

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: P1055959

Luminaire Tested: S124R3DR-S1020D840-X4F0-XX-UDD-F-B

Issue Date: 7/25/2025

**Test Information**

Test Method: LM-79-2024  
Report Number: P1055959  
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-S1020D840-X4F0-XX-UDD-F-B  
Description: DEFINE 4, BLACK 3-INCH REGRESSED DIRECT RECESSED HOUSING WITH FROSTED LENS  
CORE LIGHT ENGINE  
Light Source: 4000K CCT, 80 CRI LEDS  
Ballast/Driver: -

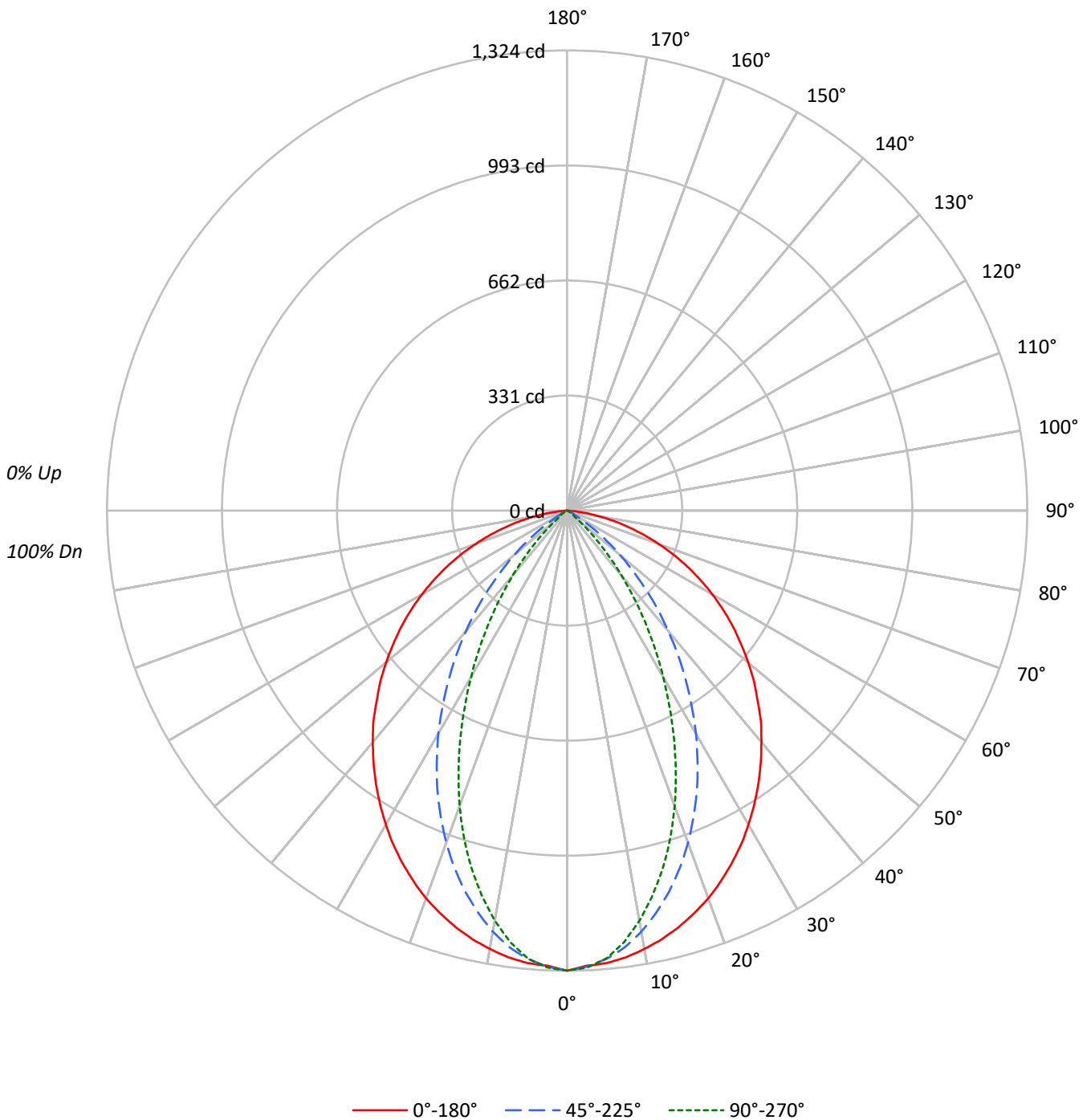
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 1850.1 lumens  
Efficiency: N/A  
Efficacy: 53.3 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): 34.7  
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°	11703	11703	11703
5°	11598	11494	11483
10°	11500	11045	10754
15°	11356	10382	9740
20°	11172	9573	8510
25°	10926	8622	7102
30°	10652	7565	5644
35°	10351	6416	4202
40°	10035	5227	2801
45°	9688	3991	1542
50°	9353	2732	428
55°	8982	1480	281
60°	8537	460	161
65°	7981	299	82
70°	7212	134	34
75°	6207	44	0
80°	4689	0	0
85°	1978	0	0

