

LM-79-08 Test Report
For
RAB LIGHTING INC

(Brand Name: N/A)

408 W 14th St, New York, NY 10014, USA

Model name(s):
SUMO-R-9/PIR

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

**Type of
Luminaire:** Downlights

Report Date: 2025-11-12

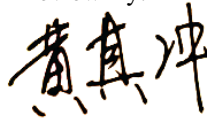
Prepared By:

Test & Report By:



Engineer: Sun Fangfang

Review By:



Manager: Huang Qichong

1.1 Rated Values:	
Rated Voltage / Frequency	120Vac, 60 Hz
Nominal Power	18.0W
Rated Initial Lamp Lumen	1500lm (mode 2700K)
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	2025-11-10	Test Ambient:	25.1 °C
Test Orientation	As intended	Stabilization Time (min)	90
Model Number	SUMO-R-9/PIR	2700K	

Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor
202511060034	120.0	60	0.151	16.30	0.900

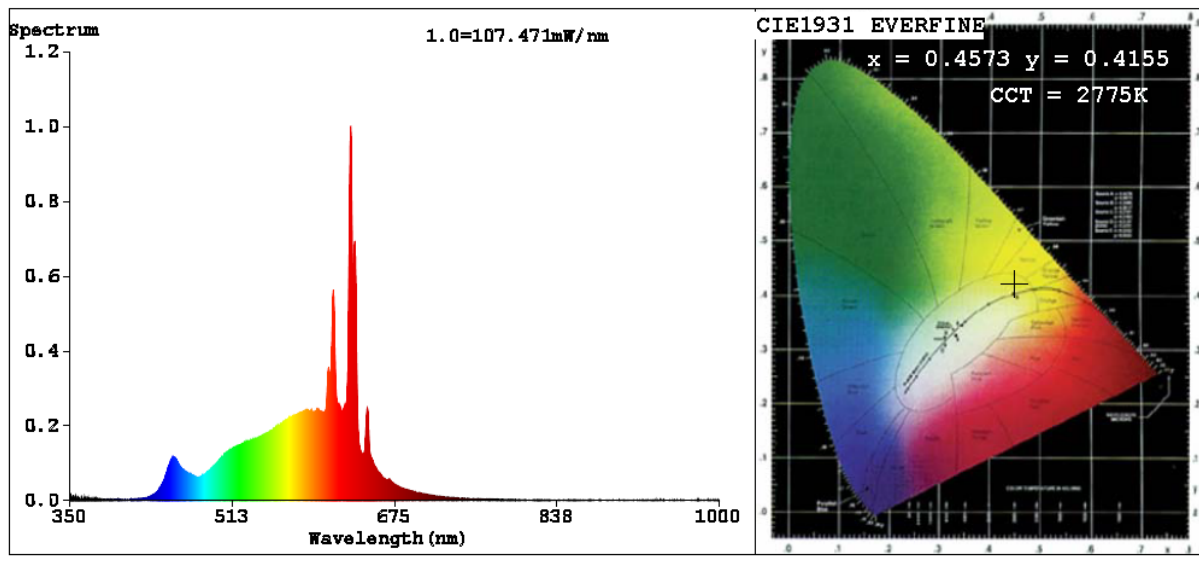
Chromaticity Measurement - Sphere-Spectroradiometer Method:

Parameter	Result	Special Color Rendering Indices			
Test Voltage (V)	120	R1	97	R9	64
Frequency (Hz)	60	R2	98	R10	94
CCT (K)	2775	R3	98	R11	100
Duv	0.0021	R4	97	R12	85
Chromaticity (x, y)	x=0.4573 y=0.4155	R5	96	R13	97
Chromaticity (u', v')	u'=0.2586 v'=0.5288	R6	97	R14	97
Color Rendering Index (CRI)	95.0	R7	92	R15	91
R9	64	R8	84	--	--
Rg	98				
Rf	91				
Rcs,h1%	-6				

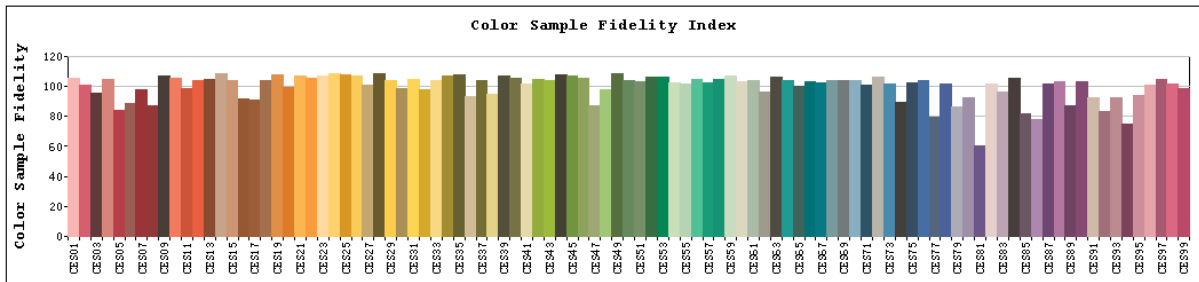
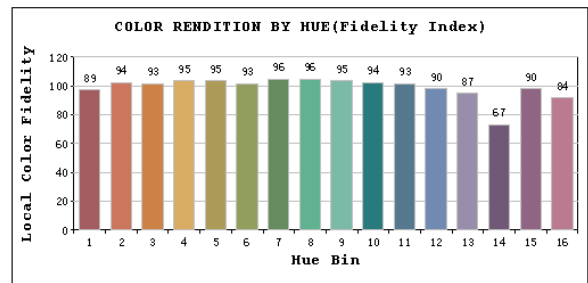
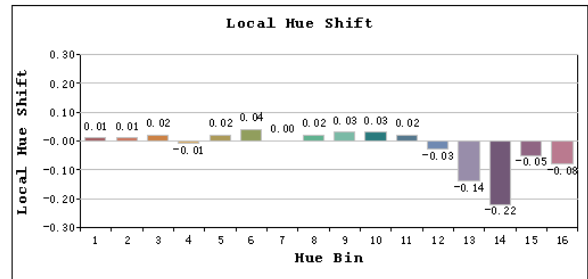
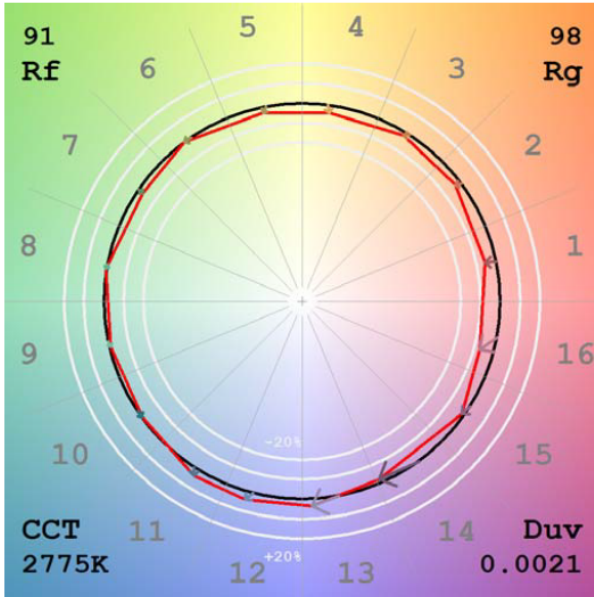
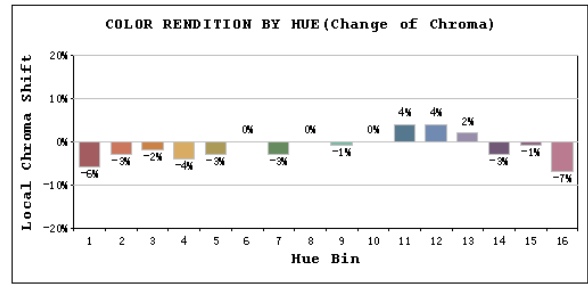
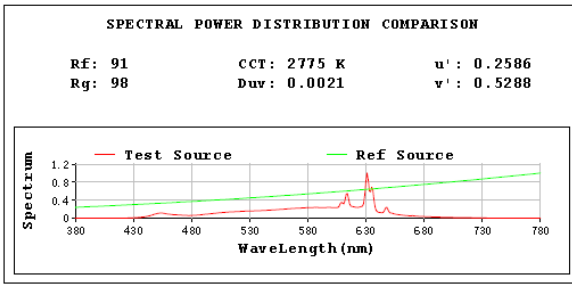
Photometric Measurement – Goniophotometer Method:

