

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): ECLPS6

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

**Type of
Luminaire:** Downlights

Report Date: 2024-06-27

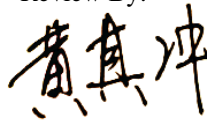
Prepared By:

Test & Report By:



Engineer: Sun Fangfang

Review By:



Manager: Huang Qichong

1.1 Rated Values:	
Rated Voltage / Frequency	120Vac, 60 Hz
Nominal Power	9.5W
Rated Initial Lamp Lumen	900lm (mode2700K)
Declared CCT	2700K/3000K/3500K/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

<p>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.</p>
<p>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</p>
<p>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.</p>

2.1.1 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	ECLPS6	2700K	

Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor
202406210016	120.0	60	0.093	9.35	0.833

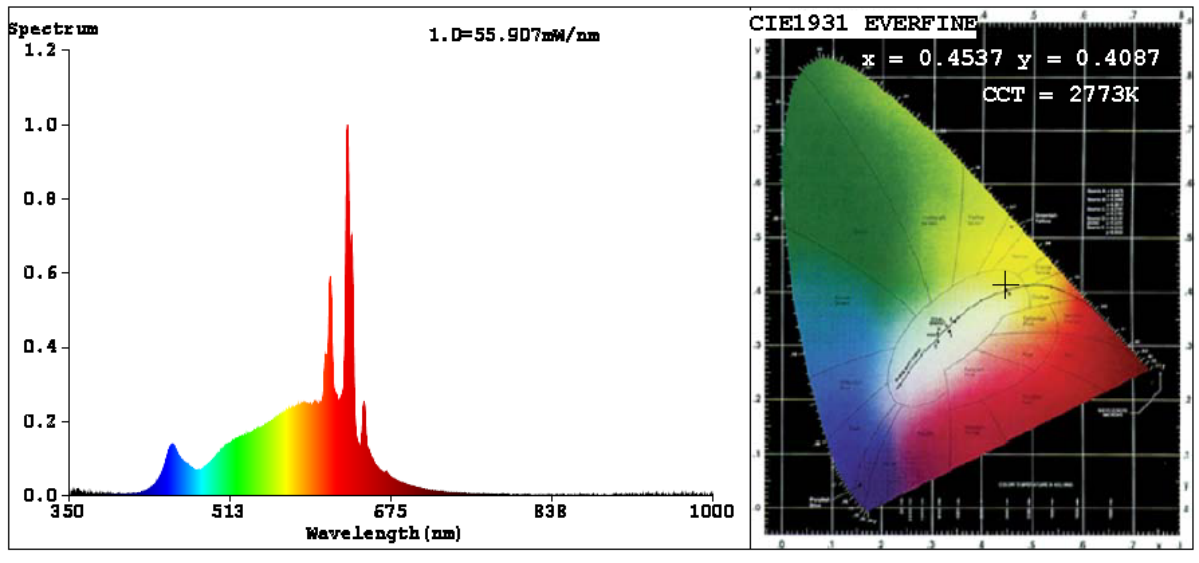
Chromaticity Measurement - Sphere-Spectroradiometer Method:

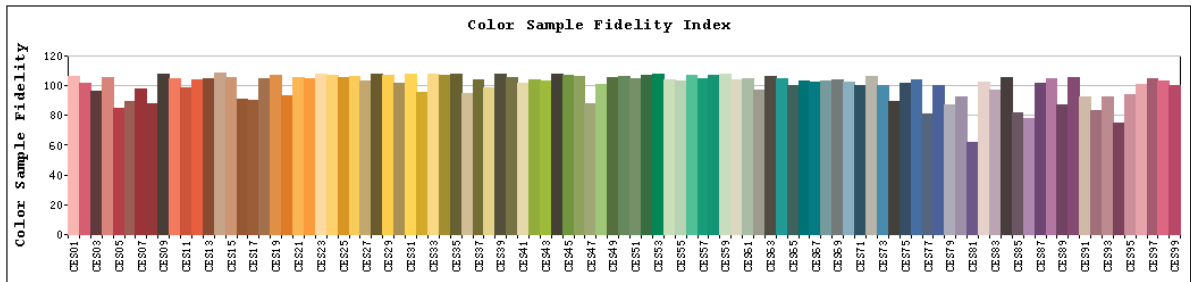
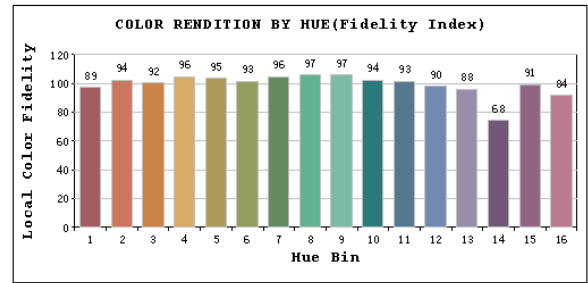
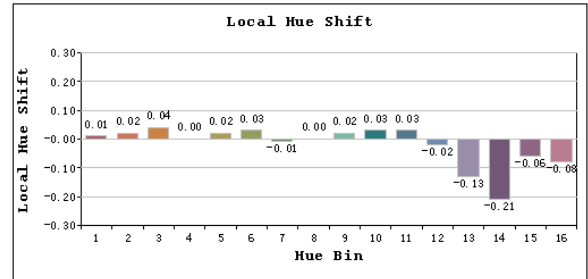
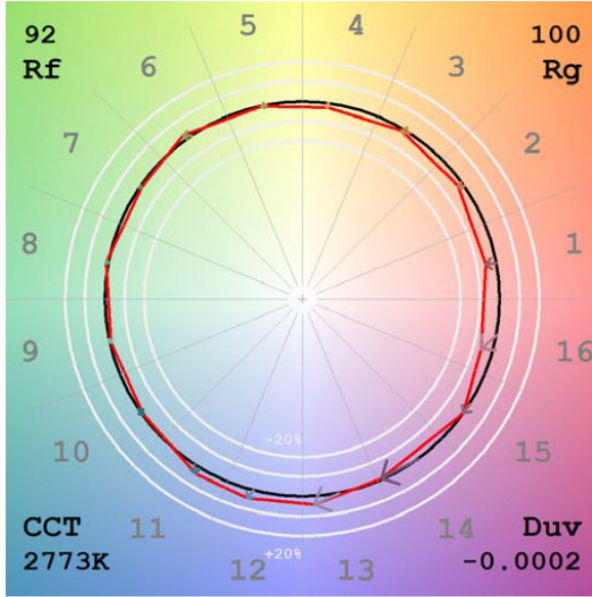
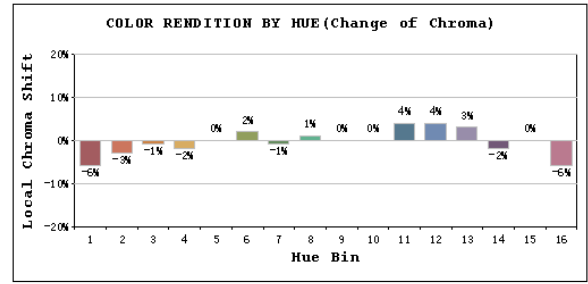
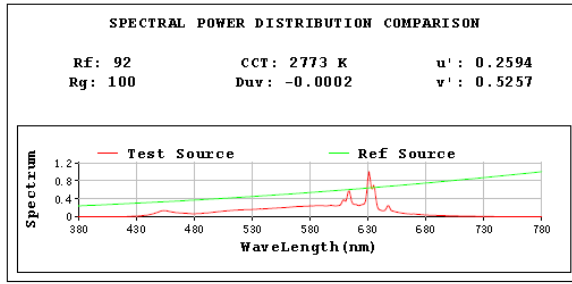
Parameter	Result	Special Color Rendering Indices			
Test Voltage (V)	120	R1	98	R9	66
Frequency (Hz)	60	R2	99	R10	95
CCT (K)	2773	R3	98	R11	99
Duv	-0.0002	R4	98	R12	86
Chromaticity (x, y)	x=0.4537 y=0.4087	R5	97	R13	98
Chromaticity (u', v')	u'=0.2594 v'=0.5257	R6	96	R14	97
Color Rendering Index (CRI)	95.3	R7	92	R15	93
R9	66	R8	85	--	--
Rg	100				
Rf	92				
Rcs,h1%	-6				

