

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: P1439817

Luminaire Tested: S123DR-S290D850-X4F0-XX-UDD-FLB-W

Issue Date: 4/2/2026

**Test Information**

Test Method: LM-79-2024  
Report Number: P1439817  
TEST IS SCALED FROM IESNA LM-79-24 TEST DATA (G3-2603-719-3)  
Test Lab: INNOVATION CENTER  
Issue Date: 4/2/2026  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: NEO-RAY  
Catalog Number: S123DR-S290D850-X4F0-XX-UDD-FLB-W  
Description: DEFINE 3, DIRECT RECESSED WITH BATWING FLUSH OPTIC  
CORE LIGHT ENGINE  
Light Source: 5000K CCT, 80 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

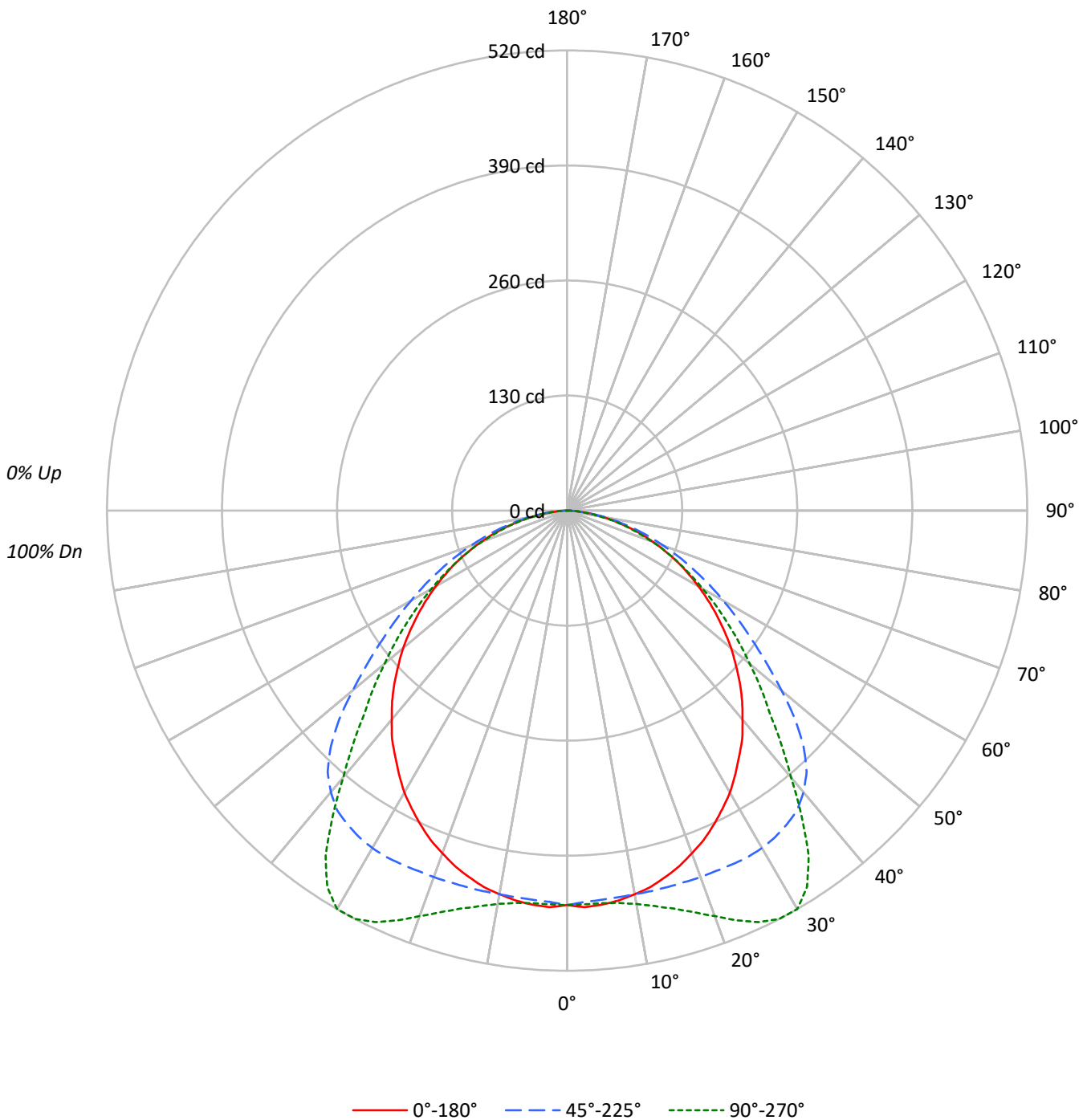
Lumens per Lamp: N/A  
Luminaire Lumens: 1348.3 lumens  
Efficiency: N/A  
Efficacy: 107.0 lumens/watt  
Spacing Criteria (0/90/45): 1.22 / 1.52 / 1.52  
Luminous Opening: Rectangular (W 0.23' x L: 3.9' x H: 0')  
CIE Type: Direct

