

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: P1056109

Luminaire Tested: S124R3DR-H1020D940-X4F0-XX-UDD-FLL-B

Issue Date: 7/25/2025

**Test Information**

Test Method: LM-79-2019  
Report Number: P1056109  
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-H1020D940-X4F0-XX-UDD-FLL-B  
Description: DEFINE 4, BLACK 3-INCH REGRESSED DIRECT RECESSED HOUSING WITH FROSTED LENS  
HIGH PERFORMANCE LIGHT ENGINE  
Light Source: 4000K CCT, 90 CRI LEDS  
Ballast/Driver: -

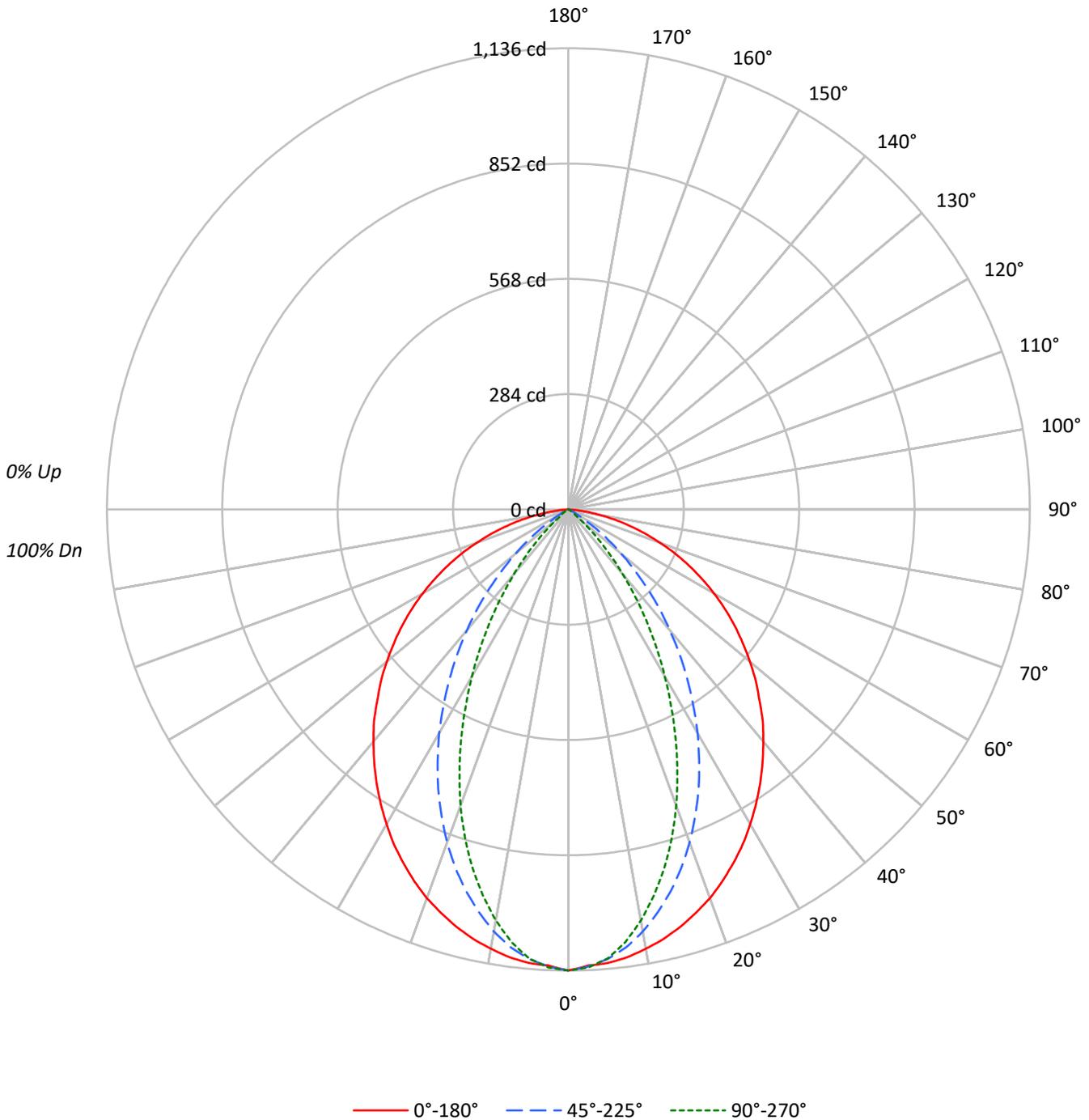
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 1587.6 lumens  
Efficiency: N/A  
Efficacy: 51.4 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 (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	112	108	105	102	109	106	103	100	102	99	97	98	96	94	95	93	92	90
2	104	98	93	88	102	96	91	87	93	89	85	90	86	83	87	84	82	80
3	97	89	82	77	95	87	81	77	84	79	75	82	78	74	79	76	73	71
4	90	81	74	68	88	80	73	68	77	72	67	75	70	66	73	69	65	64
5	84	74	66	61	83	73	66	61	71	65	60	69	64	60	67	63	59	57
6	79	68	60	55	77	67	60	55	65	59	54	64	58	54	62	57	54	52
7	74	63	55	50	73	62	55	50	60	54	50	59	53	49	58	53	49	47
8	70	58	51	46	68	57	50	46	56	50	45	55	49	45	54	49	45	43
9	66	54	47	42	64	53	47	42	52	46	42	51	46	42	50	45	41	40
10	62	50	43	39	61	50	43	39	49	43	39	48	42	39	47	42	38	37

