

Cooper Lighting Solutions Photometric Lab  
1121 Highway 74 South  
Peachtree City, GA 30269



Scaled data based on original data using  
LM-79-2019 Approved Method: Electrical and Photometric Measurements of Solid-  
State Lighting Products

Test Report Prepared for  
Cooper Lighting Solutions

Brand: NEO-RAY

Report Number: P1056112

Luminaire Tested: S124R3DR-H1020D950-X4F0-XX-UDD-FLL-B

Issue Date: 7/25/2025

**Test Information**

Test Method: LM-79-2019  
Report Number: P1056112  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2503-402-8)  
Test Lab: INNOVATION CENTER  
Issue Date: 7/25/2025  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: NEO-RAY  
Catalog Number: S124R3DR-H1020D950-X4F0-XX-UDD-FLL-B  
Description: DEFINE 4, BLACK 3-INCH REGRESSED DIRECT RECESSED HOUSING WITH FROSTED LENS  
HIGH PERFORMANCE LIGHT ENGINE  
Light Source: 5000K CCT, 90 CRI LEDS  
Ballast/Driver: -

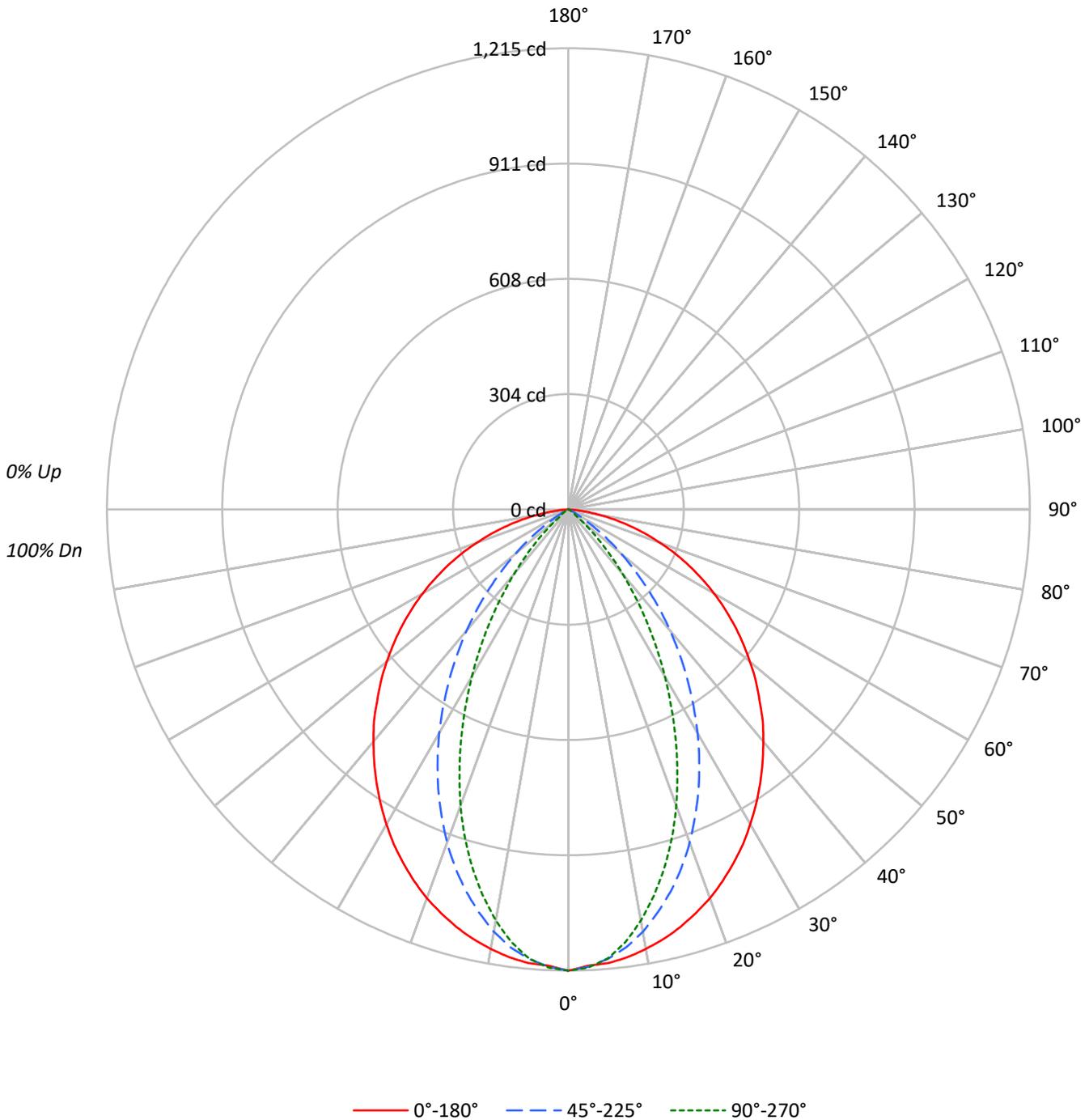
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 1698.5 lumens  
Efficiency: N/A  
Efficacy: 55.0 lumens/watt  
Spacing Criteria (0/90/45): 1.18 / 0.81 / 0.97  
Luminous Opening: Rectangular (W 0.31' x L: 3.9' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 30.9  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 24 FT

