

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: P1055964

Luminaire Tested: S124R3DR-S1020D850-X4F0-XX-UDD-F-W

Issue Date: 7/25/2025

**Test Information**

Test Method: LM-79-2024  
Report Number: P1055964  
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-S1020D850-X4F0-XX-UDD-F-W  
Description: DEFINE 4, WHITE 3-INCH REGRESSED DIRECT RECESSED HOUSING WITH FROSTED LENS  
CORE LIGHT ENGINE  
Light Source: 5000K CCT, 80 CRI LEDS  
Ballast/Driver: -

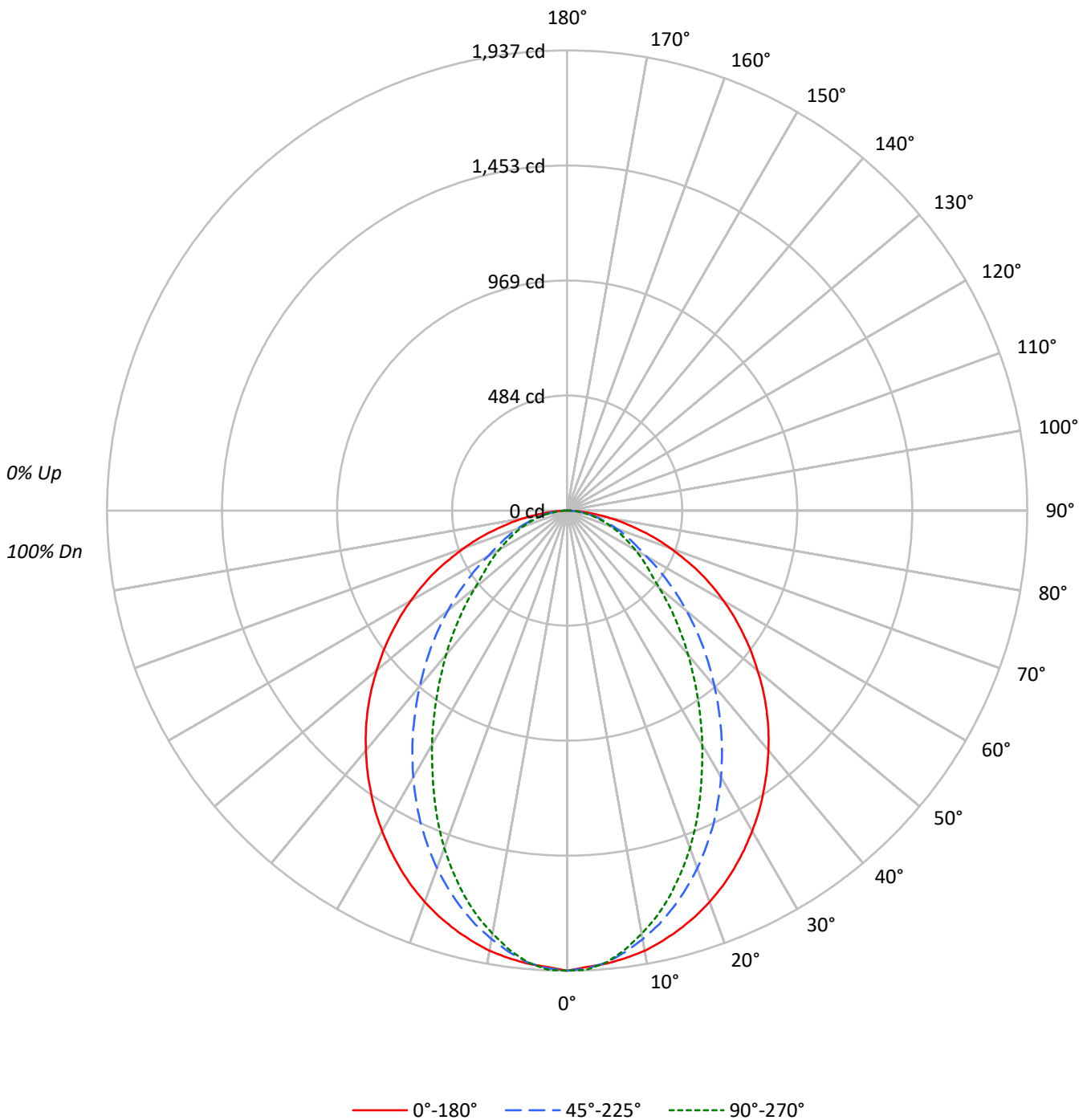
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 3857.6 lumens  
Efficiency: N/A  
Efficacy: 111.2 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): 34.7  
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	0	
RCR																						
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100				100
1	110	105	102	98	107	103	100	97	99	96	93	95	93	91	92	90	88	86				86
2	101	93	87	82	98	91	86	81	88	83	79	85	81	77	82	78	76	73				73
3	93	83	75	69	90	81	74	69	79	73	68	76	71	67	73	69	65	63				63
4	85	74	66	60	83	73	65	60	71	64	59	68	63	58	66	61	57	55				55
5	79	67	59	53	77	66	58	52	64	57	52	62	56	51	60	55	51	49				49
6	73	61	53	47	72	60	52	46	58	51	46	57	50	46	55	50	45	43				43
7	68	56	47	42	67	55	47	42	53	46	41	52	46	41	51	45	41	39				39
8	64	51	43	38	62	51	43	38	49	42	37	48	42	37	47	41	37	35				35
9	60	47	39	34	59	47	39	34	46	39	34	45	38	34	44	38	34	32				32
10	56	44	36	31	55	43	36	31	42	36	31	41	35	31	41	35	31	29				29

