

**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):**  
**DLC0041(C6R12/18/249FAUNVM)**

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

**Type of  
Luminaire:** Downlights

**Report Date:** 2020-09-09

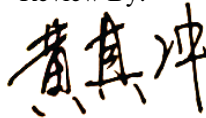
**Prepared By:**

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	12.0 W /18.0 W /24.0W
Rated Initial Lamp Lumen	800 lm /1200 lm /1600 lm
Declared CCT	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>	2020-09-09	<b>Test Ambient:</b>	25.3 °C
<b>Test Orientation</b>	As intended	<b>Stabilization Time (min)</b>	90
<b>Model Number</b>	DLC0041(C6R12/18/249FAUNVM) 3000K		

### Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz )	Current (A)	Power (W)	Power Factor
202008310085	120.0	60	0.187	22.40	0.997

### Chromaticity Measurement - Sphere-Spectroradiometer Method:

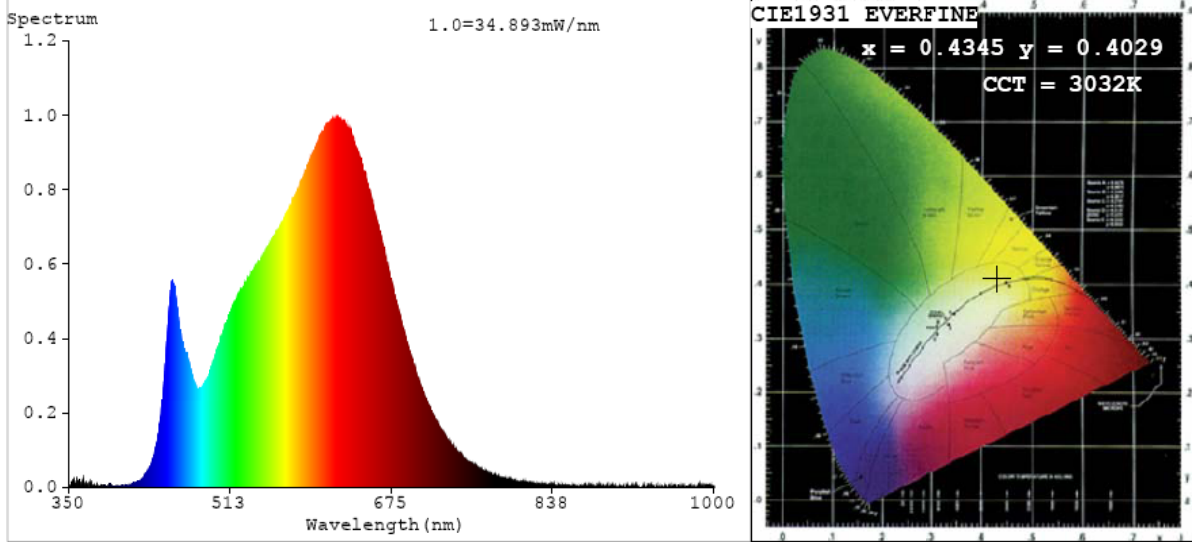
Parameter	Result	Special Color Rendering Indices			
Test Voltage (V)	120	R1	94	R9	62
Frequency (Hz)	60	R2	98	R10	93
CCT (K)	3032	R3	99	R11	93
Duv	0.0001	R4	92	R12	79
Chromaticity (x, y)	x=0.4345 y=0.4029	R5	93	R13	95
Chromaticity (u', v')	u'=0.2495 v'=0.5206	R6	96	R14	99
Color Rendering Index (CRI)	93.3	R7	92	R15	90
R9	62	R8	82	--	--

