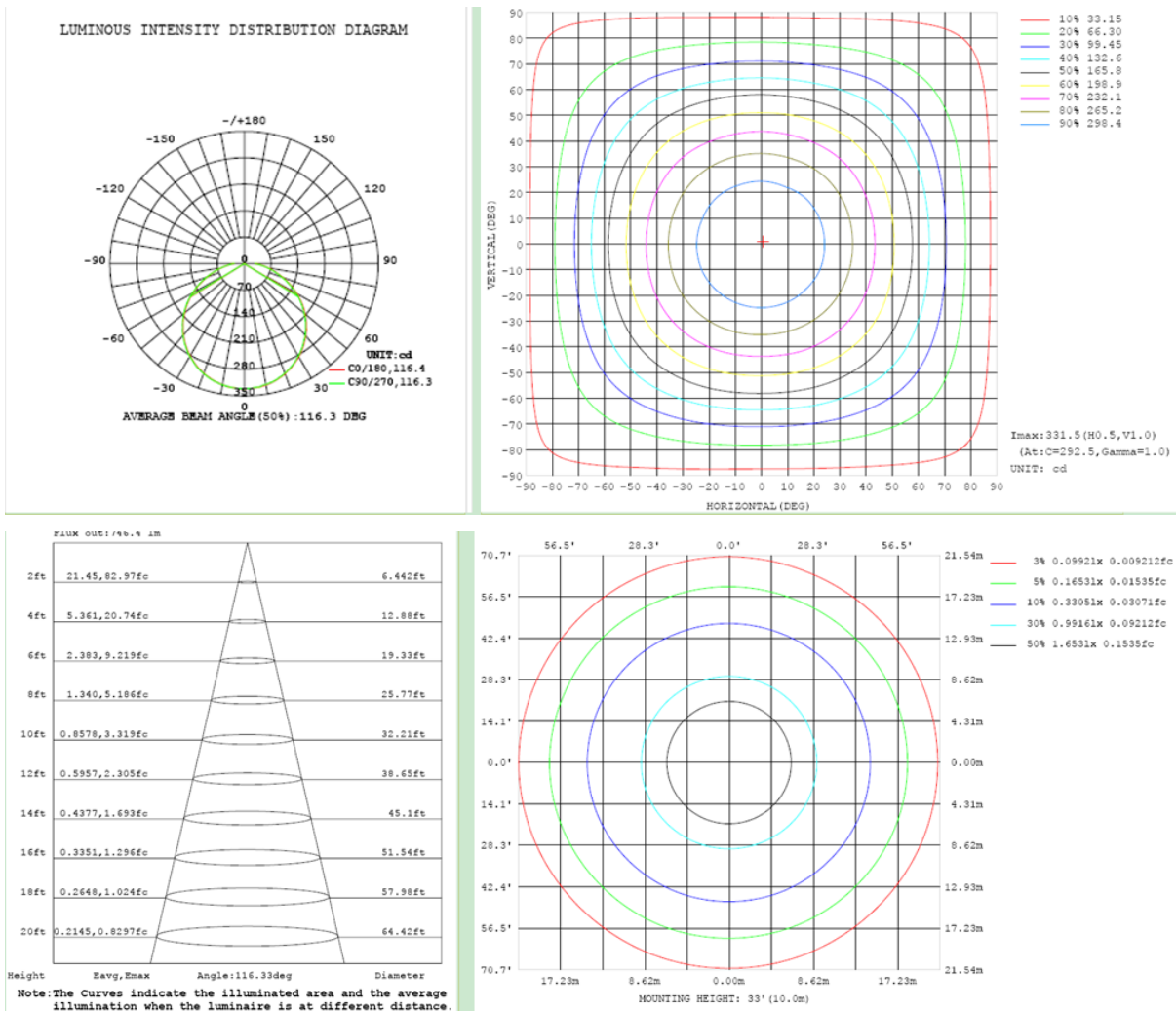


Zonal Lumen Tabulation

Zonal Lumen Summary		
Zone	Lumens	% Luminaire
0-30	258.1	25.2%
0-40	424.6	41.5%
0-60	761.4	74.4%
60-90	261.6	25.6%
70-100	132.5	13.0%
90-120	0.0	0.0%
0-90	1023.1	100.0%
90-180	0.0	0.0%
0-180	1023.1	100.0%

