

**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): ECLPS4**

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

**Type of  
Luminaire:** Downlights

**Report Date:** 2024-06-27

**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	7.5W
Rated Initial Lamp Lumen	700lm (mode2700K)
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>	2024-06-24	<b>Test Ambient:</b>	25.1 °C
<b>Test Orientation</b>	As intended	<b>Stabilization Time (min)</b>	90
<b>Model Number</b>	ECLPS4	2700K	

**Electrical Measurement:**

Sample No.	Voltage (Vac)	Frequency (Hz )	Current (A)	Power (W)	Power Factor
202406210012	120.0	60	0.072	7.38	0.851

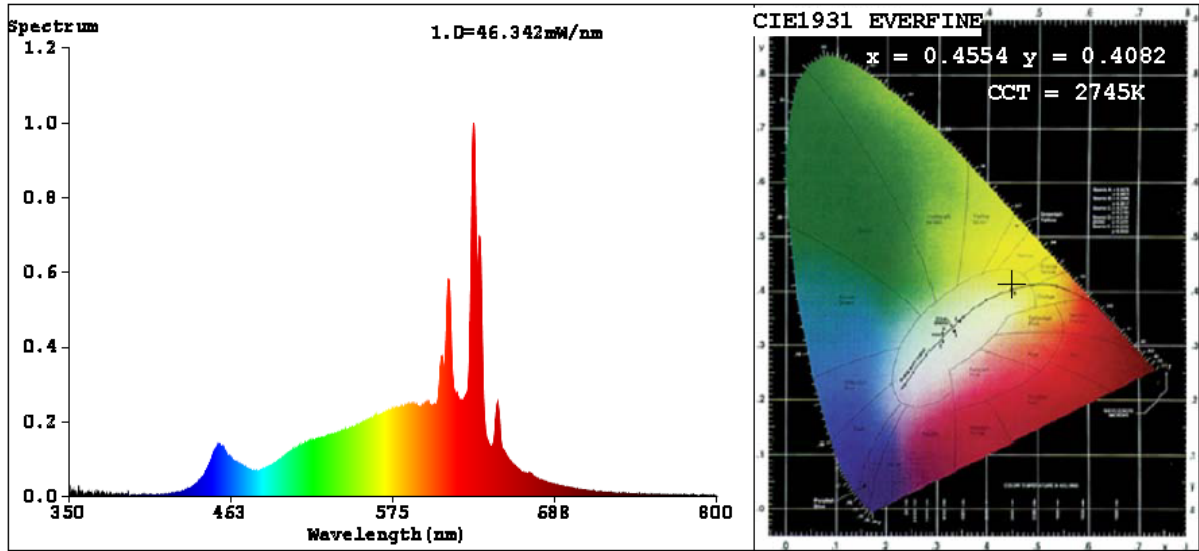
**Chromaticity Measurement - Sphere-Spectroradiometer Method:**

Parameter	Result	Special Color Rendering Indices			
Test Voltage (V)	120	R1	98	R9	67
Frequency (Hz)	60	R2	99	R10	96
CCT (K)	2745	R3	99	R11	99
Duv	-0.0005	R4	98	R12	86
Chromaticity (x, y)	x=0.4554 y=0.4082	R5	98	R13	98
Chromaticity (u', v')	u'=0.2607 v'=0.5257	R6	95	R14	98
Color Rendering Index (CRI)	95.4	R7	92	R15	93
R9	67	R8	85	--	--
Rg	100				
Rf	92				
Rcs,h1%	-5				

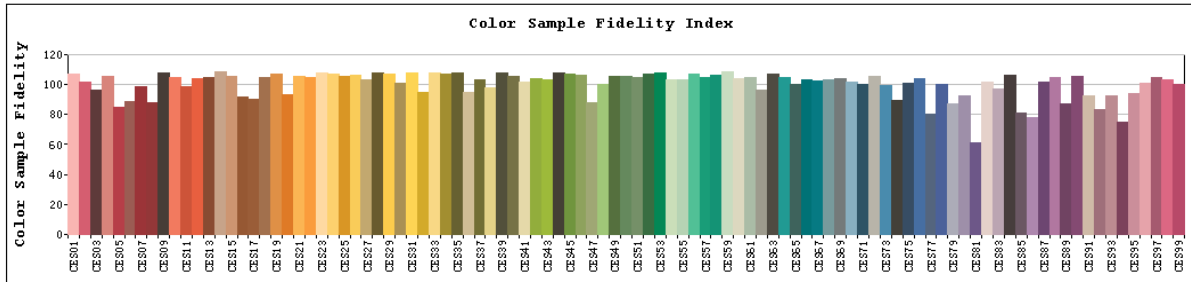
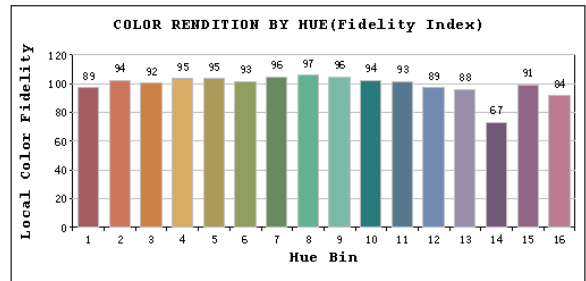
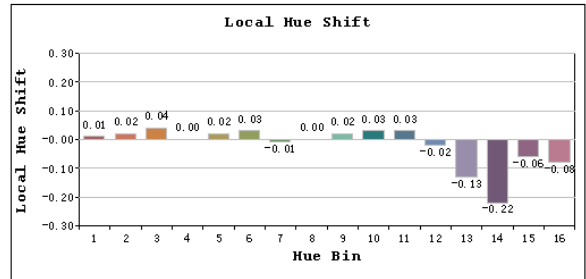
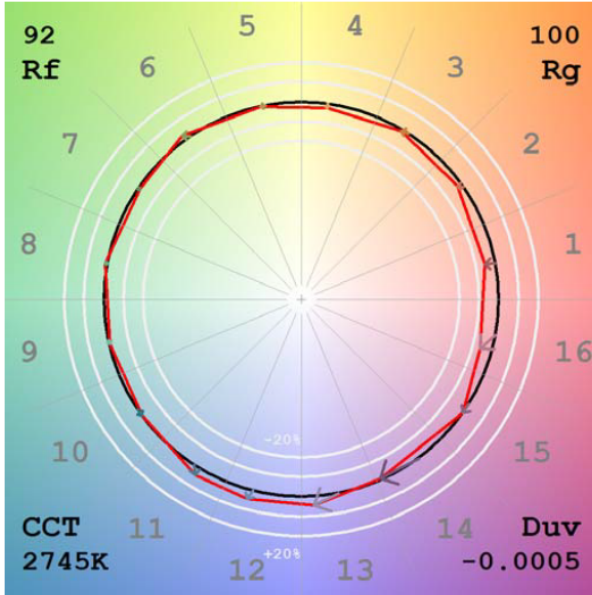
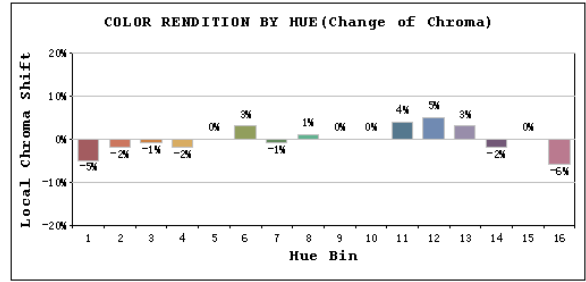
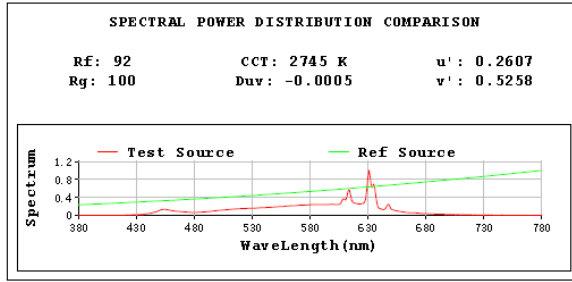
**Photometric Measurement – Goniophotometer Method:**

