

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: P1055744

Luminaire Tested: S123R3DR-H340D840-X4F0-XX-UDD-FLL-S

Issue Date: 7/25/2025

**Test Information**

Test Method: LM-79-2019  
Report Number: P1055744  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2503-402-6)  
Test Lab: INNOVATION CENTER  
Issue Date: 7/25/2025  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: NEO-RAY  
Catalog Number: S123R3DR-H340D840-X4F0-XX-UDD-FLL-S  
Description: DEFINE 3, SILVER 3-INCH REGRESSED DIRECT RECESSED HOUSING WITH FROSTED LENS  
HIGH PERFORMANCE LIGHT ENGINE  
Light Source: 4000K CCT, 80 CRI LEDS  
Ballast/Driver: -

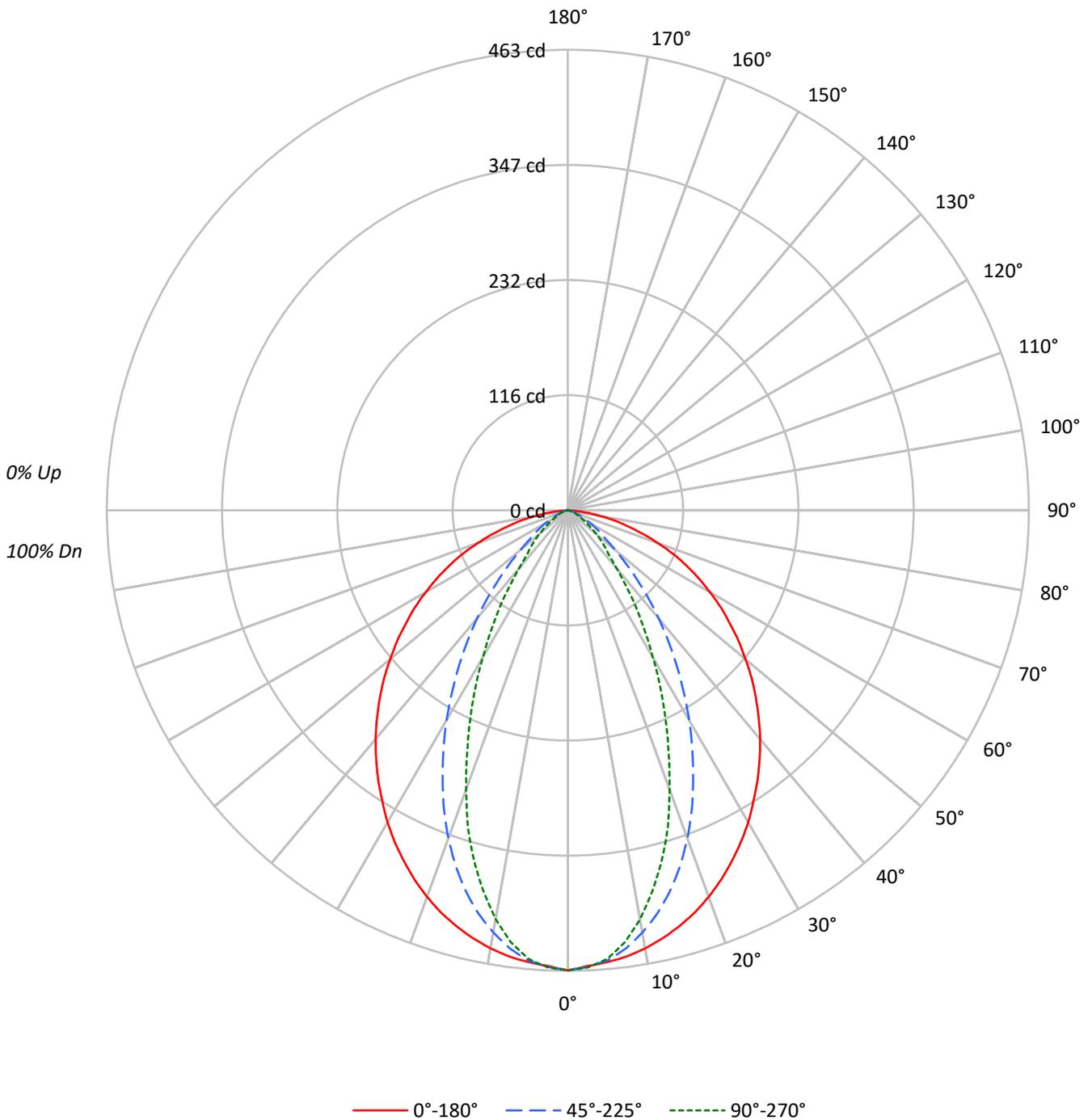
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 643.3 lumens  
Efficiency: N/A  
Efficacy: 55.0 lumens/watt  
Spacing Criteria (0/90/45): 1.17 / 0.77 / 0.94  
Luminous Opening: Rectangular (W 0.23' x L: 3.9' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 11.7  
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	111	108	104	102	109	106	103	100	101	99	97	98	96	94	94	93	91	89
2	104	97	92	87	101	95	90	86	92	88	84	89	85	82	86	83	81	79
3	96	88	81	76	94	86	80	76	84	78	74	81	77	73	79	75	72	70
4	90	80	73	67	88	79	72	67	76	71	66	74	69	65	72	68	64	62
5	84	73	66	60	82	72	65	60	70	64	59	68	63	59	67	62	58	56
6	78	67	60	54	77	66	59	54	65	58	53	63	57	53	62	57	53	51
7	73	62	54	49	72	61	54	49	60	53	49	58	53	48	57	52	48	46
8	69	57	50	45	68	57	50	45	56	49	45	54	49	44	53	48	44	42
9	65	53	46	41	64	53	46	41	52	45	41	51	45	41	50	45	41	39
10	62	50	43	38	60	49	43	38	48	42	38	48	42	38	47	42	38	36

