

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: P1056093

Luminaire Tested: S124R3DR-H1020D835-X4F0-XX-UDD-FLL-W

Issue Date: 7/25/2025

**Test Information**

Test Method: LM-79-2019  
Report Number: P1056093  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2503-402-7)  
Test Lab: INNOVATION CENTER  
Issue Date: 7/25/2025  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: NEO-RAY  
Catalog Number: S124R3DR-H1020D835-X4F0-XX-UDD-FLL-W  
Description: DEFINE 4, WHITE 3-INCH REGRESSED DIRECT RECESSED HOUSING WITH FROSTED LENS  
HIGH PERFORMANCE LIGHT ENGINE  
Light Source: 3500K CCT, 80 CRI LEDS  
Ballast/Driver: -

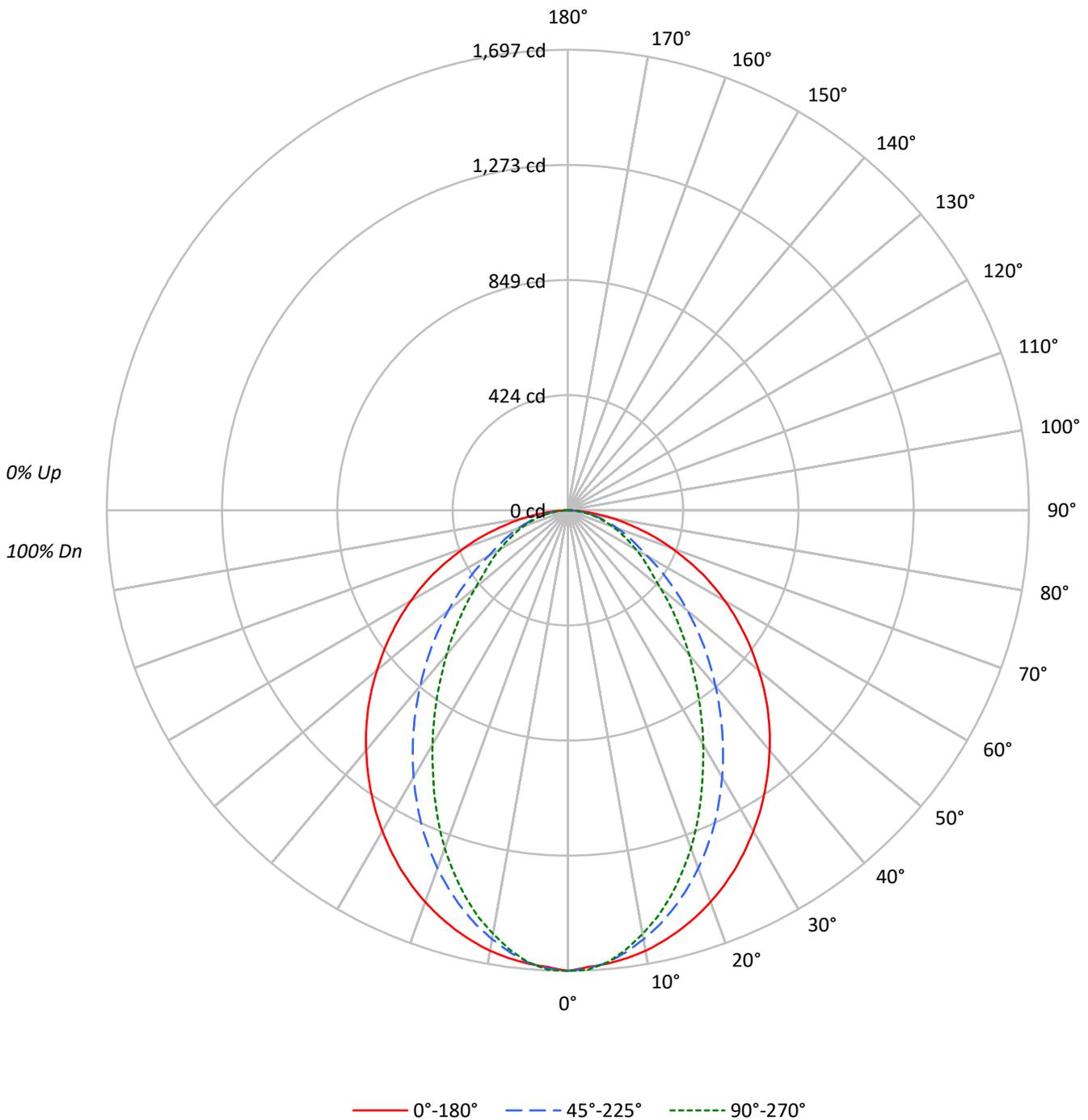
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 3380.4 lumens  
Efficiency: N/A  
Efficacy: 109.4 lumens/watt  
Spacing Criteria (0/90/45): 1.2 / 0.95 / 1.12  
Luminous Opening: Rectangular (W 0.31' x L: 3.9' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 30.9  
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	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	110	105	102	98	107	103	100	97	99	96	93	95	93	91	92	90	88	86																												
2	101	93	87	82	98	91	86	81	88	83	79	85	81	77	82	78	76	73																												
3	93	83	75	69	90	81	74	69	79	73	68	76	71	67	73	69	65	63																												
4	85	74	66	60	83	73	65	60	71	64	59	68	63	58	66	61	57	55																												
5	79	67	59	53	77	66	58	52	64	57	52	62	56	51	60	55	51	49																												
6	73	61	53	47	72	60	52	46	58	51	46	57	50	46	55	50	45	43																												
7	68	56	47	42	67	55	47	42	53	46	41	52	46	41	51	45	41	39																												
8	64	51	43	38	62	51	43	38	49	42	37	48	42	37	47	41	37	35																												
9	60	47	39	34	59	47	39	34	46	39	34	45	38	34	44	38	34	32																												
10	56	44	36	31	55	43	36	31	42	36	31	41	35	31	41	35	31	29																												

