

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): ECLPS6B

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

**Type of
Luminaire:** Downlights

Report Date: 2024-06-27

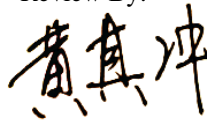
Prepared By:

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	ECLPS6B	2700K	

Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor
202406210017	120.0	60	0.092	9.26	0.833

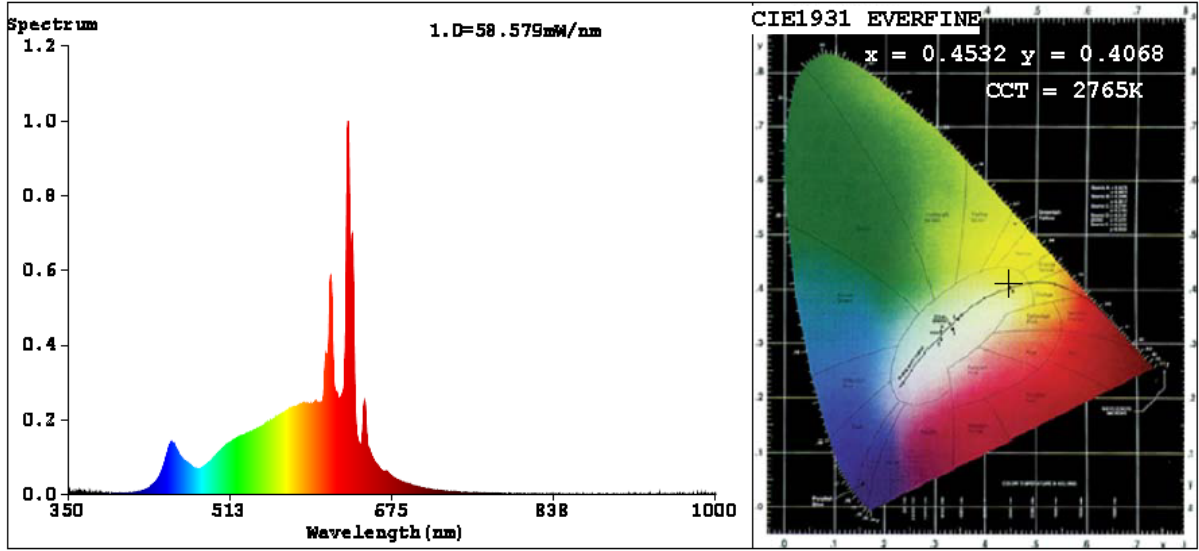
Chromaticity Measurement - Sphere-Spectroradiometer Method:

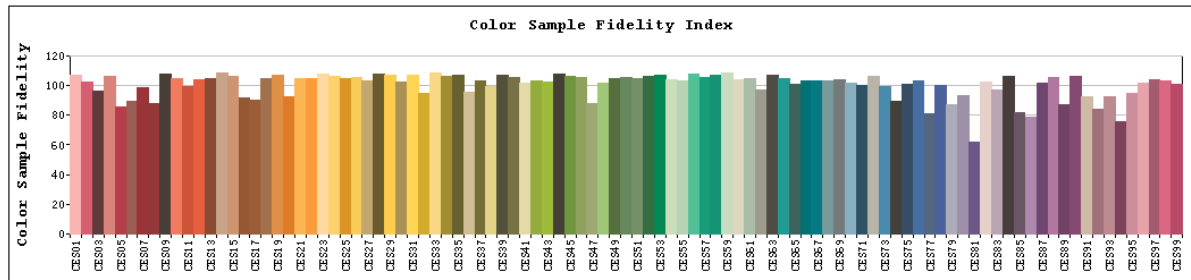
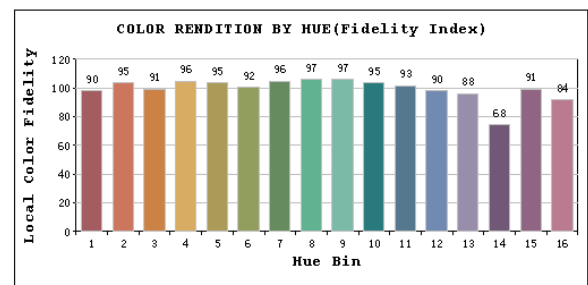
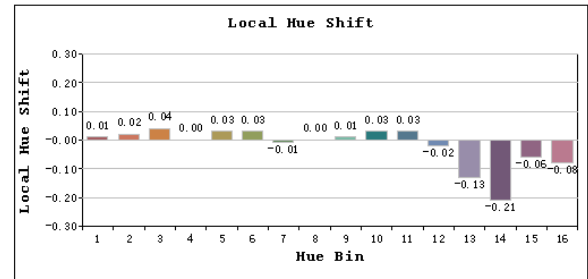
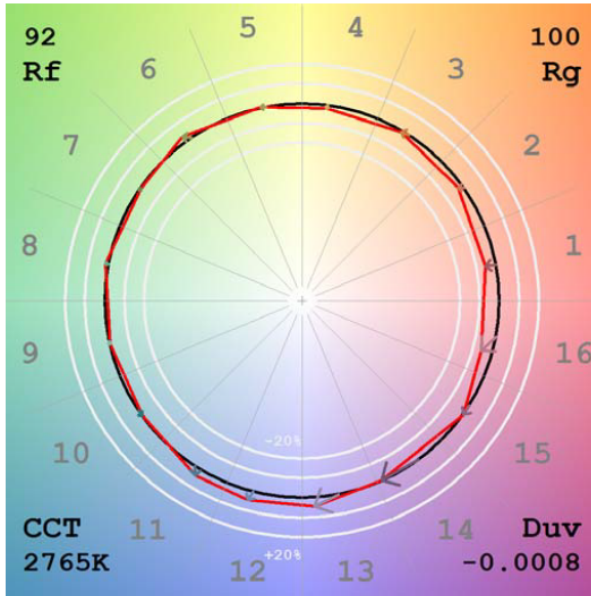
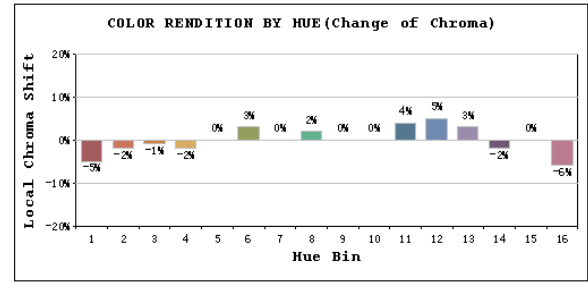
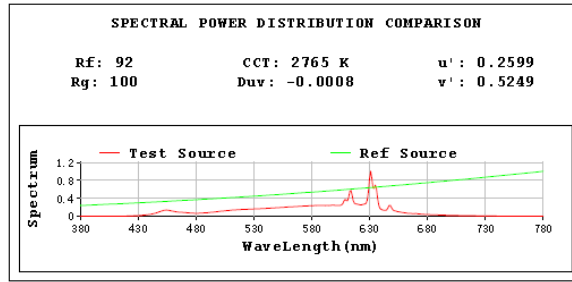
Parameter	Result	Special Color Rendering Indices			
Test Voltage (V)	120	R1	98	R9	68
Frequency (Hz)	60	R2	99	R10	96
CCT (K)	2765	R3	98	R11	98
Duv	-0.0008	R4	98	R12	87
Chromaticity (x, y)	x=0.4532 y=0.4068	R5	98	R13	99
Chromaticity (u', v')	u'=0.2599 v'=0.5249	R6	95	R14	97
Color Rendering Index (CRI)	95.6	R7	92	R15	94
R9	68	R8	86	--	--
Rg	100				
Rf	92				
Rcs,h1%	-5				

