

Cooper Lighting Solutions Photometric Lab  
1121 Highway 74 South  
Peachtree City, GA 30269



Scaled data based on original data using  
LM-79-2019 Approved Method: Electrical and Photometric Measurements of Solid-  
State Lighting Products

Test Report Prepared for  
Cooper Lighting Solutions

Brand: NEO-RAY

Report Number: P1055314

Luminaire Tested: S122R3DR-H290D850-X4F0-XX-UDD-FLL-B

Issue Date: 7/25/2025

**Test Information**

Test Method: LM-79-2019  
Report Number: P1055314  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2503-402-2)  
Test Lab: INNOVATION CENTER  
Issue Date: 7/25/2025  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: NEO-RAY  
Catalog Number: S122R3DR-H290D850-X4F0-XX-UDD-FLL-B  
Description: DEFINE 2, BLACK 3-INCH REGRESSED DIRECT RECESSED HOUSING WITH FROSTED LENS  
HIGH PERFORMANCE LIGHT ENGINE  
Light Source: 5000K CCT, 80 CRI LEDS  
Ballast/Driver: -

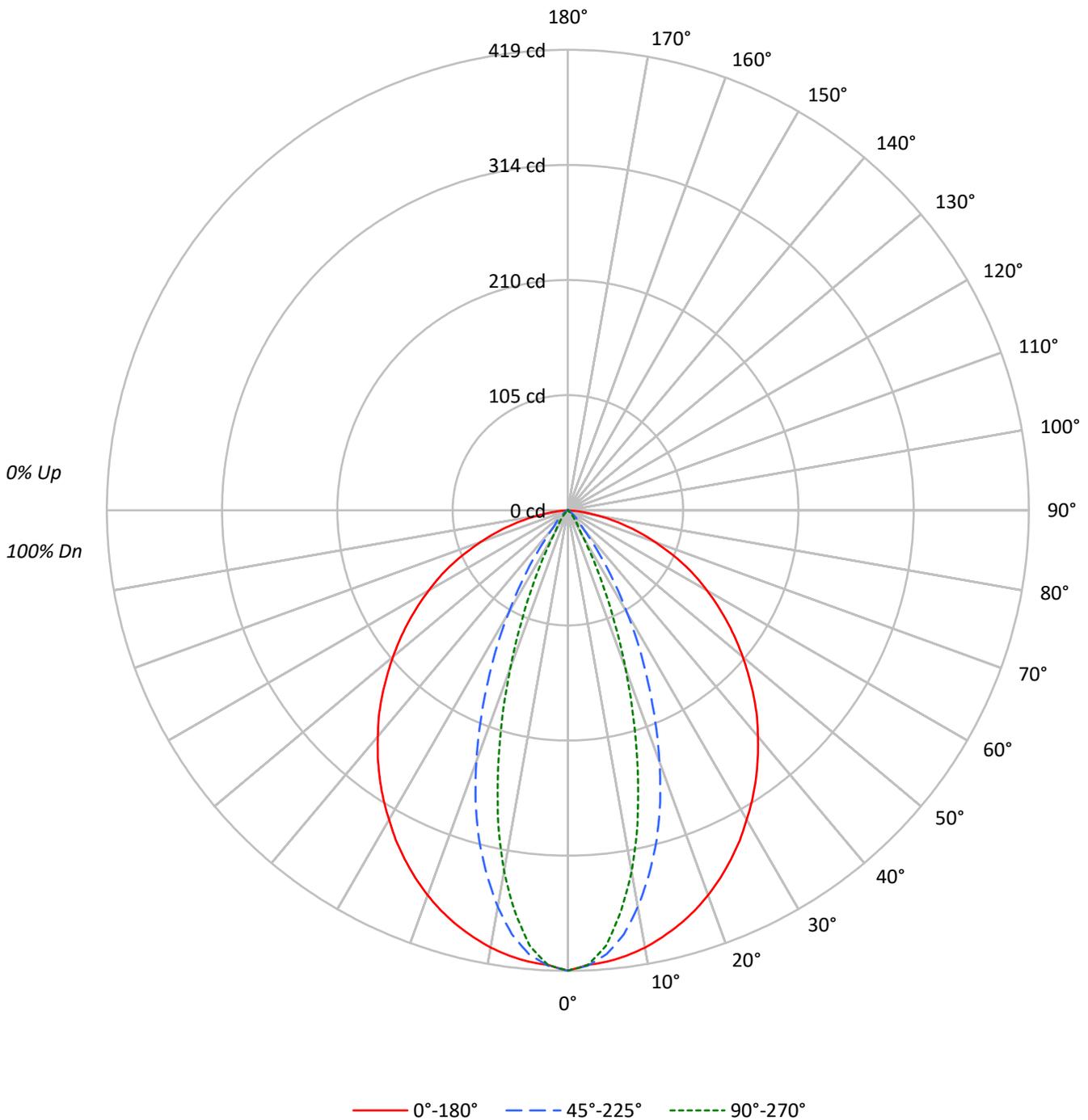
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 381.2 lumens  
Efficiency: N/A  
Efficacy: 32.6 lumens/watt  
Spacing Criteria (0/90/45): 1.16 / 0.56 / 0.7  
Luminous Opening: Rectangular (W 0.15' x L: 3.9' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 11.7  
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

