

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: P1056097

Luminaire Tested: S124R3DR-H1020D850-X4F0-XX-UDD-F-B

Issue Date: 7/25/2025

**Test Information**

Test Method: LM-79-2024  
Report Number: P1056097  
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-H1020D850-X4F0-XX-UDD-F-B  
Description: DEFINE 4, BLACK 3-INCH REGRESSED DIRECT RECESSED HOUSING WITH FROSTED LENS  
HIGH PERFORMANCE LIGHT ENGINE  
Light Source: 5000K CCT, 80 CRI LEDS  
Ballast/Driver: -

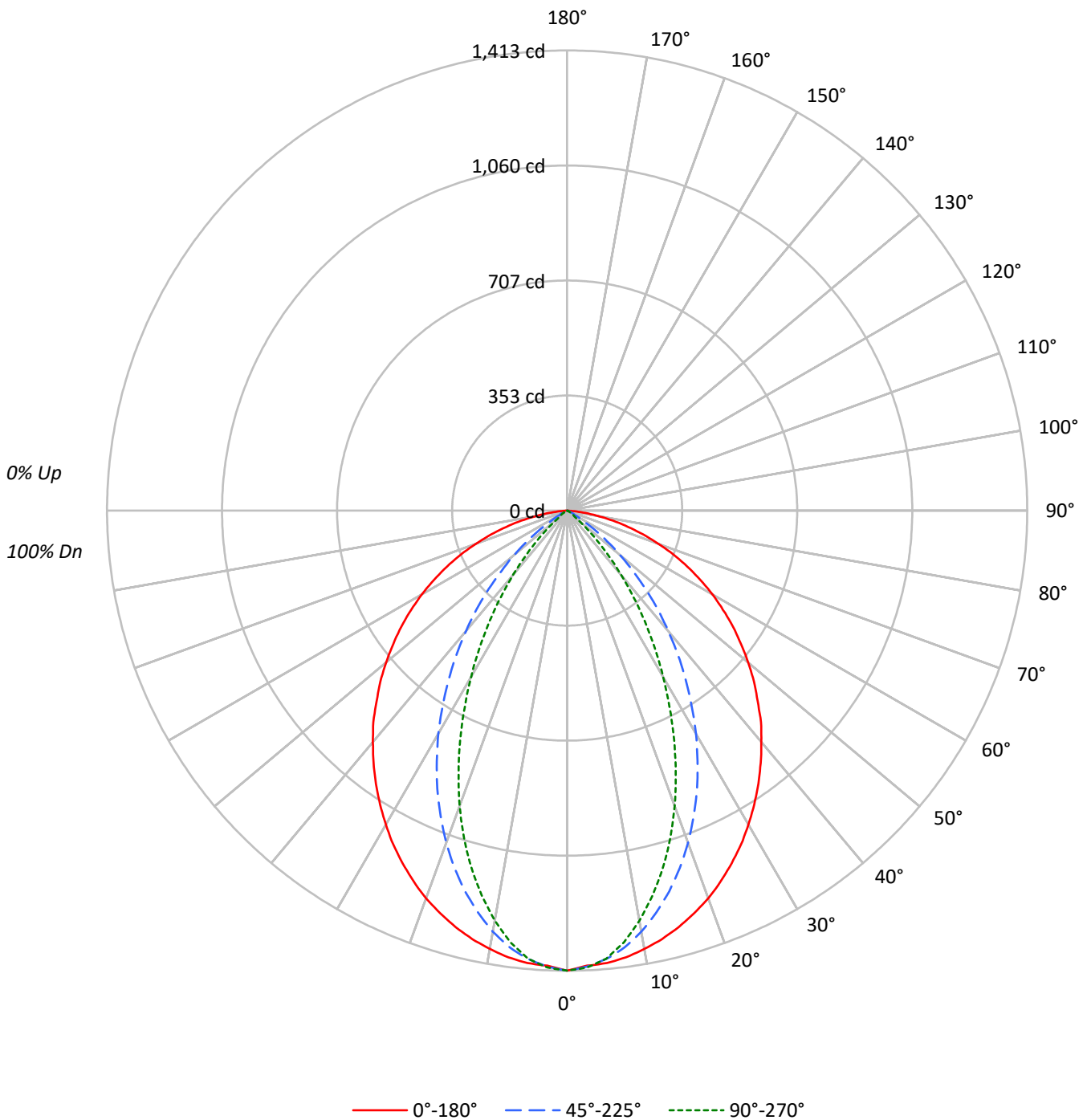
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 1974.4 lumens  
Efficiency: N/A  
Efficacy: 63.9 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°	12490	12490	12490
5°	12378	12267	12255
10°	12273	11788	11476
15°	12119	11080	10395
20°	11923	10216	9082
25°	11660	9201	7580
30°	11368	8073	6023
35°	11047	6846	4485
40°	10709	5579	2989
45°	10338	4260	1645
50°	9982	2915	457
55°	9586	1580	299
60°	9110	490	172
65°	8519	318	88
70°	7698	142	36
75°	6624	48	0
80°	5005	0	0
85°	2110	0	0