### Photometric Measurement – Goniophotometer Method:

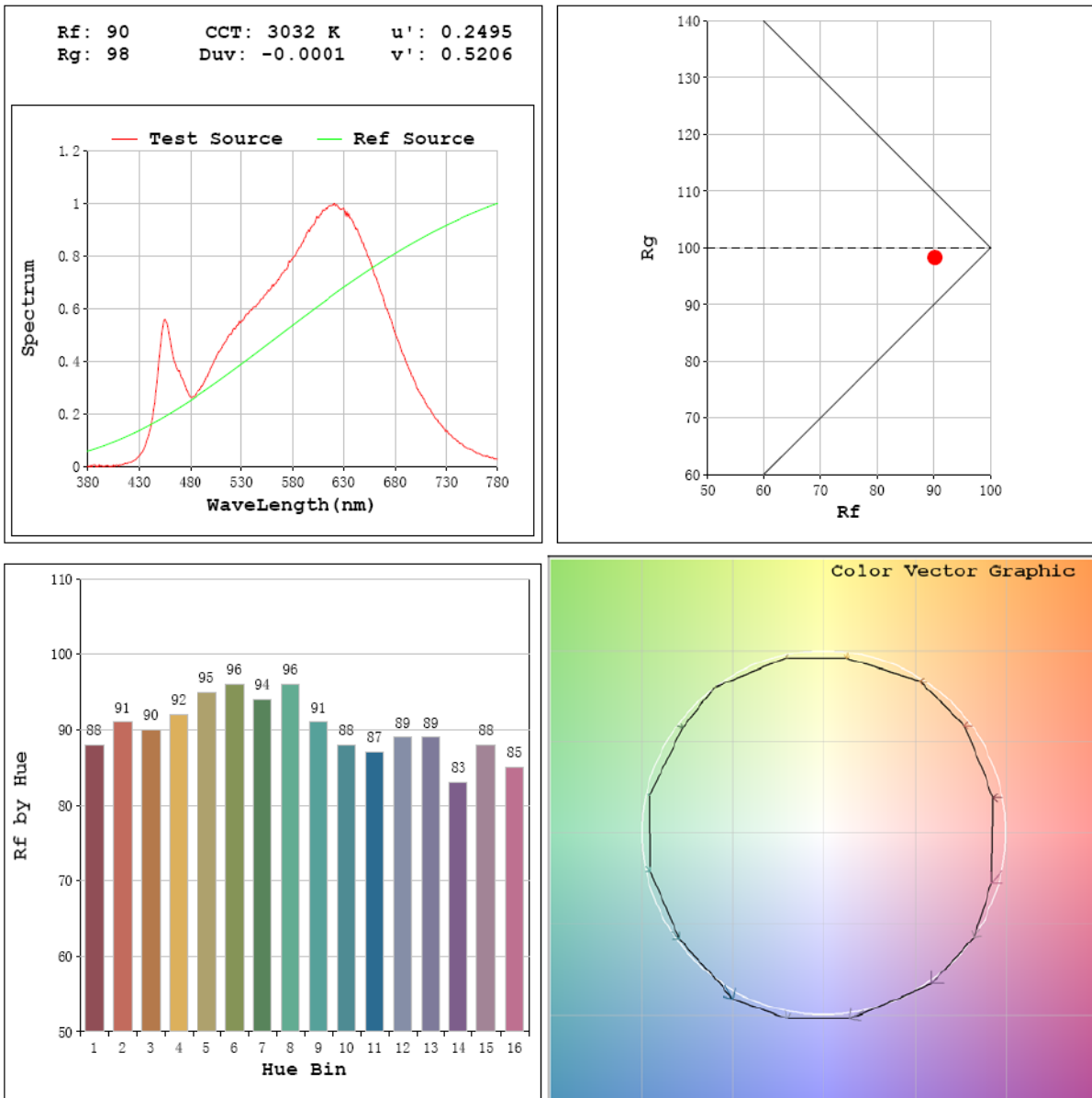
Parameter	Result
Test Voltage (V)	120.0
Frequency (Hz)	60
Total Luminous (lm)	1743.4
Luminous Efficacy (lm/W)	77.83
Beam Angle (°)	63.9
Center Beam Candle Power (cd)	1576

Parameter	Result
Test Voltage (V)	277.0
Frequency (Hz)	60
Total Luminous (lm)	1737
Luminous Efficacy (lm/W)	76.61