TEST NUMBER: P1055314

CATALOG NUMBER: S122R3DR-H290D850-X4F0-XX-UDD-FLL-B

### Luminous Intensity Polar Plot





TEST NUMBER: P1055314

CATALOG NUMBER: S122R3DR-H290D850-X4F0-XX-UDD-FLL-B

**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	0	
RCR																						
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100				100
1	112	109	106	103	110	106	104	101	102	100	98	99	97	95	95	94	92	91				91
2	105	99	94	90	103	97	93	89	94	90	87	91	88	85	88	86	83	81				81
3	98	91	85	80	96	89	84	79	86	82	78	84	80	77	82	78	75	74				74
4	92	83	77	72	90	82	76	71	80	75	70	78	73	70	76	72	69	67				67
5	87	77	70	65	85	76	70	65	74	69	64	72	68	64	71	66	63	61				61
6	82	72	65	60	80	71	64	59	69	63	59	68	62	59	66	62	58	56				56
7	77	67	60	55	76	66	59	55	65	59	55	63	58	54	62	57	54	52				52
8	73	62	56	51	72	62	55	51	61	55	51	60	54	50	59	54	50	49				49
9	70	59	52	48	68	58	52	47	57	51	47	56	51	47	55	50	47	45				45
10	66	55	49	45	65	55	49	44	54	48	44	53	48	44	52	47	44	43				43

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

	0°	45°	90°
0°	7936	7936	7936
5°	7839	7710	7564
10°	7772	7049	6420
15°	7659	6102	4807
20°	7514	4903	3077
25°	7327	3593	1580
30°	7110	2350	516
35°	6895	1302	301
40°	6646	524	166
45°	6398	348	64
50°	6116	197	29
55°	5837	96	17
60°	5528	38	0
65°	5200	22	0
70°	4670	28	0
75°	4019	37	0
80°	3044	0	0
85°	1261	109	0

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 6398 cd/sqm



TEST NUMBER: P1055314

CATALOG NUMBER: S122R3DR-H290D850-X4F0-XX-UDD-FLL-B

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	37.6	9.9
10°-20°	87.3	22.9
20°-30°	88.6	23.2
30°-40°	66.5	17.4
40°-50°	46.6	12.2
50°-60°	28.5	7.5
60°-70°	17.0	4.5
70°-80°	7.8	2.1
80°-90°	1.4	0.4
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°	213.4	56.0
0°-40°	279.9	73.4
0°-60°	354.9	93.1
0°-90°	381.2	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	381.2	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	419	419	419	419	419	
5°	412	416	405	398	398	39
15°	390	369	311	263	245	110
25°	350	289	172	98	76	161
35°	298	194	56	17	13	186
45°	239	103	13	4	2	184
55°	177	31	3	1	0	158
65°	116	9	0	0	0	114
75°	55	1	0	0	0	58
85°	6	0	0	0	0	10
90°	0	0	0	0	0	



