

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): CRX8/D10

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

**Type of
Luminaire:** Downlights

Report Date: 2024-07-12

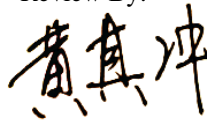
Prepared By:

Test & Report By:



Engineer: Sun Fangfang

Review By:



Manager: Huang Qichong

1.1 Rated Values:	
Rated Voltage / Frequency	120V-277Vac, 60 Hz
Nominal Power	50.0W/65.0W/80.0 W
Rated Initial Lamp Lumen	5000lm/6500lm/8000lm (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

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.

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

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.

2.1.1 Electrical, Photometric and Chromaticity Measurements

Test date	2024-07-10	Test Ambient:	25.1 °C
Test Orientation	As intended	Stabilization Time (min)	90
Model Number	CRX8/D10	2700K	

Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor
202407020007	120.0	60	0.643	76.90	0.997

Chromaticity Measurement - Sphere-Spectroradiometer Method:

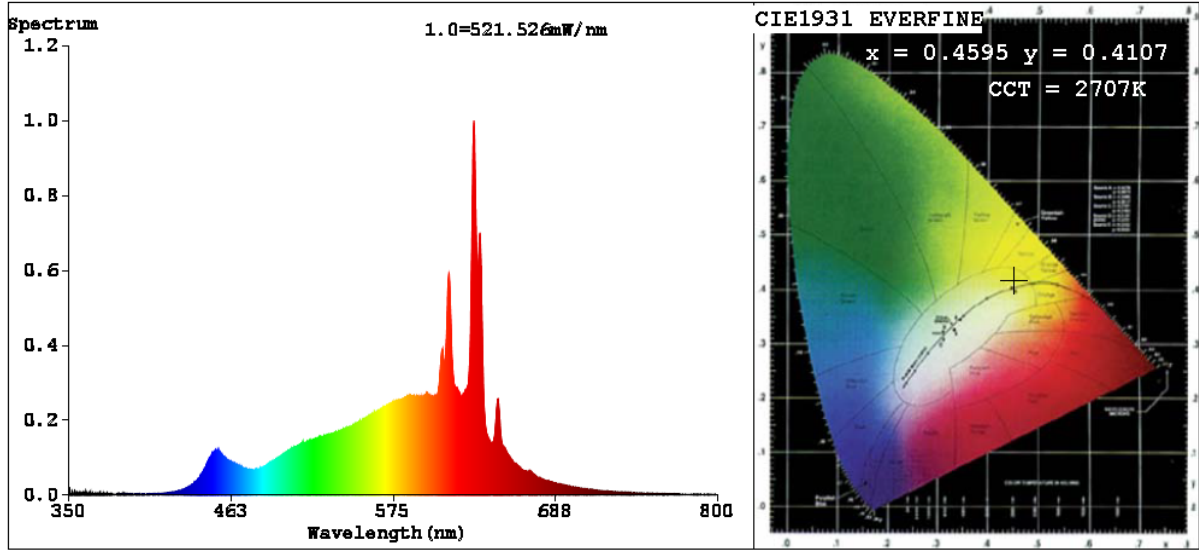
Parameter	Result	Special Color Rendering Indices			
Test Voltage (V)	120	R1	95	R9	56
Frequency (Hz)	60	R2	98	R10	94
CCT (K)	2707	R3	99	R11	97
Duv	0.0001	R4	95	R12	88
Chromaticity (x, y)	x=0.4595 y=0.4107	R5	95	R13	96
Chromaticity (u', v')	u'=0.2622 v'=0.5273	R6	96	R14	98
Color Rendering Index (CRI)	93.5	R7	90	R15	89
R9	56	R8	80	--	--
Rg	99				
Rf	91				
Rcs,h1%	-7				

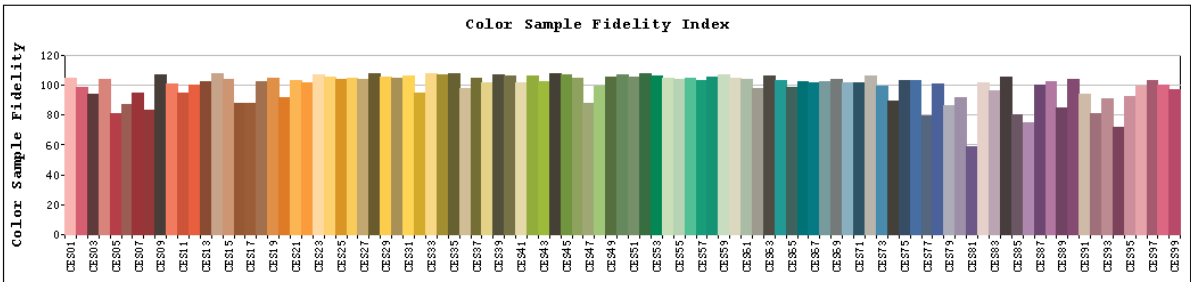
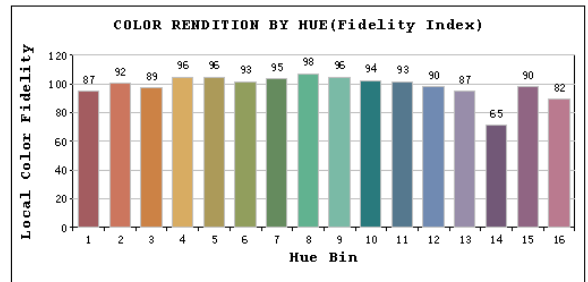
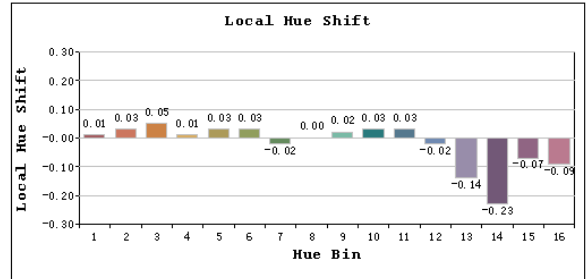
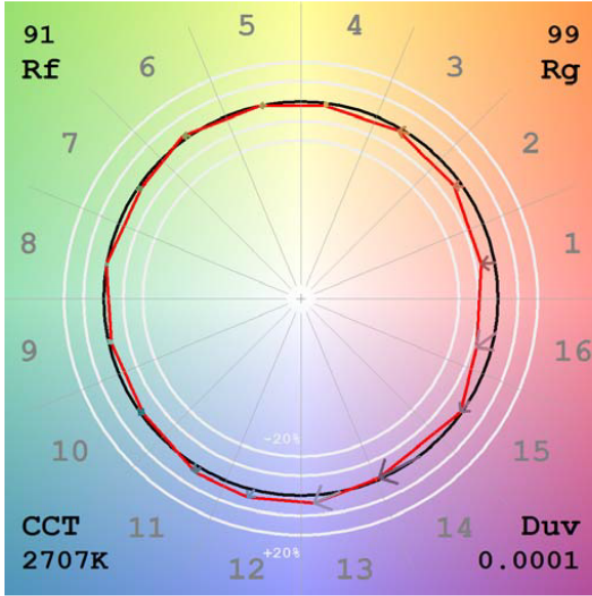
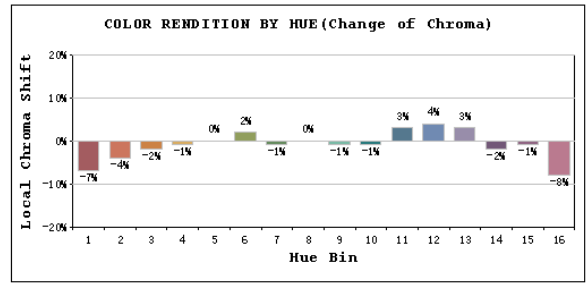
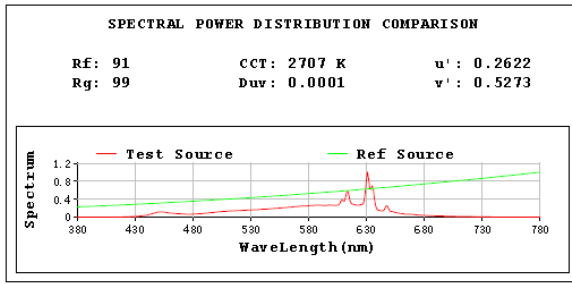
Photometric Measurement – Goniophotometer Method:

Parameter	Result
Test Voltage (V)	120.0
Frequency (Hz)	60
Total Luminous (lm)	8045.7
Luminous Efficacy (lm/W)	104.63
Beam Angle (°)	89.4
Center Beam Candle Power (cd)	4132.0

Parameter	Result
Test Voltage (V)	277.0
Frequency (Hz)	60
Total Luminous (lm)	7873.0
Luminous Efficacy (lm/W)	105.44

Spectral Power Distribution & Chromaticity Diagram



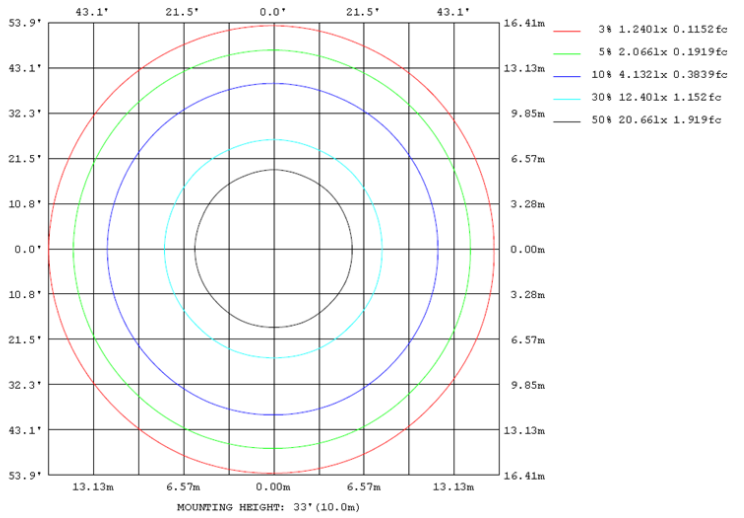
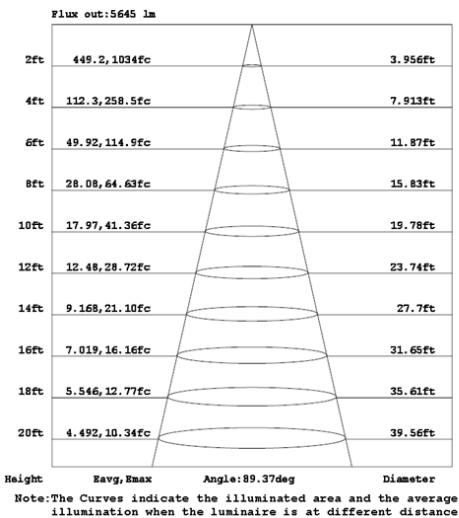
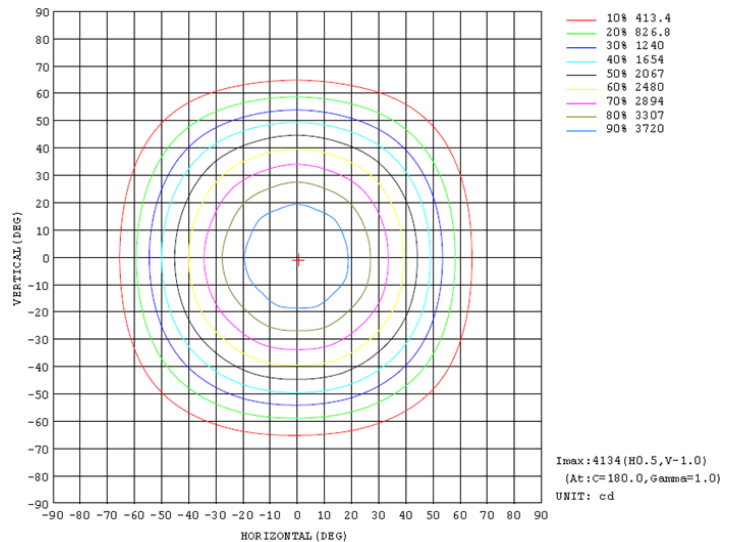
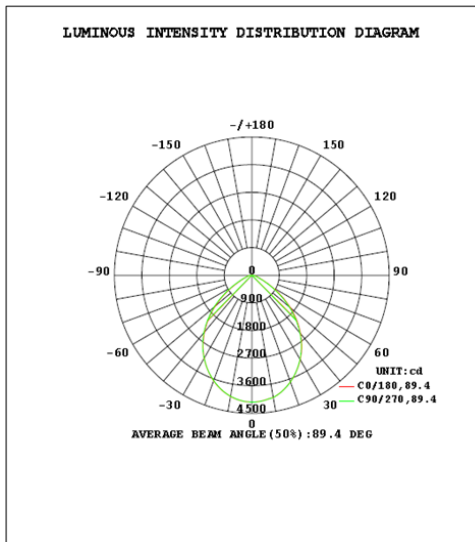


