

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: P1439771

Luminaire Tested: S123DR-H290D840-X4F0-XX-UDD-FLB-W

Issue Date: 4/2/2026

**Test Information**

Test Method: LM-79-2024  
Report Number: P1439771  
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-H290D840-X4F0-XX-UDD-FLB-W  
Description: DEFINE 3, DIRECT RECESSED WITH BATWING FLUSH OPTIC  
HIGH PERFORMANCE LIGHT ENGINE  
Light Source: 4000K CCT, 80 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

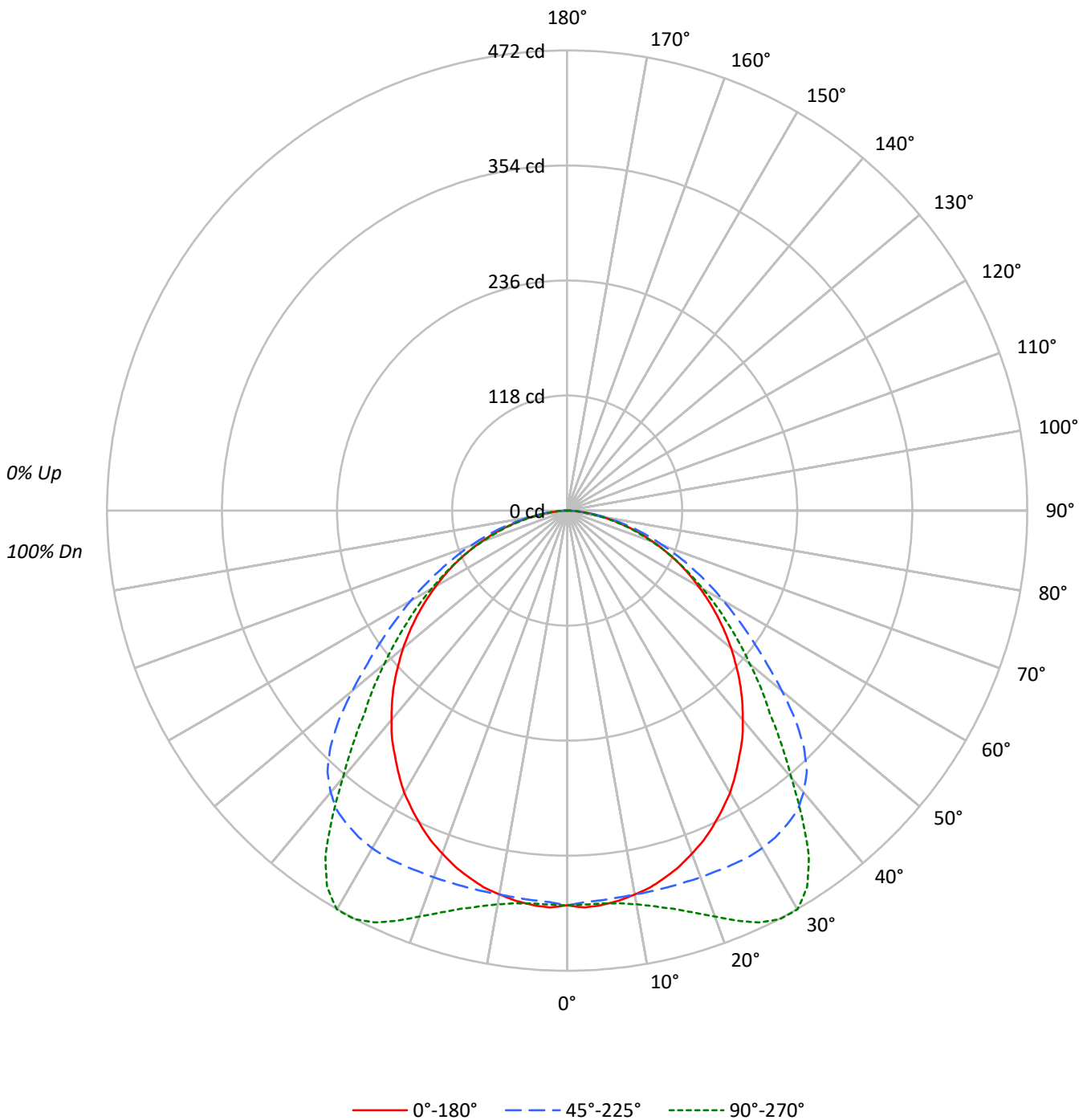
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 1224.8 lumens  
Efficiency: N/A  
Efficacy: 104.7 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): 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	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°	4882	4882	4882
5°	4916	4856	4895
10°	4896	4896	5019
15°	4860	4991	5279
20°	4804	5136	5684
25°	4734	5332	6200
30°	4653	5567	6577
35°	4530	5787	6361
40°	4410	5938	5628
45°	4276	5855	5013
50°	4123	5389	4588
55°	3943	4877	4217
60°	3757	4463	3877
65°	3572	4085	3583
70°	3307	3705	3247
75°	2986	3298	2907
80°	2499	2763	2381
85°	1909	2033	1798

