

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: P1056106

Luminaire Tested: S124R3DR-H1020D935-X4F0-XX-UDD-F-B

Issue Date: 7/25/2025

Test Information

Test Method: LM-79-2024
Report Number: P1056106
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-H1020D935-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, 90 CRI LEDS
Ballast/Driver: -

Summary

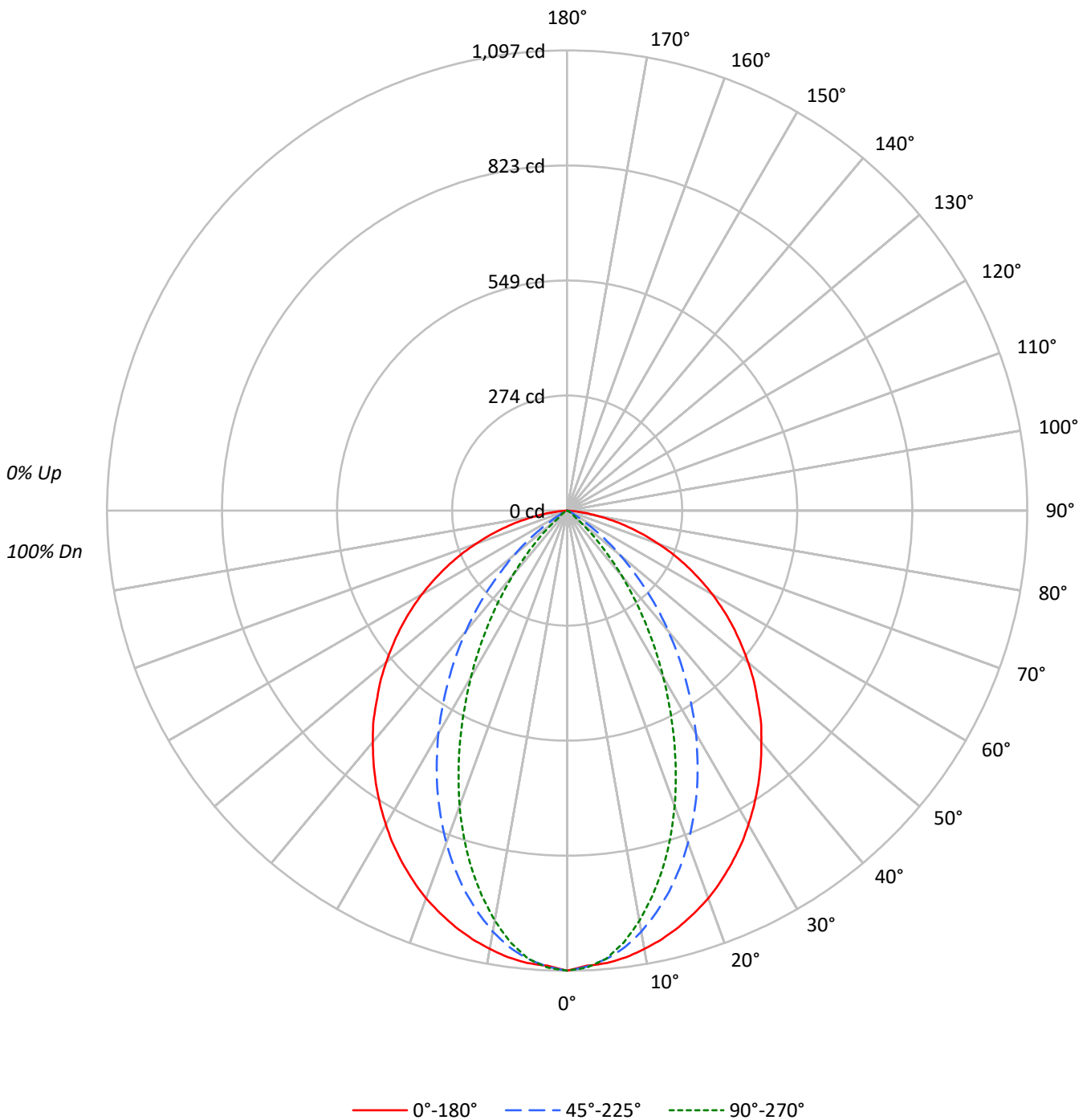
Lumens per Lamp: N/A
Luminaire Lumens: 1532.9 lumens
Efficiency: N/A
Efficacy: 49.6 lumens/watt
Spacing Criteria (0/90/45): 1.18 / 0.81 / 0.97
Luminous Opening: Rectangular (W 0.31' x L: 3.9' x H: 0')
CIE Type: Direct

Input Watts (W): 30.9
Input Voltage (V): 120
Input Current (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

TEST NUMBER: P1056106

CATALOG NUMBER: S124R3DR-H1020D935-X4F0-XX-UDD-F-B

Luminous Intensity Polar Plot





TEST NUMBER: P1056106

CATALOG NUMBER: S124R3DR-H1020D935-X4F0-XX-UDD-F-B

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°	9697	9697	9697
5°	9610	9524	9514
10°	9528	9151	8910
15°	9409	8602	8070
20°	9257	7932	7052
25°	9052	7143	5884
30°	8826	6268	4677
35°	8576	5316	3482
40°	8315	4332	2321
45°	8026	3307	1277
50°	7749	2263	355
55°	7442	1227	233
60°	7073	380	133
65°	6613	247	67
70°	5977	111	28
75°	5141	38	0
80°	3885	0	0
85°	1633	0	0

