

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: P1055719

Luminaire Tested: S123R3DR-H1165D850-X4F0-XX-UDD-FLL-B

Issue Date: 7/25/2025

**Test Information**

Test Method: LM-79-2019  
Report Number: P1055719  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2503-402-5)  
Test Lab: INNOVATION CENTER  
Issue Date: 7/25/2025  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: NEO-RAY  
Catalog Number: S123R3DR-H1165D850-X4F0-XX-UDD-FLL-B  
Description: DEFINE 3, BLACK 3-INCH REGRESSED DIRECT RECESSED HOUSING WITH FROSTED LENS  
HIGH PERFORMANCE LIGHT ENGINE  
Light Source: 5000K CCT, 80 CRI LEDS  
Ballast/Driver: -

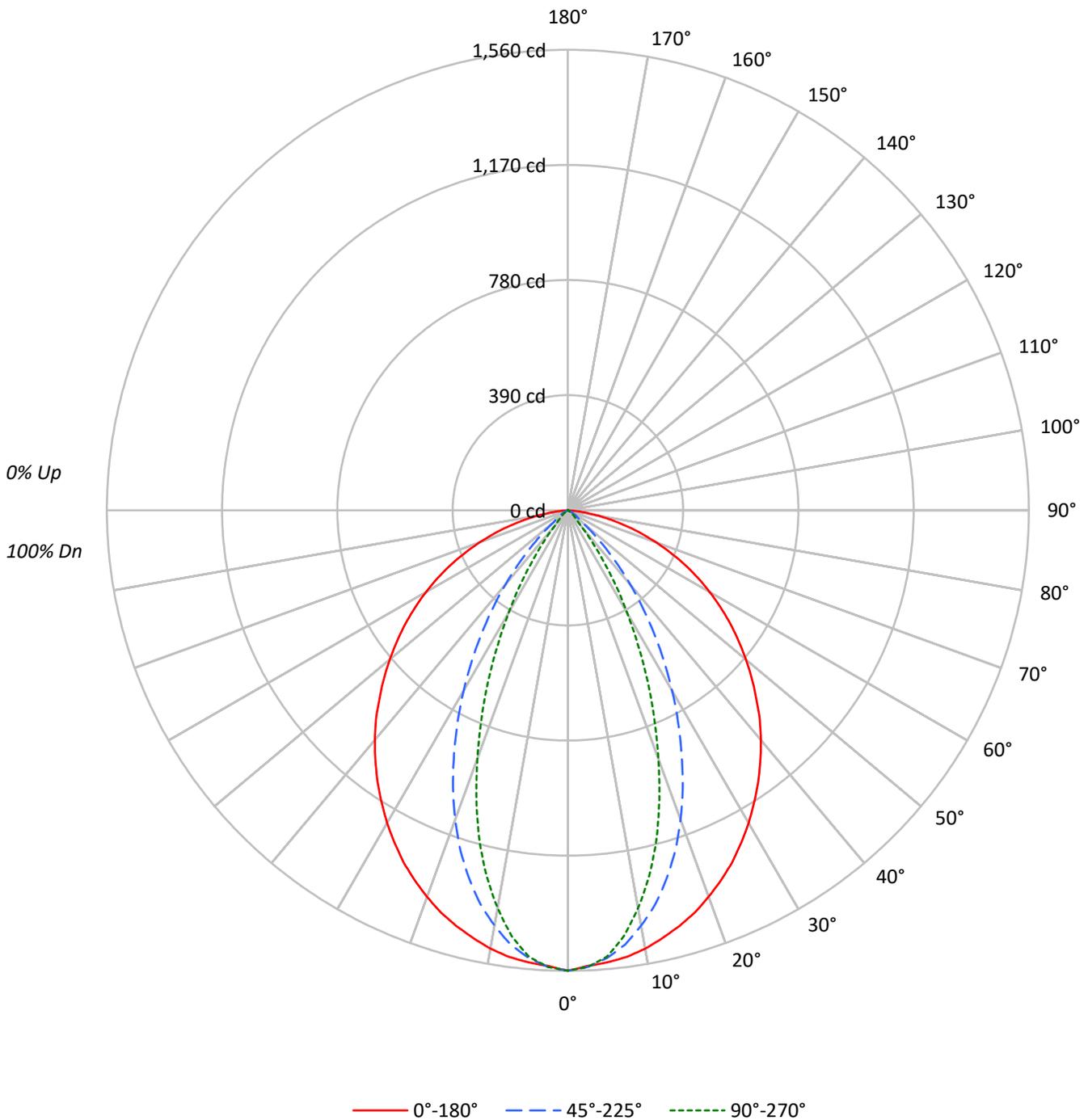
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 1825.4 lumens  
Efficiency: N/A  
Efficacy: 49.9 lumens/watt  
Spacing Criteria (0/90/45): 1.17 / 0.7 / 0.86  
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 (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