# Spectral Power Distribution & Chromaticity Diagram



## T30

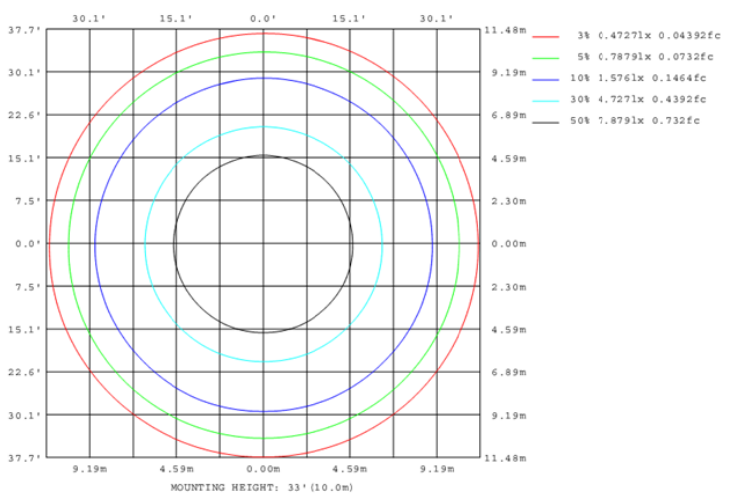
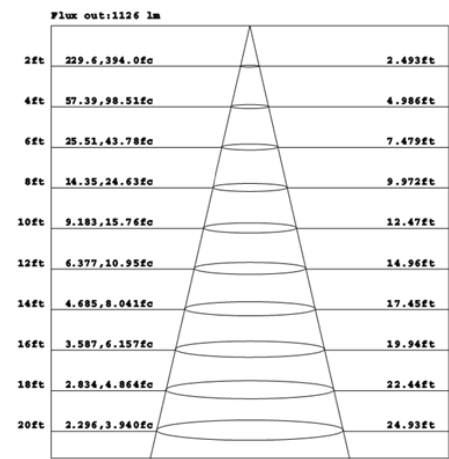
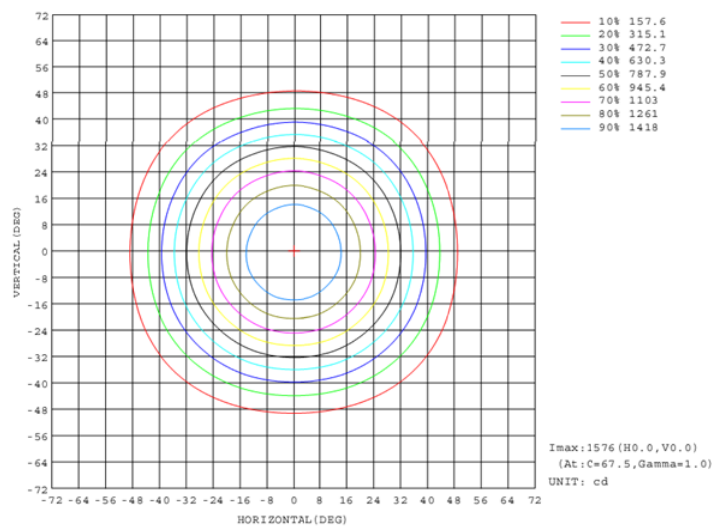
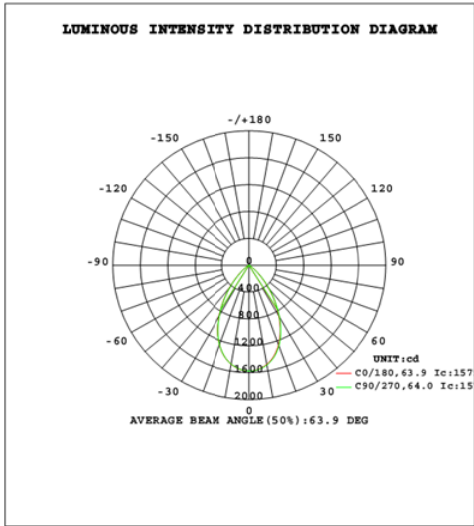


# Zonal Lumen Tabulation

Zonal Lumen Summary		
Zone	Lumens	% Luminaire
0-30	1032.7	59.2%
0-40	1440.7	82.6%
0-60	1703.6	97.7%
60-90	39.8	2.3%
70-100	21.9	1.3%
90-120	0.0	0.0%
0-90	1743.4	100.0%
90-180	0.0	0.0%
0-180	1743.4	100.0%

Lumens Per Zone					
Zone	Lumens	% Total	Zone	Lumens	% Total
0-10	146.8	8.4%	90-100	0.0	0.0%
10-20	392.2	22.5%	100-110	0.0	0.0%
20-30	493.8	28.3%	110-120	0.0	0.0%
30-40	407.9	23.4%	120-130	0.0	0.0%
40-50	208.9	12.0%	130-140	0.0	0.0%
50-60	54.0	3.1%	140-150	0.0	0.0%
60-70	17.8	1.0%	150-160	0.0	0.0%
70-80	12.4	0.7%	160-170	0.0	0.0%
80-90	9.5	0.5%	170-180	0.0	0.0%

## Photometric Data



Note: The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.



## 2.1.2 Electrical, Photometric and Chromaticity Measurements

<b>Test date</b>	2020-09-09	<b>Test Ambient:</b>	25.3 °C
<b>Test Orientation</b>	As intended	<b>Stabilization Time (min)</b>	90
<b>Model Number</b>	DLC0041(C6R12/18/249FAUNVM)		3500K

### Electrical Measurement:

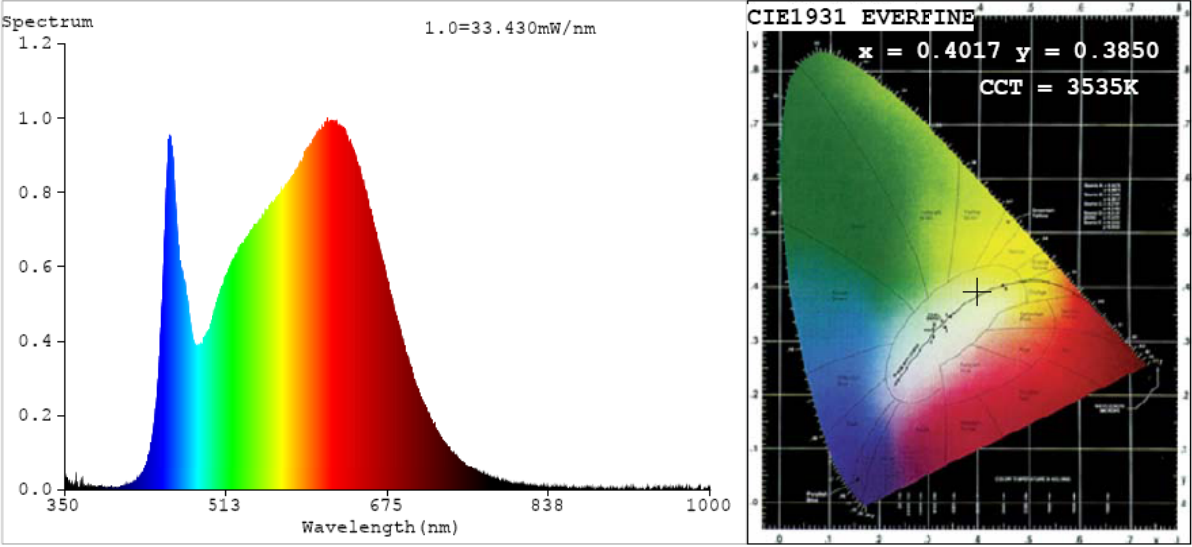
Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor
202008310085	120.0	60	0.185	22.18	0.997