Photometric Measurement – Goniophotometer Method:

Parameter	Result
Test Voltage (V)	120.0
Frequency (Hz)	60
Total Luminous (lm)	907.9
Luminous Efficacy (lm/W)	98.05
Beam Angle (°)	91.4
Center Beam Candle Power (cd)	424.7

Spectral Power Distribution & Chromaticity Diagram



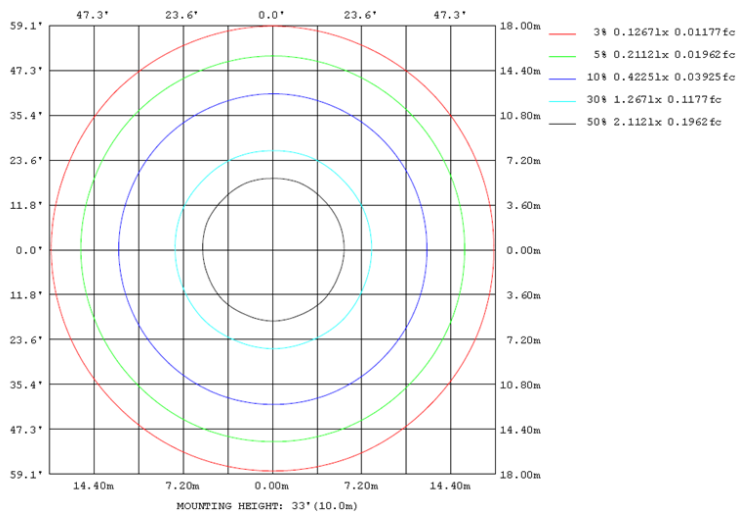
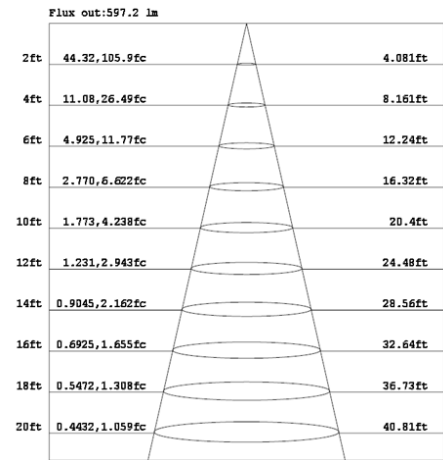
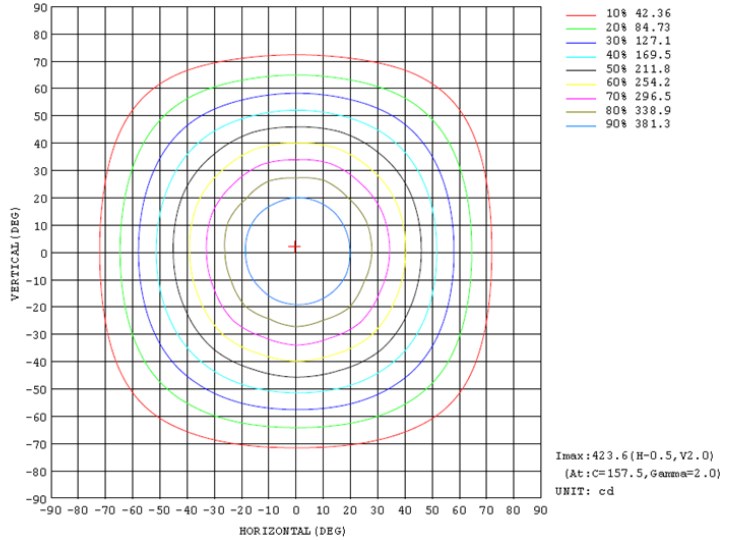
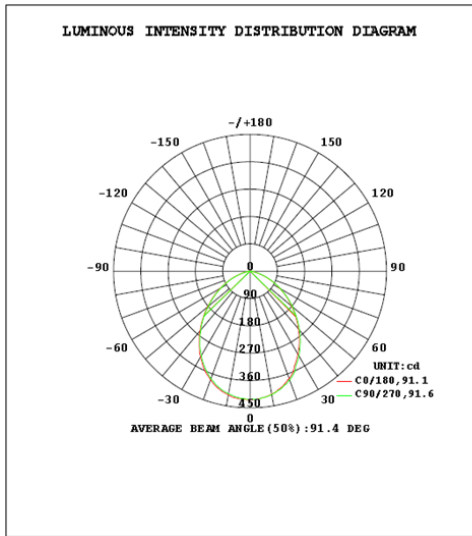


