

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: P1056091

Luminaire Tested: S124R3DR-H1020D835-X4F0-XX-UDD-F-B

Issue Date: 7/25/2025

Test Information

Test Method: LM-79-2024
Report Number: P1056091
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2503-402-8)
Test Lab: INNOVATION CENTER
Issue Date: 7/25/2025
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: S124R3DR-H1020D835-X4F0-XX-UDD-F-B
Description: DEFINE 4, BLACK 3-INCH REGRESSED DIRECT RECESSED HOUSING WITH FROSTED LENS
HIGH PERFORMANCE LIGHT ENGINE
Light Source: 3500K CCT, 80 CRI LEDS
Ballast/Driver: -

Summary

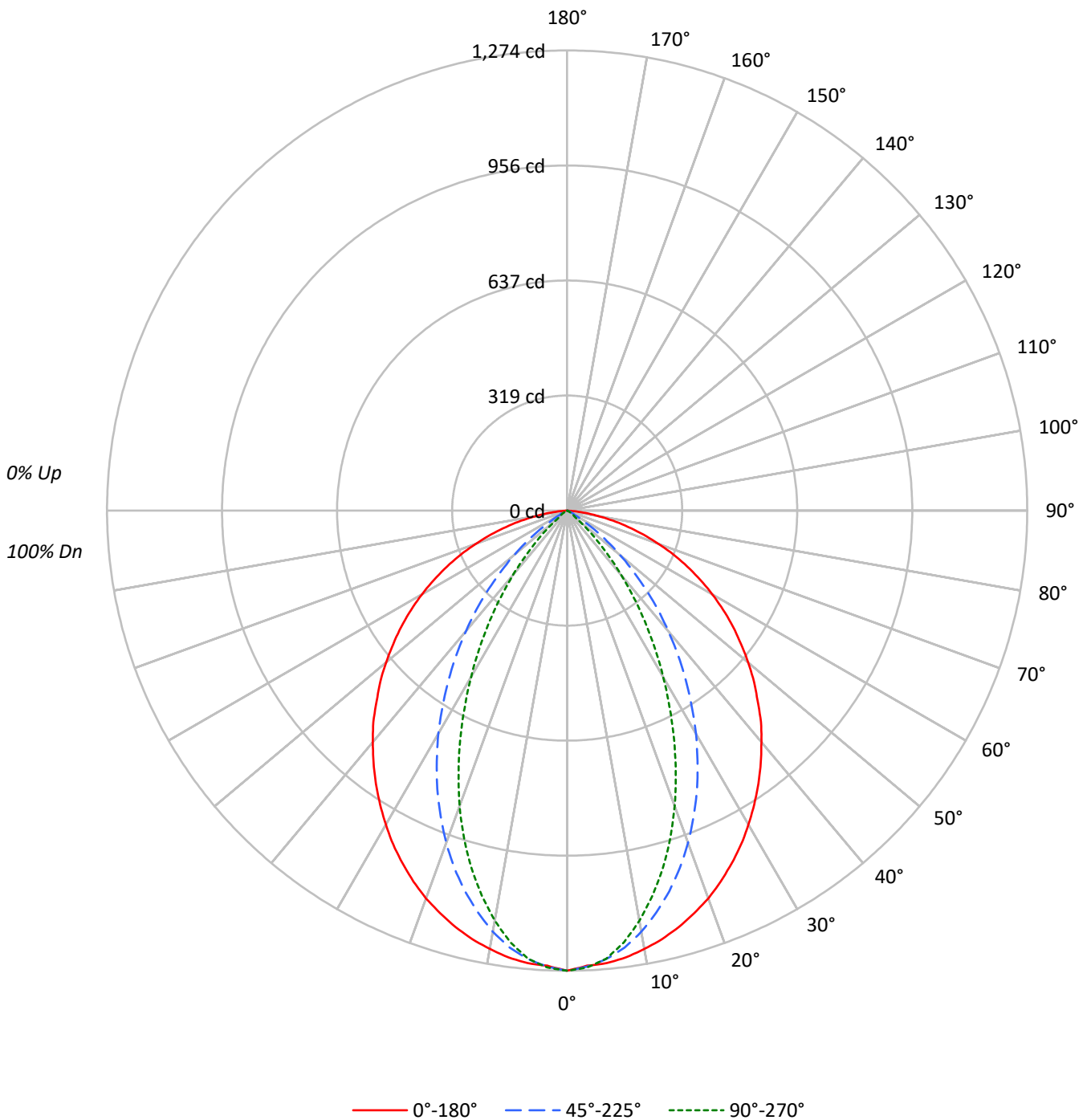
Lumens per Lamp: N/A
Luminaire Lumens: 1780.3 lumens
Efficiency: N/A
Efficacy: 57.6 lumens/watt
Spacing Criteria (0/90/45): 1.18 / 0.81 / 0.97
Luminous Opening: Rectangular (W 0.31' x L: 3.9' x H: 0')
CIE Type: Direct