Zonal Lumen Tabulation

Zonal Lumen Summary		
Zone	Lumens	% Luminaire
0-30	3057.1	38.0%
0-40	4814.0	59.8%
0-60	7410.2	92.1%
60-90	635.4	7.9%
70-100	206.7	2.6%
90-120	0.0	0.0%
0-90	8045.7	100.0%
90-180	0.0	0.0%
0-180	8045.7	100.0%

Lumens Per Zone					
Zone	Lumens	% Total	Zone	Lumens	% Total
0-10	389.0	4.8%	90-100	0.0	0.0%
10-20	1091.1	13.6%	100-110	0.0	0.0%
20-30	1577.0	19.6%	110-120	0.0	0.0%
30-40	1756.9	21.8%	120-130	0.0	0.0%
40-50	1568.0	19.5%	130-140	0.0	0.0%
50-60	1028.2	12.8%	140-150	0.0	0.0%
60-70	428.8	5.3%	150-160	0.0	0.0%
70-80	161.5	2.0%	160-170	0.0	0.0%
80-90	45.2	0.6%	170-180	0.0	0.0%

Photometric Data



2.1.2 Electrical, Photometric and Chromaticity Measurements

Test date	2024-07-10	Test Ambient:	25.1 °C
Test Orientation	As intended	Stabilization Time (min)	90
Model Number	CRX8/D10	3000K	

Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor
202407020007	120.0	60	0.640	76.60	0.997

Chromaticity Measurement - Sphere-Spectroradiometer Method:

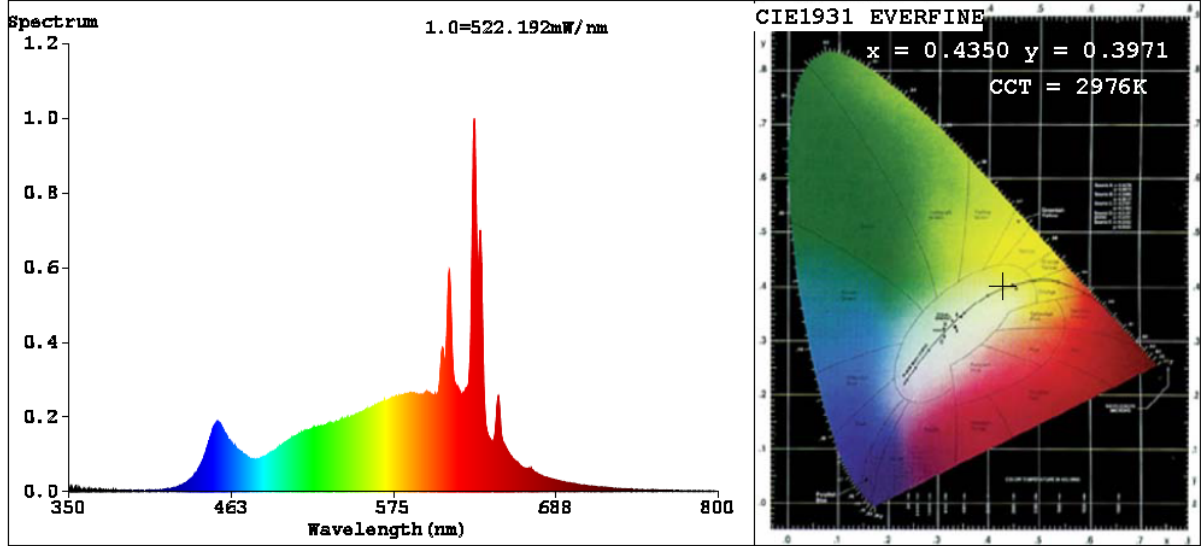
Parameter	Result	Special Color Rendering Indices			
Test Voltage (V)	120	R1	98	R9	69
Frequency (Hz)	60	R2	99	R10	98
CCT (K)	2976	R3	99	R11	98
Duv	-0.0025	R4	97	R12	86
Chromaticity (x, y)	x=0.4350 y=0.3971	R5	98	R13	99
Chromaticity (u', v')	u'=0.2523 v'=0.5183	R6	94	R14	98
Color Rendering Index (CRI)	95.4	R7	92	R15	94
R9	69	R8	86	--	--
Rg	101				
Rf	92				
Rcs,h1%	-5				

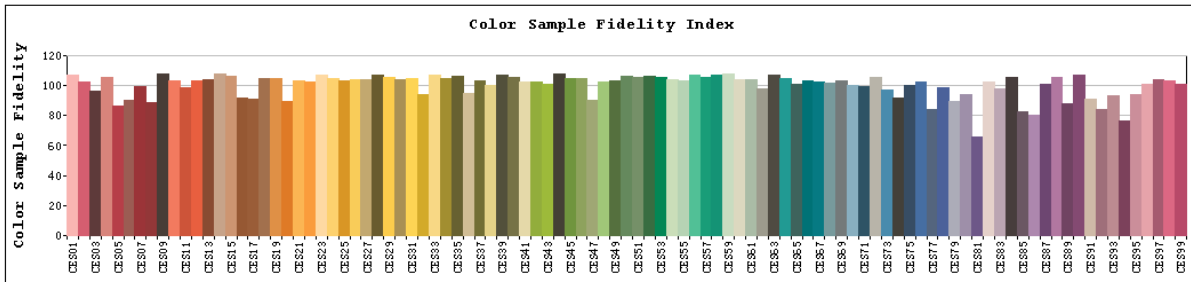
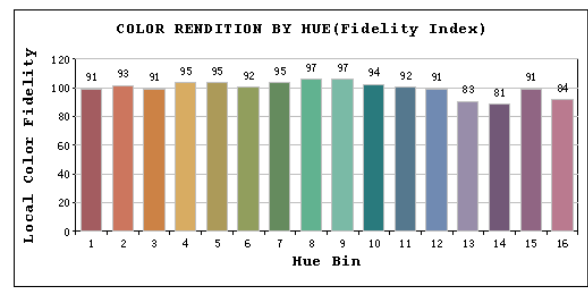
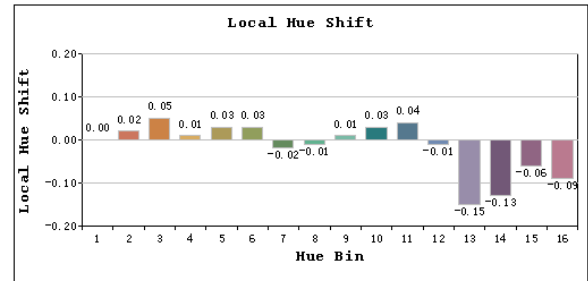
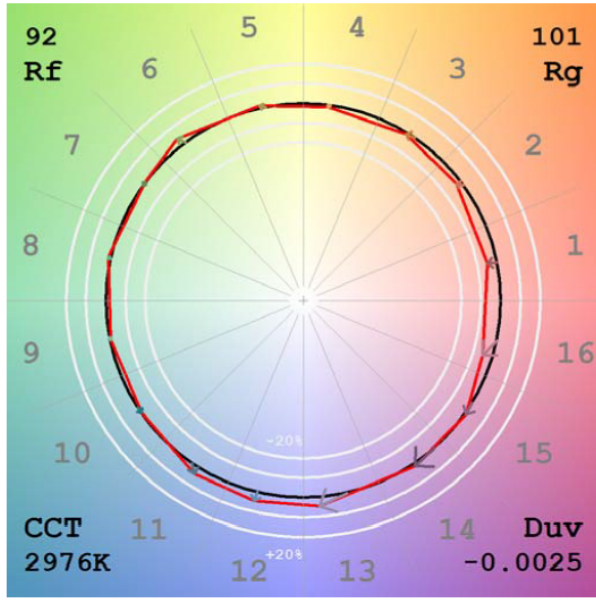
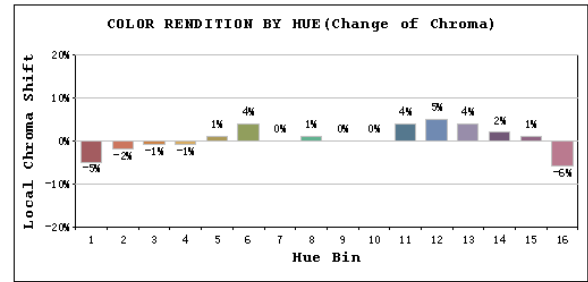
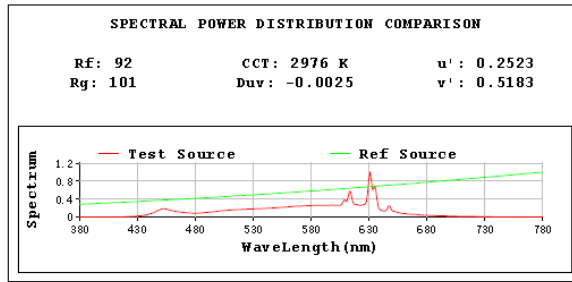
Photometric Measurement – Goniophotometer Method:

Parameter	Result
Test Voltage (V)	120.0
Frequency (Hz)	60
Total Luminous (lm)	8525.7
Luminous Efficacy (lm/W)	111.30

Parameter	Result
Test Voltage (V)	277.0
Frequency (Hz)	60
Total Luminous (lm)	8426.0
Luminous Efficacy (lm/W)	113.01

Spectral Power Distribution & Chromaticity Diagram





2.1.3 Electrical, Photometric and Chromaticity Measurements

Test date	2024-07-10	Test Ambient:	25.1 °C
Test Orientation	As intended	Stabilization Time (min)	90
Model Number	CRX8/D10	3500K	

Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor
202407020007	120.0	60	0.622	74.40	0.997

Chromaticity Measurement - Sphere-Spectroradiometer Method:

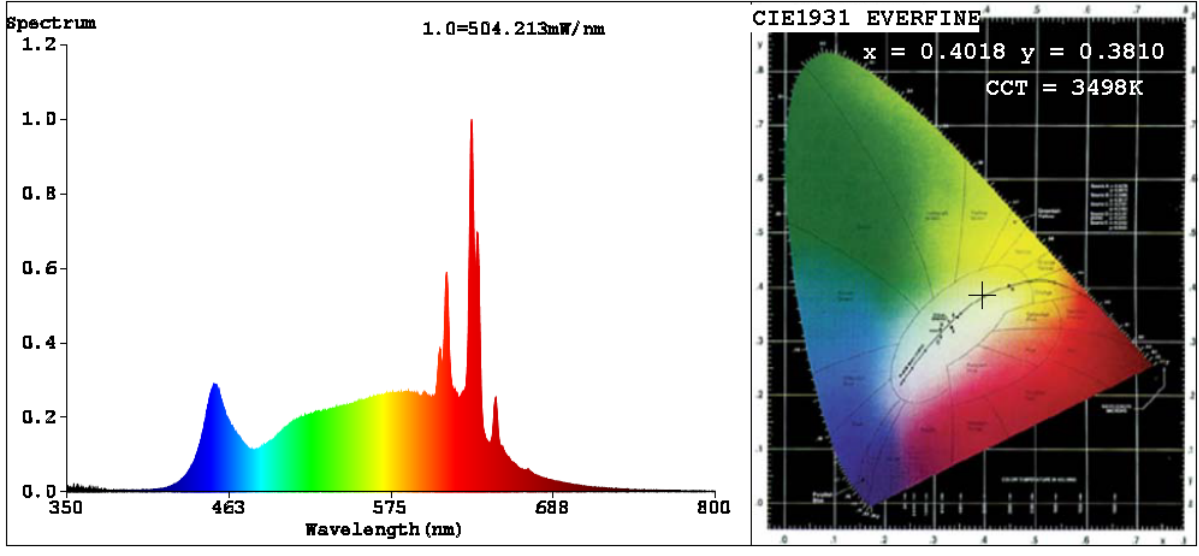
Parameter	Result	Special Color Rendering Indices			
Test Voltage (V)	120	R1	98	R9	83
Frequency (Hz)	60	R2	99	R10	98
CCT (K)	3498	R3	97	R11	96
Duv	-0.0036	R4	99	R12	82
Chromaticity (x, y)	x=0.4018 y=0.3810	R5	99	R13	99
Chromaticity (u', v')	u'=0.2374 v'=0.5066	R6	94	R14	97
Color Rendering Index (CRI)	96.7	R7	95	R15	98
R9	83	R8	93	--	--
Rg	102				
Rf	93				
Rcs,h1%	-3				

Photometric Measurement – Goniophotometer Method:

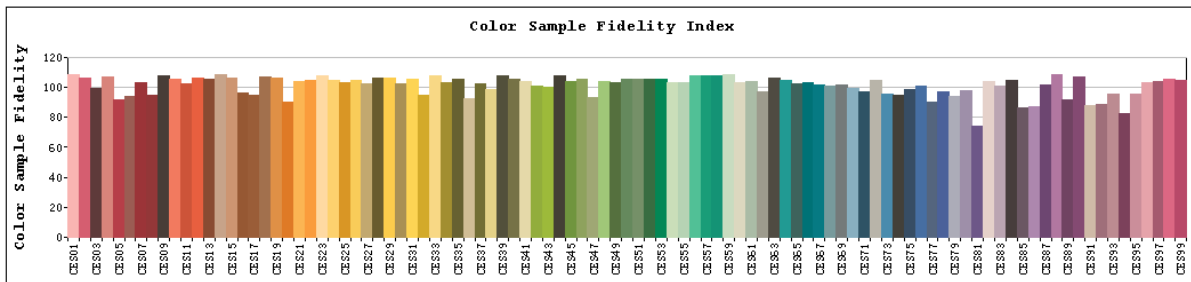
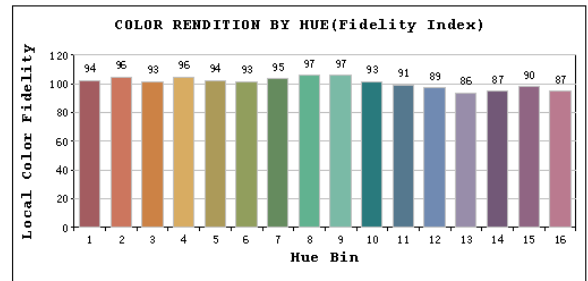
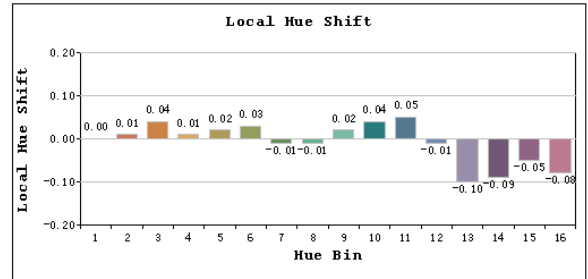
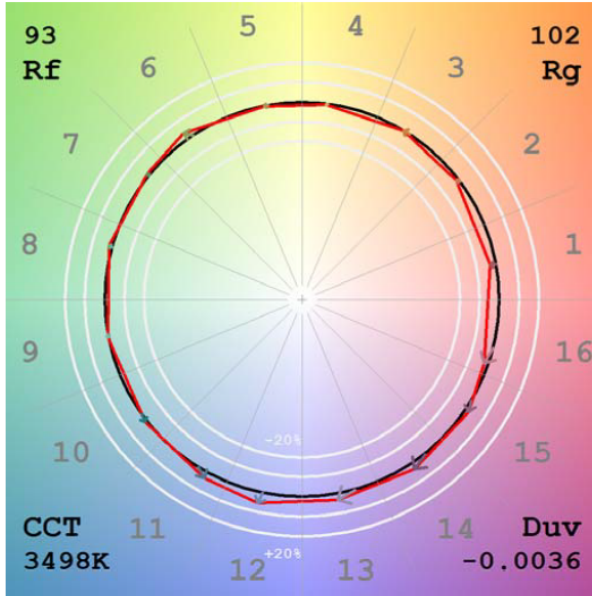
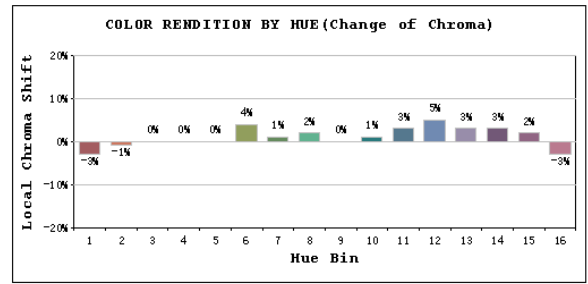
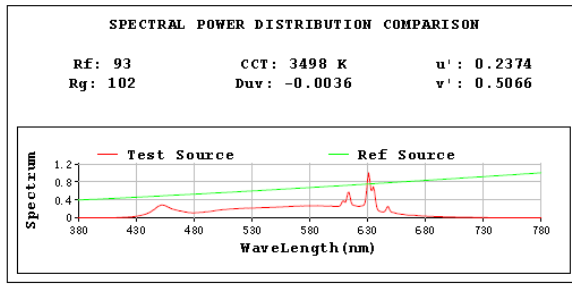
Parameter	Result
Test Voltage (V)	120.0
Frequency (Hz)	60
Total Luminous (lm)	9042.4
Luminous Efficacy (lm/W)	121.54

Parameter	Result
Test Voltage (V)	277.0
Frequency (Hz)	60
Total Luminous (lm)	8954.0
Luminous Efficacy (lm/W)	123.59

Spectral Power Distribution & Chromaticity Diagram



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2.1.4 Electrical, Photometric and Chromaticity Measurements

Test date	2024-07-10	Test Ambient:	25.1 °C
Test Orientation	As intended	Stabilization Time (min)	90
Model Number	CRX8/D10	4000K	

Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor
202407020007	120.0	60	0.634	75.80	0.997

Chromaticity Measurement - Sphere-Spectroradiometer Method:

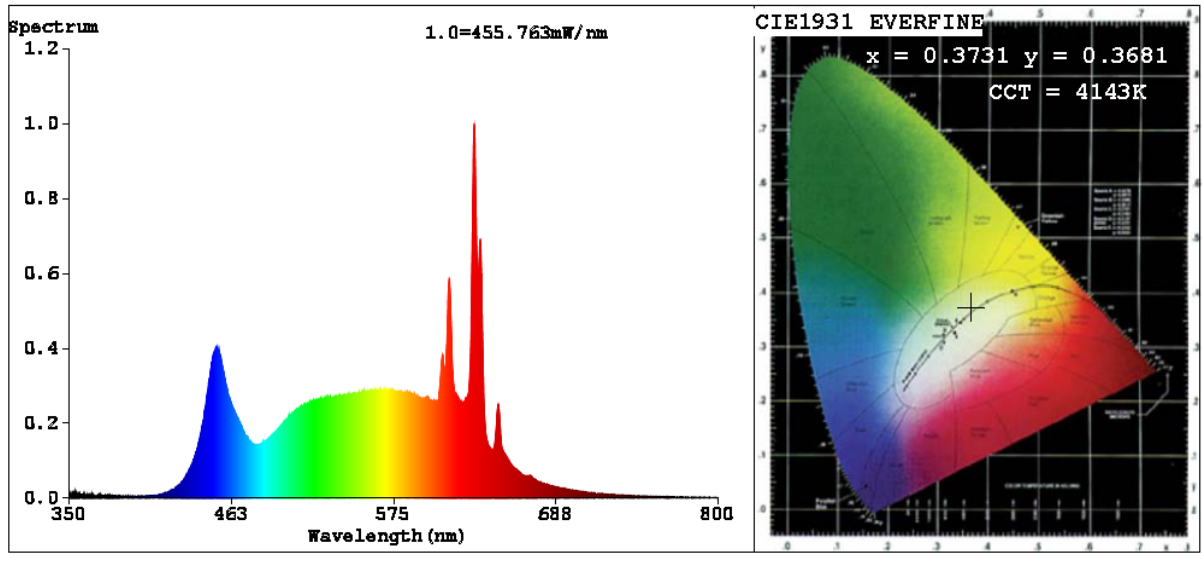
Parameter	Result	Special Color Rendering Indices			
Test Voltage (V)	120	R1	98	R9	89
Frequency (Hz)	60	R2	99	R10	95
CCT (K)	4143	R3	95	R11	96
Duv	-0.0019	R4	99	R12	77
Chromaticity (x, y)	x=0.3731 y=0.3681	R5	98	R13	99
Chromaticity (u', v')	u'=0.2237 v'=0.4966	R6	95	R14	96
Color Rendering Index (CRI)	97.3	R7	97	R15	98
R9	89	R8	96	--	--
Rg	101				
Rf	93				
Rcs,h1%	-3				