Parameter	Result
Test Voltage (V)	120.0
Frequency (Hz)	60
Total Luminous (lm)	1573.0
Luminous Efficacy (lm/W)	96.50
Beam Angle (°)	112.5
Center Beam Candle Power (cd)	553.6

Spectral Power Distribution & Chromaticity Diagram



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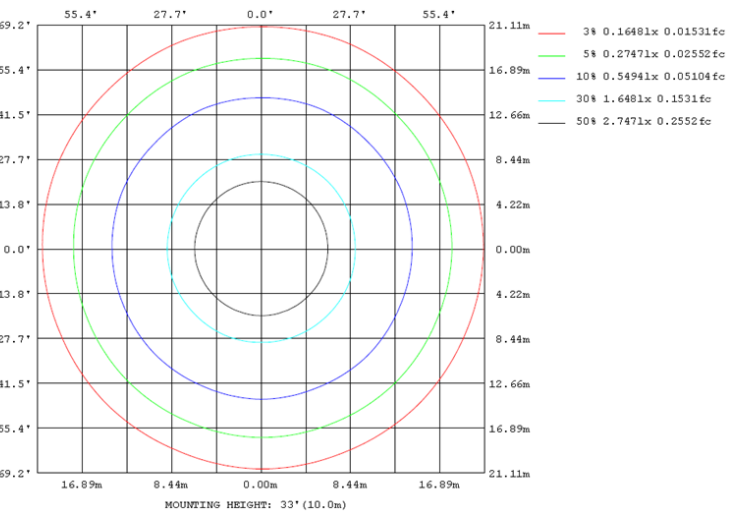
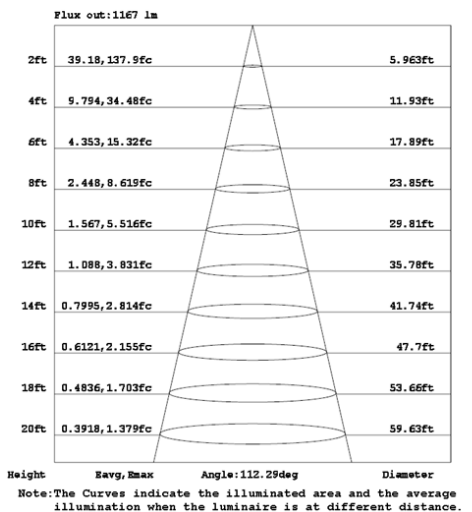
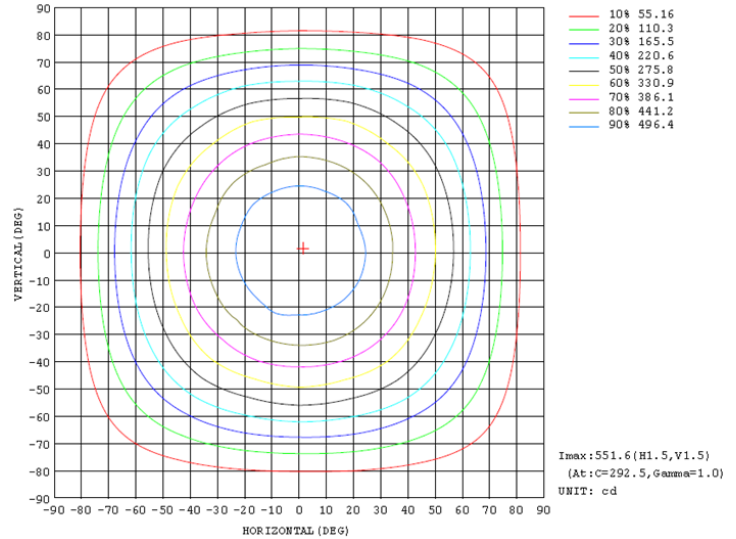
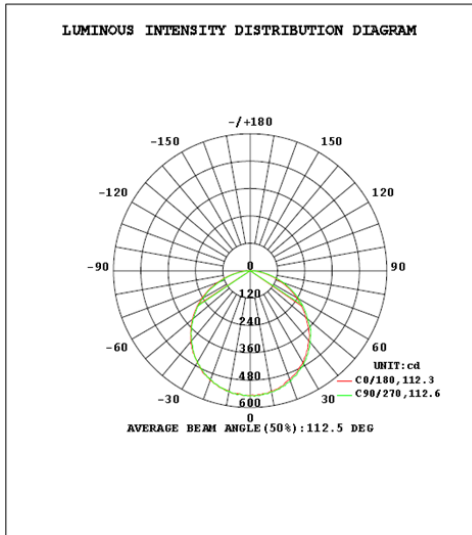


