

**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):**  
**DLW0077(WFRL6R149FA120WB)**

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

**Type of  
Luminaire:** Downlights

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

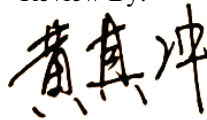
**Prepared By:**

Test & Report By:



Engineer: Sun Fangfang

Review By:



Manager: Huang Qichong

<b>1.1 Rated Values:</b>	
Rated Voltage / Frequency	120Vac, 60 Hz
Nominal Power	14.0W
Rated Initial Lamp Lumen	1150 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>	DLW0077(WFRL6R149FA120WB)	2700K	

**Electrical Measurement:**

Sample No.	Voltage (Vac)	Frequency (Hz )	Current (A)	Power (W)	Power Factor
202108300007	120.0	60	0.113	13.5	0.988

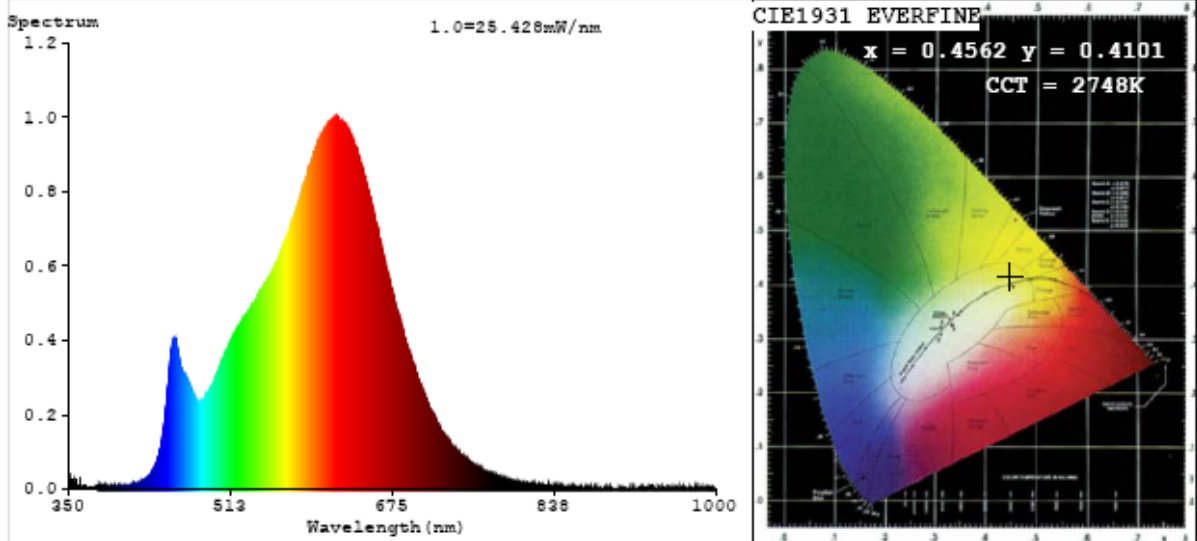
**Chromaticity Measurement - Sphere-Spectroradiometer Method:**

Parameter	Result	Special Color Rendering Indices			
Test Voltage (V)	120	R1	92	R9	50
Frequency (Hz)	60	R2	98	R10	94
CCT (K)	2748	R3	97	R11	92
Duv	0.0001	R4	90	R12	83
Chromaticity (x, y)	x=0.4562 y=0.4101	R5	92	R13	94
Chromaticity (u', v')	u'=0.2603 v'=0.5266	R6	97	R14	99
Color Rendering Index (CRI)	91.3	R7	89	R15	86
R9	50	R8	76	--	--

