

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):
WFRL6R139FA120WBB

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

**Type of
Luminaire:** Downlights

Report Date: 2024-11-22

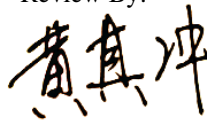
Prepared By:

Test & Report By:



Engineer: Sun Fangfang

Review By:



Manager: Huang Qichong

1.1 Rated Values:	
Rated Voltage / Frequency	120Vac, 60 Hz
Nominal Power	13.0W
Rated Initial Lamp Lumen	1100lm (mode 5000K)
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	2024-11-20	Test Ambient:	25.1 °C
Test Orientation	As intended	Stabilization Time (min)	90
Model Number	WFRL6R139FA120WBB	5000K	

Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor
202411160004	120.0	60	0.106	12.40	0.975

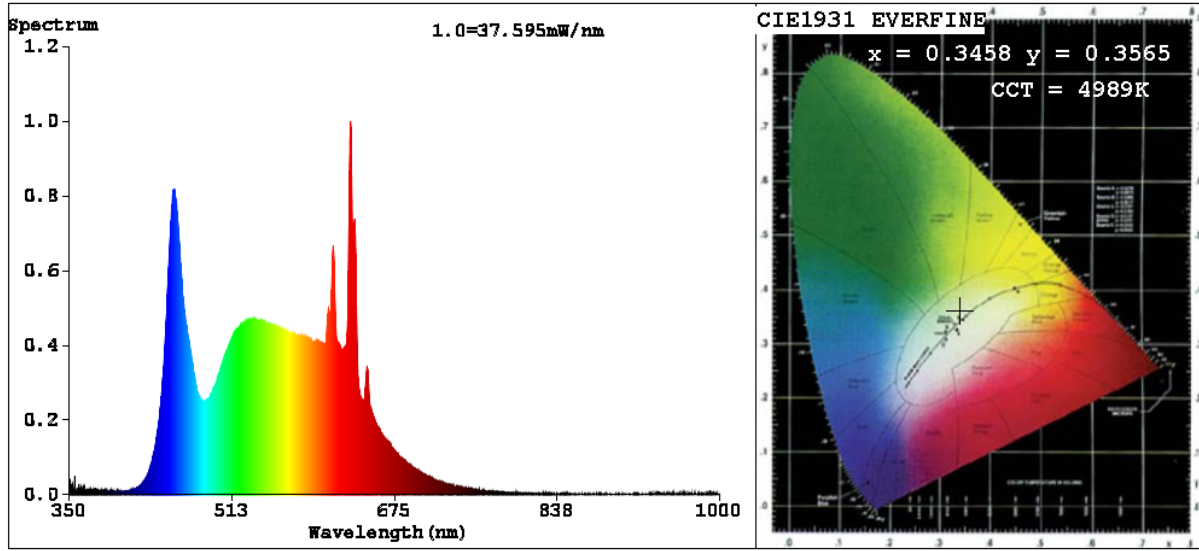
Chromaticity Measurement - Sphere-Spectroradiometer Method:

Parameter	Result	Special Color Rendering Indices			
Test Voltage (V)	120	R1	97	R9	82
Frequency (Hz)	60	R2	98	R10	91
CCT (K)	4989	R3	95	R11	95
Duv	0.0021	R4	95	R12	64
Chromaticity (x, y)	x=0.3458 y=0.3565	R5	94	R13	98
Chromaticity (u', v')	u'=0.2100 v'=0.4871	R6	94	R14	97
Color Rendering Index (CRI)	95.1	R7	96	R15	94
R9	82	R8	93	--	--
Rg	100				
Rf	92				
Rcs,h1%	-4				

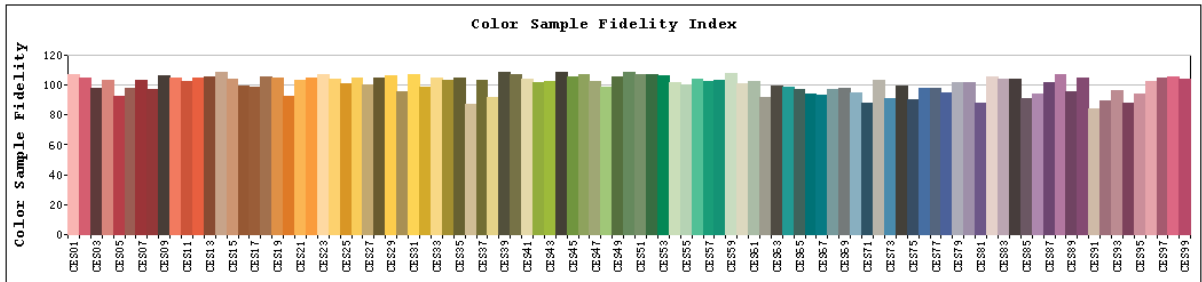
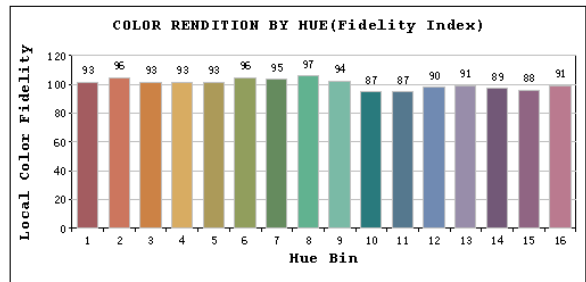
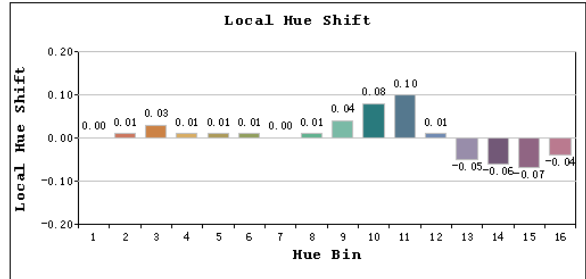
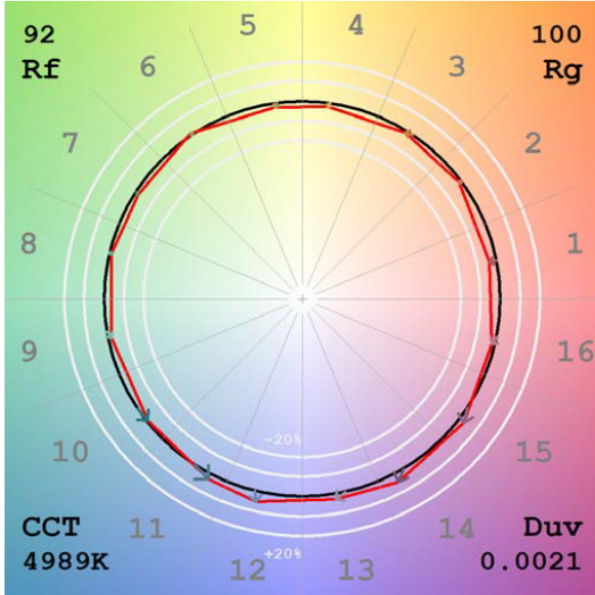
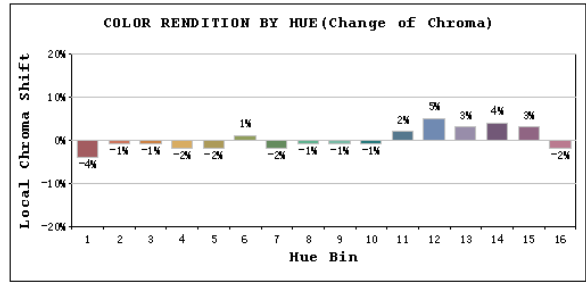
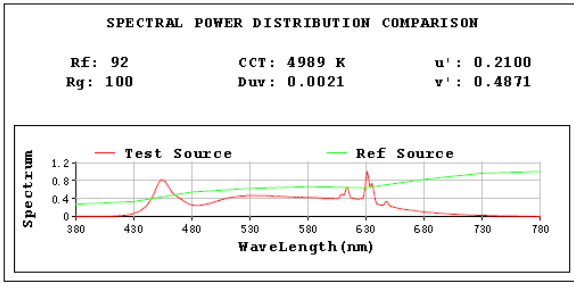
Photometric Measurement – Goniophotometer Method:

