

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):
ND22-12-3RW

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

**Type of
Luminaire:** Downlights

Report Date: 2025-08-15

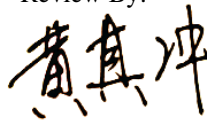
Prepared By:

Test & Report By:



Engineer: Sun Fangfang

Review By:



Manager: Huang Qichong

1.1 Rated Values:	
Rated Voltage / Frequency	120V-277Vac, 60 Hz
Nominal Power	7.0W/9.0W/12.0W
Rated Initial Lamp Lumen	600lm/750lm/1000lm (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	2025-08-13	Test Ambient:	25.1 °C
Test Orientation	As intended	Stabilization Time (min)	90
Model Number	ND22-12-3RW 45°	5000K	

Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor
202507280014	120.0	60	0.095	11.30	0.992

Chromaticity Measurement - Sphere-Spectroradiometer Method:

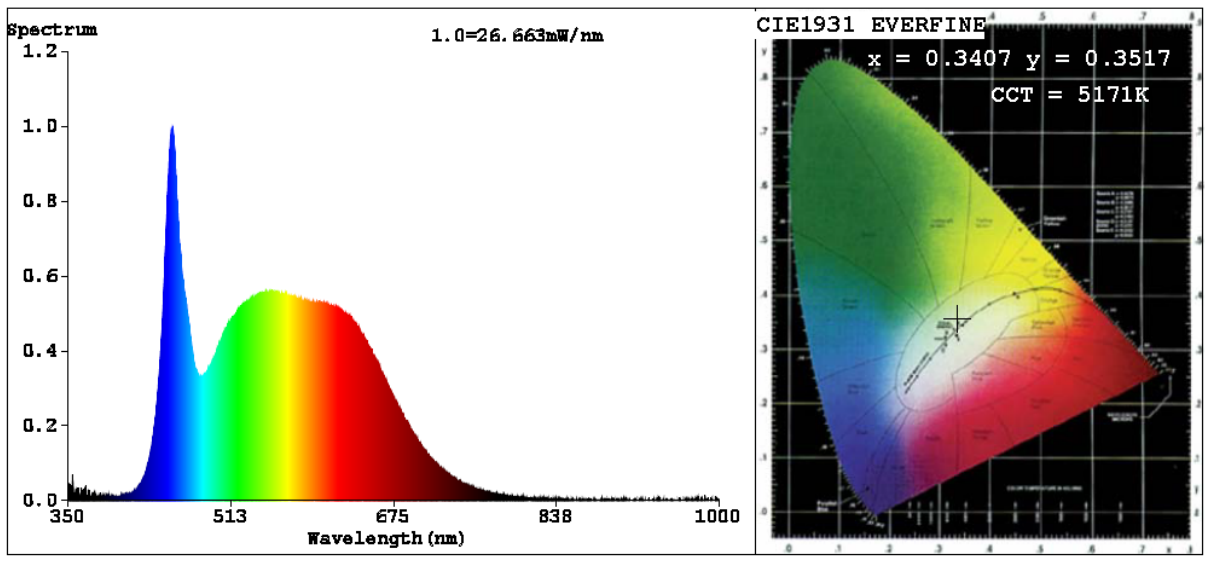
Parameter	Result	Special Color Rendering Indices			
Test Voltage (V)	120	R1	93	R9	67
Frequency (Hz)	60	R2	96	R10	88
CCT (K)	5171	R3	96	R11	92
Duv	0.0018	R4	92	R12	70
Chromaticity (x, y)	x=0.3407 y=0.3517	R5	92	R13	94
Chromaticity (u', v')	u'=0.2084 v'=0.4840	R6	92	R14	98
Color Rendering Index (CRI)	92.6	R7	94	R15	91
R9	67	R8	87	--	--
Rg	99				
Rf	91				
Rcs,h1%	-5				

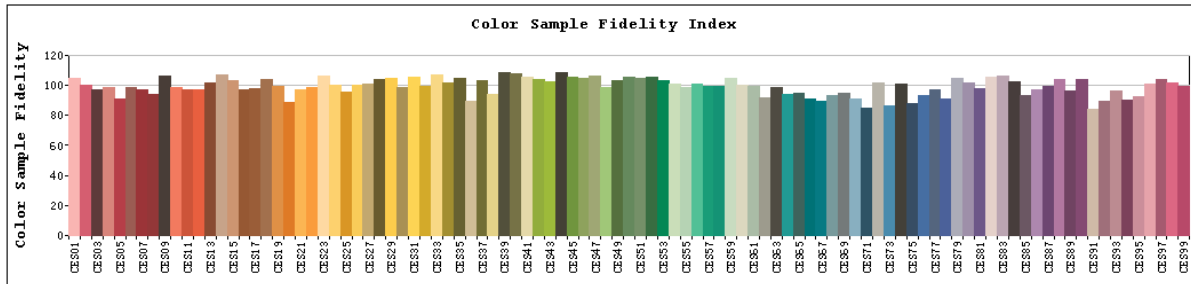
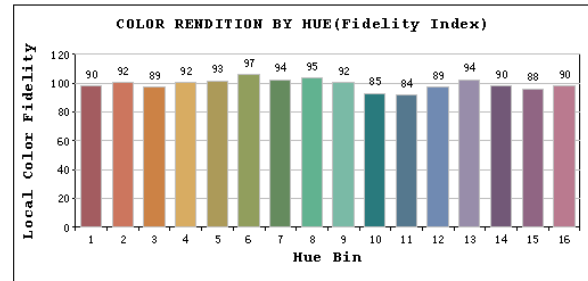
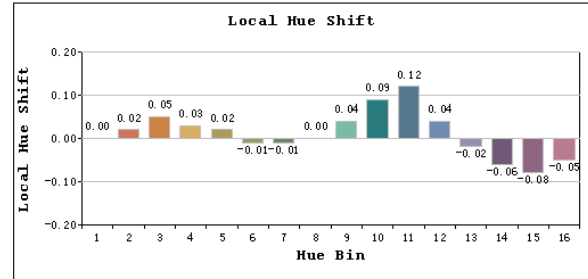
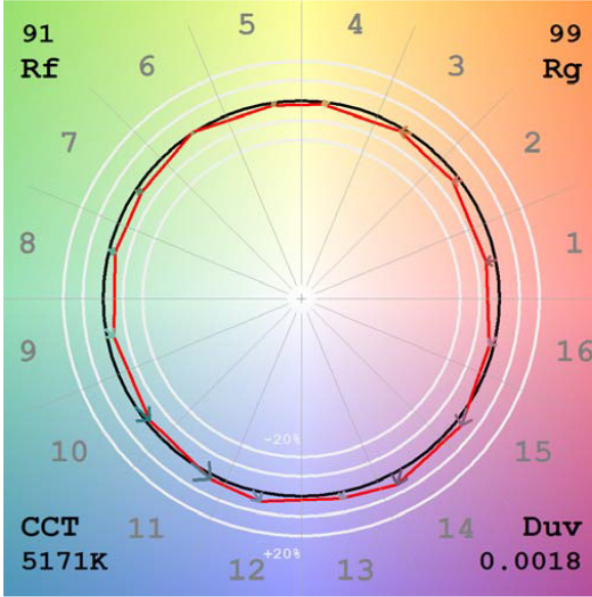
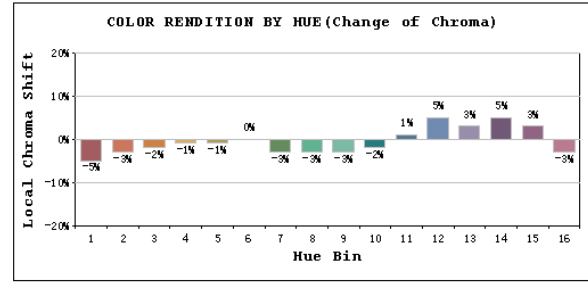
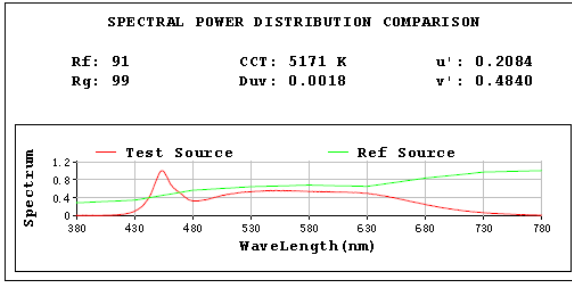
Photometric Measurement – Goniophotometer Method:

Parameter	Result
Test Voltage (V)	120.0
Frequency (Hz)	60
Total Luminous (lm)	1006.5
Luminous Efficacy (lm/W)	89.07
Beam Angle (°)	46.5
Center Beam Candle Power (cd)	1224.0

Parameter	Result
Test Voltage (V)	277.0
Frequency (Hz)	60
Total Luminous (lm)	972.7
Luminous Efficacy (lm/W)	84.88

Spectral Power Distribution & Chromaticity Diagram



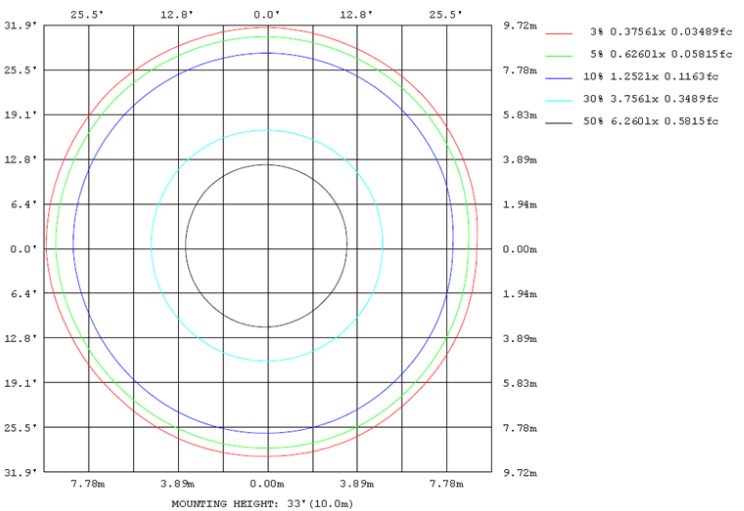
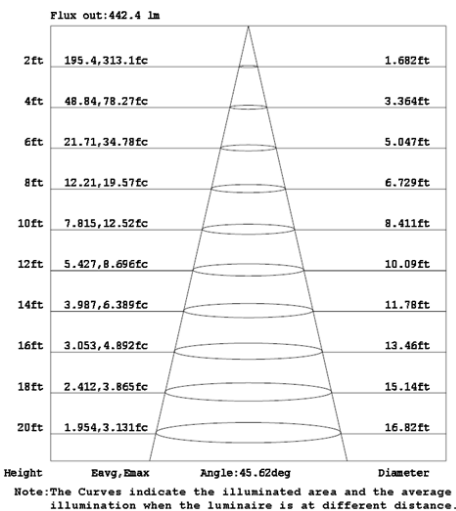
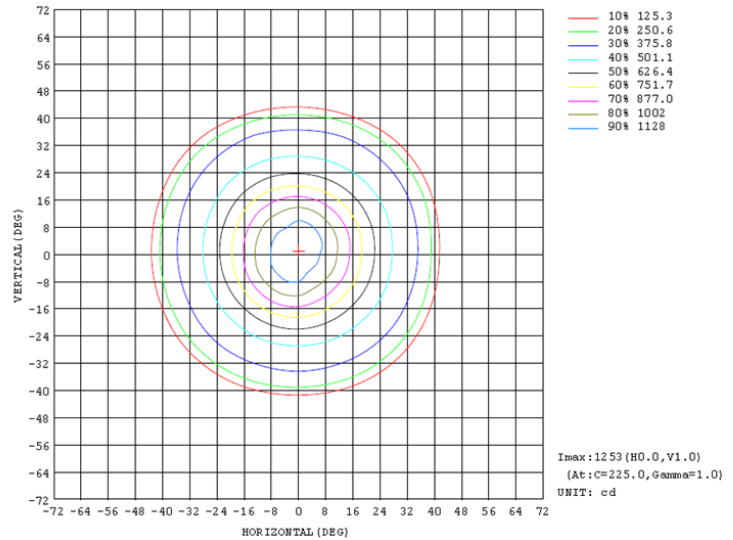
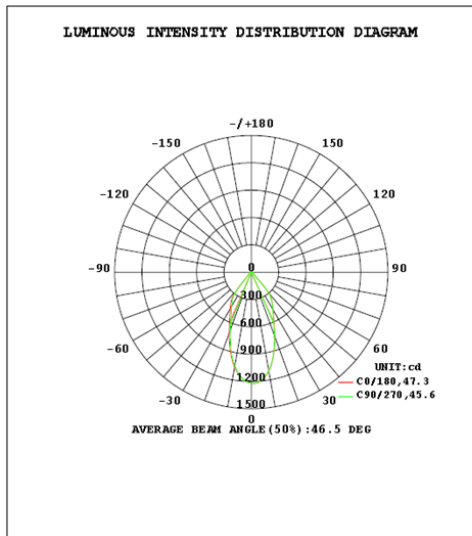