Photometric Measurement – Goniophotometer Method:

Parameter	Result
Test Voltage (V)	120.0
Frequency (Hz)	60
Total Luminous (lm)	906.5
Luminous Efficacy (lm/W)	96.95
Beam Angle (°)	91.0
Center Beam Candle Power (cd)	426.0

Spectral Power Distribution & Chromaticity Diagram



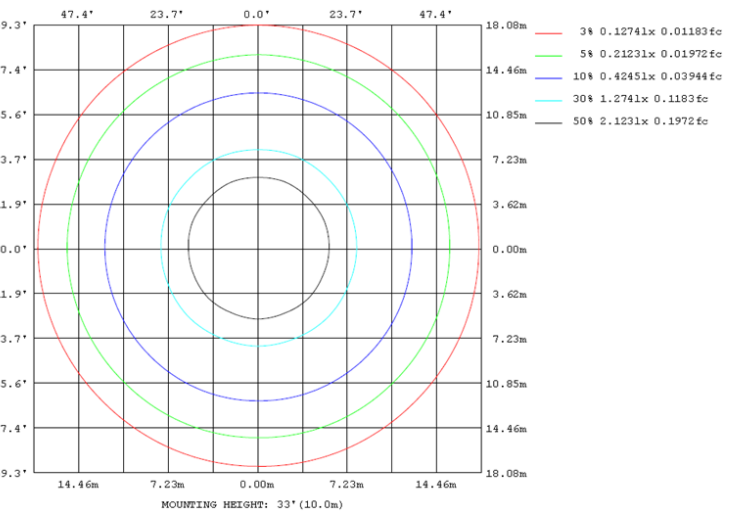
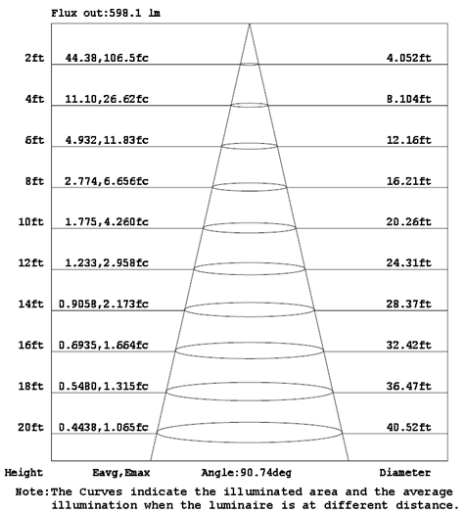
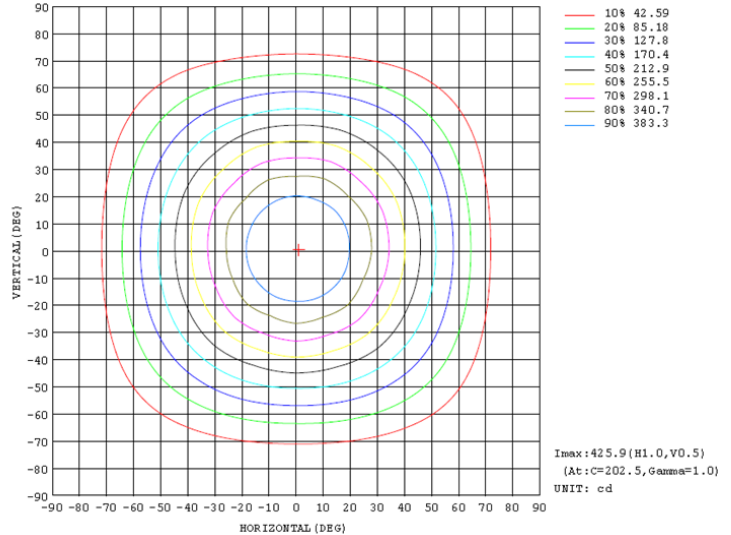
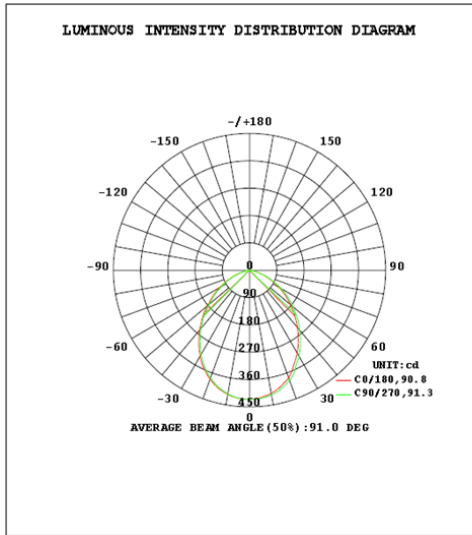