Parameter	Result
Test Voltage (V)	120.0
Frequency (Hz)	60
Total Luminous (lm)	1178.0
Luminous Efficacy (lm/W)	95.00
Beam Angle (°)	110.0
Center Beam Candle Power (cd)	431.1

Spectral Power Distribution & Chromaticity Diagram



TM30

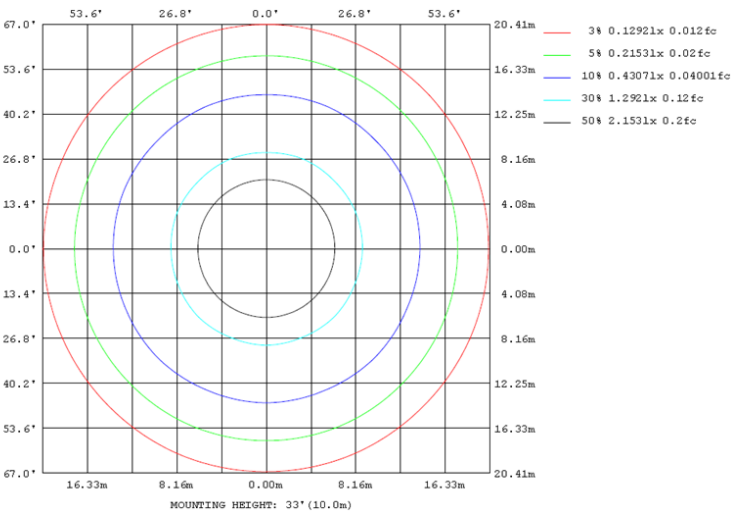
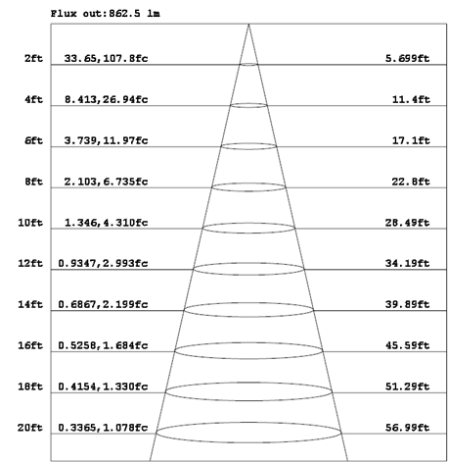
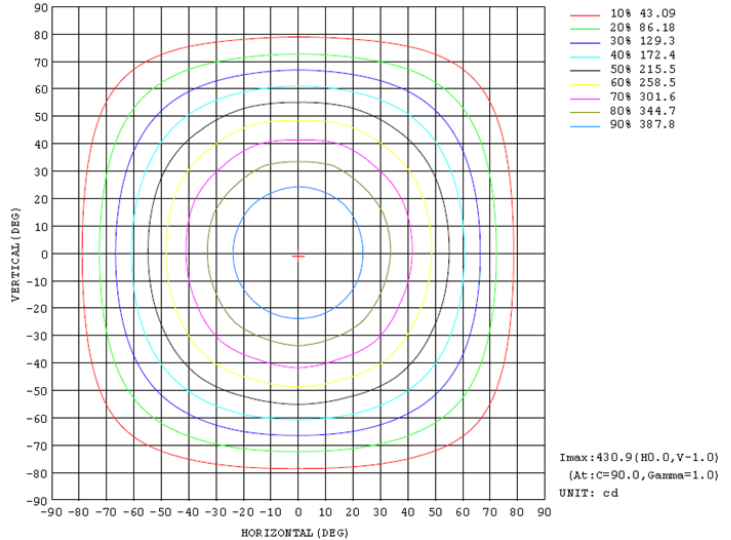
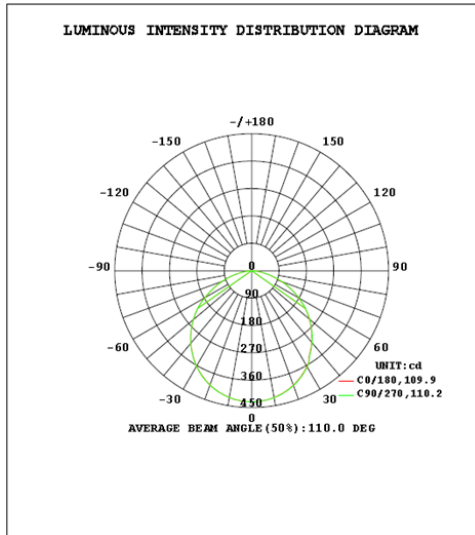