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 45°  
 Vertical Angle: 45°  
 Luminance: 5855 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	38.6	3.1
10°-20°	114.6	9.4
20°-30°	187.8	15.3
30°-40°	237.5	19.4
40°-50°	232.1	18.9
50°-60°	190.7	15.6
60°-70°	134.5	11.0
70°-80°	71.7	5.9
80°-90°	17.5	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°	340.9	27.8
0°-40°	578.4	47.2
0°-60°	1001.2	81.7
0°-90°	1224.8	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1224.8	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	405	405	405	405	405	
5°	406	404	401	405	404	39
15°	389	392	400	418	423	110
25°	356	366	401	449	466	164
35°	308	329	393	439	432	193
45°	251	279	343	310	294	193
55°	188	216	232	208	201	168
65°	125	143	143	131	126	124
75°	64	72	71	64	62	68
85°	14	15	15	13	13	17
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	404.9	404.9	404.9	404.9	404.9
2.5°	407.5	406.2	402.0	405.8	404.5
5°	406.2	404.5	401.2	405.4	404.5
7.5°	403.7	402.8	400.3	406.6	406.2
10°	399.9	399.5	399.9	409.1	410.0
12.5°	395.7	396.1	399.9	412.9	415.8
15°	389.4	391.5	399.9	417.9	422.9
17.5°	382.7	386.1	399.9	424.6	432.2
20°	374.4	380.2	400.3	431.7	443.0
22.5°	366.0	373.1	400.3	441.4	455.2
25°	355.9	366.4	400.8	449.3	466.1
27.5°	345.1	357.6	401.2	455.6	472.4
30°	334.2	349.2	399.9	458.1	472.4
32.5°	321.2	339.6	397.4	453.9	458.1
35°	307.8	329.1	393.2	438.9	432.2
37.5°	295.2	317.8	387.8	411.2	395.3
40°	280.2	305.7	377.3	376.0	357.6
42.5°	265.9	292.7	363.9	340.5	325.4
45°	250.8	279.3	343.4	309.9	294.0
47.5°	234.9	264.7	317.4	281.0	269.7
50°	219.8	249.6	287.3	254.6	244.6
52.5°	203.5	233.7	258.4	231.2	222.4
55°	187.6	215.7	232.0	208.5	200.6
57.5°	171.7	198.1	207.7	187.2	180.9
60°	155.8	179.6	185.1	167.5	160.8
62.5°	140.3	162.5	164.2	148.7	142.8
65°	125.2	143.2	143.2	130.7	125.6
67.5°	109.3	124.8	124.0	112.2	109.3
70°	93.8	106.8	105.1	95.5	92.1
72.5°	79.1	88.8	87.5	80.0	76.2
75°	64.1	72.0	70.8	64.1	62.4
77.5°	49.8	55.3	54.0	49.4	48.2
80°	36.0	40.2	39.8	36.4	34.3
82.5°	24.3	26.4	26.0	23.9	22.6
85°	13.8	15.1	14.7	13.4	13.0
87.5°	5.4	6.3	6.7	6.3	5.9
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	17.15	18.75	17.51	19.07	19.38	16.87	18.48	17.24	18.79	19.11
	3H	18.72	20.16	19.09	20.49	20.85	18.39	19.84	18.77	20.16	20.52
	4H	19.27	20.63	19.67	20.98	21.35	18.92	20.28	19.32	20.63	21.01
	6H	19.63	20.89	20.04	21.26	21.65	19.28	20.54	19.69	20.91	21.30
	8H	19.73	20.93	20.16	21.32	21.72	19.38	20.58	19.80	20.97	21.37
	12H	19.79	20.94	20.22	21.32	21.75	19.43	20.58	19.86	20.96	21.39
4H	2H	17.79	19.15	18.18	19.49	19.87	17.57	18.93	17.97	19.28	19.66
	3H	19.59	20.73	20.00	21.13	21.53	19.29	20.42	19.70	20.82	21.22
	4H	20.28	21.31	20.71	21.72	22.16	19.93	20.95	20.36	21.36	21.80
	6H	20.76	21.65	21.22	22.10	22.55	20.39	21.28	20.84	21.72	22.18
	8H	20.90	21.73	21.36	22.17	22.64	20.51	21.35	20.97	21.79	22.25
	12H	20.98	21.73	21.46	22.21	22.68	20.59	21.34	21.07	21.82	22.29
8H	4H	20.55	21.38	21.01	21.82	22.29	20.23	21.07	20.69	21.51	21.98
	6H	21.14	21.83	21.63	22.32	22.79	20.79	21.49	21.29	21.97	22.45
	8H	21.33	21.95	21.84	22.46	22.95	20.97	21.59	21.48	22.10	22.59
	12H	21.47	22.02	21.98	22.51	23.07	21.10	21.65	21.61	22.14	22.70
12H	4H	20.56	21.31	21.04	21.79	22.26	20.26	21.01	20.74	21.48	21.95
	6H	21.17	21.79	21.68	22.30	22.79	20.84	21.46	21.35	21.97	22.45
	8H	21.41	21.96	21.92	22.45	23.02	21.07	21.62	21.57	22.11	22.67