Zonal Lumen Tabulation

Zonal Lumen Summary		
Zone	Lumens	% Luminaire
0-30	624.4	62.0%
0-40	858.9	85.3%
0-60	957.1	95.1%
60-90	49.4	4.9%
70-100	23.9	2.4%
90-120	0.0	0.0%
0-90	1006.5	100.0%
90-180	0.0	0.0%
0-180	1006.5	100.0%

Lumens Per Zone					
Zone	Lumens	% Total	Zone	Lumens	% Total
0-10	109.5	10.9%	90-100	0.0	0.0%
10-20	252.0	25.0%	100-110	0.0	0.0%
20-30	263.0	26.1%	110-120	0.0	0.0%
30-40	234.5	23.3%	120-130	0.0	0.0%
40-50	68.8	6.8%	130-140	0.0	0.0%
50-60	29.4	2.9%	140-150	0.0	0.0%
60-70	25.5	2.5%	150-160	0.0	0.0%
70-80	18.1	1.8%	160-170	0.0	0.0%
80-90	5.8	0.6%	170-180	0.0	0.0%

Photometric Data



2.1.2 Electrical, Photometric and Chromaticity Measurements

Test date	2025-08-13	Test Ambient:	25.1 °C
Test Orientation	As intended	Stabilization Time (min)	90
Model Number	ND22-12-3RW 45°	2700K	

Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor
202507280014	120.0	60	0.095	11.30	0.992

Chromaticity Measurement - Sphere-Spectroradiometer Method:

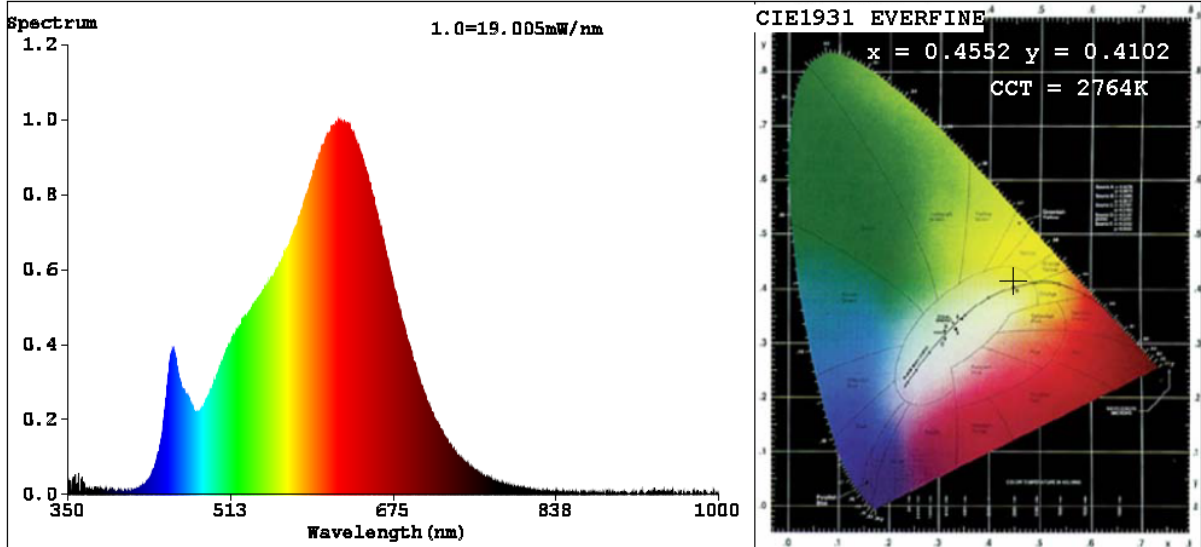
Parameter	Result	Special Color Rendering Indices			
Test Voltage (V)	120	R1	95	R9	61
Frequency (Hz)	60	R2	98	R10	95
CCT (K)	2764	R3	99	R11	96
Duv	0.0003	R4	94	R12	85
Chromaticity (x, y)	x=0.4552 y=0.4102	R5	94	R13	96
Chromaticity (u', v')	u'=0.2597 v'=0.5265	R6	98	R14	100
Color Rendering Index (CRI)	93.8	R7	91	R15	90
R9	61	R8	82	--	--
Rg	98				
Rf	92				
Rcs,h1%	-5				

Photometric Measurement – Goniophotometer Method:

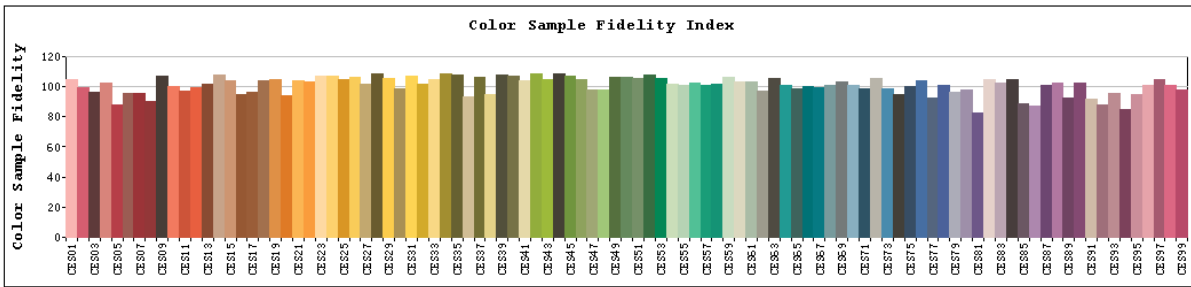
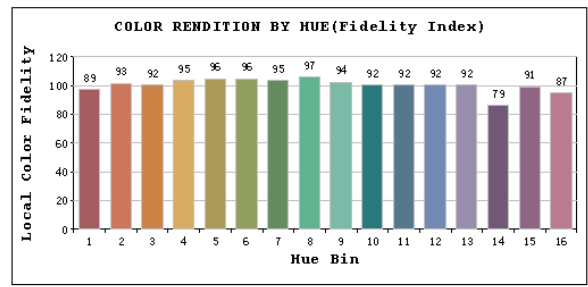
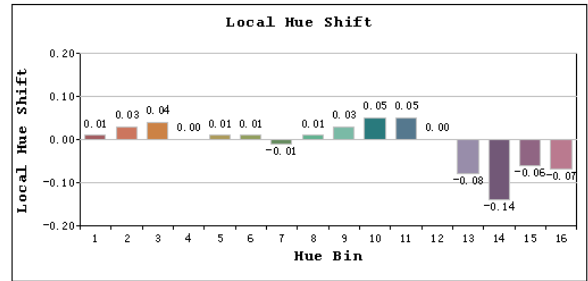
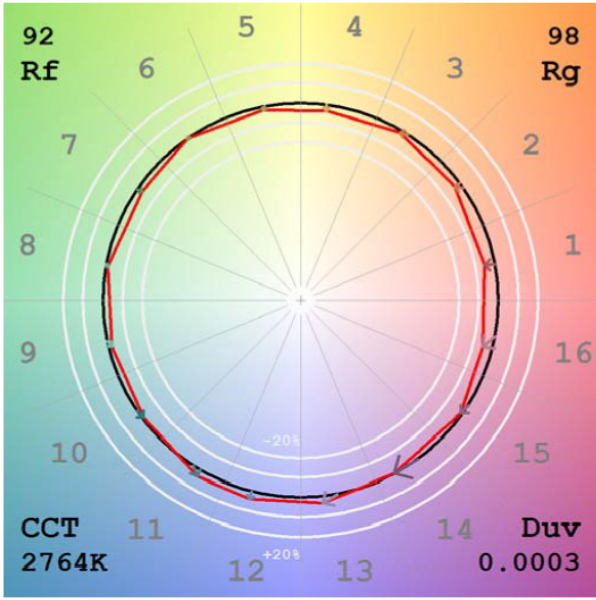
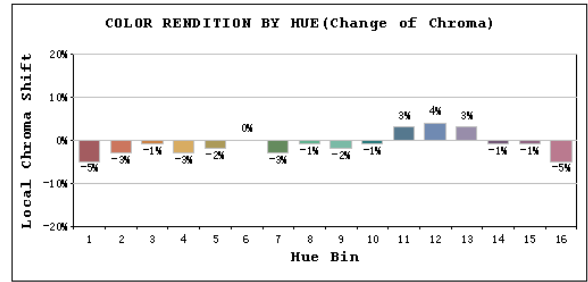
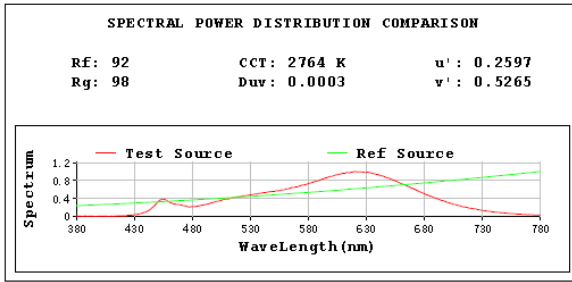
Parameter	Result
Test Voltage (V)	120.0
Frequency (Hz)	60
Total Luminous (lm)	882.7
Luminous Efficacy (lm/W)	78.11

Parameter	Result
Test Voltage (V)	277.0
Frequency (Hz)	60
Total Luminous (lm)	849.1
Luminous Efficacy (lm/W)	74.29

Spectral Power Distribution & Chromaticity Diagram



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2.1.3 Electrical, Photometric and Chromaticity Measurements

Test date	2025-08-13	Test Ambient:	25.1 °C
Test Orientation	As intended	Stabilization Time (min)	90
Model Number	ND22-12-3RW 45°	3000K	

Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor
202507280014	120.0	60	0.094	11.20	0.991

Chromaticity Measurement - Sphere-Spectroradiometer Method:

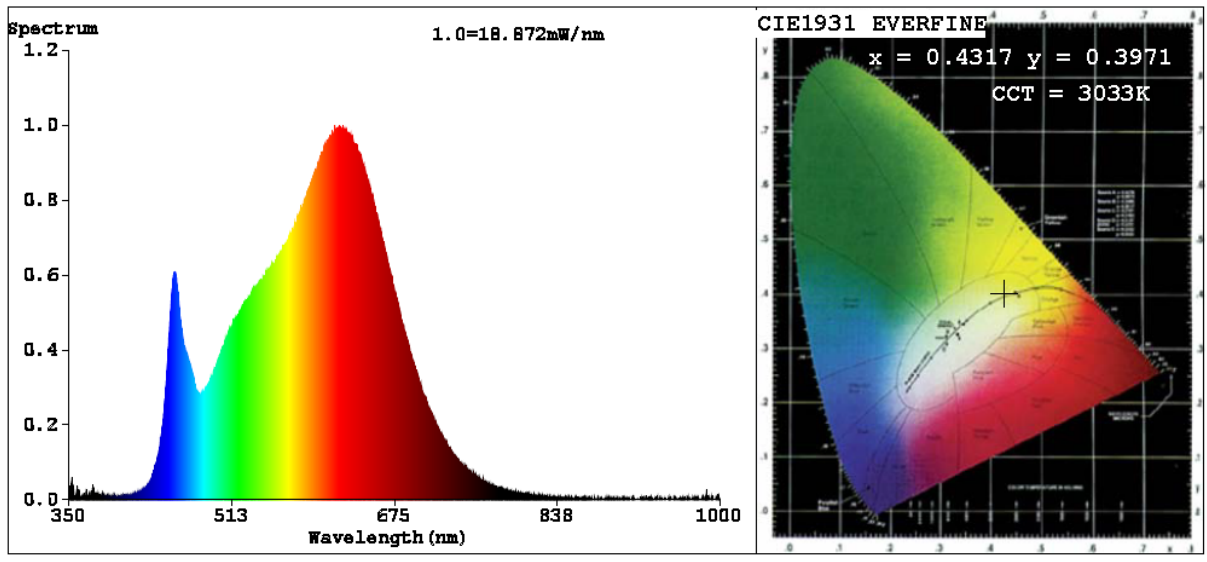
Parameter	Result	Special Color Rendering Indices			
Test Voltage (V)	120	R1	96	R9	69
Frequency (Hz)	60	R2	99	R10	98
CCT (K)	3033	R3	98	R11	96
Duv	-0.0021	R4	95	R12	82
Chromaticity (x, y)	x=0.4317 y=0.3971	R5	96	R13	98
Chromaticity (u', v')	u'=0.2502 v'=0.5178	R6	96	R14	100
Color Rendering Index (CRI)	94.6	R7	92	R15	93
R9	69	R8	85	--	--
Rg	99				
Rf	92				
Rcs,h1%	-4				

