

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: P1056092

Luminaire Tested: S124R3DRP-H1020D835-X4F0-XX-UDD-F-S

Issue Date: 7/25/2025

**Test Information**

Test Method: LM-79-2024  
Report Number: P1056092  
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: S124R3DRP-H1020D835-X4F0-XX-UDD-F-S  
Description: DEFINE 4, SILVER 3-INCH REGRESSED DIRECT RECESSED HOUSING WITH FROSTED LENS  
HIGH PERFORMANCE LIGHT ENGINE  
Light Source: 3500K CCT, 80 CRI LEDS  
Ballast/Driver: -

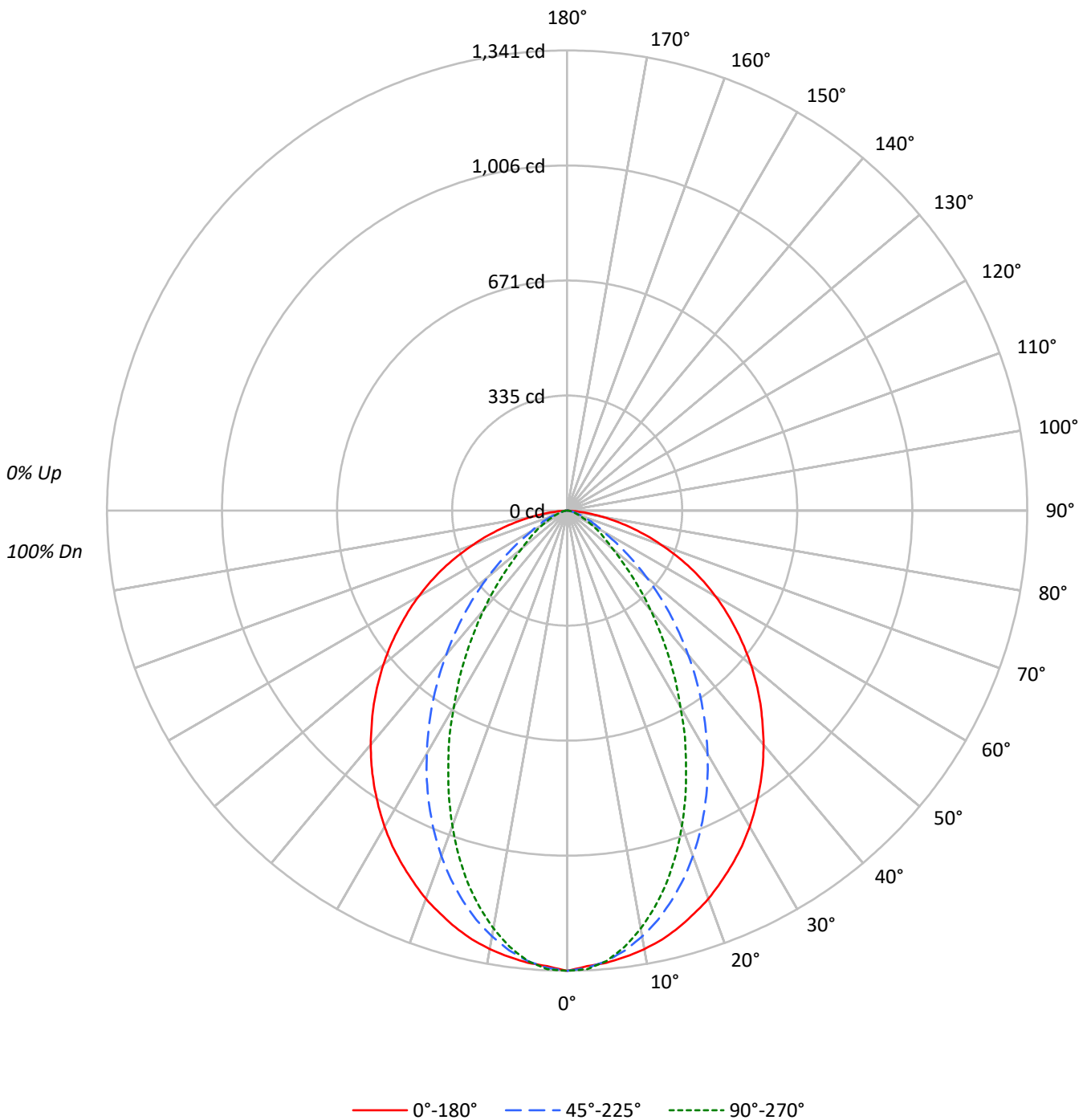
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 2168.8 lumens  
Efficiency: N/A  
Efficacy: 70.2 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 (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	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°	11859	11859	11859
5°	11737	11693	11693
10°	11650	11313	11100
15°	11511	10768	10265
20°	11327	10082	9200
25°	11099	9272	7992
30°	10863	8351	6732
35°	10581	7373	5540
40°	10277	6327	4367
45°	9963	5263	3263
50°	9620	4140	2388
55°	9239	3061	1905
60°	8833	2120	1457
65°	8308	1646	1071
70°	7522	1163	840
75°	6569	810	639
80°	5280	636	570
85°	2911	507	507

