

**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):**  
**DLW0067(WFRL6R139FADWS)**

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

**Type of  
Luminaire:** Downlights

**Report Date:** 2021-08-30

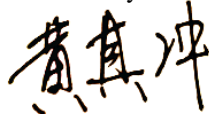
**Prepared By:**

Test & Report By:



Engineer: Sun Fangfang

Review By:



Manager: Huang Qichong

<b>1.1 Rated Values:</b>	
Rated Voltage / Frequency	120V-277Vac, 60 Hz
Nominal Power	13W
Rated Initial Lamp Lumen	1000 lm
Declared CCT	2700K/3000K/3500K/4000K/5000K

### 1.2 Test Specifications:

Test item	<ol style="list-style-type: none"> <li>1. Total Luminous Flux</li> <li>2. Luminous Distribution Intensity</li> <li>3. Luminous Efficacy</li> <li>4. Correlated Color Temperature</li> <li>5. Color Rendering Index</li> <li>6. Chromaticity Coordinate</li> <li>7. Electrical Parameters</li> </ol>
Reference Standard	<ol style="list-style-type: none"> <li>1. IES LM-79-2008 Electrical and Photometric Measurements of Solid-State Lighting Products</li> <li>2. ANSI C78.377-2015 Specifications for the Chromaticity of Solid State Lighting Products</li> <li>3. CIE 13.3-1995 Method of Measuring and Specifying Colour Rendering Properties of Light Sources</li> <li>4. CIE 15-2004 Technical Report Colorimetry</li> <li>5. IESNA LM-16-93 Practical Guide to Colorimetry of Light Source</li> <li>6. IESNA TM-16-05 Technical Memorandum on Light Emitting Diode (LED) Sources and Systems</li> </ol>
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

<b>Test date</b>	2021-08-30	<b>Test Ambient:</b>	25.3 °C
<b>Test Orientation</b>	As intended	<b>Stabilization Time (min)</b>	90
<b>Model Number</b>	DLW0067(WFRL6R139FADWS)	2700K	

### Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz )	Current (A)	Power (W)	Power Factor
202108300009	120.0	60	0.107	12.8	0.995

### Chromaticity Measurement - Sphere-Spectroradiometer Method:

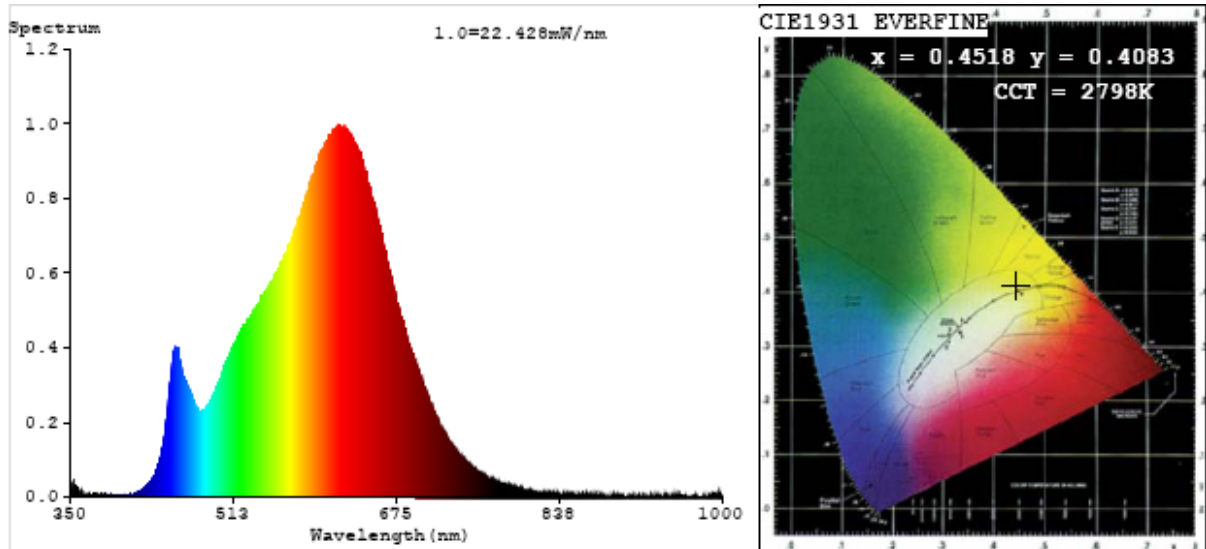
Parameter	Result	Special Color Rendering Indices			
Test Voltage (V)	120	R1	92	R9	53
Frequency (Hz)	60	R2	98	R10	93
CCT (K)	2798	R3	98	R11	93
Duv	-0.0001	R4	91	R12	83
Chromaticity (x, y)	x=0.4518 y=0.4083	R5	92	R13	94
Chromaticity (u', v')	u'=0.2583 v'=0.5253	R6	97	R14	100
Color Rendering Index (CRI)	92.0	R7	90	R15	87
R9	53	R8	78	--	--