Photometric Measurement – Goniophotometer Method:

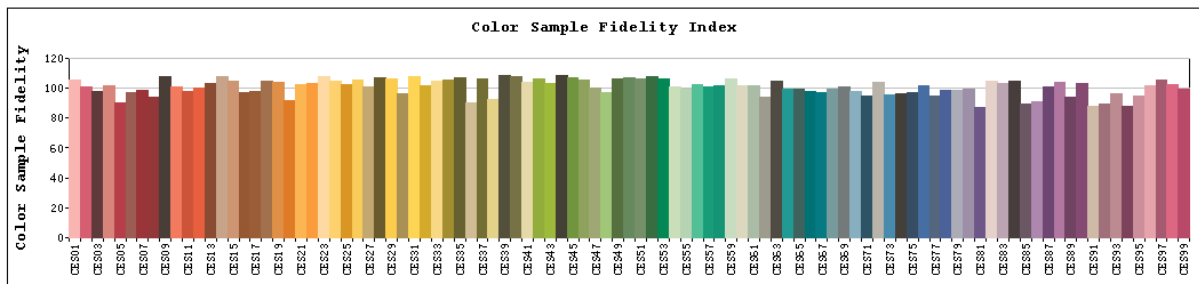
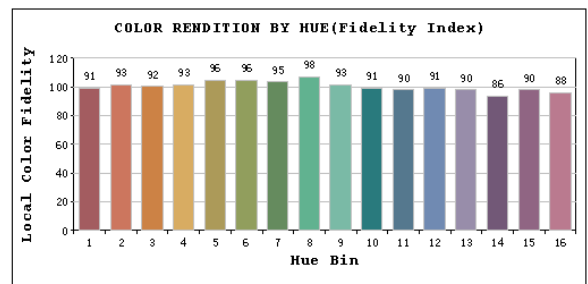
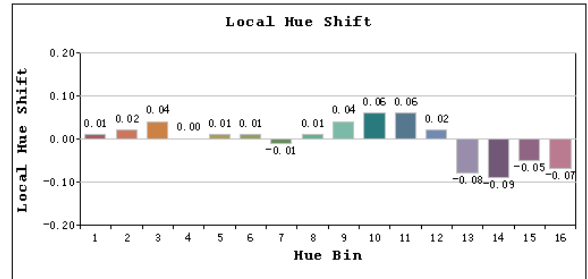
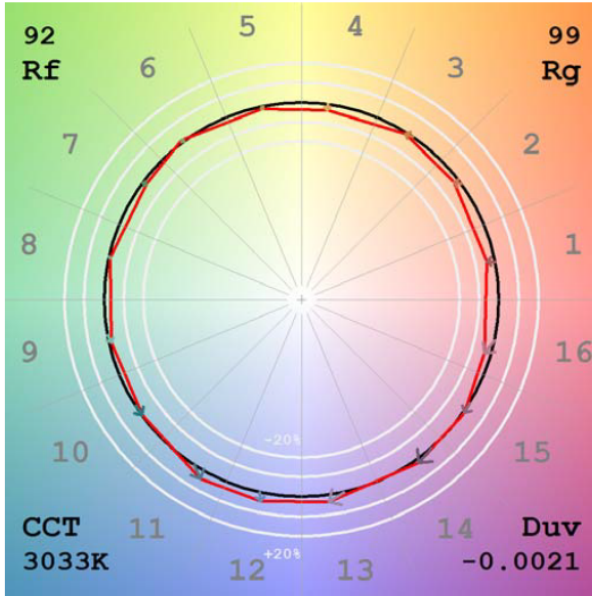
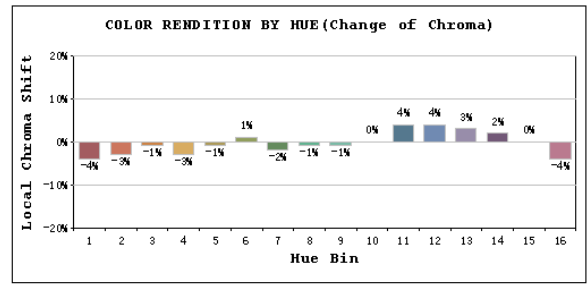
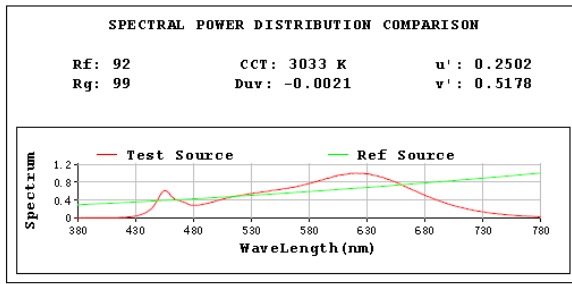
Parameter	Result
Test Voltage (V)	120.0
Frequency (Hz)	60
Total Luminous (lm)	928.6
Luminous Efficacy (lm/W)	82.91

Parameter	Result
Test Voltage (V)	277.0
Frequency (Hz)	60
Total Luminous (lm)	895.9
Luminous Efficacy (lm/W)	79.07

Spectral Power Distribution & Chromaticity Diagram



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2.1.4 Electrical, Photometric and Chromaticity Measurements

Test date	2025-08-13	Test Ambient:	25.1 °C
Test Orientation	As intended	Stabilization Time (min)	90
Model Number	ND22-12-3RW 45°	3500K	

Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor
202507280014	120.0	60	0.092	10.90	0.991

Chromaticity Measurement - Sphere-Spectroradiometer Method:

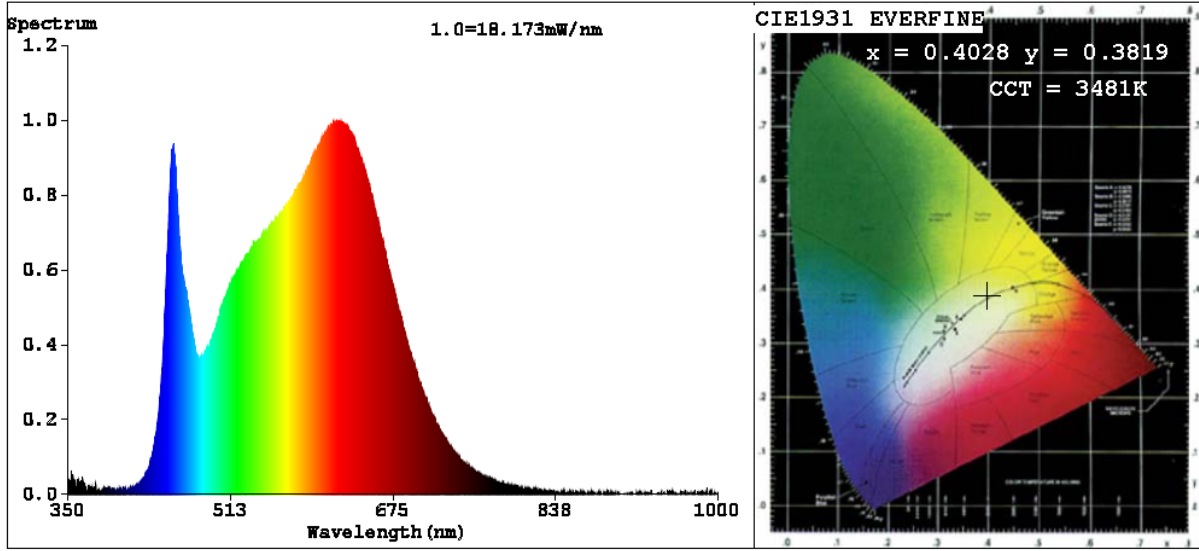
Parameter	Result	Special Color Rendering Indices			
Test Voltage (V)	120	R1	97	R9	77
Frequency (Hz)	60	R2	99	R10	98
CCT (K)	3481	R3	98	R11	96
Duv	-0.0034	R4	95	R12	78
Chromaticity (x, y)	x=0.4028 y=0.3819	R5	96	R13	99
Chromaticity (u', v')	u'=0.2378 v'=0.5072	R6	95	R14	100
Color Rendering Index (CRI)	95.4	R7	93	R15	96
R9	77	R8	89	--	--
Rg	100				
Rf	92				
Rcs,h1%	-3				

Photometric Measurement – Goniophotometer Method:

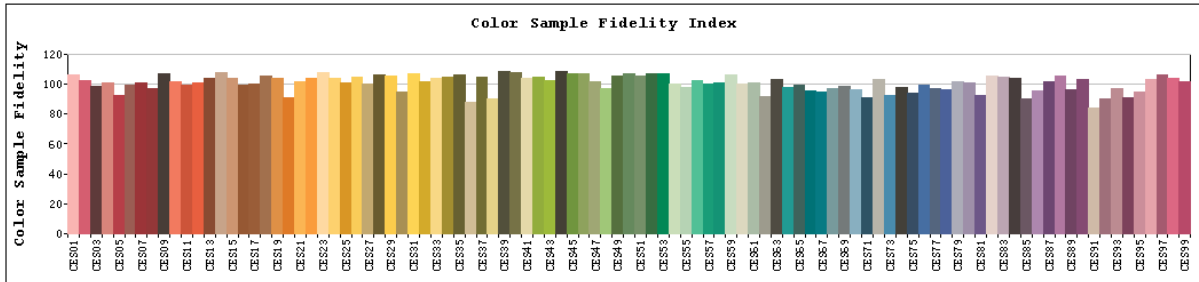
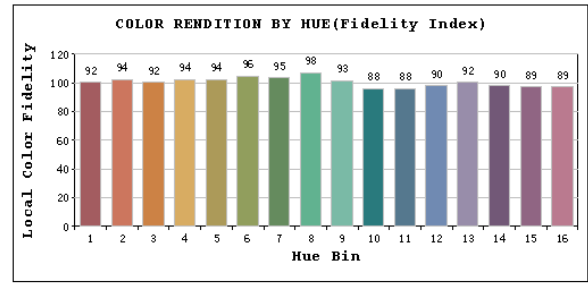
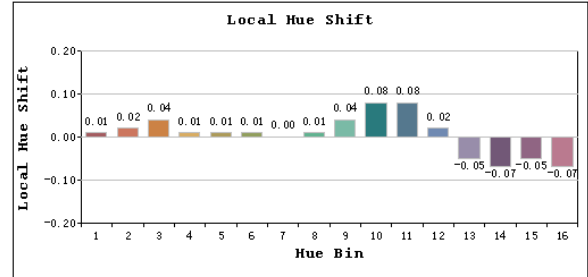
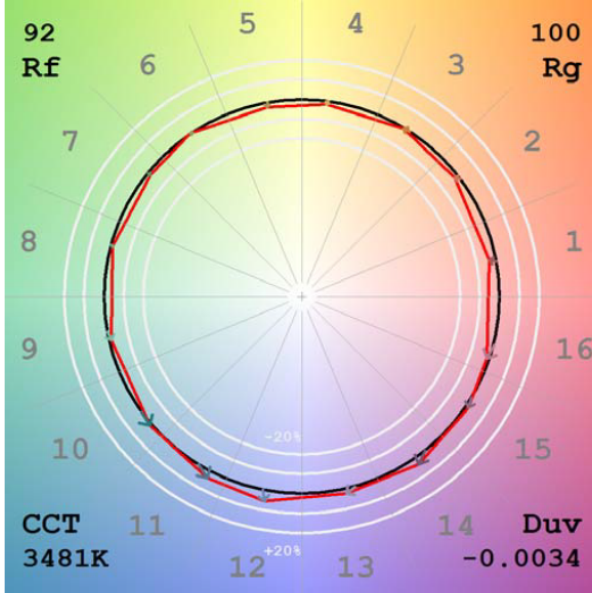
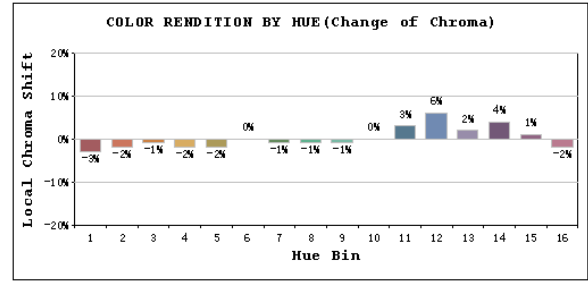
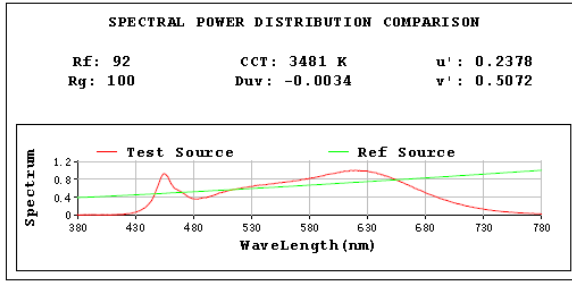
Parameter	Result
Test Voltage (V)	120.0
Frequency (Hz)	60
Total Luminous (lm)	984.3
Luminous Efficacy (lm/W)	90.30

