

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: P1056105

Luminaire Tested: S124R3DR-H1020D930-X4F0-XX-UDD-F-W

Issue Date: 7/25/2025

Test Information

Test Method: LM-79-2024
Report Number: P1056105
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2503-402-7)
Test Lab: INNOVATION CENTER
Issue Date: 7/25/2025
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: S124R3DR-H1020D930-X4F0-XX-UDD-F-W
Description: DEFINE 4, WHITE 3-INCH REGRESSED DIRECT RECESSED HOUSING WITH FROSTED LENS
HIGH PERFORMANCE LIGHT ENGINE
Light Source: 3000K CCT, 90 CRI LEDS
Ballast/Driver: -

Summary

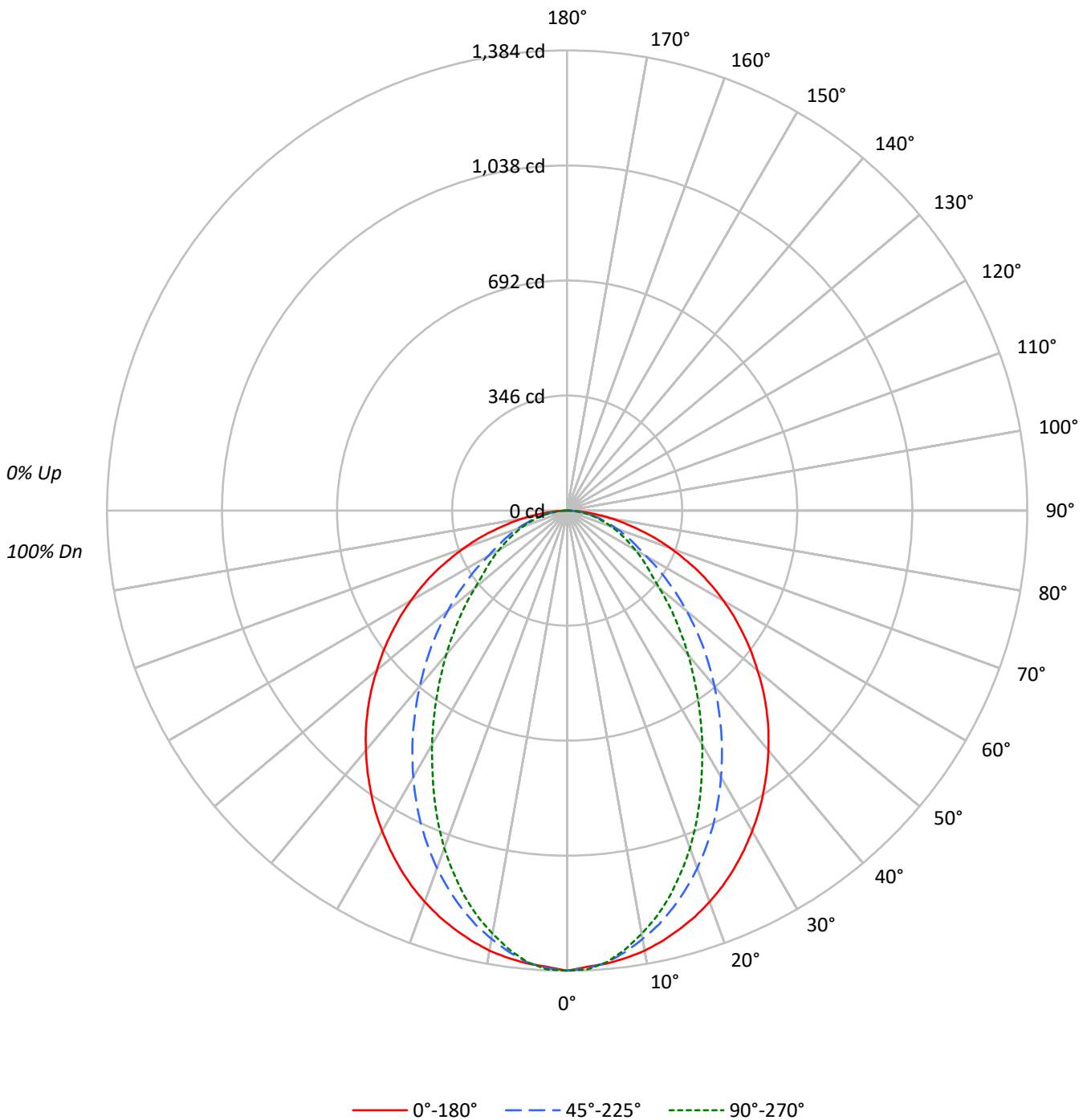
Lumens per Lamp: N/A
Luminaire Lumens: 2756.0 lumens
Efficiency: N/A
Efficacy: 89.2 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.95 / 1.12
Luminous Opening: Rectangular (W 0.31' x L: 3.9' x H: 0')
CIE Type: Direct