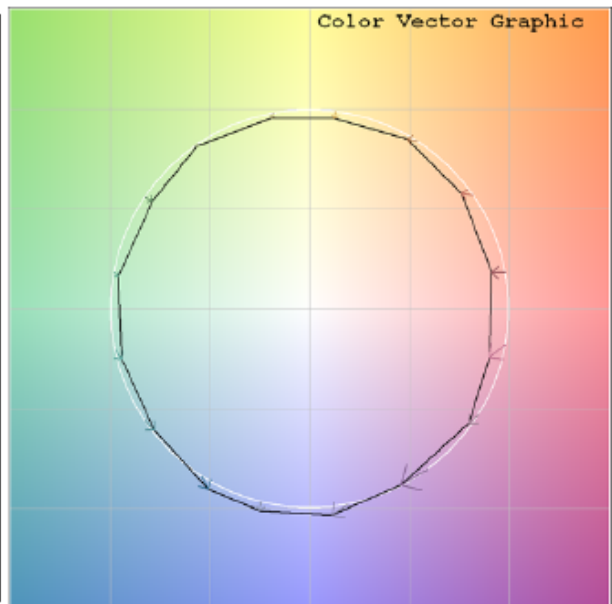
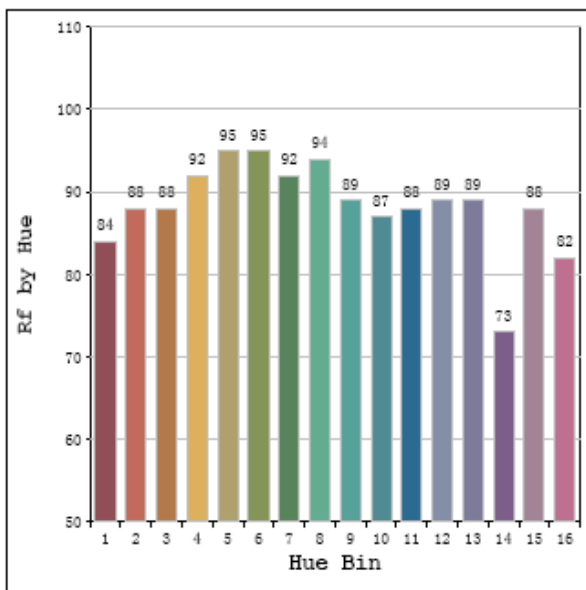
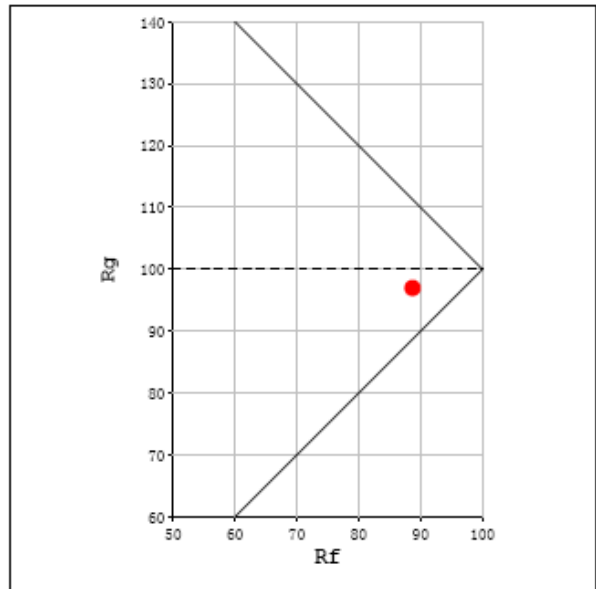
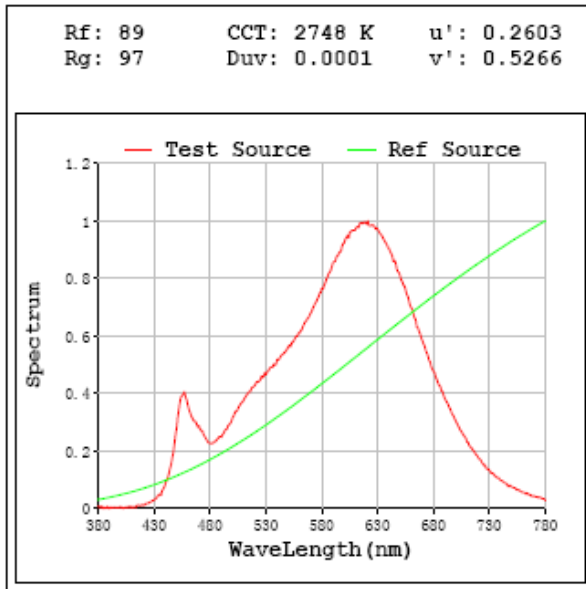
**Photometric Measurement – Goniophotometer Method:**

Parameter	Result
Test Voltage (V)	120.0
Frequency (Hz)	60
Total Luminous (lm)	1187.1
Luminous Efficacy (lm/W)	87.93
Beam Angle (°)	112.1
Center Beam Candle Power (cd)	416.6