Parameter	Result
Test Voltage (V)	277.0
Frequency (Hz)	60
Total Luminous (lm)	951.1
Luminous Efficacy (lm/W)	85.99

Spectral Power Distribution & Chromaticity Diagram



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2.1.5 Electrical, Photometric and Chromaticity Measurements

Test date	2025-08-13	Test Ambient:	25.1 °C
Test Orientation	As intended	Stabilization Time (min)	90
Model Number	ND22-12-3RW 45°	4000K	

Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor
202507280014	120.0	60	0.092	10.90	0.991

Chromaticity Measurement - Sphere-Spectroradiometer Method:

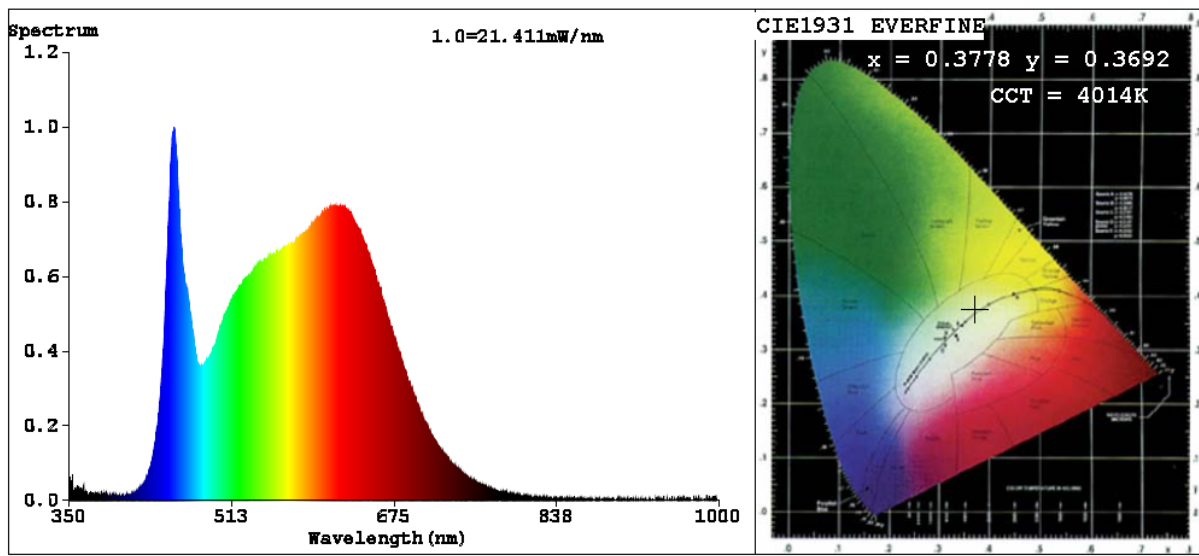
Parameter	Result	Special Color Rendering Indices			
Test Voltage (V)	120	R1	97	R9	79
Frequency (Hz)	60	R2	99	R10	97
CCT (K)	4014	R3	98	R11	95
Duv	-0.0028	R4	94	R12	73
Chromaticity (x, y)	x=0.3778 y=0.3692	R5	95	R13	99
Chromaticity (u', v')	u'=0.2264 v'=0.4978	R6	95	R14	99
Color Rendering Index (CRI)	95.4	R7	94	R15	96
R9	79	R8	90	--	--
Rg	100				
Rf	92				
Rcs,h1%	-4				

Photometric Measurement – Goniophotometer Method:

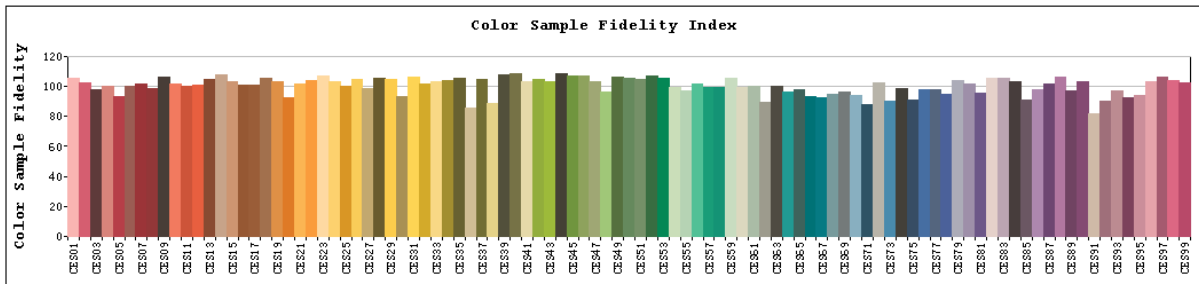
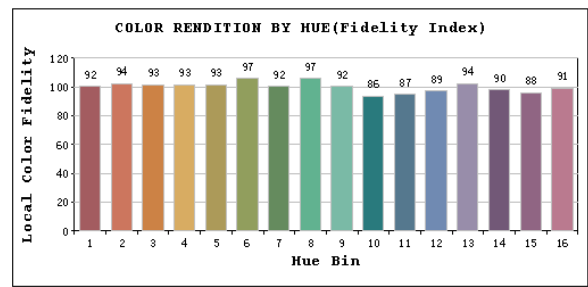
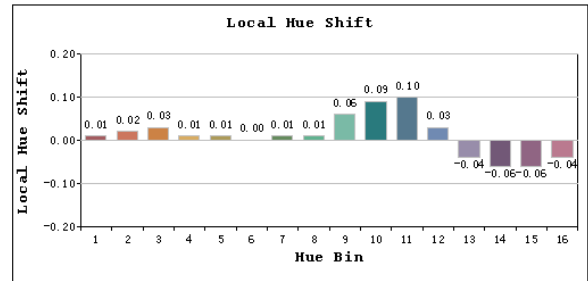
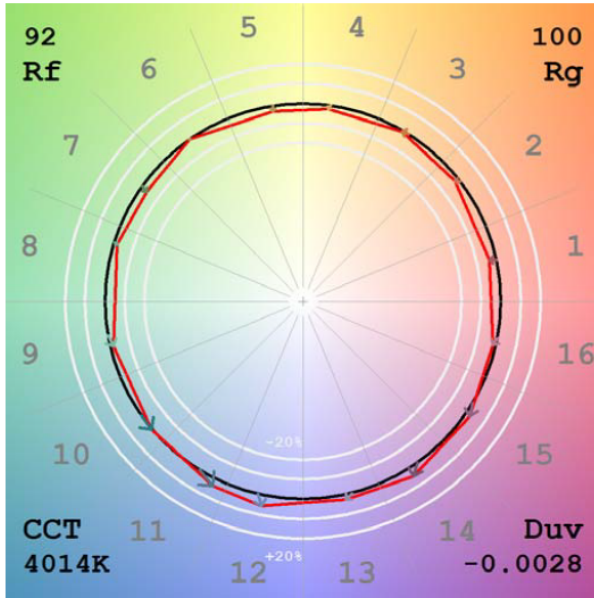
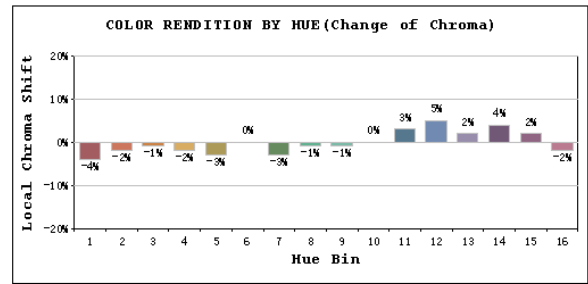
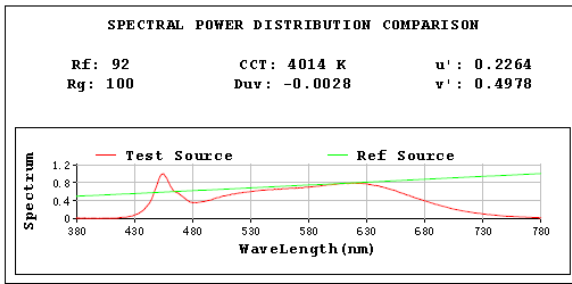
Parameter	Result
Test Voltage (V)	120.0
Frequency (Hz)	60
Total Luminous (lm)	1015.5
Luminous Efficacy (lm/W)	93.16

Parameter	Result
Test Voltage (V)	277.0
Frequency (Hz)	60
Total Luminous (lm)	981.5
Luminous Efficacy (lm/W)	88.74

Spectral Power Distribution & Chromaticity Diagram



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2.1.6 Electrical, Photometric and Chromaticity Measurements

Test date	2025-08-13	Test Ambient:	25.1 °C
Test Orientation	As intended	Stabilization Time (min)	90
Model Number	ND22-12-3RW 25°	5000K	

Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor
202507280014	120.0	60	0.095	11.30	0.991

Chromaticity Measurement - Sphere-Spectroradiometer Method:

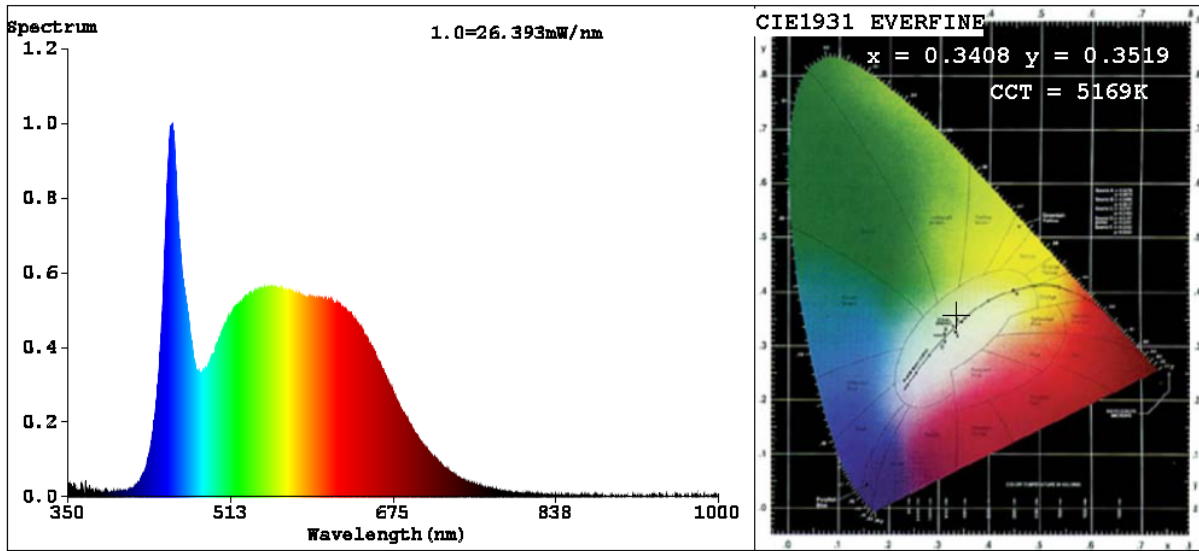
Parameter	Result	Special Color Rendering Indices			
Test Voltage (V)	120	R1	93	R9	66
Frequency (Hz)	60	R2	95	R10	88
CCT (K)	5169	R3	95	R11	92
Duv	0.0019	R4	92	R12	70
Chromaticity (x, y)	x=0.3408 y=0.3519	R5	92	R13	94
Chromaticity (u', v')	u'=0.2084 v'=0.4842	R6	92	R14	97
Color Rendering Index (CRI)	92.6	R7	94	R15	91
R9	66	R8	87	--	--
Rg	99				
Rf	91				
Rcs,h1%	-5				