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### Luminous Intensity Polar Plot





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**COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:**

RF	20					20					20					20					20					
RC	80					70					50					30					10					0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0		
RCR																										
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100					100			
1	112	108	105	102	109	106	103	100	102	99	97	98	96	94	95	93	92	90					90			
2	104	98	93	88	102	96	91	87	93	89	85	90	86	83	87	84	82	80					80			
3	97	89	82	77	95	87	81	77	84	79	75	82	78	74	79	76	73	71					71			
4	90	81	74	68	88	80	73	68	77	72	67	75	70	66	73	69	65	64					64			
5	84	74	66	61	83	73	66	61	71	65	60	69	64	60	67	63	59	57					57			
6	79	68	60	55	77	67	60	55	65	59	54	64	58	54	62	57	54	52					52			
7	74	63	55	50	73	62	55	50	60	54	50	59	53	49	58	53	49	47					47			
8	70	58	51	46	68	57	50	46	56	50	45	55	49	45	54	49	45	43					43			
9	66	54	47	42	64	53	47	42	52	46	42	51	46	42	50	45	41	40					40			
10	62	50	43	39	61	50	43	39	49	43	39	48	42	39	47	42	38	37					37			

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	10744	10744	10744
5°	10648	10553	10542
10°	10557	10139	9873
15°	10426	9531	8942
20°	10257	8789	7813
25°	10030	7915	6520
30°	9779	6945	5181
35°	9502	5890	3858
40°	9213	4799	2571
45°	8894	3665	1415
50°	8587	2507	393
55°	8245	1360	257
60°	7837	421	147
65°	7328	274	75
70°	6623	124	31
75°	5698	41	0
80°	4307	0	0
85°	1816	0	0