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

	0°	45°	90°
0°	17124	17124	17124
5°	16987	16949	16936
10°	16889	16441	16236
15°	16710	15823	15341
20°	16493	15072	14227
25°	16224	14209	12930
30°	15903	13226	11611
35°	15566	12198	10337
40°	15215	11135	9146
45°	14843	10104	8036
50°	14389	9018	6939
55°	13950	7931	6305
60°	13457	6804	5846
65°	12849	6172	5456
70°	11935	5710	5157
75°	10808	5257	4868
80°	9435	4862	4572
85°	7233	4484	4190

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 14843 cd/sqm

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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	180.3	4.7
10°-20°	489.1	12.7
20°-30°	677.2	17.6
30°-40°	726.9	18.8
40°-50°	661.1	17.1
50°-60°	520.5	13.5
60°-70°	356.3	9.2
70°-80°	191.8	5.0
80°-90°	54.3	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°	1346.7	34.9
0°-40°	2073.6	53.8
0°-60°	3255.2	84.4
0°-90°	3857.6	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3857.6	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1937	1937	1937	1937	1937	
5°	1914	1935	1910	1900	1908	182
15°	1826	1806	1729	1682	1676	515
25°	1663	1595	1456	1351	1325	766
35°	1442	1330	1130	993	958	902
45°	1187	1036	808	668	643	915
55°	905	732	514	415	409	809
65°	614	439	295	262	261	606
75°	316	192	154	141	142	338
85°	71	48	44	41	41	86
90°	0	0	0	0	0	