Zonal Lumen Tabulation

Zonal Lumen Summary		
Zone	Lumens	% Luminaire
0-30	334.2	28.4%
0-40	545.0	46.3%
0-60	953.7	81.0%
60-90	224.3	19.0%
70-100	84.7	7.2%
90-120	0.0	0.0%
0-90	1178.1	100.0%
90-180	0.0	0.0%
0-180	1178.1	100.0%

Lumens Per Zone					
Zone	Lumens	% Total	Zone	Lumens	% Total
0-10	40.8	3.5%	90-100	0.0	0.0%
10-20	116.8	9.9%	100-110	0.0	0.0%
20-30	176.7	15.0%	110-120	0.0	0.0%
30-40	210.8	17.9%	120-130	0.0	0.0%
40-50	216.3	18.4%	130-140	0.0	0.0%
50-60	192.4	16.3%	140-150	0.0	0.0%
60-70	139.7	11.9%	150-160	0.0	0.0%
70-80	72.4	6.1%	160-170	0.0	0.0%
80-90	12.3	1.0%	170-180	0.0	0.0%

Photometric Data



2.1.2 Electrical, Photometric and Chromaticity Measurements

Test date	2024-11-20	Test Ambient:	25.1 °C
Test Orientation	As intended	Stabilization Time (min)	90
Model Number	WFRL6R139FA120WBB	2700K	

Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor
202411160004	120.0	60	0.106	12.40	0.975

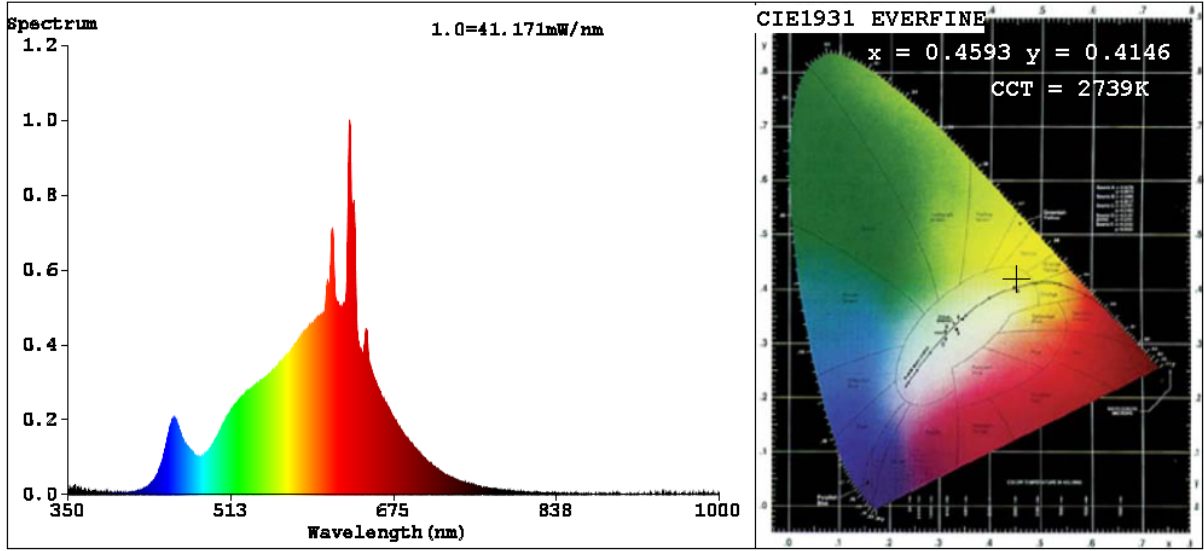
Chromaticity Measurement - Sphere-Spectroradiometer Method:

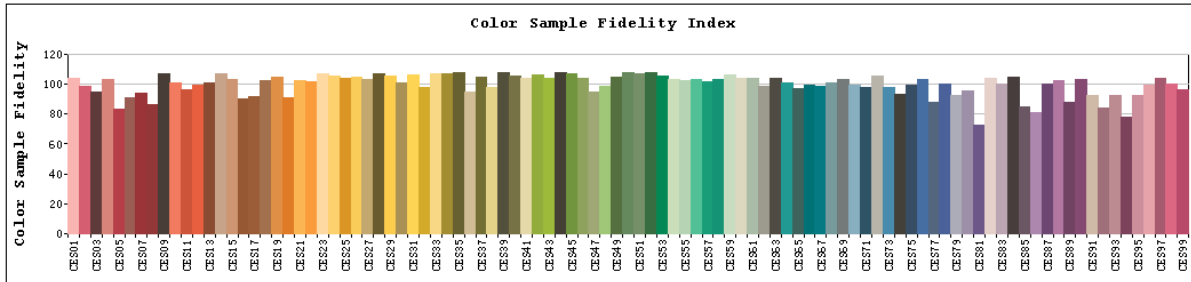
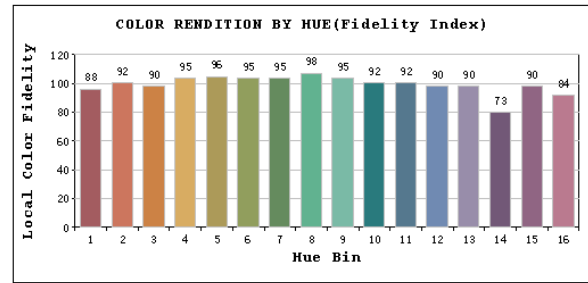
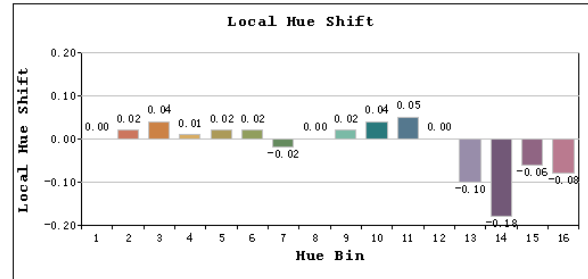
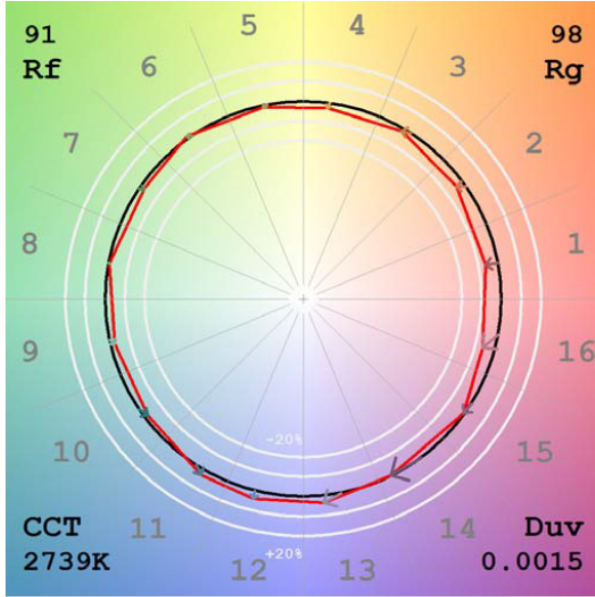
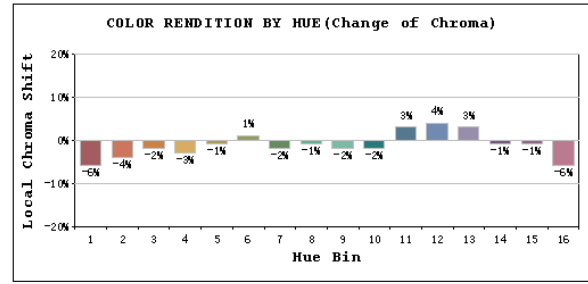
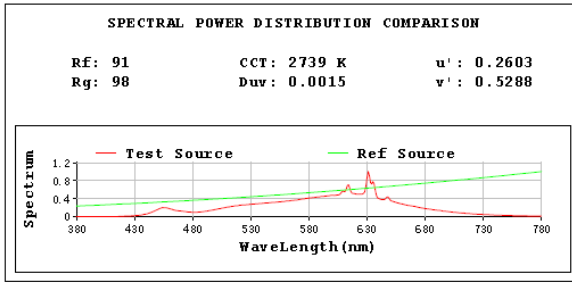
Parameter	Result	Special Color Rendering Indices			
Test Voltage (V)	120	R1	93	R9	55
Frequency (Hz)	60	R2	96	R10	90
CCT (K)	2739	R3	98	R11	95
Duv	0.0015	R4	93	R12	81
Chromaticity (x, y)	x=0.4593 y=0.4146	R5	93	R13	94
Chromaticity (u', v')	u'=0.2603 v'=0.5288	R6	97	R14	98
Color Rendering Index (CRI)	92.7	R7	91	R15	88
R9	55	R8	80	--	--
Rg	98				
Rf	91				
Rcs,h1%	-6				

Photometric Measurement – Goniophotometer Method:

Parameter	Result
Test Voltage (V)	120.0
Frequency (Hz)	60
Total Luminous (lm)	1058.3
Luminous Efficacy (lm/W)	85.34

Spectral Power Distribution & Chromaticity Diagram





2.1.3 Electrical, Photometric and Chromaticity Measurements

Test date	2024-11-20	Test Ambient:	25.1 °C
Test Orientation	As intended	Stabilization Time (min)	90
Model Number	WFRL6R139FA120WBB	3000K	

Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor
202411160004	120.0	60	0.105	12.30	0.975

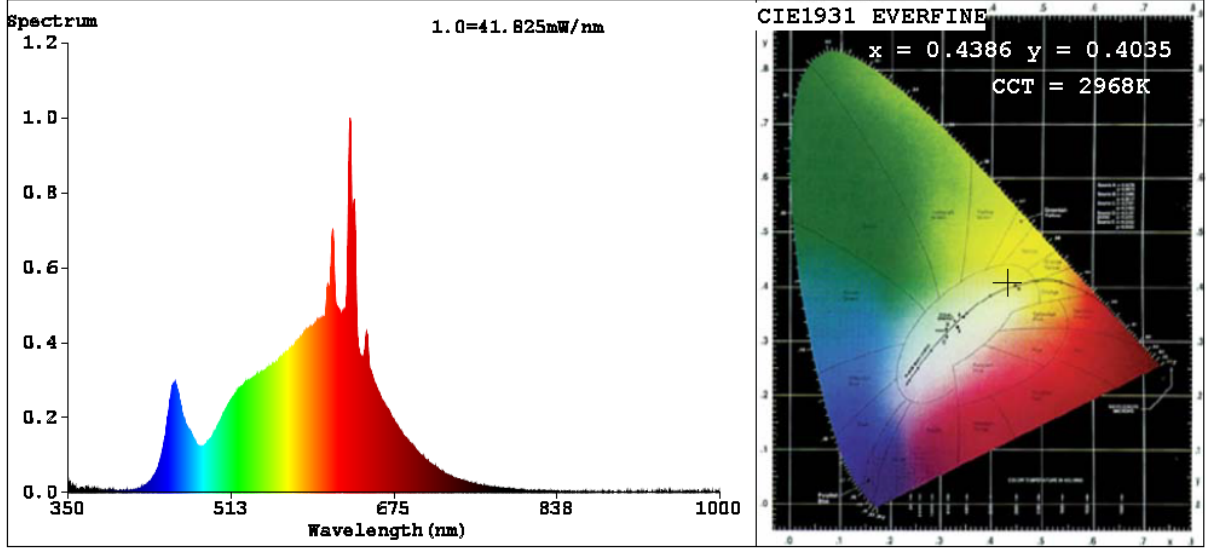
Chromaticity Measurement - Sphere-Spectroradiometer Method:

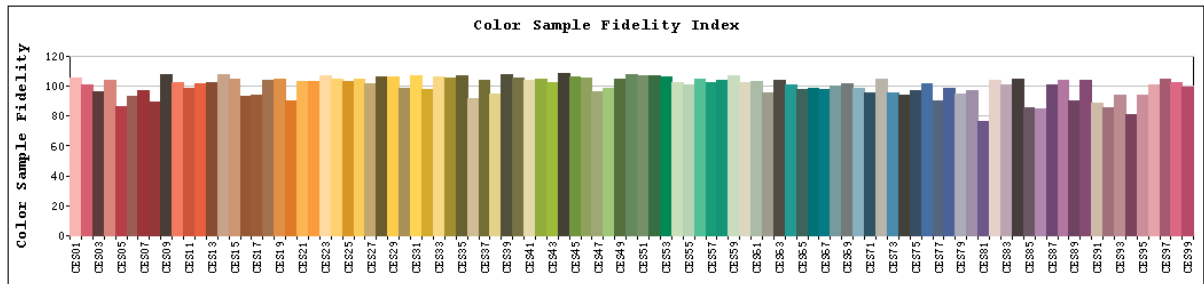
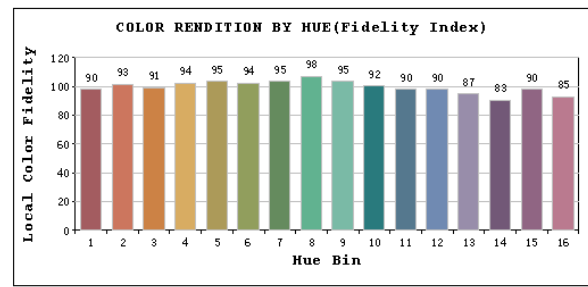
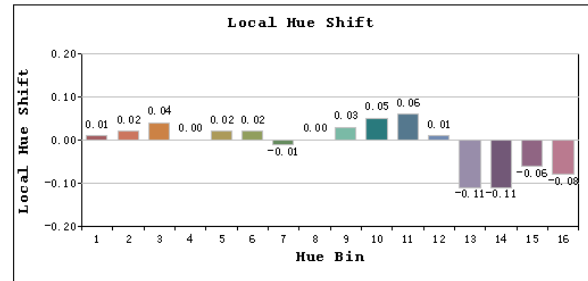
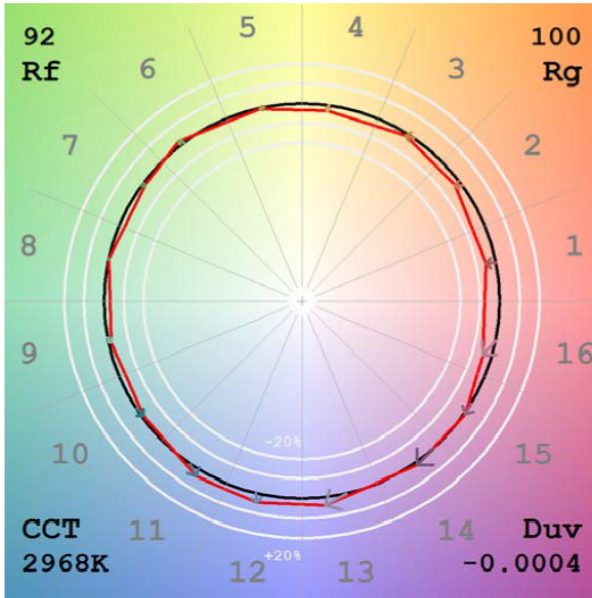
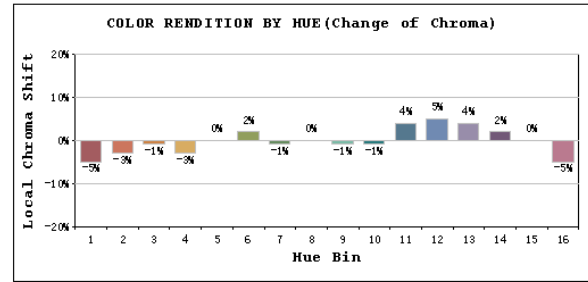
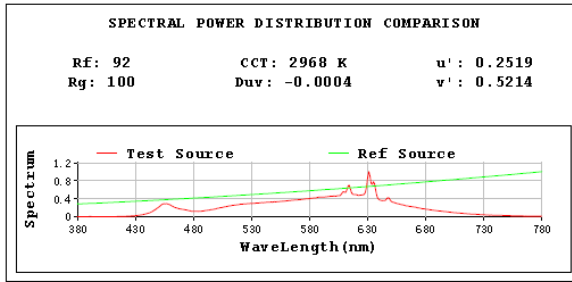
Parameter	Result	Special Color Rendering Indices			
Test Voltage (V)	120	R1	96	R9	64
Frequency (Hz)	60	R2	98	R10	93
CCT (K)	2968	R3	98	R11	97
Duv	-0.0004	R4	95	R12	80
Chromaticity (x, y)	x=0.4386 y=0.4035	R5	95	R13	97
Chromaticity (u', v')	u'=0.2519 v'=0.5214	R6	97	R14	98
Color Rendering Index (CRI)	94.5	R7	92	R15	92
R9	64	R8	84	--	--
Rg	100				
Rf	92				
Rcs,h1%	-5				

Photometric Measurement – Goniophotometer Method:

Parameter	Result
Test Voltage (V)	120.0
Frequency (Hz)	60
Total Luminous (lm)	1093.9
Luminous Efficacy (lm/W)	88.93

Spectral Power Distribution & Chromaticity Diagram





2.1.4 Electrical, Photometric and Chromaticity Measurements

Test date	2024-11-20	Test Ambient:	25.1 °C
Test Orientation	As intended	Stabilization Time (min)	90
Model Number	WFRL6R139FA120WBB	3500K	

Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor
202411160004	120.0	60	0.104	12.20	0.975