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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	103	109	106	104	101	102	100	98	98	97	95	95	93	92	90
2	105	99	94	89	102	97	92	88	93	90	86	90	87	84	87	85	83	81
3	98	90	84	79	96	88	83	78	86	81	77	83	79	76	81	77	74	73
4	92	82	75	70	90	81	75	70	79	73	69	77	72	68	75	71	67	65
5	86	76	69	63	84	75	68	63	73	67	62	71	66	62	69	65	61	59
6	81	70	63	58	79	69	62	57	67	61	57	66	61	56	64	60	56	54
7	76	65	58	53	74	64	57	52	63	57	52	61	56	52	60	55	52	50
8	71	60	53	48	70	60	53	48	58	52	48	57	52	48	56	51	48	46
9	68	56	49	45	66	56	49	45	55	49	45	54	48	44	53	48	44	43
10	64	53	46	42	63	52	46	42	51	46	41	51	45	41	50	45	41	40

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

	0°	45°	90°
0°	18804	18804	18804
5°	18601	18425	18367
10°	18460	17489	16756
15°	18195	16115	14439
20°	17872	14302	11500
25°	17497	12117	8481
30°	17027	9820	5563
35°	16526	7477	3048
40°	15990	5169	1043
45°	15366	3008	607
50°	14748	1184	364
55°	14113	748	170
60°	13380	468	77
65°	12461	231	46
70°	11178	113	56
75°	9498	75	75
80°	7075	111	0
85°	2684	0	0