Parameter	Result
Test Voltage (V)	120.0
Frequency (Hz)	60
Total Luminous (lm)	705.5
Luminous Efficacy (lm/W)	95.59
Beam Angle (°)	89.2
Center Beam Candle Power (cd)	341.7

# Spectral Power Distribution & Chromaticity Diagram



# TM30

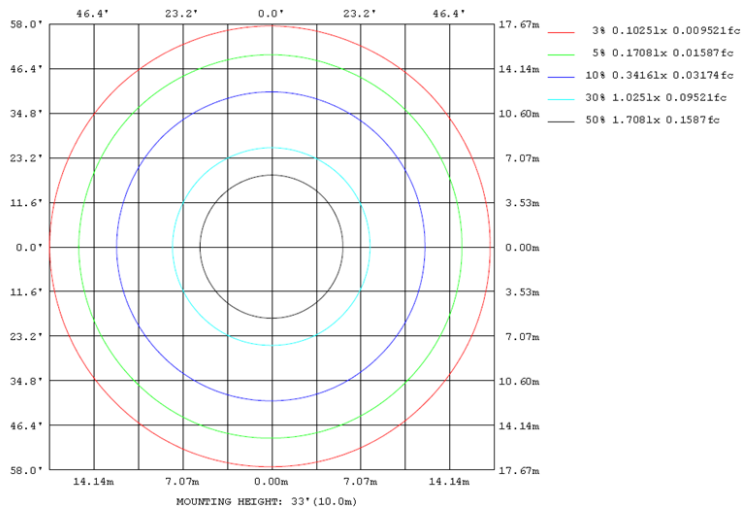
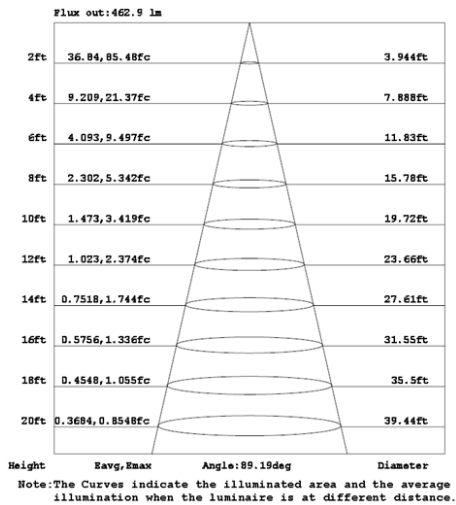
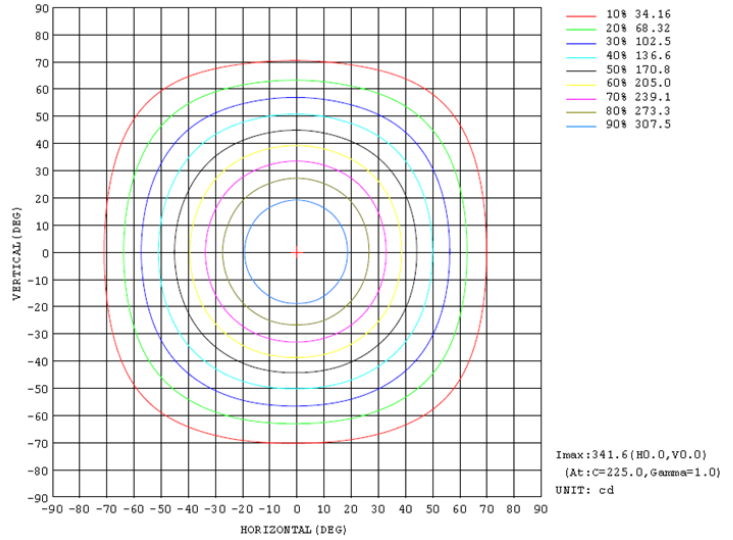
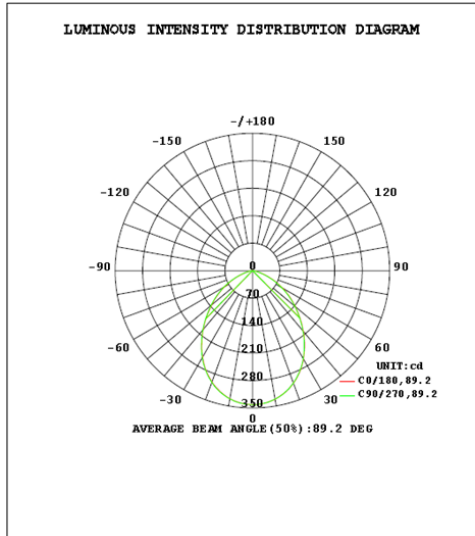


# Zonal Lumen Tabulation

Zonal Lumen Summary		
Zone	Lumens	% Luminaire
0-30	252.2	35.7%
0-40	395.0	56.0%
0-60	625.0	88.6%
60-90	80.5	11.4%
70-100	21.7	3.1%
90-120	0.0	0.0%
0-90	705.5	100.0%
90-180	0.0	0.0%
0-180	705.5	100.0%

