

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



Scaled data based on original data using  
LM-79-2024 Approved Method: Electrical and Photometric Measurements of Solid-  
State Lighting Products

Test Report Prepared for  
Cooper Lighting Solutions

Brand: NEO-RAY

Report Number: P1056089

Luminaire Tested: S124R3DR-H1020D830-X4F0-XX-UDD-F-S

Issue Date: 7/25/2025

**Test Information**

Test Method: LM-79-2024  
Report Number: P1056089  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2503-402-9)  
Test Lab: INNOVATION CENTER  
Issue Date: 7/25/2025  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: NEO-RAY  
Catalog Number: S124R3DR-H1020D830-X4F0-XX-UDD-F-S  
Description: DEFINE 4, SILVER 3-INCH REGRESSED DIRECT RECESSED HOUSING WITH FROSTED LENS  
HIGH PERFORMANCE LIGHT ENGINE  
Light Source: 3000K CCT, 80 CRI LEDS  
Ballast/Driver: -

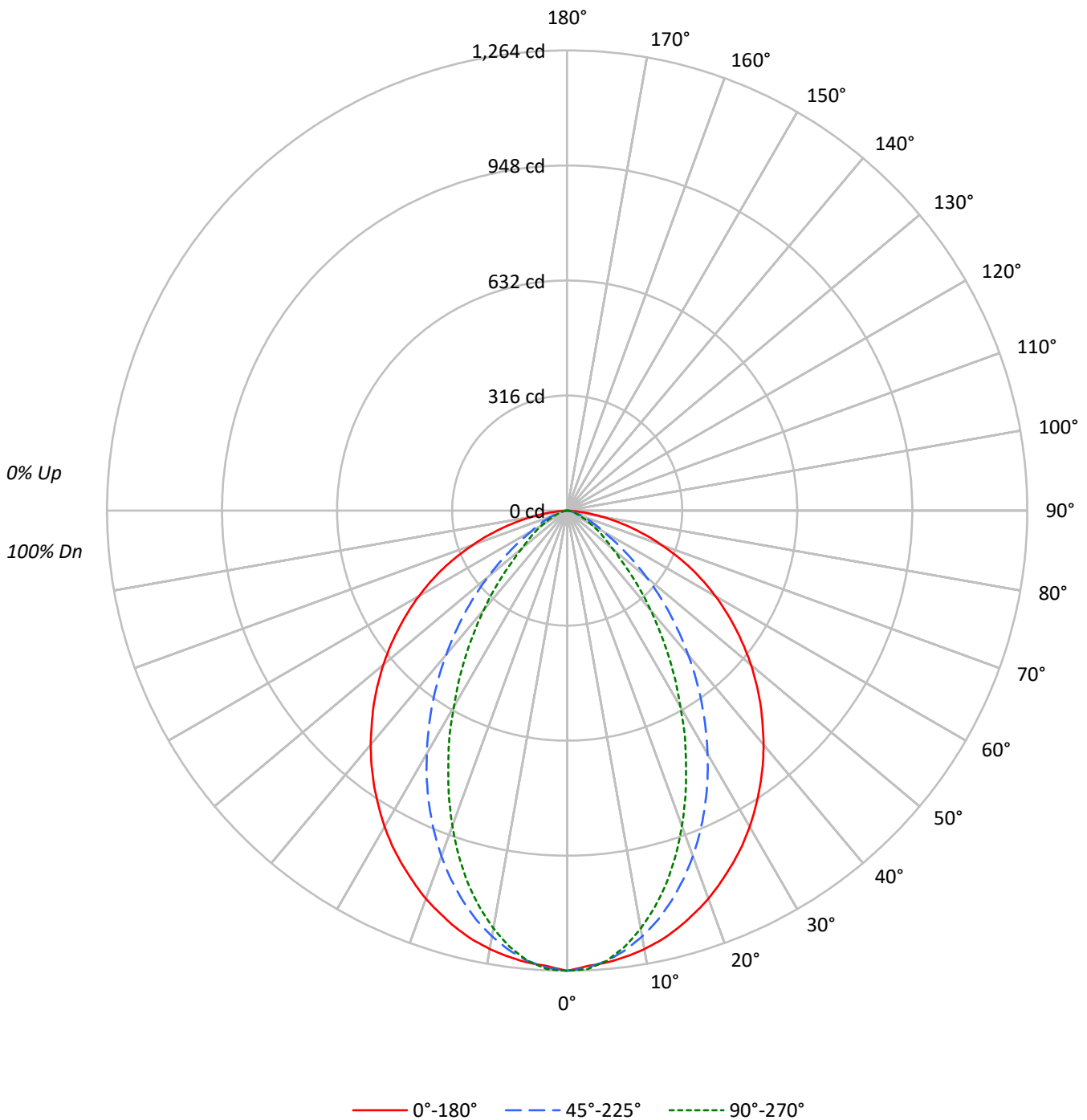
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 2044.2 lumens  
Efficiency: N/A  
Efficacy: 66.2 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 0.87 / 1.03  
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 (Ain): 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	0
RCR																		
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100
1	111	107	104	101	108	105	102	99	101	98	96	97	95	93	94	92	90	89
2	103	96	91	86	101	94	89	85	91	87	83	88	84	81	85	82	79	78
3	95	87	80	74	93	85	79	74	82	77	73	80	75	71	77	73	70	68
4	89	78	71	65	86	77	70	65	75	69	64	73	67	63	71	66	62	60
5	82	71	64	58	80	70	63	58	68	62	57	66	61	56	65	60	56	54
6	77	65	57	52	75	64	57	52	63	56	51	61	55	51	60	54	50	48
7	72	60	52	47	70	59	52	47	58	51	46	56	50	46	55	50	46	44
8	67	55	48	42	66	55	47	42	53	47	42	52	46	42	51	46	42	40
9	63	51	44	39	62	51	44	39	50	43	39	49	43	38	48	42	38	37
10	60	48	41	36	59	47	40	36	46	40	36	45	40	35	45	39	35	34