Zonal Lumen Tabulation

Zonal Lumen Summary		
Zone	Lumens	% Luminaire
0-30	426.9	27.1%
0-40	700.1	44.5%
0-60	1238.9	78.8%
60-90	334.1	21.2%
70-100	139.9	8.9%
90-120	0.0	0.0%
0-90	1573.0	100.0%
90-180	0.0	0.0%
0-180	1573.0	100.0%

Lumens Per Zone					
Zone	Lumens	% Total	Zone	Lumens	% Total
0-10	51.9	3.3%	90-100	0.0	0.0%
10-20	148.8	9.5%	100-110	0.0	0.0%
20-30	226.1	14.4%	110-120	0.0	0.0%
30-40	273.3	17.4%	120-130	0.0	0.0%
40-50	283.6	18.0%	130-140	0.0	0.0%
50-60	255.2	16.2%	140-150	0.0	0.0%
60-70	194.2	12.3%	150-160	0.0	0.0%
70-80	110.3	7.0%	160-170	0.0	0.0%
80-90	29.6	1.9%	170-180	0.0	0.0%

Photometric Data



2.1.2 Electrical, Photometric and Chromaticity Measurements

Test date	2025-11-10	Test Ambient:	25.1 °C
Test Orientation	As intended	Stabilization Time (min)	90
Model Number	SUMO-R-9/PIR	3000K	

Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor
202511060034	120.0	60	0.151	16.30	0.900

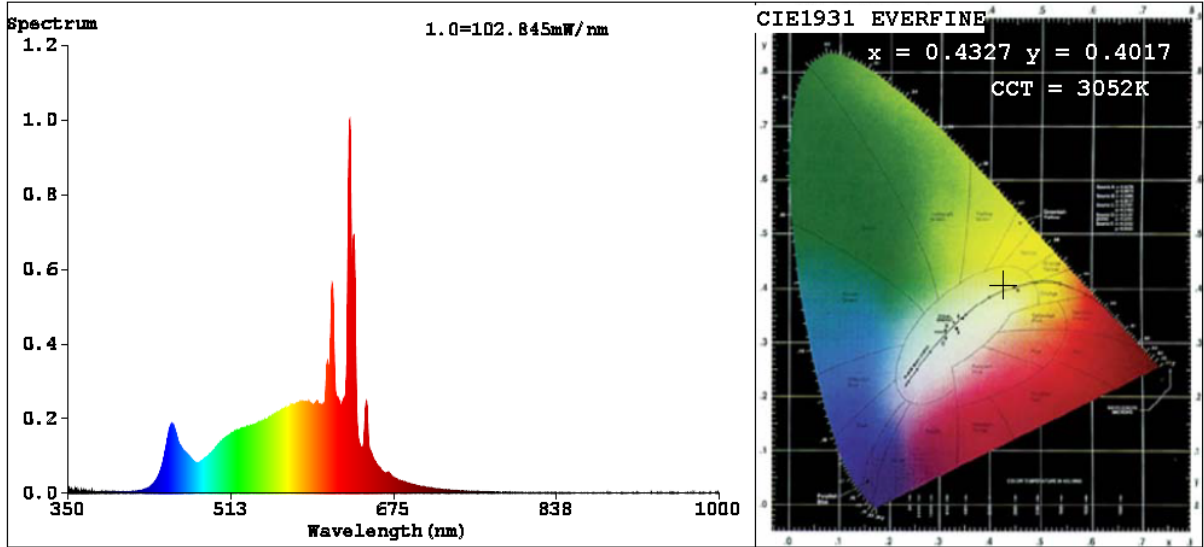
Chromaticity Measurement - Sphere-Spectroradiometer Method:

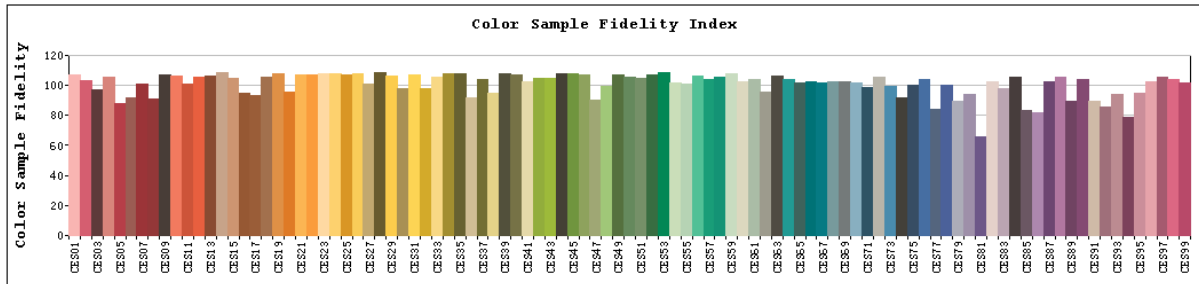
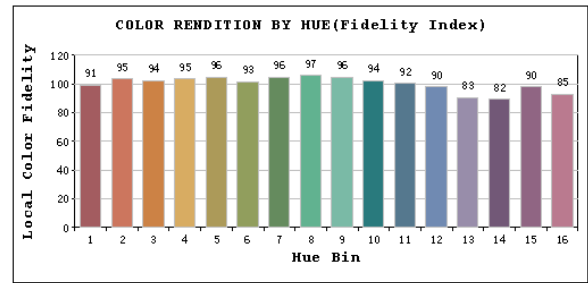
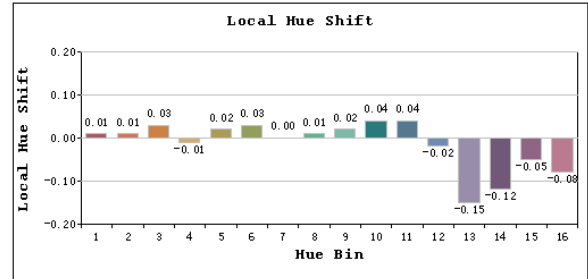
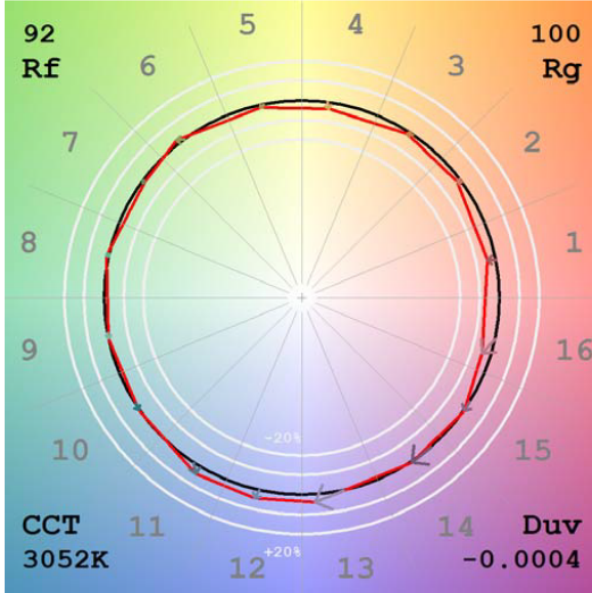
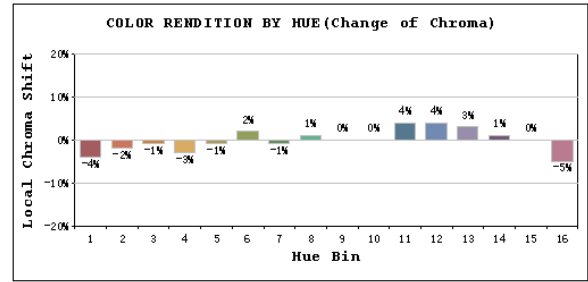
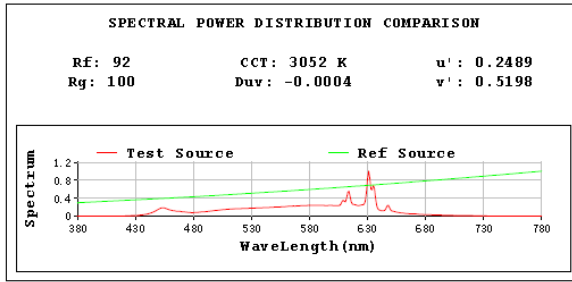
Parameter	Result	Special Color Rendering Indices			
Test Voltage (V)	120	R1	99	R9	74
Frequency (Hz)	60	R2	100	R10	97
CCT (K)	3052	R3	99	R11	98
Duv	-0.0004	R4	98	R12	84
Chromaticity (x, y)	x=0.4327 y=0.4017	R5	98	R13	99
Chromaticity (u', v')	u'=0.2489 v'=0.5198	R6	95	R14	98
Color Rendering Index (CRI)	96.5	R7	93	R15	95
R9	74	R8	89	--	--
Rg	100				
Rf	92				
Rcs,h1%	-4				