Lumens Per Zone					
Zone	Lumens	% Total	Zone	Lumens	% Total
0-10	32.1	4.6%	90-100	0.0	0.0%
10-20	90.1	12.8%	100-110	0.0	0.0%
20-30	129.9	18.4%	110-120	0.0	0.0%
30-40	142.9	20.3%	120-130	0.0	0.0%
40-50	129.9	18.4%	130-140	0.0	0.0%
50-60	100.1	14.2%	140-150	0.0	0.0%
60-70	58.8	8.3%	150-160	0.0	0.0%
70-80	19.2	2.7%	160-170	0.0	0.0%
80-90	2.5	0.4%	170-180	0.0	0.0%

## Photometric Data





## 2.1.2 Electrical, Photometric and Chromaticity Measurements

Test date	2024-06-24	Test Ambient:	25.1 °C
Test Orientation	As intended	Stabilization Time (min)	90
Model Number	ECLPS4	3000K	

### Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz )	Current (A)	Power (W)	Power Factor
202406210012	120.0	60	0.073	7.42	0.842

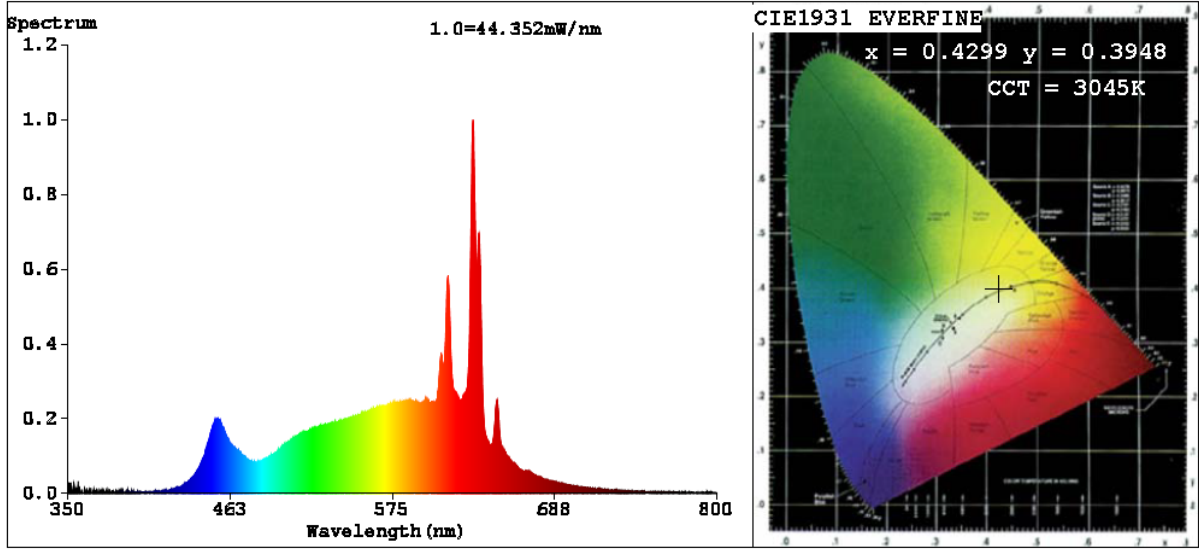
### Chromaticity Measurement - Sphere-Spectroradiometer Method:

Parameter	Result	Special Color Rendering Indices			
Test Voltage (V)	120	R1	99	R9	78
Frequency (Hz)	60	R2	99	R10	98
CCT (K)	3045	R3	98	R11	96
Duv	-0.0028	R4	99	R12	85
Chromaticity (x, y)	x=0.4299 y=0.3948	R5	99	R13	99
Chromaticity (u', v')	u'=0.2500 v'=0.5166	R6	94	R14	97
Color Rendering Index (CRI)	96.4	R7	94	R15	97
R9	78	R8	90	--	--
Rg	102				
Rf	92				
Rcs,h1%	-4				

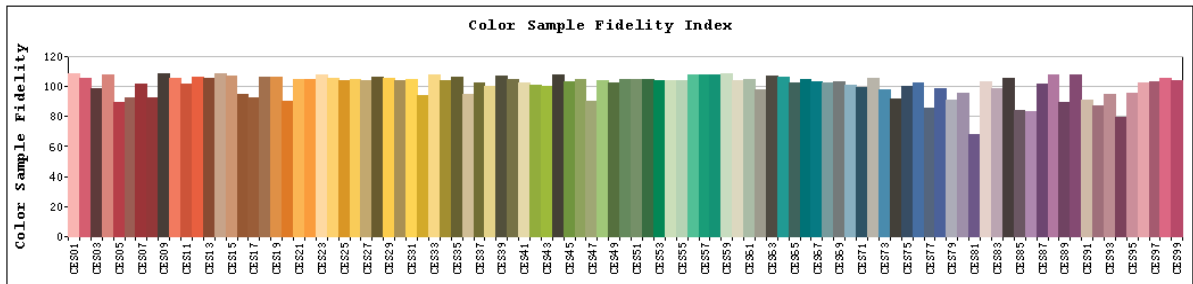
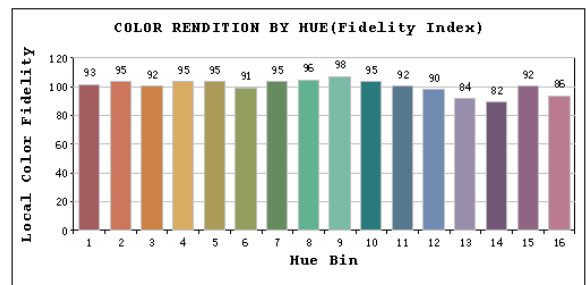
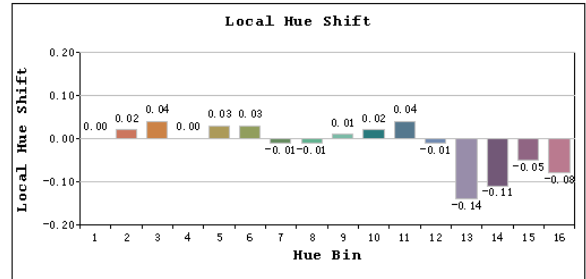
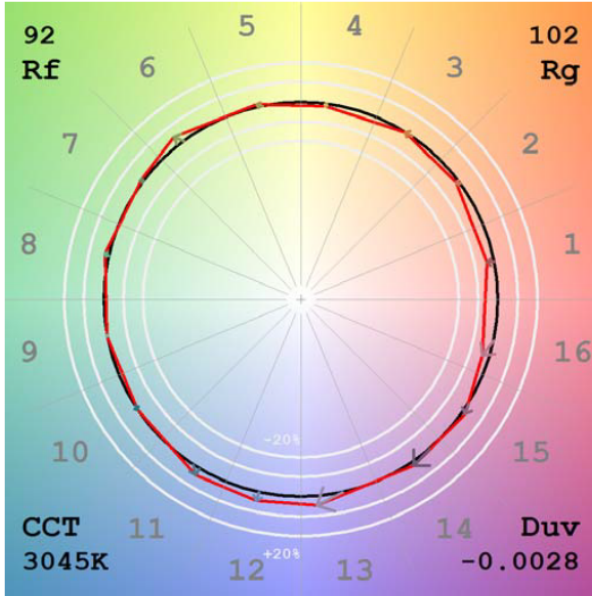
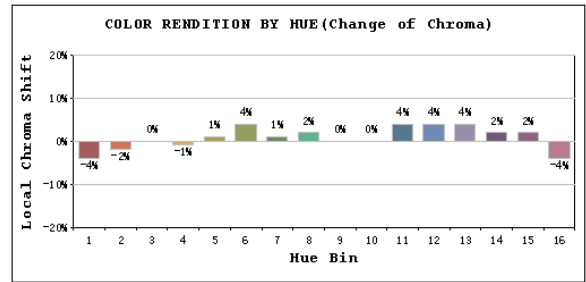
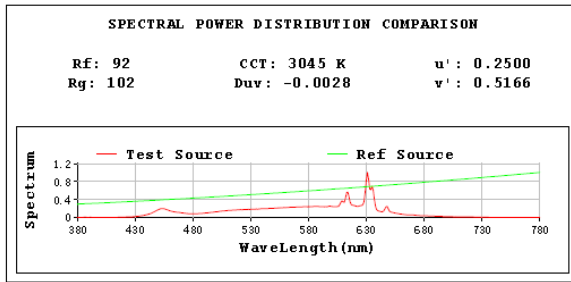
### Photometric Measurement – Goniophotometer Method:

Parameter	Result
Test Voltage (V)	120.0
Frequency (Hz)	60
Total Luminous (lm)	713.1
Luminous Efficacy (lm/W)	96.10

# Spectral Power Distribution & Chromaticity Diagram



# TM30



**2.1.3 Electrical, Photometric and Chromaticity Measurements**

<b>Test date</b>	2024-06-24	<b>Test Ambient:</b>	25.1 °C
<b>Test Orientation</b>	As intended	<b>Stabilization Time (min)</b>	90
<b>Model Number</b>	ECLPS4	3500K	

**Electrical Measurement:**

Sample No.	Voltage (Vac)	Frequency (Hz )	Current (A)	Power (W)	Power Factor
202406210012	120.0	60	0.075	7.46	0.828

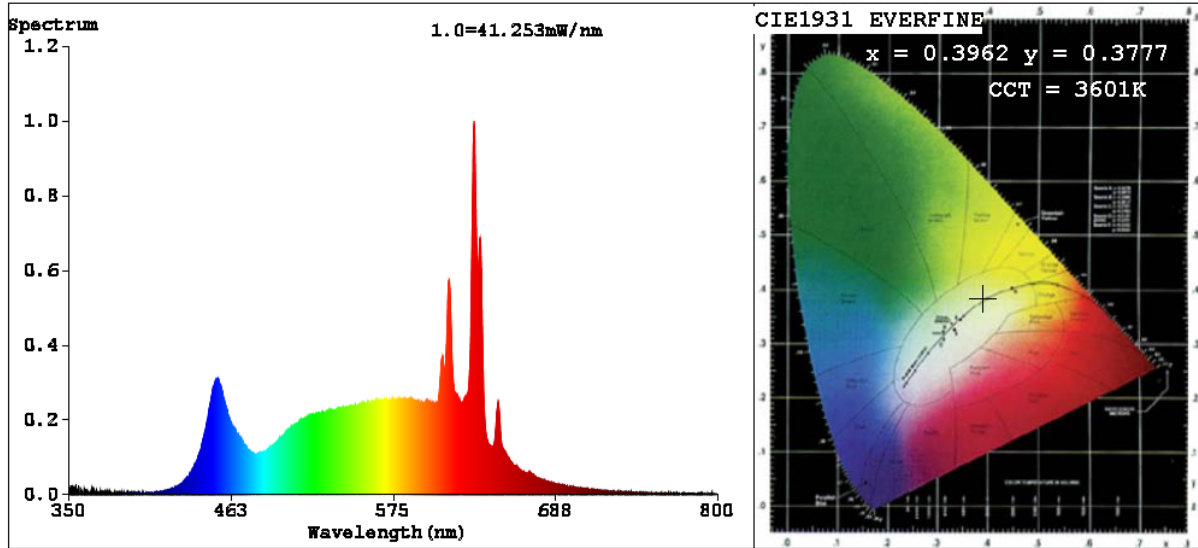
**Chromaticity Measurement - Sphere-Spectroradiometer Method:**