# Spectral Power Distribution & Chromaticity Diagram



## TM30

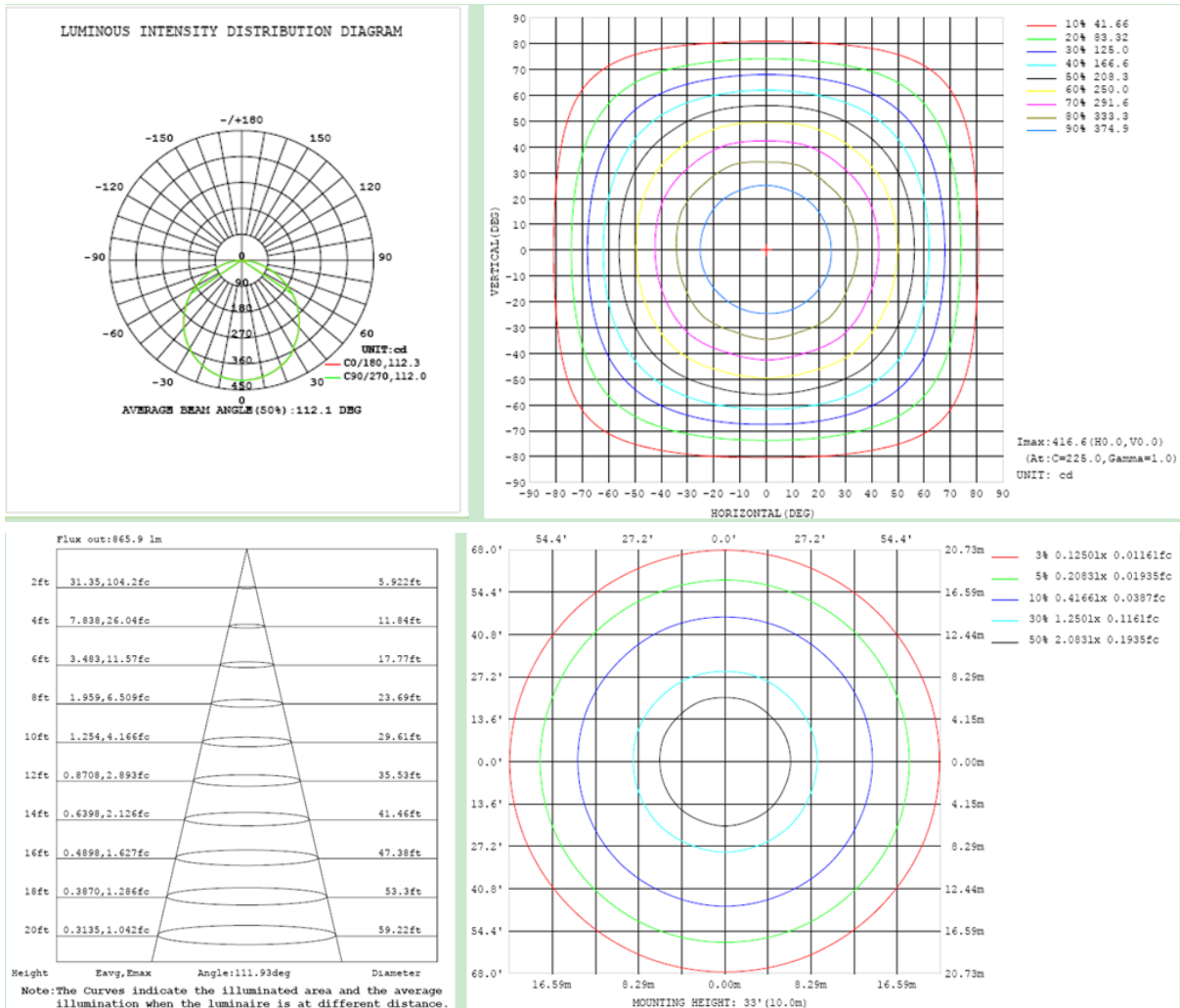


# Zonal Lumen Tabulation

Zonal Lumen Summary		
Zone	Lumens	% Luminaire
0-30	325.3	27.4%
0-40	532.0	44.8%
0-60	938.2	79.0%
60-90	248.9	21.0%
70-100	105.4	8.9%
90-120	0.0	0.0%
0-90	1187.1	100.0%
90-180	0.0	0.0%
0-180	1187.1	100.0%

Lumens Per Zone					
Zone	Lumens	% Total	Zone	Lumens	% Total
0-10	39.5	3.3%	90-100	0.0	0.0%
10-20	113.4	9.6%	100-110	0.0	0.0%
20-30	172.5	14.5%	110-120	0.0	0.0%
30-40	206.7	17.4%	120-130	0.0	0.0%
40-50	214.0	18.0%	130-140	0.0	0.0%
50-60	192.2	16.2%	140-150	0.0	0.0%
60-70	143.5	12.1%	150-160	0.0	0.0%
70-80	81.5	6.9%	160-170	0.0	0.0%
80-90	23.9	2.0%	170-180	0.0	0.0%

## Photometric Data





## 2.1.2 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>	DLW0077(WFRL6R149FA120WB)		3000K

### Electrical Measurement:

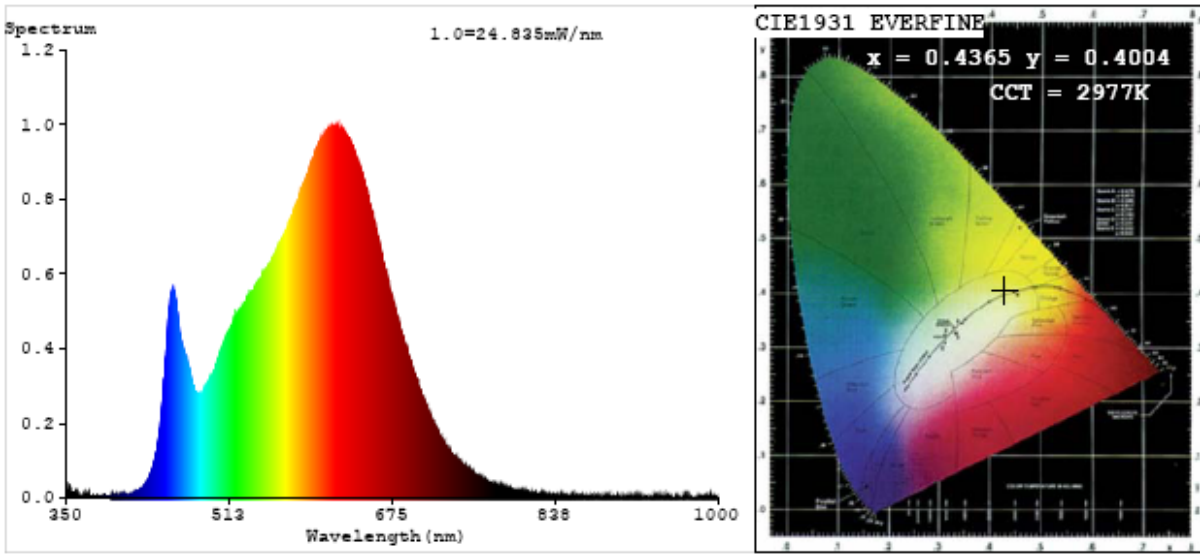
Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor
202108300007	120.0	60	0.1129	13.38	0.9868

### Chromaticity Measurement - Sphere-Spectroradiometer Method:

Parameter	Result
Test Voltage (V)	120
Frequency (Hz)	60
CCT (K)	2977
Duv	-0.0014
Chromaticity (x, y)	x=0.4365 y=0.4004
Chromaticity (u', v')	u'=0.2519 v'=0.5199
Color Rendering Index (CRI)	92.6
R9	59
Total Luminous (lm)	1215
Luminous Efficacy (lm/W)	90.84

