

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: P1056103

Luminaire Tested: S124R3DR-H1020D930-X4F0-XX-UDD-FLL-B

Issue Date: 7/25/2025

**Test Information**

Test Method: LM-79-2019  
Report Number: P1056103  
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-H1020D930-X4F0-XX-UDD-FLL-B  
Description: DEFINE 4, BLACK 3-INCH REGRESSED DIRECT RECESSED HOUSING WITH FROSTED LENS  
HIGH PERFORMANCE LIGHT ENGINE  
Light Source: 3000K CCT, 90 CRI LEDS  
Ballast/Driver: -

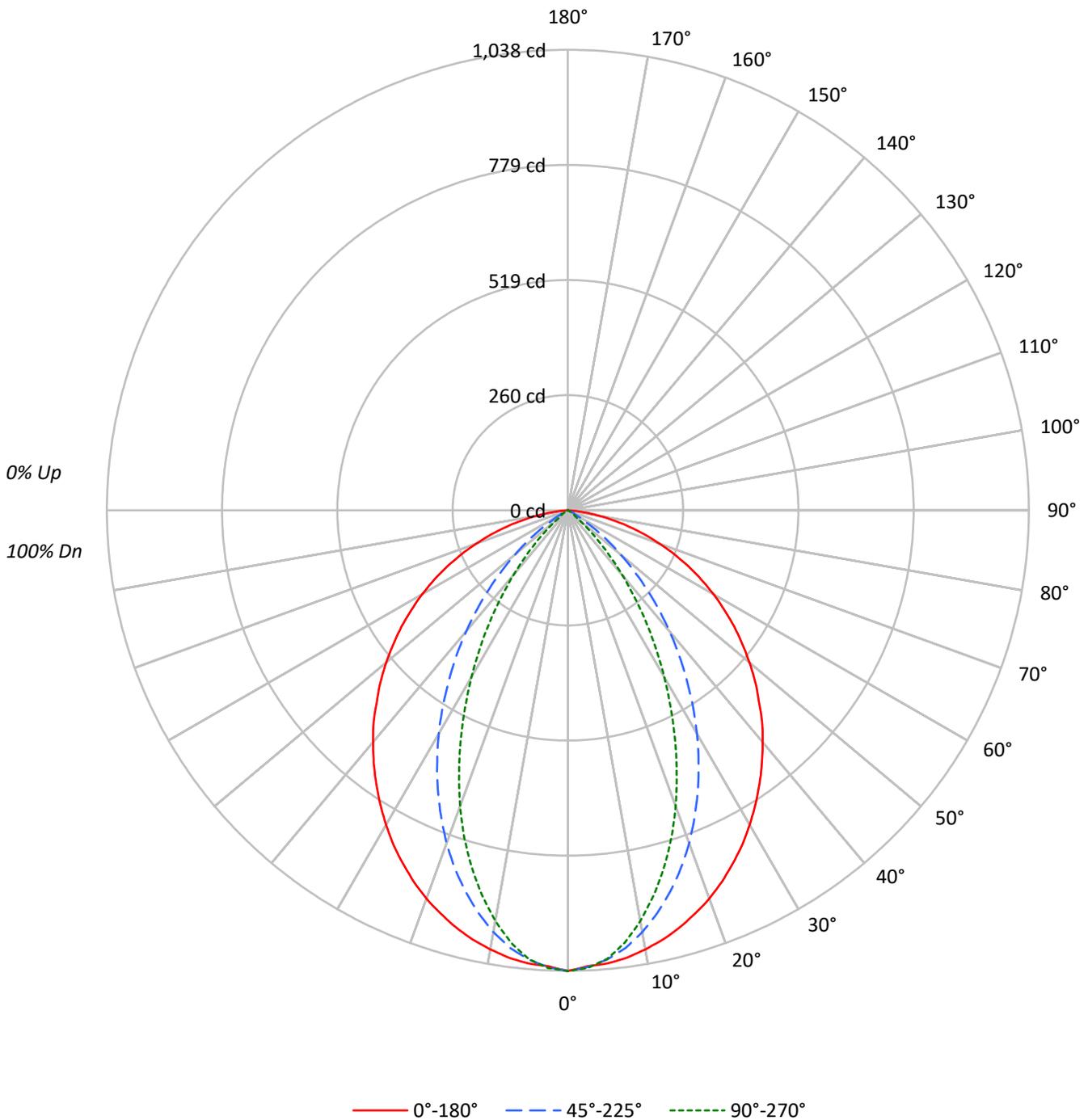
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 1451.5 lumens  
Efficiency: N/A  
Efficacy: 47.0 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 (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	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°	9182	9182	9182
5°	9100	9018	9009
10°	9022	8665	8437
15°	8910	8145	7642
20°	8765	7511	6677
25°	8572	6764	5572
30°	8357	5936	4428
35°	8121	5033	3297
40°	7874	4101	2198
45°	7601	3132	1209
50°	7338	2143	336
55°	7047	1161	220
60°	6698	361	126
65°	6261	234	65
70°	5659	106	26
75°	4868	34	0
80°	3681	0	0
85°	1552	0	0