Photometric Measurement – Goniophotometer Method:

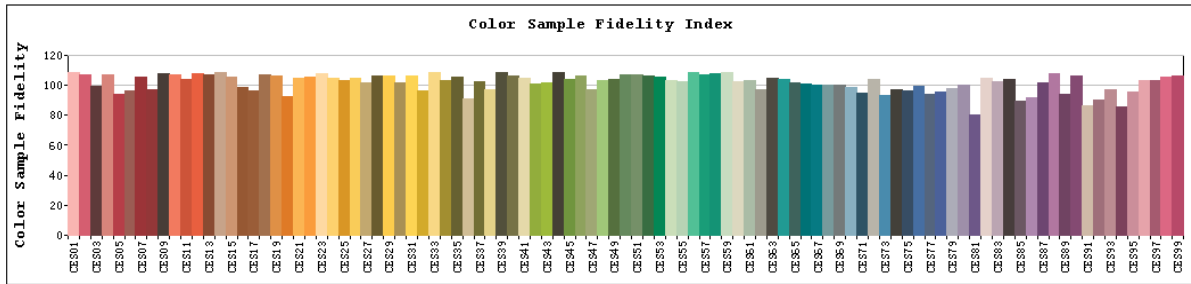
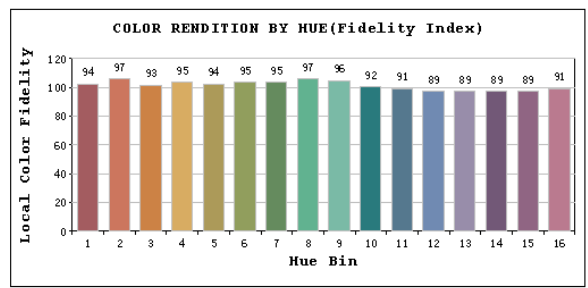
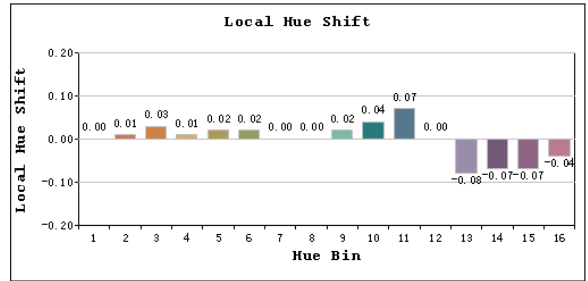
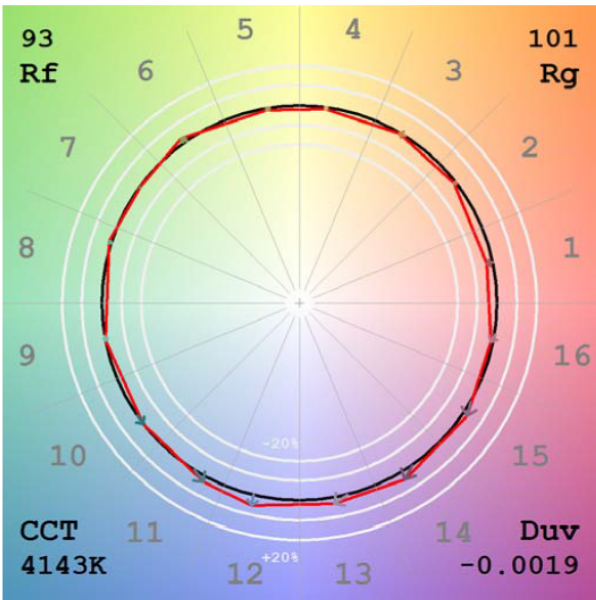
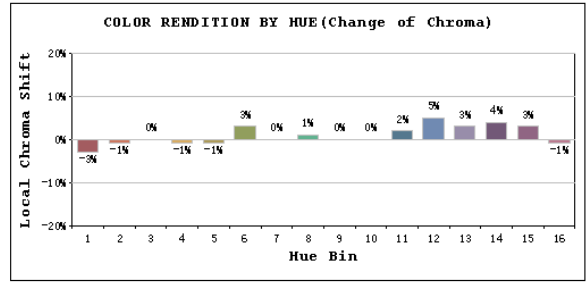
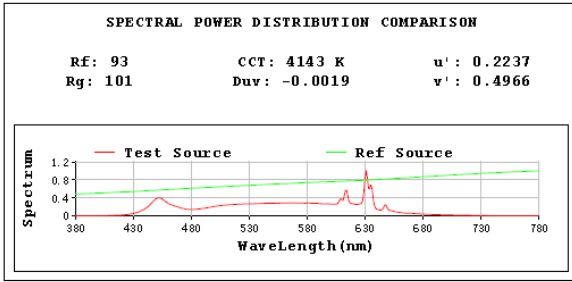
Parameter	Result
Test Voltage (V)	120.0
Frequency (Hz)	60
Total Luminous (lm)	9122.9
Luminous Efficacy (lm/W)	120.35

Parameter	Result
Test Voltage (V)	277.0
Frequency (Hz)	60
Total Luminous (lm)	9004.0
Luminous Efficacy (lm/W)	122.02

Spectral Power Distribution & Chromaticity Diagram



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2.1.5 Electrical, Photometric and Chromaticity Measurements

Test date	2024-07-10	Test Ambient:	25.1 °C
Test Orientation	As intended	Stabilization Time (min)	90
Model Number	CRX8/D10	5000K	

Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor
202407020007	120.0	60	0.641	76.70	0.997

Chromaticity Measurement - Sphere-Spectroradiometer Method:

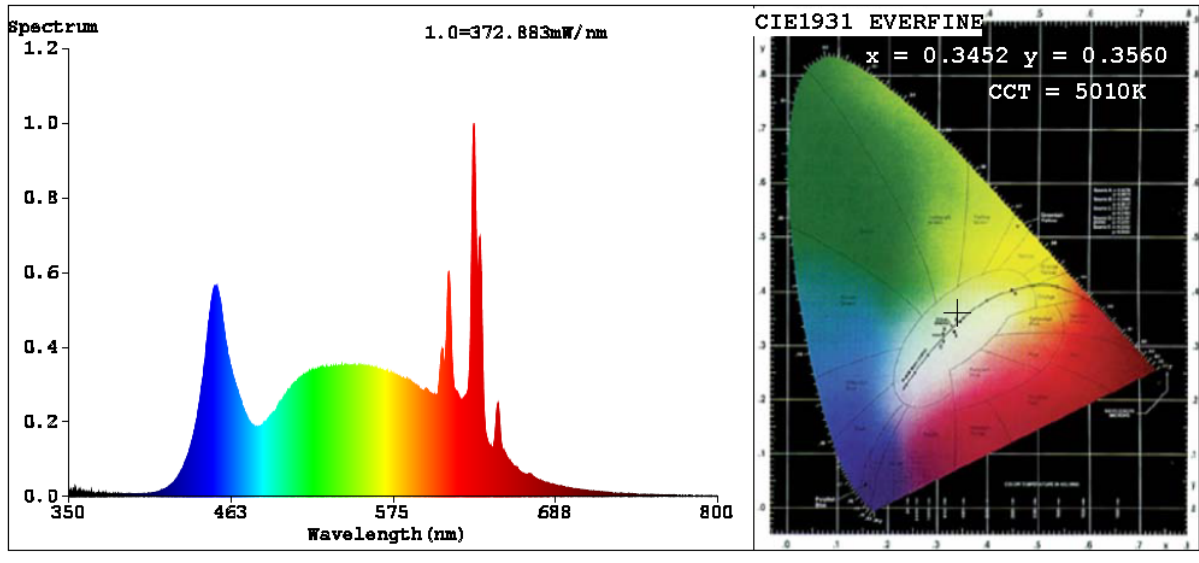
Parameter	Result	Special Color Rendering Indices			
Test Voltage (V)	120	R1	97	R9	83
Frequency (Hz)	60	R2	96	R10	88
CCT (K)	5010	R3	93	R11	95
Duv	0.0021	R4	96	R12	76
Chromaticity (x, y)	x=0.3452 y=0.3560	R5	96	R13	97
Chromaticity (u', v')	u'=0.2098 v'=0.4868	R6	94	R14	95
Color Rendering Index (CRI)	95.5	R7	97	R15	97
R9	83	R8	95	--	--
Rg	101				
Rf	93				
Rcs,h1%	-4				

Photometric Measurement – Goniophotometer Method:

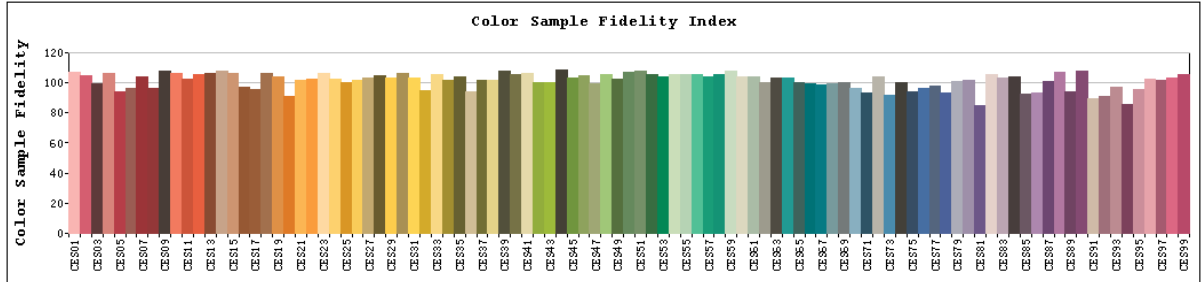
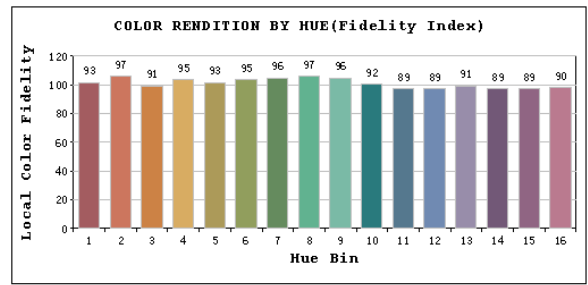
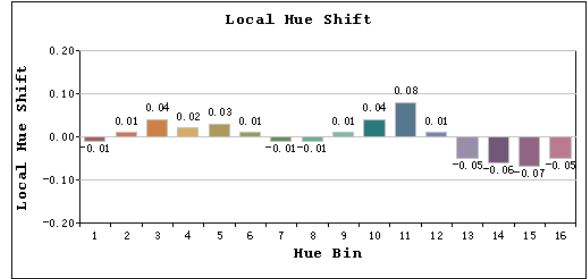
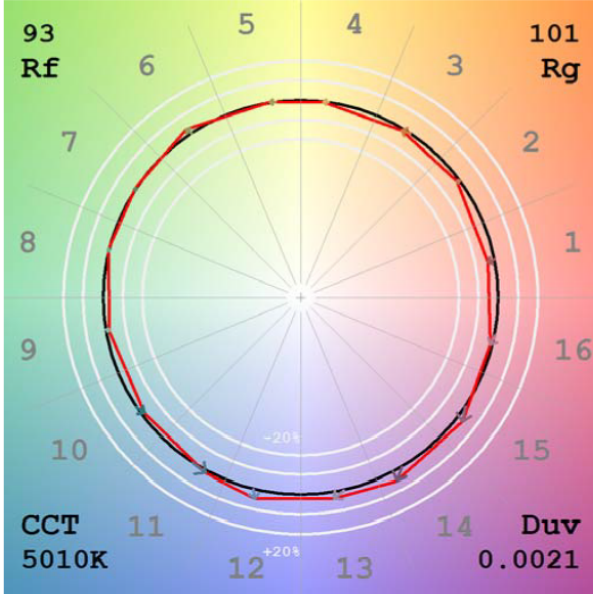
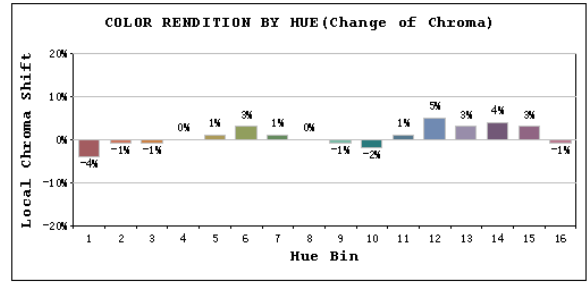
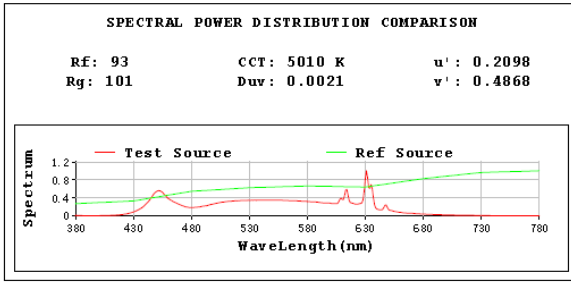
Parameter	Result
Test Voltage (V)	120.0
Frequency (Hz)	60
Total Luminous (lm)	8784.3
Luminous Efficacy (lm/W)	114.53