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

	0°	45°	90°
0°	5577	5577	5577
5°	5519	5498	5481
10°	5475	5276	5110
15°	5402	4948	4548
20°	5305	4501	3831
25°	5180	3960	3092
30°	5042	3394	2381
35°	4885	2801	1762
40°	4728	2229	1201
45°	4552	1668	905
50°	4366	1159	707
55°	4175	847	517
60°	3976	634	369
65°	3740	425	288
70°	3384	310	233
75°	2921	224	182
80°	2347	181	153
85°	1217	180	124

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 4552 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	42.8	6.6
10°-20°	111.3	17.3
20°-30°	139.8	21.7
30°-40°	130.3	20.2
40°-50°	99.7	15.5
50°-60°	66.3	10.3
60°-70°	35.7	5.6
70°-80°	14.6	2.3
80°-90°	2.8	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°	293.9	45.7
0°-40°	424.2	65.9
0°-60°	590.1	91.7
0°-90°	643.3	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	643.3	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	463	463	463	463	463	
5°	456	461	454	452	453	43
15°	433	426	396	373	364	122
25°	389	363	298	248	232	179
35°	332	283	190	135	120	208
45°	267	197	98	57	53	206
55°	199	115	40	28	25	178
65°	131	44	15	11	10	130
75°	63	10	5	4	4	67
85°	9	1	1	1	1	13
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	462.6	462.6	462.6	462.6	462.6
2.5°	458.6	464.3	459.5	460.0	460.0
5°	456.0	460.8	454.3	452.5	452.9
7.5°	452.5	455.6	444.6	438.9	438.0
10°	447.2	448.1	431.0	420.9	417.4
12.5°	440.7	437.6	415.2	398.6	392.0
15°	432.8	425.8	396.4	373.1	364.4
17.5°	424.0	412.2	374.9	344.6	334.1
20°	413.5	396.8	350.8	313.1	298.6
22.5°	402.1	380.6	325.3	280.6	264.4
25°	389.4	363.1	297.7	248.2	232.4
27.5°	376.2	344.2	270.5	217.5	201.3
30°	362.2	324.9	243.8	187.7	171.0
32.5°	346.8	303.9	216.2	160.0	143.4
35°	331.9	282.8	190.3	134.6	119.7
37.5°	316.1	261.8	165.3	112.2	95.6
40°	300.4	240.3	141.6	90.3	76.3
42.5°	283.7	218.8	119.3	71.9	60.9
45°	267.0	197.3	97.8	57.4	53.1
47.5°	250.4	175.8	78.9	49.5	45.2
50°	232.8	155.2	61.8	42.1	37.7
52.5°	216.2	134.6	48.2	34.6	30.7
55°	198.6	114.9	40.3	28.1	24.6
57.5°	182.4	94.7	33.3	21.9	19.3
60°	164.9	76.7	26.3	17.1	15.3
62.5°	148.2	60.1	20.2	13.6	12.3
65°	131.1	44.3	14.9	11.0	10.1
67.5°	114.0	32.0	11.4	8.8	8.3
70°	96.0	24.1	8.8	7.0	6.6
72.5°	78.9	17.1	6.6	5.7	5.3
75°	62.7	10.5	4.8	4.4	3.9
77.5°	48.2	6.1	3.5	3.5	3.1
80°	33.8	3.5	2.6	2.6	2.2
82.5°	20.6	2.2	1.8	1.8	1.8
85°	8.8	1.3	1.3	1.3	0.9
87.5°	1.3	0.4	0.4	0.4	0.4
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	15.78	17.14	16.15	17.45	17.77	4.35	5.71	4.72	6.02	6.34
	3H	17.54	18.74	17.92	19.07	19.44	5.02	6.22	5.40	6.55	6.92
	4H	18.24	19.36	18.64	19.71	20.09	5.21	6.34	5.61	6.69	7.07
	6H	18.75	19.78	19.16	20.15	20.55	5.34	6.37	5.75	6.74	7.13
	8H	18.89	19.87	19.32	20.26	20.66	5.37	6.35	5.80	6.74	7.15
	12H	18.94	19.88	19.37	20.26	20.69	5.39	6.32	5.82	6.70	7.13
4H	2H	15.59	16.72	15.99	17.07	17.45	4.91	6.03	5.31	6.38	6.77
	3H	17.38	18.30	17.80	18.71	19.11	5.71	6.63	6.12	7.03	7.44
	4H	18.08	18.90	18.51	19.32	19.76	5.97	6.79	6.40	7.21	7.65
	6H	18.65	19.36	19.11	19.80	20.27	6.17	6.88	6.63	7.32	7.79
	8H	18.82	19.49	19.29	19.93	20.40	6.22	6.89	6.69	7.33	7.80
	12H	18.91	19.50	19.40	19.98	20.45	6.26	6.85	6.74	7.33	7.80
8H	4H	17.96	18.62	18.42	19.06	19.54	6.28	6.94	6.75	7.39	7.86
	6H	18.51	19.05	19.01	19.55	20.03	6.53	7.07	7.03	7.57	8.05
	8H	18.69	19.17	19.21	19.69	20.18	6.62	7.11	7.14	7.62	8.11
	12H	18.79	19.22	19.30	19.71	20.28	6.71	7.13	7.22	7.63	8.20
12H	4H	17.91	18.50	18.40	18.98	19.45	6.33	6.91	6.81	7.39	7.87
	6H	18.45	18.94	18.97	19.45	19.94	6.57	7.06	7.10	7.57	8.07
	8H	18.65	19.07	19.16	19.57	20.14	6.71	7.13	7.22	7.63	8.20