

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: P1056090

Luminaire Tested: S124R3DR-H1020D830-X4F0-XX-UDD-FLL-W

Issue Date: 7/25/2025

**Test Information**

Test Method: LM-79-2019  
Report Number: P1056090  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2503-402-7)  
Test Lab: INNOVATION CENTER  
Issue Date: 7/25/2025  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: NEO-RAY  
Catalog Number: S124R3DR-H1020D830-X4F0-XX-UDD-FLL-W  
Description: DEFINE 4, WHITE 3-INCH REGRESSED DIRECT RECESSED HOUSING WITH FROSTED LENS  
HIGH PERFORMANCE LIGHT ENGINE  
Light Source: 3000K CCT, 80 CRI LEDS  
Ballast/Driver: -

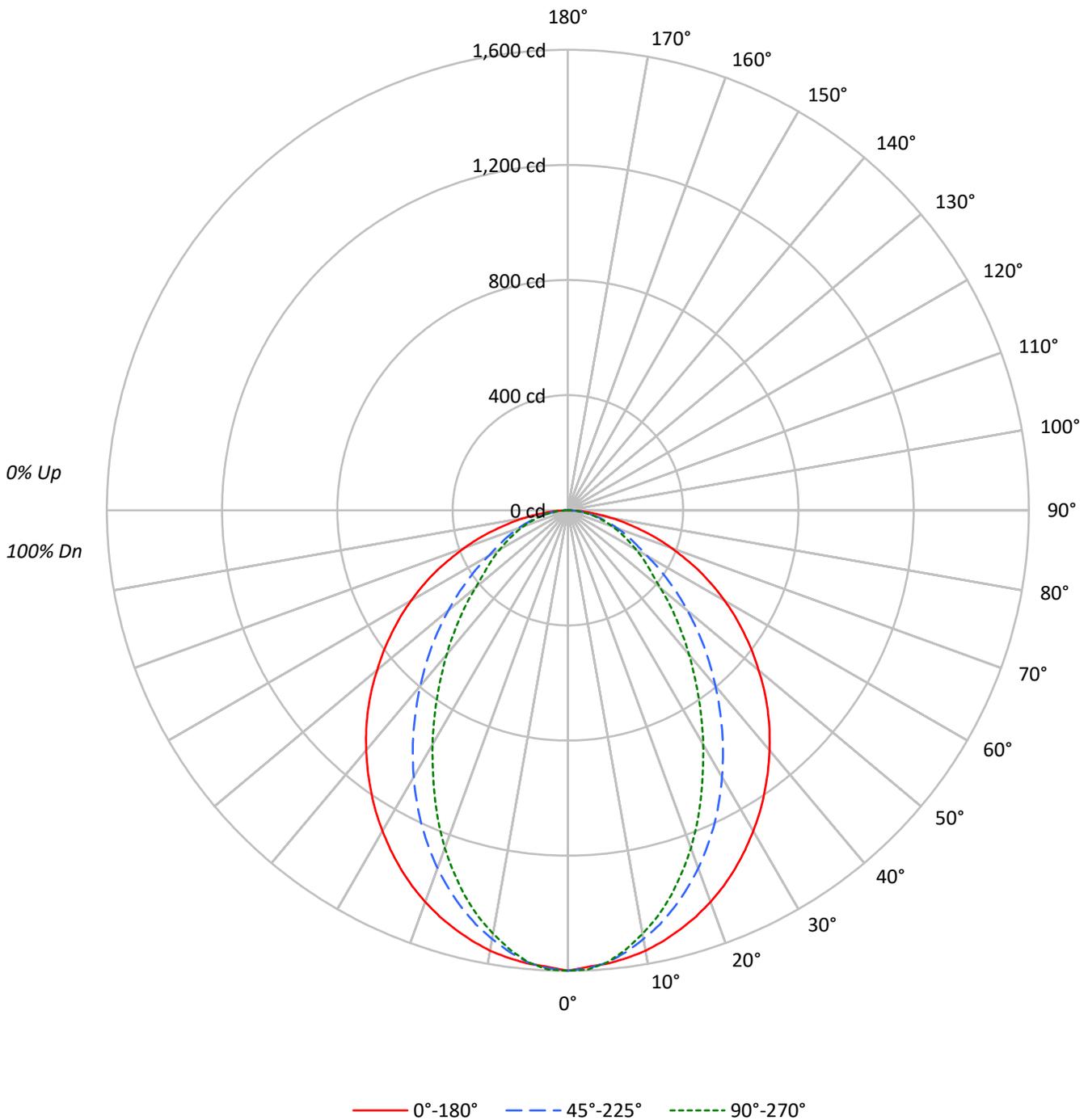
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 3186.2 lumens  
Efficiency: N/A  
Efficacy: 103.1 lumens/watt  
Spacing Criteria (0/90/45): 1.2 / 0.95 / 1.12  
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	110	105	102	98	107	103	100	97	99	96	93	95	93	91	92	90	88	86
2	101	93	87	82	98	91	86	81	88	83	79	85	81	77	82	78	76	73
3	93	83	75	69	90	81	74	69	79	73	68	76	71	67	73	69	65	63
4	85	74	66	60	83	73	65	60	71	64	59	68	63	58	66	61	57	55
5	79	67	59	53	77	66	58	52	64	57	52	62	56	51	60	55	51	49
6	73	61	53	47	72	60	52	46	58	51	46	57	50	46	55	50	45	43
7	68	56	47	42	67	55	47	42	53	46	41	52	46	41	51	45	41	39
8	64	51	43	38	62	51	43	38	49	42	37	48	42	37	47	41	37	35
9	60	47	39	34	59	47	39	34	46	39	34	45	38	34	44	38	34	32
10	56	44	36	31	55	43	36	31	42	36	31	41	35	31	41	35	31	29