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 9963 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	124.4	5.7
10°-20°	332.4	15.3
20°-30°	443.4	20.4
30°-40°	446.4	20.6
40°-50°	366.1	16.9
50°-60°	250.3	11.5
60°-70°	139.8	6.4
70°-80°	55.4	2.6
80°-90°	10.5	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°	900.2	41.5
0°-40°	1346.6	62.1
0°-60°	1963.0	90.5
0°-90°	2168.8	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2168.8	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1341	1341	1341	1341	1341	
5°	1322	1338	1318	1311	1318	125
15°	1258	1244	1176	1135	1122	354
25°	1138	1082	950	854	819	524
35°	980	877	683	553	513	613
45°	797	651	421	296	261	614
55°	599	421	199	132	124	536
65°	397	200	79	56	51	392
75°	192	52	24	20	19	206
85°	29	5	5	5	5	41
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1341.3	1341.3	1341.3	1341.3	1341.3
2.5°	1328.8	1345.0	1333.8	1335.0	1337.5
5°	1322.5	1337.5	1317.5	1311.3	1317.5
7.5°	1311.3	1322.5	1292.6	1280.1	1282.6
10°	1297.6	1301.3	1260.1	1238.9	1236.4
12.5°	1280.1	1275.1	1221.4	1190.1	1182.7
15°	1257.6	1243.9	1176.4	1135.2	1121.5
17.5°	1231.4	1207.6	1126.5	1072.8	1052.8
20°	1203.9	1168.9	1071.5	1002.8	977.8
22.5°	1171.4	1127.7	1012.8	929.1	900.4
25°	1137.7	1081.5	950.4	854.2	819.2
27.5°	1102.7	1034.0	885.4	778.0	743.1
30°	1064.0	982.8	818.0	701.9	659.4
32.5°	1022.8	930.4	750.6	626.9	587.0
35°	980.3	876.7	683.1	553.2	513.3
37.5°	936.6	821.7	615.7	483.3	443.3
40°	890.4	765.5	548.2	417.1	378.4
42.5°	843.0	708.1	483.3	354.7	318.5
45°	796.8	650.6	420.9	296.0	261.0
47.5°	748.1	593.2	359.7	241.0	211.1
50°	699.4	535.8	301.0	193.6	173.6
52.5°	649.4	478.3	247.3	158.6	144.9
55°	599.4	420.9	198.6	132.4	123.6
57.5°	549.5	363.4	153.6	112.4	102.4
60°	499.5	307.2	119.9	91.2	82.4
62.5°	448.3	251.0	98.7	72.4	64.9
65°	397.1	199.8	78.7	56.2	51.2
67.5°	345.9	152.4	59.9	43.7	40.0
70°	291.0	108.6	45.0	33.7	32.5
72.5°	243.5	73.7	32.5	26.2	25.0
75°	192.3	52.5	23.7	20.0	18.7
77.5°	148.6	33.7	17.5	16.2	15.0
80°	103.7	18.7	12.5	11.2	11.2
82.5°	63.7	10.0	8.7	7.5	7.5
85°	28.7	5.0	5.0	5.0	5.0
87.5°	5.0	2.5	2.5	2.5	2.5
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	19.32	20.72	19.68	21.04	21.35	10.41	11.81	10.77	12.13	12.44
	3H	20.90	22.15	21.28	22.48	22.85	11.00	12.25	11.38	12.58	12.94
	4H	21.50	22.67	21.90	23.02	23.40	11.16	12.32	11.56	12.67	13.06
	6H	21.93	23.00	22.34	23.37	23.77	11.26	12.34	11.68	12.71	13.10
	8H	22.04	23.06	22.47	23.45	23.86	11.28	12.30	11.71	12.69	13.10
	12H	22.08	23.06	22.52	23.44	23.87	11.29	12.27	11.72	12.65	13.08
4H	2H	19.17	20.34	19.57	20.69	21.07	10.99	12.16	11.39	12.51	12.89
	3H	20.82	21.78	21.23	22.18	22.58	11.70	12.66	12.11	13.06	13.47
	4H	21.42	22.28	21.86	22.70	23.14	11.91	12.76	12.34	13.18	13.62
	6H	21.92	22.66	22.38	23.10	23.57	12.07	12.81	12.53	13.26	13.72
	8H	22.06	22.75	22.53	23.20	23.67	12.10	12.80	12.57	13.24	13.71
	12H	22.13	22.75	22.62	23.23	23.70	12.13	12.74	12.62	13.23	13.70
8H	4H	21.32	22.01	21.78	22.45	22.92	12.18	12.87	12.64	13.32	13.79
	6H	21.80	22.36	22.30	22.86	23.34	12.38	12.95	12.88	13.44	13.92
	8H	21.94	22.45	22.46	22.96	23.45	12.44	12.95	12.96	13.46	13.95
	12H	22.03	22.48	22.55	22.98	23.54	12.50	12.95	13.01	13.44	14.01
12H	4H	21.28	21.89	21.76	22.37	22.85	12.21	12.82	12.69	13.30	13.77
	6H	21.74	22.25	22.26	22.77	23.26	12.41	12.92	12.93	13.43	13.92
	8H	21.91	22.36	22.42	22.85	23.42	12.50	12.95	13.01	13.44	14.01