

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: P1055786

Luminaire Tested: S123R3DR-H560D940-X4F0-XX-UDD-FLL-S

Issue Date: 7/25/2025

**Test Information**

Test Method: LM-79-2019  
Report Number: P1055786  
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-H560D940-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: -

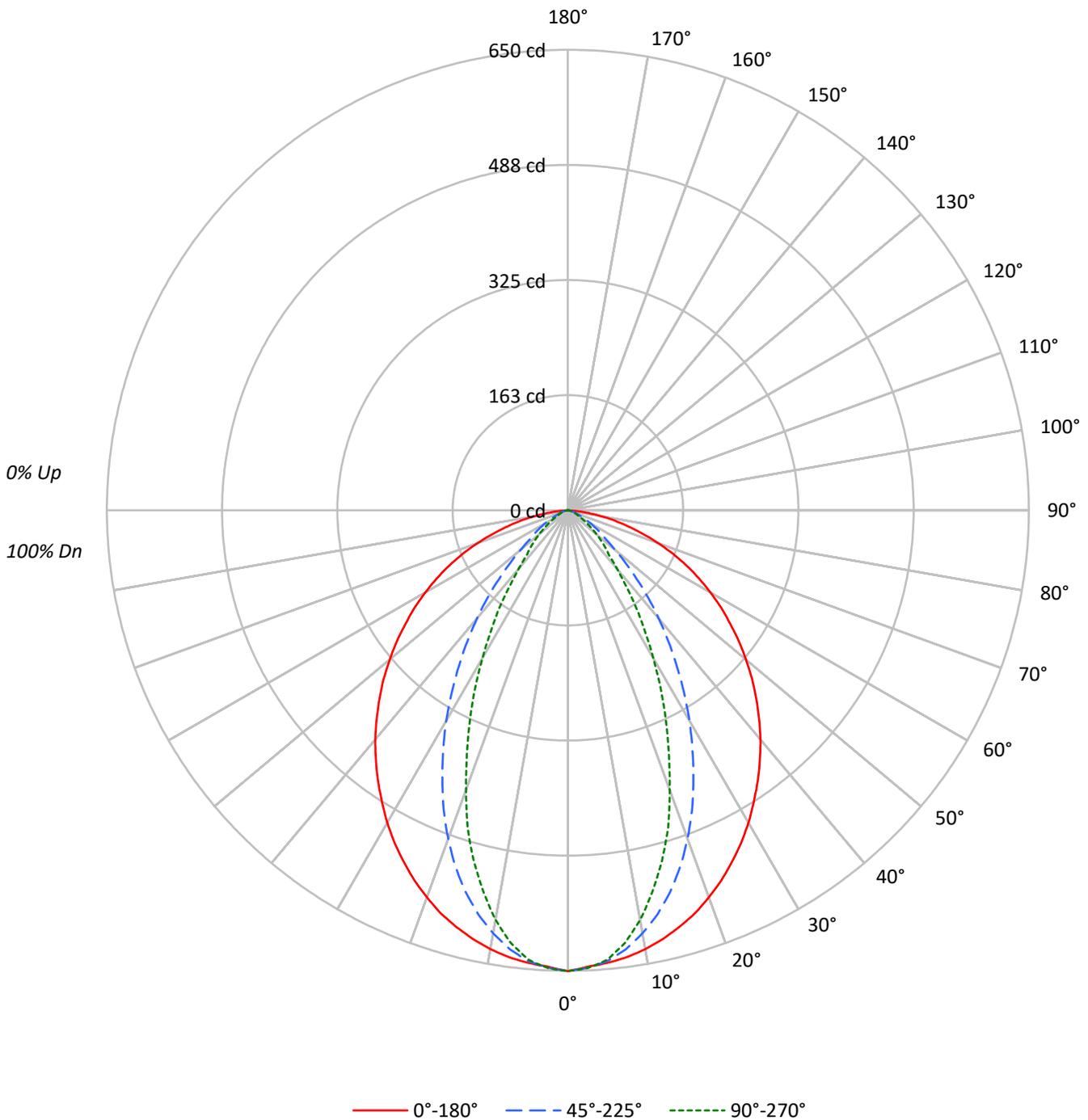
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 904.6 lumens  
Efficiency: N/A  
Efficacy: 52.3 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): 17.3  
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°	7843	7843	7843
5°	7760	7731	7708
10°	7699	7420	7186
15°	7596	6957	6396
20°	7459	6329	5387
25°	7283	5570	4347
30°	7090	4772	3348
35°	6869	3939	2477
40°	6648	3135	1689
45°	6402	2344	1272
50°	6141	1630	994
55°	5871	1192	725
60°	5589	892	521
65°	5261	599	405
70°	4759	434	324
75°	4109	317	256
80°	3298	257	215
85°	1701	249	166