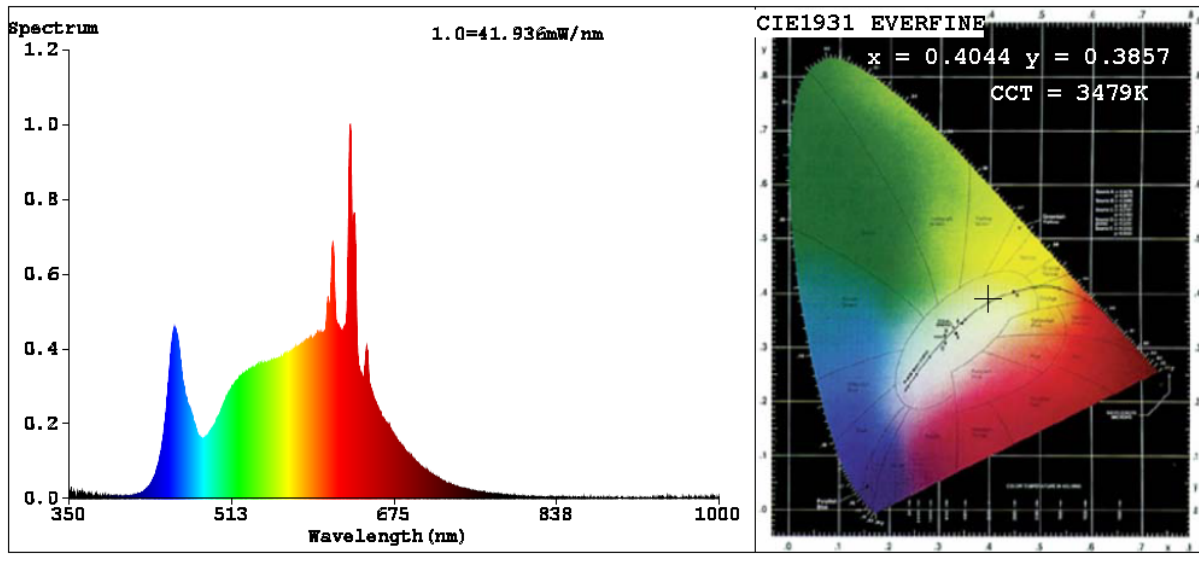
Chromaticity Measurement - Sphere-Spectroradiometer Method:

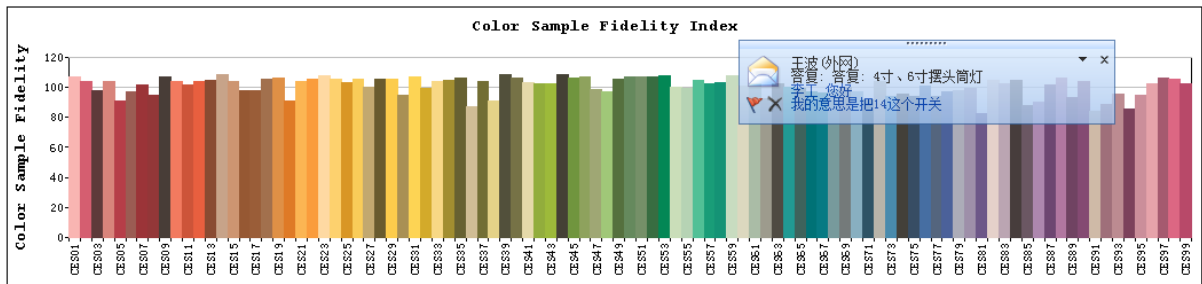
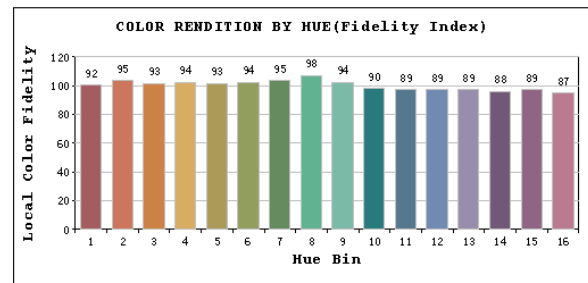
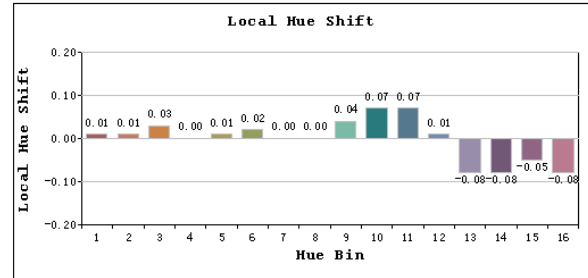
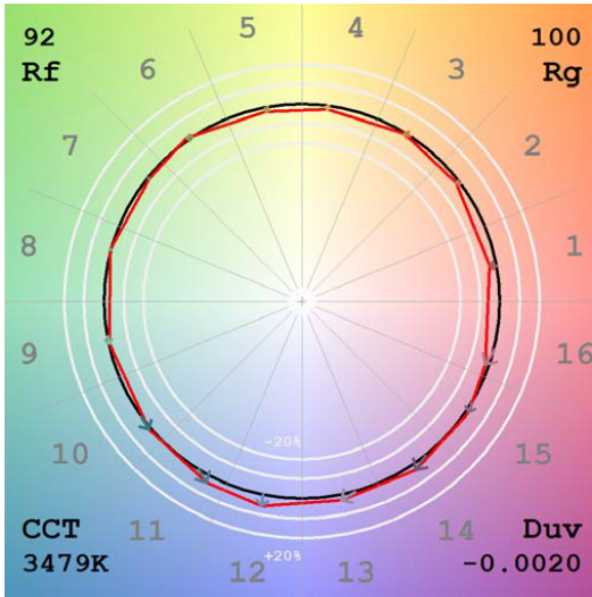
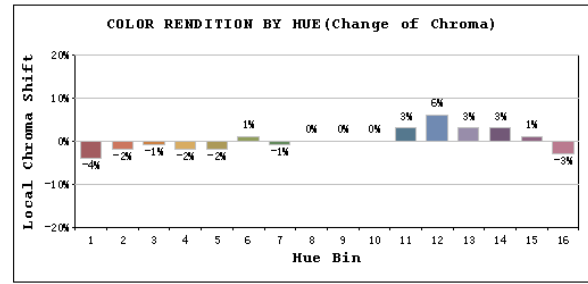
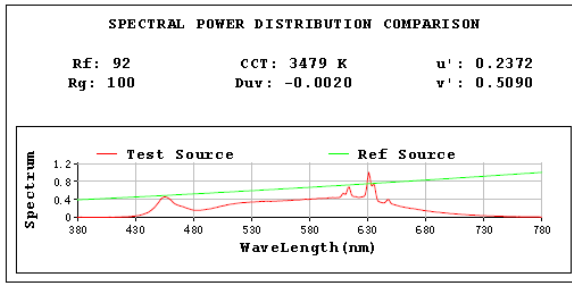
Parameter	Result	Special Color Rendering Indices			
Test Voltage (V)	120	R1	98	R9	77
Frequency (Hz)	60	R2	99	R10	96
CCT (K)	3479	R3	97	R11	98
Duv	-0.0020	R4	98	R12	76
Chromaticity (x, y)	x=0.4044 y=0.3857	R5	97	R13	100
Chromaticity (u', v')	u'=0.2372 v'=0.5090	R6	95	R14	97
Color Rendering Index (CRI)	96.2	R7	94	R15	96
R9	77	R8	90	--	--
Rg	100				
Rf	92				
Rcs,h1%	-4				