Input Watts (W): 30.9
Input Voltage (V): 120
Input Current (A_{in}): 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

TEST NUMBER: P1056091

CATALOG NUMBER: S124R3DR-H1020D835-X4F0-XX-UDD-F-B

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	102	109	106	103	100	102	99	97	98	96	94	95	93	92	90
2	104	98	93	88	102	96	91	87	93	89	85	90	86	83	87	84	82	80
3	97	89	82	77	95	87	81	77	84	79	75	82	78	74	79	76	73	71
4	90	81	74	68	88	80	73	68	77	72	67	75	70	66	73	69	65	64
5	84	74	66	61	83	73	66	61	71	65	60	69	64	60	67	63	59	57
6	79	68	60	55	77	67	60	55	65	59	54	64	58	54	62	57	54	52
7	74	63	55	50	73	62	55	50	60	54	50	59	53	49	58	53	49	47
8	70	58	51	46	68	57	50	46	56	50	45	55	49	45	54	49	45	43
9	66	54	47	42	64	53	47	42	52	46	42	51	46	42	50	45	41	40
10	62	50	43	39	61	50	43	39	49	43	39	48	42	39	47	42	38	37

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	11262	11262	11262
5°	11161	11061	11050
10°	11066	10629	10349
15°	10928	9991	9374
20°	10751	9212	8189
25°	10514	8297	6835
30°	10251	7280	5431
35°	9961	6174	4044
40°	9657	5030	2695
45°	9323	3841	1483
50°	9001	2629	413
55°	8643	1424	270
60°	8215	442	154
65°	7682	287	77
70°	6941	129	31
75°	5971	41	0
80°	4516	0	0
85°	1897	0	0

