

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: P1056088

Luminaire Tested: S124R3DR-H1020D830-X4F0-XX-UDD-F-B

Issue Date: 7/25/2025

**Test Information**

Test Method: LM-79-2024  
Report Number: P1056088  
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-H1020D830-X4F0-XX-UDD-F-B  
Description: DEFINE 4, BLACK 3-INCH REGRESSED DIRECT RECESSED HOUSING WITH FROSTED LENS  
HIGH PERFORMANCE LIGHT ENGINE  
Light Source: 3000K CCT, 80 CRI LEDS  
Ballast/Driver: -

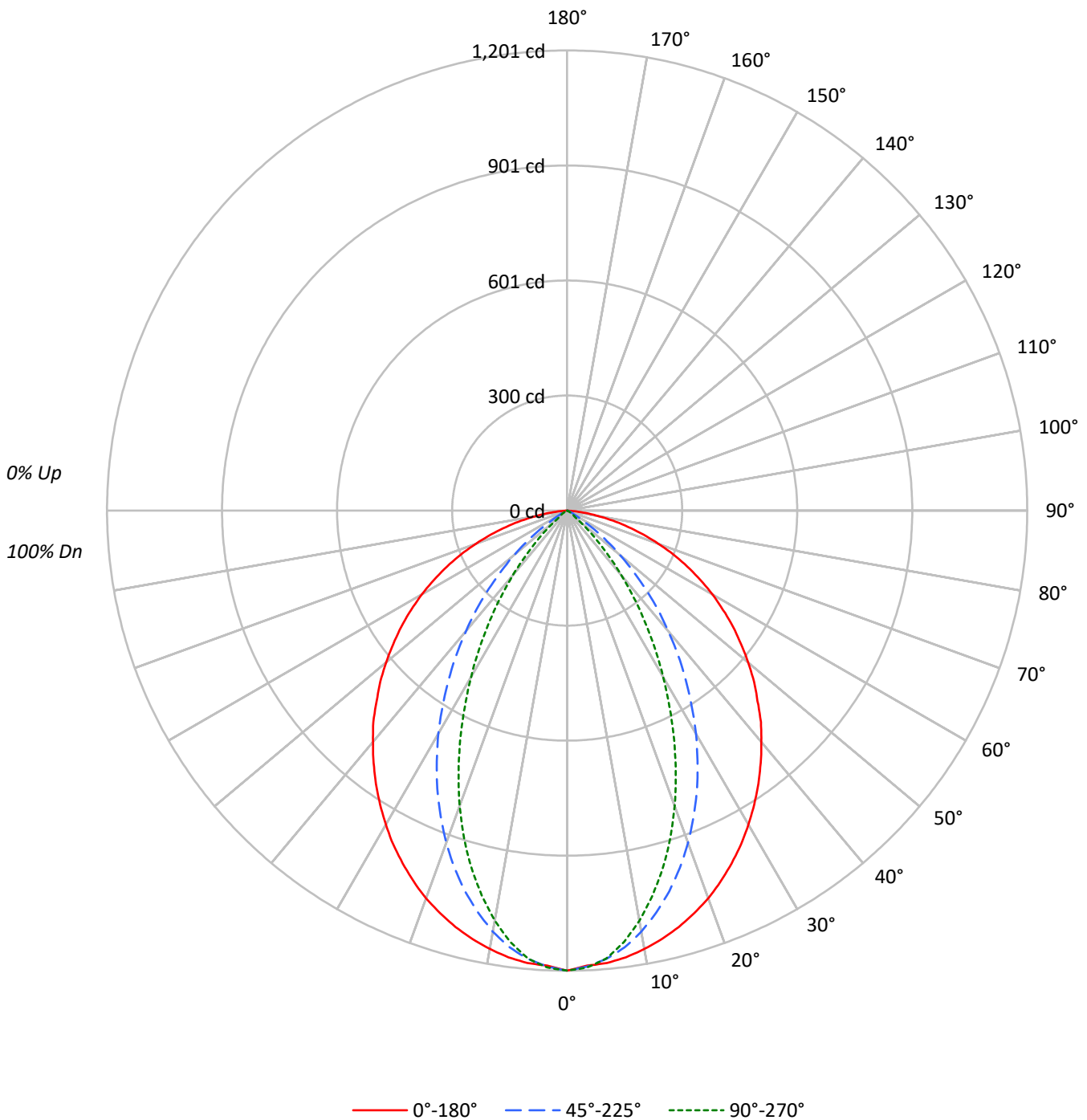
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 1678.1 lumens  
Efficiency: N/A  
Efficacy: 54.3 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): 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°	10615	10615	10615
5°	10520	10426	10416
10°	10430	10018	9754
15°	10300	9417	8835
20°	10133	8682	7719
25°	9910	7820	6441
30°	9662	6862	5119
35°	9389	5819	3811
40°	9102	4741	2540
45°	8786	3621	1398
50°	8484	2477	389
55°	8147	1343	254
60°	7743	416	145
65°	7241	270	73
70°	6543	121	31
75°	5630	41	0
80°	4257	0	0
85°	1796	0	0

