

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: P1056151

Luminaire Tested: S124R3DR-H350D850-X4F0-XX-UDD-F-B

Issue Date: 7/25/2025

Test Information

Test Method: LM-79-2024
Report Number: P1056151
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-H350D850-X4F0-XX-UDD-F-B
Description: DEFINE 4, BLACK 3-INCH REGRESSED DIRECT RECESSED HOUSING WITH FROSTED LENS
HIGH PERFORMANCE LIGHT ENGINE
Light Source: 5000K CCT, 80 CRI LEDS
Ballast/Driver: -

Summary

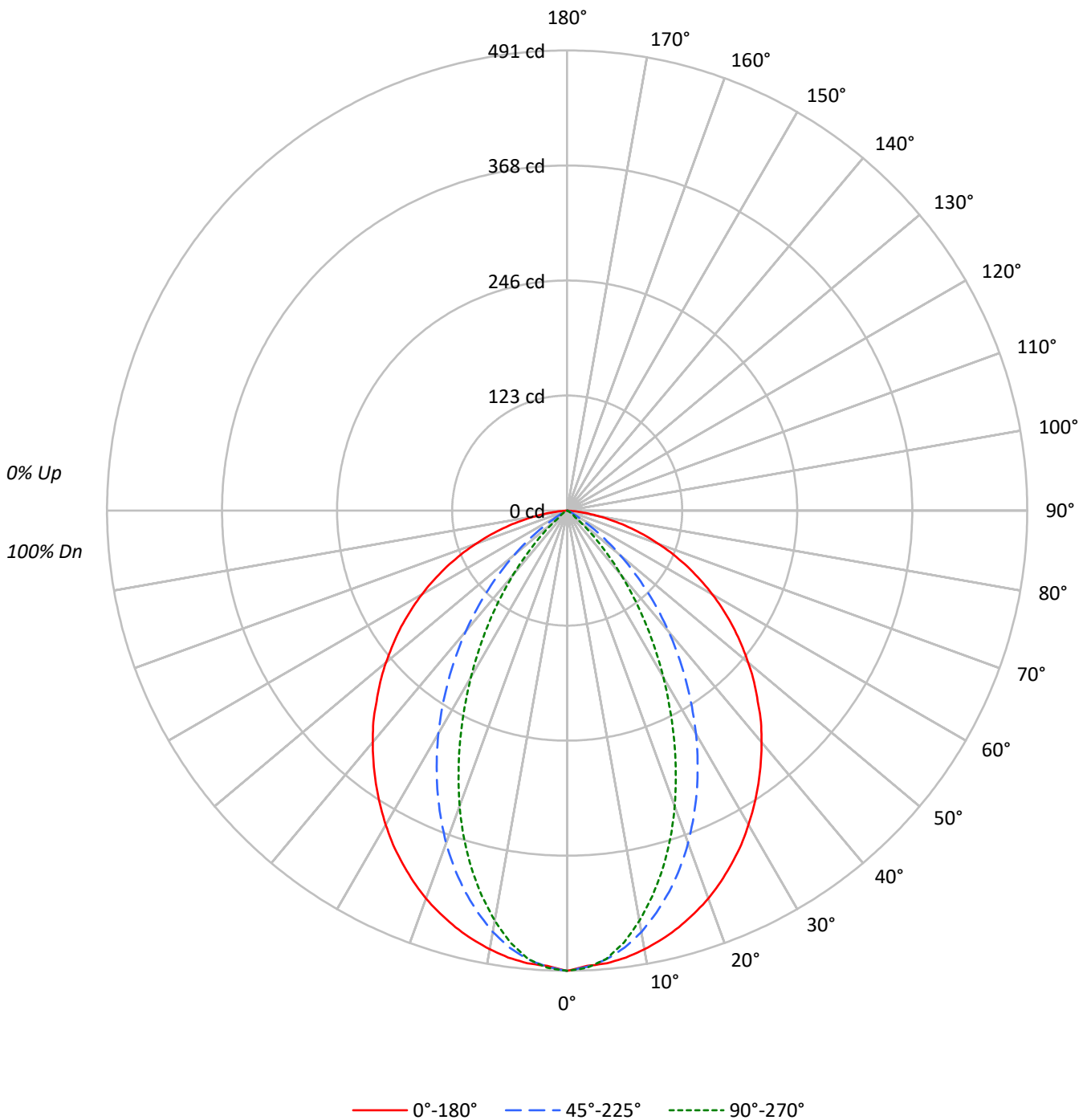
Lumens per Lamp: N/A
Luminaire Lumens: 686.5 lumens
Efficiency: N/A
Efficacy: 58.7 lumens/watt
Spacing Criteria (0/90/45): 1.18 / 0.81 / 0.97
Luminous Opening: Rectangular (W 0.31' x L: 3.9' x H: 0')
CIE Type: Direct

Input Watts (W): 11.7
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	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°	4342	4342	4342
5°	4304	4265	4261
10°	4267	4098	3990
15°	4213	3852	3614
20°	4146	3552	3158
25°	4054	3199	2635
30°	3952	2806	2094
35°	3840	2380	1560
40°	3723	1940	1039
45°	3595	1482	571
50°	3470	1014	160
55°	3333	549	103
60°	3167	170	60
65°	2962	111	29
70°	2676	49	13
75°	2302	17	0
80°	1741	0	0
85°	730	0	0