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

	0°	45°	90°
0°	10043	10043	10043
5°	9953	9864	9854
10°	9867	9478	9228
15°	9745	8909	8359
20°	9588	8215	7303
25°	9375	7398	6094
30°	9140	6492	4843
35°	8883	5505	3606
40°	8611	4485	2403
45°	8312	3425	1323
50°	8026	2344	367
55°	7707	1270	240
60°	7326	394	138
65°	6849	255	69
70°	6189	116	28
75°	5326	38	0
80°	4027	0	0
85°	1694	0	0

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 8312 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	104.8	6.6
10°-20°	275.1	17.3
20°-30°	355.5	22.4
30°-40°	339.8	21.4
40°-50°	254.1	16.0
50°-60°	151.2	9.5
60°-70°	76.8	4.8
70°-80°	26.7	1.7
80°-90°	3.6	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°	735.4	46.3
0°-40°	1075.1	67.7
0°-60°	1480.5	93.3
0°-90°	1587.6	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1587.6	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1136	1136	1136	1136	1136	
5°	1121	1130	1111	1106	1110	106
15°	1065	1042	973	928	913	300
25°	961	894	758	658	625	443
35°	823	709	510	380	334	515
45°	665	510	274	146	106	514
55°	500	311	82	19	16	446
65°	327	126	12	4	3	324
75°	156	17	1	1	0	165
85°	17	0	0	0	0	28
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1135.9	1135.9	1135.9	1135.9	1135.9
2.5°	1124.7	1138.1	1127.0	1128.1	1129.2
5°	1121.4	1130.3	1111.4	1105.8	1110.3
7.5°	1112.5	1115.8	1088.0	1073.5	1074.6
10°	1099.1	1095.8	1055.7	1031.2	1027.9
12.5°	1083.5	1072.4	1016.7	981.1	973.3
15°	1064.6	1042.3	973.3	927.6	913.2
17.5°	1042.3	1010.0	925.4	865.3	847.5
20°	1019.0	974.4	873.1	798.5	776.2
22.5°	991.1	934.3	816.3	728.3	700.5
25°	961.0	894.2	758.4	658.1	624.7
27.5°	929.9	850.8	697.1	586.9	547.9
30°	895.3	805.1	635.9	514.5	474.4
32.5°	859.7	758.4	572.4	447.7	403.1
35°	823.0	709.4	510.0	379.7	334.1
37.5°	785.1	660.4	449.9	315.2	268.4
40°	746.1	610.3	388.6	253.9	208.2
42.5°	708.3	560.1	330.7	196.0	153.7
45°	664.8	510.0	273.9	145.9	105.8
47.5°	625.8	461.0	219.4	99.1	62.4
50°	583.5	408.7	170.4	57.9	26.7
52.5°	541.2	359.7	124.7	25.6	20.0
55°	500.0	310.7	82.4	18.9	15.6
57.5°	456.6	261.7	44.5	14.5	11.1
60°	414.3	213.8	22.3	11.1	7.8
62.5°	370.8	168.2	17.8	6.7	4.5
65°	327.4	125.8	12.2	4.5	3.3
67.5°	284.0	85.7	7.8	2.2	1.1
70°	239.4	52.3	4.5	1.1	1.1
72.5°	197.1	26.7	2.2	1.1	1.1
75°	155.9	16.7	1.1	1.1	0.0
77.5°	115.8	8.9	1.1	1.1	0.0
80°	79.1	3.3	0.0	0.0	0.0
82.5°	45.7	1.1	0.0	0.0	0.0
85°	16.7	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	18.47	19.80	18.84	20.11	20.43	0.00	0.00	0.00	0.00	0.00
	3H	20.01	21.19	20.39	21.52	21.88	0.00	0.00	0.00	0.00	0.00
	4H	20.61	21.70	21.01	22.05	22.44	0.00	0.00	0.00	0.00	0.00
	6H	21.02	22.03	21.44	22.40	22.79	0.00	0.00	0.00	0.00	0.00
	8H	21.12	22.07	21.55	22.47	22.87	0.00	0.00	0.00	0.00	0.00
	12H	21.14	22.05	21.57	22.43	22.86	0.00	0.00	0.00	0.00	0.00
4H	2H	18.25	19.34	18.65	19.69	20.08	0.00	0.00	0.00	0.00	0.00
	3H	19.81	20.70	20.22	21.11	21.51	0.00	0.00	0.00	0.00	0.00
	4H	20.39	21.19	20.83	21.61	22.05	0.00	0.00	0.00	0.00	0.00
	6H	20.85	21.54	21.32	21.99	22.45	0.00	0.00	0.00	0.00	0.00
	8H	20.97	21.62	21.44	22.06	22.53	0.00	0.00	0.00	0.00	0.00
	12H	21.01	21.58	21.50	22.06	22.54	0.00	0.00	0.00	0.00	0.00
8H	4H	20.26	20.90	20.73	21.35	21.82	0.00	0.40	0.23	0.85	1.32
	6H	20.70	21.22	21.20	21.72	22.20	0.00	0.19	0.17	0.69	1.17
	8H	20.82	21.28	21.34	21.80	22.29	0.00	0.08	0.13	0.59	1.08
	12H	20.86	21.28	21.38	21.77	22.34	0.00	0.00	0.08	0.47	1.04
12H	4H	20.21	20.78	20.70	21.26	21.74	0.17	0.74	0.66	1.22	1.69
	6H	20.64	21.11	21.16	21.62	22.11	0.06	0.53	0.59	1.05	1.54
	8H	20.77	21.18	21.29	21.68	22.25	0.02	0.43	0.54	0.93	1.50