

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: P1439906

Luminaire Tested: S124DR-H290D840-X4F0-XX-UDD-FLB-W

Issue Date: 4/2/2026

Test Information

Test Method: LM-79-2024
Report Number: P1439906
TEST IS SCALED FROM IESNA LM-79-24 TEST DATA (G2-2509-563-1)
Test Lab: INNOVATION CENTER
Issue Date: 4/2/2026
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: S124DR-H290D840-X4F0-XX-UDD-FLB-W
Description: DEFINE 4, DIRECT RECESSED WITH BATWING FLUSH OPTIC
HIGH PERFORMANCE LIGHT ENGINE
Light Source: 4000K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

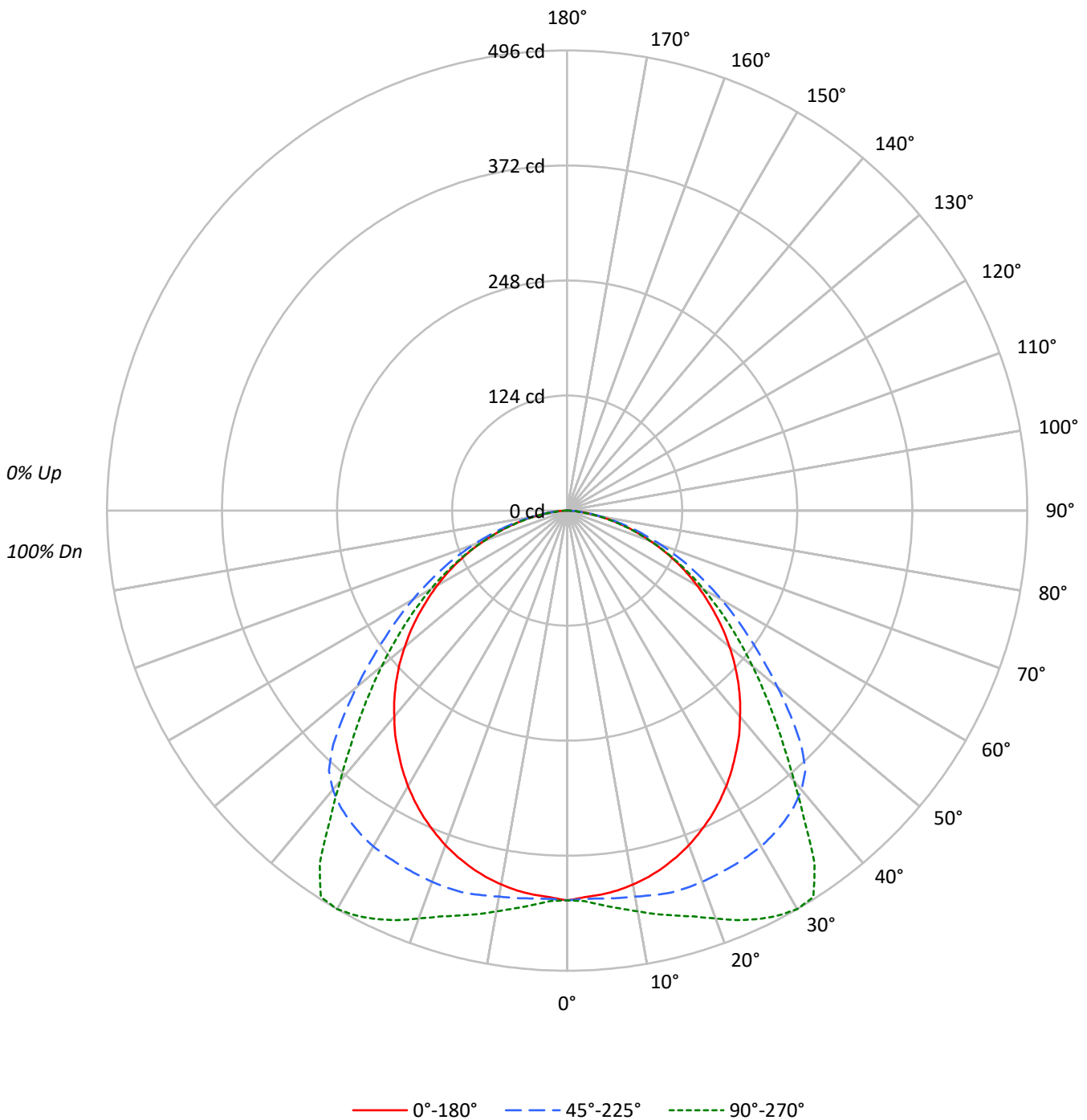
Lumens per Lamp: N/A
Luminaire Lumens: 1276.6 lumens
Efficiency: N/A
Efficacy: 109.1 lumens/watt
Spacing Criteria (0/90/45): 1.22 / 1.53 / 1.51
Luminous Opening: Rectangular (W 0.31' x L: 3.9' x H: 0')
CIE Type: Direct