### Photometric Measurement – Goniophotometer Method:

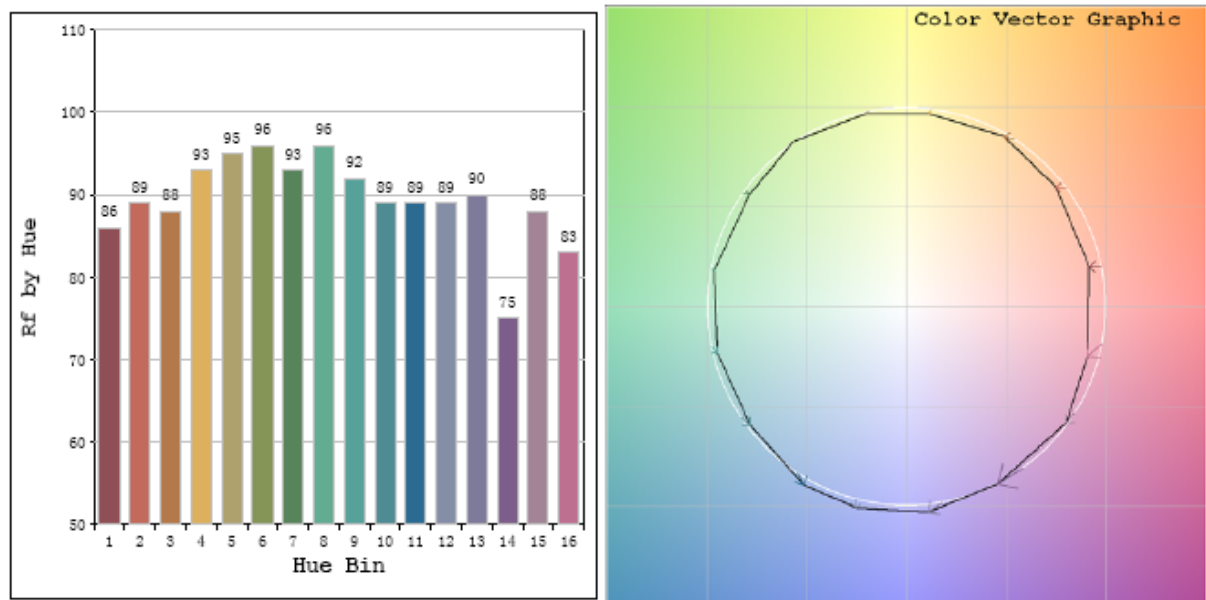
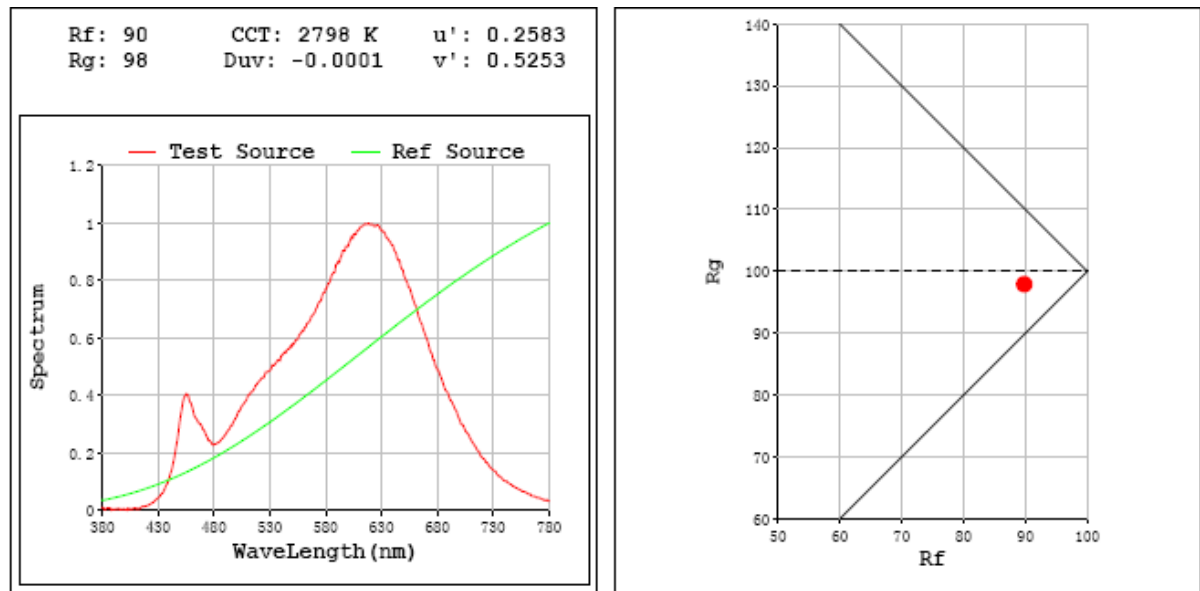
Parameter	Result
Test Voltage (V)	120.0
Frequency (Hz)	60
Total Luminous (lm)	1038.7
Luminous Efficacy (lm/W)	81.15
Beam Angle (°)	111.5
Center Beam Candle Power (cd)	362.4

Parameter	Result
Test Voltage (V)	277.0
Frequency (Hz)	60
Total Luminous (lm)	1049
Luminous Efficacy (lm/W)	77.91