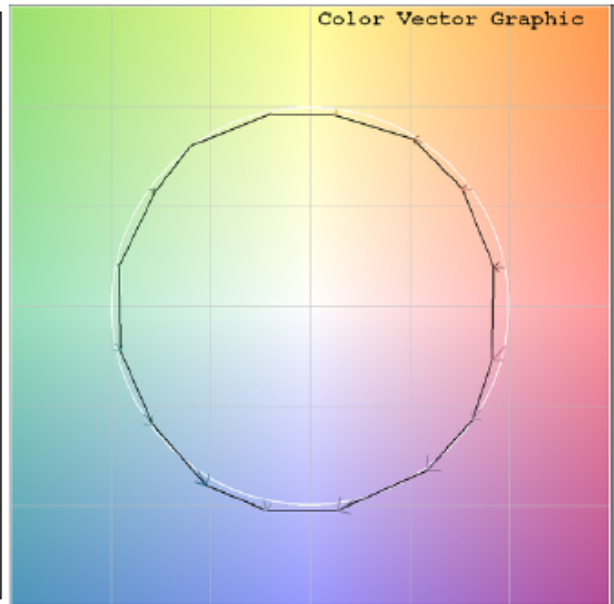
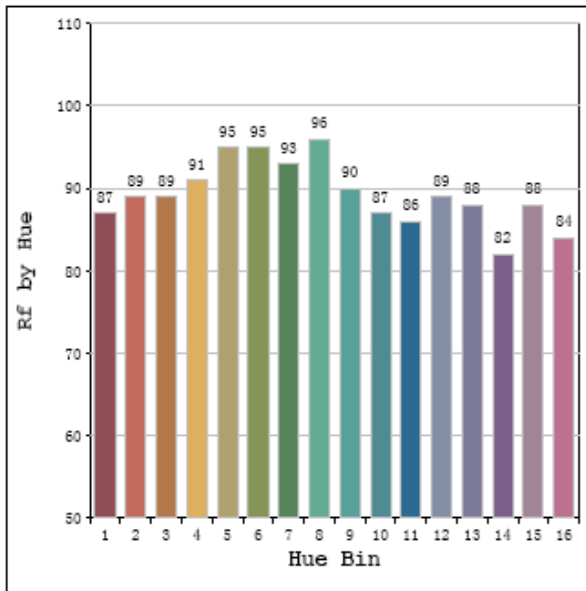
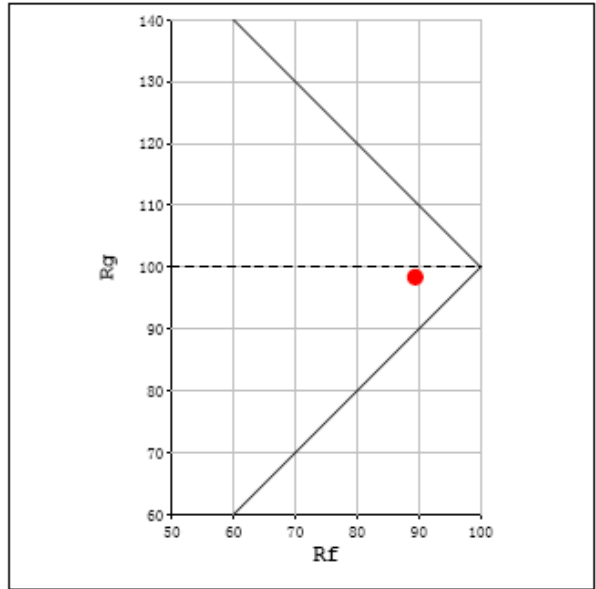
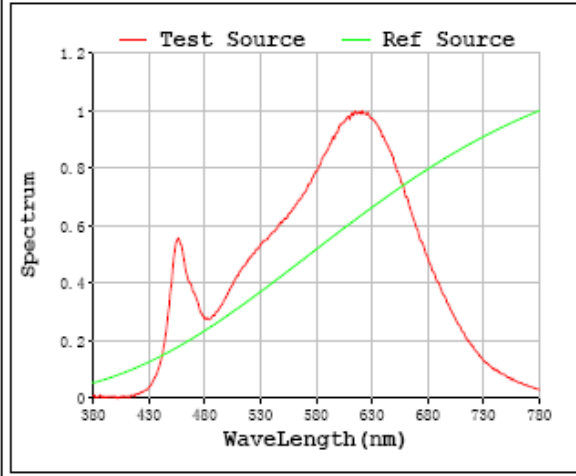
Special Color Rendering Indices			
R1	94	R9	59
R2	99	R10	96
R3	97	R11	93
R4	92	R12	81
R5	93	R13	95
R6	96	R14	100
R7	90	R15	89
R8	80	--	--

## Spectral Power Distribution & Chromaticity Diagram



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Rf: 89 CCT: 2977 K u': 0.2519  
 Rg: 98 Duv: -0.0014 v': 0.5199



