

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: P1056099

Luminaire Tested: S124R3DR-H1020D850-X4F0-XX-UDD-F-W

Issue Date: 7/25/2025

Test Information

Test Method: LM-79-2024
Report Number: P1056099
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-H1020D850-X4F0-XX-UDD-F-W
Description: DEFINE 4, WHITE 3-INCH REGRESSED DIRECT RECESSED HOUSING WITH FROSTED LENS
HIGH PERFORMANCE LIGHT ENGINE
Light Source: 5000K CCT, 80 CRI LEDS
Ballast/Driver: -

Summary

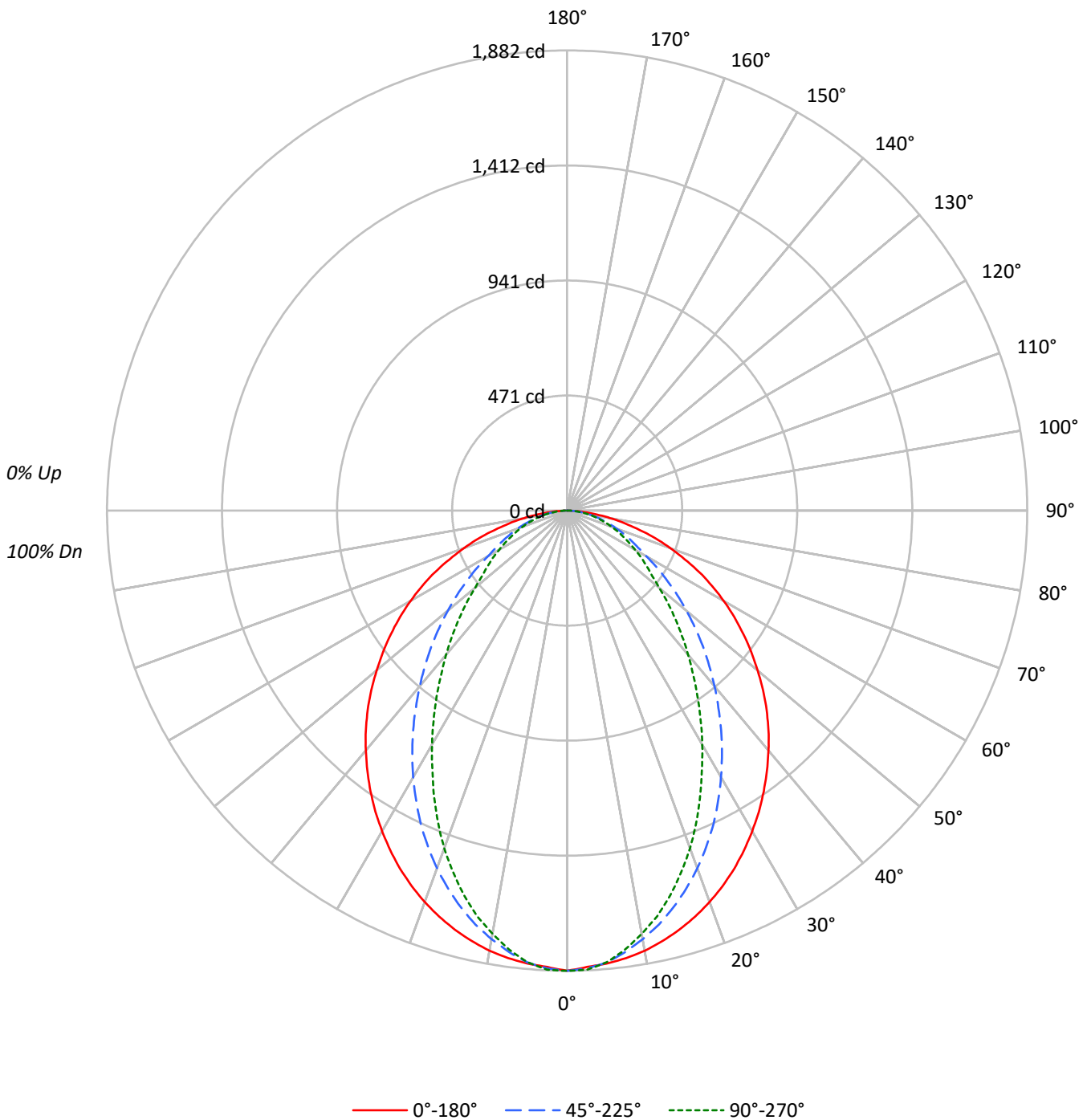
Lumens per Lamp: N/A
Luminaire Lumens: 3748.9 lumens
Efficiency: N/A
Efficacy: 121.3 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.95 / 1.12
Luminous Opening: Rectangular (W 0.31' x L: 3.9' x H: 0')
CIE Type: Direct

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	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°	16641	16641	16641
5°	16508	16471	16459
10°	16413	15978	15778
15°	16239	15377	14908
20°	16028	14647	13826
25°	15768	13808	12565
30°	15455	12852	11283
35°	15128	11854	10045
40°	14786	10821	8887
45°	14425	9819	7810
50°	13983	8763	6744
55°	13557	7707	6127
60°	13078	6612	5681
65°	12487	5998	5301
70°	11599	5550	5012
75°	10504	5110	4731
80°	9165	4725	4445
85°	7020	4352	4078