TEST NUMBER: P1055314

CATALOG NUMBER: S122R3DR-H290D850-X4F0-XX-UDD-FLL-B

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	418.9	418.9	418.9	418.9	418.9
2.5°	414.1	420.4	414.6	413.6	414.1
5°	412.2	416.0	405.4	397.7	397.7
7.5°	408.8	408.8	389.1	373.2	368.4
10°	404.0	398.7	366.4	340.9	333.7
12.5°	397.7	385.2	340.0	303.8	292.3
15°	390.5	369.3	311.1	263.4	245.1
17.5°	382.3	351.5	278.8	219.6	198.4
20°	372.7	332.3	243.2	174.8	152.6
22.5°	362.1	311.1	207.1	134.8	111.2
25°	350.5	288.9	171.9	98.2	75.6
27.5°	338.5	265.8	139.6	67.4	46.2
30°	325.0	241.7	107.4	40.0	23.6
32.5°	312.0	218.6	80.4	21.7	17.3
35°	298.1	194.1	56.3	16.9	13.0
37.5°	283.6	170.9	34.7	12.5	9.6
40°	268.7	147.3	21.2	9.1	6.7
42.5°	254.2	125.2	16.9	6.3	4.3
45°	238.8	102.6	13.0	3.9	2.4
47.5°	222.9	81.9	9.6	2.4	1.4
50°	207.5	63.6	6.7	1.4	1.0
52.5°	192.1	46.7	4.3	1.0	0.5
55°	176.7	31.3	2.9	1.0	0.5
57.5°	161.3	22.2	1.9	0.5	0.5
60°	145.9	17.3	1.0	0.5	0.0
62.5°	131.5	13.5	1.0	0.5	0.5
65°	116.0	9.1	0.5	0.5	0.0
67.5°	99.7	5.8	0.5	0.5	0.0
70°	84.3	3.4	0.5	0.5	0.0
72.5°	69.3	1.9	0.5	0.5	0.0
75°	54.9	1.0	0.5	0.5	0.0
77.5°	40.9	0.5	0.0	0.5	0.0
80°	27.9	0.0	0.0	0.5	0.0
82.5°	16.4	0.0	0.0	0.5	0.0
85°	5.8	0.0	0.5	0.5	0.0
87.5°	0.0	0.0	0.5	0.5	0.0
90°	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P1055314  
 CATALOG NUMBER: S122R3DR-H290D850-X4F0-XX-UDD-FLL-B

**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	13.41	14.67	13.78	14.99	15.30	0.00	0.00	0.00	0.00	0.00
	3H	17.15	18.27	17.53	18.60	18.97	0.00	0.00	0.00	0.00	0.00
	4H	18.46	19.50	18.87	19.86	20.24	0.00	0.00	0.00	0.00	0.00
	6H	19.32	20.27	19.73	20.64	21.04	0.00	0.00	0.00	0.00	0.00
	8H	19.53	20.43	19.96	20.83	21.23	0.00	0.00	0.00	0.00	0.00
	12H	19.59	20.46	20.03	20.84	21.27	0.00	0.00	0.00	0.00	0.00
4H	2H	13.17	14.21	13.57	14.56	14.94	0.00	0.00	0.00	0.00	0.00
	3H	16.91	17.76	17.32	18.17	18.57	0.00	0.00	0.00	0.00	0.00
	4H	18.20	18.96	18.64	19.38	19.83	0.00	0.00	0.00	0.00	0.00
	6H	19.12	19.78	19.58	20.22	20.69	0.00	0.00	0.00	0.00	0.00
	8H	19.38	19.99	19.85	20.44	20.91	0.00	0.00	0.00	0.00	0.00
	12H	19.48	20.02	19.97	20.50	20.98	0.00	0.00	0.00	0.00	0.00
8H	4H	18.06	18.67	18.53	19.12	19.59	0.00	0.00	0.00	0.00	0.00
	6H	18.96	19.45	19.46	19.95	20.43	0.00	0.00	0.00	0.00	0.00
	8H	19.21	19.66	19.74	20.18	20.67	0.00	0.00	0.00	0.00	0.00
	12H	19.33	19.72	19.85	20.22	20.79	0.00	0.00	0.00	0.00	0.00
12H	4H	18.01	18.55	18.50	19.03	19.51	0.00	0.00	0.00	0.00	0.00
	6H	18.89	19.34	19.42	19.85	20.35	0.00	0.00	0.00	0.00	0.00
	8H	19.17	19.56	19.69	20.05	20.63	0.00	0.00	0.00	0.00	0.00