

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: P1055731

Luminaire Tested: S123R3DR-H1165D940-X4F0-XX-UDD-F-B

Issue Date: 7/25/2025

**Test Information**

Test Method: LM-79-2024  
Report Number: P1055731  
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-H1165D940-X4F0-XX-UDD-F-B  
Description: DEFINE 3, BLACK 3-INCH REGRESSED DIRECT RECESSED HOUSING WITH FROSTED LENS  
HIGH PERFORMANCE LIGHT ENGINE  
Light Source: 4000K CCT, 90 CRI LEDS  
Ballast/Driver: -

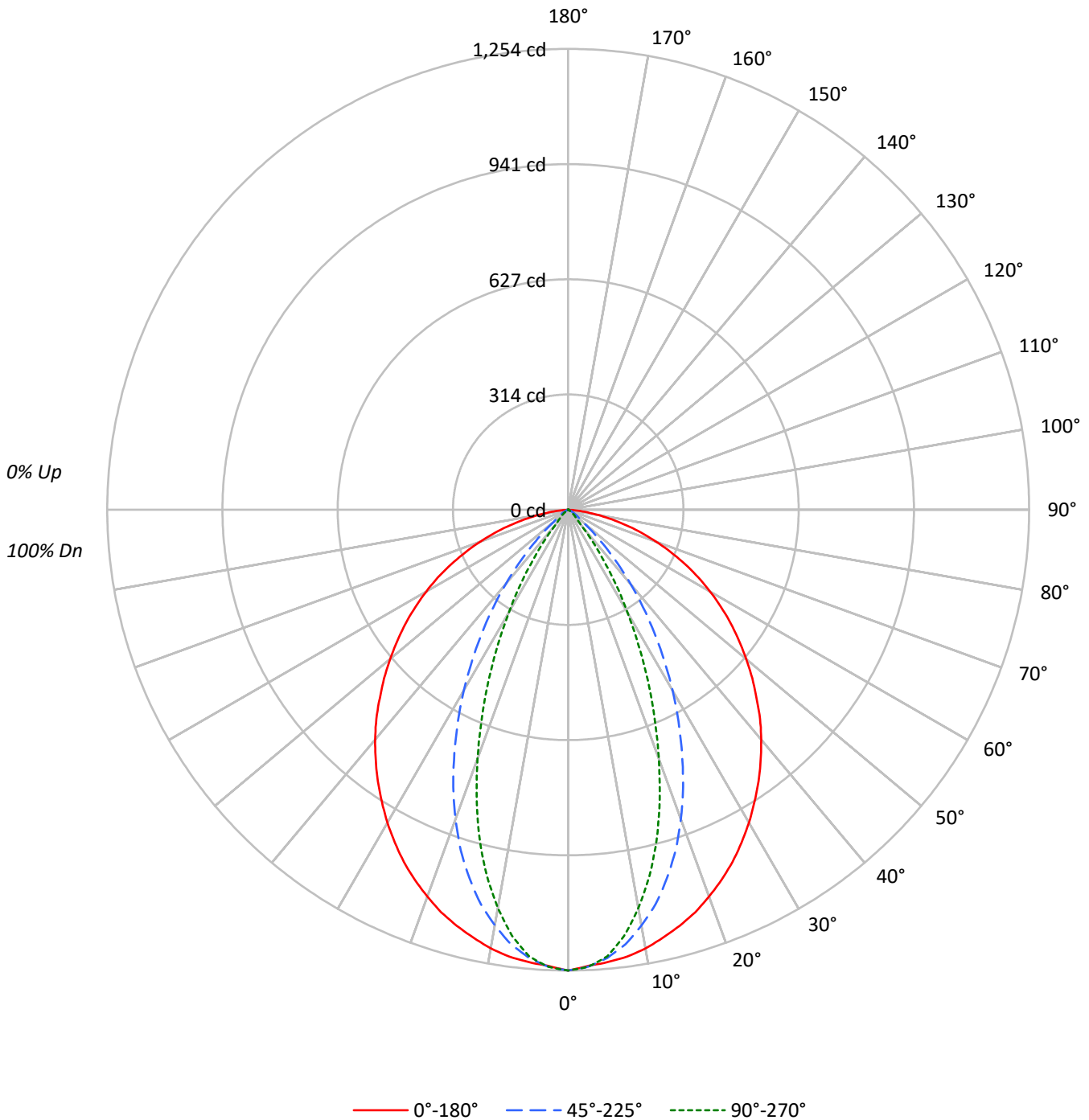
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 1467.7 lumens  
Efficiency: N/A  
Efficacy: 40.1 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 (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	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°	15120	15120	15120
5°	14957	14815	14767
10°	14843	14063	13474
15°	14630	12957	11609
20°	14371	11500	9247
25°	14069	9743	6819
30°	13692	7896	4473
35°	13288	6012	2451
40°	12858	4157	839
45°	12355	2418	488
50°	11858	951	293
55°	11349	601	137
60°	10759	376	63
65°	10019	185	37
70°	8989	92	46
75°	7635	61	61
80°	5693	90	0
85°	2158	0	0