Input Watts (W): 11.7
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

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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	109	105	101	97	107	103	99	95	98	95	92	94	92	90	91	89	87	85
2	100	92	85	80	97	90	84	79	86	81	77	83	79	75	80	77	73	71
3	91	81	73	67	89	79	72	66	76	70	65	74	68	64	71	67	63	60
4	83	72	63	57	81	70	62	56	68	61	55	66	60	55	63	58	54	52
5	77	64	55	49	75	63	55	49	61	54	48	59	53	47	57	52	47	45
6	71	58	49	43	69	57	48	42	55	48	42	53	47	42	52	46	41	39
7	66	52	44	38	64	52	43	37	50	43	37	49	42	37	47	41	37	35
8	61	48	39	34	60	47	39	33	46	38	33	44	38	33	43	37	33	31
9	57	44	36	30	56	43	35	30	42	35	30	41	34	30	40	34	30	28
10	53	40	32	27	52	40	32	27	39	32	27	38	31	27	37	31	27	25

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3714	3714	3714
5°	3688	3725	3787
10°	3675	3793	3938
15°	3648	3906	4135
20°	3611	4006	4402
25°	3563	4122	4741
30°	3502	4267	5063
35°	3426	4409	5019
40°	3345	4535	4392
45°	3257	4459	3949
50°	3142	4071	3589
55°	3012	3704	3279
60°	2865	3397	3003
65°	2690	3096	2743
70°	2461	2771	2451
75°	2169	2381	2125
80°	1782	1909	1721
85°	1258	1298	1167