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

	0°	45°	90°
0°	11177	11177	11177
5°	11063	11021	11021
10°	10980	10663	10462
15°	10849	10149	9675
20°	10676	9502	8672
25°	10461	8739	7533
30°	10239	7871	6345
35°	9973	6950	5222
40°	9687	5964	4117
45°	9390	4960	3076
50°	9067	3902	2250
55°	8709	2886	1796
60°	8325	1998	1374
65°	7831	1552	1010
70°	7091	1096	791
75°	6193	765	605
80°	4974	601	540
85°	2749	477	477

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 9390 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	117.3	5.7
10°-20°	313.3	15.3
20°-30°	417.9	20.4
30°-40°	420.8	20.6
40°-50°	345.1	16.9
50°-60°	235.9	11.5
60°-70°	131.8	6.4
70°-80°	52.3	2.6
80°-90°	9.9	0.5
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°	848.5	41.5
0°-40°	1269.2	62.1
0°-60°	1850.2	90.5
0°-90°	2044.2	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2044.2	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1264	1264	1264	1264	1264	
5°	1246	1261	1242	1236	1242	118
15°	1185	1172	1109	1070	1057	334
25°	1072	1019	896	805	772	494
35°	924	826	644	522	484	578
45°	751	613	397	279	246	579
55°	565	397	187	125	116	505
65°	374	188	74	53	48	370
75°	181	49	22	19	18	194
85°	27	5	5	5	5	38
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1264.2	1264.2	1264.2	1264.2	1264.2
2.5°	1252.4	1267.7	1257.1	1258.3	1260.7
5°	1246.5	1260.7	1241.8	1235.9	1241.8
7.5°	1235.9	1246.5	1218.3	1206.5	1208.9
10°	1223.0	1226.5	1187.7	1167.7	1165.3
12.5°	1206.5	1201.8	1151.2	1121.8	1114.7
15°	1185.3	1172.4	1108.8	1070.0	1057.0
17.5°	1160.6	1138.2	1061.7	1011.1	992.3
20°	1134.7	1101.8	1009.9	945.2	921.7
22.5°	1104.1	1062.9	954.6	875.8	848.7
25°	1072.3	1019.4	895.8	805.1	772.2
27.5°	1039.4	974.6	834.6	733.3	700.4
30°	1002.9	926.4	771.0	661.5	621.5
32.5°	964.0	876.9	707.4	590.9	553.2
35°	924.0	826.3	643.9	521.5	483.8
37.5°	882.8	774.5	580.3	455.5	417.9
40°	839.3	721.6	516.7	393.1	356.7
42.5°	794.5	667.4	455.5	334.3	300.2
45°	751.0	613.3	396.7	279.0	246.0
47.5°	705.1	559.1	339.0	227.2	198.9
50°	659.2	505.0	283.7	182.4	163.6
52.5°	612.1	450.8	233.1	149.5	136.5
55°	565.0	396.7	187.2	124.8	116.5
57.5°	517.9	342.5	144.8	105.9	96.5
60°	470.8	289.6	113.0	85.9	77.7
62.5°	422.6	236.6	93.0	68.3	61.2
65°	374.3	188.3	74.2	53.0	48.3
67.5°	326.1	143.6	56.5	41.2	37.7
70°	274.3	102.4	42.4	31.8	30.6
72.5°	229.5	69.4	30.6	24.7	23.5
75°	181.3	49.4	22.4	18.8	17.7
77.5°	140.1	31.8	16.5	15.3	14.1
80°	97.7	17.7	11.8	10.6	10.6
82.5°	60.0	9.4	8.2	7.1	7.1
85°	27.1	4.7	4.7	4.7	4.7
87.5°	4.7	2.4	2.4	2.4	2.4
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	19.11	20.52	19.48	20.83	21.14	10.20	11.61	10.56	11.92	12.23
	3H	20.70	21.95	21.08	22.28	22.64	10.79	12.04	11.17	12.37	12.74
	4H	21.29	22.46	21.69	22.81	23.19	10.95	12.12	11.35	12.47	12.85
	6H	21.72	22.80	22.14	23.17	23.56	11.06	12.13	11.47	12.50	12.89
	8H	21.84	22.86	22.27	23.25	23.65	11.08	12.10	11.50	12.49	12.89
	12H	21.88	22.85	22.31	23.24	23.67	11.08	12.06	11.52	12.44	12.87
4H	2H	18.96	20.13	19.37	20.48	20.86	10.78	11.95	11.18	12.30	12.68
	3H	20.61	21.57	21.02	21.97	22.38	11.50	12.45	11.91	12.86	13.26
	4H	21.22	22.08	21.65	22.49	22.94	11.70	12.56	12.13	12.98	13.42
	6H	21.71	22.45	22.17	22.90	23.36	11.87	12.61	12.33	13.05	13.52
	8H	21.85	22.54	22.32	22.99	23.46	11.90	12.59	12.37	13.04	13.51
	12H	21.93	22.54	22.41	23.02	23.49	11.92	12.54	12.41	13.02	13.49
8H	4H	21.11	21.80	21.58	22.25	22.72	11.97	12.66	12.44	13.11	13.58
	6H	21.59	22.16	22.09	22.65	23.13	12.18	12.74	12.68	13.24	13.72
	8H	21.74	22.24	22.26	22.76	23.25	12.23	12.74	12.75	13.25	13.75
	12H	21.83	22.28	22.34	22.77	23.34	12.29	12.74	12.81	13.24	13.80
12H	4H	21.07	21.69	21.56	22.17	22.64	12.00	12.61	12.48	13.09	13.57
	6H	21.54	22.05	22.06	22.56	23.05	12.20	12.71	12.72	13.23	13.72
	8H	21.70	22.15	22.22	22.64	23.21	12.30	12.75	12.81	13.24	13.81