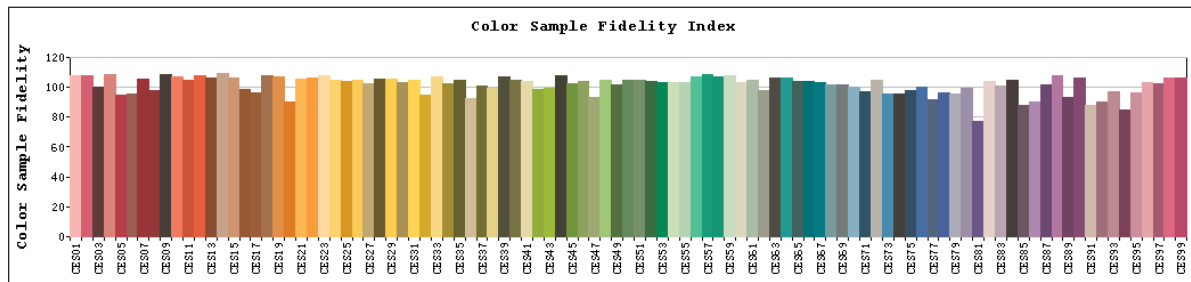
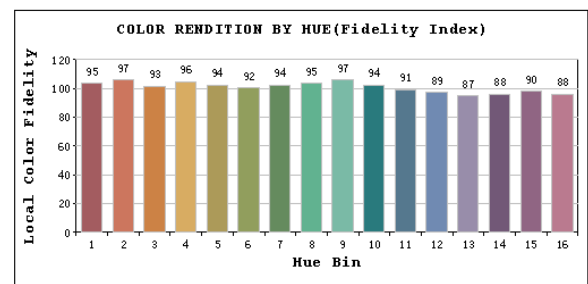
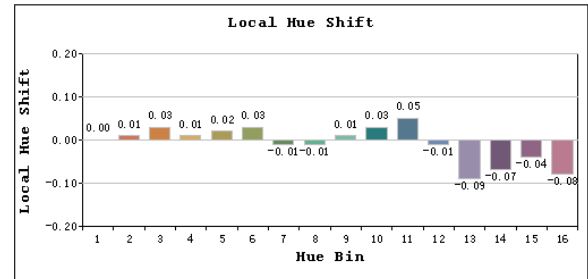
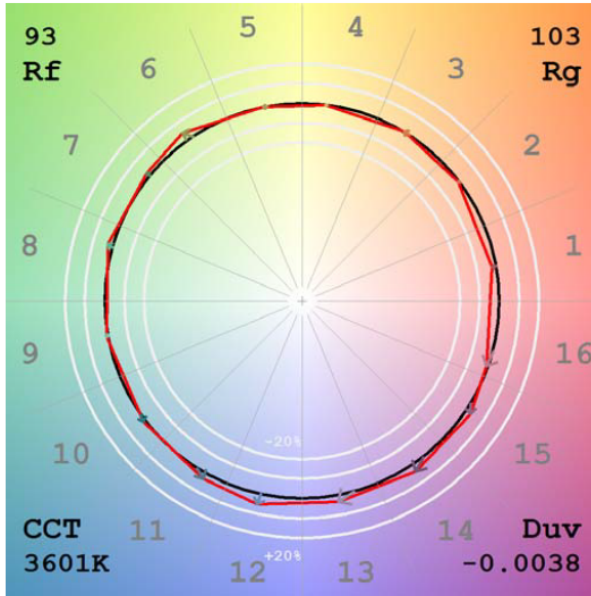
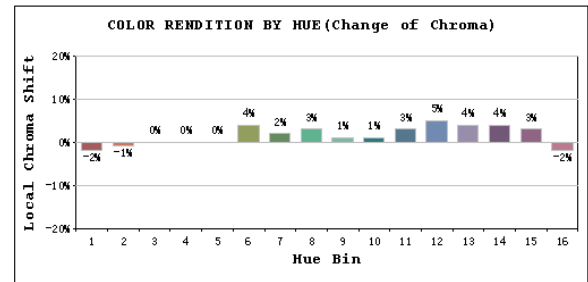
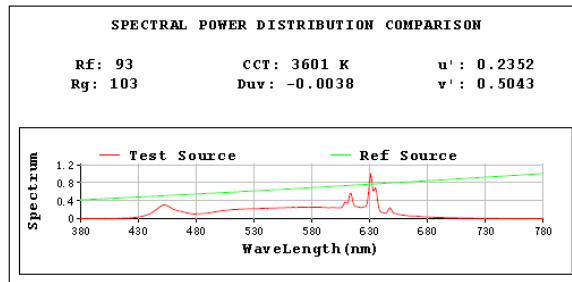
Parameter	Result	Special Color Rendering Indices			
Test Voltage (V)	120	R1	97	R9	90
Frequency (Hz)	60	R2	99	R10	98
CCT (K)	3601	R3	96	R11	94
Duv	-0.0038	R4	97	R12	82
Chromaticity (x, y)	x=0.3962 y=0.3777	R5	98	R13	97
Chromaticity (u', v')	u'=0.2352 v'=0.5043	R6	95	R14	96
Color Rendering Index (CRI)	96.7	R7	97	R15	98
R9	90	R8	97	--	--
Rg	103				
Rf	93				
Rcs,h1%	-2				

**Photometric Measurement – Goniophotometer Method:**

Parameter	Result
Test Voltage (V)	120.0
Frequency (Hz)	60
Total Luminous (lm)	724.5
Luminous Efficacy (lm/W)	97.12

# Spectral Power Distribution & Chromaticity Diagram





**2.1.4 Electrical, Photometric and Chromaticity Measurements**

<b>Test date</b>	2024-06-24	<b>Test Ambient:</b>	25.1 °C
<b>Test Orientation</b>	As intended	<b>Stabilization Time (min)</b>	90
<b>Model Number</b>	ECLPS4	4000K	

**Electrical Measurement:**

Sample No.	Voltage (Vac)	Frequency (Hz )	Current (A)	Power (W)	Power Factor
202406210012	120.0	60	0.074	7.44	0.835

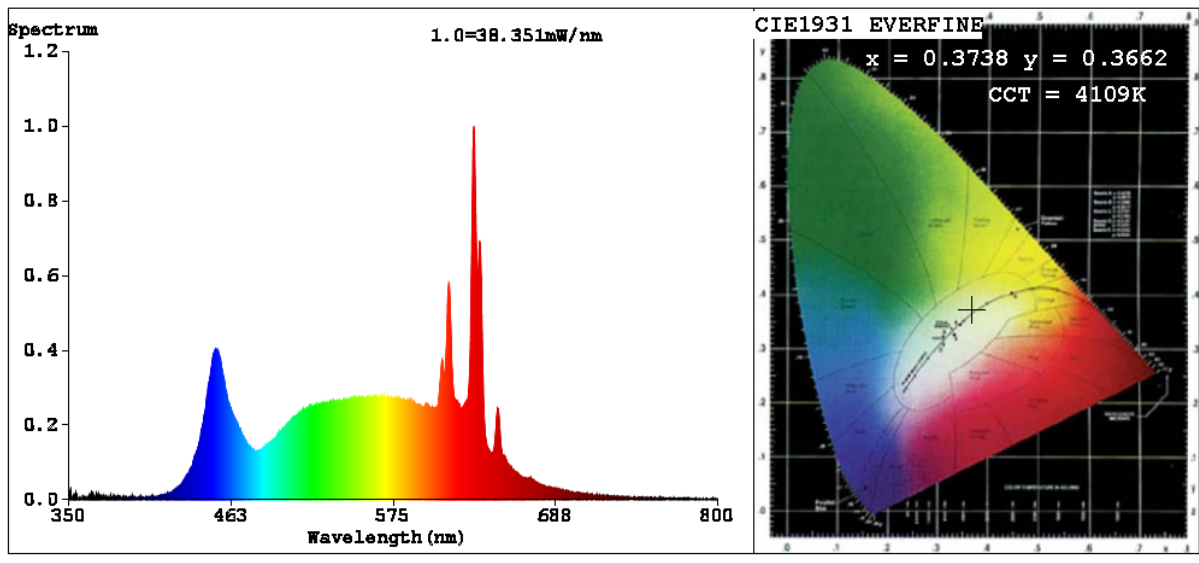
**Chromaticity Measurement - Sphere-Spectroradiometer Method:**