### Chromaticity Measurement - Sphere-Spectroradiometer Method:

Parameter	Result
Test Voltage (V)	120
Frequency (Hz)	60
CCT (K)	3535
Duv	0.0017
Chromaticity (x, y)	x=0.4017 y=0.3850
Chromaticity (u', v')	u'=0.2357 v'=0.5083
Color Rendering Index (CRI)	94.5
R9	74
Total Luminous (lm)	1849
Luminous Efficacy (lm/W)	83.37

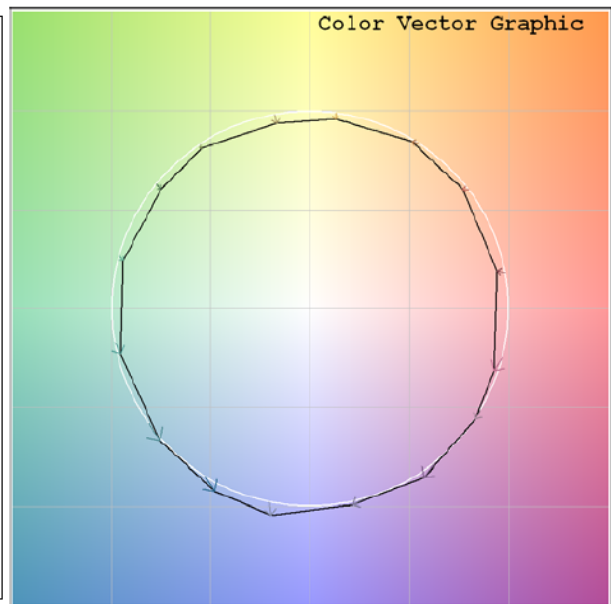
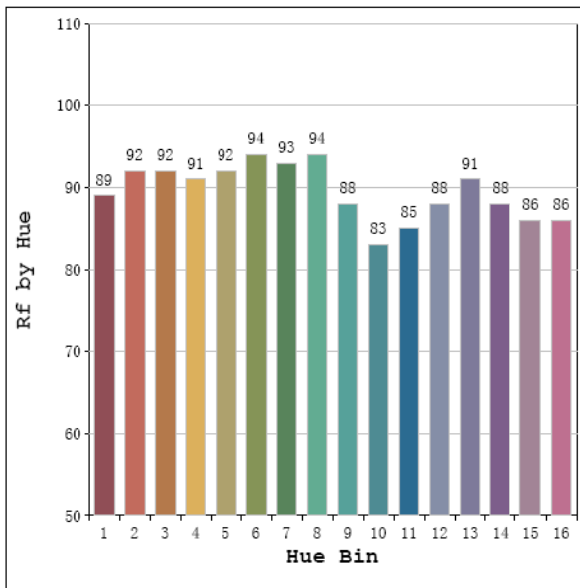
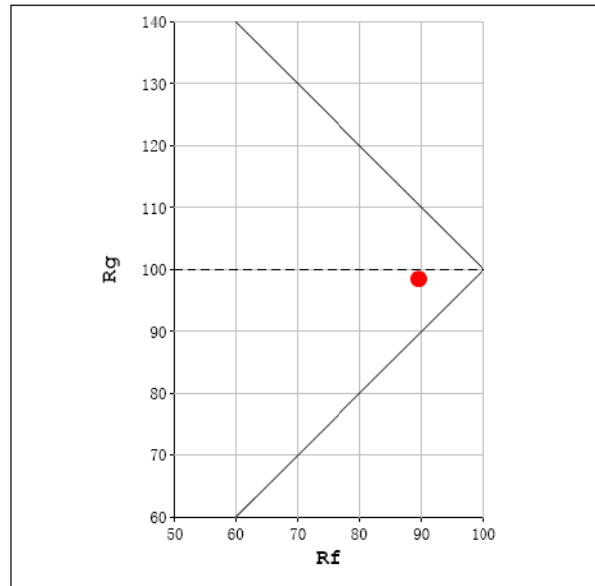
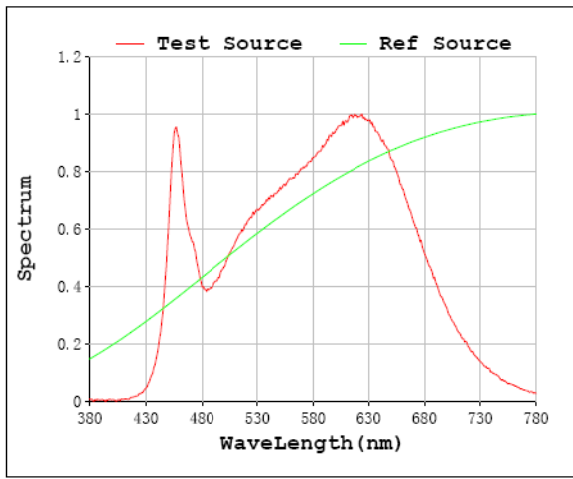
Special Color Rendering Indices			
R1	96	R9	74
R2	99	R10	97
R3	98	R11	94
R4	93	R12	74
R5	94	R13	98
R6	96	R14	100
R7	92	R15	94
R8	87	--	--