Lumens Per Zone					
Zone	Lumens	% Total	Zone	Lumens	% Total
0-10	31.3	3.1%	90-100	0.0	0.0%
10-20	89.9	8.8%	100-110	0.0	0.0%
20-30	136.9	13.4%	110-120	0.0	0.0%
30-40	166.5	16.3%	120-130	0.0	0.0%
40-50	175.0	17.1%	130-140	0.0	0.0%
50-60	161.8	15.8%	140-150	0.0	0.0%
60-70	129.1	12.6%	150-160	0.0	0.0%
70-80	86.0	8.4%	160-170	0.0	0.0%
80-90	46.5	4.5%	170-180	0.0	0.0%

Photometric Data



2.1.2 Electrical, Photometric and Chromaticity Measurements

Test date	2021-09-02	Test Ambient:	25.3 °C
Test Orientation	As intended	Stabilization Time (min)	90
Model Number	DLS0109(DSKFA-6R159CCT120WS/PIR)	4000K	

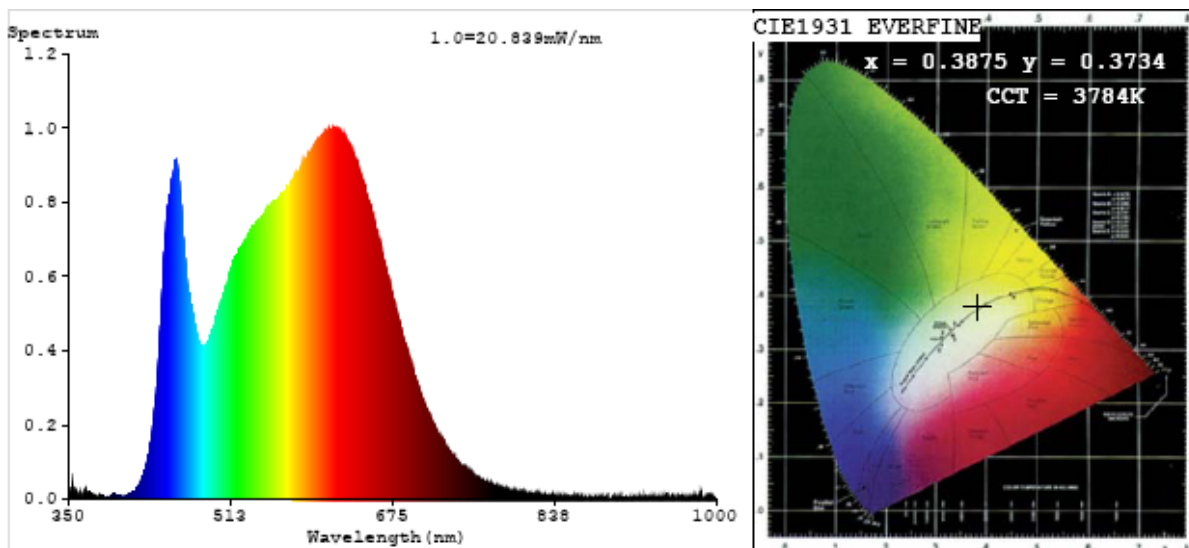
Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor
202109020019	120.0	60	0.1344	14.96	0.9271

Chromaticity Measurement - Sphere-Spectroradiometer Method:

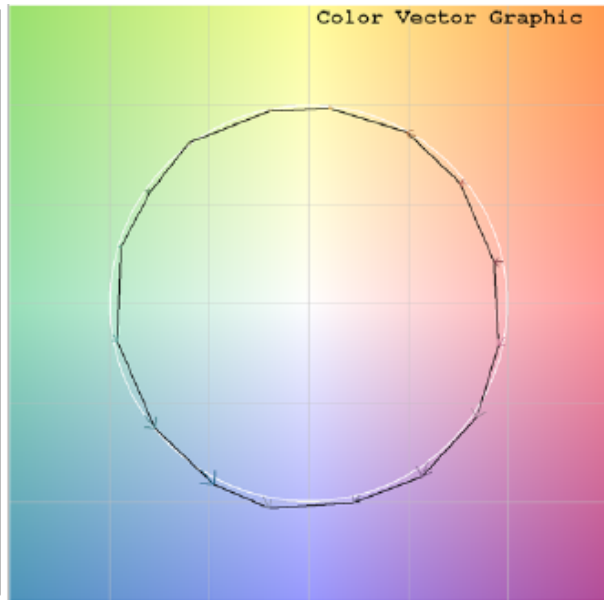
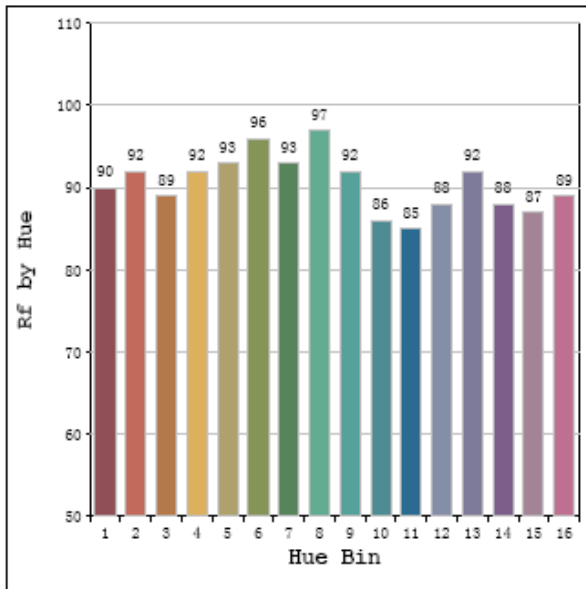
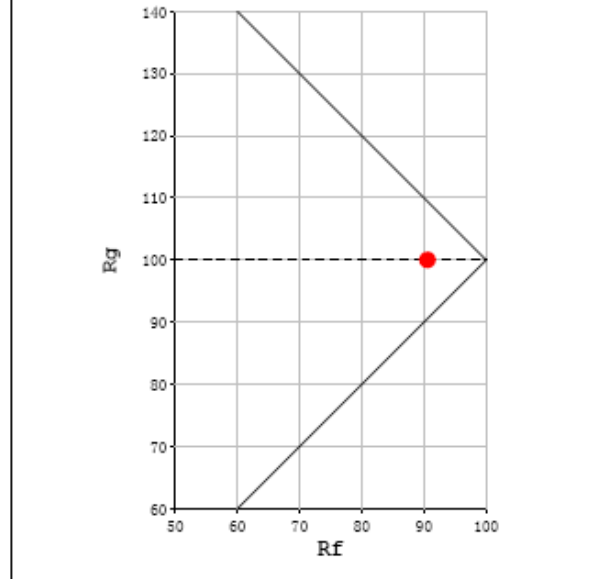
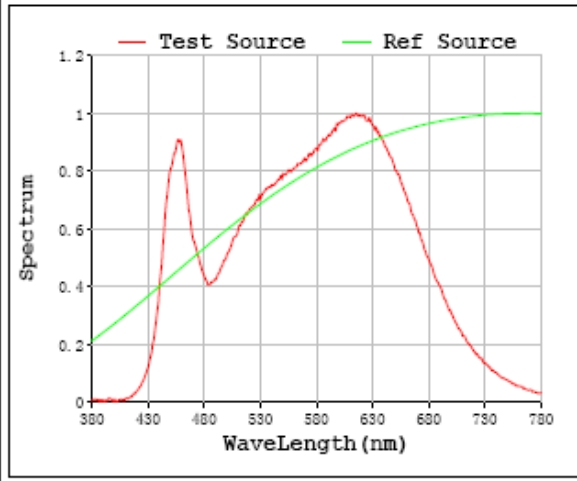
Parameter	Result	Special Color Rendering Indices			
Test Voltage (V)	120	R1	96	R9	72
Frequency (Hz)	60	R2	98	R10	95
CCT (K)	3784	R3	98	R11	94
Duv	-0.0036	R4	94	R12	77
Chromaticity (x, y)	x=0.3875 y=0.3734	R5	95	R13	97
Chromaticity (u', v')	u'=0.2312 v'=0.5011	R6	95	R14	99
Color Rendering Index (CRI)	94.5	R7	93	R15	94
R9	72	R8	88	--	--
Total Luminous (lm)	1204				
Luminous Efficacy (lm/W)	80.5				