Zonal Lumen Tabulation

Zonal Lumen Summary		
Zone	Lumens	% Luminaire
0-30	313.7	34.6%
0-40	493.7	54.4%
0-60	792.0	87.2%
60-90	116.0	12.8%
70-100	34.6	3.8%
90-120	0.0	0.0%
0-90	907.9	100.0%
90-180	0.0	0.0%
0-180	907.9	100.0%

Lumens Per Zone					
Zone	Lumens	% Total	Zone	Lumens	% Total
0-10	39.8	4.4%	90-100	0.0	0.0%
10-20	112.1	12.3%	100-110	0.0	0.0%
20-30	161.8	17.8%	110-120	0.0	0.0%
30-40	180.0	19.8%	120-130	0.0	0.0%
40-50	167.2	18.4%	130-140	0.0	0.0%
50-60	131.1	14.4%	140-150	0.0	0.0%
60-70	81.4	9.0%	150-160	0.0	0.0%
70-80	30.4	3.4%	160-170	0.0	0.0%
80-90	4.1	0.5%	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	ECLPS6B	3000K	

Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor
202406210017	120.0	60	0.094	9.31	0.823

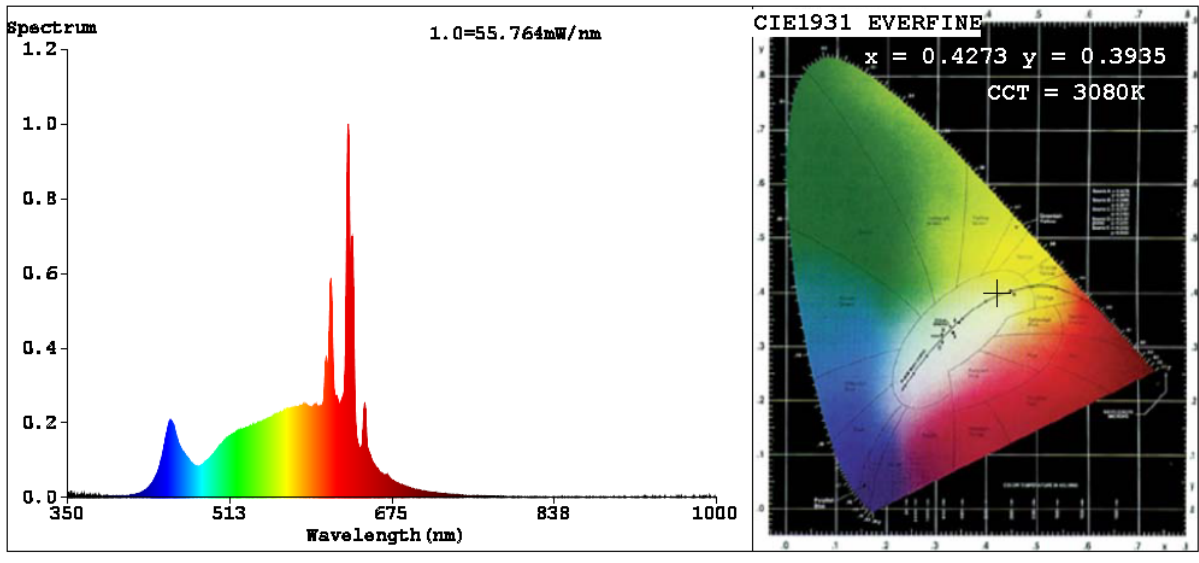
Chromaticity Measurement - Sphere-Spectroradiometer Method:

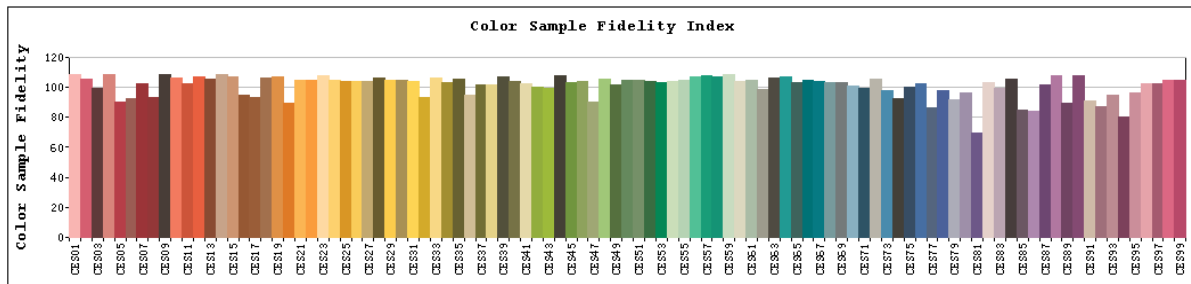
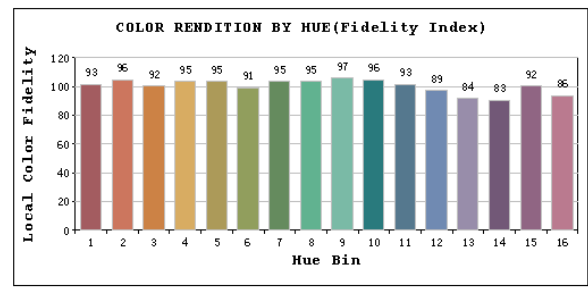
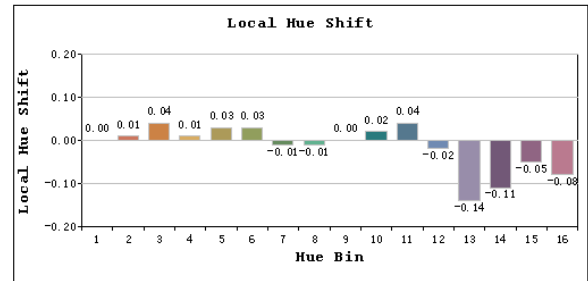
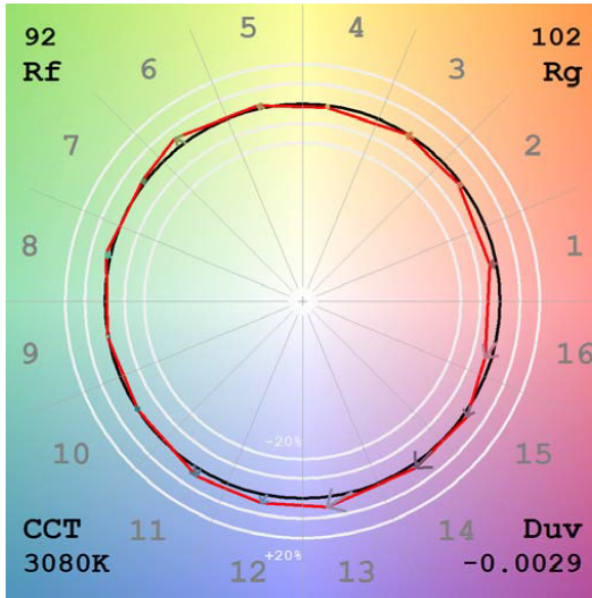
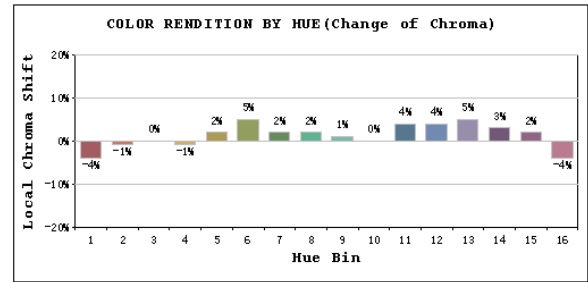
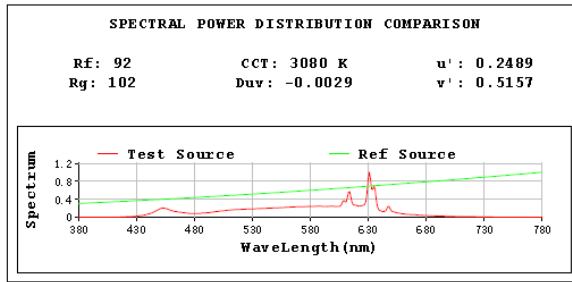
Parameter	Result	Special Color Rendering Indices			
Test Voltage (V)	120	R1	99	R9	79
Frequency (Hz)	60	R2	99	R10	98
CCT (K)	3080	R3	97	R11	95
Duv	-0.0029	R4	98	R12	85
Chromaticity (x, y)	x=0.4273 y=0.3935	R5	99	R13	99
Chromaticity (u', v')	u'=0.2489 v'=0.5157	R6	94	R14	97
Color Rendering Index (CRI)	96.4	R7	94	R15	98
R9	79	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)	98.30