Photometric Measurement – Goniophotometer Method:

Parameter	Result
Test Voltage (V)	120.0
Frequency (Hz)	60
Total Luminous (lm)	1594.6
Luminous Efficacy (lm/W)	97.83

Spectral Power Distribution & Chromaticity Diagram





2.1.3 Electrical, Photometric and Chromaticity Measurements

Test date	2025-11-10	Test Ambient:	25.1 °C
Test Orientation	As intended	Stabilization Time (min)	90
Model Number	SUMO-R-9/PIR	3500K	

Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor
202511060034	120.0	60	0.152	16.50	0.903

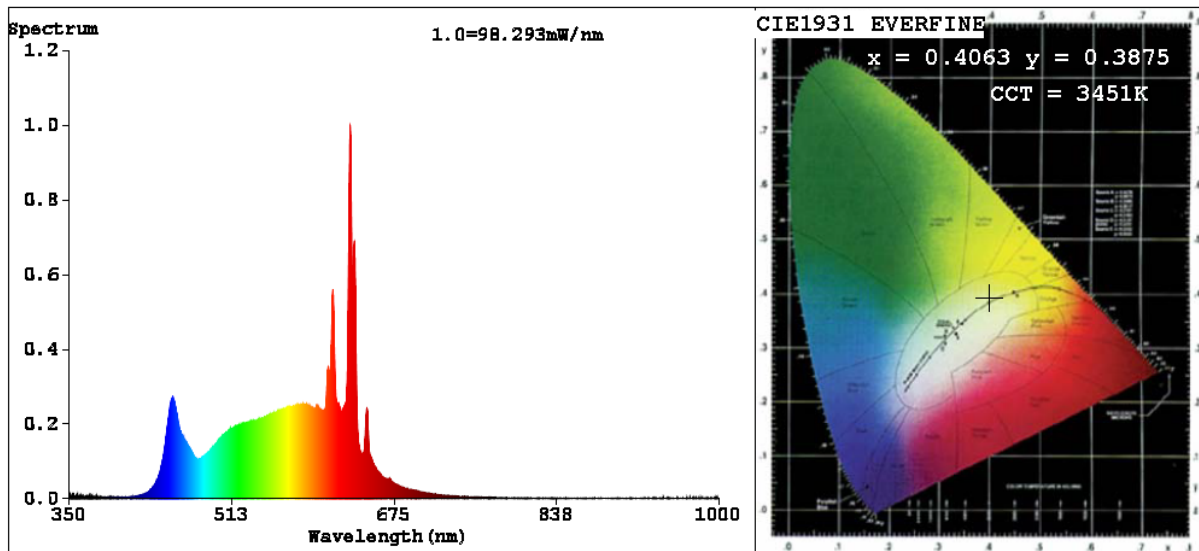
Chromaticity Measurement - Sphere-Spectroradiometer Method:

Parameter	Result	Special Color Rendering Indices			
Test Voltage (V)	120	R1	98	R9	84
Frequency (Hz)	60	R2	99	R10	99
CCT (K)	3451	R3	98	R11	97
Duv	-0.0016	R4	99	R12	81
Chromaticity (x, y)	x=0.4063 y=0.3875	R5	98	R13	99
Chromaticity (u', v')	u'=0.2377 v'=0.5101	R6	95	R14	98
Color Rendering Index (CRI)	96.9	R7	95	R15	98
R9	84	R8	93	--	--
Rg	100				
Rf	93				
Rcs,h1%	-3				

