

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: P1056095

Luminaire Tested: S124R3DR-H1020D840-X4F0-XX-UDD-F-S

Issue Date: 7/25/2025

Test Information

Test Method: LM-79-2024
Report Number: P1056095
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-H1020D840-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, 80 CRI LEDS
Ballast/Driver: -

Summary

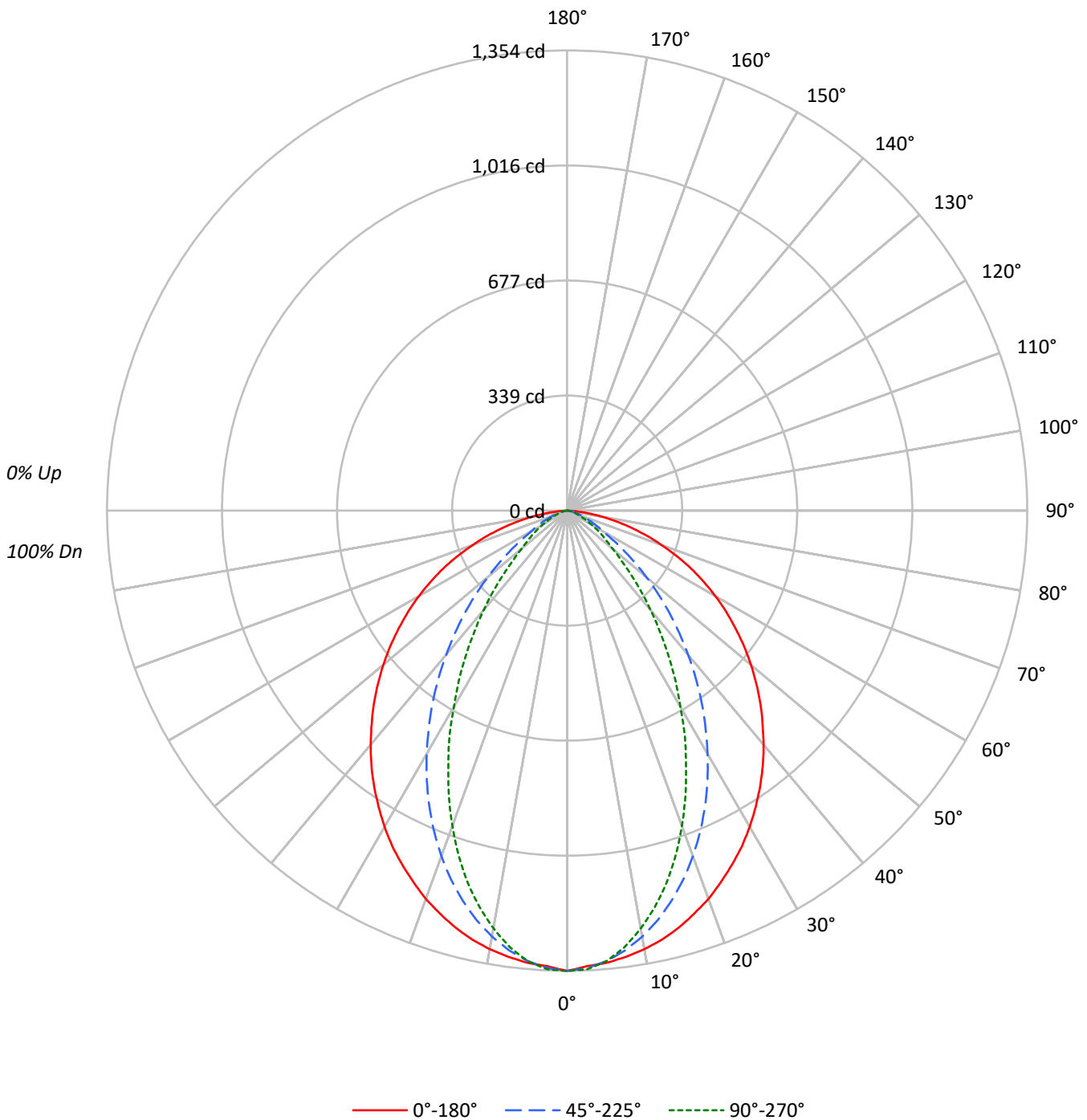
Lumens per Lamp: N/A
Luminaire Lumens: 2190.2 lumens
Efficiency: N/A
Efficacy: 70.9 lumens/watt
Spacing Criteria (0/90/45): 1.19 / 0.87 / 1.03
Luminous Opening: Rectangular (W 0.31' x L: 3.9' x H: 0')
CIE Type: Direct

Input Watts (W): 30.9
Input Voltage (V): 120
Input Current (A_{in}): 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	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°	11976	11976	11976
5°	11854	11808	11808
10°	11764	11424	11210
15°	11625	10874	10366
20°	11439	10181	9291
25°	11208	9362	8071
30°	10970	8434	6798
35°	10685	7446	5594
40°	10378	6391	4410
45°	10060	5314	3296
50°	9715	4180	2411
55°	9332	3091	1925
60°	8921	2141	1471
65°	8391	1663	1082
70°	7597	1174	848
75°	6634	820	646
80°	5331	642	580
85°	2942	507	507