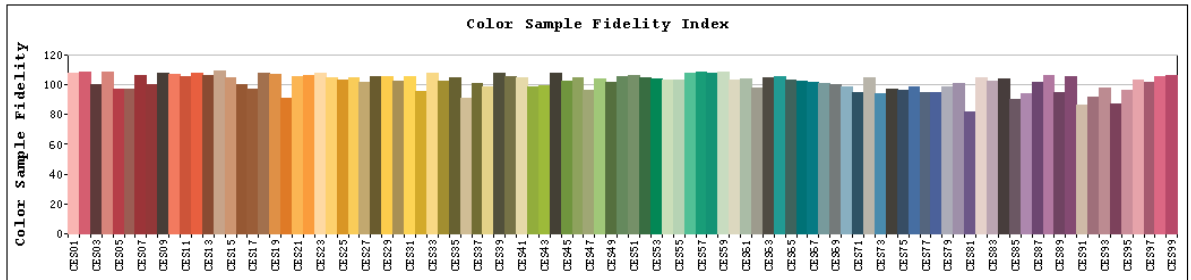
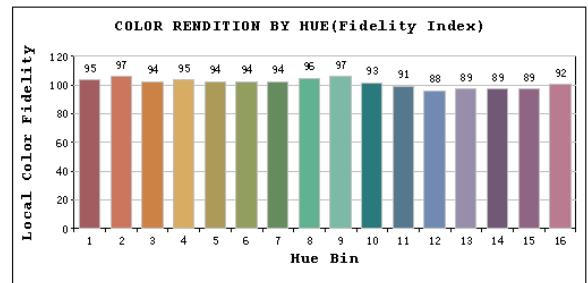
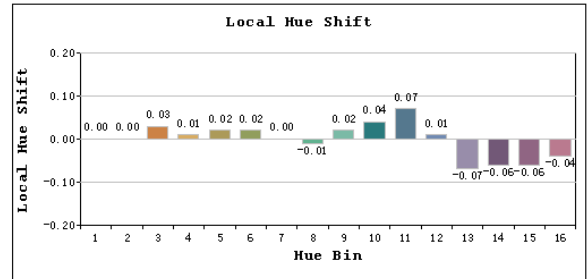
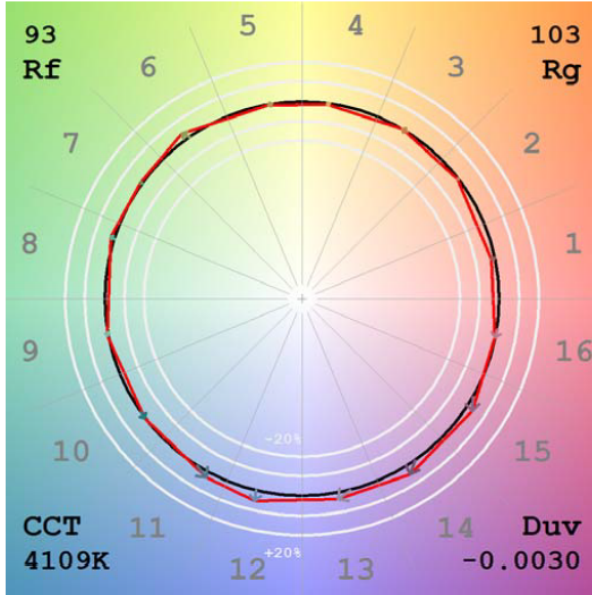
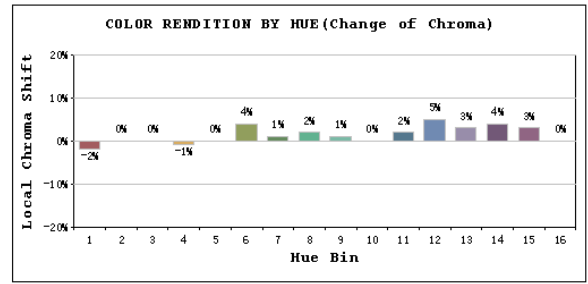
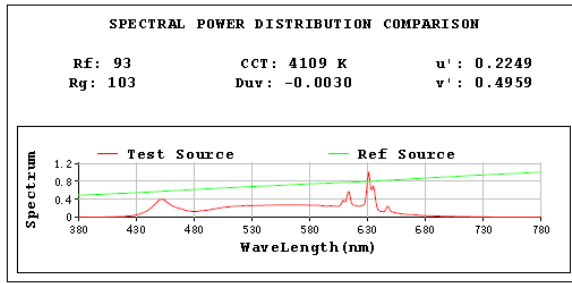
Parameter	Result	Special Color Rendering Indices			
Test Voltage (V)	120	R1	97	R9	96
Frequency (Hz)	60	R2	99	R10	96
CCT (K)	4109	R3	94	R11	94
Duv	-0.0030	R4	97	R12	78
Chromaticity (x, y)	x=0.3738 y=0.3662	R5	98	R13	98
Chromaticity (u', v')	u'=0.2249 v'=0.4959	R6	95	R14	95
Color Rendering Index (CRI)	97.2	R7	98	R15	97
R9	96	R8	99	--	--
Rg	103				
Rf	93				
Rcs,h1%	-2				

**Photometric Measurement – Goniophotometer Method:**

Parameter	Result
Test Voltage (V)	120.0
Frequency (Hz)	60
Total Luminous (lm)	738.5
Luminous Efficacy (lm/W)	99.26

# Spectral Power Distribution & Chromaticity Diagram





**2.1.5 Electrical, Photometric and Chromaticity Measurements**

<b>Test date</b>	2024-06-24	<b>Test Ambient:</b>	25.1 °C
<b>Test Orientation</b>	As intended	<b>Stabilization Time (min)</b>	90
<b>Model Number</b>	ECLPS4	5000K	