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 7601 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	95.8	6.6
10°-20°	251.5	17.3
20°-30°	325.0	22.4
30°-40°	310.6	21.4
40°-50°	232.3	16.0
50°-60°	138.3	9.5
60°-70°	70.2	4.8
70°-80°	24.4	1.7
80°-90°	3.3	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°	672.4	46.3
0°-40°	983.0	67.7
0°-60°	1353.6	93.3
0°-90°	1451.5	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1451.5	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1038	1038	1038	1038	1038	
5°	1025	1034	1016	1011	1015	97
15°	973	953	890	848	835	274
25°	879	818	693	602	571	405
35°	752	649	466	347	306	471
45°	608	466	250	133	97	470
55°	457	284	75	17	14	408
65°	299	115	11	4	3	296
75°	142	15	1	1	0	151
85°	15	0	0	0	0	25
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1038.5	1038.5	1038.5	1038.5	1038.5
2.5°	1028.4	1040.6	1030.4	1031.4	1032.4
5°	1025.3	1033.5	1016.1	1011.1	1015.1
7.5°	1017.2	1020.2	994.8	981.5	982.5
10°	1004.9	1001.9	965.2	942.8	939.8
12.5°	990.7	980.5	929.6	897.0	889.9
15°	973.4	953.0	889.9	848.1	834.9
17.5°	953.0	923.5	846.1	791.1	774.8
20°	931.6	890.9	798.3	730.0	709.7
22.5°	906.2	854.3	746.3	665.9	640.4
25°	878.7	817.6	693.4	601.7	571.2
27.5°	850.2	777.9	637.4	536.6	500.9
30°	818.6	736.1	581.4	470.4	433.7
32.5°	786.0	693.4	523.3	409.3	368.6
35°	752.4	648.6	466.3	347.2	305.5
37.5°	717.8	603.8	411.3	288.1	245.4
40°	682.2	558.0	355.3	232.1	190.4
42.5°	647.6	512.1	302.4	179.2	140.5
45°	607.9	466.3	250.5	133.4	96.7
47.5°	572.2	421.5	200.6	90.6	57.0
50°	533.5	373.7	155.8	52.9	24.4
52.5°	494.8	328.9	114.0	23.4	18.3
55°	457.2	284.1	75.3	17.3	14.3
57.5°	417.5	239.3	40.7	13.2	10.2
60°	378.8	195.5	20.4	10.2	7.1
62.5°	339.1	153.7	16.3	6.1	4.1
65°	299.3	115.1	11.2	4.1	3.1
67.5°	259.6	78.4	7.1	2.0	1.0
70°	218.9	47.9	4.1	1.0	1.0
72.5°	180.2	24.4	2.0	1.0	1.0
75°	142.5	15.3	1.0	1.0	0.0
77.5°	105.9	8.1	1.0	1.0	0.0
80°	72.3	3.1	0.0	0.0	0.0
82.5°	41.7	1.0	0.0	0.0	0.0
85°	15.3	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	18.16	19.49	18.52	19.80	20.12	0.00	0.00	0.00	0.00	0.00
	3H	19.70	20.88	20.08	21.21	21.57	0.00	0.00	0.00	0.00	0.00
	4H	20.30	21.39	20.70	21.74	22.12	0.00	0.00	0.00	0.00	0.00
	6H	20.71	21.72	21.13	22.09	22.48	0.00	0.00	0.00	0.00	0.00
	8H	20.81	21.76	21.24	22.15	22.56	0.00	0.00	0.00	0.00	0.00
	12H	20.83	21.74	21.26	22.12	22.55	0.00	0.00	0.00	0.00	0.00
4H	2H	17.94	19.03	18.34	19.38	19.77	0.00	0.00	0.00	0.00	0.00
	3H	19.50	20.39	19.91	20.80	21.20	0.00	0.00	0.00	0.00	0.00
	4H	20.08	20.88	20.52	21.30	21.74	0.00	0.00	0.00	0.00	0.00
	6H	20.54	21.23	21.01	21.68	22.14	0.00	0.00	0.00	0.00	0.00
	8H	20.66	21.30	21.13	21.75	22.22	0.00	0.00	0.00	0.00	0.00
	12H	20.70	21.27	21.19	21.75	22.23	0.00	0.00	0.00	0.00	0.00
8H	4H	19.95	20.59	20.42	21.04	21.51	0.00	0.09	0.00	0.53	1.01
	6H	20.39	20.91	20.89	21.41	21.89	0.00	0.00	0.00	0.37	0.86
	8H	20.50	20.97	21.03	21.49	21.98	0.00	0.00	0.00	0.28	0.77
	12H	20.55	20.97	21.07	21.46	22.03	0.00	0.00	0.00	0.16	0.73
12H	4H	19.90	20.47	20.39	20.95	21.42	0.00	0.43	0.35	0.91	1.38
	6H	20.33	20.79	20.85	21.31	21.80	0.00	0.22	0.27	0.74	1.23
	8H	20.46	20.87	20.98	21.37	21.94	0.00	0.12	0.22	0.62	1.19