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	ECLPS6B	3500K	

Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor
202406210017	120.0	60	0.097	9.39	0.804

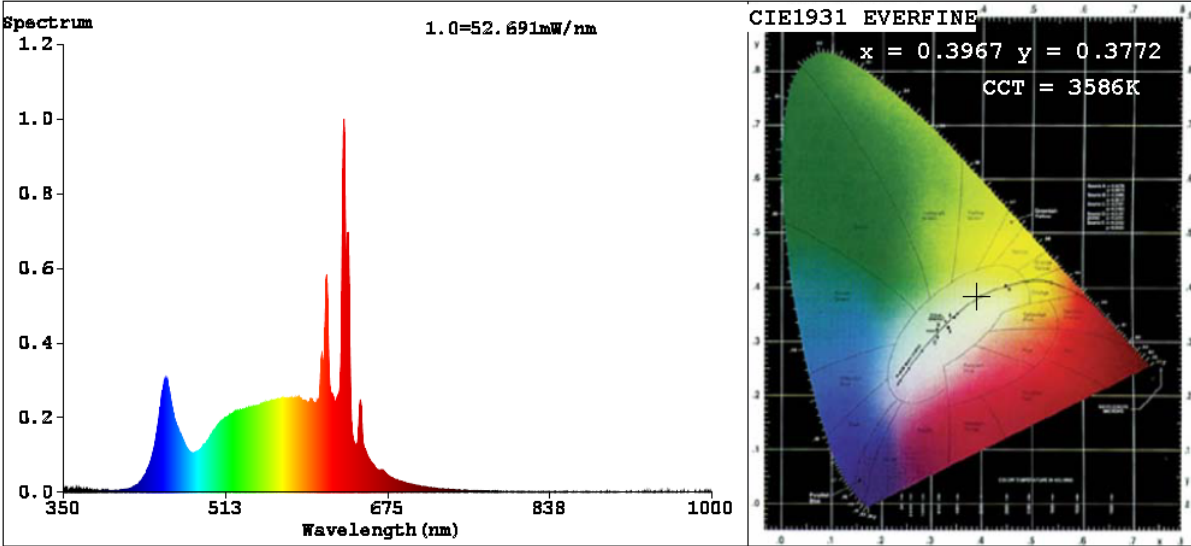
Chromaticity Measurement - Sphere-Spectroradiometer Method:

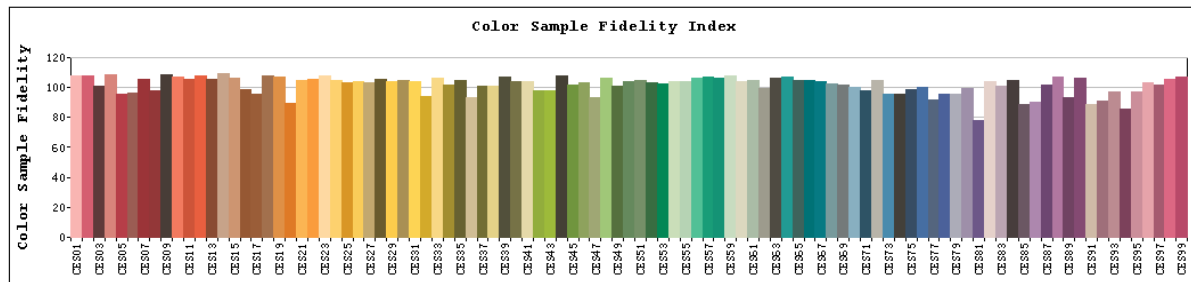
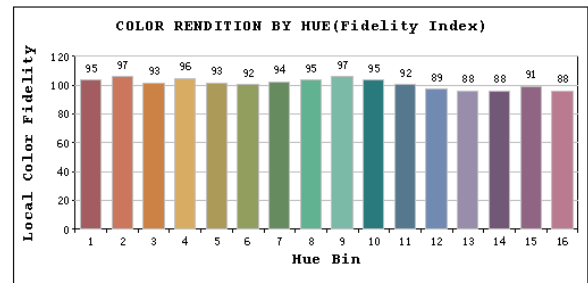
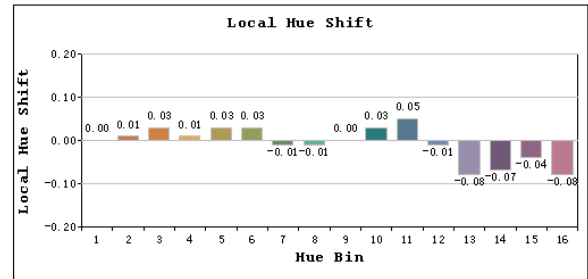
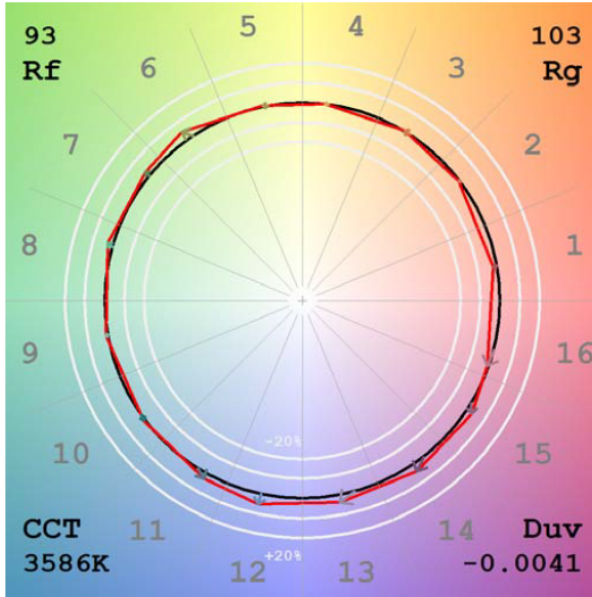
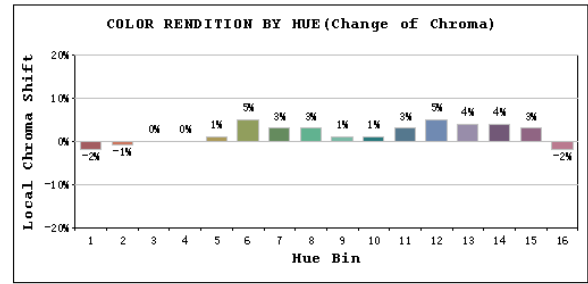
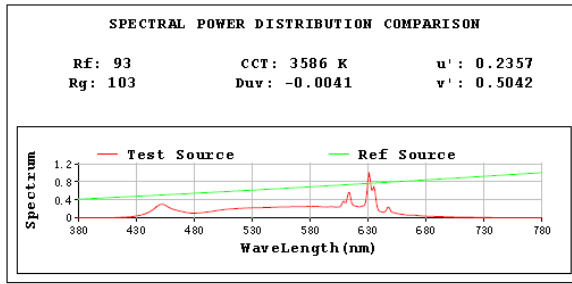
Parameter	Result	Special Color Rendering Indices			
Test Voltage (V)	120	R1	97	R9	91
Frequency (Hz)	60	R2	99	R10	98
CCT (K)	3586	R3	95	R11	93
Duv	-0.0041	R4	96	R12	82
Chromaticity (x, y)	x=0.3967 y=0.3772	R5	98	R13	97
Chromaticity (u', v')	u'=0.2357 v'=0.5042	R6	95	R14	96
Color Rendering Index (CRI)	96.6	R7	97	R15	98
R9	91	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)	932.1
Luminous Efficacy (lm/W)	99.27

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	ECLPS6B	4000K	

Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor
202406210017	120.0	60	0.095	9.35	0.813

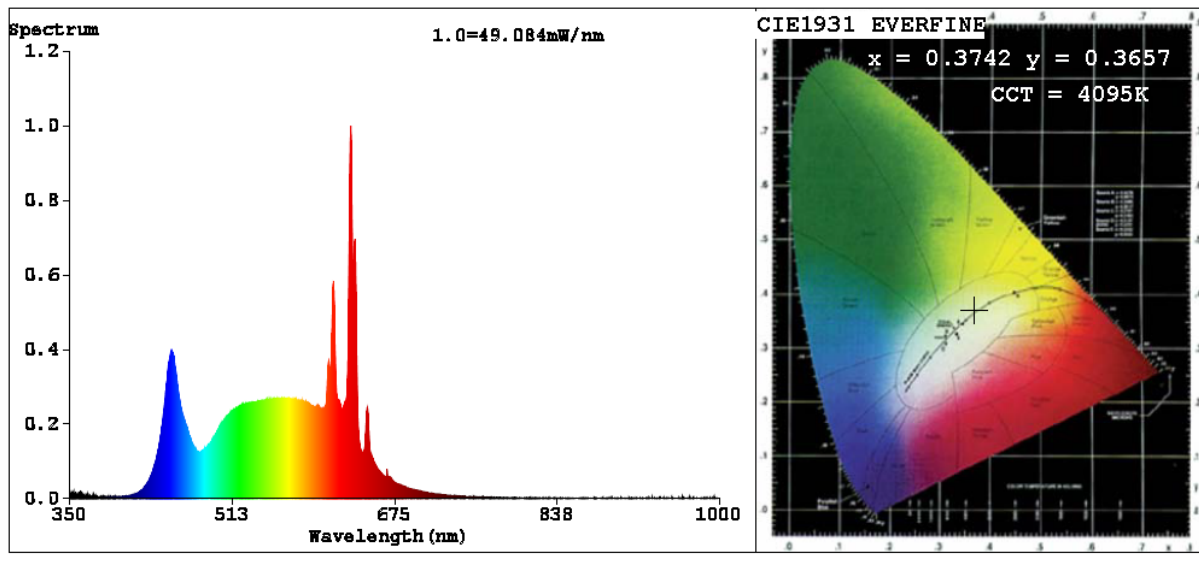
Chromaticity Measurement - Sphere-Spectroradiometer Method:

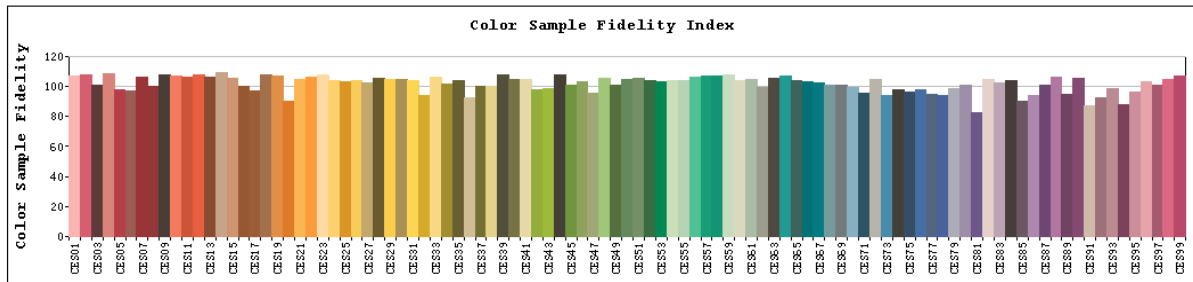
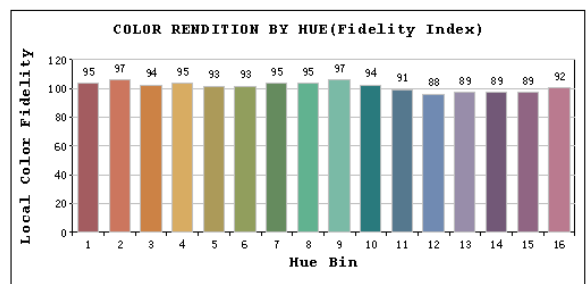
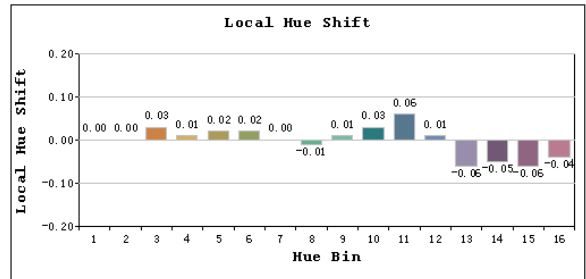
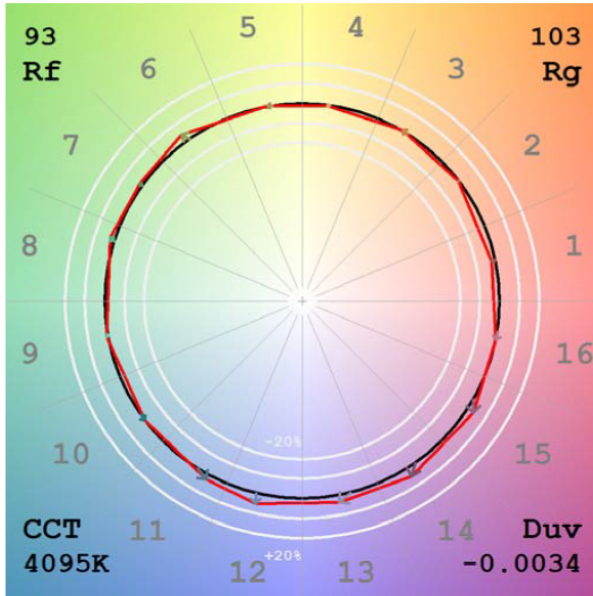
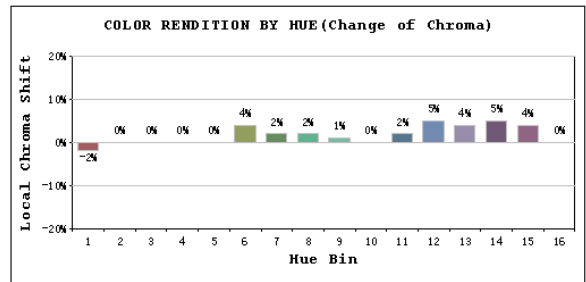
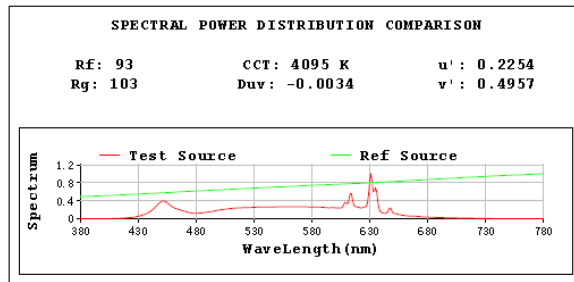
Parameter	Result	Special Color Rendering Indices			
Test Voltage (V)	120	R1	96	R9	96
Frequency (Hz)	60	R2	99	R10	96
CCT (K)	4095	R3	94	R11	93
Duv	-0.0034	R4	96	R12	79
Chromaticity (x, y)	x=0.3742 y=0.3657	R5	98	R13	97
Chromaticity (u', v')	u'=0.2254 v'=0.4957	R6	95	R14	95
Color Rendering Index (CRI)	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)	938.1
Luminous Efficacy (lm/W)	100.33

Spectral Power Distribution & Chromaticity Diagram





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	ECLPS6B	5000K	

Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor
202406210017	120.0	60	0.093	9.28	0.829