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 45°
 Vertical Angle: 45°
 Luminance: 4459 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	40.3	3.2
10°-20°	120.8	9.5
20°-30°	196.6	15.4
30°-40°	249.7	19.6
40°-50°	243.3	19.1
50°-60°	199.5	15.6
60°-70°	139.2	10.9
70°-80°	71.4	5.6
80°-90°	15.8	1.2
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°	357.7	28.0
0°-40°	607.4	47.6
0°-60°	1050.2	82.3
0°-90°	1276.6	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1276.6	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	420	420	420	420	420	
5°	416	422	420	422	427	39
15°	399	411	427	444	452	112
25°	365	389	422	466	486	168
35°	317	348	408	468	465	199
45°	260	293	357	327	316	201
55°	195	226	240	220	213	175
65°	129	147	148	136	131	127
75°	64	70	70	65	62	68
85°	12	13	13	12	12	16
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	420.1	420.1	420.1	420.1	420.1
2.5°	417.2	422.5	418.8	420.5	421.3
5°	415.5	421.7	419.7	422.5	426.7
7.5°	413.1	420.1	421.3	427.1	432.4
10°	409.3	417.6	422.5	432.4	438.6
12.5°	404.4	414.7	424.6	438.2	445.6
15°	398.6	411.0	426.7	443.6	451.8
17.5°	391.6	406.5	426.7	447.7	458.8
20°	383.8	401.1	425.8	453.0	467.9
22.5°	374.7	395.3	424.2	459.2	477.8
25°	365.2	388.7	422.5	466.2	486.0
27.5°	354.5	380.9	420.5	471.6	492.2
30°	343.0	371.4	418.0	474.1	495.9
32.5°	330.6	360.3	413.9	474.1	493.9
35°	317.4	348.3	408.5	467.9	465.0
37.5°	304.6	335.6	401.9	437.8	419.7
40°	289.8	322.0	392.9	395.3	380.5
42.5°	275.8	307.5	380.1	359.5	346.3
45°	260.5	292.7	356.6	326.9	315.8
47.5°	244.9	276.6	326.1	297.6	287.3
50°	228.4	260.5	296.0	270.0	260.9
52.5°	212.3	243.2	267.1	244.5	235.8
55°	195.4	225.5	240.3	220.1	212.7
57.5°	178.5	207.4	216.0	197.5	190.5
60°	162.0	188.0	192.1	176.0	169.8
62.5°	145.5	167.8	169.4	155.4	150.1
65°	128.6	147.2	148.0	136.0	131.1
67.5°	112.1	127.4	127.4	117.1	113.0
70°	95.2	108.0	107.2	98.9	94.8
72.5°	79.1	88.2	87.4	81.2	78.3
75°	63.5	70.5	69.7	64.7	62.2
77.5°	48.6	53.6	52.8	49.5	47.4
80°	35.0	37.9	37.5	35.0	33.8
82.5°	23.1	24.7	23.9	22.3	21.4
85°	12.4	12.8	12.8	12.0	11.5
87.5°	4.5	4.5	4.5	4.5	4.1
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	16.24	17.84	16.61	18.16	18.47	16.03	17.63	16.39	17.94	18.26
	3H	17.75	19.19	18.12	19.51	19.87	17.50	18.94	17.88	19.27	19.63
	4H	18.25	19.60	18.65	19.95	20.33	17.99	19.35	18.39	19.70	20.07
	6H	18.57	19.82	18.98	20.19	20.58	18.31	19.56	18.72	19.93	20.32
	8H	18.65	19.85	19.08	20.24	20.64	18.39	19.58	18.81	19.97	20.37
	12H	18.69	19.84	19.12	20.22	20.65	18.42	19.56	18.85	19.95	20.38
4H	2H	16.87	18.22	17.26	18.57	18.94	16.70	18.05	17.10	18.40	18.77
	3H	18.60	19.72	19.00	20.12	20.52	18.36	19.49	18.77	19.89	20.29
	4H	19.22	20.24	19.65	20.65	21.09	18.96	19.98	19.39	20.39	20.83
	6H	19.65	20.54	20.11	20.98	21.43	19.37	20.26	19.83	20.70	21.16
	8H	19.76	20.59	20.22	21.03	21.50	19.48	20.30	19.94	20.75	21.21
	12H	19.83	20.57	20.31	21.05	21.52	19.53	20.28	20.01	20.75	21.22
8H	4H	19.47	20.29	19.93	20.74	21.20	19.23	20.06	19.69	20.50	20.97
	6H	19.99	20.67	20.48	21.16	21.64	19.73	20.42	20.23	20.91	21.38
	8H	20.15	20.77	20.66	21.28	21.76	19.88	20.50	20.39	21.00	21.49
	12H	20.26	20.81	20.77	21.30	21.86	19.98	20.52	20.49	21.02	21.58
12H	4H	19.48	20.22	19.96	20.69	21.16	19.25	19.99	19.73	20.47	20.94
	6H	20.01	20.63	20.52	21.13	21.62	19.76	20.38	20.27	20.89	21.37
	8H	20.22	20.76	20.73	21.25	21.82	19.96	20.50	20.46	20.99	21.55