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 9688 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	122.1	6.6
10°-20°	320.6	17.3
20°-30°	414.3	22.4
30°-40°	396.0	21.4
40°-50°	296.1	16.0
50°-60°	176.2	9.5
60°-70°	89.5	4.8
70°-80°	31.1	1.7
80°-90°	4.3	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°	857.0	46.3
0°-40°	1252.9	67.7
0°-60°	1725.3	93.3
0°-90°	1850.1	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1850.1	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1324	1324	1324	1324	1324	
5°	1307	1317	1295	1289	1294	124
15°	1241	1215	1134	1081	1064	350
25°	1120	1042	884	767	728	516
35°	959	827	594	442	389	600
45°	775	594	319	170	123	599
55°	583	362	96	22	18	520
65°	382	147	14	5	4	377
75°	182	20	1	1	0	193
85°	20	0	0	0	0	32
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1323.7	1323.7	1323.7	1323.7	1323.7
2.5°	1310.7	1326.3	1313.3	1314.6	1315.9
5°	1306.8	1317.2	1295.1	1288.7	1293.8
7.5°	1296.4	1300.3	1267.9	1251.0	1252.3
10°	1280.9	1277.0	1230.3	1201.7	1197.8
12.5°	1262.7	1249.7	1184.8	1143.3	1134.2
15°	1240.6	1214.7	1134.2	1081.0	1064.1
17.5°	1214.7	1177.1	1078.4	1008.3	987.6
20°	1187.4	1135.5	1017.4	930.5	904.5
22.5°	1155.0	1088.8	951.2	848.7	816.3
25°	1120.0	1042.1	883.8	767.0	728.0
27.5°	1083.6	991.5	812.4	683.9	638.5
30°	1043.4	938.3	741.0	599.6	552.8
32.5°	1001.9	883.8	667.0	521.7	469.8
35°	959.0	826.7	594.4	442.5	389.3
37.5°	914.9	769.6	524.3	367.3	312.8
40°	869.5	711.2	452.9	295.9	242.7
42.5°	825.4	652.8	385.4	228.4	179.1
45°	774.8	594.4	319.2	170.0	123.3
47.5°	729.3	537.3	255.7	115.5	72.7
50°	680.0	476.3	198.6	67.5	31.1
52.5°	630.7	419.2	145.3	29.8	23.4
55°	582.7	362.1	96.0	22.1	18.2
57.5°	532.1	305.0	51.9	16.9	13.0
60°	482.8	249.2	26.0	13.0	9.1
62.5°	432.1	196.0	20.8	7.8	5.2
65°	381.5	146.6	14.3	5.2	3.9
67.5°	330.9	99.9	9.1	2.6	1.3
70°	279.0	61.0	5.2	1.3	1.3
72.5°	229.7	31.1	2.6	1.3	1.3
75°	181.7	19.5	1.3	1.3	0.0
77.5°	135.0	10.4	1.3	1.3	0.0
80°	92.1	3.9	0.0	0.0	0.0
82.5°	53.2	1.3	0.0	0.0	0.0
85°	19.5	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	19.00	20.33	19.37	20.64	20.96	0.00	0.00	0.00	0.00	0.00
	3H	20.54	21.72	20.92	22.05	22.42	0.00	0.00	0.00	0.00	0.00
	4H	21.14	22.23	21.54	22.58	22.97	0.00	0.00	0.00	0.00	0.00
	6H	21.56	22.56	21.97	22.93	23.33	0.00	0.00	0.00	0.00	0.00
	8H	21.65	22.61	22.08	23.00	23.40	0.00	0.00	0.00	0.00	0.00
	12H	21.67	22.58	22.11	22.97	23.40	0.00	0.00	0.00	0.00	0.00
4H	2H	18.78	19.88	19.18	20.23	20.61	0.00	0.00	0.00	0.11	0.49
	3H	20.34	21.24	20.76	21.64	22.04	0.00	0.00	0.00	0.00	0.33
	4H	20.93	21.72	21.36	22.14	22.59	0.00	0.00	0.00	0.00	0.23
	6H	21.39	22.07	21.85	22.52	22.99	0.00	0.00	0.00	0.00	0.11
	8H	21.51	22.15	21.98	22.59	23.07	0.00	0.00	0.00	0.00	0.01
	12H	21.55	22.11	22.03	22.59	23.07	0.00	0.00	0.00	0.00	0.00
8H	4H	20.79	21.43	21.26	21.88	22.35	0.30	0.95	0.77	1.39	1.86
	6H	21.23	21.75	21.73	22.25	22.73	0.21	0.74	0.72	1.23	1.71
	8H	21.35	21.82	21.87	22.33	22.82	0.15	0.62	0.67	1.14	1.63
	12H	21.40	21.81	21.91	22.30	22.88	0.11	0.52	0.62	1.02	1.59
12H	4H	20.74	21.31	21.23	21.79	22.27	0.72	1.28	1.20	1.77	2.24
	6H	21.17	21.64	21.69	22.15	22.64	0.61	1.08	1.13	1.59	2.09
	8H	21.30	21.72	21.82	22.21	22.78	0.57	0.98	1.08	1.47	2.04