

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: P1055732

Luminaire Tested: S123R3DR-H1165D940-X4F0-XX-UDD-FLL-S

Issue Date: 7/25/2025

**Test Information**

Test Method: LM-79-2019  
Report Number: P1055732  
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-H1165D940-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, 90 CRI LEDS  
Ballast/Driver: -

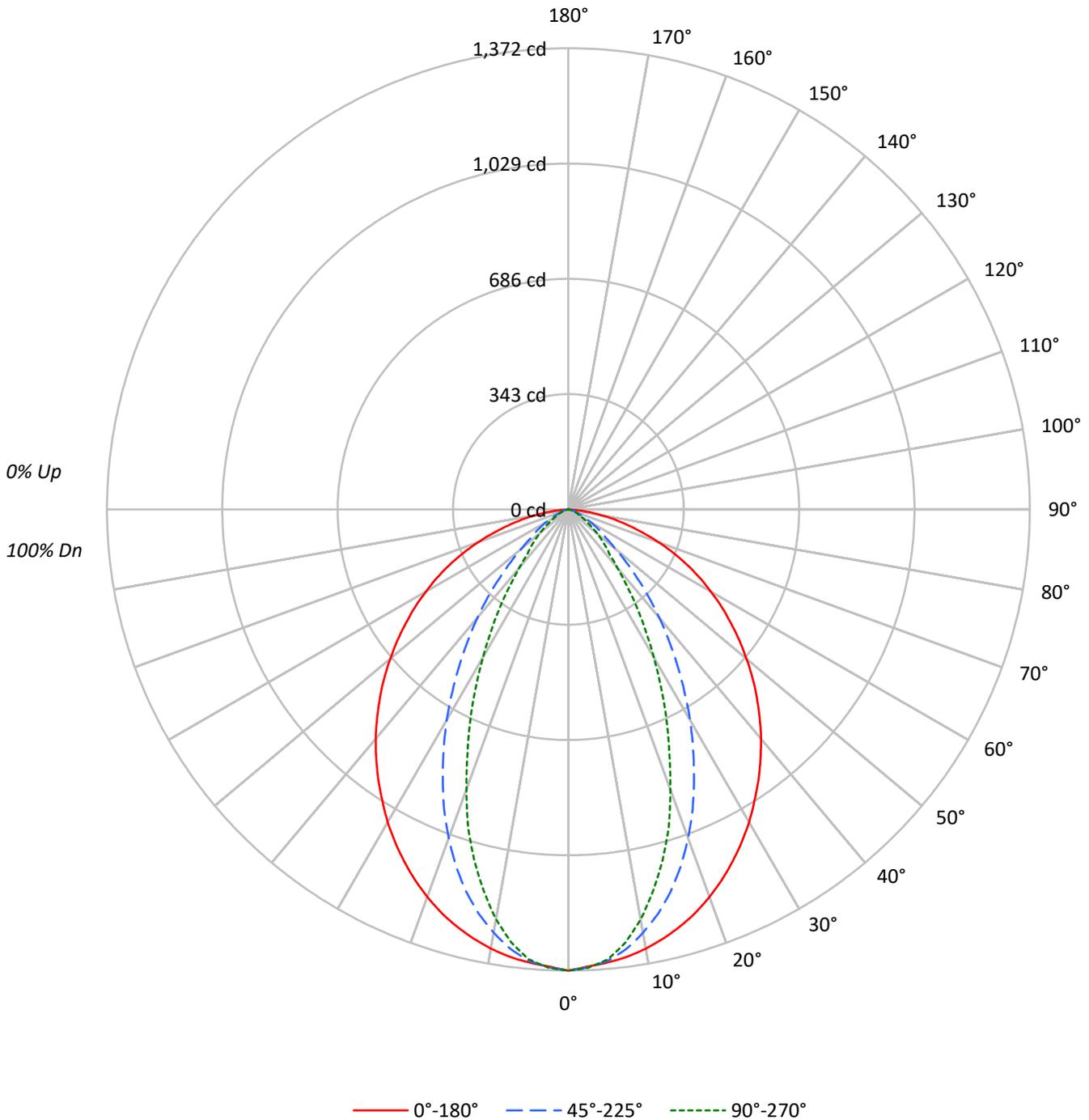
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 1908.6 lumens  
Efficiency: N/A  
Efficacy: 52.1 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): 36.6  
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	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	111	108	104	102	109	106	103	100	101	99	97	98	96	94	94	93	91	89					89			
2	104	97	92	87	101	95	90	86	92	88	84	89	85	82	86	83	81	79					79			
3	96	88	81	76	94	86	80	76	84	78	74	81	77	73	79	75	72	70					70			
4	90	80	73	67	88	79	72	67	76	71	66	74	69	65	72	68	64	62					62			
5	84	73	66	60	82	72	65	60	70	64	59	68	63	59	67	62	58	56					56			
6	78	67	60	54	77	66	59	54	65	58	53	63	57	53	62	57	53	51					51			
7	73	62	54	49	72	61	54	49	60	53	49	58	53	48	57	52	48	46					46			
8	69	57	50	45	68	57	50	45	56	49	45	54	49	44	53	48	44	42					42			
9	65	53	46	41	64	53	46	41	52	45	41	51	45	41	50	45	41	39					39			
10	62	50	43	38	60	49	43	38	48	42	38	48	42	38	47	42	38	36					36			