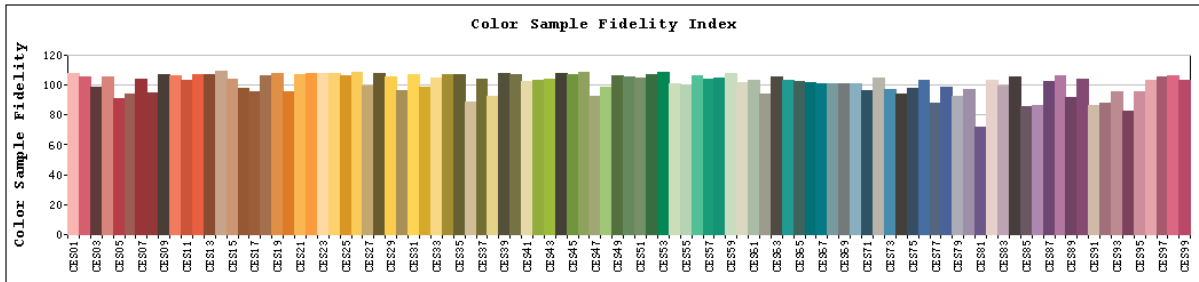
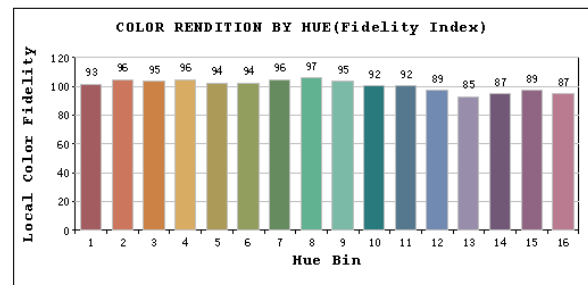
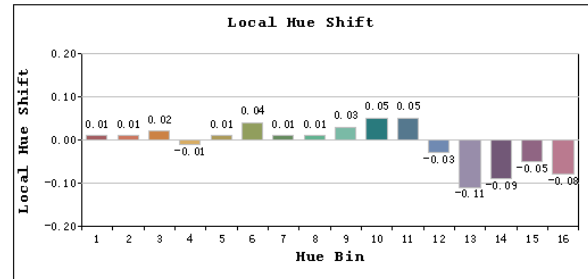
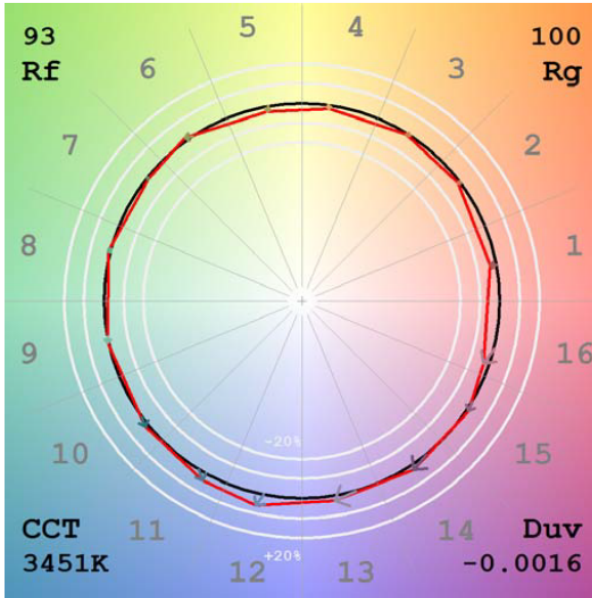
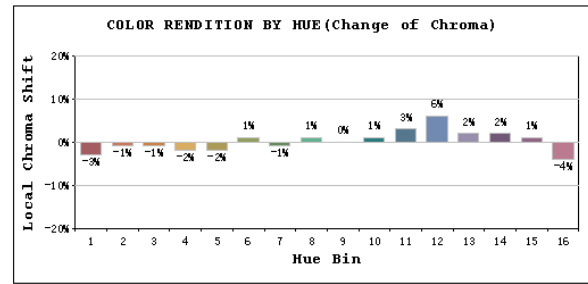
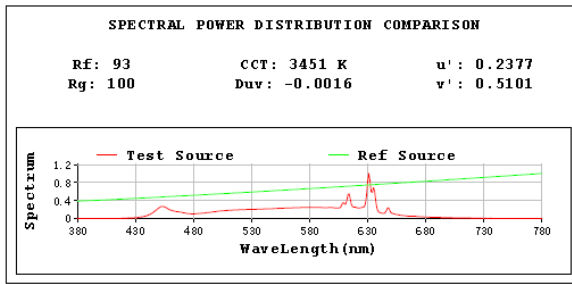
Photometric Measurement – Goniophotometer Method:

Parameter	Result
Test Voltage (V)	120.0
Frequency (Hz)	60
Total Luminous (lm)	1637.0
Luminous Efficacy (lm/W)	99.21

Spectral Power Distribution & Chromaticity Diagram



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2.1.4 Electrical, Photometric and Chromaticity Measurements

Test date	2025-11-10	Test Ambient:	25.1 °C
Test Orientation	As intended	Stabilization Time (min)	90
Model Number	SUMO-R-9/PIR	4000K	

Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor
202511060034	120.0	60	0.152	16.40	0.901

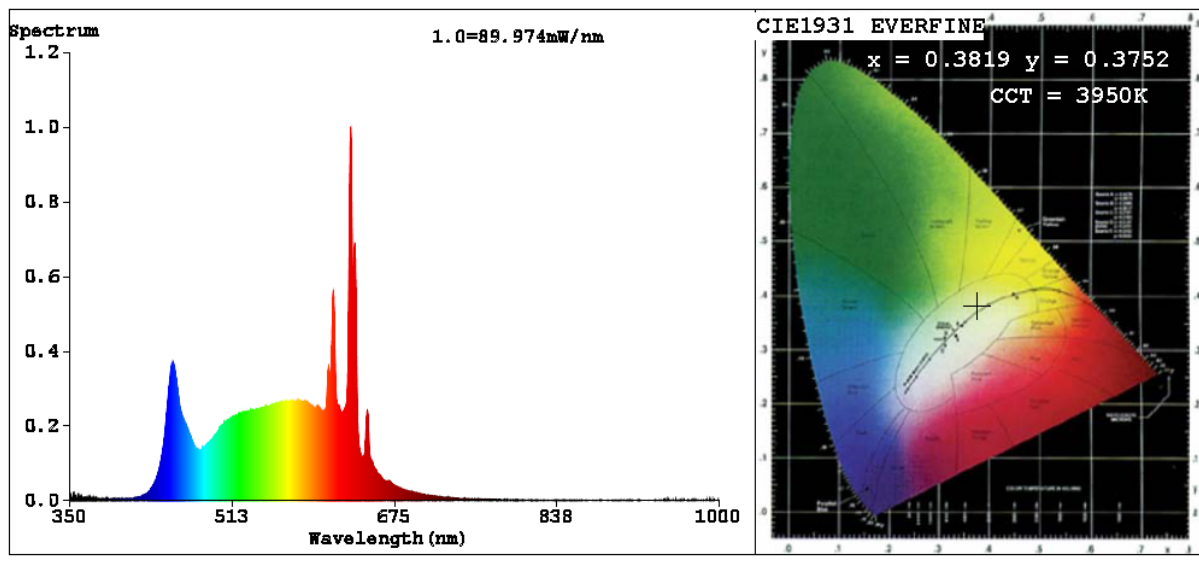
Chromaticity Measurement - Sphere-Spectroradiometer Method:

Parameter	Result	Special Color Rendering Indices			
Test Voltage (V)	120	R1	98	R9	89
Frequency (Hz)	60	R2	99	R10	99
CCT (K)	3950	R3	98	R11	98
Duv	-0.0011	R4	99	R12	77
Chromaticity (x, y)	x=0.3819 y=0.3752	R5	98	R13	99
Chromaticity (u', v')	u'=0.2267 v'=0.5011	R6	95	R14	97
Color Rendering Index (CRI)	97.2	R7	96	R15	97
R9	89	R8	95	--	--
Rg	100				
Rf	93				
Rcs,h1%	-3				

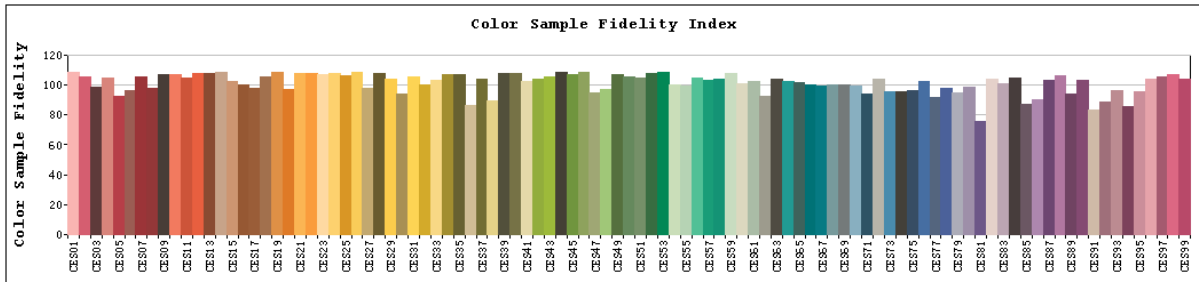
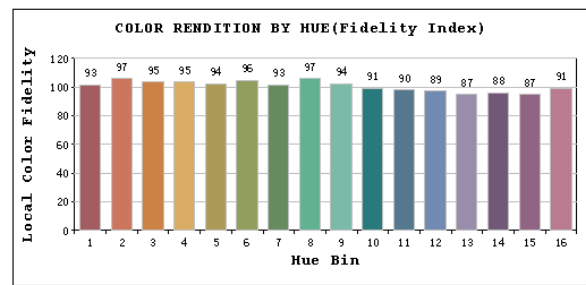
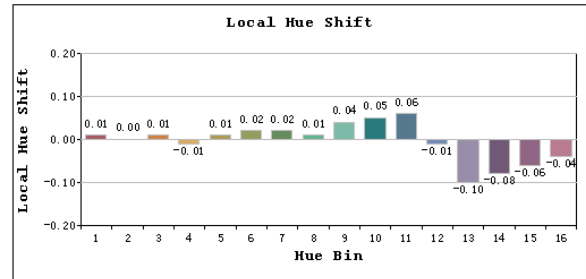
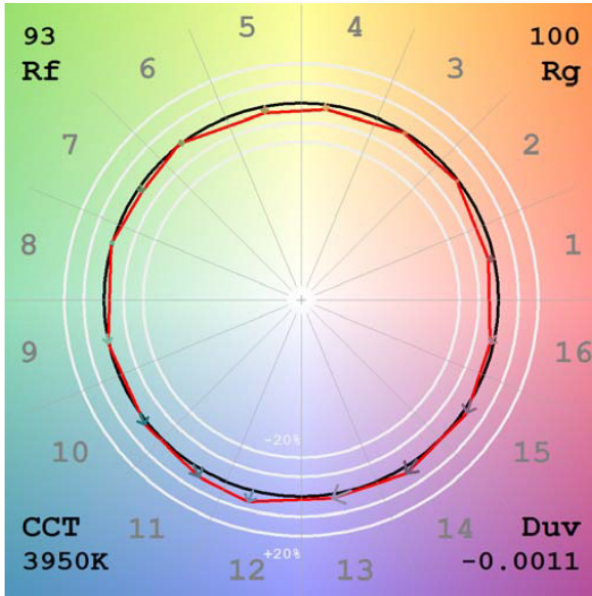
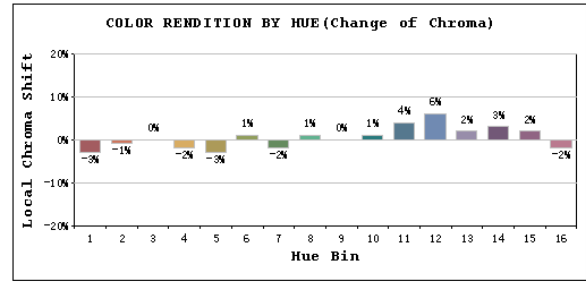
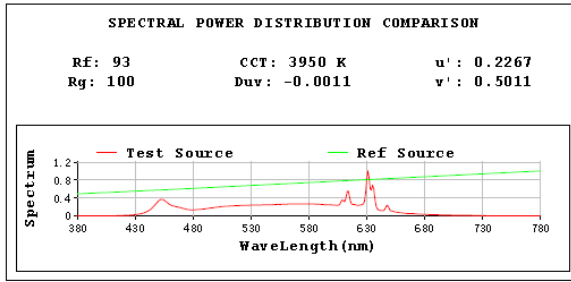
Photometric Measurement – Goniophotometer Method:

Parameter	Result
Test Voltage (V)	120.0
Frequency (Hz)	60
Total Luminous (lm)	1637.8
Luminous Efficacy (lm/W)	99.86

Spectral Power Distribution & Chromaticity Diagram



TM30



2.1.5 Electrical, Photometric and Chromaticity Measurements

Test date	2025-11-10	Test Ambient:	25.1 °C
Test Orientation	As intended	Stabilization Time (min)	90
Model Number	SUMO-R-9/PIR	5000K	

Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor
202511060034	120.0	60	0.151	16.30	0.900