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 8026 cd/sqm



TEST NUMBER: P1056106

CATALOG NUMBER: S124R3DR-H1020D935-X4F0-XX-UDD-F-B

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	101.2	6.6
10°-20°	265.6	17.3
20°-30°	343.2	22.4
30°-40°	328.1	21.4
40°-50°	245.4	16.0
50°-60°	146.0	9.5
60°-70°	74.1	4.8
70°-80°	25.8	1.7
80°-90°	3.5	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°	710.0	46.3
0°-40°	1038.1	67.7
0°-60°	1429.5	93.3
0°-90°	1532.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1532.9	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1097	1097	1097	1097	1097	
5°	1083	1091	1073	1068	1072	103
15°	1028	1006	940	896	882	290
25°	928	863	732	636	603	427
35°	795	685	492	367	323	497
45°	642	492	264	141	102	496
55°	483	300	80	18	15	431
65°	316	122	12	4	3	313
75°	150	16	1	1	0	160
85°	16	0	0	0	0	27
90°	0	0	0	0	0	

TEST NUMBER: P1056106

CATALOG NUMBER: S124R3DR-H1020D935-X4F0-XX-UDD-F-B

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1096.8	1096.8	1096.8	1096.8	1096.8
2.5°	1086.0	1098.9	1088.2	1089.2	1090.3
5°	1082.8	1091.4	1073.1	1067.7	1072.0
7.5°	1074.2	1077.4	1050.5	1036.5	1037.6
10°	1061.3	1058.0	1019.3	995.7	992.5
12.5°	1046.2	1035.5	981.7	947.3	939.8
15°	1027.9	1006.4	939.8	895.7	881.7
17.5°	1006.4	975.3	893.5	835.5	818.3
20°	983.9	940.8	843.0	771.0	749.5
22.5°	957.0	902.1	788.2	703.2	676.3
25°	927.9	863.4	732.2	635.5	603.2
27.5°	897.8	821.5	673.1	566.7	529.0
30°	864.5	777.4	614.0	496.8	458.1
32.5°	830.1	732.2	552.7	432.3	389.2
35°	794.6	684.9	492.5	366.7	322.6
37.5°	758.1	637.6	434.4	304.3	259.1
40°	720.4	589.2	375.3	245.2	201.1
42.5°	683.9	540.9	319.4	189.2	148.4
45°	641.9	492.5	264.5	140.9	102.1
47.5°	604.3	445.2	211.8	95.7	60.2
50°	563.4	394.6	164.5	55.9	25.8
52.5°	522.6	347.3	120.4	24.7	19.4
55°	482.8	300.0	79.6	18.3	15.1
57.5°	440.9	252.7	43.0	14.0	10.8
60°	400.0	206.4	21.5	10.8	7.5
62.5°	358.1	162.4	17.2	6.5	4.3
65°	316.1	121.5	11.8	4.3	3.2
67.5°	274.2	82.8	7.5	2.2	1.1
70°	231.2	50.5	4.3	1.1	1.1
72.5°	190.3	25.8	2.2	1.1	1.1
75°	150.5	16.1	1.1	1.1	0.0
77.5°	111.8	8.6	1.1	1.1	0.0
80°	76.3	3.2	0.0	0.0	0.0
82.5°	44.1	1.1	0.0	0.0	0.0
85°	16.1	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: P1056106
 CATALOG NUMBER: S124R3DR-H1020D935-X4F0-XX-UDD-F-B

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	18.35	19.68	18.71	19.99	20.30	0.00	0.00	0.00	0.00	0.00
	3H	19.89	21.07	20.27	21.40	21.76	0.00	0.00	0.00	0.00	0.00
	4H	20.48	21.58	20.89	21.93	22.31	0.00	0.00	0.00	0.00	0.00
	6H	20.90	21.91	21.32	22.28	22.67	0.00	0.00	0.00	0.00	0.00
	8H	21.00	21.95	21.43	22.34	22.75	0.00	0.00	0.00	0.00	0.00
	12H	21.02	21.93	21.45	22.31	22.74	0.00	0.00	0.00	0.00	0.00
4H	2H	18.13	19.22	18.53	19.57	19.96	0.00	0.00	0.00	0.00	0.00
	3H	19.69	20.58	20.10	20.99	21.39	0.00	0.00	0.00	0.00	0.00
	4H	20.27	21.07	20.71	21.49	21.93	0.00	0.00	0.00	0.00	0.00
	6H	20.73	21.42	21.19	21.87	22.33	0.00	0.00	0.00	0.00	0.00
	8H	20.85	21.49	21.32	21.94	22.41	0.00	0.00	0.00	0.00	0.00
	12H	20.89	21.46	21.38	21.94	22.41	0.00	0.00	0.00	0.00	0.00
8H	4H	20.14	20.78	20.61	21.22	21.70	0.00	0.29	0.12	0.74	1.21
	6H	20.58	21.10	21.08	21.60	22.08	0.00	0.08	0.06	0.58	1.06
	8H	20.69	21.16	21.22	21.68	22.17	0.00	0.00	0.02	0.48	0.97
	12H	20.74	21.16	21.26	21.65	22.22	0.00	0.00	0.00	0.36	0.93
12H	4H	20.09	20.66	20.58	21.14	21.61	0.06	0.63	0.55	1.11	1.58
	6H	20.51	20.98	21.04	21.50	21.99	0.00	0.42	0.48	0.94	1.43
	8H	20.65	21.06	21.16	21.56	22.13	0.00	0.32	0.43	0.82	1.39