Input Watts (W): 12.6  
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	109	105	100	97	106	102	99	95	98	95	92	94	92	89	91	89	87	85
2	100	92	85	79	97	90	84	78	86	81	77	83	79	75	80	76	73	71
3	91	81	73	66	88	79	72	66	76	70	65	73	68	63	71	66	62	60
4	83	72	63	56	81	70	62	56	68	61	55	65	59	54	63	58	54	52
5	77	64	55	49	75	63	54	48	61	53	48	59	52	47	57	51	47	45
6	71	58	49	42	69	57	48	42	55	47	42	53	47	41	52	46	41	39
7	66	52	43	37	64	51	43	37	50	42	37	48	42	37	47	41	36	34
8	61	48	39	33	59	47	39	33	46	38	33	44	38	33	43	37	33	31
9	57	44	35	30	56	43	35	30	42	35	30	41	34	30	40	34	29	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°	5375	5375	5375
5°	5412	5344	5389
10°	5390	5390	5525
15°	5351	5496	5811
20°	5287	5654	6257
25°	5212	5869	6826
30°	5122	6130	7239
35°	4987	6371	7003
40°	4854	6538	6196
45°	4708	6445	5517
50°	4539	5931	5049
55°	4341	5368	4641
60°	4135	4914	4268
65°	3931	4499	3945
70°	3641	4078	3574
75°	3284	3629	3200
80°	2749	3041	2624
85°	2103	2227	1978

