

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):
WFRX-4R/NL

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

**Type of
Luminaire:** Downlights

Report Date: 2025-11-21

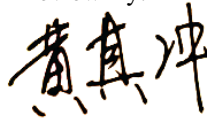
Prepared By:

Test & Report By:



Engineer: Sun Fangfang

Review By:



Manager: Huang Qichong

1.1 Rated Values:	
Rated Voltage / Frequency	120Vac, 60 Hz
Nominal Power	6.0W/8.0W/10.0W
Rated Initial Lamp Lumen	500lm/650lm/850lm (mode5000K)
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	2025-11-19	Test Ambient:	25.1 °C
Test Orientation	As intended	Stabilization Time (min)	90
Model Number	WFRX-4R/NL	5000K	

Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor
202510160028	120.0	60	0.081	9.47	0.972

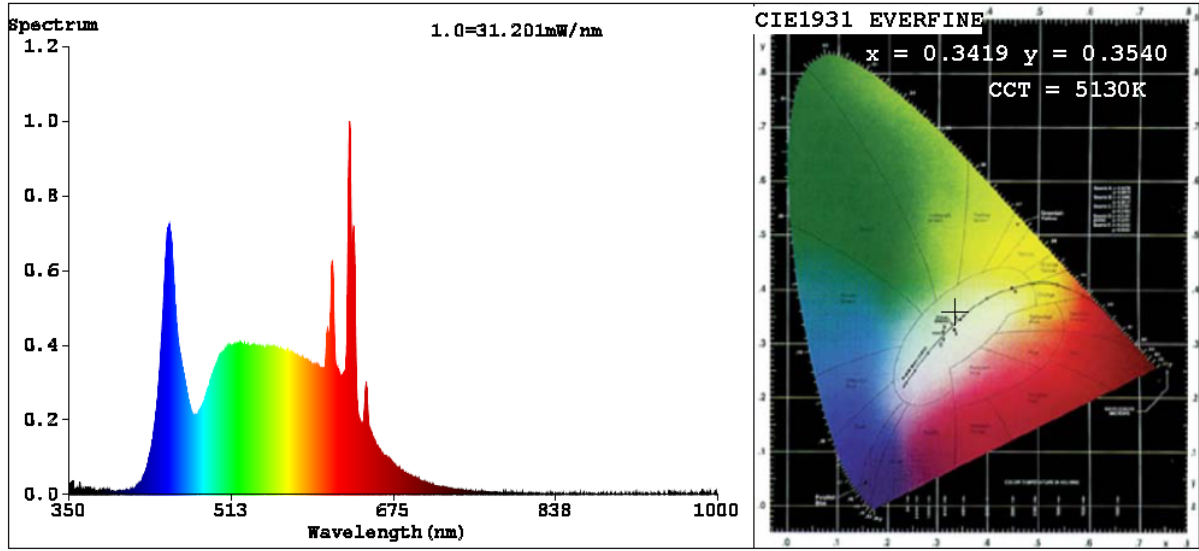
Chromaticity Measurement - Sphere-Spectroradiometer Method:

Parameter	Result	Special Color Rendering Indices			
Test Voltage (V)	120	R1	98	R9	83
Frequency (Hz)	60	R2	97	R10	92
CCT (K)	5130	R3	95	R11	94
Duv	0.0025	R4	96	R12	80
Chromaticity (x, y)	x=0.3419 y=0.3540	R5	98	R13	98
Chromaticity (u', v')	u'=0.2083 v'=0.4854	R6	95	R14	97
Color Rendering Index (CRI)	96.4	R7	97	R15	97
R9	83	R8	95	--	--
Rg	101				
Rf	94				
Rcs,h1%	-3				

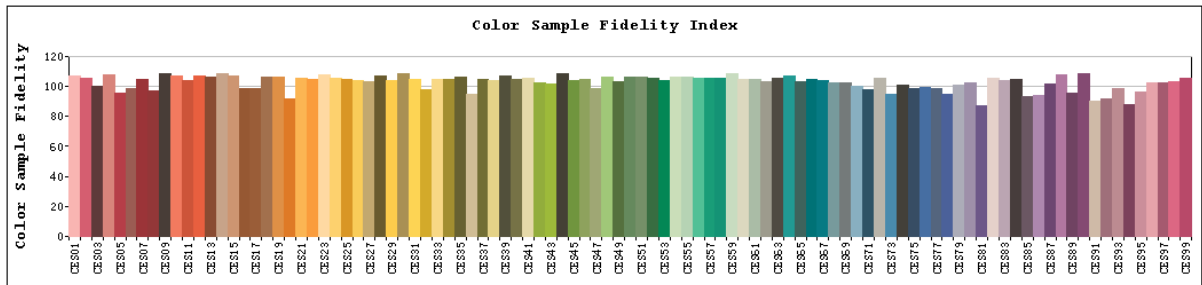
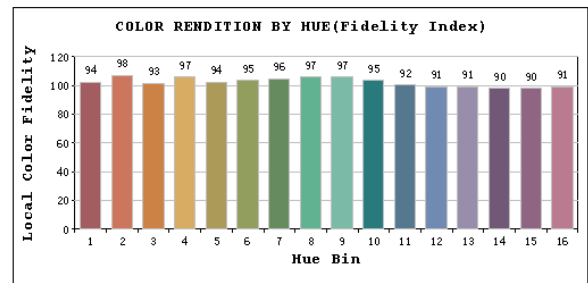
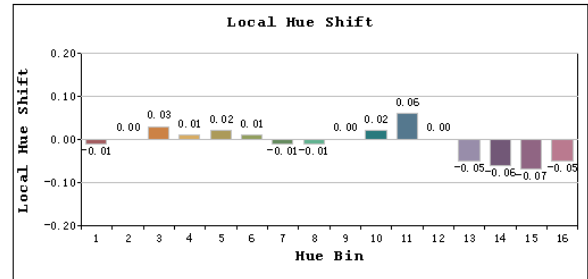
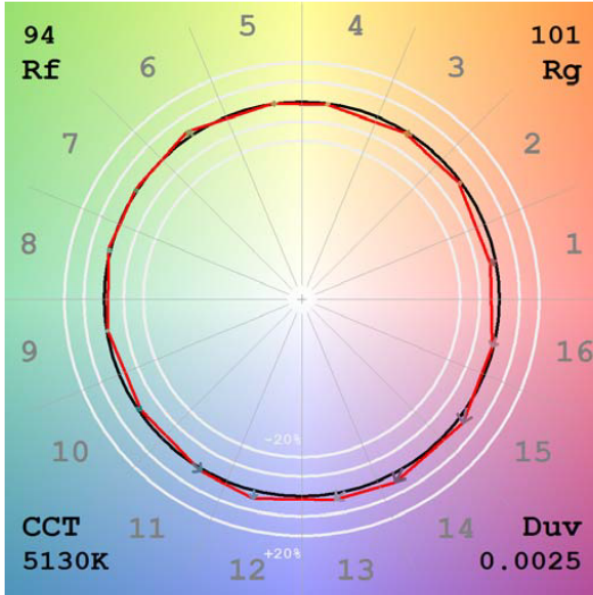
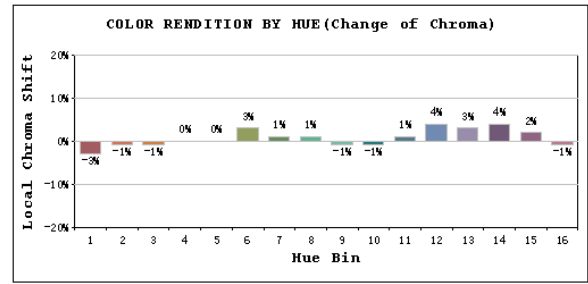
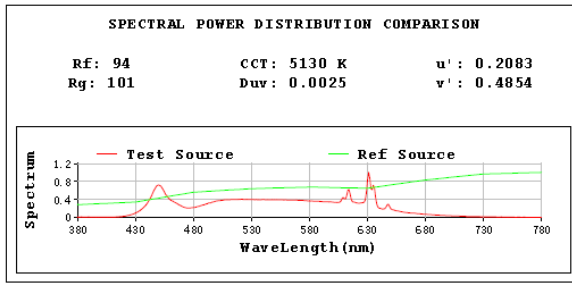
Photometric Measurement – Goniophotometer Method:

Parameter	Result
Test Voltage (V)	120.0
Frequency (Hz)	60
Total Luminous (lm)	909.1
Luminous Efficacy (lm/W)	95.99
Beam Angle (°)	106.1
Center Beam Candle Power (cd)	343.4

Spectral Power Distribution & Chromaticity Diagram



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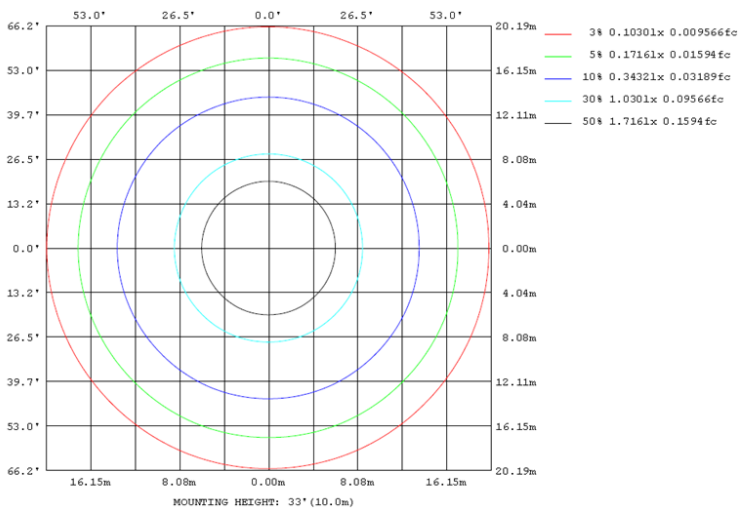
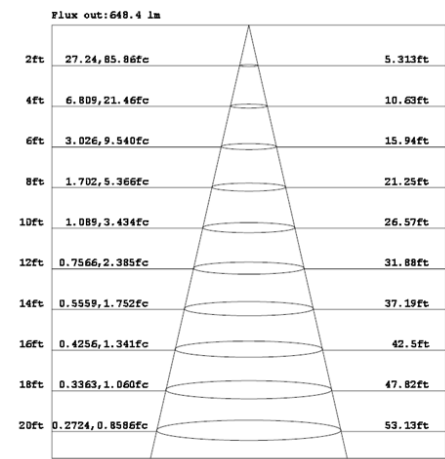
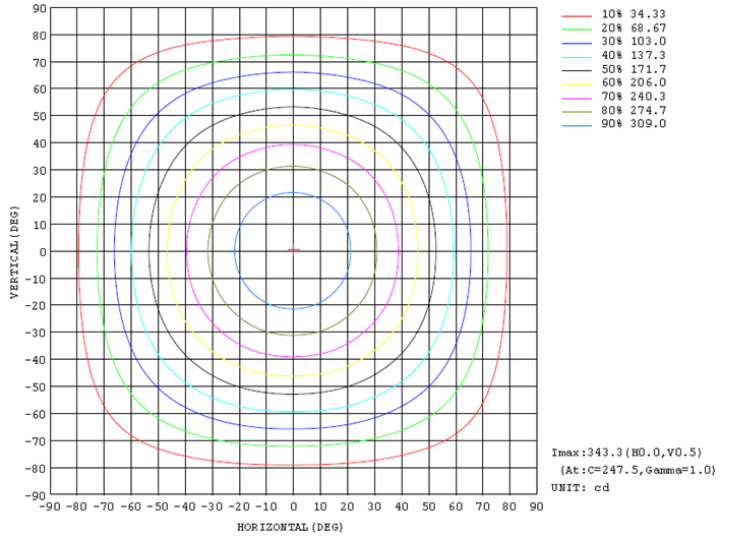
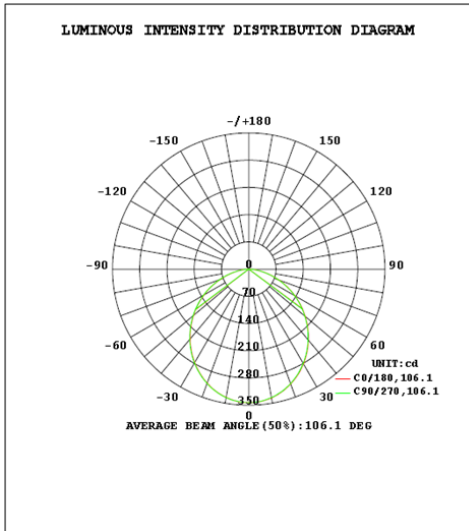