**Electrical Measurement:**

Sample No.	Voltage (Vac)	Frequency (Hz )	Current (A)	Power (W)	Power Factor
202406210012	120.0	60	0.072	7.38	0.850

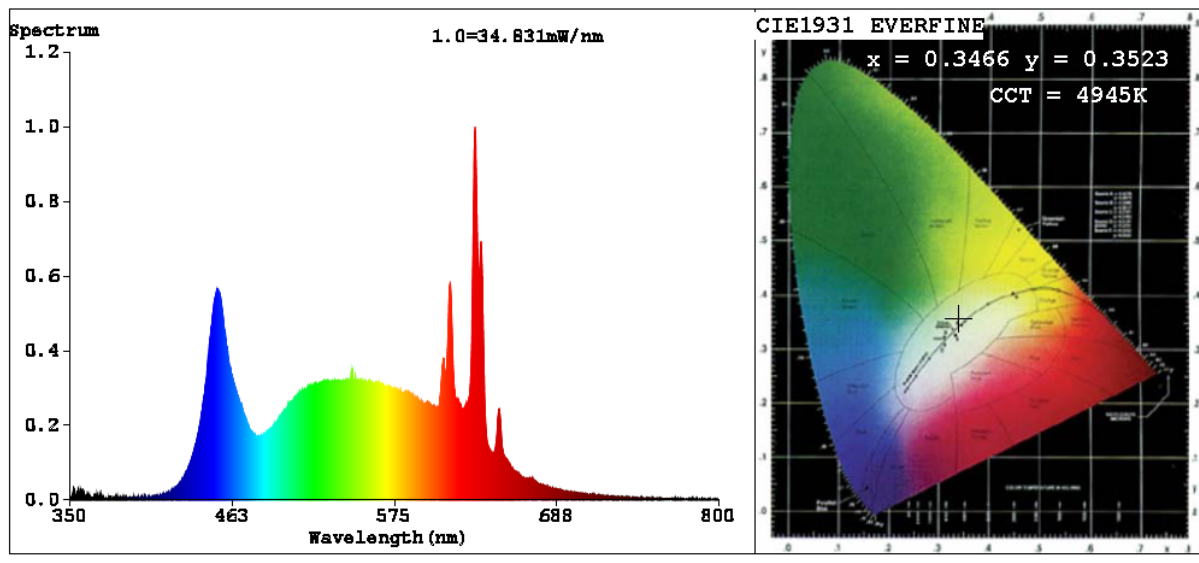
**Chromaticity Measurement - Sphere-Spectroradiometer Method:**

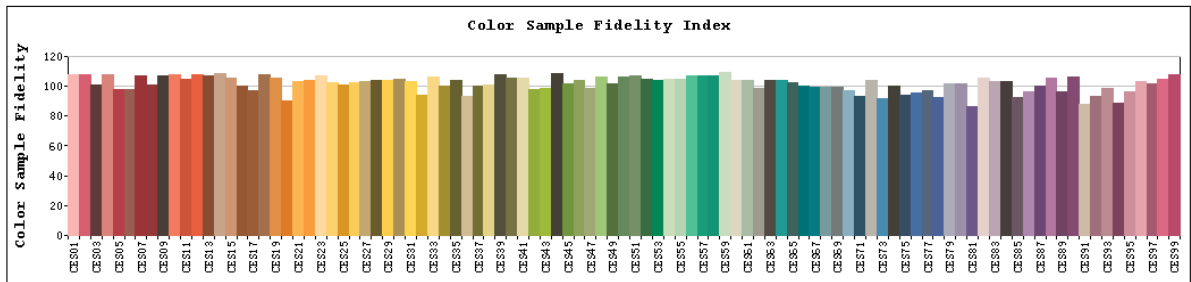
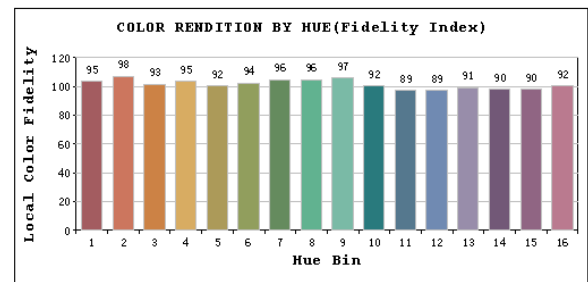
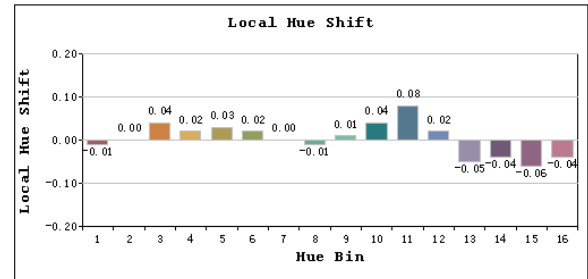
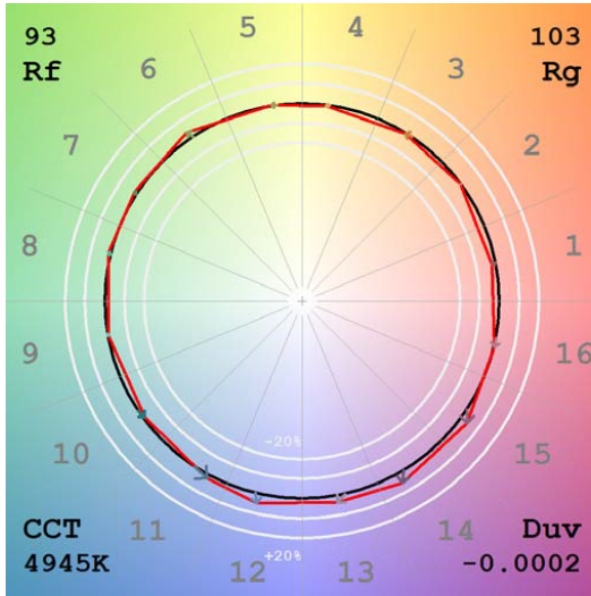
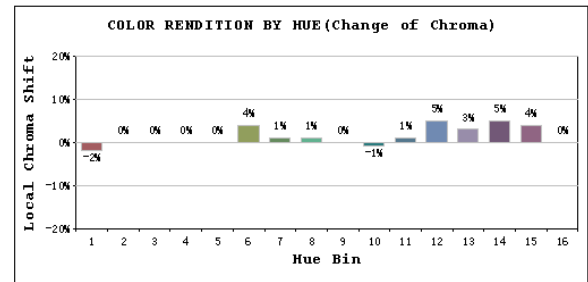
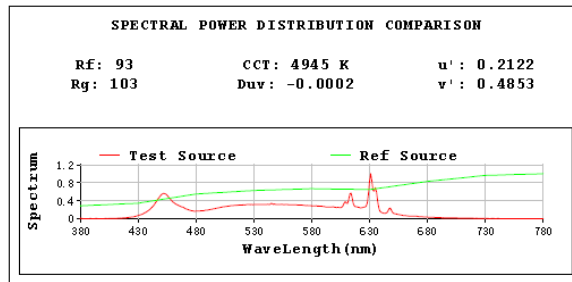
Parameter	Result	Special Color Rendering Indices			
Test Voltage (V)	120	R1	98	R9	96
Frequency (Hz)	60	R2	98	R10	92
CCT (K)	4945	R3	93	R11	96
Duv	-0.0002	R4	99	R12	70
Chromaticity (x, y)	x=0.3466 y=0.3523	R5	98	R13	99
Chromaticity (u', v')	u'=0.2122 v'=0.4853	R6	95	R14	95
Color Rendering Index (CRI)	97.3	R7	99	R15	97
R9	96	R8	99	--	--
Rg	103				
Rf	93				
Rcs,h1%	-2				