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 45°  
 Vertical Angle: 45°  
 Luminance: 6445 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	42.4	3.1
10°-20°	126.1	9.4
20°-30°	206.7	15.3
30°-40°	261.5	19.4
40°-50°	255.5	18.9
50°-60°	209.9	15.6
60°-70°	148.0	11.0
70°-80°	78.9	5.9
80°-90°	19.2	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°	375.3	27.8
0°-40°	636.8	47.2
0°-60°	1102.2	81.7
0°-90°	1348.3	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1348.3	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	446	446	446	446	446	
5°	447	445	442	446	445	42
15°	429	431	440	460	466	121
25°	392	403	441	495	513	180
35°	339	362	433	483	476	212
45°	276	308	378	341	324	213
55°	206	237	255	230	221	185
65°	138	158	158	144	138	136
75°	70	79	78	70	69	75
85°	15	17	16	15	14	18
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	445.8	445.8	445.8	445.8	445.8
2.5°	448.6	447.2	442.6	446.7	445.3
5°	447.2	445.3	441.6	446.2	445.3
7.5°	444.4	443.5	440.7	447.6	447.2
10°	440.3	439.8	440.3	450.4	451.3
12.5°	435.6	436.1	440.3	454.5	457.8
15°	428.7	431.0	440.3	460.1	465.6
17.5°	421.4	425.0	440.3	467.5	475.8
20°	412.1	418.6	440.7	475.3	487.7
22.5°	402.9	410.8	440.7	485.9	501.1
25°	391.8	403.4	441.2	494.7	513.1
27.5°	379.9	393.7	441.6	501.6	520.0
30°	367.9	384.5	440.3	504.3	520.0
32.5°	353.6	373.9	437.5	499.7	504.3
35°	338.8	362.3	432.9	483.1	475.8
37.5°	325.0	349.9	426.9	452.7	435.2
40°	308.4	336.5	415.4	414.0	393.7
42.5°	292.7	322.2	400.6	374.8	358.2
45°	276.1	307.5	378.0	341.1	323.6
47.5°	258.6	291.4	349.4	309.3	296.9
50°	242.0	274.8	316.2	280.3	269.2
52.5°	224.0	257.2	284.4	254.5	244.8
55°	206.5	237.4	255.4	229.6	220.8
57.5°	189.0	218.1	228.7	206.1	199.2
60°	171.5	197.8	203.8	184.4	177.0
62.5°	154.4	178.9	180.7	163.7	157.2
65°	137.8	157.7	157.7	143.8	138.3
67.5°	120.3	137.4	136.5	123.5	120.3
70°	103.3	117.6	115.7	105.1	101.4
72.5°	87.1	97.7	96.3	88.1	83.9
75°	70.5	79.3	77.9	70.5	68.7
77.5°	54.9	60.9	59.5	54.4	53.0
80°	39.6	44.3	43.8	40.1	37.8
82.5°	26.7	29.0	28.6	26.3	24.9
85°	15.2	16.6	16.1	14.8	14.3
87.5°	6.0	6.9	7.4	6.9	6.5
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	17.48	19.09	17.85	19.40	19.72	17.21	18.81	17.57	19.13	19.44
	3H	19.05	20.50	19.43	20.82	21.19	18.72	20.17	19.10	20.50	20.86
	4H	19.60	20.96	20.00	21.31	21.69	19.26	20.62	19.66	20.97	21.34
	6H	19.97	21.23	20.38	21.59	21.98	19.62	20.87	20.03	21.24	21.63
	8H	20.07	21.27	20.49	21.66	22.06	19.71	20.91	20.14	21.30	21.70
	12H	20.12	21.27	20.55	21.65	22.08	19.76	20.91	20.19	21.29	21.72
4H	2H	18.12	19.48	18.52	19.83	20.20	17.91	19.27	18.31	19.62	19.99
	3H	19.93	21.06	20.34	21.46	21.86	19.62	20.76	20.03	21.16	21.56
	4H	20.62	21.64	21.05	22.05	22.49	20.26	21.28	20.69	21.70	22.13
	6H	21.10	21.99	21.55	22.43	22.89	20.72	21.61	21.17	22.05	22.51
	8H	21.23	22.06	21.69	22.51	22.97	20.85	21.68	21.31	22.12	22.59
	12H	21.31	22.06	21.80	22.54	23.01	20.93	21.67	21.41	22.15	22.62
8H	4H	20.88	21.72	21.34	22.16	22.62	20.57	21.40	21.03	21.84	22.31
	6H	21.47	22.16	21.97	22.65	23.13	21.13	21.82	21.62	22.31	22.78
	8H	21.67	22.29	22.18	22.79	23.28	21.31	21.93	21.82	22.44	22.92
	12H	21.81	22.36	22.31	22.85	23.41	21.44	21.99	21.94	22.48	23.04
12H	4H	20.90	21.65	21.38	22.12	22.59	20.59	21.34	21.07	21.82	22.29
	6H	21.50	22.13	22.01	22.63	23.12	21.17	21.79	21.68	22.30	22.79
	8H	21.75	22.30	22.25	22.79	23.35	21.40	21.95	21.91	22.44	23.00