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

	0°	45°	90°
0°	15006	15006	15006
5°	14885	14853	14841
10°	14800	14408	14228
15°	14643	13866	13442
20°	14453	13207	12467
25°	14217	12451	11330
30°	13935	11589	10174
35°	13641	10689	9058
40°	13333	9758	8014
45°	13007	8854	7042
50°	12609	7902	6081
55°	12224	6949	5525
60°	11793	5963	5123
65°	11261	5408	4780
70°	10459	5005	4519
75°	9469	4608	4267
80°	8269	4262	4007
85°	6330	3926	3672

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 13007 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	158.0	4.7
10°-20°	428.6	12.7
20°-30°	593.5	17.6
30°-40°	637.0	18.8
40°-50°	579.3	17.1
50°-60°	456.2	13.5
60°-70°	312.2	9.2
70°-80°	168.1	5.0
80°-90°	47.6	1.4
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°	1180.1	34.9
0°-40°	1817.1	53.8
0°-60°	2852.5	84.4
0°-90°	3380.4	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3380.4	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1697	1697	1697	1697	1697	
5°	1677	1696	1674	1665	1672	159
15°	1600	1582	1515	1474	1469	451
25°	1457	1398	1276	1184	1161	671
35°	1264	1165	990	870	839	791
45°	1040	908	708	586	563	802
55°	793	642	451	363	358	709
65°	538	385	258	230	228	531
75°	277	169	135	124	125	296
85°	62	42	39	36	36	75
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1697.2	1697.2	1697.2	1697.2	1697.2
2.5°	1684.7	1704.7	1689.7	1692.2	1694.7
5°	1677.2	1695.9	1673.5	1664.7	1672.2
7.5°	1664.7	1677.2	1642.2	1626.0	1633.5
10°	1648.5	1651.0	1604.8	1581.0	1584.8
12.5°	1626.0	1619.8	1563.6	1529.8	1532.3
15°	1599.8	1582.3	1514.9	1473.6	1468.6
17.5°	1569.8	1541.1	1461.2	1408.7	1398.7
20°	1536.1	1497.4	1403.7	1336.3	1325.0
22.5°	1498.6	1448.7	1341.3	1261.3	1245.1
25°	1457.4	1397.5	1276.3	1183.9	1161.4
27.5°	1412.4	1342.5	1206.4	1105.2	1076.5
30°	1365.0	1285.1	1135.2	1026.6	996.6
32.5°	1316.3	1226.4	1062.8	947.9	916.7
35°	1263.8	1165.2	990.3	870.4	839.2
37.5°	1210.1	1101.5	916.7	795.5	763.0
40°	1155.2	1037.8	845.5	720.6	694.4
42.5°	1099.0	972.9	775.5	650.6	626.9
45°	1040.3	907.9	708.1	585.7	563.2
47.5°	980.3	841.7	639.4	524.5	503.3
50°	916.7	775.5	574.5	464.6	442.1
52.5°	855.5	708.1	512.0	405.9	394.6
55°	793.0	641.9	450.8	363.4	358.4
57.5°	730.6	575.7	394.6	329.7	324.7
60°	666.9	510.8	337.2	294.7	289.7
62.5°	603.2	447.1	294.7	261.0	258.5
65°	538.3	384.6	258.5	229.8	228.5
67.5°	469.6	324.7	226.0	202.3	201.1
70°	404.6	264.8	193.6	174.8	174.8
72.5°	343.4	209.8	163.6	148.6	148.6
75°	277.2	168.6	134.9	123.6	124.9
77.5°	218.5	132.4	108.6	101.2	101.2
80°	162.4	98.7	83.7	77.4	78.7
82.5°	109.9	68.7	59.9	56.2	56.2
85°	62.4	42.5	38.7	36.2	36.2
87.5°	22.5	20.0	18.7	16.2	17.5
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	20.55	22.08	20.92	22.39	22.70	16.33	17.85	16.69	18.17	18.48
	3H	22.33	23.70	22.70	24.02	24.39	17.94	19.31	18.32	19.64	20.00
	4H	23.00	24.28	23.40	24.63	25.01	18.57	19.86	18.97	20.21	20.58
	6H	23.51	24.70	23.92	25.06	25.45	19.07	20.26	19.48	20.63	21.02
	8H	23.67	24.80	24.10	25.19	25.59	19.24	20.37	19.67	20.76	21.16
	12H	23.77	24.85	24.20	25.24	25.67	19.36	20.45	19.79	20.83	21.26
4H	2H	20.65	21.93	21.05	22.28	22.66	17.05	18.33	17.45	18.68	19.06
	3H	22.59	23.66	23.00	24.06	24.46	18.85	19.92	19.27	20.32	20.73
	4H	23.35	24.31	23.78	24.73	25.16	19.59	20.56	20.02	20.97	21.41
	6H	23.98	24.82	24.44	25.26	25.72	20.21	21.05	20.67	21.49	21.95
	8H	24.20	24.99	24.66	25.43	25.90	20.42	21.21	20.89	21.65	22.12
	12H	24.36	25.06	24.84	25.54	26.01	20.59	21.29	21.07	21.77	22.24
8H	4H	23.40	24.19	23.87	24.63	25.10	19.98	20.77	20.44	21.21	21.68
	6H	24.10	24.75	24.60	25.24	25.72	20.71	21.36	21.21	21.85	22.33
	8H	24.37	24.95	24.89	25.46	25.95	21.00	21.58	21.51	22.09	22.58
	12H	24.59	25.10	25.10	25.60	26.16	21.25	21.76	21.76	22.25	22.82
12H	4H	23.40	24.10	23.88	24.58	25.05	20.04	20.74	20.52	21.22	21.69
	6H	24.10	24.68	24.61	25.19	25.68	20.79	21.38	21.31	21.89	22.38
	8H	24.41	24.92	24.91	25.41	25.98	21.14	21.66	21.65	22.15	22.72