# Spectral Power Distribution & Chromaticity Diagram



## TM30

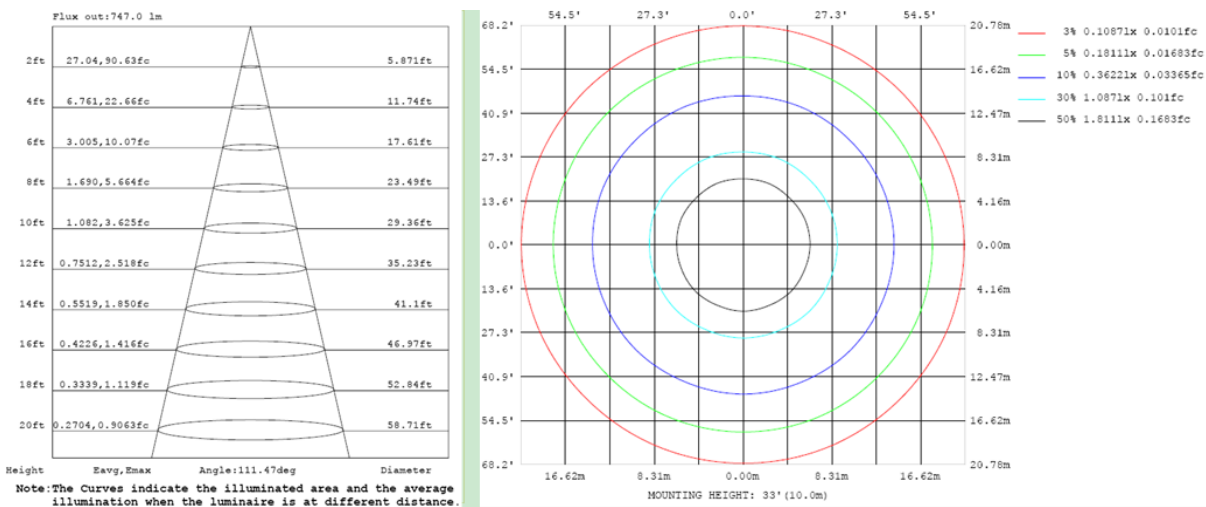
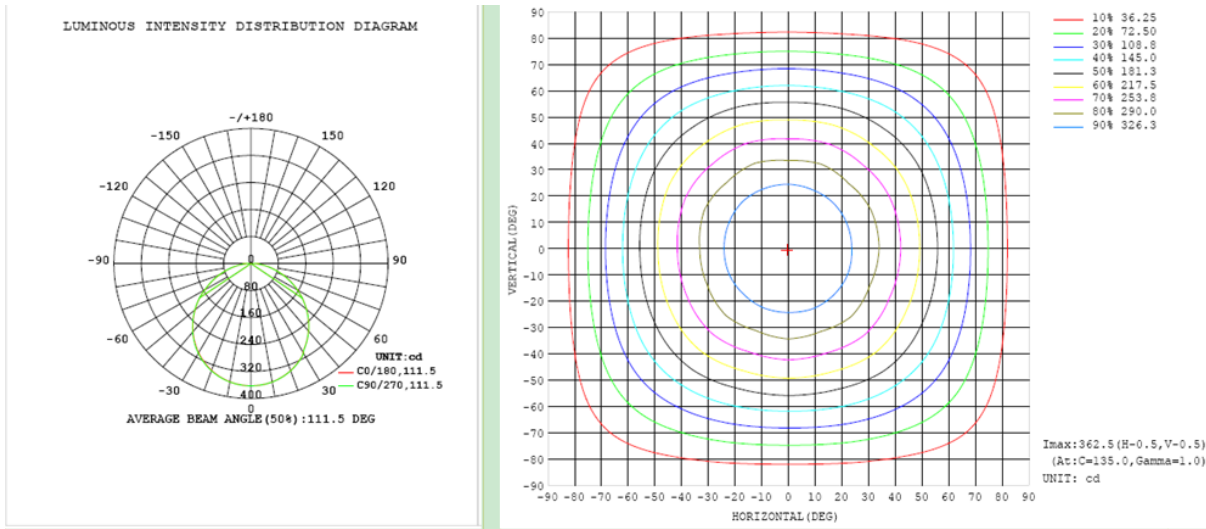


# Zonal Lumen Tabulation

Zonal Lumen Summary		
Zone	Lumens	% Luminaire
0-30	281.8	27.1%
0-40	460.0	44.3%
0-60	809.5	77.9%
60-90	229.2	22.1%
70-100	102.9	9.9%
90-120	0.0	0.0%
0-90	1038.7	100.0%
90-180	0.0	0.0%
0-180	1038.7	100.0%

Lumens Per Zone					
Zone	Lumens	% Total	Zone	Lumens	% Total
0-10	34.3	3.3%	90-100	0.0	0.0%
10-20	98.4	9.5%	100-110	0.0	0.0%
20-30	149.2	14.4%	110-120	0.0	0.0%
30-40	178.2	17.2%	120-130	0.0	0.0%
40-50	184.0	17.7%	130-140	0.0	0.0%
50-60	165.6	15.9%	140-150	0.0	0.0%
60-70	126.3	12.2%	150-160	0.0	0.0%
70-80	76.3	7.3%	160-170	0.0	0.0%
80-90	26.7	2.6%	170-180	0.0	0.0%

## Photometric Data





## 2.1.2 Electrical, Photometric and Chromaticity Measurements

Test date	2021-08-30	Test Ambient:	25.3 °C
Test Orientation	As intended	Stabilization Time (min)	90
Model Number	DLW0067(WFRL6R139FADWS)	3000K	

### Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor
202108300009	120.0	60	0.1068	12.74	0.9941

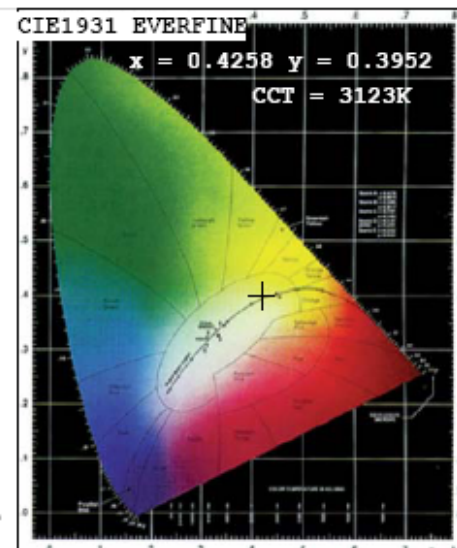
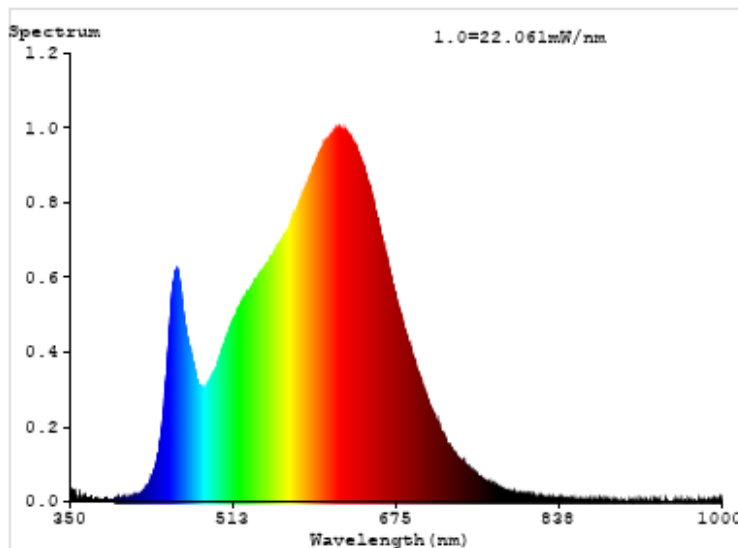
### Chromaticity Measurement - Sphere-Spectroradiometer Method:

Parameter	Result
Test Voltage (V)	120
Frequency (Hz)	60
CCT (K)	3123
Duv	-0.0020
Chromaticity (x, y)	x=0.4258 y=0.3952
Chromaticity (u', v')	u'=0.2474 v'=0.5161
Color Rendering Index (CRI)	93.7
R9	64
Total Luminous (lm)	1117
Luminous Efficacy (lm/W)	87.7

Special Color Rendering Indices			
R1	95	R9	64
R2	99	R10	96
R3	98	R11	94
R4	93	R12	80
R5	94	R13	97
R6	96	R14	100
R7	91	R15	91
R8	83	--	--

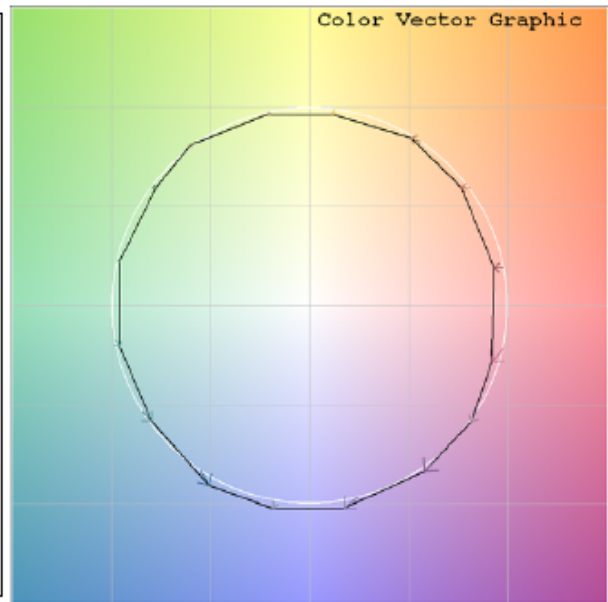
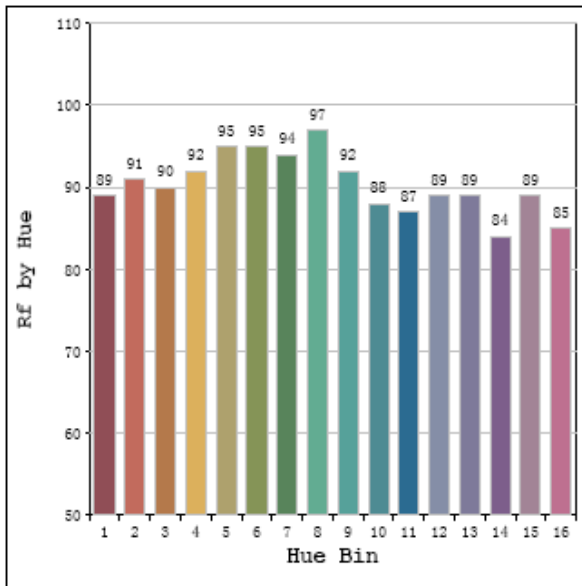
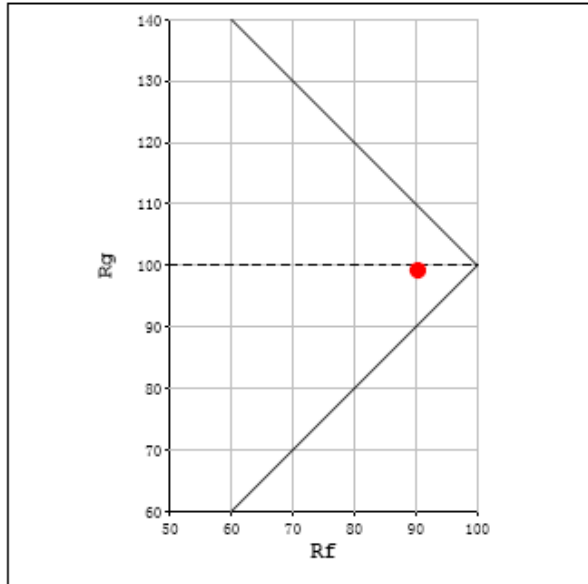
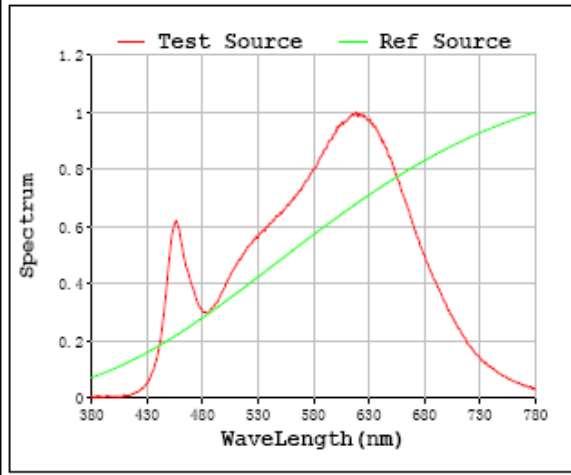
Parameter	Result
Test Voltage (V)	277.0
Frequency (Hz)	60
Total Luminous (lm)	1110
Luminous Efficacy (lm/W)	83.35

### Spectral Power Distribution & Chromaticity Diagram



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Rf: 90 CCT: 3123 K u': 0.2472  
 Rg: 99 Duv: -0.0020 v': 0.5161



### 2.1.3 Electrical, Photometric and Chromaticity Measurements

<b>Test date</b>	2021-08-30	<b>Test Ambient:</b>	25.3 °C
<b>Test Orientation</b>	As intended	<b>Stabilization Time (min)</b>	90
<b>Model Number</b>	DLW0067(WFRL6R139FADWS)		3500K

#### Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor
202108300009	120.0	60	0.1048	12.5	0.9938