Parameter	Result
Test Voltage (V)	277.0
Frequency (Hz)	60
Total Luminous (lm)	1846
Luminous Efficacy (lm/W)	82.58



# T30

Rf: 90 CCT: 3535 K u': 0.2357  
 Rg: 98 Duv: -0.0017 v': 0.5083





### 2.1.3 Electrical, Photometric and Chromaticity Measurements

Test date	2020-09-09	Test Ambient:	25.3 °C
Test Orientation	As intended	Stabilization Time (min)	90
Model Number	DLC0041(C6R12/18/249FAUNVM) 4000K		

#### Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz )	Current (A)	Power (W)	Power Factor
202008310085	120.0	60	0.184	22.00	0.997

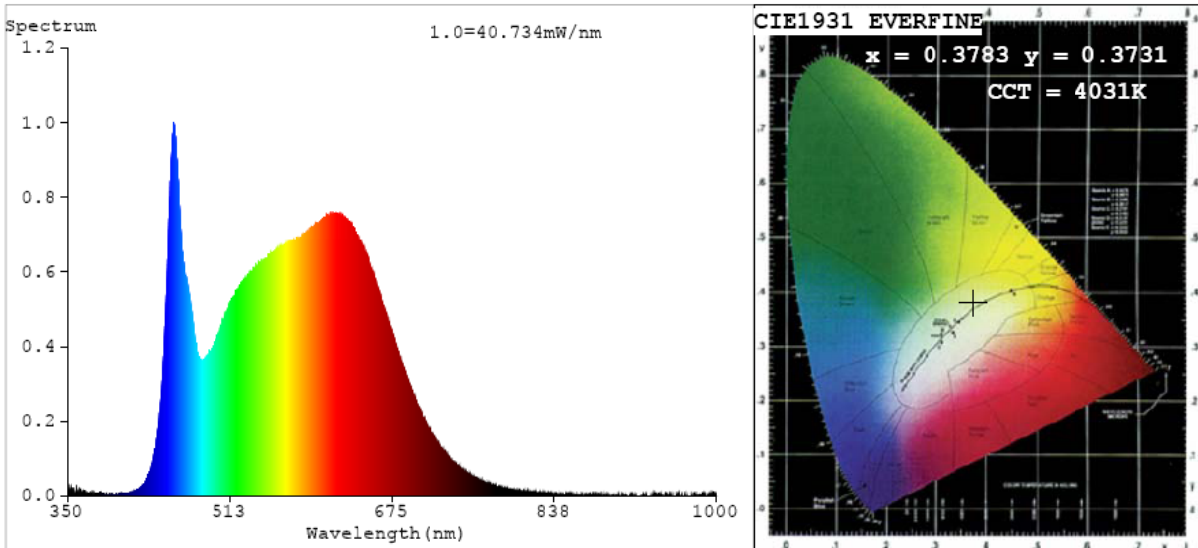
#### Chromaticity Measurement - Sphere-Spectroradiometer Method:

Parameter	Result
Test Voltage (V)	120
Frequency (Hz)	60
CCT (K)	4031
Duv	0.0011
Chromaticity (x, y)	x=0.3783 y=0.3731
Chromaticity (u', v')	u'=0.2252 v'=0.4996
Color Rendering Index (CRI)	94.4
R9	78
Total Luminous (lm)	1888
Luminous Efficacy (lm/W)	85.82

Special Color Rendering Indices			
R1	96	R9	78
R2	100	R10	97
R3	98	R11	92
R4	91	R12	70
R5	94	R13	98
R6	95	R14	99
R7	92	R15	94
R8	89	--	--