Zonal Lumen Tabulation

Zonal Lumen Summary		
Zone	Lumens	% Luminaire
0-30	314.8	34.7%
0-40	494.7	54.6%
0-60	792.4	87.4%
60-90	114.2	12.6%
70-100	33.4	3.7%
90-120	0.0	0.0%
0-90	906.5	100.0%
90-180	0.0	0.0%
0-180	906.5	100.0%

Lumens Per Zone					
Zone	Lumens	% Total	Zone	Lumens	% Total
0-10	40.0	4.4%	90-100	0.0	0.0%
10-20	112.5	12.4%	100-110	0.0	0.0%
20-30	162.2	17.9%	110-120	0.0	0.0%
30-40	179.9	19.8%	120-130	0.0	0.0%
40-50	166.8	18.4%	130-140	0.0	0.0%
50-60	130.9	14.4%	140-150	0.0	0.0%
60-70	80.8	8.9%	150-160	0.0	0.0%
70-80	29.7	3.3%	160-170	0.0	0.0%
80-90	3.7	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	ECLPS6	3000K	

Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor
202406210016	120.0	60	0.095	9.40	0.823

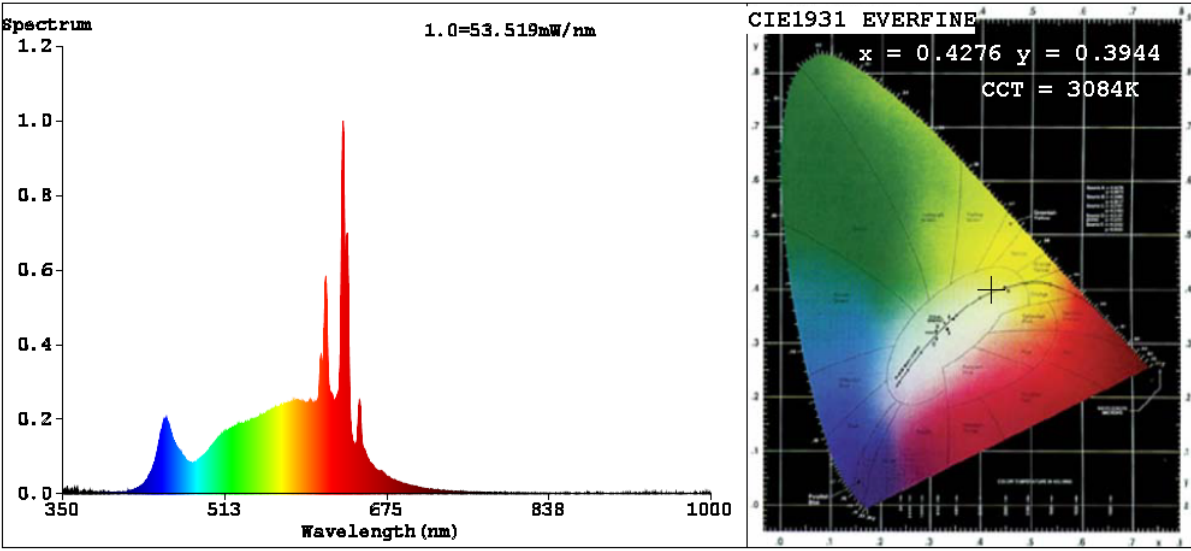
Chromaticity Measurement - Sphere-Spectroradiometer Method:

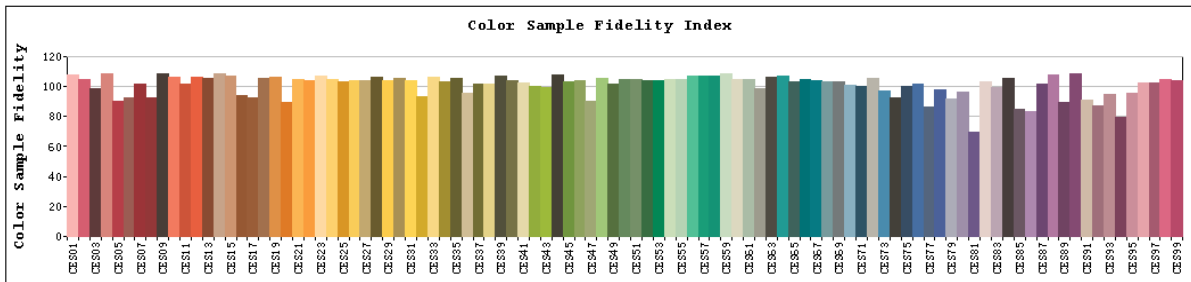
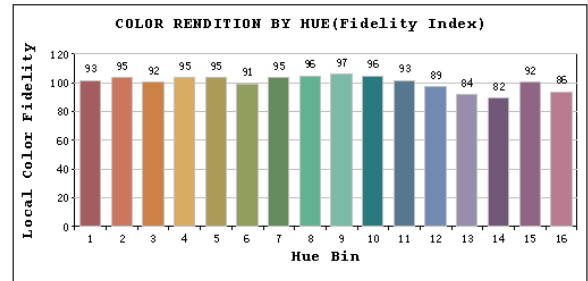
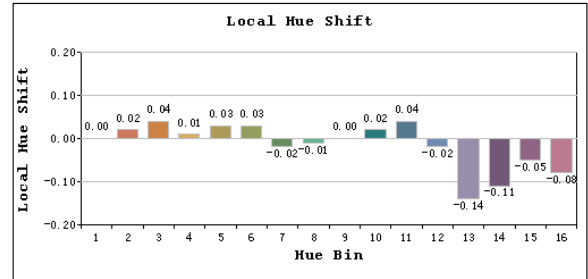
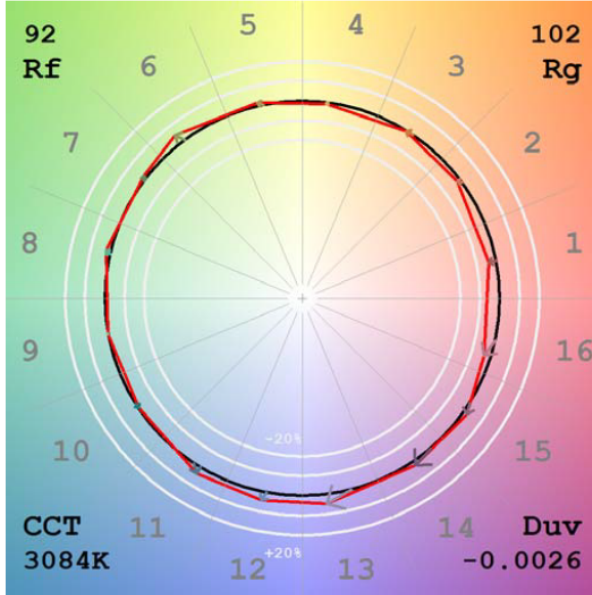
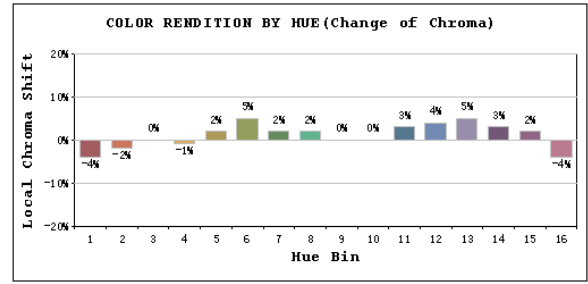
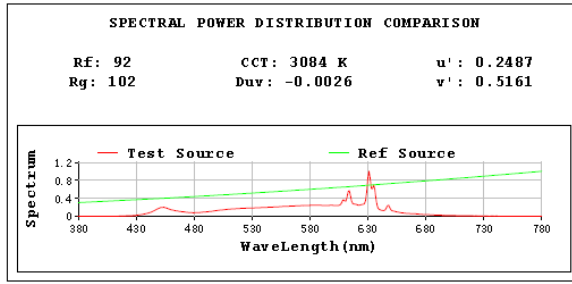
Parameter	Result	Special Color Rendering Indices			
Test Voltage (V)	120	R1	99	R9	78
Frequency (Hz)	60	R2	99	R10	97
CCT (K)	3084	R3	97	R11	96
Duv	-0.0026	R4	98	R12	85
Chromaticity (x, y)	x=0.4276 y=0.3944	R5	99	R13	99
Chromaticity (u', v')	u'=0.2487 v'=0.5161	R6	95	R14	97
Color Rendering Index (CRI)	96.5	R7	94	R15	97
R9	78	R8	91	--	--
Rg	102				
Rf	92				
Rcs,h1%	-4				

Photometric Measurement – Goniophotometer Method:

Parameter	Result
Test Voltage (V)	120.0
Frequency (Hz)	60
Total Luminous (lm)	915.2
Luminous Efficacy (lm/W)	97.36

Spectral Power Distribution & Chromaticity Diagram





2.1.3 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	ECLPS6	3500K	

Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor
202406210016	120.0	60	0.097	9.48	0.805

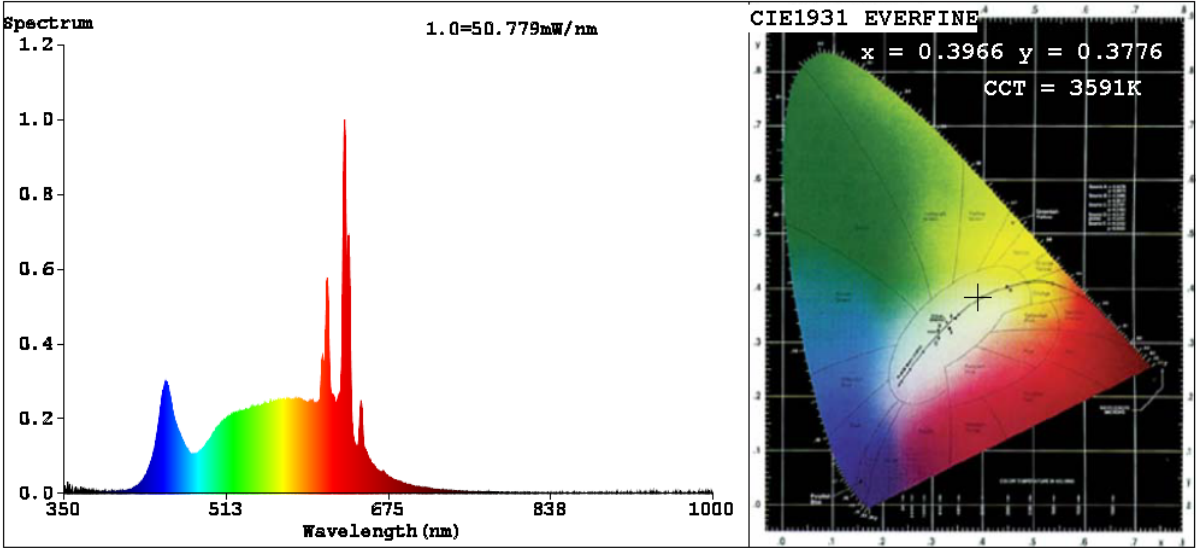
Chromaticity Measurement - Sphere-Spectroradiometer Method:

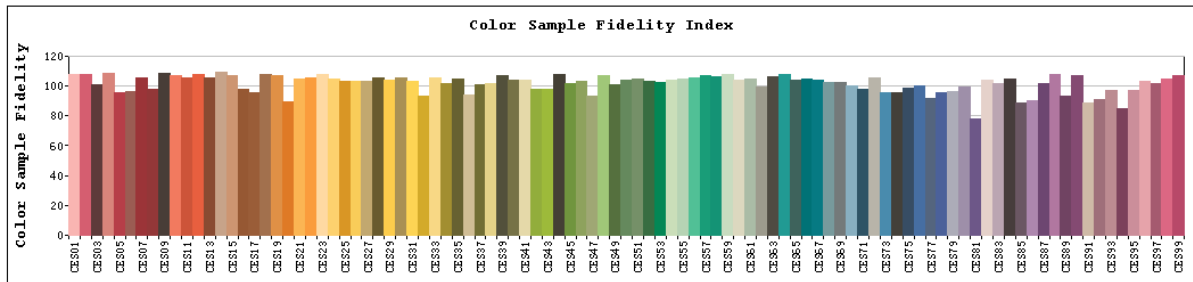
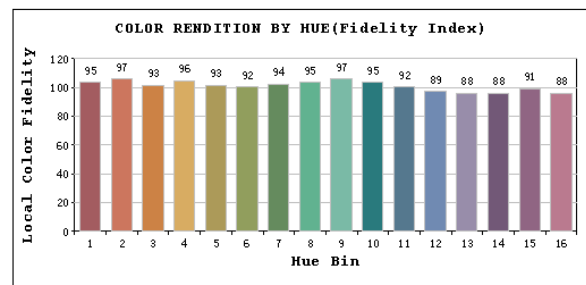
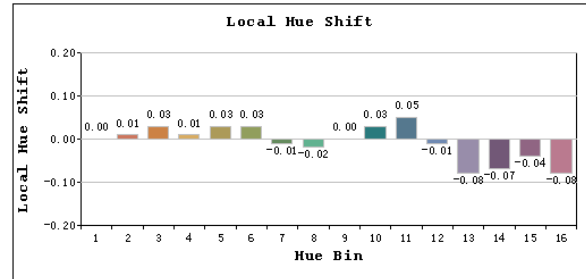
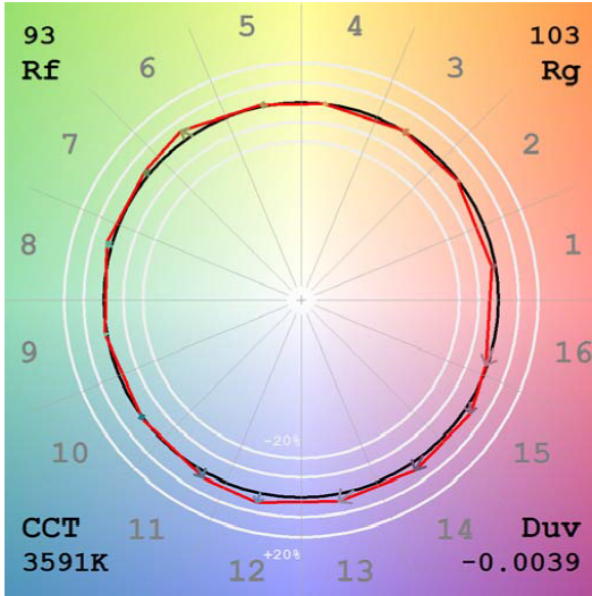
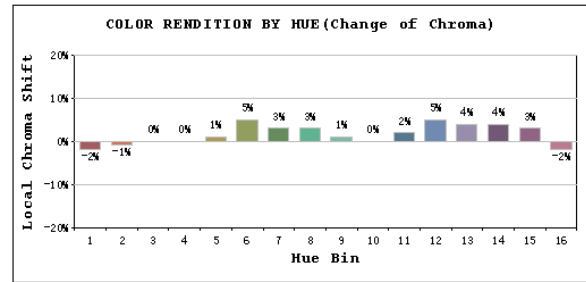
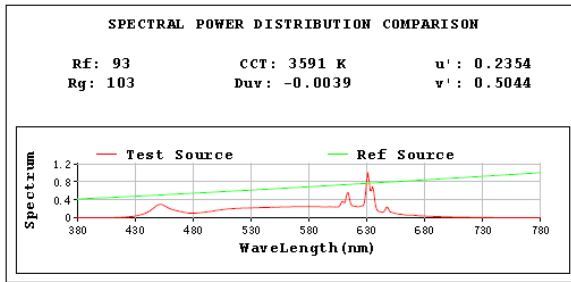
Parameter	Result	Special Color Rendering Indices			
Test Voltage (V)	120	R1	97	R9	90
Frequency (Hz)	60	R2	99	R10	97
CCT (K)	3591	R3	95	R11	93
Duv	-0.0039	R4	96	R12	83
Chromaticity (x, y)	x=0.3966 y=0.3776	R5	98	R13	98
Chromaticity (u', v')	u'=0.2354 v'=0.5044	R6	95	R14	96
Color Rendering Index (CRI)	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)	931.9
Luminous Efficacy (lm/W)	98.31

Spectral Power Distribution & Chromaticity Diagram





2.1.4 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	ECLPS6	4000K	

Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor
202406210016	120.0	60	0.096	9.44	0.815

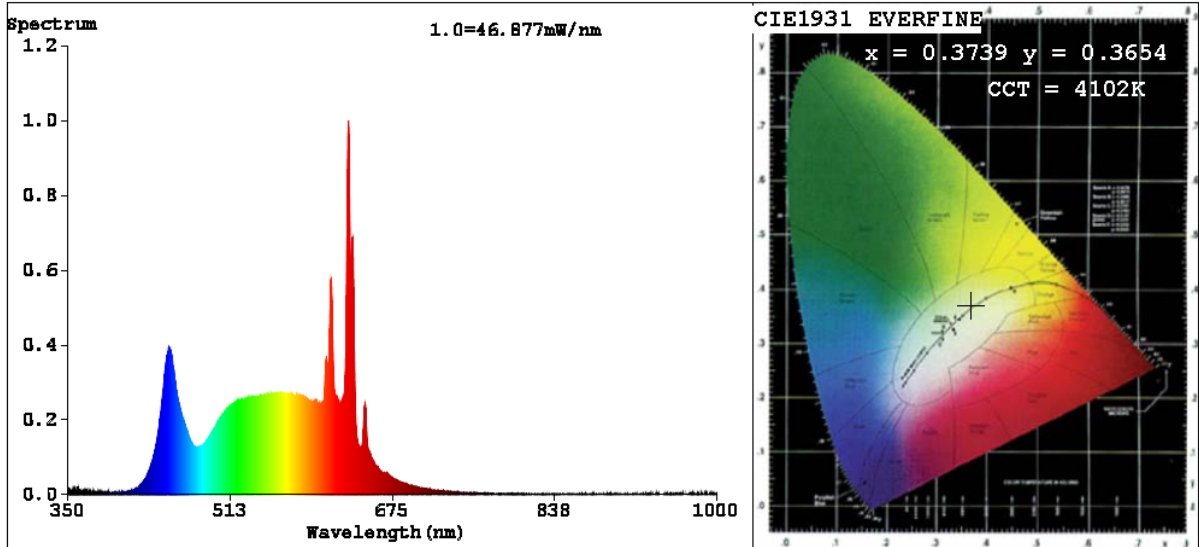
Chromaticity Measurement - Sphere-Spectroradiometer Method:

Parameter	Result	Special Color Rendering Indices			
Test Voltage (V)	120	R1	97	R9	96
Frequency (Hz)	60	R2	99	R10	96
CCT (K)	4102	R3	93	R11	93
Duv	-0.0034	R4	96	R12	79
Chromaticity (x, y)	x=0.3739 y=0.3654	R5	98	R13	98
Chromaticity (u', v')	u'=0.2253 v'=0.4955	R6	95	R14	95
Color Rendering Index (CRI)	97.0	R7	98	R15	97
R9	96	R8	99	--	--
Rg	103				
Rf	93				
Rcs,h1%	-2				

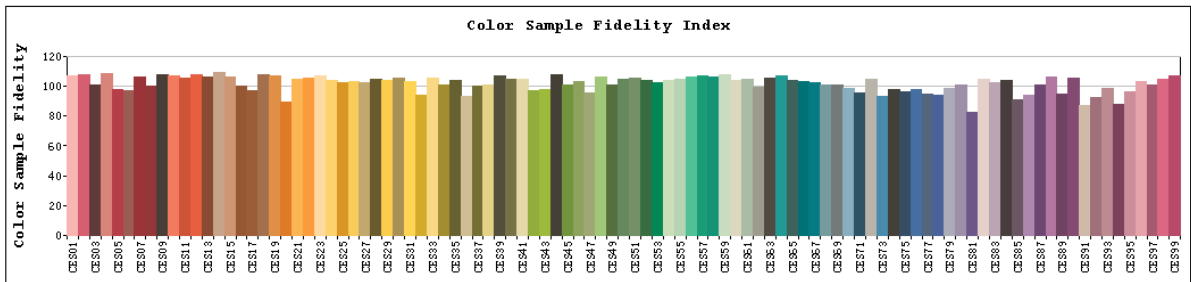
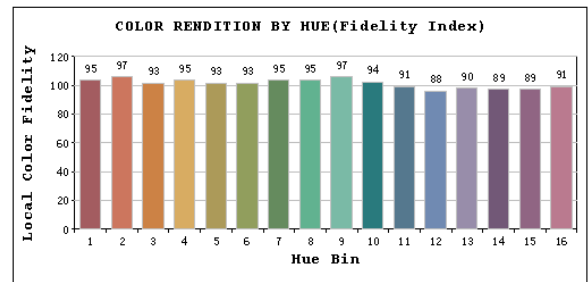
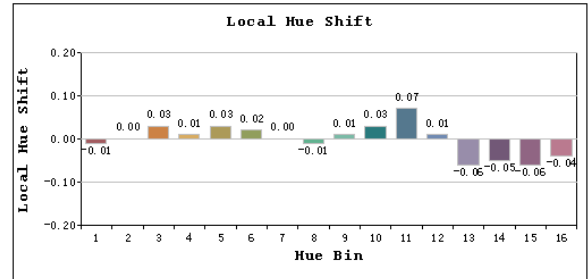
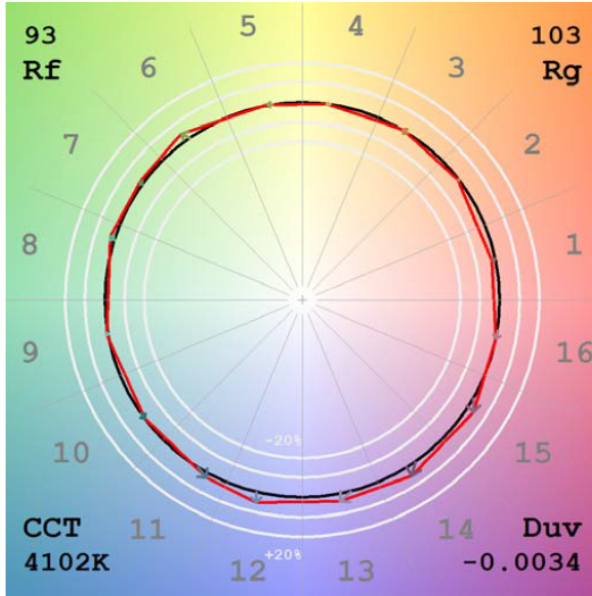
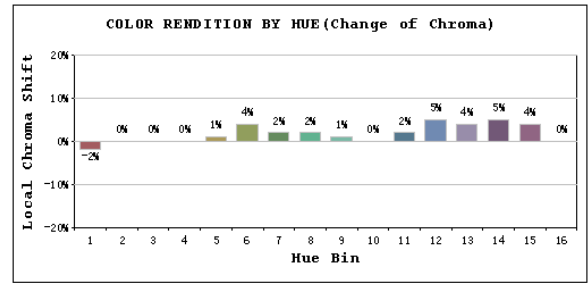
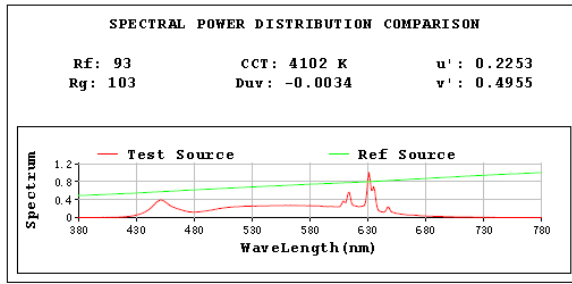
Photometric Measurement – Goniophotometer Method:

Parameter	Result
Test Voltage (V)	120.0
Frequency (Hz)	60
Total Luminous (lm)	937.9
Luminous Efficacy (lm/W)	99.36

Spectral Power Distribution & Chromaticity Diagram



TM30



2.1.5 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	ECLPS6	5000K	

Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor
202406210016	120.0	60	0.094	9.37	0.830