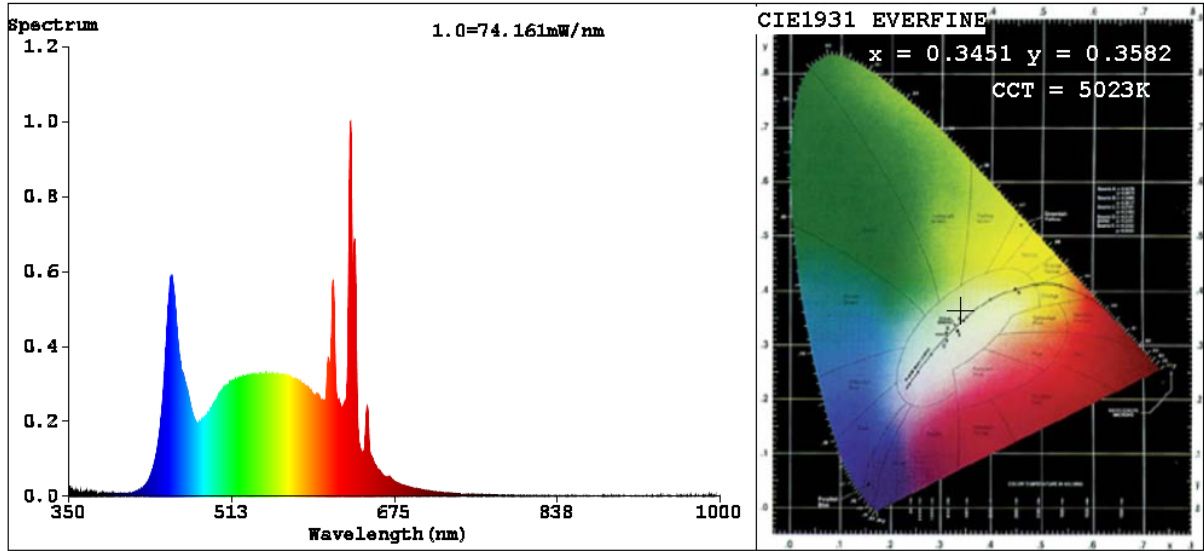
Chromaticity Measurement - Sphere-Spectroradiometer Method:

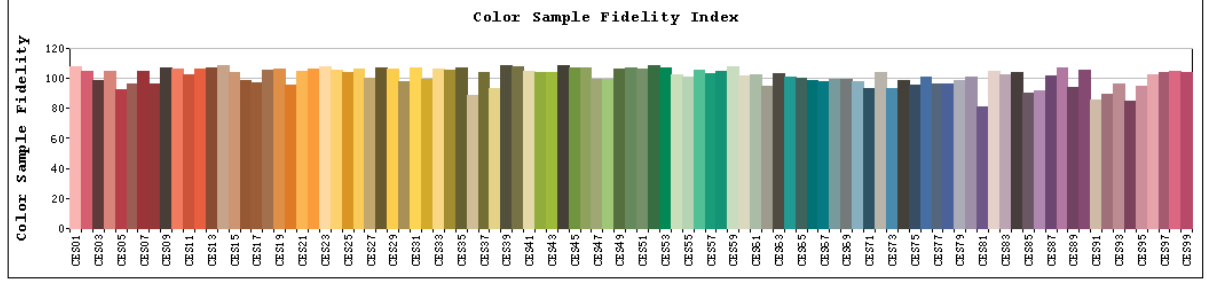
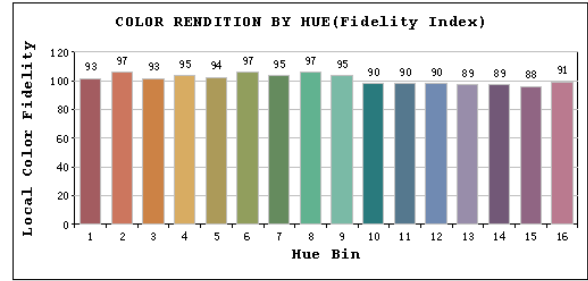
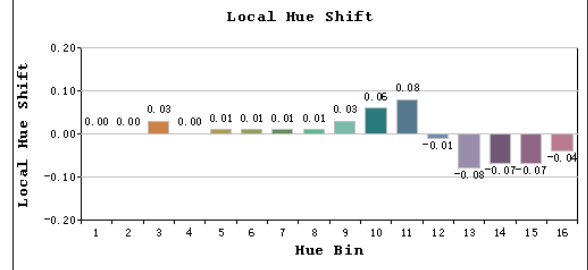
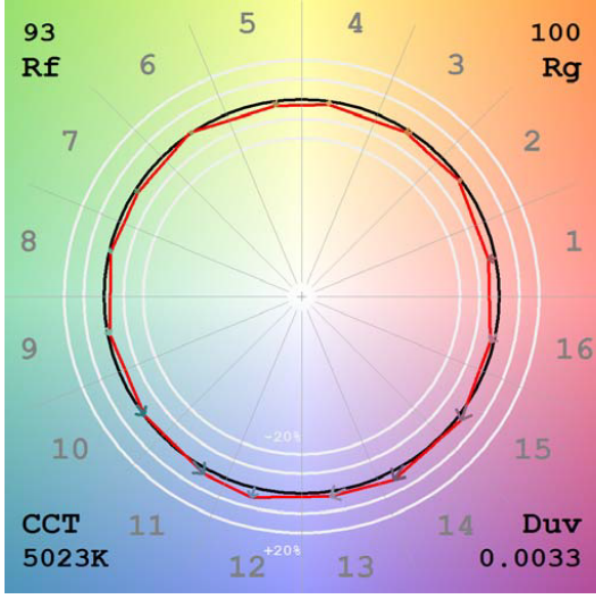
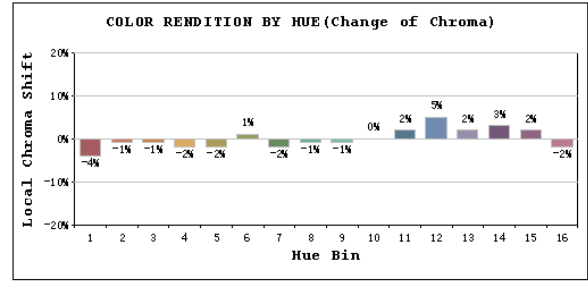
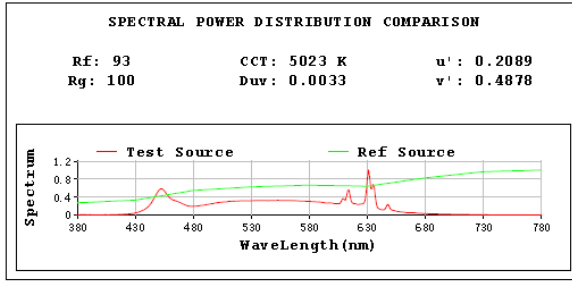
Parameter	Result	Special Color Rendering Indices			
Test Voltage (V)	120	R1	97	R9	83
Frequency (Hz)	60	R2	98	R10	93
CCT (K)	5023	R3	96	R11	97
Duv	0.0033	R4	97	R12	74
Chromaticity (x, y)	x=0.3451 y=0.3582	R5	96	R13	98
Chromaticity (u', v')	u'=0.2089 v'=0.4878	R6	95	R14	97
Color Rendering Index (CRI)	96.3	R7	96	R15	96
R9	83	R8	94	--	--
Rg	100				
Rf	93				
Rcs,h1%	-4				