### 2.1.3 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	DLW0077(WFRL6R149FA120WB)	3500K	

#### Electrical Measurement:

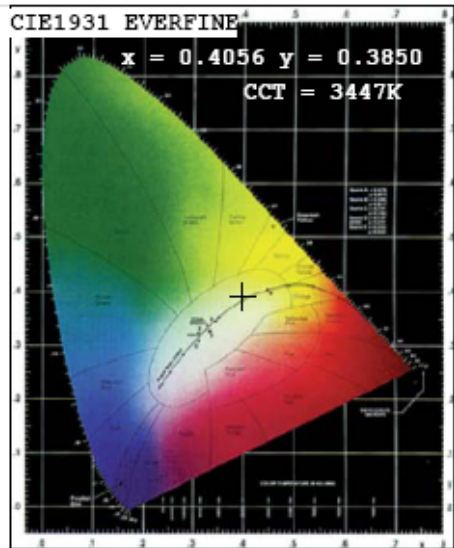
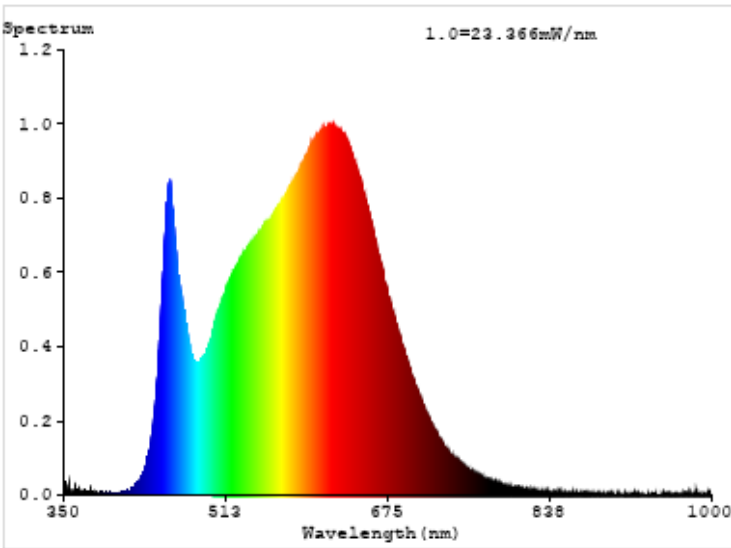
Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor
202108300007	120.0	60	0.1109	13.14	0.9863

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

Parameter	Result
Test Voltage (V)	120
Frequency (Hz)	60
CCT (K)	3447
Duv	-0.0026
Chromaticity (x, y)	x=0.4056 y=0.3850
Chromaticity (u', v')	u'=0.2382 v'=0.5089
Color Rendering Index (CRI)	94.3
R9	70
Total Luminous (lm)	1268
Luminous Efficacy (lm/W)	96.49

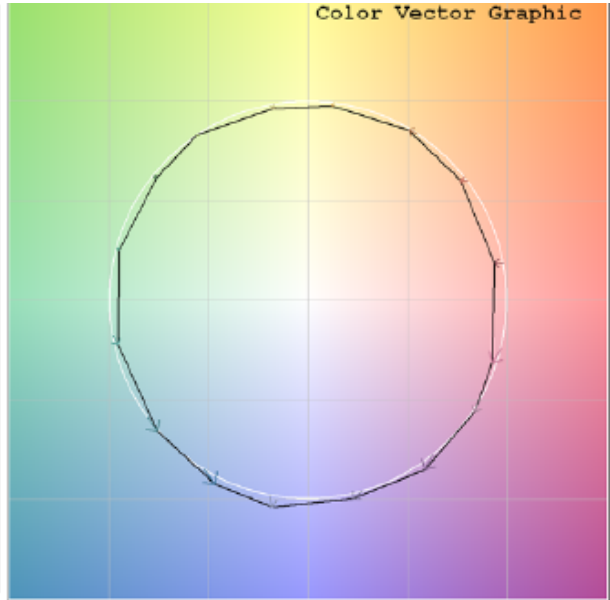
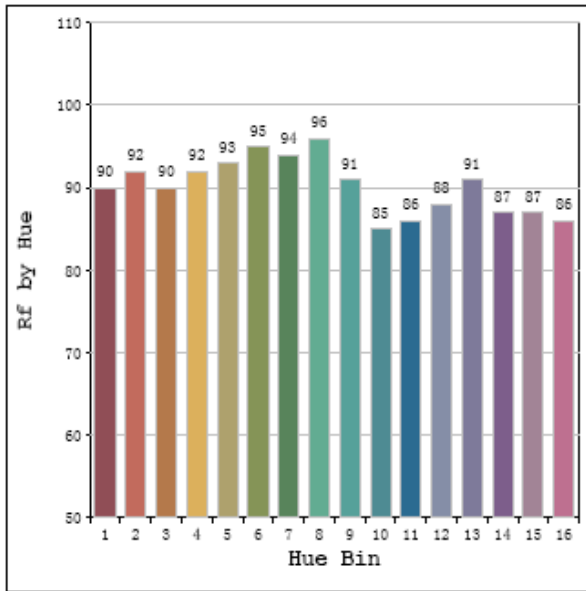
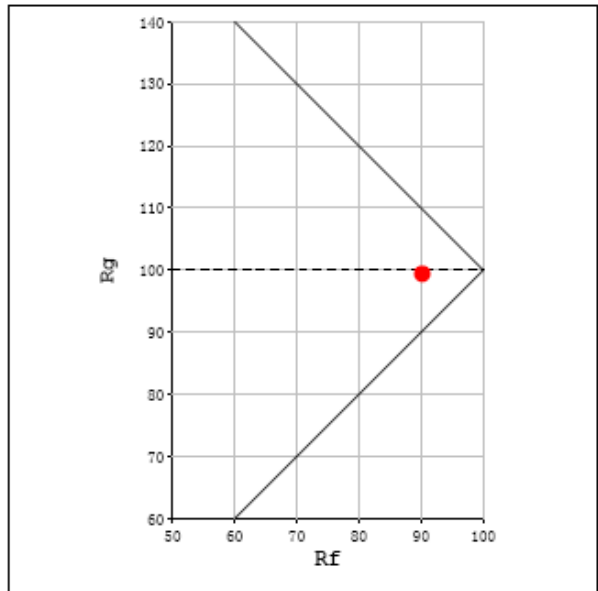
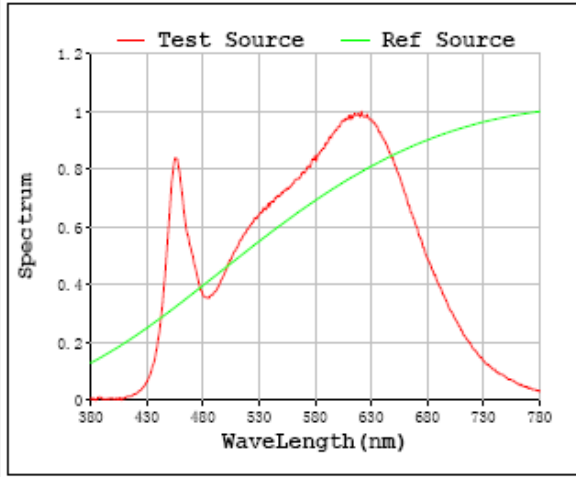
Special Color Rendering Indices			
R1	96	R9	70
R2	99	R10	96
R3	98	R11	94
R4	93	R12	77
R5	95	R13	97
R6	96	R14	99
R7	92	R15	93
R8	86	--	--