Parameter	Result
Test Voltage (V)	277.0
Frequency (Hz)	60
Total Luminous (lm)	8706.0
Luminous Efficacy (lm/W)	116.70

Spectral Power Distribution & Chromaticity Diagram

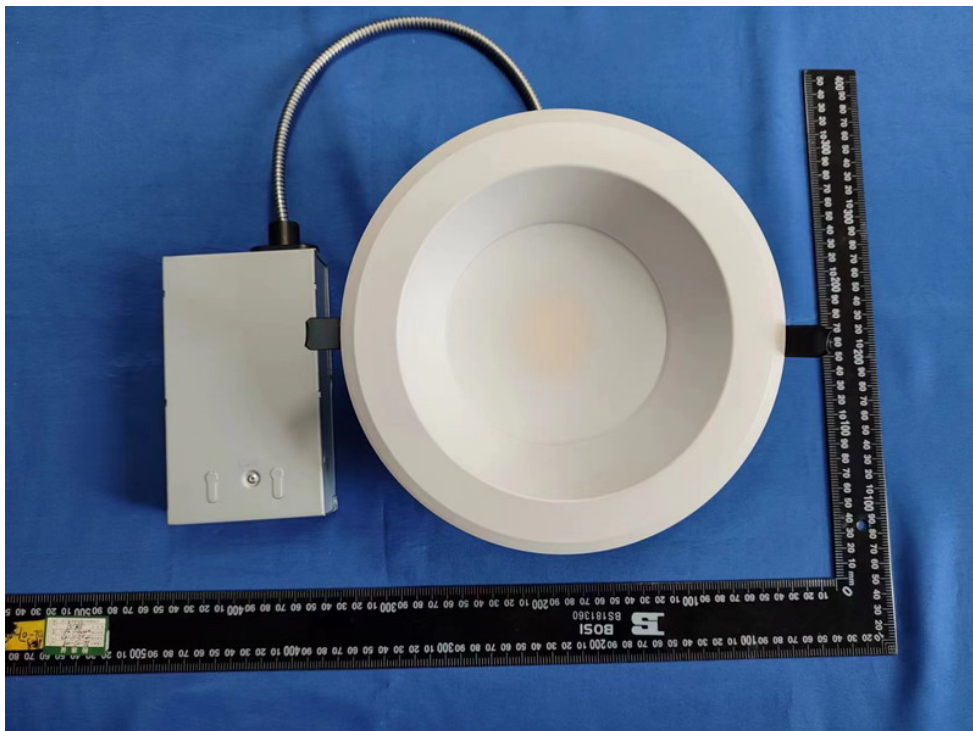
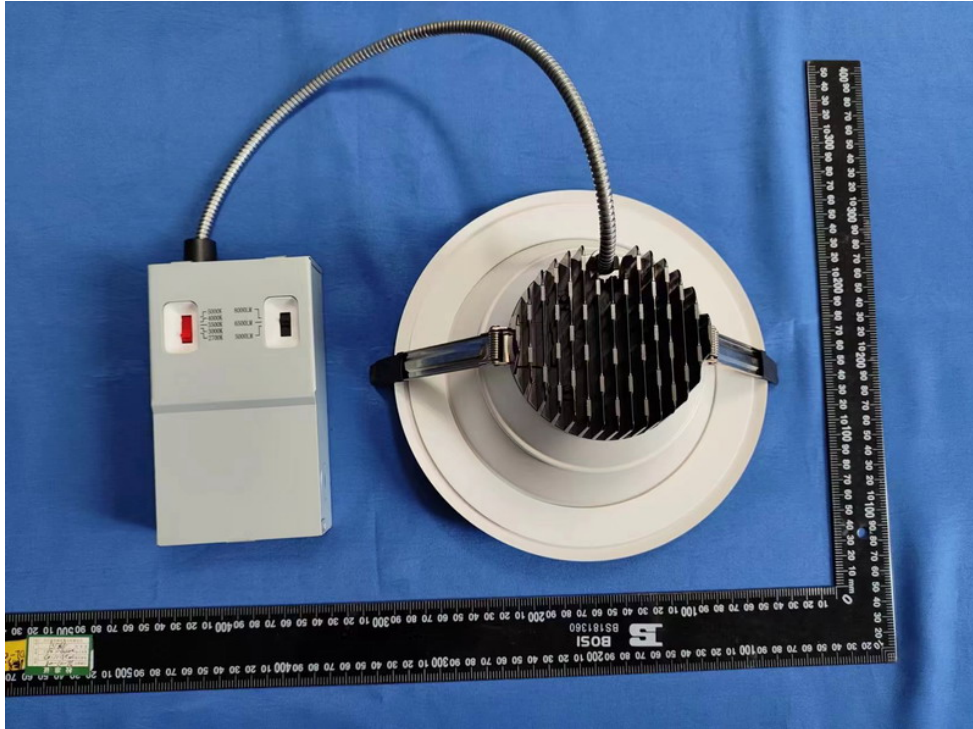


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Sample No.	Wattage and CCT setting	Test Voltage(V)	Flux(lm)	P(W)	Luminous Efficacy lm/W
CRX8/D10	50W-2700K setting	120	5021.1	49.20	102.05
		277	5051.0	49.62	101.79
	65W-2700K setting	120	6594.7	64.20	102.72
		277	6523.0	63.09	103.39
	80W-2700K setting	120	8045.7	76.90	104.63
		277	7873.0	74.67	105.44
	80W-3000K setting	120	8525.7	76.60	111.30
		277	8426.0	74.56	113.01
	80W-3500K setting	120	9042.4	74.40	121.54
		277	8954.0	72.45	123.59
	80W-4000K setting	120	9122.9	75.80	120.35
		277	9004.0	73.79	122.02
	80W-5000K setting	120	8784.3	76.70	114.53
		277	8706.0	74.60	116.70

3. Product Photo



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