**Photometric Measurement – Goniophotometer Method:**

Parameter	Result
Test Voltage (V)	120.0
Frequency (Hz)	60
Total Luminous (lm)	758.6
Luminous Efficacy (lm/W)	102.79

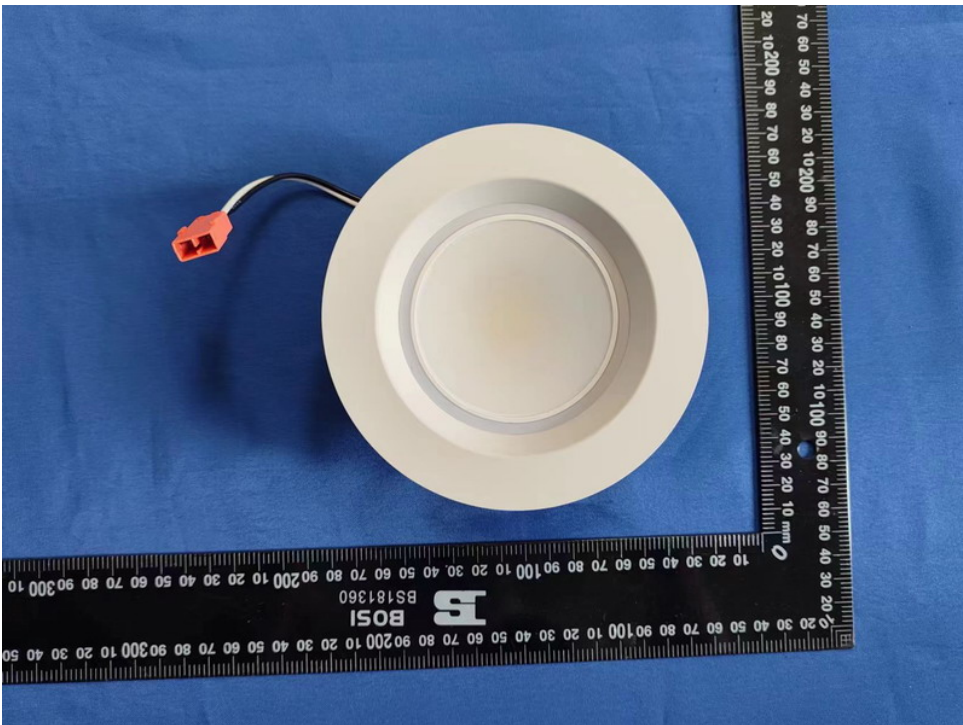
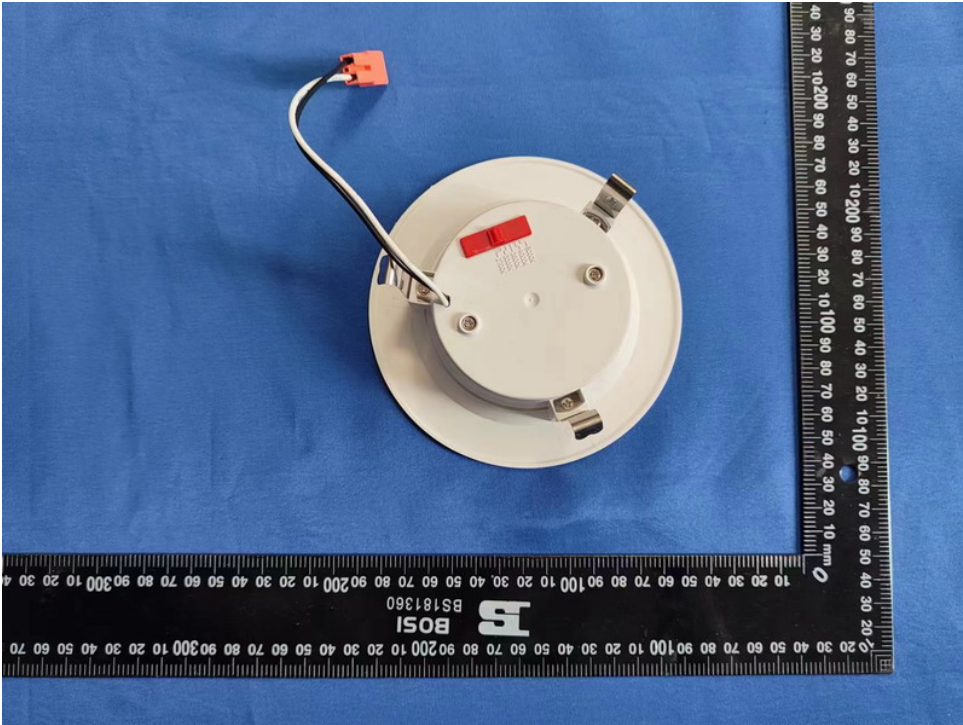
# Spectral Power Distribution & Chromaticity Diagram





Sample No.	Wattage and CCT setting	Test Voltage(V)	Flux(lm)	P(W)	Luminous Efficacy lm/W
ECLPS4	2700K setting	120	705.5	7.38	95.59
	3000K setting	120	713.1	7.42	96.10
	3500K setting	120	724.5	7.46	97.12
	4000K setting	120	738.5	7.44	99.26
	5000K setting	120	758.6	7.38	102.79

### 3. Product Photo



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