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	110	105	102	98	107	103	100	97	99	96	93	95	93	91	92	90	88	86
2	101	93	87	82	98	91	86	81	88	83	79	85	81	77	82	78	76	73
3	93	83	75	69	90	81	74	69	79	73	68	76	71	67	73	69	65	63
4	85	74	66	60	83	73	65	60	71	64	59	68	63	58	66	61	57	55
5	79	67	59	53	77	66	58	52	64	57	52	62	56	51	60	55	51	49
6	73	61	53	47	72	60	52	46	58	51	46	57	50	46	55	50	45	43
7	68	56	47	42	67	55	47	42	53	46	41	52	46	41	51	45	41	39
8	64	51	43	38	62	51	43	38	49	42	37	48	42	37	47	41	37	35
9	60	47	39	34	59	47	39	34	46	39	34	45	38	34	44	38	34	32
10	56	44	36	31	55	43	36	31	42	36	31	41	35	31	41	35	31	29

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	12234	12234	12234
5°	12136	12109	12099
10°	12066	11747	11600
15°	11939	11305	10960
20°	11784	10767	10164
25°	11591	10151	9237
30°	11362	9449	8295
35°	11121	8715	7385
40°	10870	7956	6534
45°	10604	7218	5742
50°	10279	6443	4957
55°	9965	5666	4504
60°	9614	4861	4177
65°	9180	4410	3897
70°	8528	4079	3684
75°	7720	3758	3478
80°	6741	3472	3264
85°	5163	3206	2993