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 8894 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	112.1	6.6
10°-20°	294.3	17.3
20°-30°	380.3	22.4
30°-40°	363.5	21.4
40°-50°	271.8	16.0
50°-60°	161.8	9.5
60°-70°	82.1	4.8
70°-80°	28.6	1.7
80°-90°	3.9	0.2
90°-100°	0.0	0.0
100°-110°	0.0	0.0
110°-120°	0.0	0.0
120°-130°	0.0	0.0
130°-140°	0.0	0.0
140°-150°	0.0	0.0
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	786.7	46.3
0°-40°	1150.2	67.7
0°-60°	1583.9	93.3
0°-90°	1698.5	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1698.5	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1215	1215	1215	1215	1215	
5°	1200	1209	1189	1183	1188	114
15°	1139	1115	1041	992	977	321
25°	1028	957	811	704	668	473
35°	880	759	546	406	357	551
45°	711	546	293	156	113	550
55°	535	332	88	20	17	478
65°	350	135	13	5	4	346
75°	167	18	1	1	0	177
85°	18	0	0	0	0	30
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1215.2	1215.2	1215.2	1215.2	1215.2
2.5°	1203.3	1217.6	1205.7	1206.9	1208.1
5°	1199.7	1209.3	1189.0	1183.1	1187.8
7.5°	1190.2	1193.8	1164.0	1148.5	1149.7
10°	1175.9	1172.3	1129.4	1103.2	1099.7
12.5°	1159.2	1147.3	1087.7	1049.6	1041.3
15°	1139.0	1115.1	1041.3	992.4	976.9
17.5°	1115.1	1080.6	990.1	925.7	906.7
20°	1090.1	1042.5	934.1	854.2	830.4
22.5°	1060.3	999.6	873.3	779.2	749.4
25°	1028.2	956.7	811.3	704.1	668.4
27.5°	994.8	910.2	745.8	627.9	586.2
30°	957.9	861.4	680.3	550.4	507.5
32.5°	919.8	811.3	612.4	478.9	431.3
35°	880.4	758.9	545.7	406.3	357.4
37.5°	839.9	706.5	481.3	337.2	287.1
40°	798.2	652.9	415.8	271.6	222.8
42.5°	757.7	599.3	353.8	209.7	164.4
45°	711.3	545.7	293.1	156.1	113.2
47.5°	669.6	493.2	234.7	106.0	66.7
50°	624.3	437.2	182.3	62.0	28.6
52.5°	579.0	384.8	133.4	27.4	21.4
55°	534.9	332.4	88.2	20.3	16.7
57.5°	488.5	280.0	47.7	15.5	11.9
60°	443.2	228.7	23.8	11.9	8.3
62.5°	396.7	179.9	19.1	7.1	4.8
65°	350.3	134.6	13.1	4.8	3.6
67.5°	303.8	91.7	8.3	2.4	1.2
70°	256.2	56.0	4.8	1.2	1.2
72.5°	210.9	28.6	2.4	1.2	1.2
75°	166.8	17.9	1.2	1.2	0.0
77.5°	123.9	9.5	1.2	1.2	0.0
80°	84.6	3.6	0.0	0.0	0.0
82.5°	48.8	1.2	0.0	0.0	0.0
85°	17.9	0.0	0.0	0.0	0.0
87.5°	0.0	0.0	0.0	0.0	0.0
90°	0.0	0.0	0.0	0.0	0.0

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**CIE UGR TABLE:**

Reflectances:											
Ceiling		0.7	0.7	0.5	0.5	0.3	0.7	0.7	0.5	0.5	0.3
Wall		0.5	0.3	0.5	0.3	0.3	0.5	0.3	0.5	0.3	0.3
Reference plane		0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Room dimensions		Viewed crosswise					Viewed endwise				
X=2H	Y=2H	18.70	20.03	19.07	20.35	20.66	0.00	0.00	0.00	0.00	0.00
	3H	20.25	21.42	20.63	21.75	22.12	0.00	0.00	0.00	0.00	0.00
	4H	20.84	21.94	21.24	22.29	22.67	0.00	0.00	0.00	0.00	0.00
	6H	21.26	22.26	21.67	22.63	23.03	0.00	0.00	0.00	0.00	0.00
	8H	21.36	22.31	21.79	22.70	23.11	0.00	0.00	0.00	0.00	0.00
	12H	21.38	22.29	21.81	22.67	23.10	0.00	0.00	0.00	0.00	0.00
4H	2H	18.48	19.58	18.89	19.93	20.31	0.00	0.00	0.00	0.00	0.18
	3H	20.05	20.94	20.46	21.34	21.75	0.00	0.00	0.00	0.00	0.02
	4H	20.63	21.43	21.06	21.85	22.29	0.00	0.00	0.00	0.00	0.00
	6H	21.09	21.78	21.55	22.22	22.69	0.00	0.00	0.00	0.00	0.00
	8H	21.21	21.85	21.68	22.30	22.77	0.00	0.00	0.00	0.00	0.00
	12H	21.25	21.81	21.74	22.30	22.77	0.00	0.00	0.00	0.00	0.00
8H	4H	20.49	21.13	20.96	21.58	22.05	0.00	0.65	0.47	1.09	1.56
	6H	20.93	21.46	21.44	21.95	22.43	0.00	0.44	0.42	0.93	1.41
	8H	21.05	21.52	21.57	22.03	22.53	0.00	0.32	0.37	0.84	1.33
	12H	21.10	21.51	21.61	22.01	22.58	0.00	0.22	0.32	0.72	1.29
12H	4H	20.45	21.01	20.93	21.50	21.97	0.42	0.98	0.90	1.46	1.94
	6H	20.87	21.34	21.39	21.86	22.35	0.31	0.78	0.83	1.29	1.78
	8H	21.01	21.42	21.52	21.91	22.49	0.26	0.68	0.78	1.17	1.74