Zonal Lumen Tabulation

Zonal Lumen Summary		
Zone	Lumens	% Luminaire
0-30	261.4	28.8%
0-40	423.3	46.6%
0-60	731.5	80.5%
60-90	177.5	19.5%
70-100	70.8	7.8%
90-120	0.0	0.0%
0-90	909.1	100.0%
90-180	0.0	0.0%
0-180	909.1	100.0%

Lumens Per Zone					
Zone	Lumens	% Total	Zone	Lumens	% Total
0-10	32.4	3.6%	90-100	0.0	0.0%
10-20	91.9	10.1%	100-110	0.0	0.0%
20-30	137.1	15.1%	110-120	0.0	0.0%
30-40	161.9	17.8%	120-130	0.0	0.0%
40-50	163.9	18.0%	130-140	0.0	0.0%
50-60	144.3	15.9%	140-150	0.0	0.0%
60-70	106.7	11.7%	150-160	0.0	0.0%
70-80	58.0	6.4%	160-170	0.0	0.0%
80-90	12.8	1.4%	170-180	0.0	0.0%

Photometric Data



2.1.2 Electrical, Photometric and Chromaticity Measurements

Test date	2025-11-19	Test Ambient:	25.1 °C
Test Orientation	As intended	Stabilization Time (min)	90
Model Number	WFRX-4R/NL	2700K	

Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor
202510160028	120.0	60	0.080	9.44	0.972

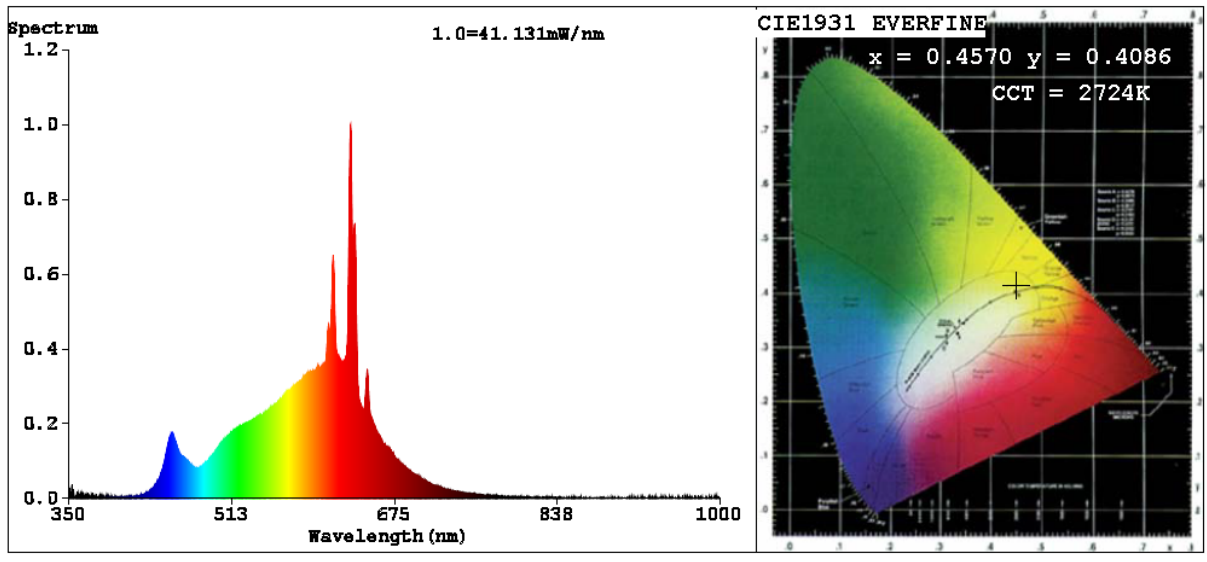
Chromaticity Measurement - Sphere-Spectroradiometer Method:

Parameter	Result	Special Color Rendering Indices			
Test Voltage (V)	120	R1	96	R9	58
Frequency (Hz)	60	R2	99	R10	95
CCT (K)	2724	R3	99	R11	98
Duv	-0.0005	R4	95	R12	87
Chromaticity (x, y)	x=0.4570 y=0.4086	R5	96	R13	97
Chromaticity (u', v')	u'=0.2616 v'=0.5262	R6	96	R14	99
Color Rendering Index (CRI)	94.0	R7	90	R15	90
R9	58	R8	81	--	--
Rg	99				
Rf	92				
Rcs,h1%	-6				

