

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: P1439904

Luminaire Tested: S124DR-H290D830-X4F0-XX-UDD-FLB-W

Issue Date: 4/2/2026

**Test Information**

Test Method: LM-79-2024  
Report Number: P1439904  
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-H290D830-X4F0-XX-UDD-FLB-W  
Description: DEFINE 4, DIRECT RECESSED WITH BATWING FLUSH OPTIC  
HIGH PERFORMANCE LIGHT ENGINE  
Light Source: 3000K CCT, 80 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

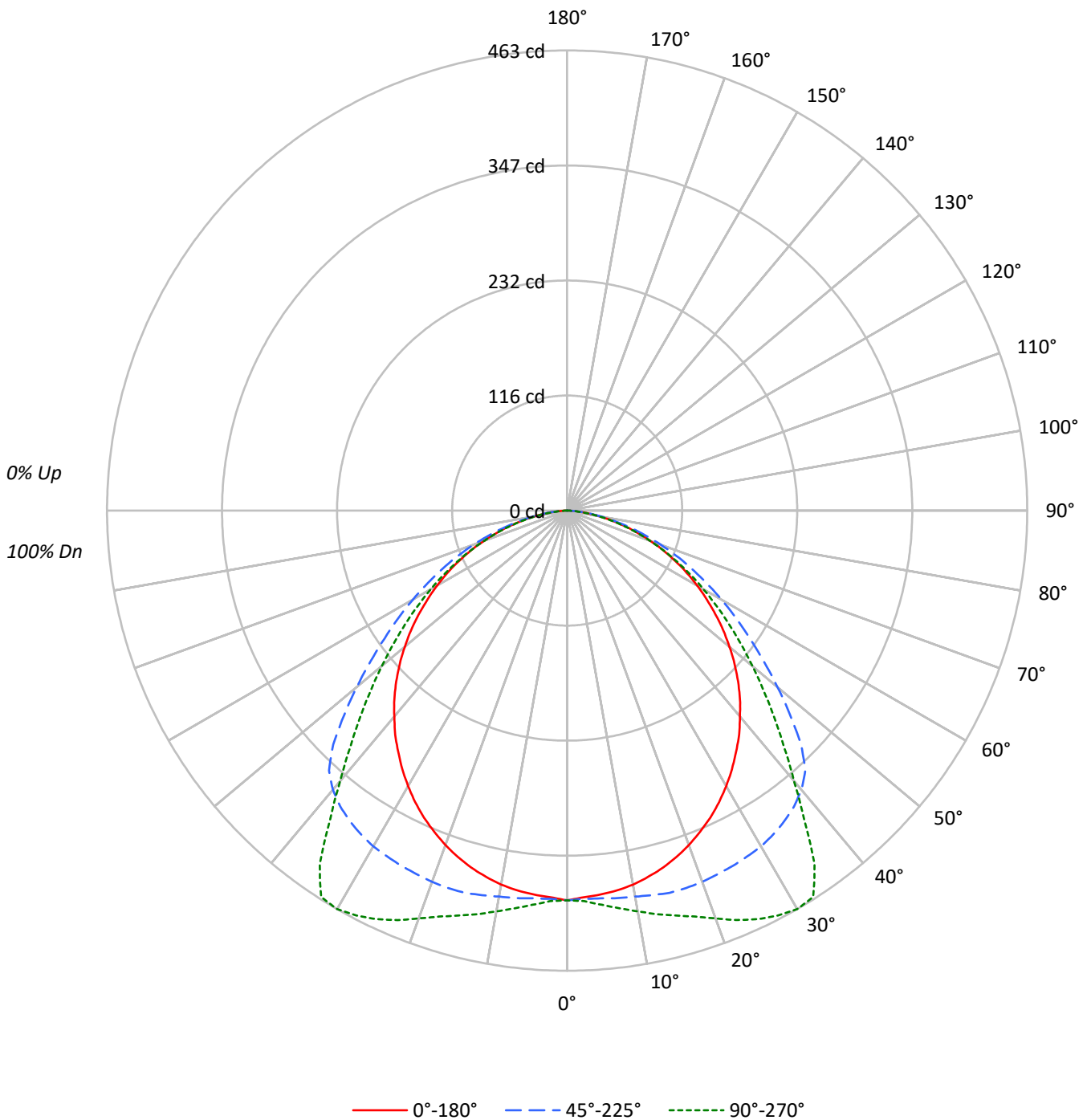
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 1191.5 lumens  
Efficiency: N/A  
Efficacy: 101.8 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<sub>in</sub>): 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°	3467	3467	3467
5°	3442	3476	3534
10°	3430	3541	3675
15°	3406	3645	3860
20°	3370	3740	4109
25°	3326	3848	4425
30°	3268	3983	4726
35°	3198	4115	4684
40°	3122	4232	4098
45°	3041	4161	3685
50°	2933	3800	3349
55°	2812	3457	3060
60°	2674	3171	2803
65°	2510	2889	2561
70°	2298	2585	2288
75°	2026	2220	1985
80°	1665	1782	1604
85°	1167	1207	1096

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 45°  
 Vertical Angle: 45°  
 Luminance: 4161 cd/sqm