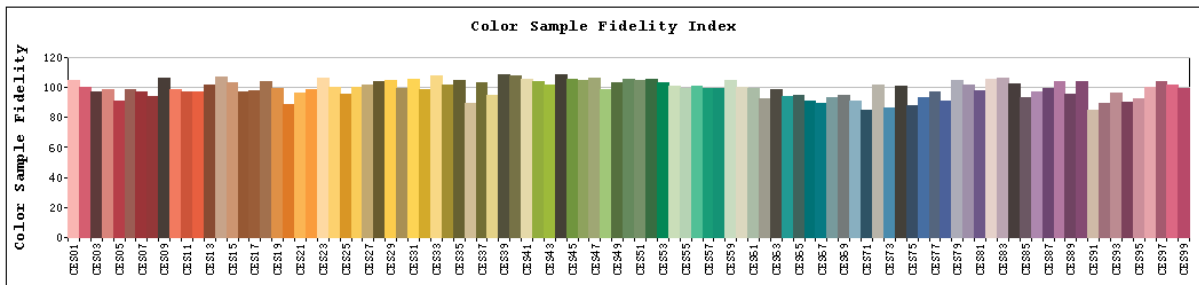
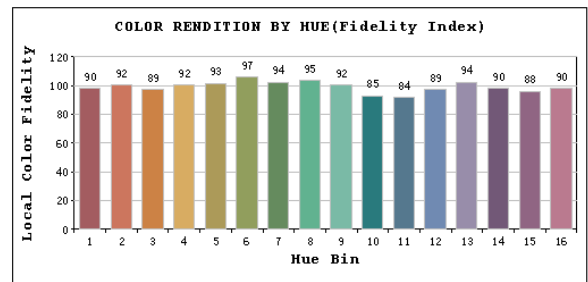
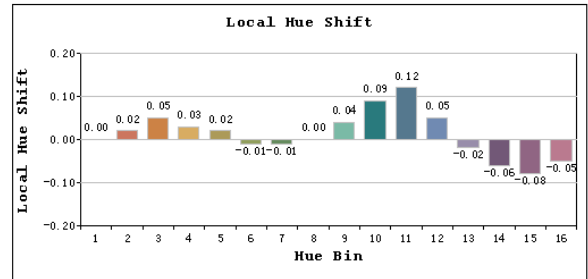
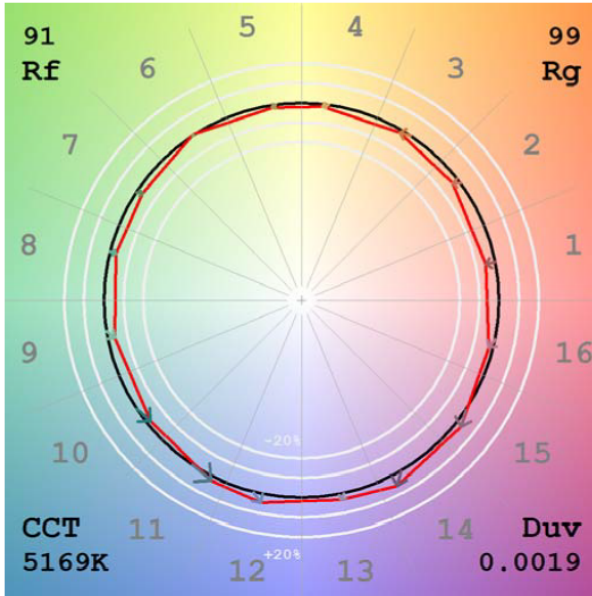
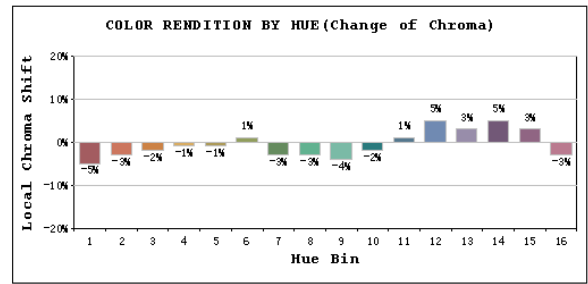
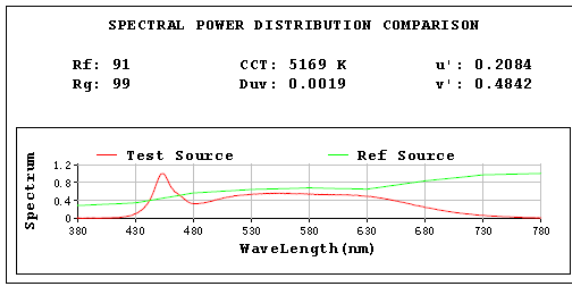
Photometric Measurement – Goniophotometer Method:

Parameter	Result
Test Voltage (V)	120.0
Frequency (Hz)	60
Total Luminous (lm)	1029.0
Luminous Efficacy (lm/W)	91.06
Beam Angle (°)	28.0
Center Beam Candle Power (cd)	2202.0

Parameter	Result
Test Voltage (V)	277.0
Frequency (Hz)	60
Total Luminous (lm)	996.2
Luminous Efficacy (lm/W)	87.16

Spectral Power Distribution & Chromaticity Diagram





Zonal Lumen Tabulation

Zonal Lumen Summary		
Zone	Lumens	% Luminaire
0-30	702.0	68.2%
0-40	912.6	88.7%
0-60	994.0	96.6%
60-90	35.0	3.4%
70-100	17.5	1.7%
90-120	0.0	0.0%
0-90	1029.0	100.0%
90-180	0.0	0.0%
0-180	1029.0	100.0%

Lumens Per Zone					
Zone	Lumens	% Total	Zone	Lumens	% Total
0-10	167.6	16.3%	90-100	0.0	0.0%
10-20	283.0	27.5%	100-110	0.0	0.0%
20-30	251.4	24.4%	110-120	0.0	0.0%
30-40	210.6	20.5%	120-130	0.0	0.0%
40-50	59.2	5.8%	130-140	0.0	0.0%
50-60	22.1	2.1%	140-150	0.0	0.0%
60-70	17.5	1.7%	150-160	0.0	0.0%
70-80	13.0	1.3%	160-170	0.0	0.0%
80-90	4.5	0.4%	170-180	0.0	0.0%

Photometric Data

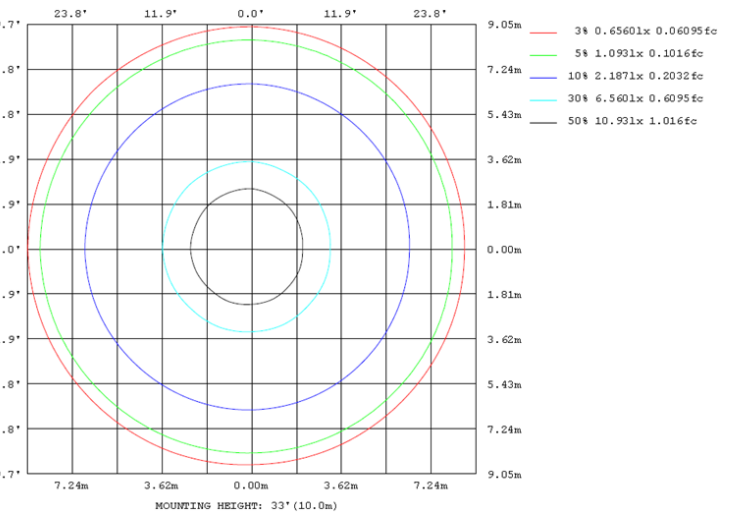
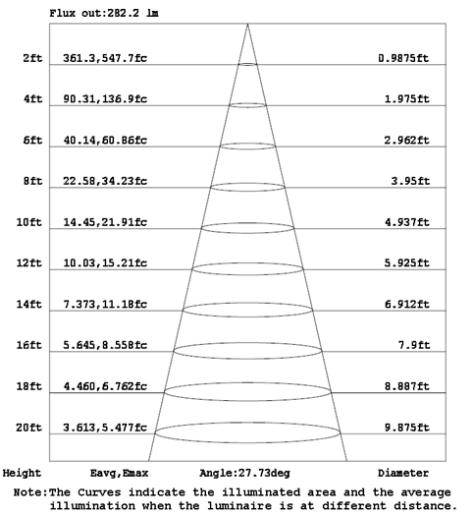
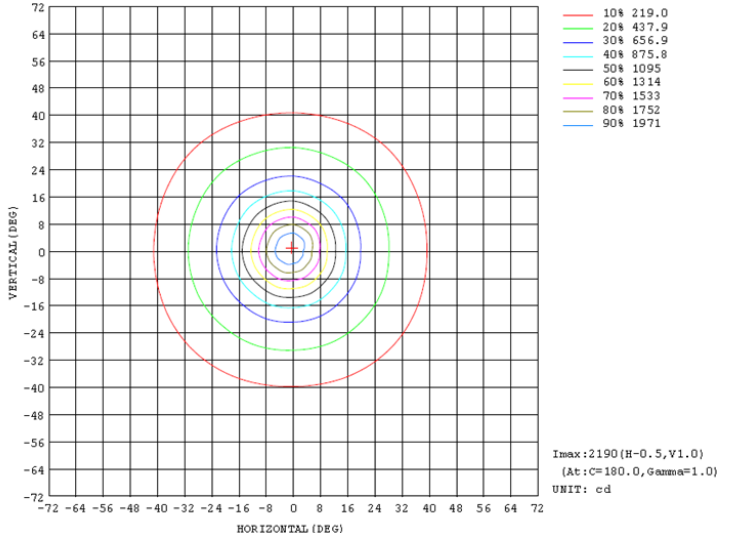
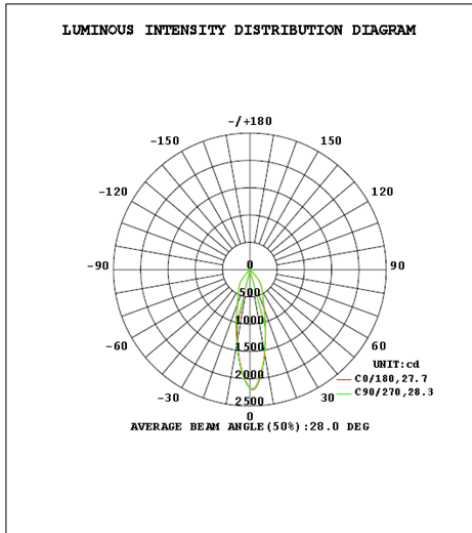


Table--1

UNIT: cd

γ (DEG)	C(DEG)															
	0	22.5	45	67.5	90	112.5	135	157.5	180	202.5	225	247.5	270	292.5	315	337.5
0	2172	2172	2172	2172	2172	2172	2172	2172	2172	2172	2172	2172	2172	2172	2172	2172
5	1811	1815	1812	1837	1850	1891	1910	1974	2032	2005	2028	1997	1995	1932	1904	1845
10	1321	1336	1346	1379	1392	1438	1457	1514	1580	1553	1574	1543	1537	1457	1418	1347
15	914	927	933	966	977	1011	1022	1069	1120	1100	1114	1086	1075	1006	975	931
20	655	660	663	680	689	710	717	750	787	776	783	758	748	707	692	665
25	506	509	510	517	522	533	539	559	584	579	582	566	560	538	528	512
30	410	411	412	417	420	428	433	448	465	458	460	450	446	431	424	413
35	324	318	324	325	333	334	345	356	368	364	360	358	349	340	329	326
40	185	191	194	204	206	227	241	260	271	269	261	258	250	238	224	196
45	46.2	47.2	47.3	48.4	47.9	49.9	49.8	52.4	55.4	53.7	55.1	54.1	54.5	51.6	49.9	47.0
50	31.9	32.6	32.3	32.9	32.5	33.9	34.2	35.4	36.7	36.0	36.5	36.0	36.4	35.3	34.6	32.6
55	23.2	23.3	23.1	23.2	22.9	23.3	23.4	24.2	25.2	24.7	25.0	24.7	25.1	24.5	24.2	23.4
60	20.0	19.9	19.7	19.5	19.2	19.0	18.9	19.1	19.6	19.5	19.7	19.7	20.0	19.9	19.9	19.9
65	17.9	17.8	17.7	17.5	17.3	17.2	17.1	17.3	17.8	17.8	18.0	18.0	18.2	18.0	18.0	17.8
70	15.4	15.3	15.2	15.1	14.9	14.9	14.8	15.1	15.6	15.5	15.8	15.7	15.9	15.7	15.5	15.4
75	12.2	12.2	12.1	12.1	12.0	12.1	12.1	12.4	12.9	12.8	13.0	13.0	13.0	12.7	12.6	12.3
80	8.19	8.24	8.19	8.23	8.19	8.44	8.57	8.96	9.39	9.29	9.45	9.32	9.35	8.99	8.79	8.38
85	3.26	3.40	3.35	3.49	3.53	3.90	4.16	4.63	5.04	4.91	5.01	4.82	4.79	4.38	4.12	3.61
90	0.15	0.15	0.15	0.14	0.15	0.14	0.15	0.16	0.20	0.21	0.19	0.19	0.15	0.14	0.14	0.13

2.1.7 Electrical, Photometric and Chromaticity Measurements

Test date	2025-08-13	Test Ambient:	25.1 °C
Test Orientation	As intended	Stabilization Time (min)	90
Model Number	ND22-12-3RW 25°	2700K	

Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor
202507280014	120.0	60	0.095	11.30	0.991

Chromaticity Measurement - Sphere-Spectroradiometer Method:

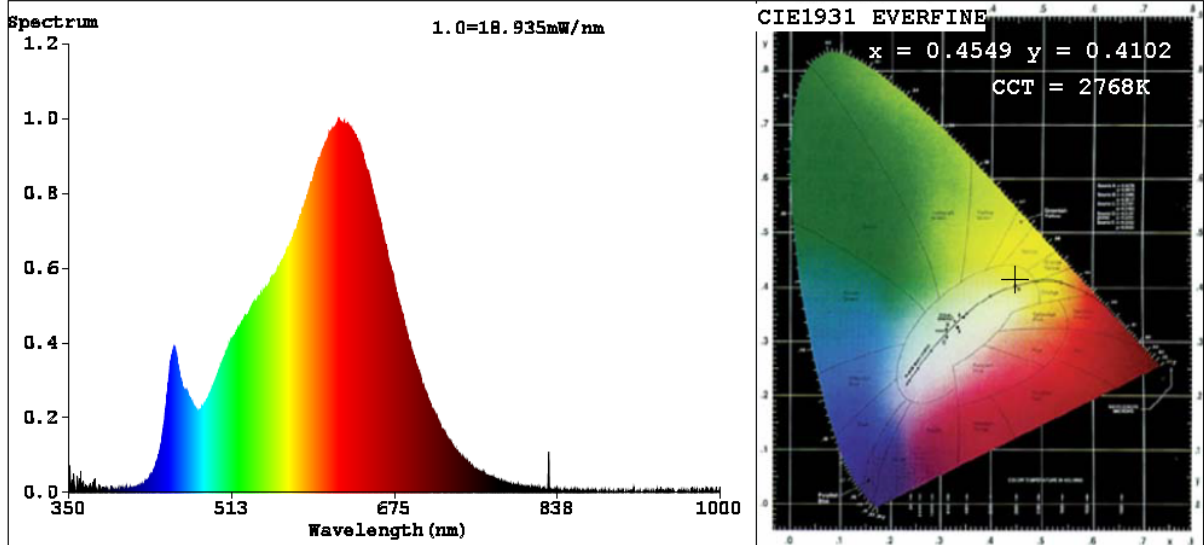
Parameter	Result	Special Color Rendering Indices			
Test Voltage (V)	120	R1	95	R9	61
Frequency (Hz)	60	R2	98	R10	95
CCT (K)	2768	R3	99	R11	96
Duv	0.0003	R4	94	R12	85
Chromaticity (x, y)	x=0.4549 y=0.4102	R5	95	R13	96
Chromaticity (u', v')	u'=0.2595 v'=0.5265	R6	97	R14	100
Color Rendering Index (CRI)	93.9	R7	91	R15	90
R9	61	R8	82	--	--
Rg	98				
Rf	92				
Rcs,h1%	-5				

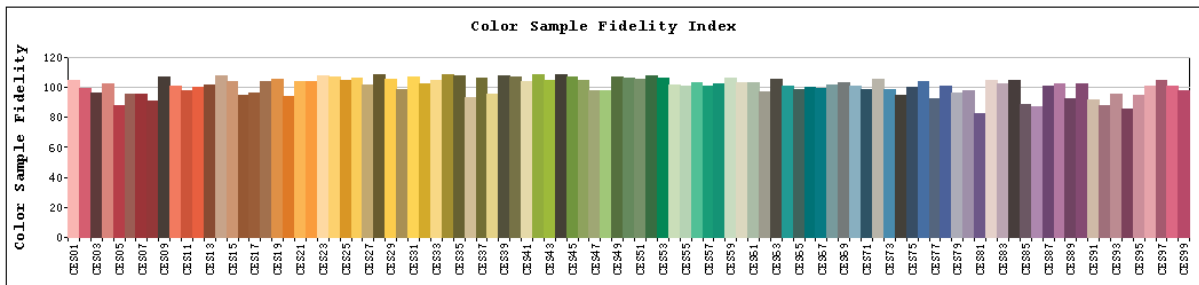
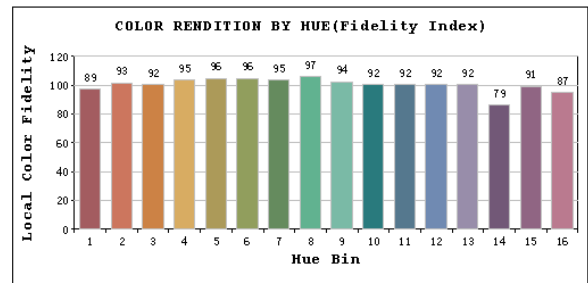
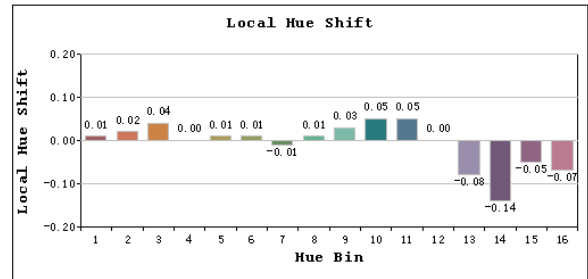
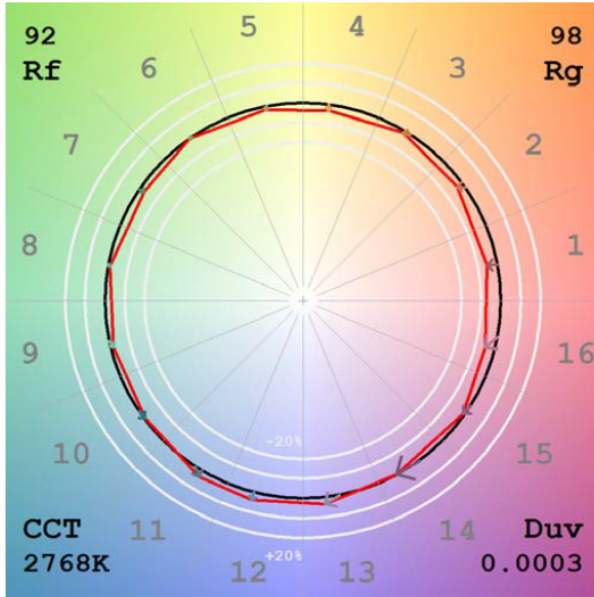
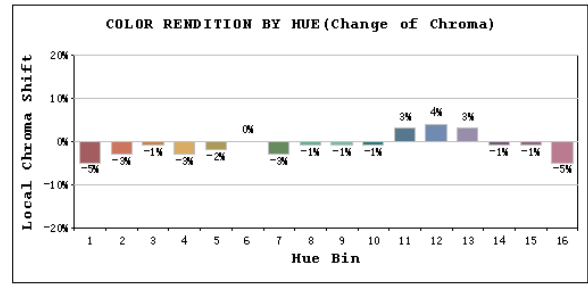
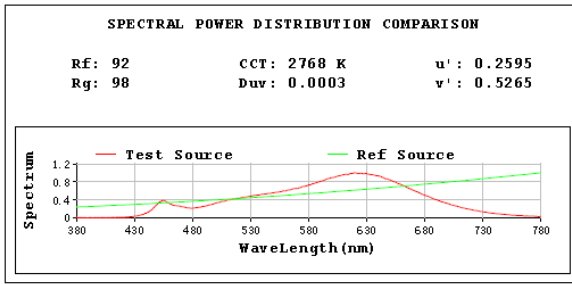
Photometric Measurement – Goniophotometer Method:

Parameter	Result
Test Voltage (V)	120.0
Frequency (Hz)	60
Total Luminous (lm)	896.5
Luminous Efficacy (lm/W)	79.33

Parameter	Result
Test Voltage (V)	277.0
Frequency (Hz)	60
Total Luminous (lm)	864.3
Luminous Efficacy (lm/W)	75.62

Spectral Power Distribution & Chromaticity Diagram





2.1.8 Electrical, Photometric and Chromaticity Measurements

Test date	2025-08-13	Test Ambient:	25.1 °C
Test Orientation	As intended	Stabilization Time (min)	90
Model Number	ND22-12-3RW 25°	3000K	

Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor
202507280014	120.0	60	0.094	11.20	0.991

Chromaticity Measurement - Sphere-Spectroradiometer Method:

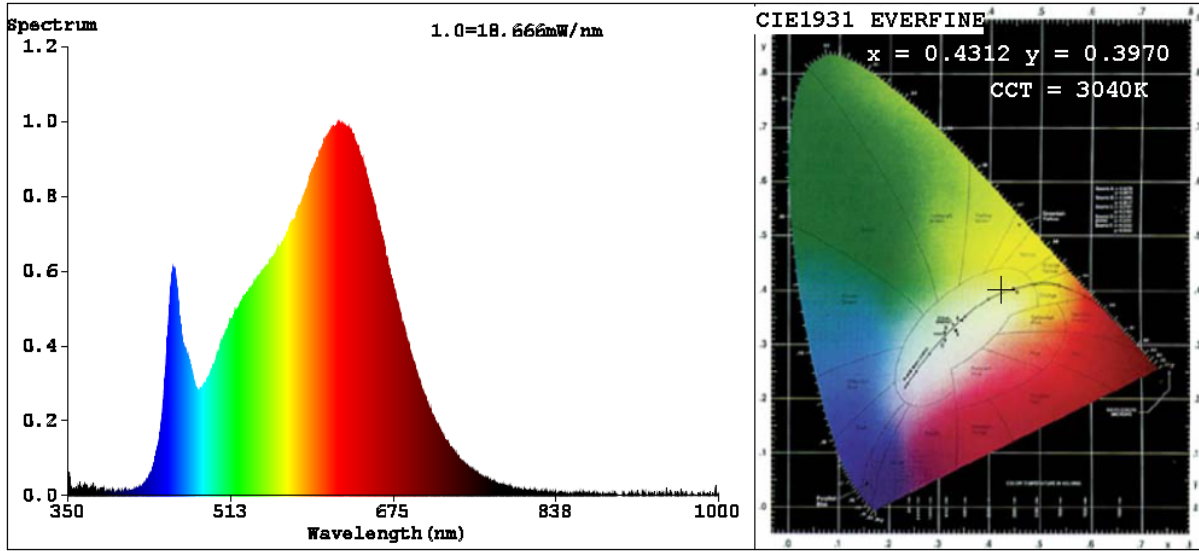
Parameter	Result	Special Color Rendering Indices			
Test Voltage (V)	120	R1	97	R9	69
Frequency (Hz)	60	R2	99	R10	98
CCT (K)	3040	R3	98	R11	96
Duv	-0.0020	R4	95	R12	82
Chromaticity (x, y)	x=0.4312 y=0.3970	R5	96	R13	98
Chromaticity (u', v')	u'=0.2499 v'=0.5177	R6	96	R14	100
Color Rendering Index (CRI)	94.7	R7	92	R15	93
R9	69	R8	85	--	--
Rg	100				
Rf	92				
Rcs,h1%	-4				

