

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: P1055960

Luminaire Tested: S124R3DR-S1020D840-X4F0-XX-UDD-F-S

Issue Date: 7/25/2025

**Test Information**

Test Method: LM-79-2024  
Report Number: P1055960  
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-S1020D840-X4F0-XX-UDD-F-S  
Description: DEFINE 4, SILVER 3-INCH REGRESSED DIRECT RECESSED HOUSING WITH FROSTED LENS  
CORE LIGHT ENGINE  
Light Source: 4000K CCT, 80 CRI LEDS  
Ballast/Driver: -

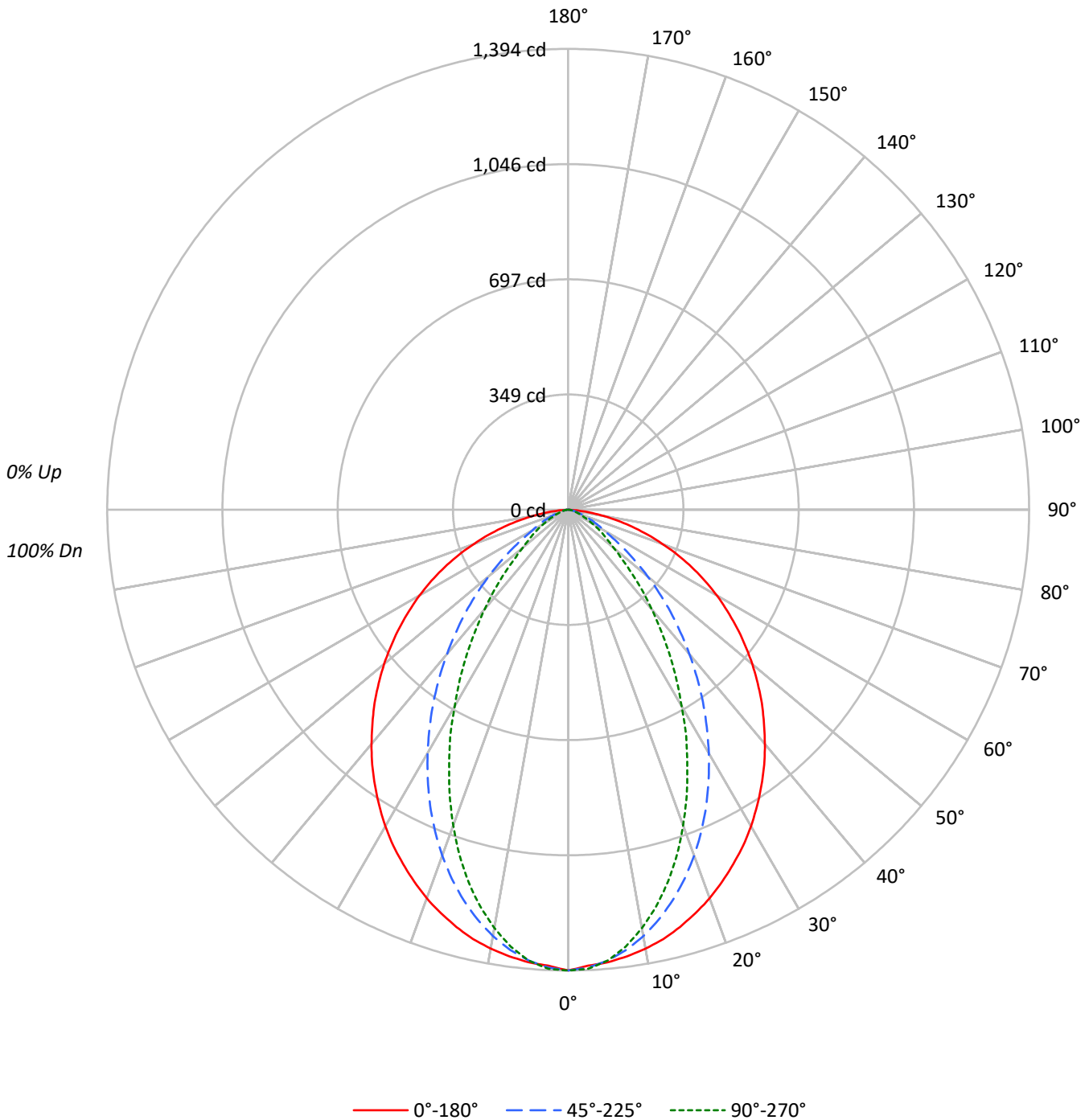
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 2253.7 lumens  
Efficiency: N/A  
Efficacy: 64.9 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): 34.7  
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	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°	12323	12323	12323
5°	12197	12151	12151
10°	12106	11755	11535
15°	11961	11190	10667
20°	11770	10477	9560
25°	11533	9634	8305
30°	11288	8678	6995
35°	10995	7662	5757
40°	10679	6575	4538
45°	10353	5468	3391
50°	9996	4302	2481
55°	9602	3180	1981
60°	9179	2203	1515
65°	8634	1711	1113
70°	7817	1207	871
75°	6829	844	666
80°	5484	662	596
85°	3023	528	528

