

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: P1056094

Luminaire Tested: S124R3DR-H1020D840-X4F0-XX-UDD-FLL-B

Issue Date: 7/25/2025

**Test Information**

Test Method: LM-79-2019  
Report Number: P1056094  
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-H1020D840-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, 80 CRI LEDS  
Ballast/Driver: -

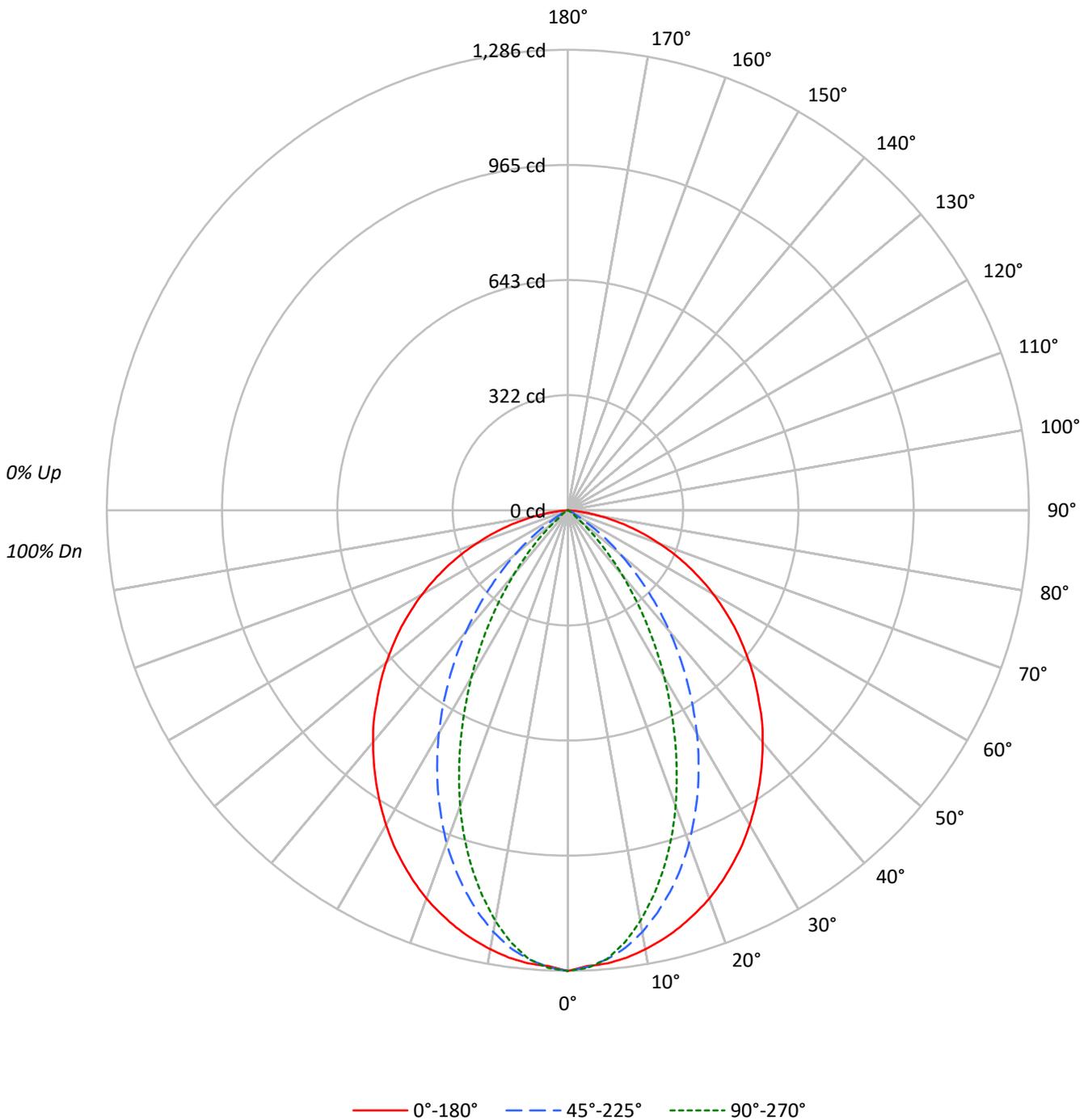
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 1798.0 lumens  
Efficiency: N/A  
Efficacy: 58.2 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	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°	11374	11374	11374
5°	11271	11170	11160
10°	11176	10734	10451
15°	11036	10090	9466
20°	10858	9303	8270
25°	10618	8379	6902
30°	10352	7352	5485
35°	10059	6234	4083
40°	9753	5079	2722
45°	9414	3879	1498
50°	9091	2655	417
55°	8729	1438	273
60°	8297	446	156
65°	7757	291	79
70°	7011	129	34
75°	6033	44	0
80°	4557	0	0
85°	1917	0	0