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 12355 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	115.0	7.8
10°-20°	291.8	19.9
20°-30°	348.1	23.7
30°-40°	295.2	20.1
40°-50°	200.7	13.7
50°-60°	124.4	8.5
60°-70°	63.0	4.3
70°-80°	25.7	1.8
80°-90°	4.0	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°	754.8	51.4
0°-40°	1050.1	71.5
0°-60°	1375.1	93.7
0°-90°	1467.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1467.7	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1254	1254	1254	1254	1254	
5°	1236	1248	1224	1215	1220	117
15°	1172	1142	1038	956	930	330
25°	1058	959	732	566	513	487
35°	903	725	408	220	166	564
45°	725	475	142	35	29	560
55°	540	239	29	10	6	482
65°	351	58	6	1	1	347
75°	164	10	1	1	1	174
85°	16	0	0	1	0	28
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1254.1	1254.1	1254.1	1254.1	1254.1
2.5°	1242.4	1259.3	1245.0	1243.7	1245.0
5°	1235.9	1247.6	1224.1	1215.0	1220.2
7.5°	1226.7	1231.9	1192.9	1169.5	1169.5
10°	1212.4	1208.5	1148.7	1109.7	1100.6
12.5°	1192.9	1177.3	1099.3	1038.1	1021.2
15°	1172.1	1142.2	1038.1	956.2	930.1
17.5°	1148.7	1103.2	971.8	865.1	827.4
20°	1120.1	1058.9	896.3	766.2	720.7
22.5°	1090.2	1010.8	817.0	664.8	614.0
25°	1057.6	958.8	732.4	565.9	512.6
27.5°	1021.2	904.1	649.1	470.9	412.4
30°	983.5	846.9	567.2	379.9	321.3
32.5°	943.2	787.0	485.2	296.6	242.0
35°	902.8	724.6	408.5	219.9	166.5
37.5°	859.9	662.2	334.3	152.2	105.4
40°	817.0	601.0	264.1	96.3	53.3
42.5°	772.7	537.3	200.3	48.1	36.4
45°	724.6	474.8	141.8	35.1	28.6
47.5°	679.1	415.0	93.7	28.6	22.1
50°	632.2	355.1	50.7	20.8	15.6
52.5°	585.4	297.9	36.4	15.6	10.4
55°	539.9	239.4	28.6	10.4	6.5
57.5°	493.0	188.6	22.1	6.5	3.9
60°	446.2	139.2	15.6	3.9	2.6
62.5°	399.4	96.3	10.4	2.6	1.3
65°	351.2	58.5	6.5	1.3	1.3
67.5°	301.8	40.3	3.9	1.3	1.3
70°	255.0	28.6	2.6	1.3	1.3
72.5°	208.1	18.2	1.3	1.3	0.0
75°	163.9	10.4	1.3	1.3	1.3
77.5°	121.0	3.9	1.3	1.3	0.0
80°	82.0	1.3	1.3	1.3	0.0
82.5°	45.5	0.0	1.3	1.3	0.0
85°	15.6	0.0	0.0	1.3	0.0
87.5°	0.0	0.0	0.0	1.3	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	18.48	19.76	18.85	20.08	20.39	0.00	0.00	0.00	0.00	0.00
	3H	20.43	21.56	20.81	21.89	22.26	0.00	0.00	0.00	0.00	0.00
	4H	21.26	22.31	21.66	22.66	23.05	0.00	0.00	0.00	0.00	0.00
	6H	21.81	22.78	22.23	23.15	23.54	0.00	0.00	0.00	0.00	0.00
	8H	21.94	22.85	22.37	23.24	23.65	0.00	0.00	0.00	0.00	0.00
	12H	21.96	22.84	22.39	23.22	23.65	0.00	0.00	0.00	0.00	0.00
4H	2H	18.25	19.30	18.65	19.65	20.04	0.00	0.00	0.00	0.00	0.00
	3H	20.20	21.06	20.61	21.47	21.87	0.00	0.00	0.00	0.00	0.00
	4H	21.01	21.78	21.45	22.20	22.65	0.00	0.00	0.00	0.00	0.00
	6H	21.62	22.28	22.08	22.72	23.19	0.00	0.00	0.00	0.00	0.00
	8H	21.77	22.39	22.24	22.83	23.30	0.00	0.00	0.00	0.00	0.00
	12H	21.81	22.36	22.30	22.84	23.32	0.00	0.00	0.00	0.00	0.00
8H	4H	20.87	21.49	21.34	21.94	22.41	0.00	0.00	0.00	0.00	0.00
	6H	21.45	21.96	21.96	22.45	22.94	0.00	0.00	0.00	0.00	0.00
	8H	21.60	22.05	22.13	22.57	23.06	0.00	0.00	0.00	0.00	0.00
	12H	21.66	22.06	22.18	22.55	23.12	0.00	0.00	0.00	0.00	0.00
12H	4H	20.82	21.37	21.31	21.85	22.33	0.00	0.00	0.00	0.00	0.00
	6H	21.39	21.84	21.91	22.36	22.85	0.00	0.00	0.00	0.00	0.00
	8H	21.56	21.95	22.07	22.45	23.02	0.00	0.00	0.00	0.00	0.00