### Spectral Power Distribution & Chromaticity Diagram



# TM30

Rf: 90      CCT: 3447 K      u': 0.2382  
 Rg: 99      Duv: -0.0026      v': 0.5089



## 2.1.4 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>	DLW0077(WFRL6R149FA120WB)		4000K

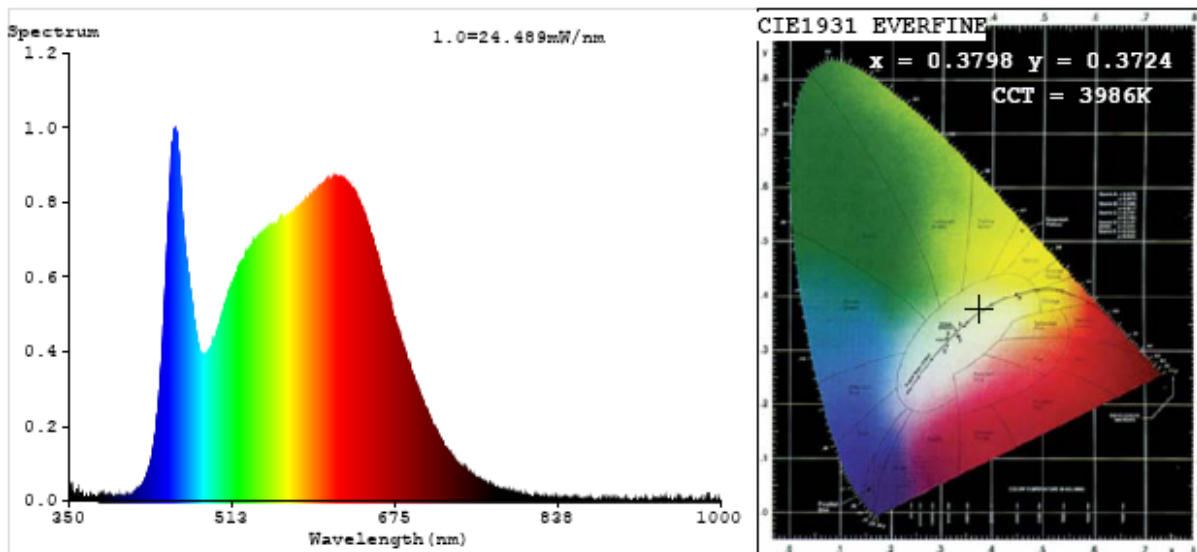
### Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz )	Current (A)	Power (W)	Power Factor
202108300007	120.0	60	0.1116	13.23	0.9865