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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1936.8	1936.8	1936.8	1936.8	1936.8
2.5°	1922.5	1945.3	1928.2	1931.1	1933.9
5°	1914.0	1935.3	1909.7	1899.7	1908.3
7.5°	1899.7	1914.0	1874.1	1855.5	1864.1
10°	1881.2	1884.0	1831.3	1804.2	1808.5
12.5°	1855.5	1848.4	1784.3	1745.8	1748.6
15°	1825.6	1805.7	1728.7	1681.7	1676.0
17.5°	1791.4	1758.6	1667.4	1607.6	1596.2
20°	1752.9	1708.7	1601.9	1524.9	1512.1
22.5°	1710.2	1653.2	1530.6	1439.4	1420.9
25°	1663.1	1594.7	1456.5	1351.0	1325.4
27.5°	1611.8	1532.0	1376.7	1261.2	1228.5
30°	1557.7	1466.5	1295.5	1171.5	1137.3
32.5°	1502.1	1399.5	1212.8	1081.7	1046.1
35°	1442.2	1329.7	1130.1	993.3	957.7
37.5°	1381.0	1257.0	1046.1	907.8	870.8
40°	1318.3	1184.3	964.8	822.3	792.4
42.5°	1254.1	1110.2	885.0	742.5	715.4
45°	1187.1	1036.1	808.1	668.4	642.7
47.5°	1118.7	960.5	729.7	598.6	574.3
50°	1046.1	885.0	655.6	530.2	504.5
52.5°	976.2	808.1	584.3	463.2	450.3
55°	905.0	732.5	514.5	414.7	409.0
57.5°	833.7	657.0	450.3	376.2	370.5
60°	761.0	582.9	384.8	336.3	330.6
62.5°	688.3	510.2	336.3	297.9	295.0
65°	614.2	438.9	295.0	262.2	260.8
67.5°	535.9	370.5	258.0	230.9	229.4
70°	461.7	302.1	220.9	199.5	199.5
72.5°	391.9	239.4	186.7	169.6	169.6
75°	316.4	192.4	153.9	141.1	142.5
77.5°	249.4	151.1	124.0	115.4	115.4
80°	185.3	112.6	95.5	88.4	89.8
82.5°	125.4	78.4	68.4	64.1	64.1
85°	71.3	48.5	44.2	41.3	41.3
87.5°	25.7	22.8	21.4	18.5	20.0
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	21.01	22.54	21.38	22.85	23.16	16.79	18.31	17.15	18.63	18.94
	3H	22.79	24.16	23.16	24.48	24.85	18.40	19.77	18.78	20.10	20.46
	4H	23.46	24.74	23.86	25.09	25.47	19.03	20.32	19.43	20.66	21.04
	6H	23.97	25.16	24.38	25.52	25.91	19.53	20.72	19.94	21.08	21.48
	8H	24.13	25.26	24.56	25.65	26.05	19.70	20.83	20.13	21.22	21.62
	12H	24.23	25.31	24.66	25.70	26.12	19.82	20.91	20.25	21.29	21.72
4H	2H	21.11	22.39	21.51	22.74	23.12	17.51	18.79	17.91	19.14	19.52
	3H	23.05	24.12	23.46	24.52	24.92	19.31	20.38	19.72	20.78	21.18
	4H	23.81	24.77	24.24	25.19	25.62	20.05	21.01	20.48	21.43	21.87
	6H	24.44	25.28	24.90	25.72	26.18	20.67	21.51	21.12	21.95	22.41
	8H	24.66	25.45	25.12	25.89	26.36	20.88	21.67	21.35	22.11	22.58
	12H	24.82	25.52	25.30	26.00	26.47	21.05	21.75	21.53	22.23	22.70
8H	4H	23.86	24.65	24.33	25.09	25.56	20.44	21.22	20.90	21.67	22.14
	6H	24.56	25.21	25.06	25.70	26.18	21.17	21.82	21.67	22.31	22.79
	8H	24.83	25.41	25.34	25.92	26.41	21.46	22.04	21.97	22.55	23.04
	12H	25.05	25.56	25.56	26.06	26.62	21.70	22.22	22.21	22.71	23.28
12H	4H	23.85	24.56	24.34	25.03	25.51	20.49	21.20	20.98	21.67	22.15
	6H	24.56	25.14	25.07	25.65	26.14	21.25	21.84	21.77	22.35	22.83
	8H	24.86	25.38	25.37	25.87	26.44	21.60	22.12	22.11	22.61	23.17