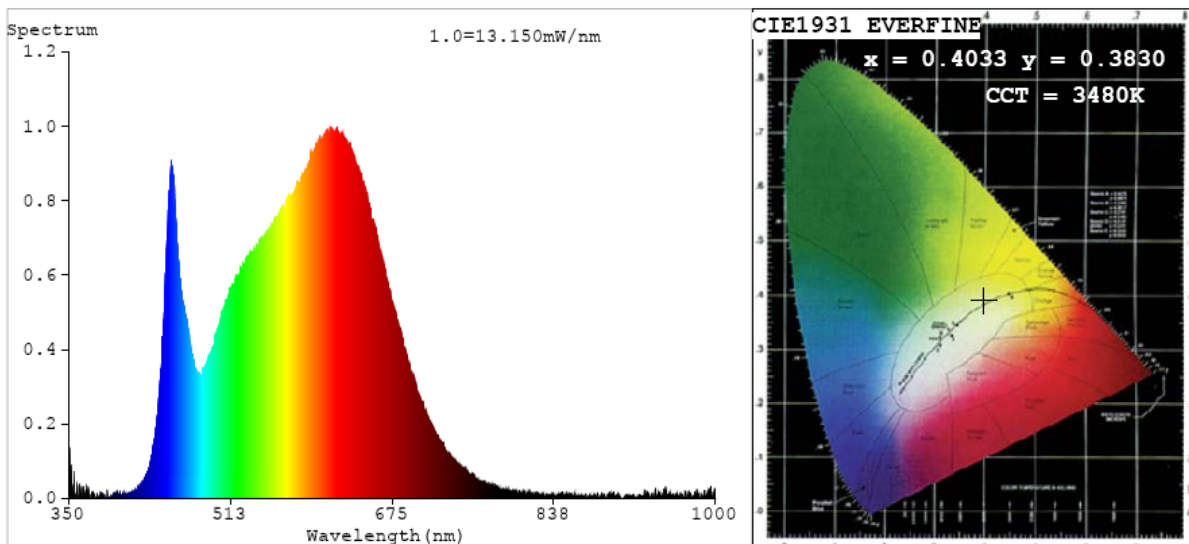
#### Chromaticity Measurement - Sphere-Spectroradiometer Method:

Parameter	Result
Test Voltage (V)	120
Frequency (Hz)	60
CCT (K)	3669
Duv	-0.0024
Chromaticity (x, y)	x=0.3940 y=0.3795
Chromaticity (u', v')	u'=0.2330 v'=0.5048
Color Rendering Index (CRI)	94.8
R9	74
Total Luminous (lm)	1180
Luminous Efficacy (lm/W)	94.41

Special Color Rendering Indices			
R1	96	R9	74
R2	99	R10	96
R3	98	R11	94
R4	94	R12	75
R5	95	R13	98
R6	95	R14	99
R7	93	R15	94
R8	88	--	--

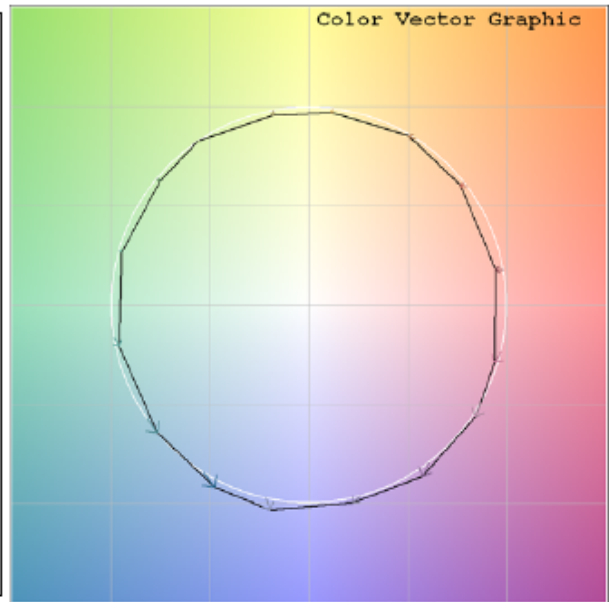
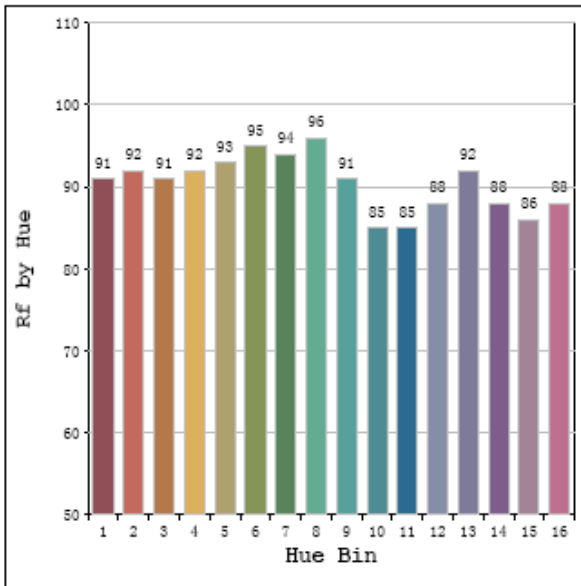
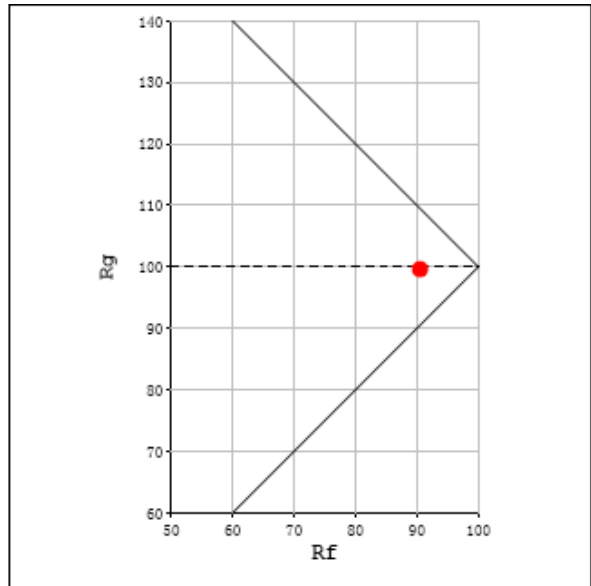
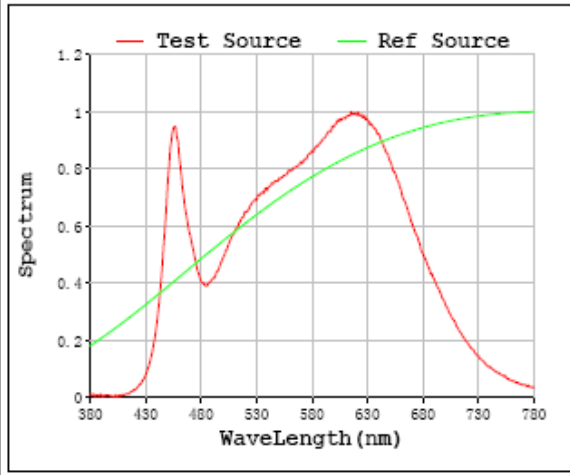
Parameter	Result
Test Voltage (V)	277.0
Frequency (Hz)	60
Total Luminous (lm)	1178
Luminous Efficacy (lm/W)	89.83