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 9323 cd/sqm



TEST NUMBER: P1056091

CATALOG NUMBER: S124R3DR-H1020D835-X4F0-XX-UDD-F-B

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	117.5	6.6
10°-20°	308.5	17.3
20°-30°	398.7	22.4
30°-40°	381.0	21.4
40°-50°	285.0	16.0
50°-60°	169.6	9.5
60°-70°	86.1	4.8
70°-80°	29.9	1.7
80°-90°	4.1	0.2
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°	824.7	46.3
0°-40°	1205.7	67.7
0°-60°	1660.2	93.3
0°-90°	1780.3	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1780.3	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1274	1274	1274	1274	1274	
5°	1258	1268	1246	1240	1245	119
15°	1194	1169	1092	1040	1024	336
25°	1078	1003	850	738	701	496
35°	923	796	572	426	375	577
45°	746	572	307	164	119	576
55°	561	348	92	21	18	501
65°	367	141	14	5	4	363
75°	175	19	1	1	0	186
85°	19	0	0	0	0	31
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1273.8	1273.8	1273.8	1273.8	1273.8
2.5°	1261.3	1276.3	1263.8	1265.1	1266.3
5°	1257.6	1267.6	1246.3	1240.1	1245.1
7.5°	1247.6	1251.3	1220.1	1203.9	1205.1
10°	1232.6	1228.9	1183.9	1156.4	1152.7
12.5°	1215.1	1202.6	1140.2	1100.2	1091.5
15°	1193.9	1168.9	1091.5	1040.3	1024.1
17.5°	1168.9	1132.7	1037.8	970.4	950.4
20°	1142.7	1092.7	979.1	895.4	870.4
22.5°	1111.5	1047.8	915.4	816.7	785.5
25°	1077.8	1002.8	850.5	738.1	700.6
27.5°	1042.8	954.1	781.8	658.1	614.4
30°	1004.1	902.9	713.1	577.0	532.0
32.5°	964.1	850.5	641.9	502.0	452.1
35°	922.9	795.5	572.0	425.9	374.7
37.5°	880.4	740.6	504.5	353.4	301.0
40°	836.7	684.4	435.8	284.7	233.5
42.5°	794.3	628.2	370.9	219.8	172.3
45°	745.6	572.0	307.2	163.6	118.6
47.5°	701.9	517.0	246.0	111.1	69.9
50°	654.4	458.3	191.1	64.9	30.0
52.5°	606.9	403.4	139.9	28.7	22.5
55°	560.7	348.4	92.4	21.2	17.5
57.5°	512.0	293.5	50.0	16.2	12.5
60°	464.6	239.8	25.0	12.5	8.7
62.5°	415.9	188.6	20.0	7.5	5.0
65°	367.2	141.1	13.7	5.0	3.7
67.5°	318.5	96.2	8.7	2.5	1.2
70°	268.5	58.7	5.0	1.2	1.2
72.5°	221.0	30.0	2.5	1.2	1.2
75°	174.8	18.7	1.2	1.2	0.0
77.5°	129.9	10.0	1.2	1.2	0.0
80°	88.7	3.7	0.0	0.0	0.0
82.5°	51.2	1.2	0.0	0.0	0.0
85°	18.7	0.0	0.0	0.0	0.0
87.5°	0.0	0.0	0.0	0.0	0.0
90°	0.0	0.0	0.0	0.0	0.0

TEST NUMBER: P1056091

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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	18.87	20.20	19.23	20.51	20.82	0.00	0.00	0.00	0.00	0.00
	3H	20.41	21.59	20.79	21.92	22.28	0.00	0.00	0.00	0.00	0.00
	4H	21.00	22.10	21.41	22.45	22.83	0.00	0.00	0.00	0.00	0.00
	6H	21.42	22.43	21.84	22.80	23.19	0.00	0.00	0.00	0.00	0.00
	8H	21.52	22.47	21.95	22.86	23.27	0.00	0.00	0.00	0.00	0.00
	12H	21.54	22.45	21.97	22.83	23.26	0.00	0.00	0.00	0.00	0.00
4H	2H	18.65	19.74	19.05	20.09	20.48	0.00	0.00	0.00	0.00	0.33
	3H	20.21	21.10	20.62	21.51	21.91	0.00	0.00	0.00	0.00	0.17
	4H	20.79	21.59	21.23	22.01	22.45	0.00	0.00	0.00	0.00	0.07
	6H	21.25	21.94	21.72	22.39	22.85	0.00	0.00	0.00	0.00	0.00
	8H	21.37	22.01	21.84	22.46	22.93	0.00	0.00	0.00	0.00	0.00
	12H	21.41	21.98	21.90	22.46	22.94	0.00	0.00	0.00	0.00	0.00
8H	4H	20.66	21.30	21.13	21.74	22.22	0.15	0.79	0.62	1.24	1.71
	6H	21.10	21.62	21.60	22.12	22.60	0.06	0.58	0.56	1.08	1.56
	8H	21.21	21.68	21.74	22.20	22.69	0.00	0.47	0.52	0.98	1.47
	12H	21.26	21.68	21.78	22.17	22.74	0.00	0.37	0.47	0.86	1.43
12H	4H	20.61	21.18	21.10	21.66	22.13	0.56	1.13	1.05	1.61	2.09
	6H	21.04	21.50	21.56	22.02	22.51	0.46	0.92	0.98	1.44	1.93
	8H	21.17	21.58	21.69	22.08	22.65	0.41	0.83	0.93	1.32	1.89