

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: P1056110

Luminaire Tested: S124R3DR-H1020D940-X4F0-XX-UDD-F-S

Issue Date: 7/25/2025

**Test Information**

Test Method: LM-79-2024  
Report Number: P1056110  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2503-402-9)  
Test Lab: INNOVATION CENTER  
Issue Date: 7/25/2025  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: NEO-RAY  
Catalog Number: S124R3DR-H1020D940-X4F0-XX-UDD-F-S  
Description: DEFINE 4, SILVER 3-INCH REGRESSED DIRECT RECESSED HOUSING WITH FROSTED LENS  
HIGH PERFORMANCE LIGHT ENGINE  
Light Source: 4000K CCT, 90 CRI LEDS  
Ballast/Driver: -

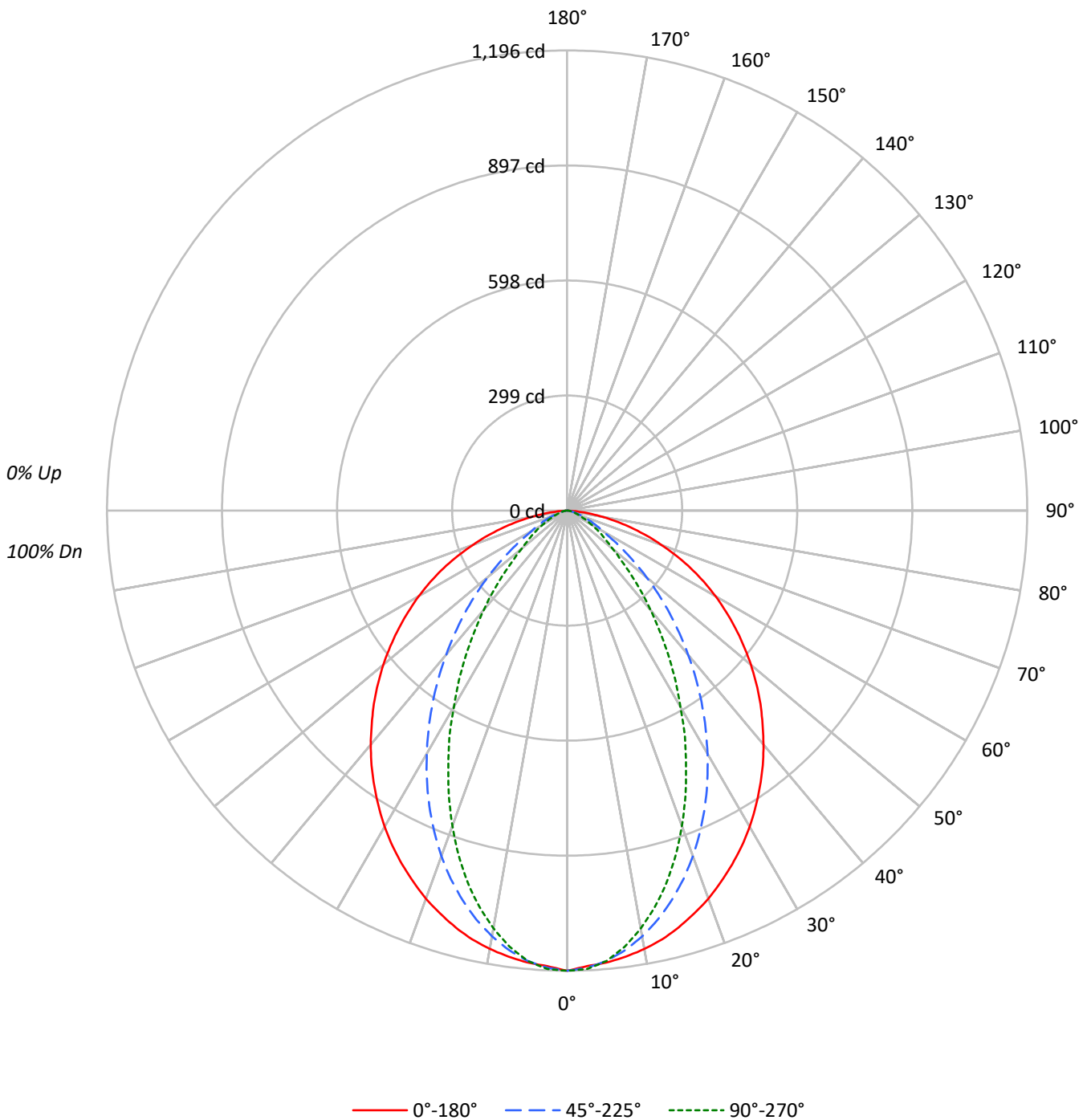
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 1933.9 lumens  
Efficiency: N/A  
Efficacy: 62.6 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 0.87 / 1.03  
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	111	107	104	101	108	105	102	99	101	98	96	97	95	93	94	92	90	89
2	103	96	91	86	101	94	89	85	91	87	83	88	84	81	85	82	79	78
3	95	87	80	74	93	85	79	74	82	77	73	80	75	71	77	73	70	68
4	89	78	71	65	86	77	70	65	75	69	64	73	67	63	71	66	62	60
5	82	71	64	58	80	70	63	58	68	62	57	66	61	56	65	60	56	54
6	77	65	57	52	75	64	57	52	63	56	51	61	55	51	60	54	50	48
7	72	60	52	47	70	59	52	47	58	51	46	56	50	46	55	50	46	44
8	67	55	48	42	66	55	47	42	53	47	42	52	46	42	51	46	42	40
9	63	51	44	39	62	51	44	39	50	43	39	49	43	38	48	42	38	37
10	60	48	41	36	59	47	40	36	46	40	36	45	40	35	45	39	35	34