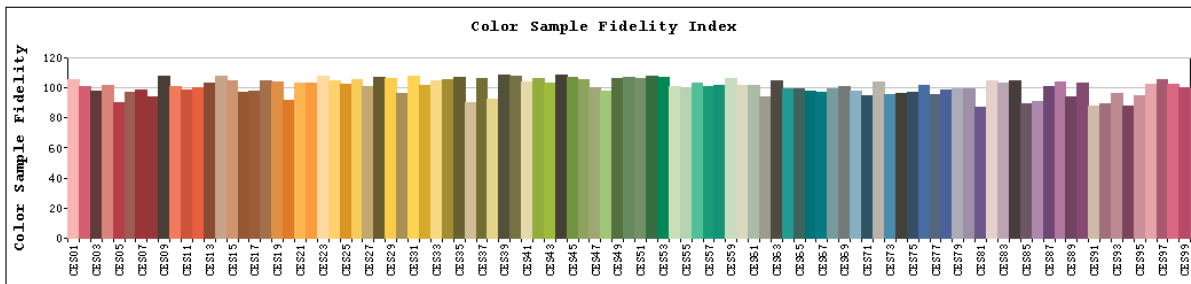
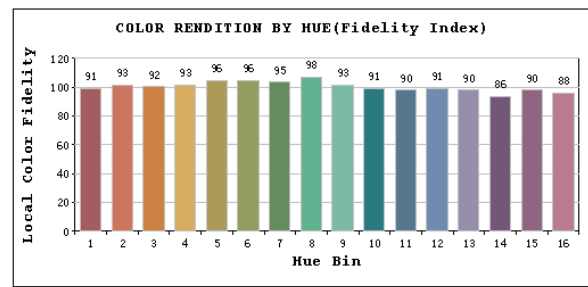
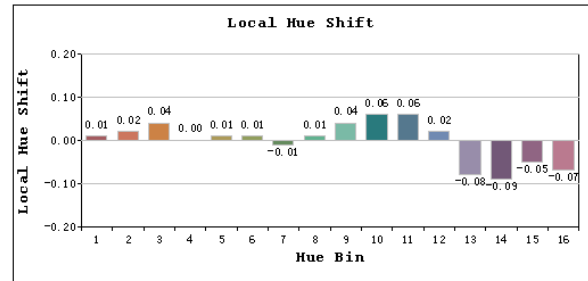
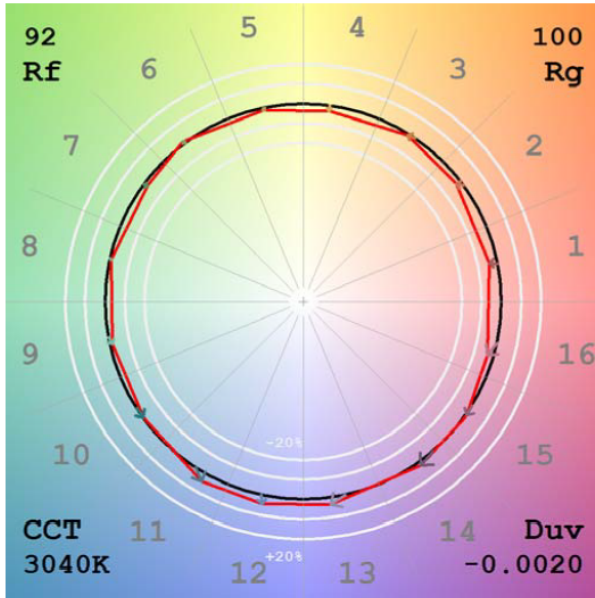
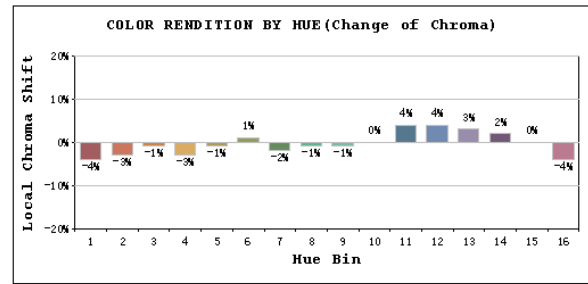
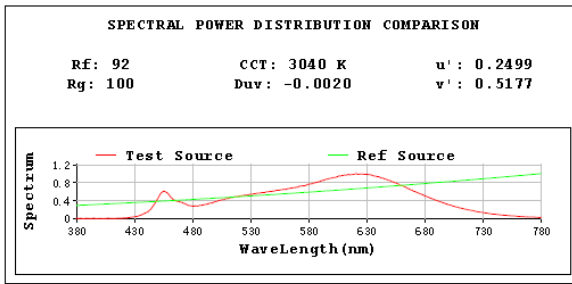
Photometric Measurement – Goniophotometer Method:

Parameter	Result
Test Voltage (V)	120.0
Frequency (Hz)	60
Total Luminous (lm)	945.9
Luminous Efficacy (lm/W)	84.45

Parameter	Result
Test Voltage (V)	277.0
Frequency (Hz)	60
Total Luminous (lm)	914.5
Luminous Efficacy (lm/W)	80.71

Spectral Power Distribution & Chromaticity Diagram





2.1.9 Electrical, Photometric and Chromaticity Measurements

Test date	2025-08-13	Test Ambient:	25.1 °C
Test Orientation	As intended	Stabilization Time (min)	90
Model Number	ND22-12-3RW 25°	3500K	

Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor
202507280014	120.0	60	0.092	11.00	0.991

Chromaticity Measurement - Sphere-Spectroradiometer Method:

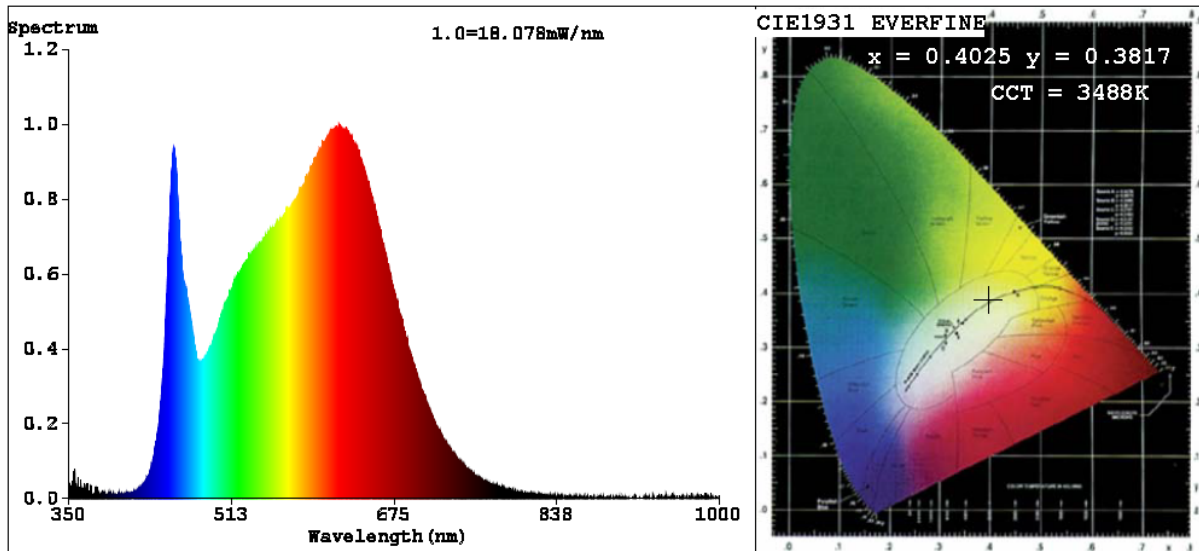
Parameter	Result	Special Color Rendering Indices			
Test Voltage (V)	120	R1	97	R9	77
Frequency (Hz)	60	R2	99	R10	98
CCT (K)	3488	R3	98	R11	96
Duv	-0.0034	R4	95	R12	78
Chromaticity (x, y)	x=0.4025 y=0.3817	R5	96	R13	99
Chromaticity (u', v')	u'=0.2376 v'=0.5070	R6	95	R14	99
Color Rendering Index (CRI)	95.4	R7	93	R15	96
R9	77	R8	89	--	--
Rg	100				
Rf	92				
Rcs,h1%	-3				

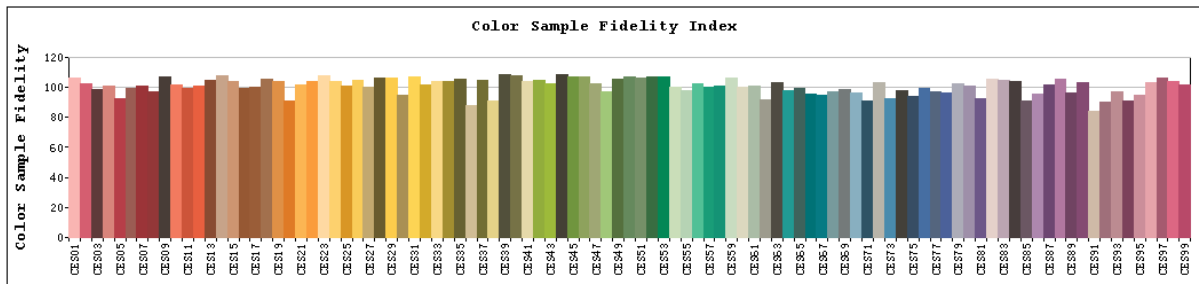
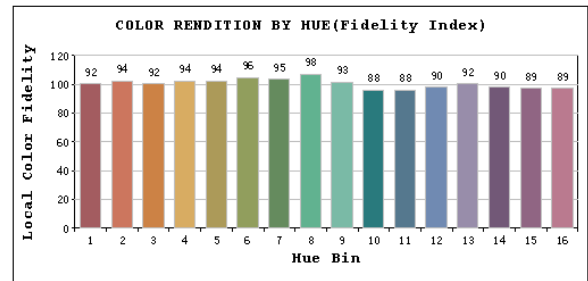
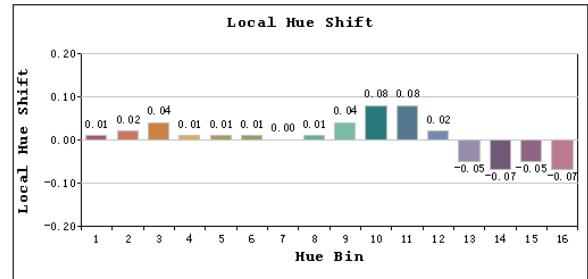
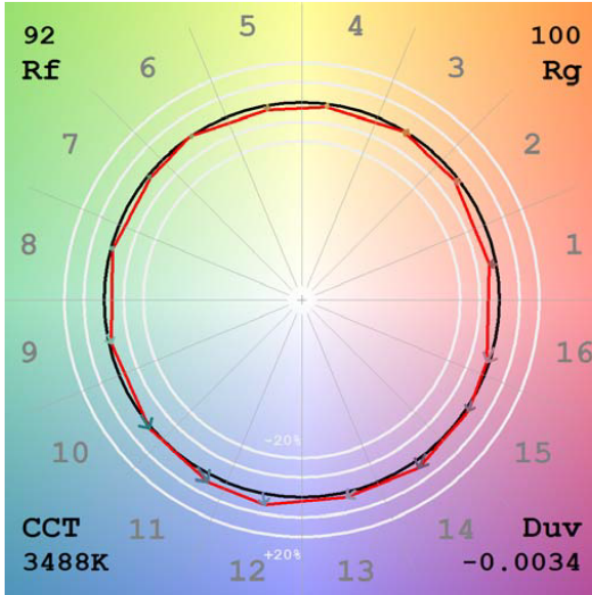
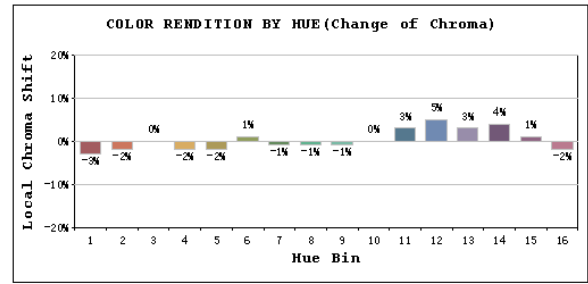
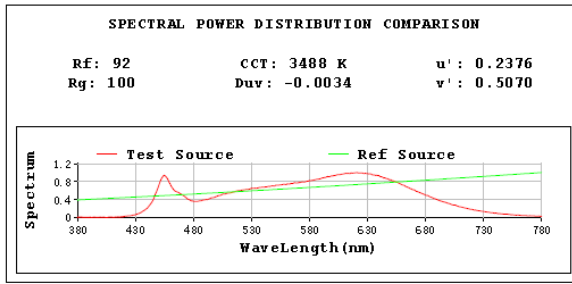
Photometric Measurement – Goniophotometer Method:

Parameter	Result
Test Voltage (V)	120.0
Frequency (Hz)	60
Total Luminous (lm)	1006.3
Luminous Efficacy (lm/W)	91.48

Parameter	Result
Test Voltage (V)	277.0
Frequency (Hz)	60
Total Luminous (lm)	971.7
Luminous Efficacy (lm/W)	87.15

Spectral Power Distribution & Chromaticity Diagram





2.1.10 Electrical, Photometric and Chromaticity Measurements

Test date	2025-08-13	Test Ambient:	25.1 °C
Test Orientation	As intended	Stabilization Time (min)	90
Model Number	ND22-12-3RW 25°	4000K	

Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor
202507280014	120.0	60	0.092	10.90	0.991

Chromaticity Measurement - Sphere-Spectroradiometer Method:

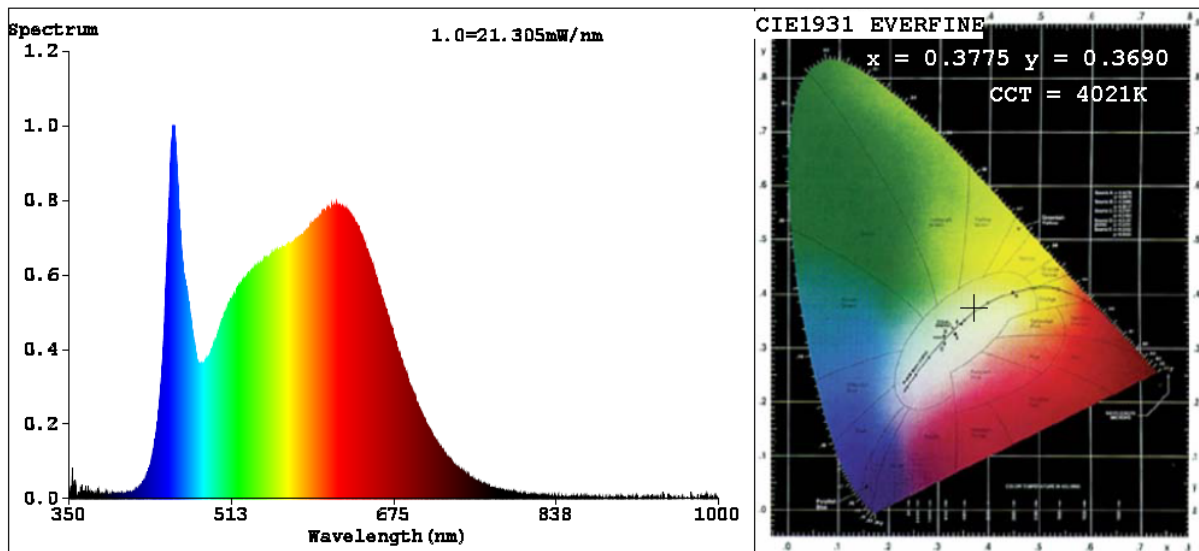
Parameter	Result	Special Color Rendering Indices			
Test Voltage (V)	120	R1	97	R9	79
Frequency (Hz)	60	R2	99	R10	97
CCT (K)	4021	R3	98	R11	95
Duv	-0.0028	R4	95	R12	73
Chromaticity (x, y)	x=0.3775 y=0.3690	R5	95	R13	99
Chromaticity (u', v')	u'=0.2263 v'=0.4977	R6	95	R14	99
Color Rendering Index (CRI)	95.4	R7	94	R15	96
R9	79	R8	90	--	--
Rg	100				
Rf	92				
Rcs,h1%	-4				

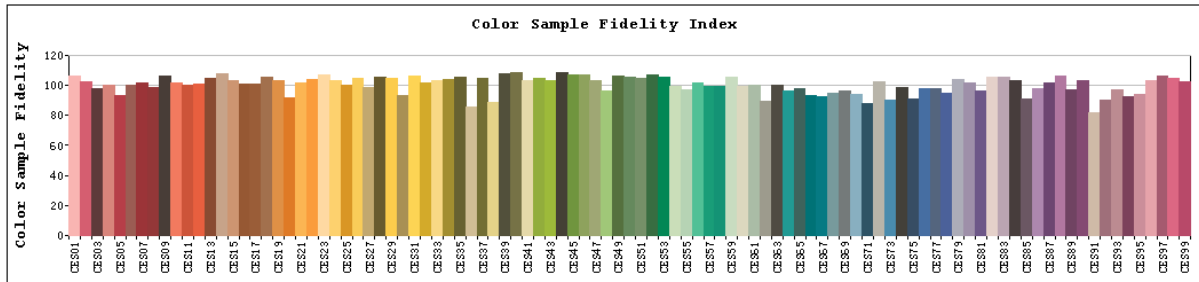
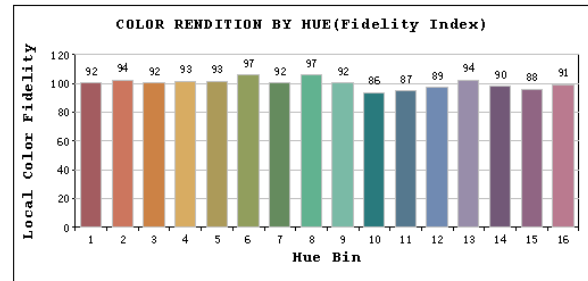
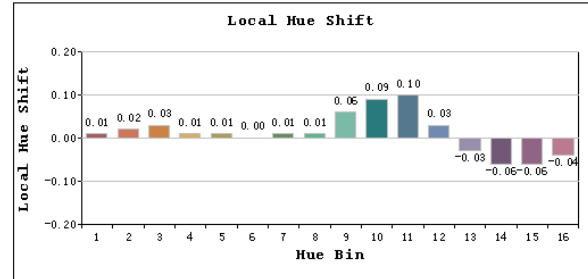
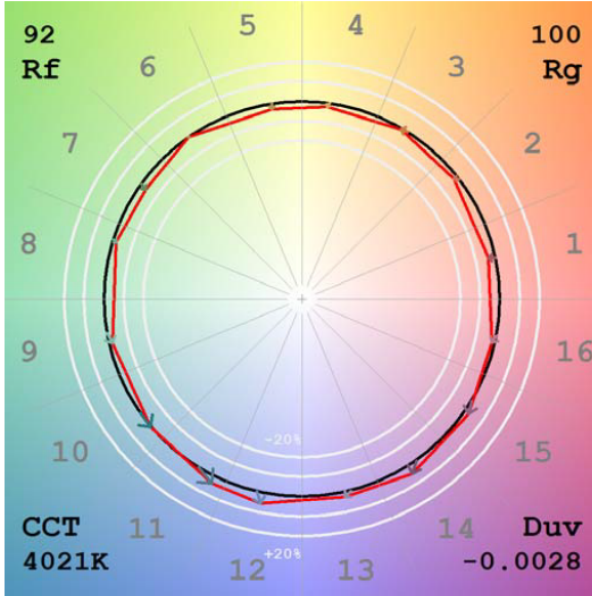
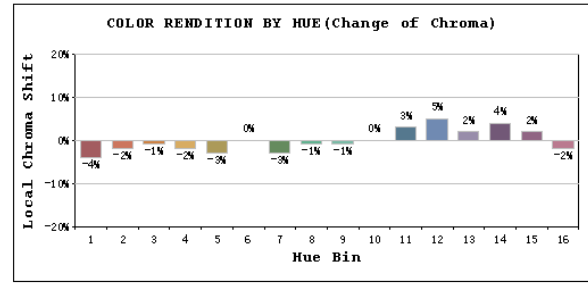
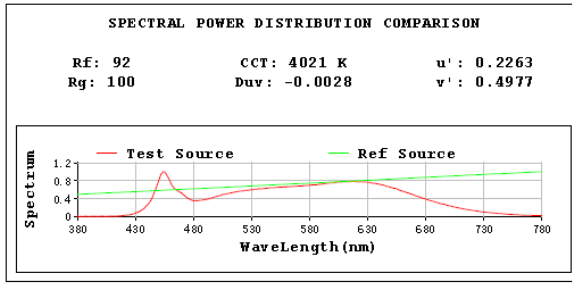
Photometric Measurement – Goniophotometer Method:

Parameter	Result
Test Voltage (V)	120.0
Frequency (Hz)	60
Total Luminous (lm)	1041.0
Luminous Efficacy (lm/W)	95.51

Parameter	Result
Test Voltage (V)	277.0
Frequency (Hz)	60
Total Luminous (lm)	1008.0
Luminous Efficacy (lm/W)	91.14

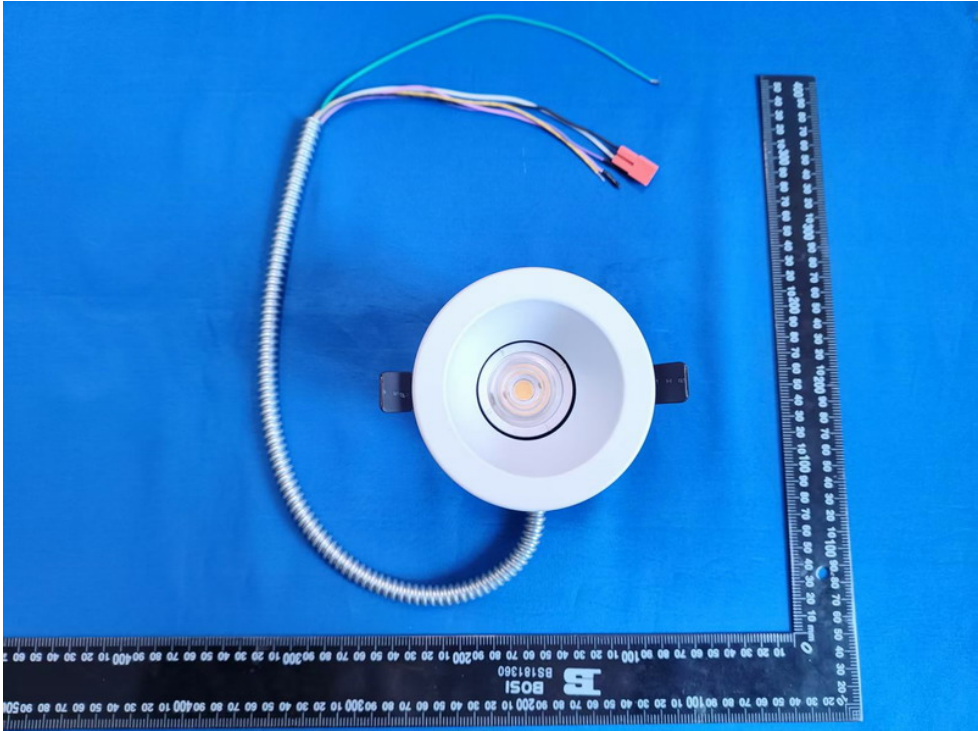
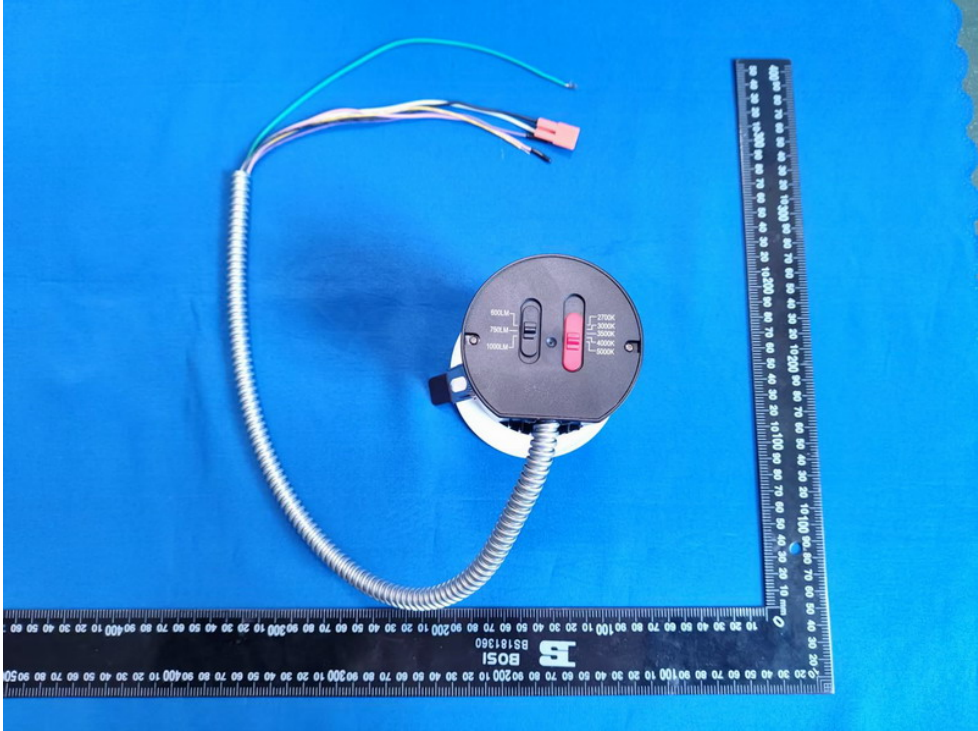
Spectral Power Distribution & Chromaticity Diagram





Sample No.	Wattage and CCT setting	Test Voltage(V)	Flux(lm)	P(W)	Luminous Efficacy lm/W
ND22-12-3RW 45°	7W-5000K setting	120	647.5	6.98	92.77
		277	624.8	7.08	88.25
	9W-5000K setting	120	799.4	8.86	90.22
		277	772.8	8.99	85.96
	12W-2700K setting	120	882.7	11.30	78.11
		277	849.1	11.43	74.29
	12W-3000K setting	120	928.6	11.20	82.91
		277	895.9	11.33	79.07
	12W-3500K setting	120	984.3	10.90	90.30
		277	951.1	11.06	85.99
	12W-4000K setting	120	1015.5	10.90	93.16
		277	981.5	11.06	88.74
	12W-5000K setting	120	1006.5	11.30	89.07
		277	972.7	11.46	84.88
ND22-12-3RW 25°	7W-5000K setting	120	662.2	6.98	94.87
		277	642.5	7.09	90.62
	9W-5000K setting	120	817.3	8.84	92.46
		277	789.4	8.95	88.20
	12W-2700K setting	120	896.5	11.30	79.33
		277	864.3	11.43	75.62
	12W-3000K setting	120	945.9	11.20	84.45
		277	914.5	11.33	80.71
	12W-3500K setting	120	1006.3	11.00	91.48
		277	971.7	11.15	87.15
	12W-4000K setting	120	1041.0	10.90	95.51
		277	1008.0	11.06	91.14
	12W-5000K setting	120	1029.0	11.30	91.06
		277	996.2	11.43	87.16

3. Product Photo



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