Photometric Measurement – Goniophotometer Method:

Parameter	Result
Test Voltage (V)	120.0
Frequency (Hz)	60
Total Luminous (lm)	1625.6
Luminous Efficacy (lm/W)	99.73

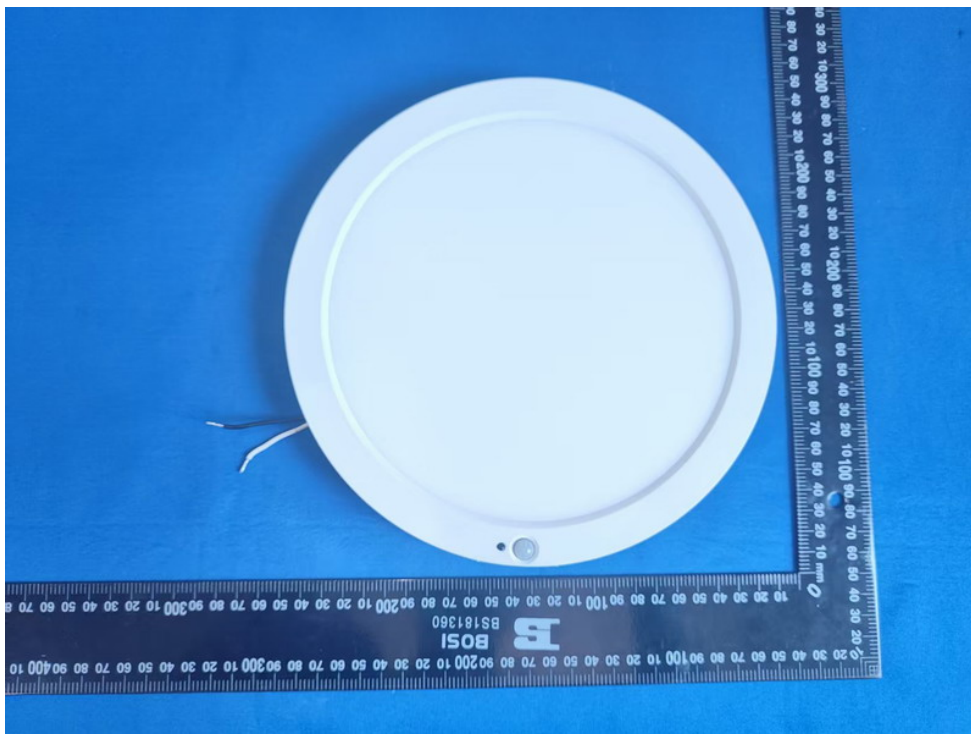
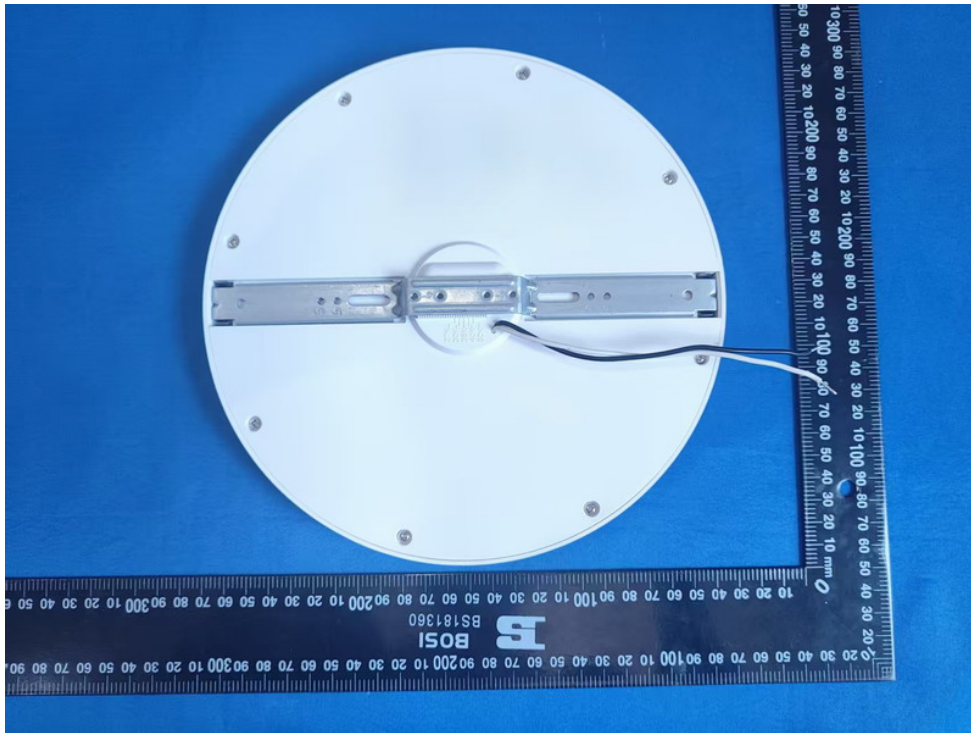
Spectral Power Distribution & Chromaticity Diagram





Sample No.	Wattage and CCT setting	Test Voltage(V)	Flux(lm)	P(W)	Luminous Efficacy lm/W
SUMO-R-9/PIR	2700K setting	120	1573.0	16.30	96.50
	3000K setting	120	1594.6	16.30	97.83
	3500K setting	120	1637.0	16.50	99.21
	4000K setting	120	1637.8	16.40	99.86
	5000K setting	120	1625.6	16.30	99.73

3. Product Photo



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