### Spectral Power Distribution & Chromaticity Diagram



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Rf: 91      CCT: 3669 K      u': 0.2330  
 Rg: 100      Duv: -0.0024      v': 0.5048



## 2.1.4 Electrical, Photometric and Chromaticity Measurements

Test date	2021-08-30	Test Ambient:	25.3 °C
Test Orientation	As intended	Stabilization Time (min)	90
Model Number	DLW0067(WFRL6R139FADWS)	4000K	

### Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor
202108300009	120.0	60	0.1052	12.55	0.9939

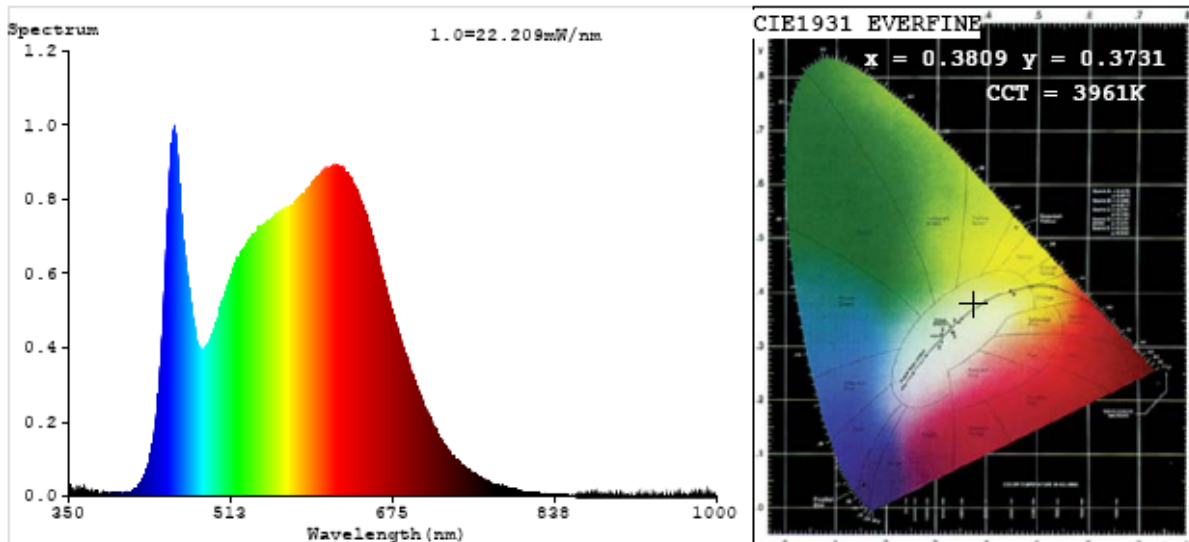
### Chromaticity Measurement - Sphere-Spectroradiometer Method:

Parameter	Result
Test Voltage (V)	120
Frequency (Hz)	60
CCT (K)	3961
Duv	-0.0018
Chromaticity (x, y)	x=0.3809 y=0.3731
Chromaticity (u', v')	u'=0.2269 v'=0.5000
Color Rendering Index (CRI)	94.7
R9	76
Total Luminous (lm)	1192
Luminous Efficacy (lm/W)	95

Special Color Rendering Indices			
R1	96	R9	76
R2	99	R10	94
R3	98	R11	94
R4	93	R12	72
R5	94	R13	97
R6	95	R14	98
R7	94	R15	94
R8	89	--	--