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

	0°	45°	90°
0°	14144	14144	14144
5°	14030	13999	13988
10°	13950	13580	13410
15°	13802	13069	12671
20°	13622	12449	11751
25°	13401	11736	10679
30°	13135	10924	9589
35°	12857	10074	8538
40°	12566	9197	7554
45°	12260	8345	6638
50°	11884	7448	5732
55°	11522	6550	5207
60°	11115	5620	4829
65°	10613	5098	4506
70°	9859	4715	4260
75°	8926	4342	4021
80°	7790	4017	3778
85°	5975	3703	3459

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 12260 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	148.9	4.7
10°-20°	404.0	12.7
20°-30°	559.4	17.6
30°-40°	600.4	18.8
40°-50°	546.0	17.1
50°-60°	429.9	13.5
60°-70°	294.3	9.2
70°-80°	158.4	5.0
80°-90°	44.9	1.4
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°	1112.3	34.9
0°-40°	1712.7	53.8
0°-60°	2688.6	84.4
0°-90°	3186.2	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3186.2	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1600	1600	1600	1600	1600	
5°	1581	1598	1577	1569	1576	150
15°	1508	1491	1428	1389	1384	425
25°	1374	1317	1203	1116	1095	632
35°	1191	1098	933	820	791	745
45°	980	856	667	552	531	756
55°	748	605	425	342	338	668
65°	507	362	244	217	215	501
75°	261	159	127	116	118	279
85°	59	40	36	34	34	71
90°	0	0	0	0	0	