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 9414 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	118.7	6.6
10°-20°	311.6	17.3
20°-30°	402.6	22.4
30°-40°	384.8	21.4
40°-50°	287.8	16.0
50°-60°	171.3	9.5
60°-70°	86.9	4.8
70°-80°	30.2	1.7
80°-90°	4.1	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°	832.8	46.3
0°-40°	1217.6	67.7
0°-60°	1676.6	93.3
0°-90°	1798.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1798.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1286	1286	1286	1286	1286	
5°	1270	1280	1259	1252	1257	120
15°	1206	1180	1102	1051	1034	340
25°	1088	1013	859	745	708	501
35°	932	803	578	430	378	583
45°	753	578	310	165	120	582
55°	566	352	93	21	18	506
65°	371	142	14	5	4	367
75°	177	19	1	1	0	187
85°	19	0	0	0	0	31
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1286.4	1286.4	1286.4	1286.4	1286.4
2.5°	1273.8	1288.9	1276.3	1277.6	1278.8
5°	1270.0	1280.1	1258.6	1252.3	1257.4
7.5°	1259.9	1263.7	1232.2	1215.8	1217.0
10°	1244.8	1241.0	1195.6	1167.8	1164.1
12.5°	1227.1	1214.5	1151.4	1111.1	1102.3
15°	1205.7	1180.5	1102.3	1050.6	1034.2
17.5°	1180.5	1143.9	1048.0	979.9	959.7
20°	1154.0	1103.5	988.8	904.3	879.0
22.5°	1122.4	1058.1	924.4	824.8	793.3
25°	1088.4	1012.7	858.9	745.3	707.5
27.5°	1053.1	963.5	789.5	664.6	620.5
30°	1014.0	911.8	720.1	582.7	537.3
32.5°	973.6	858.9	648.2	507.0	456.5
35°	932.0	803.4	577.6	430.1	378.3
37.5°	889.1	747.9	509.5	356.9	303.9
40°	845.0	691.1	440.1	287.5	235.8
42.5°	802.1	634.4	374.6	222.0	174.0
45°	752.9	577.6	310.2	165.2	119.8
47.5°	708.8	522.1	248.4	112.2	70.6
50°	660.9	462.8	193.0	65.6	30.3
52.5°	612.9	407.4	141.3	29.0	22.7
55°	566.3	351.9	93.3	21.4	17.7
57.5°	517.1	296.4	50.4	16.4	12.6
60°	469.2	242.1	25.2	12.6	8.8
62.5°	420.0	190.4	20.2	7.6	5.0
65°	370.8	142.5	13.9	5.0	3.8
67.5°	321.6	97.1	8.8	2.5	1.3
70°	271.2	59.3	5.0	1.3	1.3
72.5°	223.2	30.3	2.5	1.3	1.3
75°	176.6	18.9	1.3	1.3	0.0
77.5°	131.2	10.1	1.3	1.3	0.0
80°	89.5	3.8	0.0	0.0	0.0
82.5°	51.7	1.3	0.0	0.0	0.0
85°	18.9	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	18.90	20.23	19.27	20.54	20.86	0.00	0.00	0.00	0.00	0.00
	3H	20.45	21.62	20.82	21.95	22.32	0.00	0.00	0.00	0.00	0.00
	4H	21.04	22.13	21.44	22.49	22.87	0.00	0.00	0.00	0.00	0.00
	6H	21.46	22.46	21.87	22.83	23.23	0.00	0.00	0.00	0.00	0.00
	8H	21.55	22.51	21.98	22.90	23.30	0.00	0.00	0.00	0.00	0.00
	12H	21.57	22.48	22.01	22.87	23.30	0.00	0.00	0.00	0.00	0.00
4H	2H	18.68	19.78	19.08	20.13	20.51	0.00	0.00	0.00	0.00	0.38
	3H	20.24	21.14	20.66	21.54	21.94	0.00	0.00	0.00	0.00	0.22
	4H	20.83	21.62	21.26	22.04	22.49	0.00	0.00	0.00	0.00	0.13
	6H	21.29	21.97	21.75	22.42	22.89	0.00	0.00	0.00	0.00	0.01
	8H	21.41	22.05	21.88	22.50	22.97	0.00	0.00	0.00	0.00	0.00
	12H	21.45	22.01	21.93	22.50	22.97	0.00	0.00	0.00	0.00	0.00
8H	4H	20.69	21.33	21.16	21.78	22.25	0.20	0.84	0.67	1.29	1.76
	6H	21.13	21.65	21.63	22.15	22.63	0.11	0.64	0.62	1.13	1.61
	8H	21.25	21.72	21.77	22.23	22.72	0.05	0.52	0.57	1.04	1.53
	12H	21.30	21.71	21.81	22.21	22.78	0.01	0.42	0.52	0.92	1.49
12H	4H	20.65	21.21	21.13	21.69	22.17	0.62	1.18	1.10	1.66	2.14
	6H	21.07	21.54	21.59	22.05	22.55	0.51	0.98	1.03	1.49	1.99
	8H	21.20	21.62	21.72	22.11	22.68	0.47	0.88	0.98	1.37	1.94