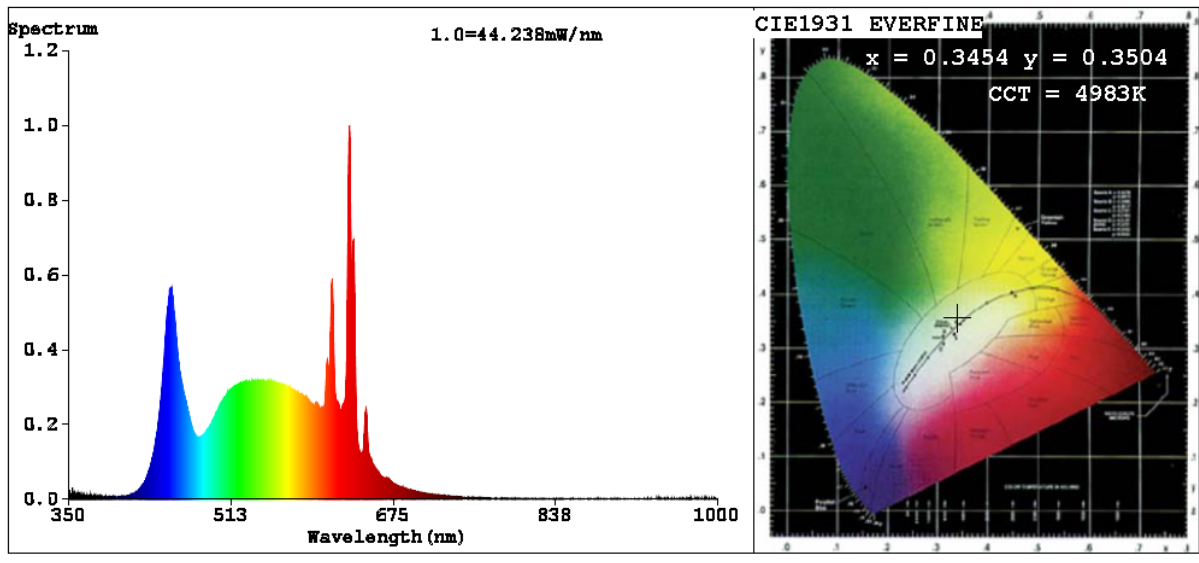
Chromaticity Measurement - Sphere-Spectroradiometer Method:

Parameter	Result	Special Color Rendering Indices			
Test Voltage (V)	120	R1	98	R9	97
Frequency (Hz)	60	R2	98	R10	93
CCT (K)	4983	R3	92	R11	95
Duv	-0.0008	R4	98	R12	71
Chromaticity (x, y)	x=0.3454 y=0.3504	R5	98	R13	99
Chromaticity (u', v')	u'=0.2121 v'=0.4841	R6	95	R14	95
Color Rendering Index (CRI)	97.1	R7	100	R15	97
R9	97	R8	99	--	--
Rg	103				
Rf	93				
Rcs,h1%	-2				

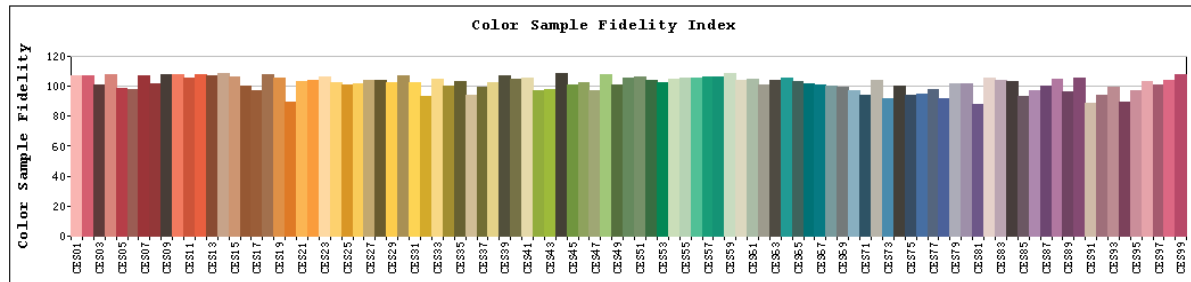
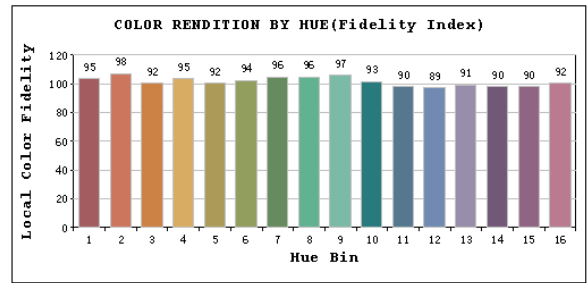
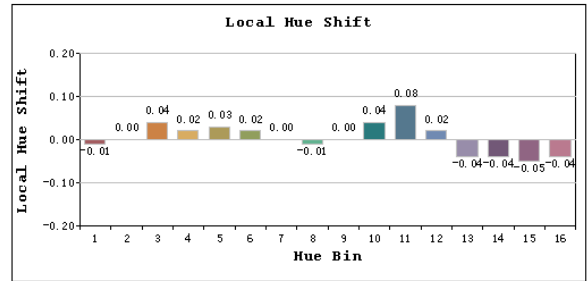
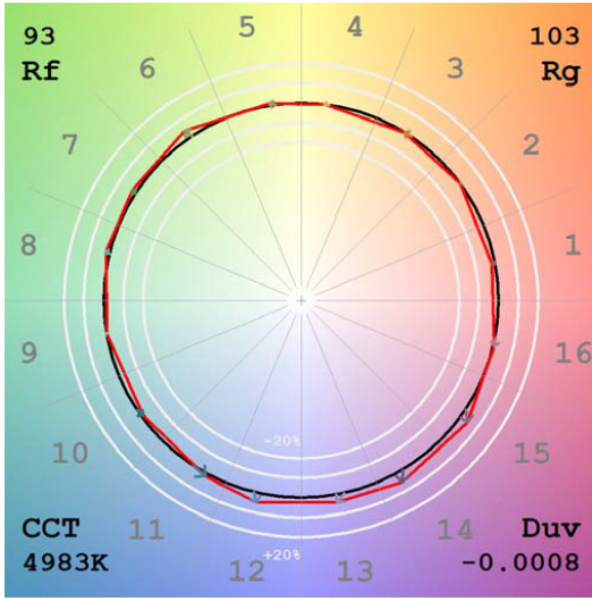
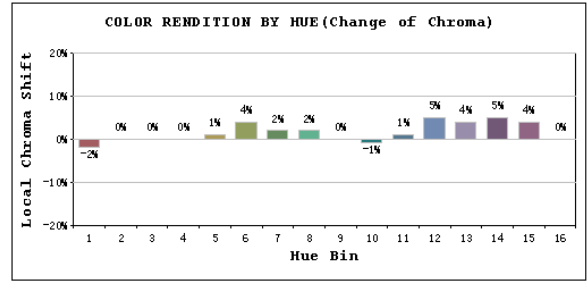
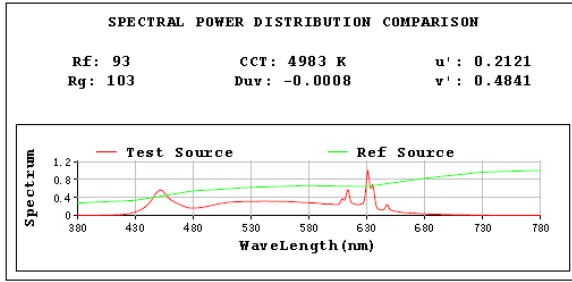
Photometric Measurement – Goniophotometer Method:

Parameter	Result
Test Voltage (V)	120.0
Frequency (Hz)	60
Total Luminous (lm)	960.1
Luminous Efficacy (lm/W)	103.46

Spectral Power Distribution & Chromaticity Diagram

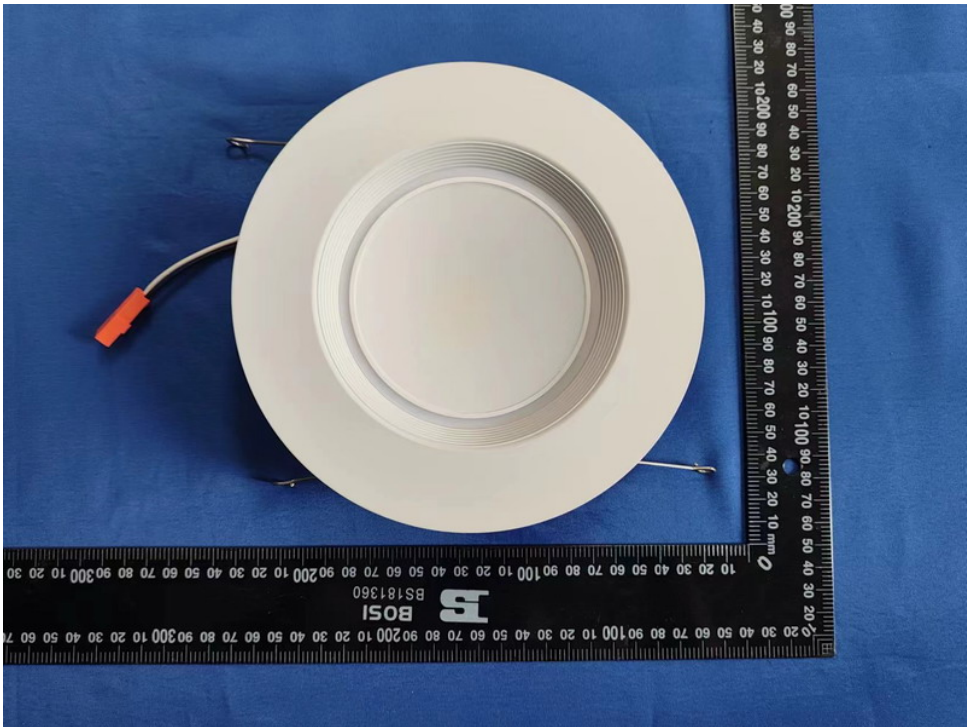
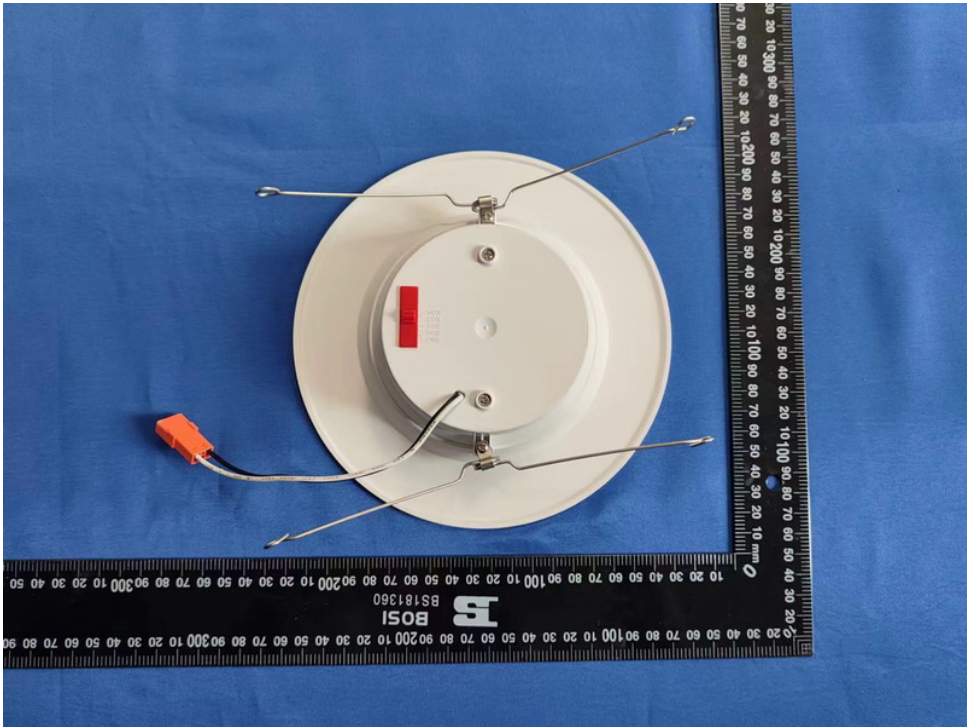


TM30



Sample No.	Wattage and CCT setting	Test Voltage(V)	Flux(lm)	P(W)	Luminous Efficacy lm/W
ECLPS6B	2700K setting	120	907.9	9.26	98.05
	3000K setting	120	915.2	9.31	98.30
	3500K setting	120	932.1	9.39	99.27
	4000K setting	120	938.1	9.35	100.33
	5000K setting	120	960.1	9.28	103.46

3. Product Photo



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