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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	37.6	3.2
10°-20°	112.7	9.5
20°-30°	183.5	15.4
30°-40°	233.0	19.6
40°-50°	227.1	19.1
50°-60°	186.2	15.6
60°-70°	129.9	10.9
70°-80°	66.7	5.6
80°-90°	14.8	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°	333.9	28.0
0°-40°	566.9	47.6
0°-60°	980.2	82.3
0°-90°	1191.5	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1191.5	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	392	392	392	392	392	
5°	388	394	392	394	398	37
15°	372	384	398	414	422	105
25°	341	363	394	435	454	157
35°	296	325	381	437	434	185
45°	243	273	333	305	295	187
55°	182	210	224	206	198	163
65°	120	137	138	127	122	119
75°	59	66	65	60	58	63
85°	12	12	12	11	11	15
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	392.1	392.1	392.1	392.1	392.1
2.5°	389.4	394.4	390.9	392.4	393.2
5°	387.8	393.6	391.7	394.4	398.2
7.5°	385.5	392.1	393.2	398.6	403.6
10°	382.1	389.8	394.4	403.6	409.4
12.5°	377.4	387.1	396.3	409.0	415.9
15°	372.1	383.6	398.2	414.0	421.7
17.5°	365.5	379.4	398.2	417.8	428.2
20°	358.2	374.4	397.5	422.8	436.7
22.5°	349.7	369.0	395.9	428.6	445.9
25°	340.9	362.8	394.4	435.2	453.6
27.5°	330.9	355.5	392.4	440.2	459.4
30°	320.1	346.7	390.1	442.5	462.9
32.5°	308.6	336.3	386.3	442.5	460.9
35°	296.3	325.1	381.3	436.7	434.0
37.5°	284.3	313.2	375.1	408.6	391.7
40°	270.5	300.5	366.7	369.0	355.1
42.5°	257.4	287.0	354.7	335.5	323.2
45°	243.2	273.2	332.8	305.1	294.7
47.5°	228.5	258.2	304.3	277.8	268.2
50°	213.2	243.2	276.3	252.0	243.5
52.5°	198.1	227.0	249.3	228.2	220.1
55°	182.4	210.5	224.3	205.5	198.5
57.5°	166.6	193.5	201.6	184.3	177.8
60°	151.2	175.4	179.3	164.3	158.5
62.5°	135.8	156.6	158.1	145.1	140.1
65°	120.0	137.4	138.1	127.0	122.4
67.5°	104.7	118.9	118.9	109.3	105.4
70°	88.9	100.8	100.0	92.3	88.5
72.5°	73.9	82.3	81.6	75.8	73.1
75°	59.3	65.8	65.0	60.4	58.1
77.5°	45.4	50.0	49.2	46.2	44.2
80°	32.7	35.4	35.0	32.7	31.5
82.5°	21.5	23.1	22.3	20.8	20.0
85°	11.5	11.9	11.9	11.2	10.8
87.5°	4.2	4.2	4.2	4.2	3.8
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	16.00	17.60	16.37	17.92	18.23	15.79	17.39	16.15	17.70	18.02
	3H	17.51	18.95	17.88	19.27	19.63	17.26	18.70	17.64	19.03	19.39
	4H	18.01	19.36	18.41	19.71	20.09	17.75	19.11	18.15	19.46	19.83
	6H	18.33	19.58	18.74	19.95	20.34	18.07	19.32	18.48	19.69	20.08
	8H	18.41	19.61	18.84	20.00	20.40	18.15	19.34	18.57	19.73	20.13
	12H	18.45	19.60	18.88	19.98	20.41	18.18	19.32	18.61	19.71	20.14
4H	2H	16.62	17.98	17.02	18.33	18.70	16.46	17.81	16.85	18.16	18.53
	3H	18.35	19.48	18.76	19.88	20.28	18.12	19.25	18.53	19.65	20.05
	4H	18.98	20.00	19.41	20.41	20.85	18.72	19.74	19.15	20.15	20.59
	6H	19.41	20.30	19.87	20.74	21.19	19.13	20.02	19.59	20.46	20.92
	8H	19.52	20.35	19.98	20.79	21.26	19.24	20.06	19.70	20.51	20.97
	12H	19.59	20.33	20.07	20.81	21.28	19.29	20.04	19.78	20.51	20.98
8H	4H	19.22	20.05	19.69	20.50	20.96	18.99	19.82	19.45	20.26	20.73
	6H	19.75	20.43	20.24	20.92	21.40	19.49	20.18	19.99	20.67	21.14
	8H	19.91	20.53	20.42	21.04	21.52	19.64	20.26	20.15	20.76	21.25
	12H	20.02	20.57	20.53	21.06	21.62	19.74	20.28	20.25	20.78	21.34
12H	4H	19.24	19.98	19.72	20.45	20.92	19.01	19.75	19.49	20.23	20.70
	6H	19.77	20.39	20.28	20.89	21.38	19.52	20.14	20.03	20.65	21.13
	8H	19.98	20.52	20.49	21.01	21.58	19.72	20.26	20.22	20.75	21.31