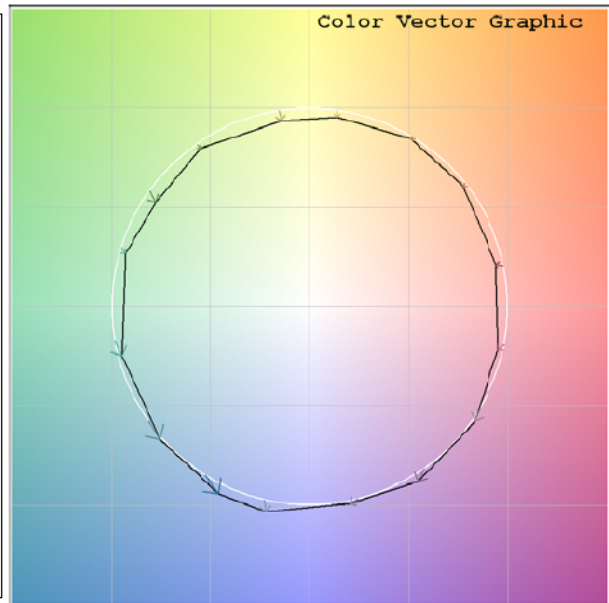
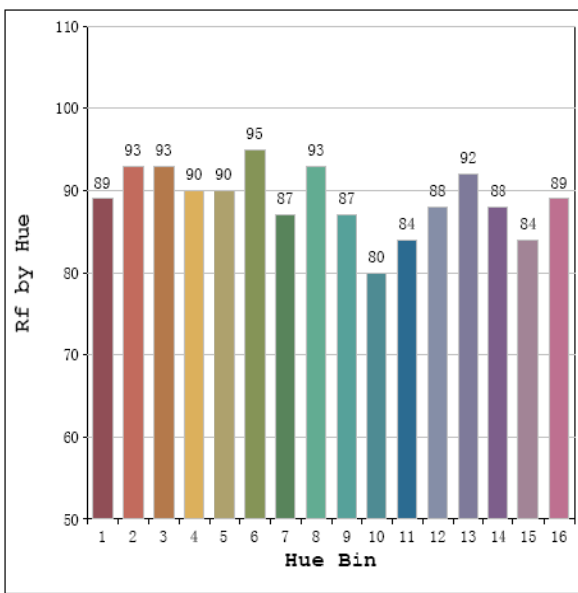
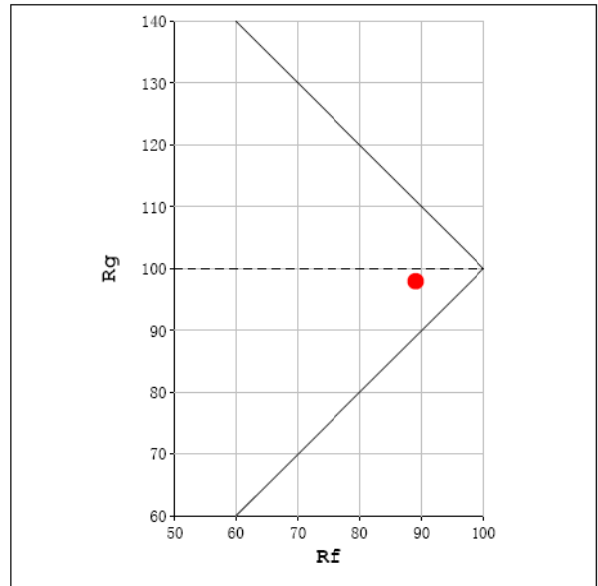
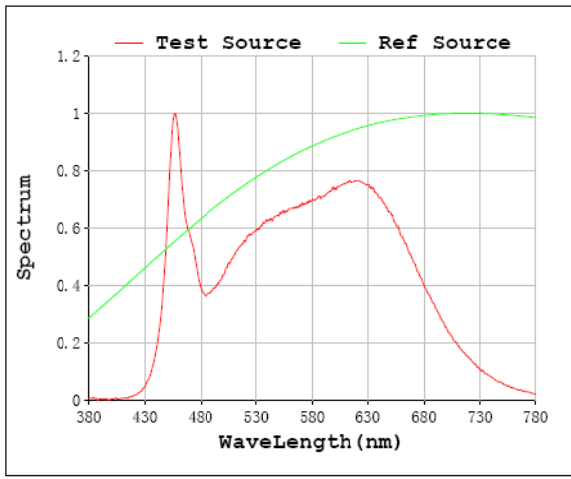
Parameter	Result
Test Voltage (V)	277.0
Frequency (Hz)	60
Total Luminous (lm)	1888
Luminous Efficacy (lm/W)	85.13

### Spectral Power Distribution & Chromaticity Diagram



# T30

Rf: 89      CCT: 4031 K      u': 0.2252  
 Rg: 98      Duv: -0.0011      v': 0.4996



### 2.1.4 Electrical, Photometric and Chromaticity Measurements

<b>Test date</b>	2020-09-09	<b>Test Ambient:</b>	25.3 °C
<b>Test Orientation</b>	As intended	<b>Stabilization Time (min)</b>	90
<b>Model Number</b>	DLC0041(C6R12/18/249FAUNVM)		5000K

#### Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor
202008310085	120.0	60	0.186	22.28	0.997