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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1599.7	1599.7	1599.7	1599.7	1599.7
2.5°	1587.9	1606.7	1592.6	1595.0	1597.3
5°	1580.8	1598.5	1577.3	1569.1	1576.1
7.5°	1569.1	1580.8	1547.9	1532.6	1539.6
10°	1553.8	1556.1	1512.6	1490.2	1493.7
12.5°	1532.6	1526.7	1473.7	1441.9	1444.3
15°	1507.9	1491.4	1427.8	1389.0	1384.3
17.5°	1479.6	1452.5	1377.2	1327.8	1318.3
20°	1447.8	1411.3	1323.1	1259.5	1248.9
22.5°	1412.5	1365.4	1264.2	1188.9	1173.6
25°	1373.7	1317.2	1203.0	1115.9	1094.7
27.5°	1331.3	1265.4	1137.1	1041.7	1014.7
30°	1286.6	1211.2	1070.0	967.6	939.3
32.5°	1240.7	1155.9	1001.7	893.4	864.0
35°	1191.2	1098.2	933.4	820.4	791.0
37.5°	1140.6	1038.2	864.0	749.8	719.2
40°	1088.8	978.2	796.9	679.2	654.5
42.5°	1035.8	917.0	731.0	613.3	590.9
45°	980.5	855.7	667.4	552.1	530.9
47.5°	924.0	793.4	602.7	494.4	474.4
50°	864.0	731.0	541.5	437.9	416.7
52.5°	806.3	667.4	482.6	382.6	372.0
55°	747.5	605.0	424.9	342.5	337.8
57.5°	688.6	542.6	372.0	310.8	306.0
60°	628.6	481.4	317.8	277.8	273.1
62.5°	568.5	421.4	277.8	246.0	243.7
65°	507.3	362.5	243.7	216.6	215.4
67.5°	442.6	306.0	213.1	190.7	189.5
70°	381.4	249.5	182.4	164.8	164.8
72.5°	323.7	197.8	154.2	140.1	140.1
75°	261.3	158.9	127.1	116.5	117.7
77.5°	206.0	124.8	102.4	95.3	95.3
80°	153.0	93.0	78.9	73.0	74.2
82.5°	103.6	64.7	56.5	53.0	53.0
85°	58.9	40.0	36.5	34.1	34.1
87.5°	21.2	18.8	17.7	15.3	16.5
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	20.35	21.87	20.71	22.18	22.50	16.12	17.65	16.49	17.96	18.28
	3H	22.12	23.49	22.50	23.82	24.18	17.74	19.11	18.11	19.43	19.79
	4H	22.79	24.08	23.19	24.43	24.81	18.37	19.65	18.77	20.00	20.38
	6H	23.30	24.49	23.71	24.86	25.25	18.87	20.05	19.28	20.42	20.81
	8H	23.46	24.60	23.89	24.99	25.39	19.04	20.17	19.46	20.56	20.96
	12H	23.56	24.65	23.99	25.03	25.46	19.16	20.24	19.59	20.62	21.05
4H	2H	20.44	21.73	20.84	22.08	22.45	16.84	18.13	17.24	18.48	18.86
	3H	22.39	23.46	22.80	23.86	24.26	18.65	19.72	19.06	20.12	20.52
	4H	23.14	24.11	23.57	24.52	24.96	19.39	20.35	19.82	20.77	21.20
	6H	23.78	24.62	24.23	25.06	25.52	20.00	20.84	20.46	21.28	21.74
	8H	24.00	24.78	24.46	25.22	25.69	20.22	21.00	20.68	21.45	21.91
	12H	24.15	24.85	24.63	25.33	25.80	20.39	21.09	20.87	21.57	22.04
8H	4H	23.20	23.98	23.66	24.43	24.89	19.78	20.56	20.24	21.00	21.47
	6H	23.90	24.55	24.39	25.04	25.52	20.51	21.16	21.00	21.65	22.12
	8H	24.17	24.75	24.68	25.26	25.75	20.80	21.38	21.31	21.89	22.38
	12H	24.38	24.90	24.89	25.39	25.95	21.04	21.56	21.55	22.05	22.61
12H	4H	23.19	23.89	23.67	24.37	24.84	19.83	20.53	20.31	21.01	21.48
	6H	23.89	24.47	24.40	24.98	25.47	20.59	21.17	21.10	21.68	22.17
	8H	24.20	24.71	24.71	25.21	25.77	20.94	21.45	21.45	21.95	22.51