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 10353 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	129.3	5.7
10°-20°	345.4	15.3
20°-30°	460.7	20.4
30°-40°	463.9	20.6
40°-50°	380.4	16.9
50°-60°	260.0	11.5
60°-70°	145.3	6.4
70°-80°	57.6	2.6
80°-90°	10.9	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°	935.4	41.5
0°-40°	1399.3	62.1
0°-60°	2039.8	90.5
0°-90°	2253.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2253.7	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1394	1394	1394	1394	1394	
5°	1374	1390	1369	1363	1369	130
15°	1307	1293	1222	1180	1165	368
25°	1182	1124	988	888	851	545
35°	1019	911	710	575	533	637
45°	828	676	437	308	271	638
55°	623	437	206	138	128	557
65°	413	208	82	58	53	408
75°	200	54	25	21	20	214
85°	30	5	5	5	5	42
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1393.8	1393.8	1393.8	1393.8	1393.8
2.5°	1380.8	1397.7	1386.0	1387.3	1389.9
5°	1374.3	1389.9	1369.1	1362.6	1369.1
7.5°	1362.6	1374.3	1343.2	1330.2	1332.8
10°	1348.4	1352.2	1309.4	1287.4	1284.8
12.5°	1330.2	1325.0	1269.2	1236.7	1229.0
15°	1306.8	1292.6	1222.5	1179.6	1165.4
17.5°	1279.6	1254.9	1170.6	1114.8	1094.0
20°	1251.0	1214.7	1113.5	1042.1	1016.1
22.5°	1217.3	1171.9	1052.5	965.5	935.7
25°	1182.2	1123.8	987.6	887.7	851.3
27.5°	1145.9	1074.5	920.1	808.5	772.2
30°	1105.7	1021.3	850.0	729.3	685.2
32.5°	1062.9	966.8	779.9	651.5	609.9
35°	1018.7	911.0	709.9	574.9	533.4
37.5°	973.3	853.9	639.8	502.2	460.7
40°	925.3	795.5	569.7	433.4	393.2
42.5°	876.0	735.8	502.2	368.6	330.9
45°	828.0	676.1	437.3	307.6	271.2
47.5°	777.3	616.4	373.7	250.5	219.3
50°	726.7	556.7	312.8	201.2	180.4
52.5°	674.8	497.0	257.0	164.8	150.5
55°	622.9	437.3	206.3	137.6	128.5
57.5°	571.0	377.6	159.6	116.8	106.4
60°	519.1	319.2	124.6	94.7	85.7
62.5°	465.9	260.8	102.5	75.3	67.5
65°	412.7	207.6	81.8	58.4	53.2
67.5°	359.5	158.3	62.3	45.4	41.5
70°	302.4	112.9	46.7	35.0	33.7
72.5°	253.1	76.6	33.7	27.3	26.0
75°	199.9	54.5	24.7	20.8	19.5
77.5°	154.4	35.0	18.2	16.9	15.6
80°	107.7	19.5	13.0	11.7	11.7
82.5°	66.2	10.4	9.1	7.8	7.8
85°	29.8	5.2	5.2	5.2	5.2
87.5°	5.2	2.6	2.6	2.6	2.6
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	19.45	20.86	19.81	21.17	21.48	10.54	11.95	10.90	12.26	12.57
	3H	21.04	22.29	21.41	22.62	22.98	11.13	12.38	11.51	12.71	13.07
	4H	21.63	22.80	22.03	23.15	23.53	11.29	12.46	11.69	12.81	13.19
	6H	22.06	23.14	22.48	23.51	23.90	11.40	12.47	11.81	12.84	13.23
	8H	22.18	23.20	22.60	23.59	23.99	11.42	12.44	11.85	12.83	13.23
	12H	22.22	23.19	22.65	23.58	24.01	11.42	12.40	11.86	12.78	13.21
4H	2H	19.30	20.47	19.70	20.82	21.20	11.12	12.29	11.52	12.64	13.02
	3H	20.95	21.91	21.36	22.31	22.71	11.83	12.79	12.25	13.20	13.60
	4H	21.56	22.42	21.99	22.83	23.27	12.04	12.90	12.47	13.32	13.76
	6H	22.05	22.79	22.51	23.24	23.70	12.21	12.95	12.67	13.39	13.86
	8H	22.19	22.88	22.66	23.33	23.80	12.24	12.93	12.71	13.38	13.85
	12H	22.27	22.88	22.75	23.36	23.83	12.27	12.88	12.75	13.36	13.83
8H	4H	21.45	22.14	21.92	22.59	23.06	12.31	13.00	12.78	13.45	13.92
	6H	21.93	22.50	22.43	22.99	23.47	12.52	13.08	13.02	13.58	14.06
	8H	22.08	22.58	22.59	23.10	23.59	12.57	13.08	13.09	13.60	14.09
	12H	22.17	22.61	22.68	23.11	23.68	12.63	13.08	13.15	13.58	14.14
12H	4H	21.41	22.02	21.90	22.51	22.98	12.34	12.95	12.82	13.43	13.91
	6H	21.88	22.39	22.40	22.90	23.39	12.54	13.05	13.06	13.57	14.06
	8H	22.04	22.49	22.55	22.98	23.55	12.64	13.09	13.15	13.58	14.15