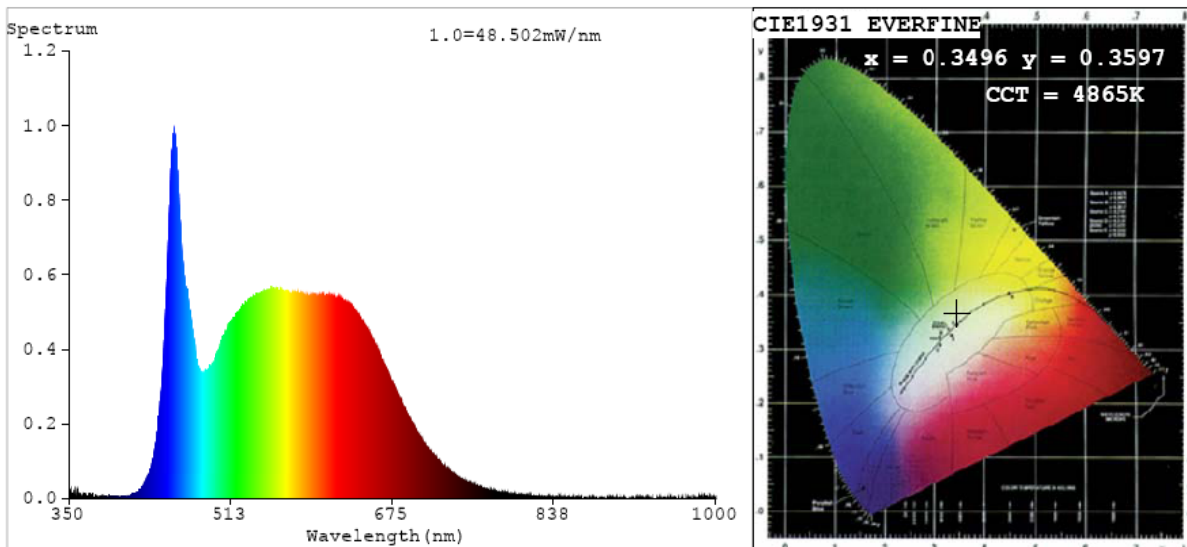
#### Chromaticity Measurement - Sphere-Spectroradiometer Method:

Parameter	Result
Test Voltage (V)	120
Frequency (Hz)	60
CCT (K)	4865
Duv	0.0022
Chromaticity (x, y)	x=0.3496 y=0.3597
Chromaticity (u', v')	u'=0.2113 v'=0.4892
Color Rendering Index (CRI)	92.6
R9	73
Total Luminous (lm)	1857
Luminous Efficacy (lm/W)	83.34

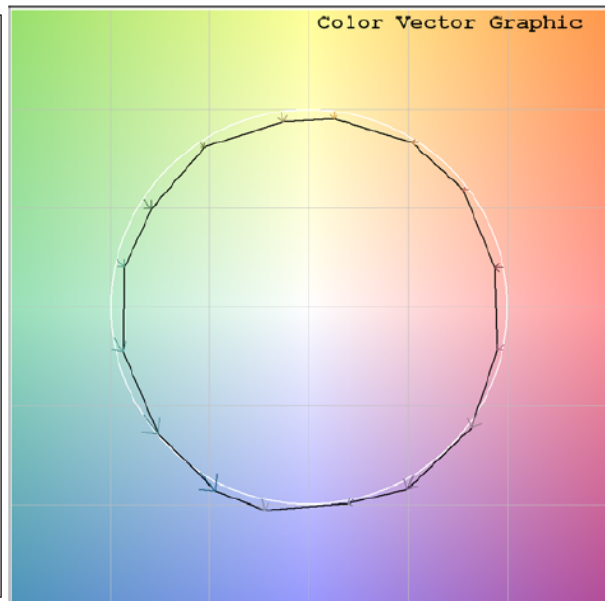
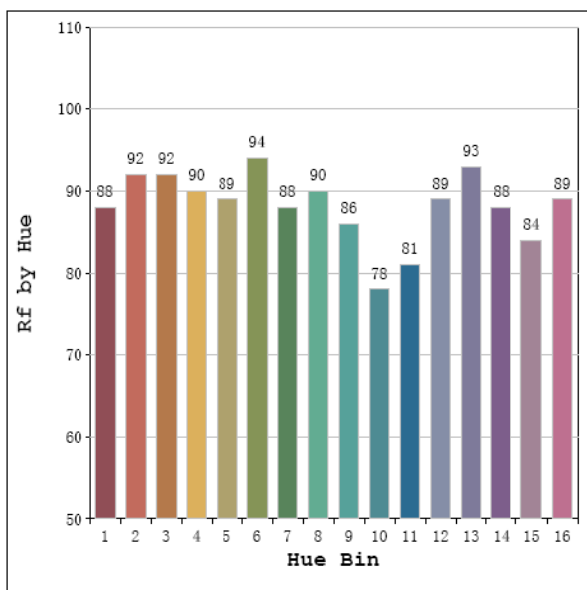
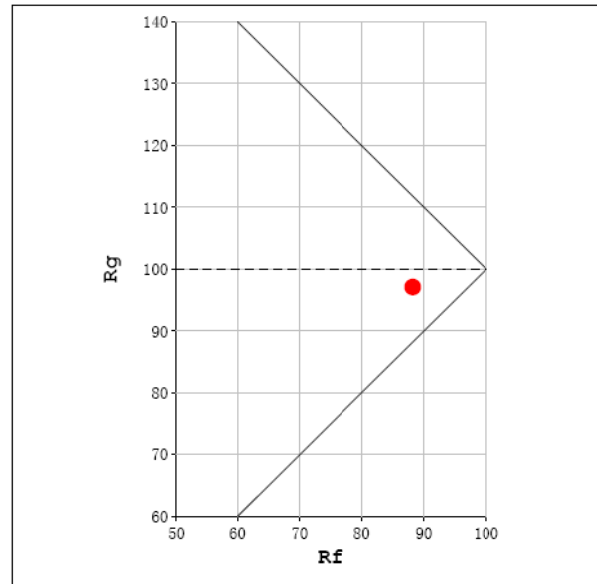
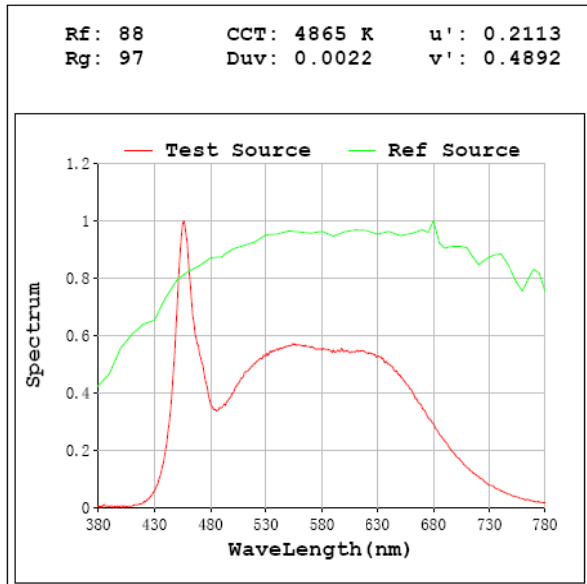
Special Color Rendering Indices			
R1	93	R9	73
R2	98	R10	92
R3	98	R11	89
R4	88	R12	63
R5	90	R13	95
R6	93	R14	99
R7	93	R15	91
R8	88	--	--