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 6402 cd/sqm

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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	60.1	6.6
10°-20°	156.5	17.3
20°-30°	196.7	21.7
30°-40°	183.2	20.2
40°-50°	140.2	15.5
50°-60°	93.2	10.3
60°-70°	50.2	5.6
70°-80°	20.6	2.3
80°-90°	3.9	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°	413.3	45.7
0°-40°	596.5	65.9
0°-60°	829.9	91.7
0°-90°	904.6	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	904.6	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	650	650	650	650	650	
5°	641	648	639	636	637	61
15°	609	599	557	525	512	171
25°	548	510	419	349	327	252
35°	467	398	268	189	168	292
45°	376	278	138	81	75	290
55°	279	162	57	40	34	250
65°	184	62	21	15	14	182
75°	88	15	7	6	6	94
85°	12	2	2	2	1	18
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	650.5	650.5	650.5	650.5	650.5
2.5°	644.9	653.0	646.2	646.8	646.8
5°	641.2	648.0	638.8	636.3	636.9
7.5°	636.3	640.6	625.2	617.2	616.0
10°	628.9	630.1	606.1	591.9	587.0
12.5°	619.7	615.3	583.9	560.5	551.2
15°	608.6	598.7	557.4	524.7	512.4
17.5°	596.2	579.6	527.2	484.6	469.8
20°	581.4	558.0	493.3	440.2	419.9
22.5°	565.4	535.2	457.5	394.6	371.8
25°	547.5	510.5	418.7	349.0	326.8
27.5°	529.0	484.0	380.4	305.8	283.0
30°	509.3	456.9	342.8	263.9	240.5
32.5°	487.7	427.3	304.0	225.0	201.6
35°	466.7	397.7	267.6	189.3	168.3
37.5°	444.5	368.1	232.4	157.8	134.4
40°	422.4	337.9	199.2	127.0	107.3
42.5°	398.9	307.7	167.7	101.1	85.7
45°	375.5	277.5	137.5	80.8	74.6
47.5°	352.1	247.2	111.0	69.7	63.5
50°	327.4	218.3	86.9	59.2	53.0
52.5°	304.0	189.3	67.8	48.7	43.2
55°	279.3	161.5	56.7	39.5	34.5
57.5°	256.5	133.2	46.9	30.8	27.1
60°	231.8	107.9	37.0	24.0	21.6
62.5°	208.4	84.5	28.4	19.1	17.3
65°	184.4	62.3	21.0	15.4	14.2
67.5°	160.3	45.0	16.0	12.3	11.7
70°	135.0	33.9	12.3	9.9	9.2
72.5°	111.0	24.0	9.2	8.0	7.4
75°	88.2	14.8	6.8	6.2	5.5
77.5°	67.8	8.6	4.9	4.9	4.3
80°	47.5	4.9	3.7	3.7	3.1
82.5°	29.0	3.1	2.5	2.5	2.5
85°	12.3	1.8	1.8	1.8	1.2
87.5°	1.8	0.6	0.6	0.6	0.6
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	16.97	18.33	17.33	18.64	18.95	5.54	6.89	5.90	7.20	7.52
	3H	18.72	19.93	19.10	20.26	20.62	6.20	7.40	6.58	7.73	8.10
	4H	19.42	20.55	19.82	20.90	21.28	6.39	7.52	6.80	7.87	8.25
	6H	19.93	20.97	20.35	21.34	21.73	6.51	7.55	6.93	7.92	8.31
	8H	20.07	21.05	20.50	21.45	21.85	6.55	7.53	6.98	7.92	8.33
	12H	20.13	21.06	20.56	21.44	21.87	6.56	7.50	6.99	7.88	8.31
4H	2H	16.78	17.90	17.18	18.25	18.63	6.10	7.22	6.50	7.57	7.95
	3H	18.57	19.49	18.98	19.89	20.30	6.89	7.81	7.31	8.22	8.62
	4H	19.26	20.09	19.70	20.51	20.95	7.15	7.98	7.59	8.39	8.84
	6H	19.83	20.54	20.30	20.99	21.46	7.35	8.06	7.81	8.50	8.97
	8H	20.01	20.67	20.48	21.12	21.59	7.40	8.07	7.87	8.51	8.98
	12H	20.10	20.68	20.58	21.16	21.64	7.44	8.02	7.92	8.50	8.98
8H	4H	19.14	19.80	19.61	20.25	20.72	7.46	8.13	7.93	8.57	9.04
	6H	19.69	20.24	20.20	20.73	21.21	7.71	8.25	8.21	8.75	9.23
	8H	19.87	20.36	20.39	20.87	21.36	7.80	8.29	8.32	8.80	9.29
	12H	19.98	20.40	20.49	20.90	21.47	7.88	8.31	8.40	8.80	9.37
12H	4H	19.10	19.68	19.58	20.17	20.64	7.51	8.10	7.99	8.58	9.05
	6H	19.64	20.12	20.16	20.64	21.13	7.76	8.24	8.28	8.76	9.25
	8H	19.83	20.26	20.35	20.75	21.32	7.89	8.32	8.40	8.81	9.38