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 14425 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	175.2	4.7
10°-20°	475.3	12.7
20°-30°	658.1	17.6
30°-40°	706.4	18.8
40°-50°	642.4	17.1
50°-60°	505.9	13.5
60°-70°	346.3	9.2
70°-80°	186.4	5.0
80°-90°	52.8	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°	1308.7	34.9
0°-40°	2015.1	53.8
0°-60°	3163.4	84.4
0°-90°	3748.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3748.9	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1882	1882	1882	1882	1882	
5°	1860	1881	1856	1846	1854	177
15°	1774	1755	1680	1634	1629	500
25°	1616	1550	1415	1313	1288	744
35°	1402	1292	1098	965	931	877
45°	1154	1007	785	650	625	889
55°	880	712	500	403	398	786
65°	597	427	287	255	253	589
75°	308	187	150	137	138	328
85°	69	47	43	40	40	83
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1882.2	1882.2	1882.2	1882.2	1882.2
2.5°	1868.3	1890.5	1873.9	1876.6	1879.4
5°	1860.0	1880.8	1855.9	1846.2	1854.5
7.5°	1846.2	1860.0	1821.2	1803.2	1811.5
10°	1828.2	1830.9	1779.7	1753.4	1757.5
12.5°	1803.2	1796.3	1734.0	1696.6	1699.4
15°	1774.1	1754.8	1680.0	1634.3	1628.7
17.5°	1740.9	1709.1	1620.4	1562.2	1551.2
20°	1703.5	1660.6	1556.7	1481.9	1469.5
22.5°	1662.0	1606.6	1487.5	1398.8	1380.8
25°	1616.3	1549.8	1415.4	1313.0	1288.0
27.5°	1566.4	1488.8	1337.9	1225.7	1193.8
30°	1513.8	1425.1	1258.9	1138.4	1105.2
32.5°	1459.8	1360.0	1178.6	1051.2	1016.6
35°	1401.6	1292.2	1098.3	965.3	930.7
37.5°	1342.0	1221.5	1016.6	882.2	846.2
40°	1281.1	1150.9	937.6	799.1	770.0
42.5°	1218.8	1078.9	860.1	721.6	695.3
45°	1153.7	1006.9	785.3	649.6	624.6
47.5°	1087.2	933.5	709.1	581.7	558.1
50°	1016.6	860.1	637.1	515.2	490.3
52.5°	948.7	785.3	567.8	450.1	437.7
55°	879.5	711.9	500.0	403.0	397.5
57.5°	810.2	638.5	437.7	365.6	360.1
60°	739.6	566.5	373.9	326.9	321.3
62.5°	668.9	495.8	326.9	289.5	286.7
65°	596.9	426.6	286.7	254.8	253.4
67.5°	520.7	360.1	250.7	224.4	223.0
70°	448.7	293.6	214.7	193.9	193.9
72.5°	380.9	232.7	181.4	164.8	164.8
75°	307.5	187.0	149.6	137.1	138.5
77.5°	242.4	146.8	120.5	112.2	112.2
80°	180.0	109.4	92.8	85.9	87.3
82.5°	121.9	76.2	66.5	62.3	62.3
85°	69.2	47.1	42.9	40.2	40.2
87.5°	24.9	22.2	20.8	18.0	19.4
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	20.91	22.44	21.28	22.75	23.06	16.69	18.21	17.05	18.53	18.84
	3H	22.69	24.06	23.06	24.38	24.75	18.30	19.67	18.68	20.00	20.36
	4H	23.36	24.64	23.76	24.99	25.37	18.93	20.22	19.33	20.57	20.94
	6H	23.87	25.06	24.28	25.42	25.81	19.43	20.62	19.84	20.99	21.38
	8H	24.03	25.16	24.46	25.55	25.95	19.60	20.73	20.03	21.12	21.52
	12H	24.13	25.21	24.56	25.60	26.02	19.72	20.81	20.15	21.19	21.62
4H	2H	21.01	22.29	21.41	22.64	23.02	17.41	18.69	17.81	19.04	19.42
	3H	22.95	24.02	23.36	24.42	24.82	19.21	20.28	19.63	20.68	21.09
	4H	23.71	24.67	24.14	25.09	25.52	19.95	20.92	20.38	21.33	21.77
	6H	24.34	25.18	24.80	25.62	26.08	20.57	21.41	21.02	21.85	22.31
	8H	24.56	25.35	25.02	25.79	26.26	20.78	21.57	21.25	22.01	22.48
	12H	24.72	25.42	25.20	25.90	26.37	20.95	21.65	21.43	22.13	22.60
8H	4H	23.76	24.55	24.23	24.99	25.46	20.34	21.13	20.80	21.57	22.04
	6H	24.46	25.11	24.96	25.60	26.08	21.07	21.72	21.57	22.21	22.69
	8H	24.73	25.31	25.24	25.82	26.31	21.36	21.94	21.87	22.45	22.94
	12H	24.95	25.46	25.46	25.96	26.52	21.61	22.12	22.12	22.61	23.18
12H	4H	23.76	24.46	24.24	24.94	25.41	20.40	21.10	20.88	21.58	22.05
	6H	24.46	25.04	24.97	25.55	26.04	21.15	21.74	21.67	22.25	22.74
	8H	24.76	25.28	25.27	25.77	26.34	21.50	22.02	22.01	22.51	23.08