Photometric Measurement – Goniophotometer Method:

Parameter	Result
Test Voltage (V)	120.0
Frequency (Hz)	60
Total Luminous (lm)	1150.5
Luminous Efficacy (lm/W)	94.30

Spectral Power Distribution & Chromaticity Diagram





2.1.5 Electrical, Photometric and Chromaticity Measurements

Test date	2024-11-20	Test Ambient:	25.1 °C
Test Orientation	As intended	Stabilization Time (min)	90
Model Number	WFRL6R139FA120WBB	4000K	

Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor
202411160004	120.0	60	0.105	12.20	0.975

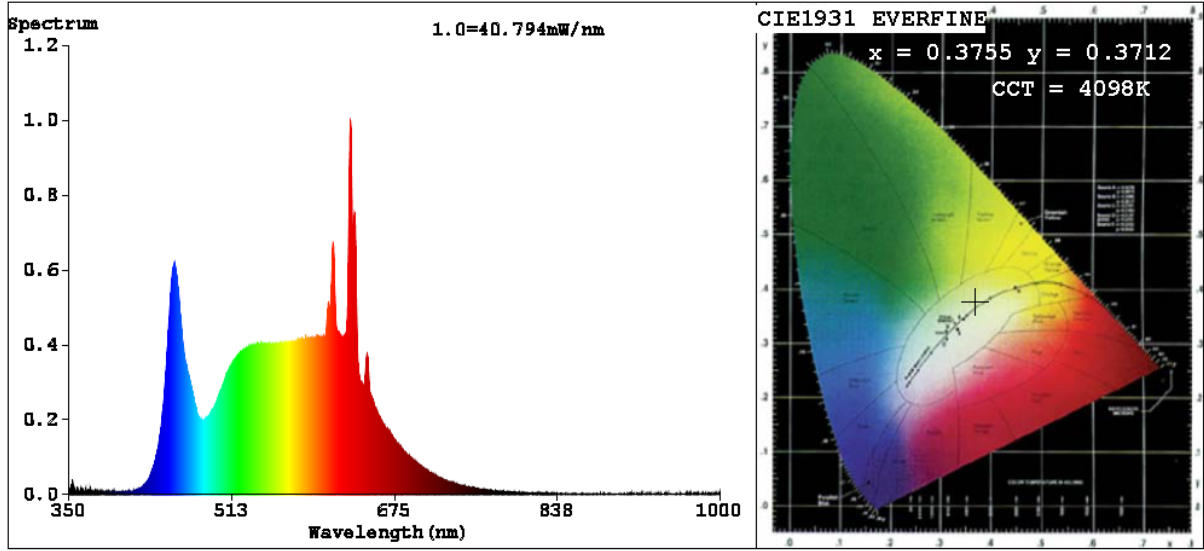
Chromaticity Measurement - Sphere-Spectroradiometer Method:

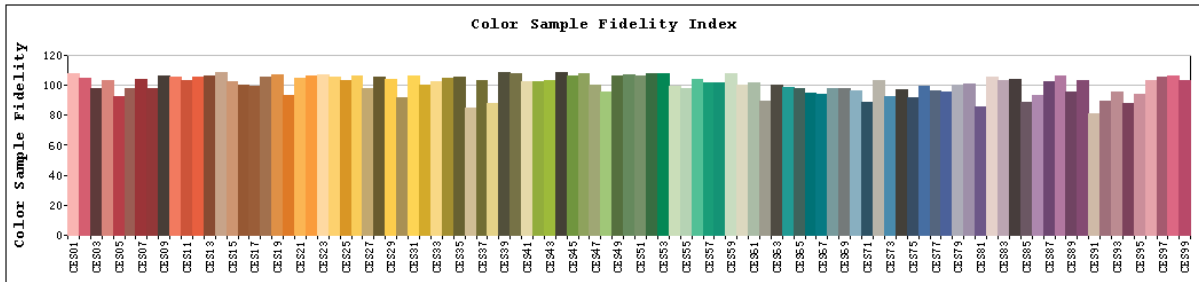
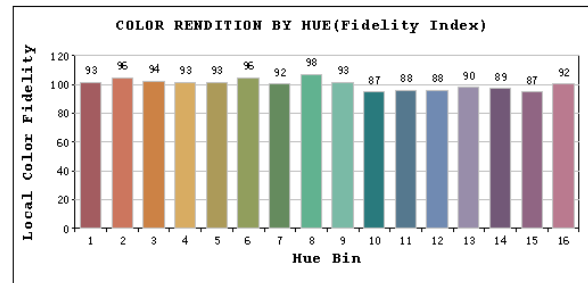
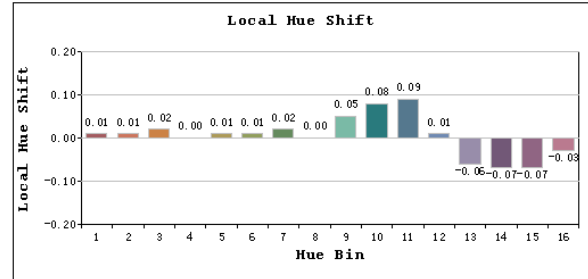
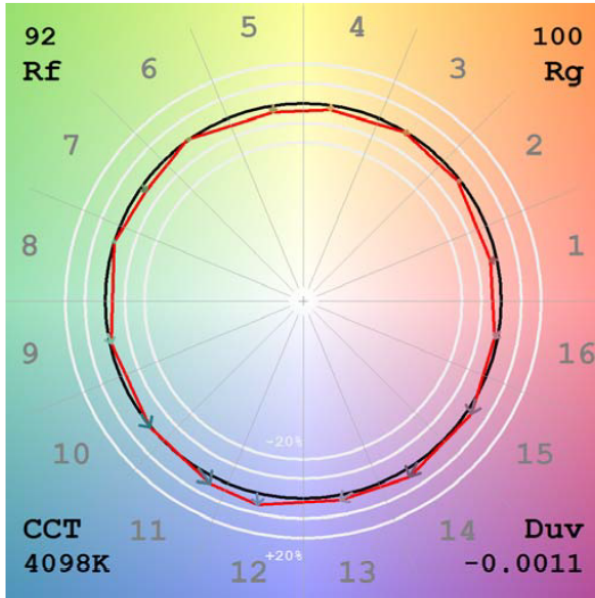
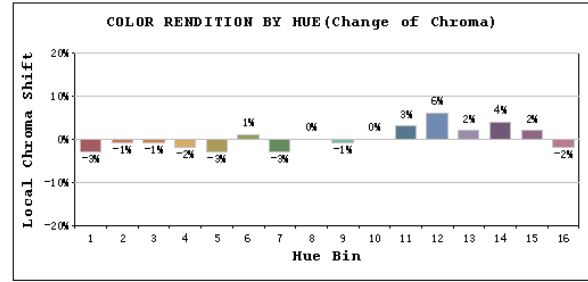
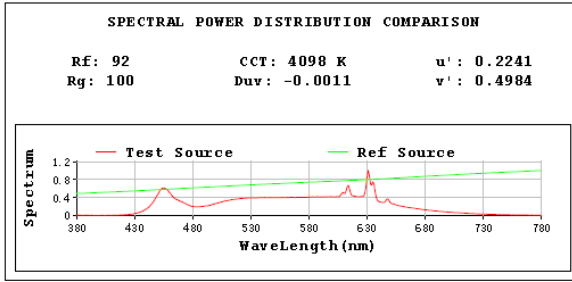
Parameter	Result	Special Color Rendering Indices			
Test Voltage (V)	120	R1	98	R9	84
Frequency (Hz)	60	R2	99	R10	95
CCT (K)	4098	R3	96	R11	98
Duv	-0.0011	R4	97	R12	71
Chromaticity (x, y)	x=0.3755 y=0.3712	R5	96	R13	100
Chromaticity (u', v')	u'=0.2241 v'=0.4984	R6	95	R14	97
Color Rendering Index (CRI)	96.4	R7	96	R15	97
R9	84	R8	93	--	--
Rg	100				
Rf	92				
Rcs,h1%	-3				

Photometric Measurement – Goniophotometer Method:

Parameter	Result
Test Voltage (V)	120.0
Frequency (Hz)	60
Total Luminous (lm)	1177.1
Luminous Efficacy (lm/W)	96.49

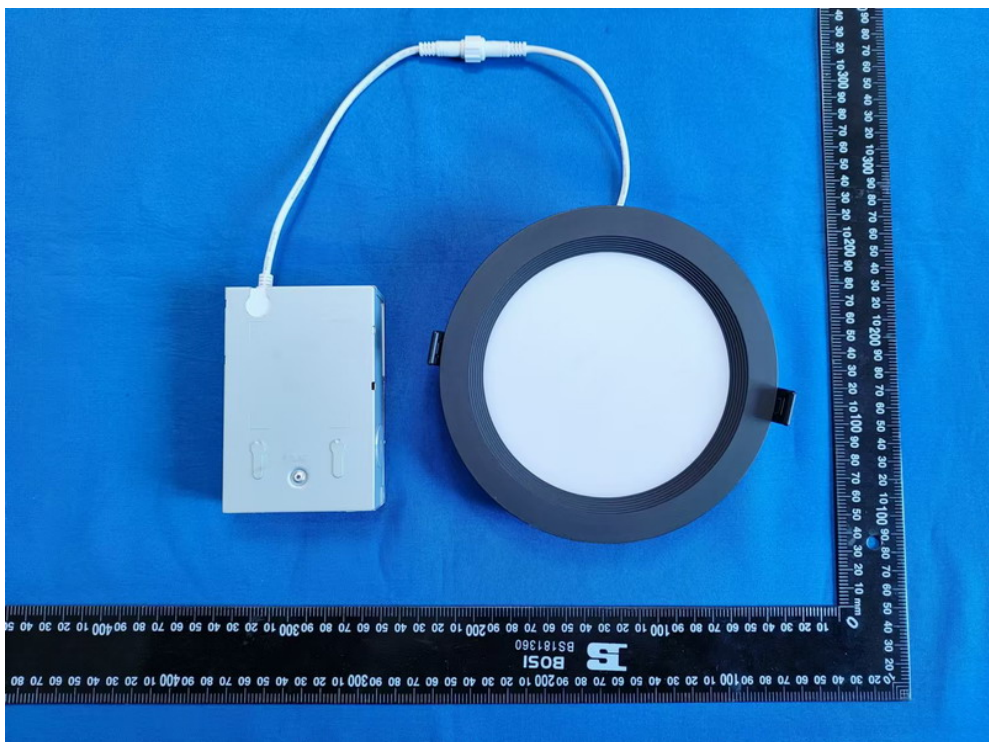
Spectral Power Distribution & Chromaticity Diagram





Sample No.	Wattage and CCT setting	Test Voltage(V)	Flux(lm)	P(W)	Luminous Efficacy lm/W
WFRL6R139FA120WBB	2700K setting	120	1058.3	12.40	85.34
	3000K setting	120	1093.9	12.30	88.93
	3500K setting	120	1150.5	12.20	94.30
	4000K setting	120	1177.1	12.20	96.49
	5000K setting	120	1178.0	12.40	95.00

3. Product Photo



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