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 10604 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	128.8	4.7
10°-20°	349.4	12.7
20°-30°	483.8	17.6
30°-40°	519.3	18.8
40°-50°	472.3	17.1
50°-60°	371.9	13.5
60°-70°	254.5	9.2
70°-80°	137.0	5.0
80°-90°	38.8	1.4
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°	962.1	34.9
0°-40°	1481.4	53.8
0°-60°	2325.6	84.4
0°-90°	2756.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2756.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1384	1384	1384	1384	1384	
5°	1367	1383	1364	1357	1363	130
15°	1304	1290	1235	1202	1197	368
25°	1188	1139	1041	965	947	547
35°	1030	950	807	710	684	645
45°	848	740	577	478	459	654
55°	646	523	368	296	292	578
65°	439	314	211	187	186	433
75°	226	138	110	101	102	241
85°	51	35	32	30	30	61
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1383.7	1383.7	1383.7	1383.7	1383.7
2.5°	1373.5	1389.8	1377.6	1379.6	1381.7
5°	1367.4	1382.7	1364.4	1357.2	1363.3
7.5°	1357.2	1367.4	1338.9	1325.7	1331.8
10°	1344.0	1346.0	1308.4	1289.0	1292.1
12.5°	1325.7	1320.6	1274.8	1247.3	1249.3
15°	1304.3	1290.0	1235.1	1201.5	1197.4
17.5°	1279.9	1256.4	1191.3	1148.5	1140.4
20°	1252.4	1220.8	1144.4	1089.5	1080.3
22.5°	1221.8	1181.1	1093.5	1028.4	1015.1
25°	1188.2	1139.3	1040.6	965.2	946.9
27.5°	1151.6	1094.5	983.6	901.1	877.7
30°	1112.9	1047.7	925.5	836.9	812.5
32.5°	1073.2	999.9	866.5	772.8	747.3
35°	1030.4	950.0	807.4	709.7	684.2
37.5°	986.6	898.0	747.3	648.6	622.1
40°	941.8	846.1	689.3	587.5	566.1
42.5°	896.0	793.2	632.3	530.5	511.1
45°	848.1	740.2	577.3	477.5	459.2
47.5°	799.3	686.3	521.3	427.6	410.3
50°	747.3	632.3	468.4	378.8	360.4
52.5°	697.5	577.3	417.5	330.9	321.7
55°	646.5	523.3	367.6	296.3	292.2
57.5°	595.6	469.4	321.7	268.8	264.7
60°	543.7	416.4	274.9	240.3	236.2
62.5°	491.8	364.5	240.3	212.8	210.8
65°	438.8	313.6	210.8	187.3	186.3
67.5°	382.8	264.7	184.3	164.9	163.9
70°	329.9	215.9	157.8	142.5	142.5
72.5°	280.0	171.1	133.4	121.2	121.2
75°	226.0	137.5	110.0	100.8	101.8
77.5°	178.2	107.9	88.6	82.5	82.5
80°	132.4	80.4	68.2	63.1	64.1
82.5°	89.6	56.0	48.9	45.8	45.8
85°	50.9	34.6	31.6	29.5	29.5
87.5°	18.3	16.3	15.3	13.2	14.3
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	19.84	21.37	20.21	21.68	22.00	15.62	17.14	15.98	17.46	17.77
	3H	21.62	22.99	22.00	23.32	23.68	17.23	18.60	17.61	18.93	19.29
	4H	22.29	23.57	22.69	23.92	24.30	17.86	19.15	18.26	19.50	19.87
	6H	22.80	23.99	23.21	24.35	24.75	18.36	19.55	18.77	19.92	20.31
	8H	22.96	24.09	23.39	24.48	24.88	18.53	19.66	18.96	20.05	20.45
	12H	23.06	24.14	23.49	24.53	24.96	18.65	19.74	19.08	20.12	20.55
4H	2H	19.94	21.22	20.34	21.57	21.95	16.34	17.62	16.74	17.97	18.35
	3H	21.88	22.95	22.29	23.35	23.75	18.15	19.22	18.56	19.61	20.02
	4H	22.64	23.60	23.07	24.02	24.46	18.88	19.85	19.31	20.26	20.70
	6H	23.27	24.11	23.73	24.55	25.01	19.50	20.34	19.96	20.78	21.24
	8H	23.49	24.28	23.96	24.72	25.19	19.71	20.50	20.18	20.94	21.41
	12H	23.65	24.35	24.13	24.83	25.30	19.88	20.58	20.36	21.06	21.53
8H	4H	22.70	23.48	23.16	23.92	24.39	19.27	20.06	19.73	20.50	20.97
	6H	23.39	24.04	23.89	24.53	25.01	20.00	20.65	20.50	21.14	21.62
	8H	23.66	24.24	24.18	24.75	25.24	20.29	20.87	20.80	21.38	21.87
	12H	23.88	24.40	24.39	24.89	25.45	20.54	21.05	21.05	21.54	22.11
12H	4H	22.69	23.39	23.17	23.87	24.34	19.33	20.03	19.81	20.51	20.98
	6H	23.39	23.97	23.90	24.48	24.97	20.09	20.67	20.60	21.18	21.67
	8H	23.70	24.21	24.21	24.70	25.27	20.43	20.95	20.94	21.44	22.01