Parameter	Result
Test Voltage (V)	277.0
Frequency (Hz)	60
Total Luminous (lm)	1859
Luminous Efficacy (lm/W)	82.83

### Spectral Power Distribution & Chromaticity Diagram

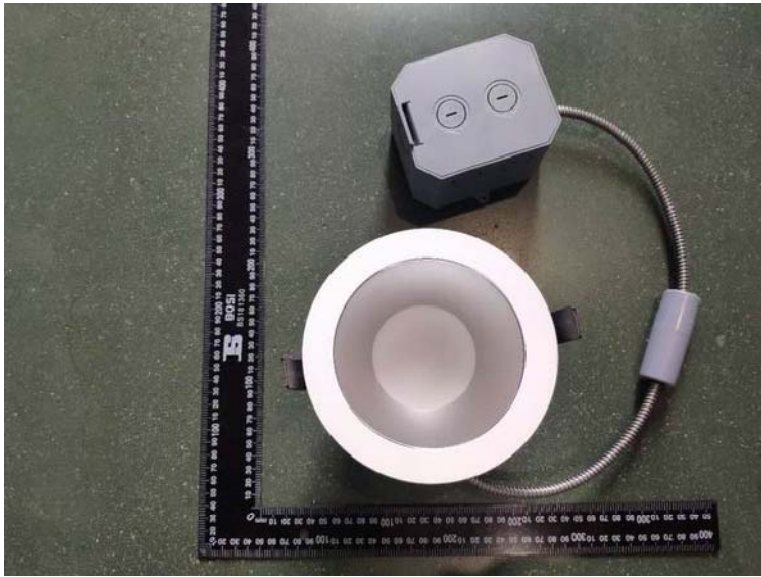


# T30



Sample No.	Wattage and CCT setting	Test Voltage(V)	Flux(lm)	P(W)	Luminous Efficacy lm/W
DLC0041(C6R12/18/249FAUNVM)	12W 3000K setting	120.0	929.8	11.31	82.24
		277.0	930.6	11.78	78.97
	18W 3000K setting	120.0	1308.0	16.31	80.22
		277.0	1310.0	16.68	78.52
	24W 3000K setting	120.0	1737.0	22.46	77.33
		277.0	1737.0	22.67	76.61
	24W 3500K setting	120.0	1849.0	22.18	83.37
		277.0	1846.0	22.36	82.58
	24W 4000K setting	120.0	1888.0	22.00	85.82
		277.0	1888.0	22.17	85.13
	24W 5000K setting	120.0	1857.0	22.28	83.34
		277.0	1859.0	22.44	82.83

### 3. Product Photo



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