### Chromaticity Measurement - Sphere-Spectroradiometer Method:

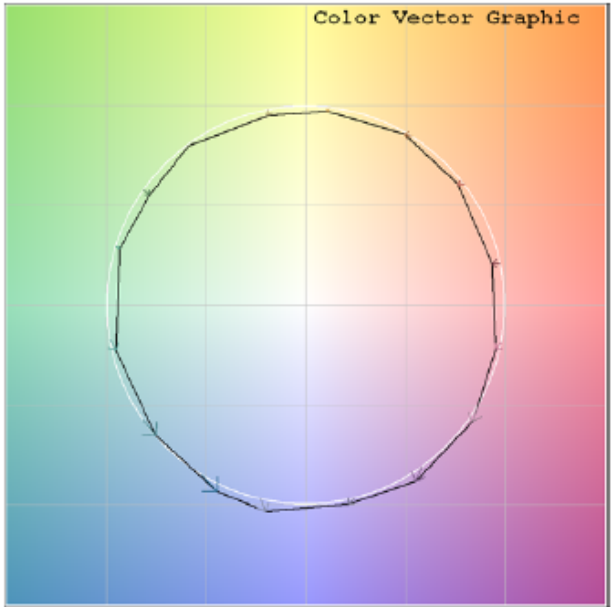
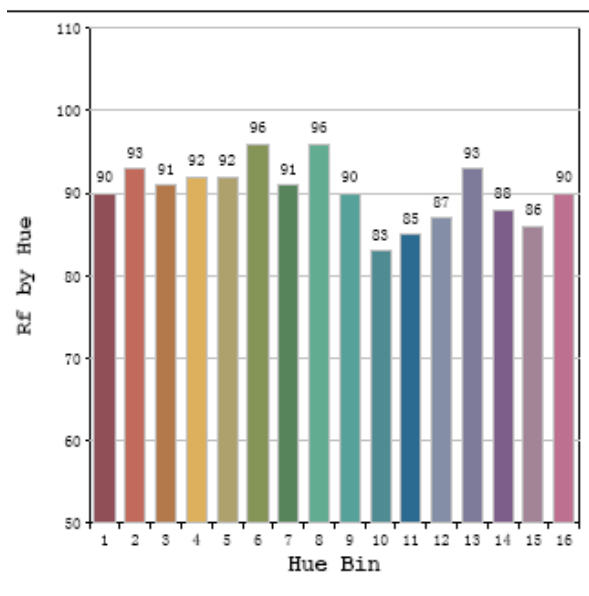
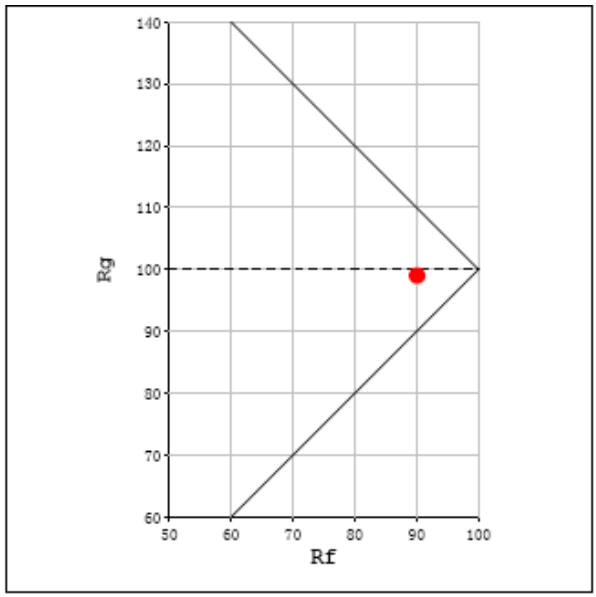
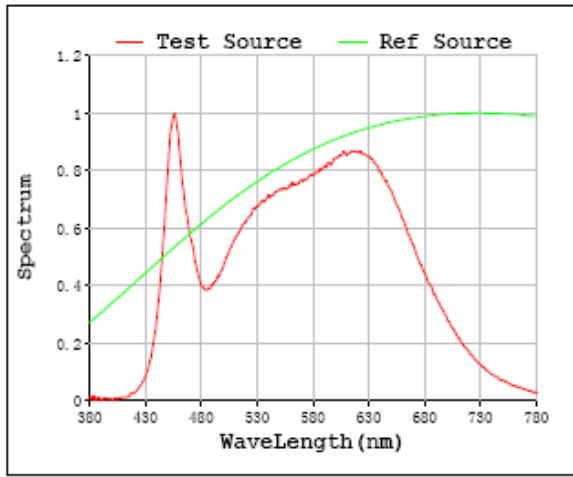
Parameter	Result	Special Color Rendering Indices			
Test Voltage (V)	120	R1	96	R9	75
Frequency (Hz)	60	R2	98	R10	94
CCT (K)	3986	R3	98	R11	93
Duv	-0.0018	R4	93	R12	72
Chromaticity (x, y)	x=0.3798 y=0.3724	R5	94	R13	97
Chromaticity (u', v')	u'=0.2264 v'=0.4996	R6	94	R14	98
Color Rendering Index (CRI)	94.5	R7	94	R15	94
R9	75	R8	89	--	--
Total Luminous (lm)	1284				
Luminous Efficacy (lm/W)	97.05				

## Spectral Power Distribution & Chromaticity Diagram



# TM30

Rf: 90 CCT: 3986 K u': 0.2264  
 Rg: 99 Duv: -0.0018 v': 0.4996



## 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>	DLW0077(WFRL6R149FA120WB)		5000K

### Electrical Measurement:

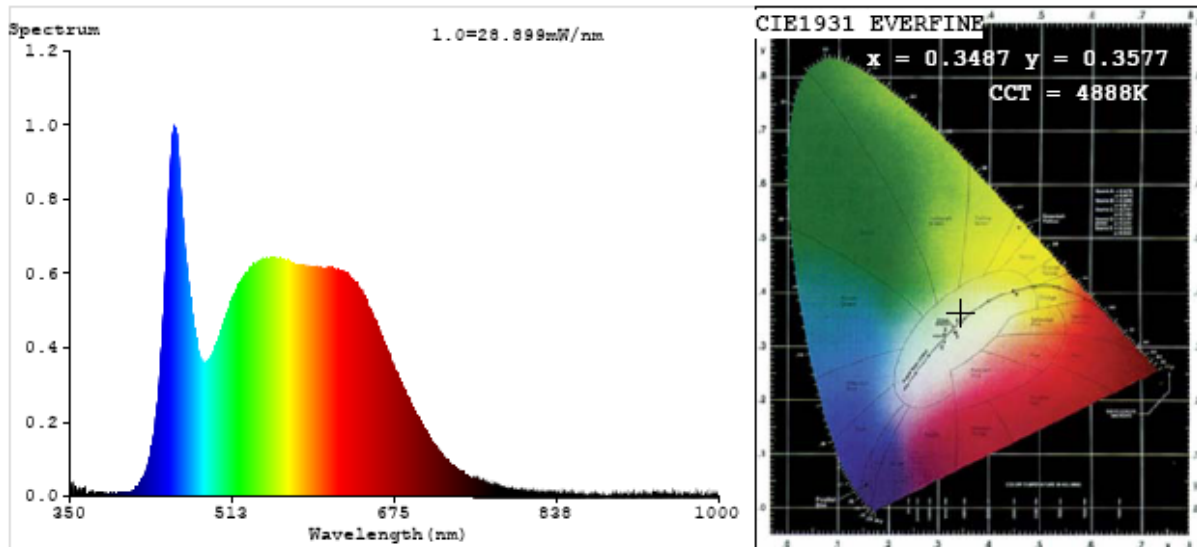
Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor
202108300007	120.0	60	0.1138	13.49	0.987