Spectral Power Distribution & Chromaticity Diagram



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Rf: 91 CCT: 3784 K u': 0.2312
 Rg: 100 Duv: -0.0036 v': 0.5011



2.1.3 Electrical, Photometric and Chromaticity Measurements

Test date	2021-09-02	Test Ambient:	25.3 °C
Test Orientation	As intended	Stabilization Time (min)	90
Model Number	DLS0109(DSKFA-6R159CCT120WS/PIR)		5000K

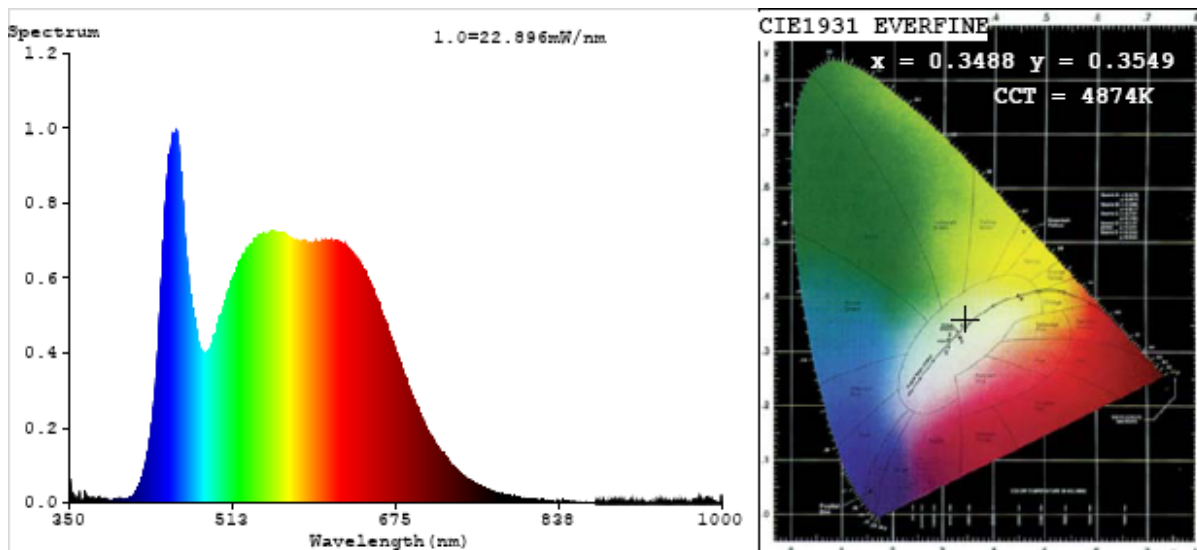
Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor
202109020019	120.0	60	0.1314	14.42	0.9143

Chromaticity Measurement - Sphere-Spectroradiometer Method:

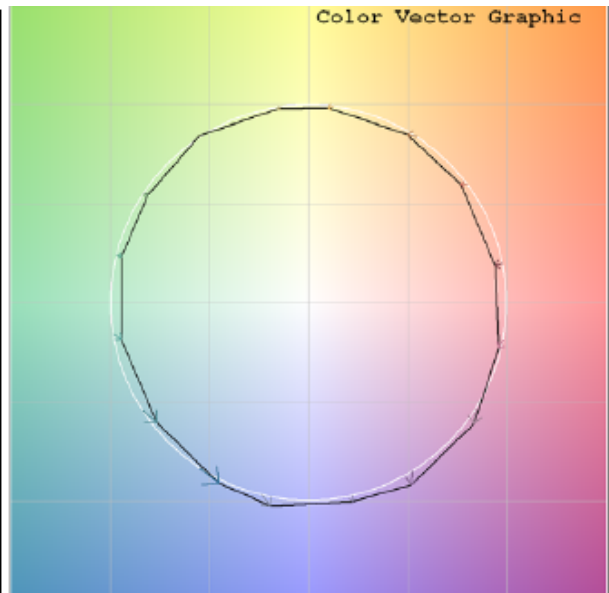
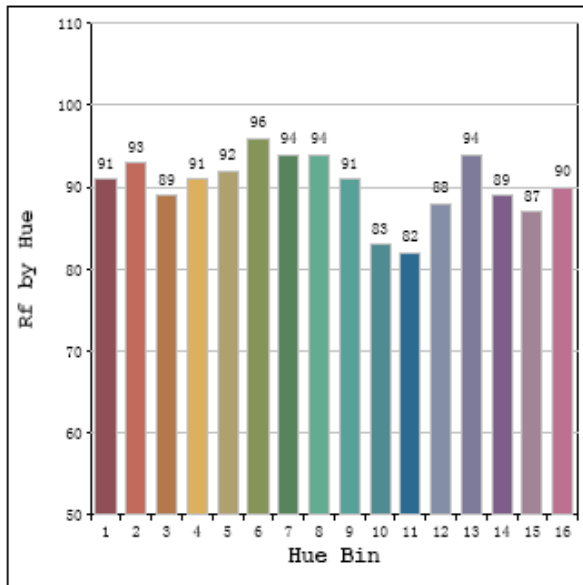
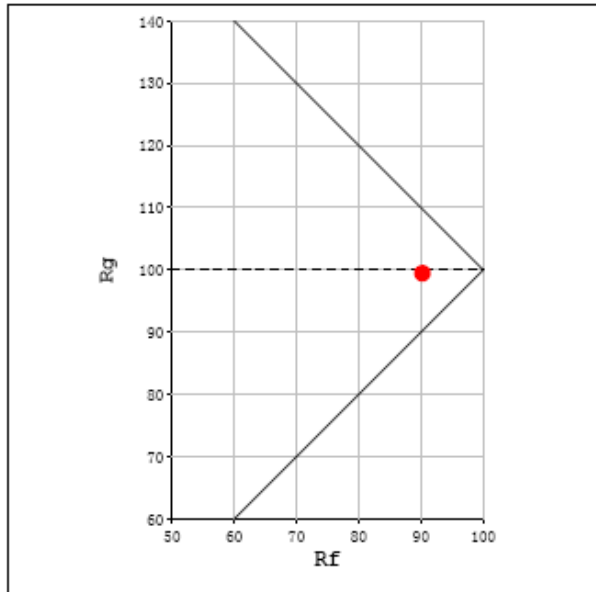
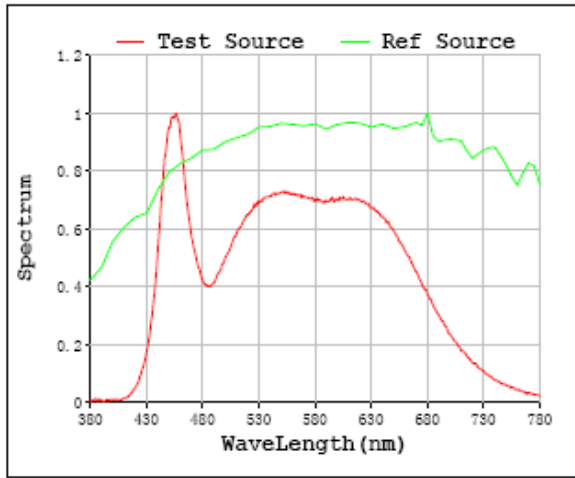
Parameter	Result	Special Color Rendering Indices			
Test Voltage (V)	120	R1	94	R9	74
Frequency (Hz)	60	R2	96	R10	87
CCT (K)	4874	R3	94	R11	91
Duv	0.0002	R4	92	R12	68
Chromaticity (x, y)	x=0.3488 y=0.3549	R5	92	R13	95
Chromaticity (u', v')	u'=0.2126 v'=0.4868	R6	91	R14	97
Color Rendering Index (CRI)	93.2	R7	96	R15	93
R9	74	R8	90	--	--
Total Luminous (lm)	1122				
Luminous Efficacy (lm/W)	77.85				

Spectral Power Distribution & Chromaticity Diagram



TM30

Rf: 90 CCT: 4874 K u': 0.2126
 Rg: 99 Duv: 0.0002 v': 0.4868



Sample No.	Wattage and CCT setting	Test Voltage(V)	Flux(lm)	P(W)	Luminous Efficacy lm/W
DLS0109(DSKFA-6R159CCT120WS/PIR)	3000K setting	120.0	1023.1	14.40	71.05
	4000K setting	120.0	1204	14.96	80.5
	5000K setting	120.0	1122	14.42	77.85

3. Product Photo



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