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 10060 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	125.6	5.7
10°-20°	335.7	15.3
20°-30°	447.7	20.4
30°-40°	450.8	20.6
40°-50°	369.7	16.9
50°-60°	252.7	11.5
60°-70°	141.2	6.4
70°-80°	56.0	2.6
80°-90°	10.6	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°	909.1	41.5
0°-40°	1359.9	62.1
0°-60°	1982.3	90.5
0°-90°	2190.2	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2190.2	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1354	1354	1354	1354	1354	
5°	1336	1351	1330	1324	1330	127
15°	1270	1256	1188	1146	1132	358
25°	1149	1092	960	863	827	529
35°	990	885	690	559	518	619
45°	805	657	425	299	264	620
55°	605	425	200	134	125	541
65°	401	202	80	57	52	396
75°	194	53	24	20	19	208
85°	29	5	5	5	5	41
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1354.5	1354.5	1354.5	1354.5	1354.5
2.5°	1341.9	1358.3	1346.9	1348.2	1350.7
5°	1335.6	1350.7	1330.5	1324.2	1330.5
7.5°	1324.2	1335.6	1305.3	1292.7	1295.2
10°	1310.4	1314.1	1272.5	1251.1	1248.6
12.5°	1292.7	1287.7	1233.4	1201.9	1194.3
15°	1270.0	1256.1	1188.0	1146.4	1132.5
17.5°	1243.5	1219.5	1137.6	1083.3	1063.2
20°	1215.8	1180.5	1082.1	1012.7	987.5
22.5°	1183.0	1138.8	1022.8	938.3	909.3
25°	1148.9	1092.2	959.7	862.6	827.3
27.5°	1113.6	1044.2	894.2	785.7	750.4
30°	1074.5	992.5	826.1	708.8	665.9
32.5°	1032.9	939.6	758.0	633.1	592.7
35°	990.0	885.3	689.9	558.7	518.3
37.5°	945.9	829.8	621.8	488.1	447.7
40°	899.2	773.1	553.7	421.2	382.1
42.5°	851.3	715.1	488.1	358.2	321.6
45°	804.6	657.1	425.0	298.9	263.6
47.5°	755.4	599.1	363.2	243.4	213.1
50°	706.3	541.0	303.9	195.5	175.3
52.5°	655.8	483.0	249.7	160.2	146.3
55°	605.4	425.0	200.5	133.7	124.9
57.5°	554.9	367.0	155.1	113.5	103.4
60°	504.5	310.2	121.1	92.1	83.2
62.5°	452.8	253.5	99.6	73.1	65.6
65°	401.1	201.8	79.5	56.8	51.7
67.5°	349.3	153.9	60.5	44.1	40.4
70°	293.9	109.7	45.4	34.1	32.8
72.5°	245.9	74.4	32.8	26.5	25.2
75°	194.2	53.0	24.0	20.2	18.9
77.5°	150.1	34.1	17.7	16.4	15.1
80°	104.7	18.9	12.6	11.4	11.4
82.5°	64.3	10.1	8.8	7.6	7.6
85°	29.0	5.0	5.0	5.0	5.0
87.5°	5.0	2.5	2.5	2.5	2.5
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	19.35	20.76	19.72	21.07	21.38	10.44	11.85	10.81	12.16	12.47
	3H	20.94	22.19	21.32	22.52	22.88	11.03	12.28	11.41	12.61	12.98
	4H	21.53	22.70	21.93	23.05	23.43	11.19	12.36	11.59	12.71	13.09
	6H	21.96	23.04	22.38	23.41	23.80	11.30	12.37	11.71	12.74	13.13
	8H	22.08	23.10	22.50	23.49	23.89	11.32	12.34	11.75	12.73	13.13
	12H	22.12	23.09	22.55	23.48	23.91	11.32	12.30	11.76	12.68	13.11
4H	2H	19.20	20.37	19.61	20.72	21.10	11.02	12.19	11.43	12.54	12.92
	3H	20.85	21.81	21.26	22.21	22.62	11.74	12.70	12.15	13.10	13.50
	4H	21.46	22.32	21.89	22.73	23.18	11.94	12.80	12.38	13.22	13.66
	6H	21.95	22.69	22.41	23.14	23.60	12.11	12.85	12.57	13.29	13.76
	8H	22.09	22.78	22.56	23.23	23.70	12.14	12.83	12.61	13.28	13.75
	12H	22.17	22.78	22.65	23.26	23.73	12.17	12.78	12.65	13.26	13.73
8H	4H	21.35	22.04	21.82	22.49	22.96	12.21	12.90	12.68	13.35	13.82
	6H	21.83	22.40	22.33	22.89	23.37	12.42	12.98	12.92	13.48	13.96
	8H	21.98	22.48	22.50	23.00	23.49	12.48	12.98	12.99	13.50	13.99
	12H	22.07	22.52	22.58	23.01	23.58	12.53	12.98	13.05	13.48	14.05
12H	4H	21.31	21.93	21.80	22.41	22.88	12.24	12.85	12.72	13.33	13.81
	6H	21.78	22.29	22.30	22.80	23.29	12.45	12.95	12.96	13.47	13.96
	8H	21.94	22.39	22.46	22.88	23.45	12.54	12.99	13.05	13.48	14.05