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

	0°	45°	90°
0°	16546	16546	16546
5°	16373	16310	16263
10°	16244	15656	15162
15°	16027	14678	13493
20°	15739	13352	11366
25°	15367	11750	9172
30°	14959	10069	7064
35°	14494	8310	5226
40°	14025	6613	3563
45°	13507	4946	2684
50°	12957	3440	2099
55°	12387	2516	1532
60°	11794	1883	1097
65°	11097	1261	853
70°	10043	917	687
75°	8664	666	545
80°	6957	542	451
85°	3597	539	360

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 13507 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	126.9	6.6
10°-20°	330.2	17.3
20°-30°	414.9	21.7
30°-40°	386.4	20.2
40°-50°	295.8	15.5
50°-60°	196.6	10.3
60°-70°	106.0	5.6
70°-80°	43.4	2.3
80°-90°	8.3	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°	872.0	45.7
0°-40°	1258.5	65.9
0°-60°	1750.9	91.7
0°-90°	1908.6	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1908.6	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1372	1372	1372	1372	1372	
5°	1353	1367	1348	1342	1344	128
15°	1284	1263	1176	1107	1081	362
25°	1155	1077	883	736	690	532
35°	985	839	565	399	355	616
45°	792	585	290	170	157	611
55°	589	341	120	83	73	528
65°	389	131	44	32	30	384
75°	186	31	14	13	12	199
85°	26	4	4	4	3	38
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1372.4	1372.4	1372.4	1372.4	1372.4
2.5°	1360.7	1377.7	1363.3	1364.6	1364.6
5°	1352.9	1367.2	1347.7	1342.5	1343.8
7.5°	1342.5	1351.6	1319.1	1302.2	1299.6
10°	1326.9	1329.5	1278.8	1248.9	1238.5
12.5°	1307.4	1298.3	1232.0	1182.5	1163.0
15°	1284.0	1263.2	1176.0	1107.1	1081.0
17.5°	1258.0	1222.8	1112.3	1022.5	991.3
20°	1226.7	1177.3	1040.7	928.8	885.9
22.5°	1192.9	1129.2	965.3	832.6	784.4
25°	1155.2	1077.1	883.3	736.3	689.5
27.5°	1116.2	1021.2	802.7	645.2	597.1
30°	1074.5	964.0	723.3	556.8	507.4
32.5°	1029.0	901.5	641.3	474.8	425.4
35°	984.8	839.1	564.6	399.4	355.1
37.5°	937.9	776.6	490.4	333.0	283.6
40°	891.1	712.9	420.2	268.0	226.4
42.5°	841.7	649.1	353.8	213.3	180.8
45°	792.2	585.4	290.1	170.4	157.4
47.5°	742.8	521.7	234.2	147.0	134.0
50°	690.8	460.5	183.4	124.9	111.9
52.5°	641.3	399.4	143.1	102.8	91.1
55°	589.3	340.8	119.7	83.3	72.9
57.5°	541.2	281.0	98.9	65.0	57.2
60°	489.1	227.7	78.1	50.7	45.5
62.5°	439.7	178.2	59.8	40.3	36.4
65°	389.0	131.4	44.2	32.5	29.9
67.5°	338.2	95.0	33.8	26.0	24.7
70°	284.9	71.5	26.0	20.8	19.5
72.5°	234.2	50.7	19.5	16.9	15.6
75°	186.0	31.2	14.3	13.0	11.7
77.5°	143.1	18.2	10.4	10.4	9.1
80°	100.2	10.4	7.8	7.8	6.5
82.5°	61.1	6.5	5.2	5.2	5.2
85°	26.0	3.9	3.9	3.9	2.6
87.5°	3.9	1.3	1.3	1.3	1.3
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	19.56	20.92	19.93	21.23	21.55	8.13	9.49	8.50	9.80	10.12
	3H	21.32	22.52	21.70	22.85	23.21	8.79	10.00	9.17	10.33	10.69
	4H	22.02	23.14	22.42	23.49	23.87	8.99	10.12	9.39	10.47	10.85
	6H	22.53	23.56	22.94	23.93	24.33	9.11	10.15	9.53	10.52	10.91
	8H	22.67	23.65	23.10	24.04	24.44	9.15	10.13	9.58	10.52	10.92
	12H	22.72	23.66	23.15	24.04	24.47	9.16	10.09	9.59	10.48	10.91
4H	2H	19.37	20.50	19.77	20.85	21.23	8.69	9.81	9.09	10.16	10.54
	3H	21.16	22.08	21.58	22.49	22.89	9.49	10.41	9.90	10.81	11.21
	4H	21.86	22.68	22.29	23.10	23.54	9.74	10.57	10.18	10.99	11.43
	6H	22.43	23.14	22.89	23.58	24.05	9.94	10.65	10.40	11.10	11.56
	8H	22.60	23.27	23.07	23.71	24.18	10.00	10.66	10.46	11.11	11.58
	12H	22.69	23.28	23.17	23.76	24.23	10.03	10.61	10.51	11.10	11.57
8H	4H	21.73	22.40	22.20	22.84	23.31	10.06	10.72	10.53	11.17	11.64
	6H	22.29	22.83	22.79	23.33	23.81	10.31	10.85	10.81	11.34	11.82
	8H	22.46	22.95	22.99	23.46	23.96	10.39	10.88	10.91	11.39	11.89
	12H	22.57	23.00	23.08	23.49	24.06	10.47	10.90	10.99	11.40	11.97
12H	4H	21.69	22.28	22.18	22.76	23.23	10.10	10.69	10.59	11.17	11.65
	6H	22.23	22.72	22.75	23.23	23.72	10.35	10.84	10.87	11.35	11.84
	8H	22.43	22.85	22.94	23.35	23.92	10.48	10.91	10.99	11.40	11.97