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 8786 cd/sqm



TEST NUMBER: P1056088

CATALOG NUMBER: S124R3DR-H1020D830-X4F0-XX-UDD-F-B

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	110.8	6.6
10°-20°	290.8	17.3
20°-30°	375.8	22.4
30°-40°	359.1	21.4
40°-50°	268.6	16.0
50°-60°	159.8	9.5
60°-70°	81.1	4.8
70°-80°	28.2	1.7
80°-90°	3.9	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°	777.3	46.3
0°-40°	1136.4	67.7
0°-60°	1564.9	93.3
0°-90°	1678.1	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1678.1	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1201	1201	1201	1201	1201	
5°	1185	1195	1175	1169	1174	112
15°	1125	1102	1029	980	965	317
25°	1016	945	802	696	660	468
35°	870	750	539	401	353	544
45°	703	539	290	154	112	543
55°	528	328	87	20	16	472
65°	346	133	13	5	4	342
75°	165	18	1	1	0	175
85°	18	0	0	0	0	29
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1200.6	1200.6	1200.6	1200.6	1200.6
2.5°	1188.9	1203.0	1191.2	1192.4	1193.6
5°	1185.3	1194.7	1174.7	1168.8	1173.6
7.5°	1175.9	1179.4	1150.0	1134.7	1135.9
10°	1161.8	1158.3	1115.9	1090.0	1086.5
12.5°	1145.3	1133.5	1074.7	1037.0	1028.8
15°	1125.3	1101.8	1028.8	980.5	965.2
17.5°	1101.8	1067.6	978.2	914.6	895.8
20°	1077.0	1030.0	922.8	844.0	820.4
22.5°	1047.6	987.6	862.8	769.8	740.4
25°	1015.8	945.2	801.6	695.7	660.3
27.5°	982.9	899.3	736.9	620.3	579.1
30°	946.4	851.0	672.1	543.8	501.4
32.5°	908.7	801.6	605.0	473.2	426.1
35°	869.9	749.8	539.1	401.4	353.1
37.5°	829.8	698.0	475.5	333.1	283.7
40°	788.6	645.0	410.8	268.4	220.1
42.5°	748.6	592.1	349.6	207.2	162.4
45°	702.7	539.1	289.6	154.2	111.8
47.5°	661.5	487.3	231.9	104.8	65.9
50°	616.8	432.0	180.1	61.2	28.3
52.5°	572.1	380.2	131.8	27.1	21.2
55°	528.5	328.4	87.1	20.0	16.5
57.5°	482.6	276.6	47.1	15.3	11.8
60°	437.9	226.0	23.5	11.8	8.2
62.5°	392.0	177.7	18.8	7.1	4.7
65°	346.1	133.0	12.9	4.7	3.5
67.5°	300.2	90.6	8.2	2.4	1.2
70°	253.1	55.3	4.7	1.2	1.2
72.5°	208.3	28.3	2.4	1.2	1.2
75°	164.8	17.7	1.2	1.2	0.0
77.5°	122.4	9.4	1.2	1.2	0.0
80°	83.6	3.5	0.0	0.0	0.0
82.5°	48.3	1.2	0.0	0.0	0.0
85°	17.7	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

TEST NUMBER: P1056088

CATALOG NUMBER: S124R3DR-H1020D830-X4F0-XX-UDD-F-B

**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	18.66	19.99	19.03	20.30	20.62	0.00	0.00	0.00	0.00	0.00
	3H	20.20	21.38	20.58	21.71	22.08	0.00	0.00	0.00	0.00	0.00
	4H	20.80	21.89	21.20	22.25	22.63	0.00	0.00	0.00	0.00	0.00
	6H	21.22	22.22	21.63	22.59	22.99	0.00	0.00	0.00	0.00	0.00
	8H	21.31	22.27	21.74	22.66	23.06	0.00	0.00	0.00	0.00	0.00
	12H	21.33	22.24	21.77	22.63	23.06	0.00	0.00	0.00	0.00	0.00
4H	2H	18.44	19.54	18.84	19.89	20.27	0.00	0.00	0.00	0.00	0.14
	3H	20.00	20.90	20.42	21.30	21.70	0.00	0.00	0.00	0.00	0.00
	4H	20.59	21.38	21.02	21.80	22.25	0.00	0.00	0.00	0.00	0.00
	6H	21.05	21.73	21.51	22.18	22.65	0.00	0.00	0.00	0.00	0.00
	8H	21.17	21.81	21.64	22.26	22.73	0.00	0.00	0.00	0.00	0.00
	12H	21.21	21.77	21.69	22.26	22.73	0.00	0.00	0.00	0.00	0.00
8H	4H	20.45	21.09	20.92	21.54	22.01	0.00	0.60	0.43	1.05	1.52
	6H	20.89	21.41	21.39	21.91	22.39	0.00	0.39	0.37	0.89	1.37
	8H	21.01	21.48	21.53	21.99	22.48	0.00	0.28	0.33	0.79	1.28
	12H	21.06	21.47	21.57	21.97	22.54	0.00	0.18	0.28	0.67	1.24
12H	4H	20.41	20.97	20.89	21.45	21.93	0.37	0.94	0.86	1.42	1.89
	6H	20.83	21.30	21.35	21.81	22.31	0.26	0.73	0.79	1.25	1.74
	8H	20.96	21.38	21.48	21.87	22.44	0.22	0.63	0.74	1.13	1.70