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 10338 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	130.3	6.6
10°-20°	342.1	17.3
20°-30°	442.1	22.4
30°-40°	422.6	21.4
40°-50°	316.0	16.0
50°-60°	188.1	9.5
60°-70°	95.5	4.8
70°-80°	33.2	1.7
80°-90°	4.5	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°	914.6	46.3
0°-40°	1337.1	67.7
0°-60°	1841.2	93.3
0°-90°	1974.4	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1974.4	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1413	1413	1413	1413	1413	
5°	1395	1406	1382	1375	1381	132
15°	1324	1296	1210	1154	1136	373
25°	1195	1112	943	818	777	550
35°	1024	882	634	472	416	640
45°	827	634	341	181	132	639
55°	622	386	102	24	19	555
65°	407	156	15	6	4	403
75°	194	21	1	1	0	206
85°	21	0	0	0	0	34
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1412.7	1412.7	1412.7	1412.7	1412.7
2.5°	1398.8	1415.4	1401.6	1403.0	1404.4
5°	1394.7	1405.7	1382.2	1375.3	1380.8
7.5°	1383.6	1387.7	1353.1	1335.1	1336.5
10°	1367.0	1362.8	1313.0	1282.5	1278.3
12.5°	1347.6	1333.7	1264.5	1220.2	1210.5
15°	1324.0	1296.3	1210.5	1153.7	1135.7
17.5°	1296.3	1256.2	1150.9	1076.1	1054.0
20°	1267.2	1211.8	1085.8	993.0	965.3
22.5°	1232.6	1162.0	1015.2	905.8	871.1
25°	1195.2	1112.1	943.2	818.5	777.0
27.5°	1156.4	1058.1	867.0	729.9	681.4
30°	1113.5	1001.3	790.8	639.9	590.0
32.5°	1069.2	943.2	711.9	556.8	501.4
35°	1023.5	882.2	634.3	472.3	415.5
37.5°	976.4	821.3	559.5	391.9	333.8
40°	927.9	759.0	483.4	315.8	259.0
42.5°	880.8	696.6	411.3	243.8	191.1
45°	826.8	634.3	340.7	181.4	131.6
47.5°	778.4	573.4	272.8	123.3	77.6
50°	725.7	508.3	211.9	72.0	33.2
52.5°	673.1	447.3	155.1	31.9	24.9
55°	621.9	386.4	102.5	23.5	19.4
57.5°	567.8	325.5	55.4	18.0	13.8
60°	515.2	265.9	27.7	13.8	9.7
62.5°	461.2	209.1	22.2	8.3	5.5
65°	407.2	156.5	15.2	5.5	4.2
67.5°	353.2	106.6	9.7	2.8	1.4
70°	297.8	65.1	5.5	1.4	1.4
72.5°	245.1	33.2	2.8	1.4	1.4
75°	193.9	20.8	1.4	1.4	0.0
77.5°	144.0	11.1	1.4	1.4	0.0
80°	98.3	4.2	0.0	0.0	0.0
82.5°	56.8	1.4	0.0	0.0	0.0
85°	20.8	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	19.23	20.56	19.59	20.87	21.18	0.00	0.00	0.00	0.00	0.00
	3H	20.77	21.95	21.15	22.28	22.64	0.00	0.00	0.00	0.00	0.00
	4H	21.36	22.46	21.77	22.81	23.19	0.00	0.00	0.00	0.00	0.00
	6H	21.78	22.79	22.20	23.16	23.55	0.00	0.00	0.00	0.00	0.00
	8H	21.88	22.83	22.31	23.22	23.63	0.00	0.00	0.00	0.00	0.00
	12H	21.90	22.81	22.33	23.19	23.62	0.00	0.00	0.00	0.00	0.00
4H	2H	19.01	20.10	19.41	20.45	20.83	0.00	0.00	0.00	0.32	0.70
	3H	20.57	21.46	20.98	21.87	22.27	0.00	0.00	0.00	0.13	0.54
	4H	21.15	21.95	21.59	22.37	22.81	0.00	0.00	0.00	0.00	0.44
	6H	21.61	22.30	22.07	22.75	23.21	0.00	0.00	0.00	0.00	0.32
	8H	21.73	22.37	22.20	22.82	23.29	0.00	0.00	0.00	0.00	0.22
	12H	21.77	22.34	22.26	22.82	23.30	0.00	0.00	0.00	0.00	0.14
8H	4H	21.02	21.66	21.49	22.10	22.58	0.52	1.16	0.99	1.61	2.08
	6H	21.46	21.98	21.96	22.48	22.96	0.43	0.95	0.93	1.45	1.93
	8H	21.57	22.04	22.10	22.56	23.05	0.37	0.84	0.89	1.35	1.84
	12H	21.62	22.04	22.14	22.53	23.10	0.32	0.74	0.84	1.23	1.80
12H	4H	20.97	21.54	21.46	22.02	22.49	0.93	1.50	1.42	1.98	2.46
	6H	21.39	21.86	21.92	22.38	22.87	0.83	1.30	1.35	1.81	2.30
	8H	21.53	21.94	22.04	22.44	23.01	0.78	1.20	1.30	1.69	2.26