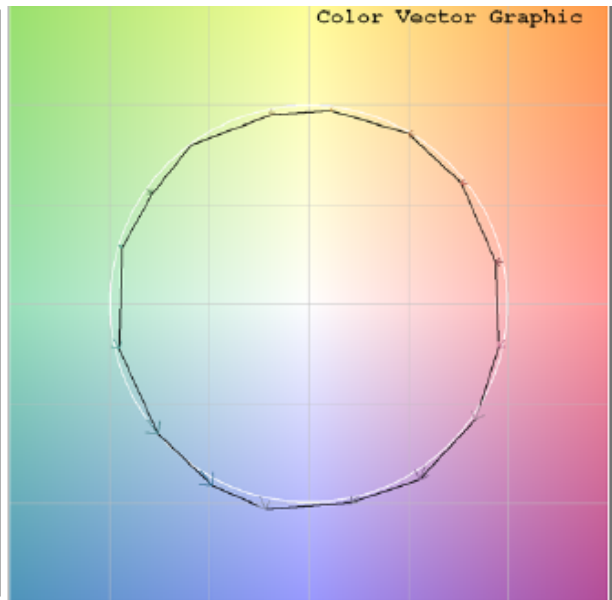
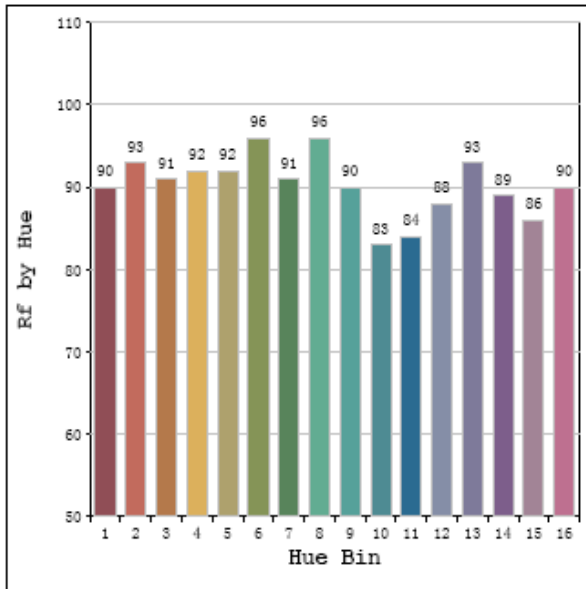
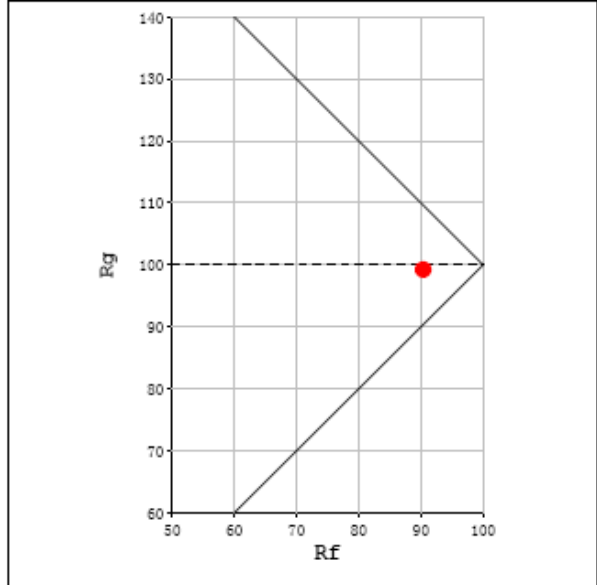
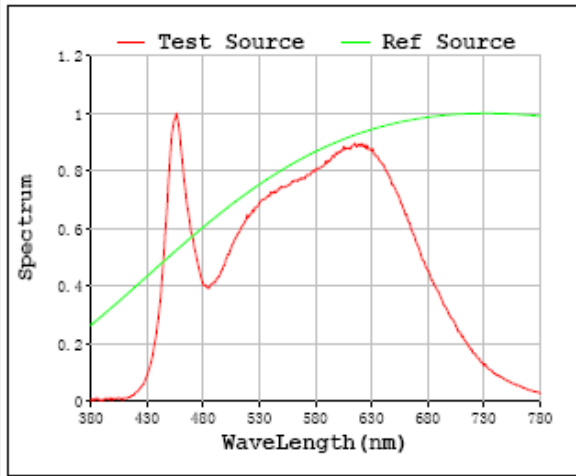
Parameter	Result
Test Voltage (V)	277.0
Frequency (Hz)	60
Total Luminous (lm)	1186
Luminous Efficacy (lm/W)	90.24

### Spectral Power Distribution & Chromaticity Diagram



# TM30

Rf: 90 CCT: 3961 K  $u'$ : 0.2269  
 Rg: 99 Duv: -0.0018  $v'$ : 0.5000



## 2.1.5 Electrical, Photometric and Chromaticity Measurements

<b>Test date</b>	2021-08-30	<b>Test Ambient:</b>	25.3 °C
<b>Test Orientation</b>	As intended	<b>Stabilization Time (min)</b>	90
<b>Model Number</b>	DLW0067(WFRL6R139FADWS) 5000K		

### Electrical Measurement:

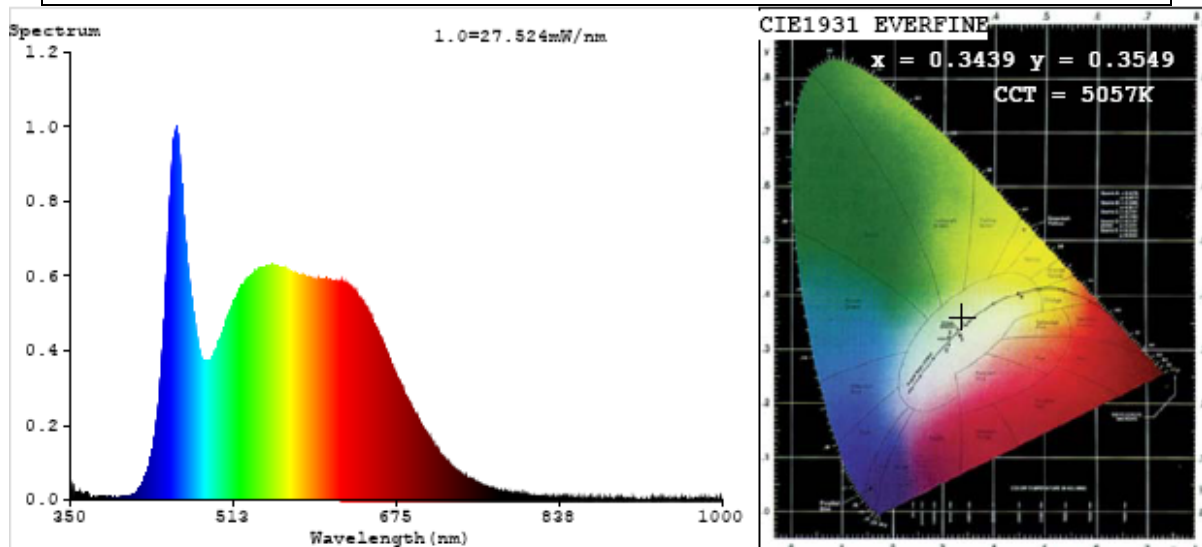
Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor
202108300009	120.0	60	0.1077	12.85	0.9942