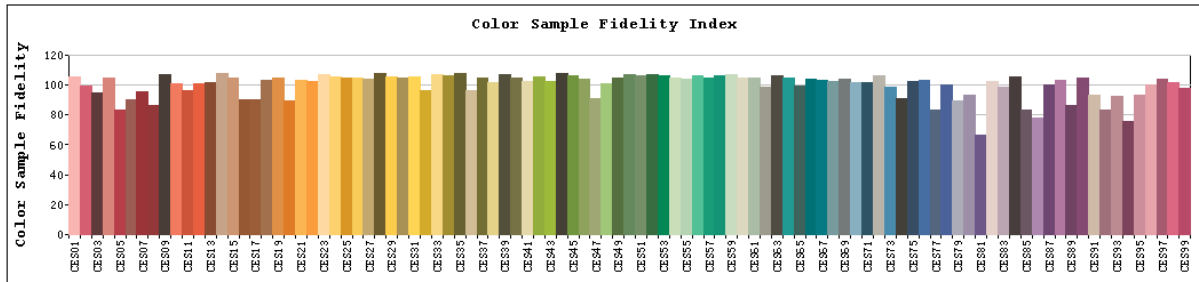
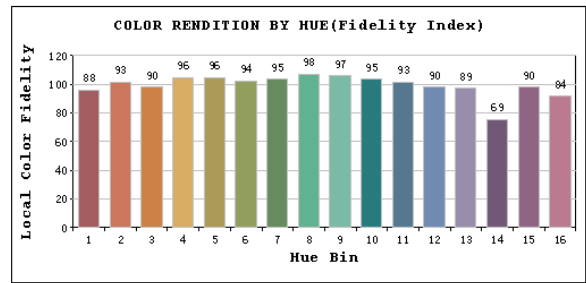
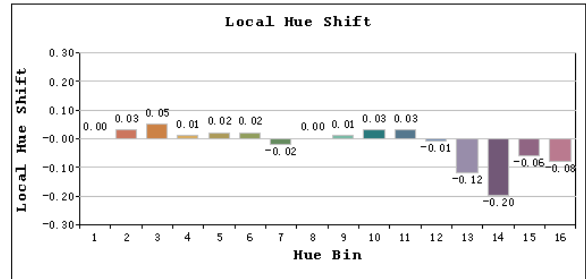
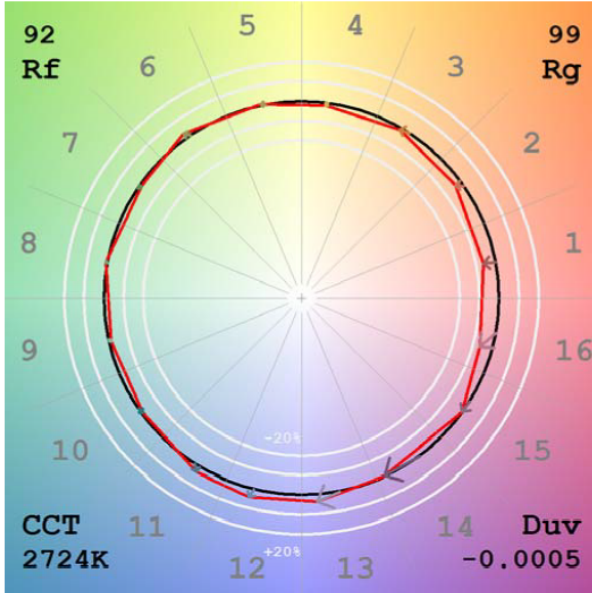
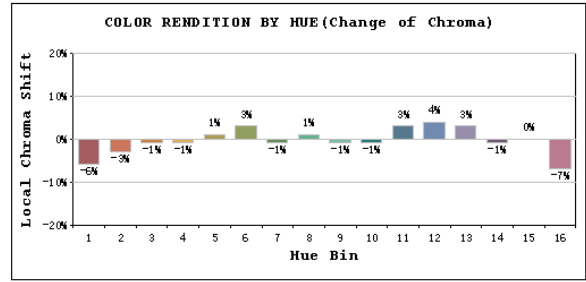
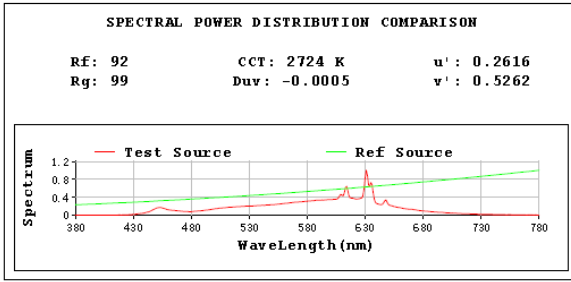
Photometric Measurement – Goniophotometer Method:

Parameter	Result
Test Voltage (V)	120.0
Frequency (Hz)	60
Total Luminous (lm)	853.6
Luminous Efficacy (lm/W)	90.43

Spectral Power Distribution & Chromaticity Diagram



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2.1.3 Electrical, Photometric and Chromaticity Measurements

Test date	2025-11-19	Test Ambient:	25.1 °C
Test Orientation	As intended	Stabilization Time (min)	90
Model Number	WFRX-4R/NL	3000K	

Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor
202510160028	120.0	60	0.081	9.47	0.972

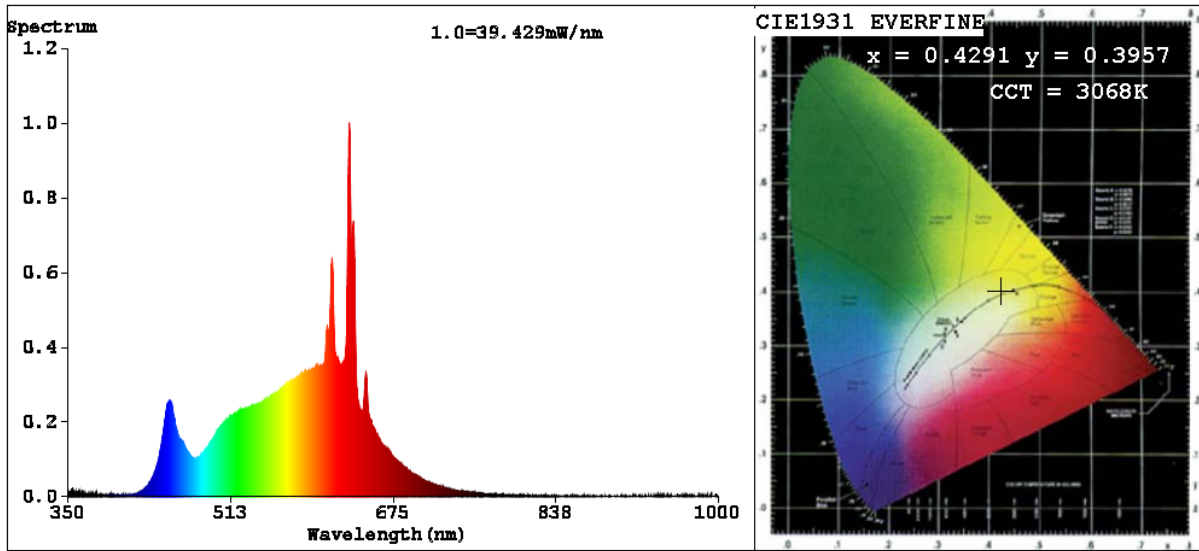
Chromaticity Measurement - Sphere-Spectroradiometer Method:

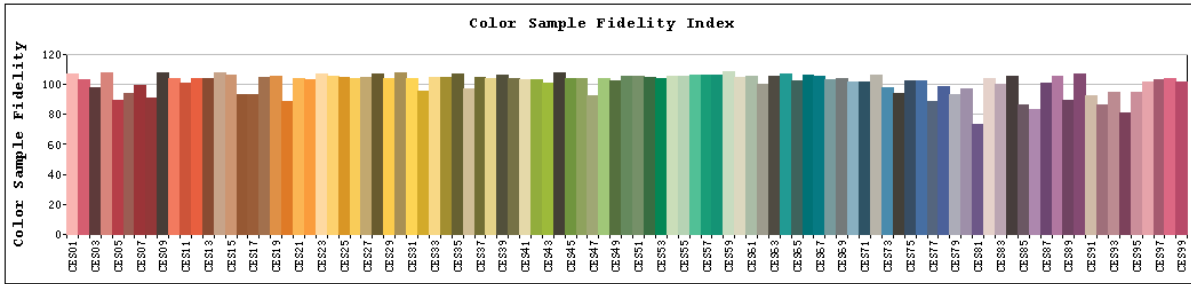
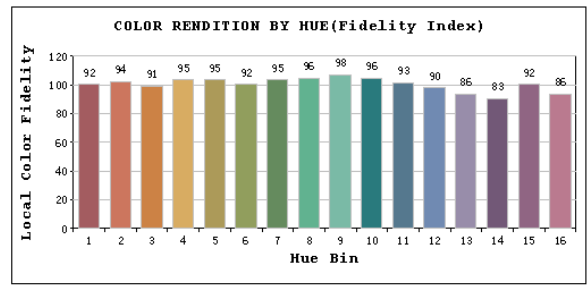
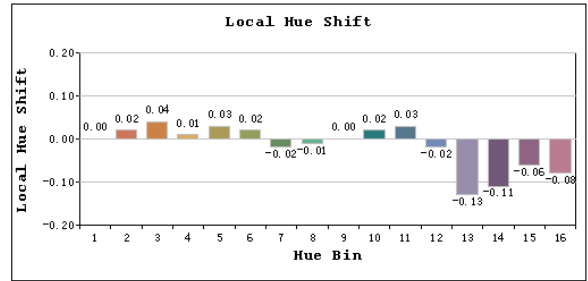
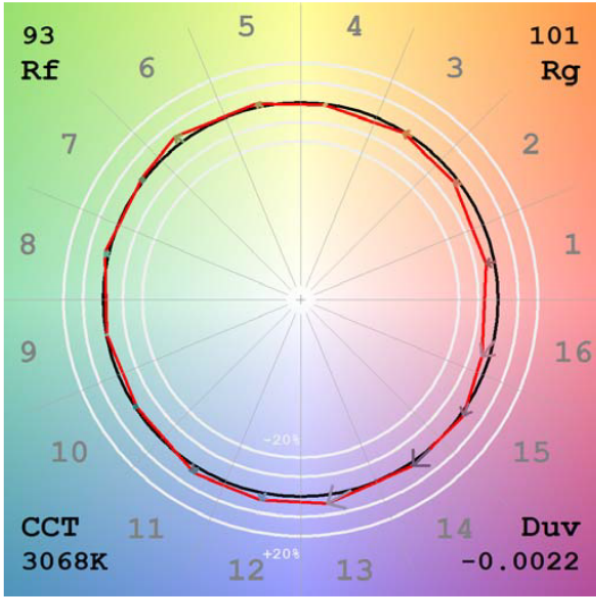
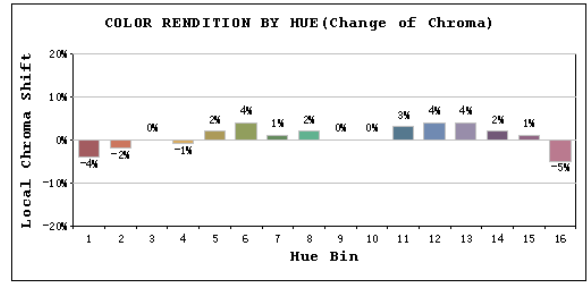
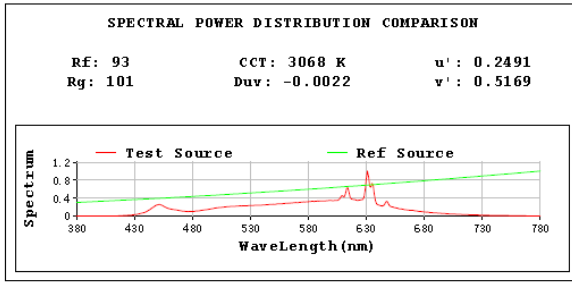
Parameter	Result	Special Color Rendering Indices			
Test Voltage (V)	120	R1	98	R9	70
Frequency (Hz)	60	R2	99	R10	98
CCT (K)	3068	R3	99	R11	96
Duv	-0.0022	R4	98	R12	87
Chromaticity (x, y)	x=0.4291 y=0.3957	R5	99	R13	99
Chromaticity (u', v')	u'=0.2491 v'=0.5169	R6	95	R14	98
Color Rendering Index (CRI)	95.9	R7	93	R15	94
R9	70	R8	87	--	--
Rg	101				
Rf	93				
Rcs,h1%	-4				

Photometric Measurement – Goniophotometer Method:

Parameter	Result
Test Voltage (V)	120.0
Frequency (Hz)	60
Total Luminous (lm)	868.9
Luminous Efficacy (lm/W)	91.76

Spectral Power Distribution & Chromaticity Diagram





2.1.4 Electrical, Photometric and Chromaticity Measurements

Test date	2025-11-19	Test Ambient:	25.1 °C
Test Orientation	As intended	Stabilization Time (min)	90
Model Number	WFRX-4R/NL	3500K	

Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor
202510160028	120.0	60	0.080	9.43	0.972

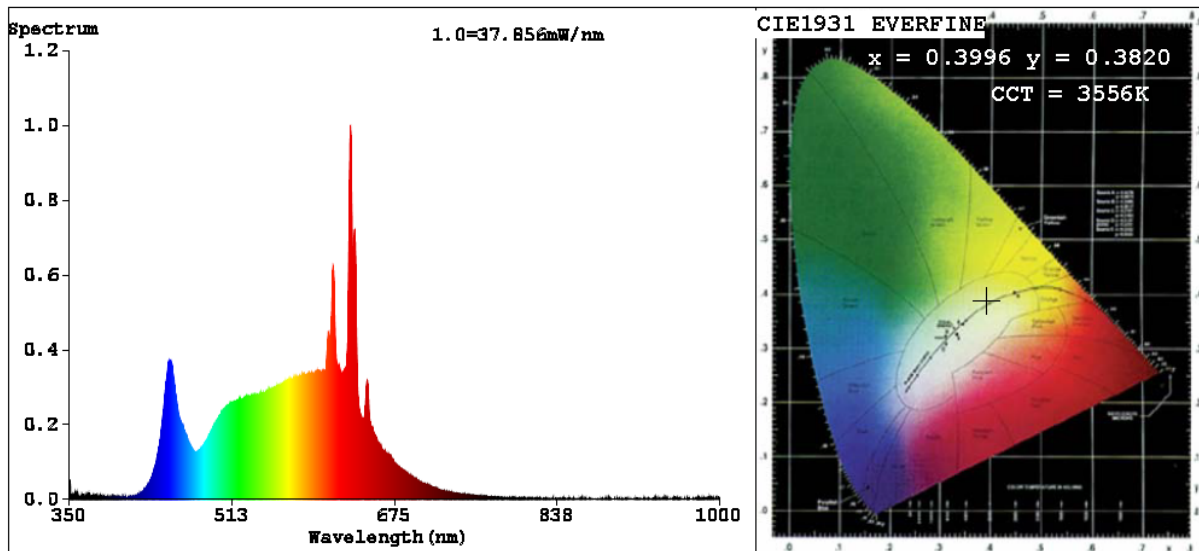
Chromaticity Measurement - Sphere-Spectroradiometer Method:

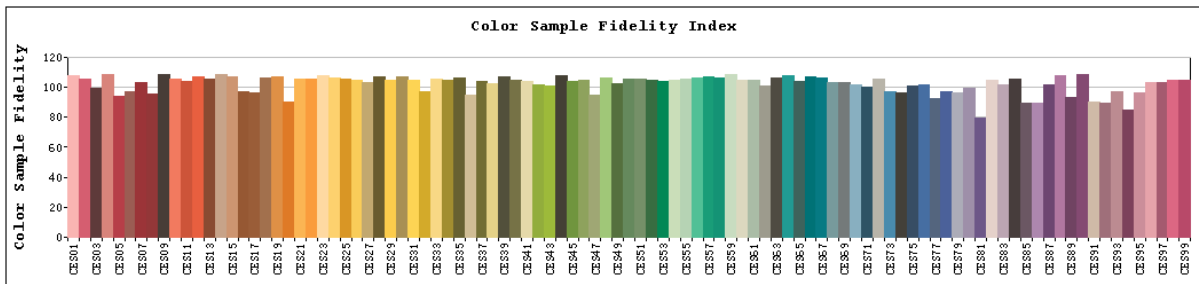
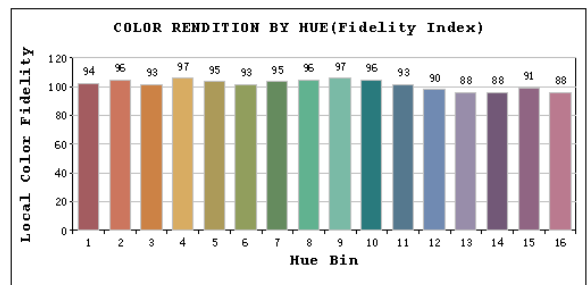
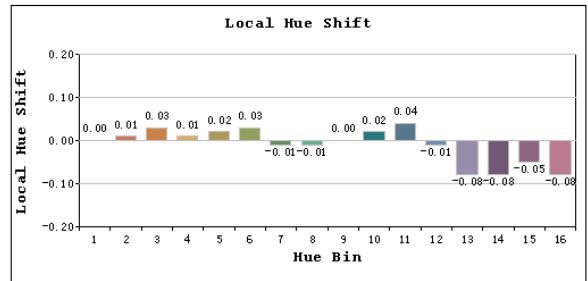
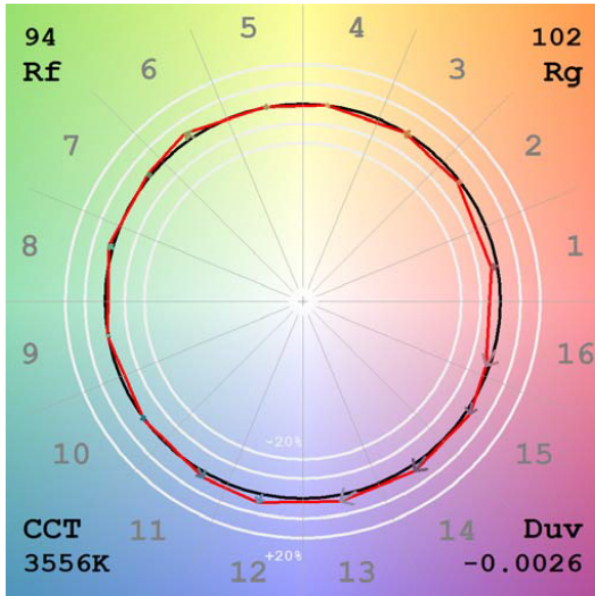
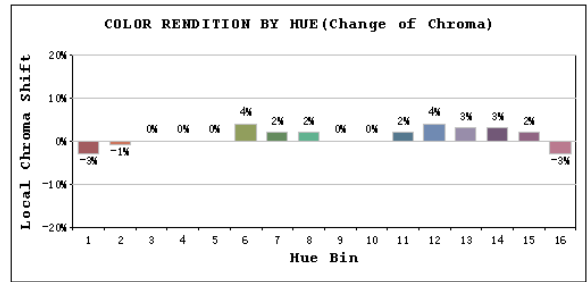
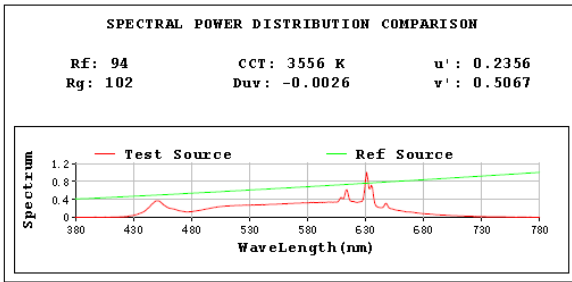
Parameter	Result	Special Color Rendering Indices			
Test Voltage (V)	120	R1	99	R9	81
Frequency (Hz)	60	R2	99	R10	98
CCT (K)	3556	R3	98	R11	95
Duv	-0.0026	R4	98	R12	85
Chromaticity (x, y)	x=0.3996 y=0.3820	R5	99	R13	99
Chromaticity (u', v')	u'=0.2356 v'=0.5067	R6	95	R14	98
Color Rendering Index (CRI)	97.0	R7	95	R15	98
R9	81	R8	92	--	--
Rg	102				
Rf	94				
Rcs,h1%	-3				

Photometric Measurement – Goniophotometer Method:

Parameter	Result
Test Voltage (V)	120.0
Frequency (Hz)	60
Total Luminous (lm)	888.6
Luminous Efficacy (lm/W)	94.23

Spectral Power Distribution & Chromaticity Diagram





2.1.5 Electrical, Photometric and Chromaticity Measurements

Test date	2025-11-19	Test Ambient:	25.1 °C
Test Orientation	As intended	Stabilization Time (min)	90
Model Number	WFRX-4R/NL	4000K	

Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor
202510160028	120.0	60	0.080	9.45	0.972