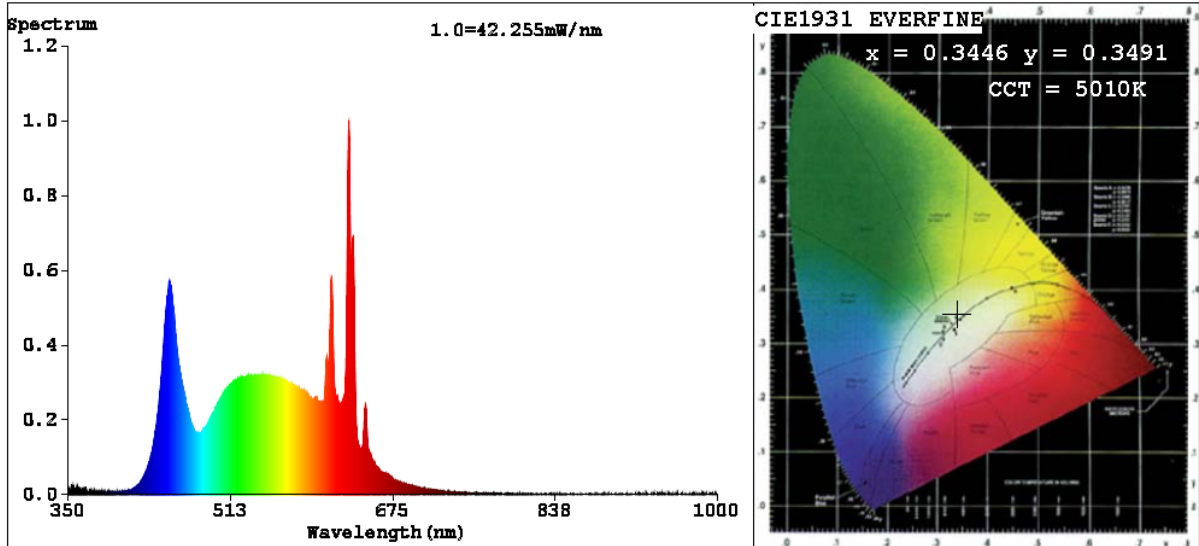
Chromaticity Measurement - Sphere-Spectroradiometer Method:

Parameter	Result	Special Color Rendering Indices			
Test Voltage (V)	120	R1	98	R9	97
Frequency (Hz)	60	R2	97	R10	92
CCT (K)	5010	R3	91	R11	92
Duv	-0.0011	R4	95	R12	78
Chromaticity (x, y)	x=0.3446 y=0.3491	R5	99	R13	99
Chromaticity (u', v')	u'=0.2121 v'=0.4834	R6	94	R14	94
Color Rendering Index (CRI)	96.4	R7	97	R15	98
R9	97	R8	99	--	--
Rg	103				
Rf	93				
Rcs,h1%	-2				

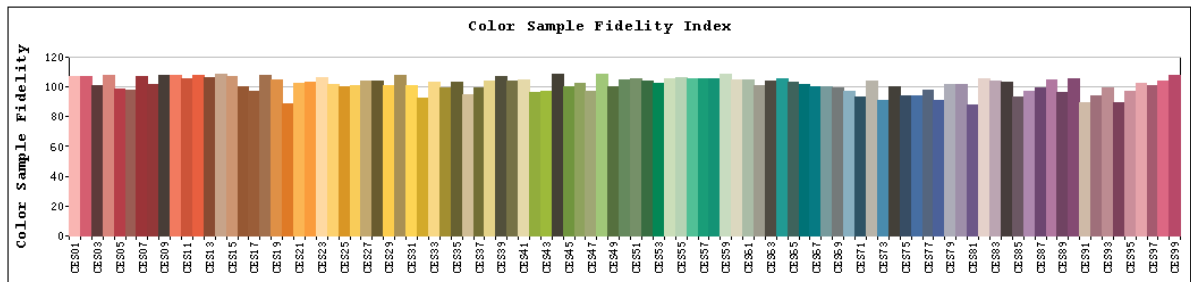
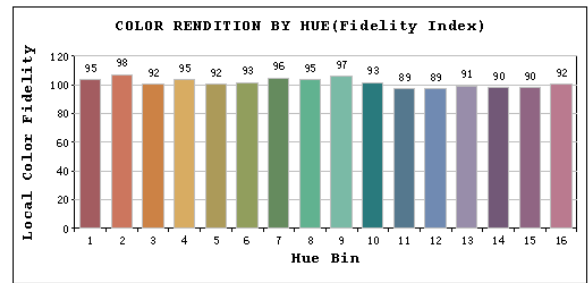
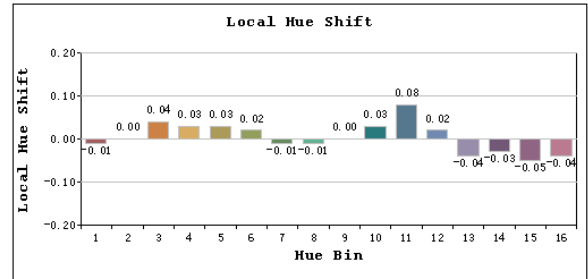
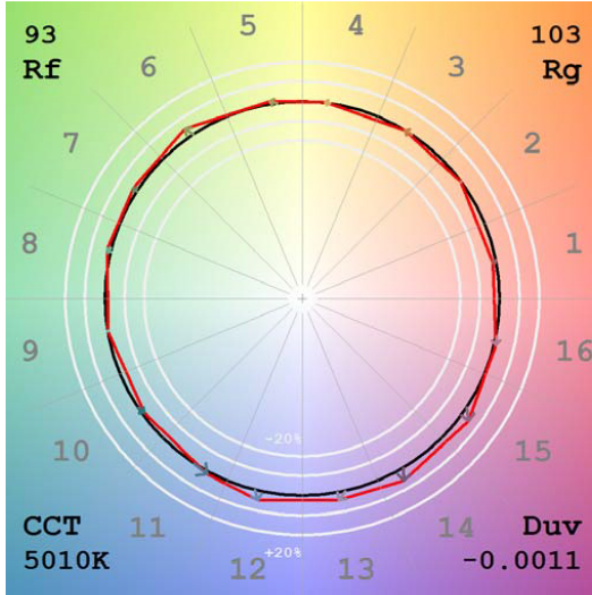
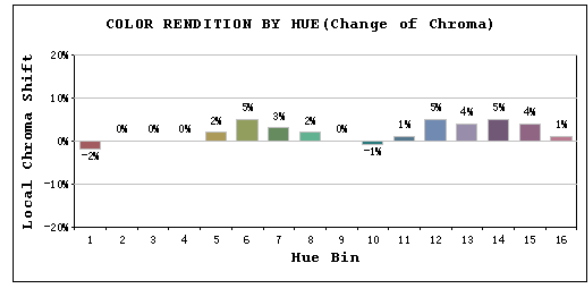
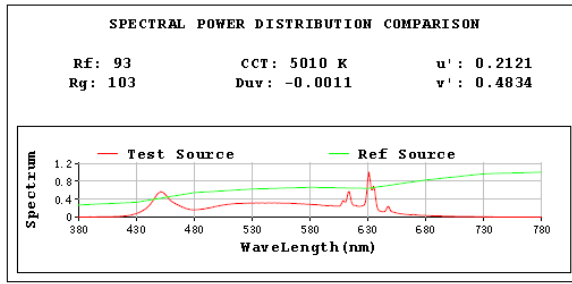
Photometric Measurement – Goniophotometer Method:

Parameter	Result
Test Voltage (V)	120.0
Frequency (Hz)	60
Total Luminous (lm)	960.0
Luminous Efficacy (lm/W)	102.45

Spectral Power Distribution & Chromaticity Diagram

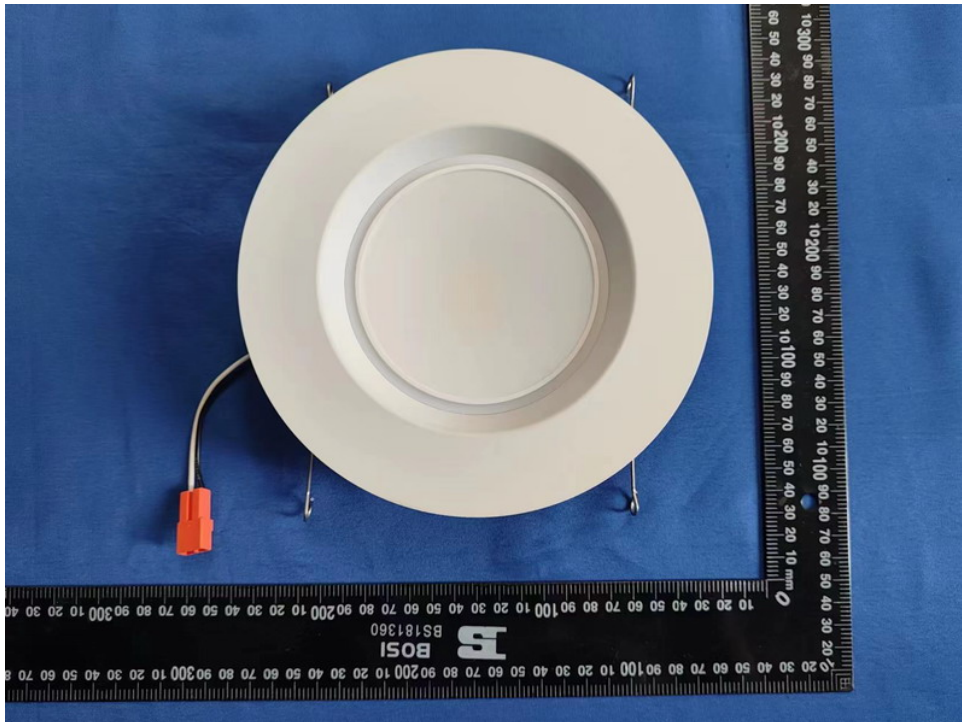
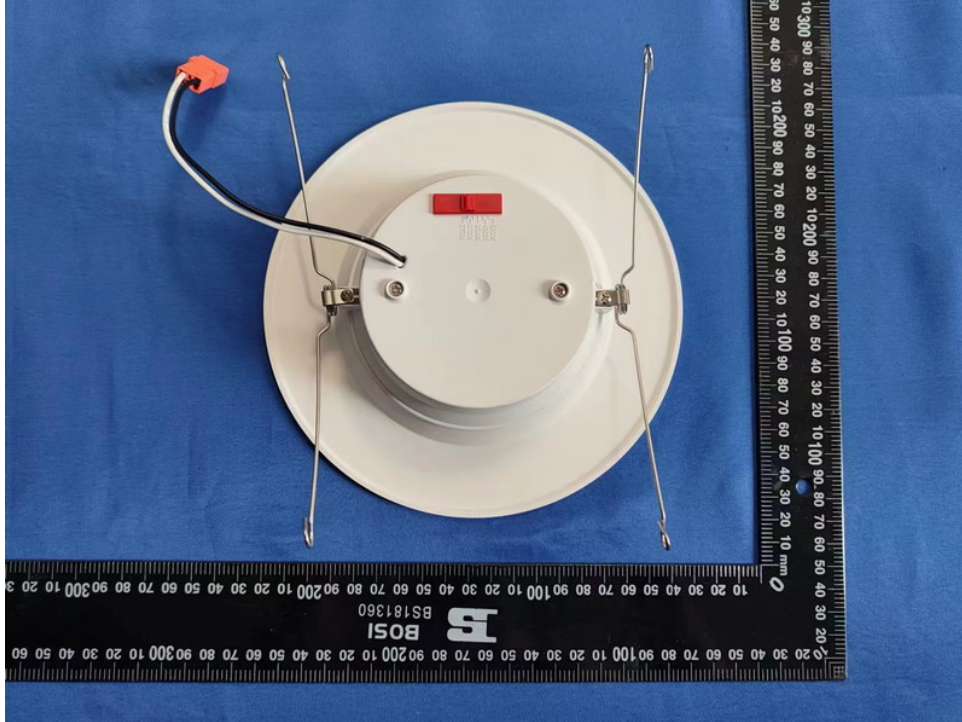


TM30



Sample No.	Wattage and CCT setting	Test Voltage(V)	Flux(lm)	P(W)	Luminous Efficacy lm/W
ECLPS6	2700K setting	120	906.5	9.35	96.95
	3000K setting	120	915.2	9.40	97.36
	3500K setting	120	931.9	9.48	98.31
	4000K setting	120	937.9	9.44	99.36
	5000K setting	120	960.0	9.37	102.45

3. Product Photo



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