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 15366 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	143.0	7.8
10°-20°	362.9	19.9
20°-30°	432.9	23.7
30°-40°	367.2	20.1
40°-50°	249.6	13.7
50°-60°	154.7	8.5
60°-70°	78.3	4.3
70°-80°	31.9	1.8
80°-90°	4.9	0.3
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°	938.8	51.4
0°-40°	1305.9	71.5
0°-60°	1710.2	93.7
0°-90°	1825.4	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1825.4	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1560	1560	1560	1560	1560	
5°	1537	1552	1522	1511	1518	146
15°	1458	1420	1291	1189	1157	411
25°	1315	1192	911	704	638	605
35°	1123	901	508	273	207	702
45°	901	590	176	44	36	696
55°	671	298	36	13	8	600
65°	437	73	8	2	2	431
75°	204	13	2	2	2	217
85°	19	0	0	2	0	34
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1559.7	1559.7	1559.7	1559.7	1559.7
2.5°	1545.1	1566.1	1548.3	1546.7	1548.3
5°	1537.0	1551.6	1522.4	1511.1	1517.6
7.5°	1525.7	1532.1	1483.6	1454.5	1454.5
10°	1507.9	1503.0	1428.6	1380.1	1368.7
12.5°	1483.6	1464.2	1367.1	1291.1	1270.0
15°	1457.7	1420.5	1291.1	1189.2	1156.8
17.5°	1428.6	1372.0	1208.6	1075.9	1029.0
20°	1393.0	1317.0	1114.7	952.9	896.3
22.5°	1355.8	1257.1	1016.0	826.7	763.6
25°	1315.3	1192.4	910.9	703.8	637.5
27.5°	1270.0	1124.4	807.3	585.7	512.9
30°	1223.1	1053.3	705.4	472.4	399.6
32.5°	1173.0	978.8	603.5	368.9	300.9
35°	1122.8	901.2	508.0	273.4	207.1
37.5°	1069.4	823.5	415.8	189.3	131.0
40°	1016.0	747.5	328.4	119.7	66.3
42.5°	961.0	668.2	249.2	59.9	45.3
45°	901.2	590.5	176.4	43.7	35.6
47.5°	844.5	516.1	116.5	35.6	27.5
50°	786.3	441.7	63.1	25.9	19.4
52.5°	728.1	370.5	45.3	19.4	12.9
55°	671.4	297.7	35.6	12.9	8.1
57.5°	613.2	234.6	27.5	8.1	4.9
60°	554.9	173.1	19.4	4.9	3.2
62.5°	496.7	119.7	12.9	3.2	1.6
65°	436.8	72.8	8.1	1.6	1.6
67.5°	375.4	50.2	4.9	1.6	1.6
70°	317.1	35.6	3.2	1.6	1.6
72.5°	258.9	22.7	1.6	1.6	0.0
75°	203.9	12.9	1.6	1.6	1.6
77.5°	150.5	4.9	1.6	1.6	0.0
80°	101.9	1.6	1.6	1.6	0.0
82.5°	56.6	0.0	1.6	1.6	0.0
85°	19.4	0.0	0.0	1.6	0.0
87.5°	0.0	0.0	0.0	1.6	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	19.24	20.52	19.61	20.84	21.15	0.00	0.00	0.00	0.00	0.00
	3H	21.19	22.32	21.57	22.65	23.02	0.00	0.00	0.00	0.00	0.00
	4H	22.01	23.07	22.42	23.42	23.81	0.00	0.00	0.00	0.00	0.00
	6H	22.57	23.54	22.98	23.91	24.30	0.00	0.00	0.00	0.00	0.00
	8H	22.69	23.61	23.13	24.00	24.41	0.00	0.00	0.00	0.00	0.00
	12H	22.72	23.59	23.15	23.98	24.41	0.00	0.00	0.00	0.00	0.00
4H	2H	19.01	20.06	19.41	20.41	20.80	0.00	0.00	0.00	0.00	0.00
	3H	20.96	21.82	21.37	22.23	22.63	0.00	0.00	0.00	0.00	0.00
	4H	21.77	22.54	22.21	22.96	23.41	0.00	0.00	0.00	0.00	0.00
	6H	22.37	23.04	22.84	23.48	23.95	0.00	0.00	0.00	0.00	0.00
	8H	22.53	23.14	23.00	23.59	24.06	0.00	0.00	0.00	0.00	0.00
	12H	22.57	23.12	23.06	23.60	24.08	0.00	0.00	0.00	0.00	0.00
8H	4H	21.63	22.25	22.10	22.70	23.17	0.00	0.00	0.00	0.00	0.00
	6H	22.21	22.71	22.72	23.21	23.69	0.00	0.00	0.00	0.00	0.00
	8H	22.36	22.81	22.88	23.33	23.82	0.00	0.00	0.00	0.00	0.00
	12H	22.42	22.81	22.93	23.31	23.88	0.00	0.00	0.00	0.00	0.00
12H	4H	21.58	22.13	22.07	22.61	23.08	0.00	0.00	0.00	0.00	0.20
	6H	22.15	22.60	22.67	23.12	23.61	0.00	0.00	0.00	0.00	0.29
	8H	22.32	22.71	22.83	23.21	23.78	0.00	0.00	0.00	0.00	0.45