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

	0°	45°	90°
0°	10574	10574	10574
5°	10466	10427	10427
10°	10387	10087	9898
15°	10264	9602	9153
20°	10100	8990	8204
25°	9897	8268	7126
30°	9686	7447	6003
35°	9436	6574	4940
40°	9164	5643	3894
45°	8884	4693	2910
50°	8577	3692	2129
55°	8239	2730	1699
60°	7876	1890	1300
65°	7408	1469	956
70°	6708	1037	750
75°	5859	724	570
80°	4705	565	509
85°	2597	456	456

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 8884 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	110.9	5.7
10°-20°	296.4	15.3
20°-30°	395.4	20.4
30°-40°	398.1	20.6
40°-50°	326.4	16.9
50°-60°	223.1	11.5
60°-70°	124.7	6.4
70°-80°	49.4	2.6
80°-90°	9.4	0.5
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°	802.7	41.5
0°-40°	1200.8	62.1
0°-60°	1750.4	90.5
0°-90°	1933.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1933.9	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1196	1196	1196	1196	1196	
5°	1179	1193	1175	1169	1175	112
15°	1121	1109	1049	1012	1000	316
25°	1014	964	848	762	730	467
35°	874	782	609	493	458	547
45°	710	580	375	264	233	548
55°	534	375	177	118	110	478
65°	354	178	70	50	46	350
75°	172	47	21	18	17	184
85°	26	4	4	4	4	36
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1196.0	1196.0	1196.0	1196.0	1196.0
2.5°	1184.9	1199.4	1189.3	1190.4	1192.7
5°	1179.3	1192.7	1174.9	1169.3	1174.9
7.5°	1169.3	1179.3	1152.6	1141.4	1143.7
10°	1157.0	1160.4	1123.6	1104.7	1102.5
12.5°	1141.4	1137.0	1089.1	1061.3	1054.6
15°	1121.4	1109.2	1049.0	1012.3	1000.0
17.5°	1098.0	1076.9	1004.5	956.6	938.8
20°	1073.5	1042.3	955.5	894.2	872.0
22.5°	1044.6	1005.6	903.1	828.5	802.9
25°	1014.5	964.4	847.5	761.7	730.5
27.5°	983.3	922.1	789.5	693.8	662.6
30°	948.8	876.4	729.4	625.8	588.0
32.5°	912.0	829.6	669.3	559.0	523.4
35°	874.2	781.8	609.1	493.3	457.7
37.5°	835.2	732.8	549.0	431.0	395.3
40°	794.0	682.6	488.9	371.9	337.4
42.5°	751.7	631.4	431.0	316.3	284.0
45°	710.5	580.2	375.3	263.9	232.7
47.5°	667.1	529.0	320.7	214.9	188.2
50°	623.6	477.7	268.4	172.6	154.8
52.5°	579.1	426.5	220.5	141.4	129.2
55°	534.5	375.3	177.1	118.0	110.2
57.5°	490.0	324.1	137.0	100.2	91.3
60°	445.4	273.9	106.9	81.3	73.5
62.5°	399.8	223.8	88.0	64.6	57.9
65°	354.1	178.2	70.2	50.1	45.7
67.5°	308.5	135.9	53.5	39.0	35.6
70°	259.5	96.9	40.1	30.1	29.0
72.5°	217.2	65.7	29.0	23.4	22.3
75°	171.5	46.8	21.2	17.8	16.7
77.5°	132.5	30.1	15.6	14.5	13.4
80°	92.4	16.7	11.1	10.0	10.0
82.5°	56.8	8.9	7.8	6.7	6.7
85°	25.6	4.5	4.5	4.5	4.5
87.5°	4.5	2.2	2.2	2.2	2.2
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	18.92	20.33	19.28	20.64	20.95	10.01	11.41	10.37	11.73	12.04
	3H	20.50	21.76	20.88	22.09	22.45	10.60	11.85	10.98	12.18	12.54
	4H	21.10	22.27	21.50	22.62	23.00	10.76	11.93	11.16	12.28	12.66
	6H	21.53	22.61	21.94	22.98	23.37	10.86	11.94	11.28	12.31	12.70
	8H	21.64	22.66	22.07	23.06	23.46	10.88	11.90	11.31	12.29	12.70
	12H	21.69	22.66	22.12	23.04	23.47	10.89	11.87	11.32	12.25	12.68
4H	2H	18.77	19.94	19.17	20.29	20.67	10.59	11.76	10.99	12.11	12.49
	3H	20.42	21.38	20.83	21.78	22.18	11.30	12.26	11.72	12.67	13.07
	4H	21.03	21.88	21.46	22.30	22.74	11.51	12.37	11.94	12.78	13.23
	6H	21.52	22.26	21.98	22.70	23.17	11.68	12.42	12.14	12.86	13.33
	8H	21.66	22.35	22.13	22.80	23.27	11.71	12.40	12.17	12.85	13.31
	12H	21.73	22.35	22.22	22.83	23.30	11.73	12.35	12.22	12.83	13.30
8H	4H	20.92	21.61	21.39	22.06	22.53	11.78	12.47	12.25	12.92	13.39
	6H	21.40	21.97	21.90	22.46	22.94	11.98	12.55	12.48	13.04	13.52
	8H	21.54	22.05	22.06	22.57	23.06	12.04	12.55	12.56	13.06	13.55
	12H	21.64	22.08	22.15	22.58	23.15	12.10	12.55	12.61	13.04	13.61
12H	4H	20.88	21.49	21.37	21.98	22.45	11.81	12.42	12.29	12.90	13.37
	6H	21.35	21.85	21.86	22.37	22.86	12.01	12.52	12.53	13.03	13.53
	8H	21.51	21.96	22.02	22.45	23.02	12.11	12.55	12.62	13.05	13.62