### Chromaticity Measurement - Sphere-Spectroradiometer Method:

Parameter	Result	Special Color Rendering Indices			
Test Voltage (V)	120	R1	93	R9	70
Frequency (Hz)	60	R2	96	R10	88
CCT (K)	5057	R3	95	R11	91
Duv	0.0021	R4	92	R12	70
Chromaticity (x, y)	x=0.3439 y=0.3549	R5	92	R13	94
Chromaticity (u', v')	u'=0.2094 v'=0.4861	R6	92	R14	97
Color Rendering Index (CRI)	92.9	R7	95	R15	92
R9	70	R8	88	--	--
Total Luminous (lm)	1167				
Luminous Efficacy (lm/W)	90.8				

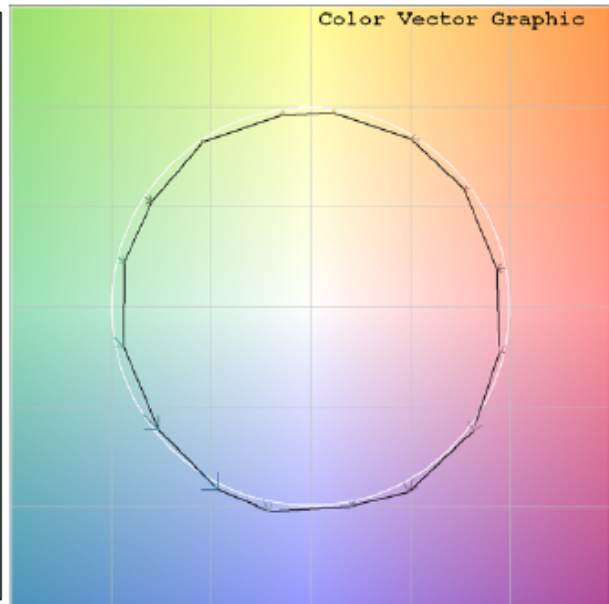
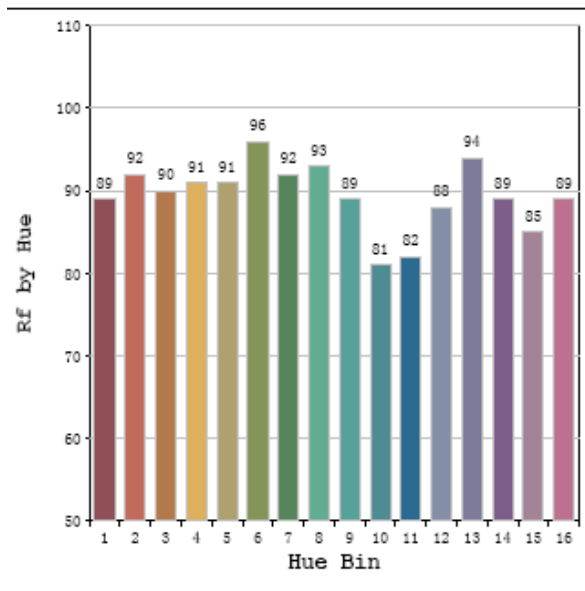
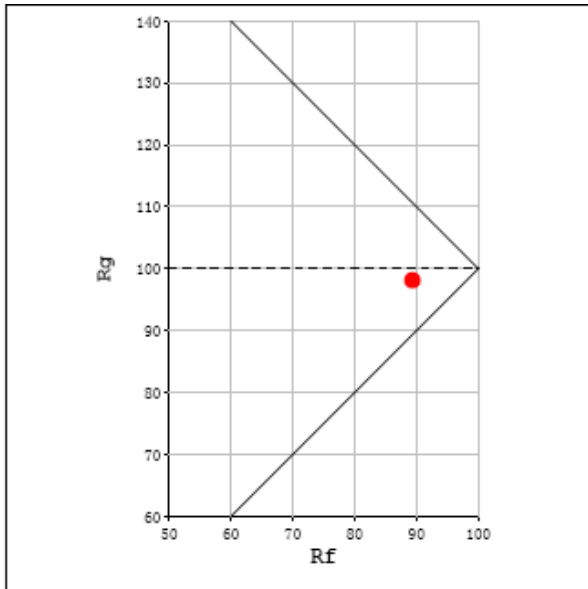
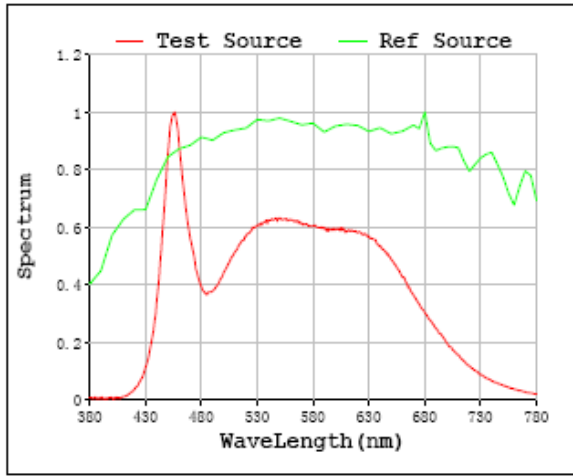
Parameter	Result
Test Voltage (V)	277.0
Frequency (Hz)	60
Total Luminous (lm)	1164
Luminous Efficacy (lm/W)	86.65

## Spectral Power Distribution & Chromaticity Diagram



# TM30

Rf: 89      CCT: 5057 K      u': 0.2094  
 Rg: 98      Duv: 0.0021      v': 0.4861



Sample No.	Wattage and CCT setting	Test Voltage(V)	Flux(lm)	P(W)	Luminous Efficacy lm/W
DLW0067(WFRL6R139FADWS)	2700K setting	120.0	1038.7	12.80	81.15
		277.0	1049	13.47	77.91
	3000K setting	120.0	1117	12.74	87.7
		277.0	1110	13.31	83.35
	3500K setting	120.0	1180	12.5	94.41
		277.0	1178	13.12	89.83
	4000K setting	120.0	1192	12.55	95
		277.0	1186	13.15	90.24
	5000K setting	120.0	1167	12.85	90.8
		277.0	1164	13.43	86.65

### 3. Product Photo



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