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 3595 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	45.3	6.6
10°-20°	118.9	17.3
20°-30°	153.7	22.4
30°-40°	146.9	21.4
40°-50°	109.9	16.0
50°-60°	65.4	9.5
60°-70°	33.2	4.8
70°-80°	11.6	1.7
80°-90°	1.6	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°	318.0	46.3
0°-40°	464.9	67.7
0°-60°	640.1	93.3
0°-90°	686.5	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	686.5	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	491	491	491	491	491	
5°	485	489	481	478	480	46
15°	460	451	421	401	395	130
25°	416	387	328	285	270	191
35°	356	307	220	164	144	223
45°	288	220	118	63	46	222
55°	216	134	36	8	7	193
65°	142	54	5	2	1	140
75°	67	7	0	0	0	72
85°	7	0	0	0	0	12
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	491.1	491.1	491.1	491.1	491.1
2.5°	486.3	492.1	487.3	487.8	488.3
5°	484.9	488.7	480.6	478.1	480.1
7.5°	481.0	482.5	470.4	464.2	464.7
10°	475.3	473.8	456.5	445.9	444.4
12.5°	468.5	463.7	439.6	424.2	420.8
15°	460.3	450.7	420.8	401.1	394.8
17.5°	450.7	436.7	400.1	374.1	366.4
20°	440.6	421.3	377.5	345.2	335.6
22.5°	428.6	404.0	353.0	314.9	302.9
25°	415.6	386.7	327.9	284.6	270.1
27.5°	402.1	367.9	301.4	253.8	236.9
30°	387.1	348.1	274.9	222.5	205.1
32.5°	371.7	327.9	247.5	193.6	174.3
35°	355.8	306.7	220.5	164.2	144.5
37.5°	339.5	285.5	194.5	136.3	116.0
40°	322.6	263.9	168.1	109.8	90.0
42.5°	306.2	242.2	143.0	84.7	66.4
45°	287.5	220.5	118.5	63.1	45.7
47.5°	270.6	199.3	94.9	42.9	27.0
50°	252.3	176.7	73.7	25.0	11.6
52.5°	234.0	155.5	53.9	11.1	8.7
55°	216.2	134.3	35.6	8.2	6.7
57.5°	197.4	113.2	19.3	6.3	4.8
60°	179.1	92.5	9.6	4.8	3.4
62.5°	160.3	72.7	7.7	2.9	1.9
65°	141.6	54.4	5.3	1.9	1.4
67.5°	122.8	37.1	3.4	1.0	0.5
70°	103.5	22.6	1.9	0.5	0.5
72.5°	85.2	11.6	1.0	0.5	0.5
75°	67.4	7.2	0.5	0.5	0.0
77.5°	50.1	3.9	0.5	0.5	0.0
80°	34.2	1.4	0.0	0.0	0.0
82.5°	19.7	0.5	0.0	0.0	0.0
85°	7.2	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	15.56	16.89	15.92	17.20	17.52	0.00	0.00	0.00	0.00	0.00
	3H	17.10	18.28	17.48	18.61	18.97	0.00	0.00	0.00	0.00	0.00
	4H	17.69	18.79	18.10	19.14	19.52	0.00	0.00	0.00	0.00	0.00
	6H	18.11	19.12	18.53	19.49	19.88	0.00	0.00	0.00	0.00	0.00
	8H	18.21	19.16	18.64	19.55	19.96	0.00	0.00	0.00	0.00	0.00
	12H	18.23	19.14	18.66	19.52	19.95	0.00	0.00	0.00	0.00	0.00
4H	2H	15.34	16.43	15.74	16.78	17.17	0.00	0.00	0.00	0.00	0.00
	3H	16.90	17.79	17.31	18.20	18.60	0.00	0.00	0.00	0.00	0.00
	4H	17.48	18.28	17.92	18.70	19.14	0.00	0.00	0.00	0.00	0.00
	6H	17.94	18.63	18.41	19.08	19.54	0.00	0.00	0.00	0.00	0.00
	8H	18.06	18.70	18.53	19.15	19.62	0.00	0.00	0.00	0.00	0.00
	12H	18.10	18.67	18.59	19.15	19.62	0.00	0.00	0.00	0.00	0.00
8H	4H	17.35	17.99	17.82	18.43	18.90	0.00	0.00	0.00	0.00	0.00
	6H	17.79	18.31	18.29	18.81	19.29	0.00	0.00	0.00	0.00	0.00
	8H	17.90	18.37	18.43	18.89	19.38	0.00	0.00	0.00	0.00	0.00
	12H	17.95	18.36	18.47	18.86	19.43	0.00	0.00	0.00	0.00	0.00
12H	4H	17.30	17.87	17.79	18.35	18.82	0.00	0.00	0.00	0.00	0.00
	6H	17.72	18.19	18.25	18.71	19.20	0.00	0.00	0.00	0.00	0.00
	8H	17.86	18.27	18.37	18.77	19.34	0.00	0.00	0.00	0.00	0.00