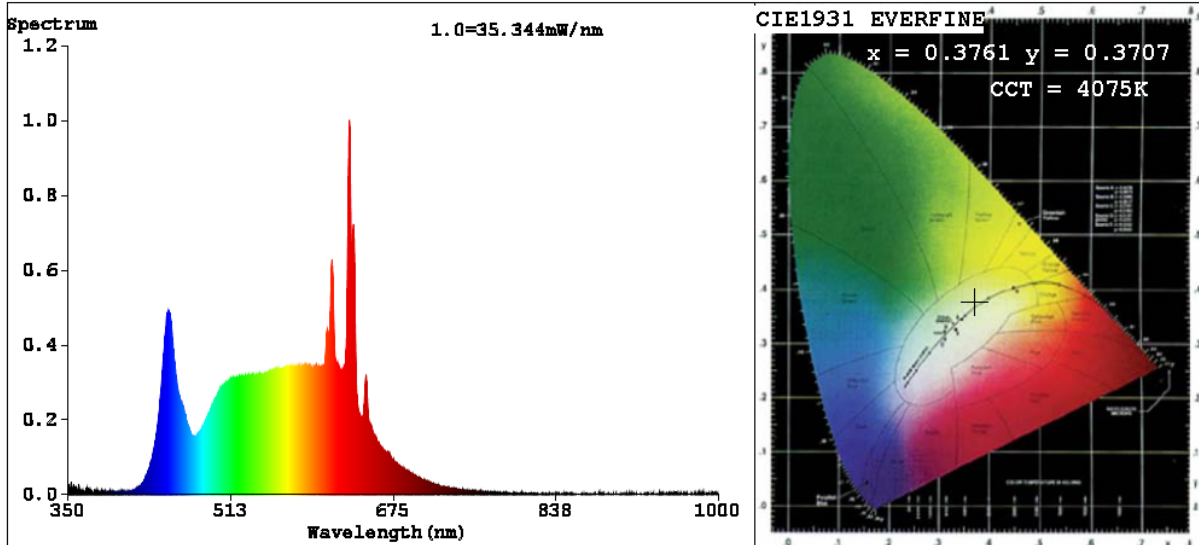
Chromaticity Measurement - Sphere-Spectroradiometer Method:

Parameter	Result	Special Color Rendering Indices			
Test Voltage (V)	120	R1	99	R9	86
Frequency (Hz)	60	R2	99	R10	97
CCT (K)	4075	R3	97	R11	94
Duv	-0.0016	R4	98	R12	81
Chromaticity (x, y)	x=0.3761 y=0.3707	R5	99	R13	99
Chromaticity (u', v')	u'=0.2247 v'=0.4982	R6	96	R14	97
Color Rendering Index (CRI)	97.4	R7	97	R15	98
R9	86	R8	95	--	--
Rg	102				
Rf	94				
Rcs,h1%	-3				

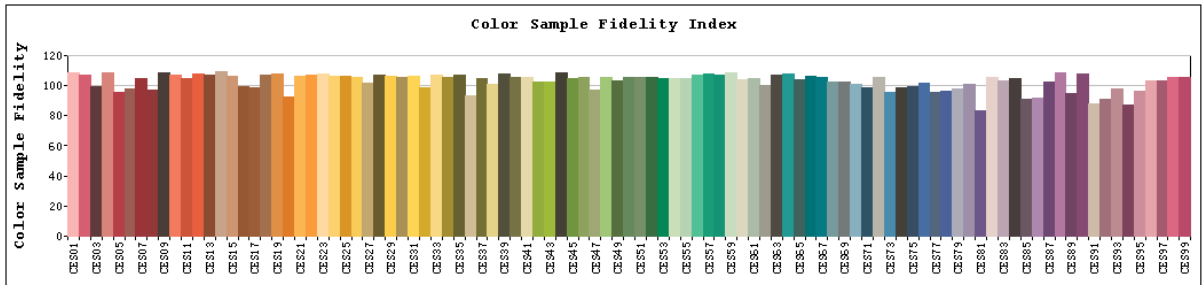
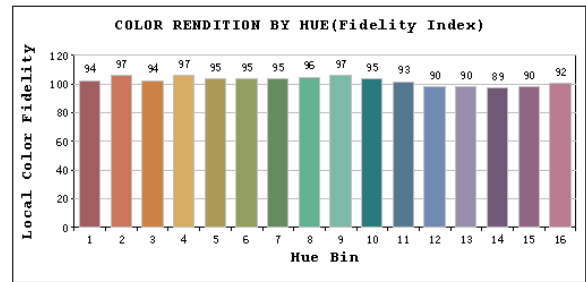
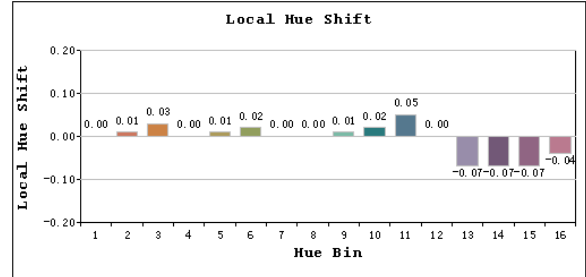
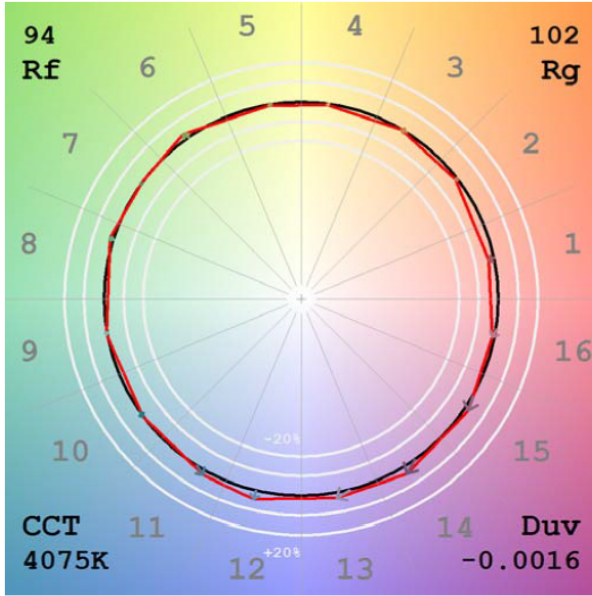
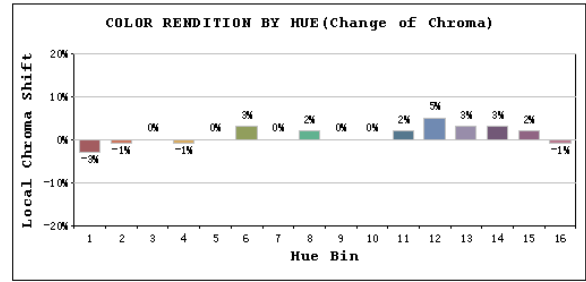
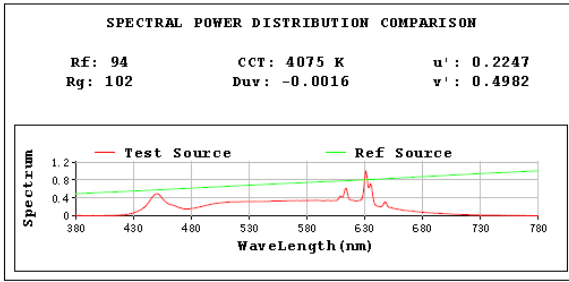
Photometric Measurement – Goniophotometer Method:

Parameter	Result
Test Voltage (V)	120.0
Frequency (Hz)	60
Total Luminous (lm)	899.0
Luminous Efficacy (lm/W)	95.13

Spectral Power Distribution & Chromaticity Diagram

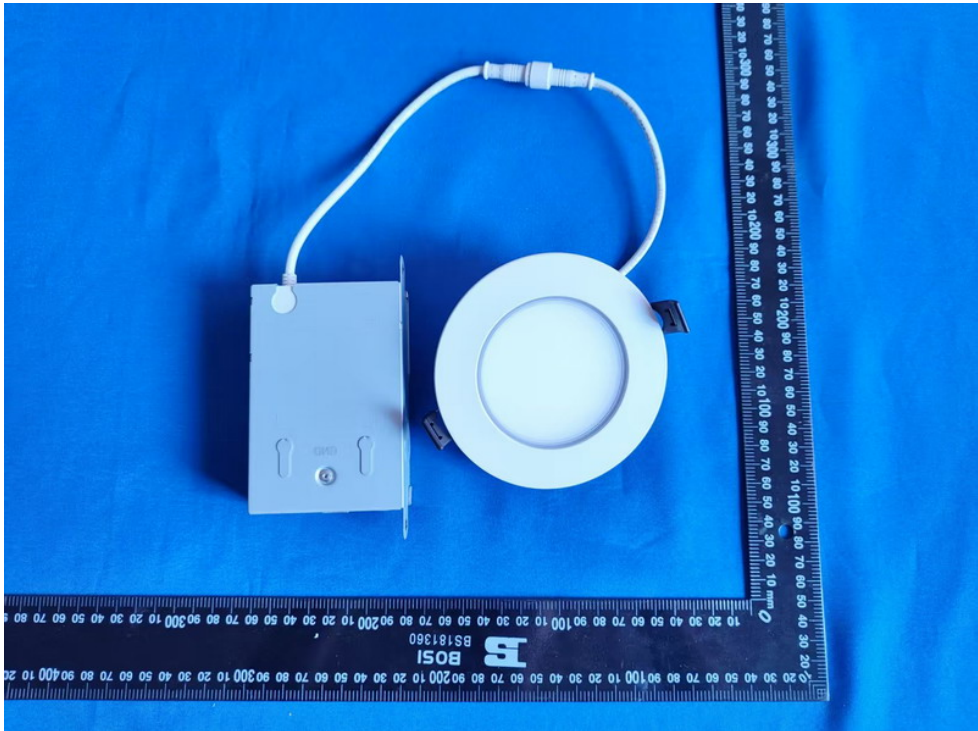
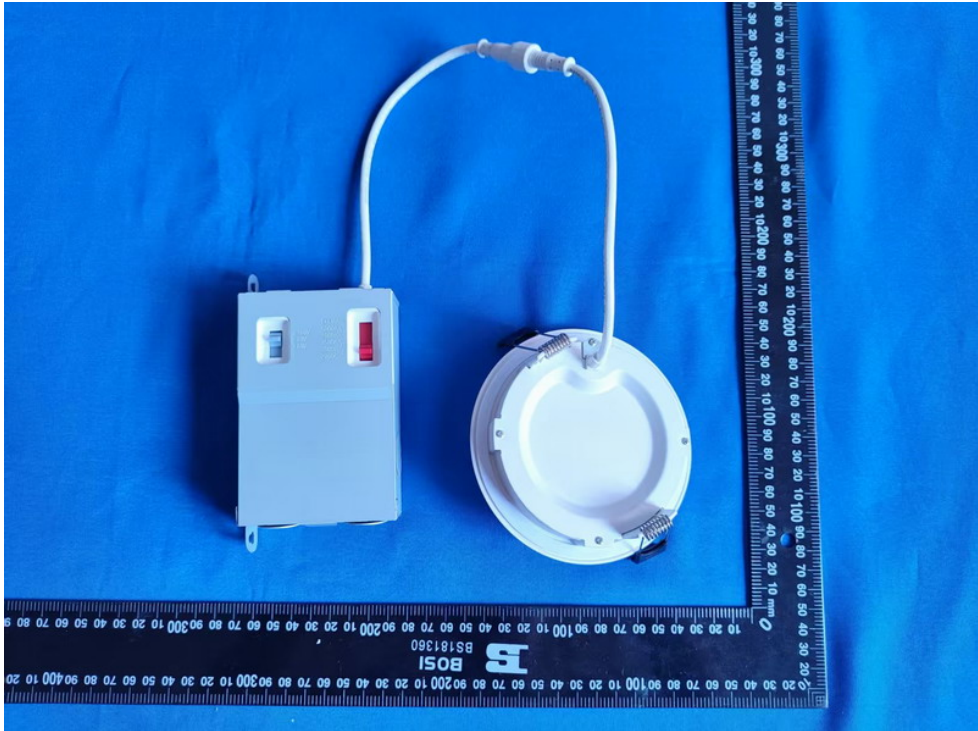


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Sample No.	Wattage and CCT setting	Test Voltage(V)	Flux(lm)	P(W)	Luminous Efficacy lm/W
WFRX-4R/NL	6W-5000K setting	120	546.0	5.61	97.33
	8W-5000K setting	120	707.5	7.32	96.65
	10W-2700K setting	120	853.6	9.44	90.43
	10W-3000K setting	120	868.9	9.47	91.76
	10W-3500K setting	120	888.6	9.43	94.23
	10W-4000K setting	120	899.0	9.45	95.13
	10W-5000K setting	120	909.1	9.47	95.99

3. Product Photo



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