### Chromaticity Measurement - Sphere-Spectroradiometer Method:

Parameter	Result
Test Voltage (V)	120
Frequency (Hz)	60
CCT (K)	4888
Duv	0.0016
Chromaticity (x, y)	x=0.3487 y=0.3577
Chromaticity (u', v')	u'=0.2115 v'=0.4881
Color Rendering Index (CRI)	92.4
R9	71
Total Luminous (lm)	1257
Luminous Efficacy (lm/W)	93.22

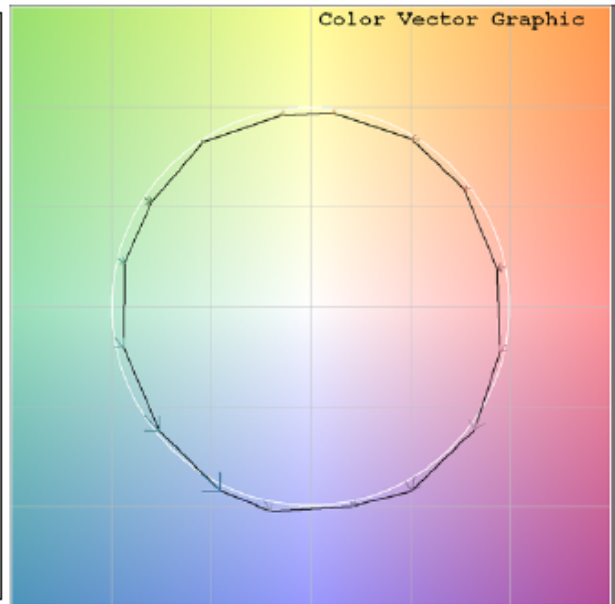
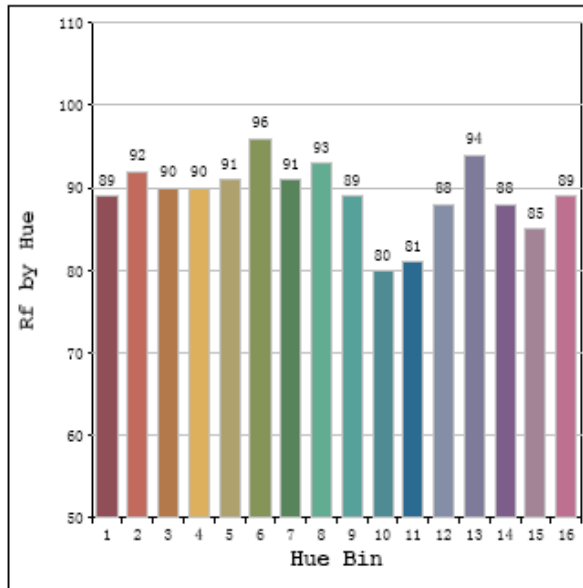
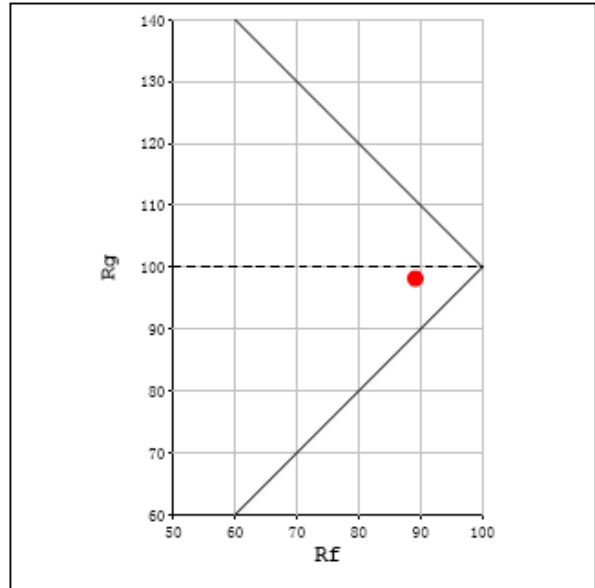
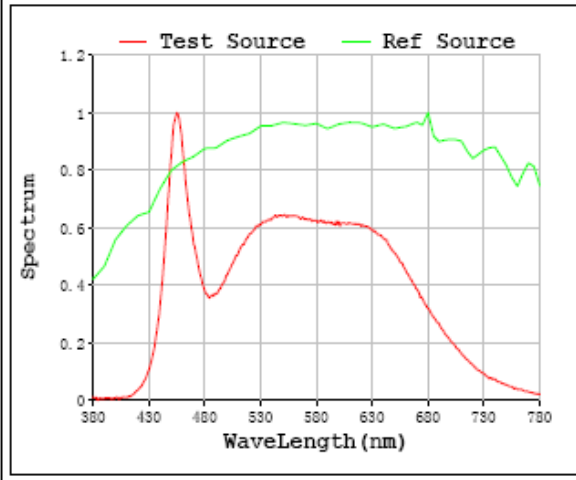
Special Color Rendering Indices			
R1	93	R9	71
R2	96	R10	88
R3	96	R11	89
R4	90	R12	64
R5	90	R13	94
R6	91	R14	97
R7	95	R15	91
R8	89	--	--

## Spectral Power Distribution & Chromaticity Diagram



# TM30

Rf: 89 CCT: 4888 K u': 0.2115  
 Rg: 98 Duv: 0.0016 v': 0.4881



Sample No.	Wattage and CCT setting	Test Voltage(V)	Flux(lm)	P(W)	Luminous Efficacy lm/W
DLW0077(WFRL6R149FA120WB)	2700K setting	120.0	1187.1	13.50	87.93
	3000K setting	120.0	1215	13.38	90.84
	3500K setting	120.0	1268	13.14	96.49
	4000K setting	120.0	1284	13.23	97.05
	5000K setting	120.0	1257	13.49	93.22

### 3. Product Photo



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