

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: P1439776

Luminaire Tested: S123DR-H290D940-X4F0-XX-UDD-FLB-W

Issue Date: 4/2/2026

**Test Information**

Test Method: LM-79-2024  
Report Number: P1439776  
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-H290D940-X4F0-XX-UDD-FLB-W  
Description: DEFINE 3, DIRECT RECESSED WITH BATWING FLUSH OPTIC  
HIGH PERFORMANCE LIGHT ENGINE  
Light Source: 4000K CCT, 90 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

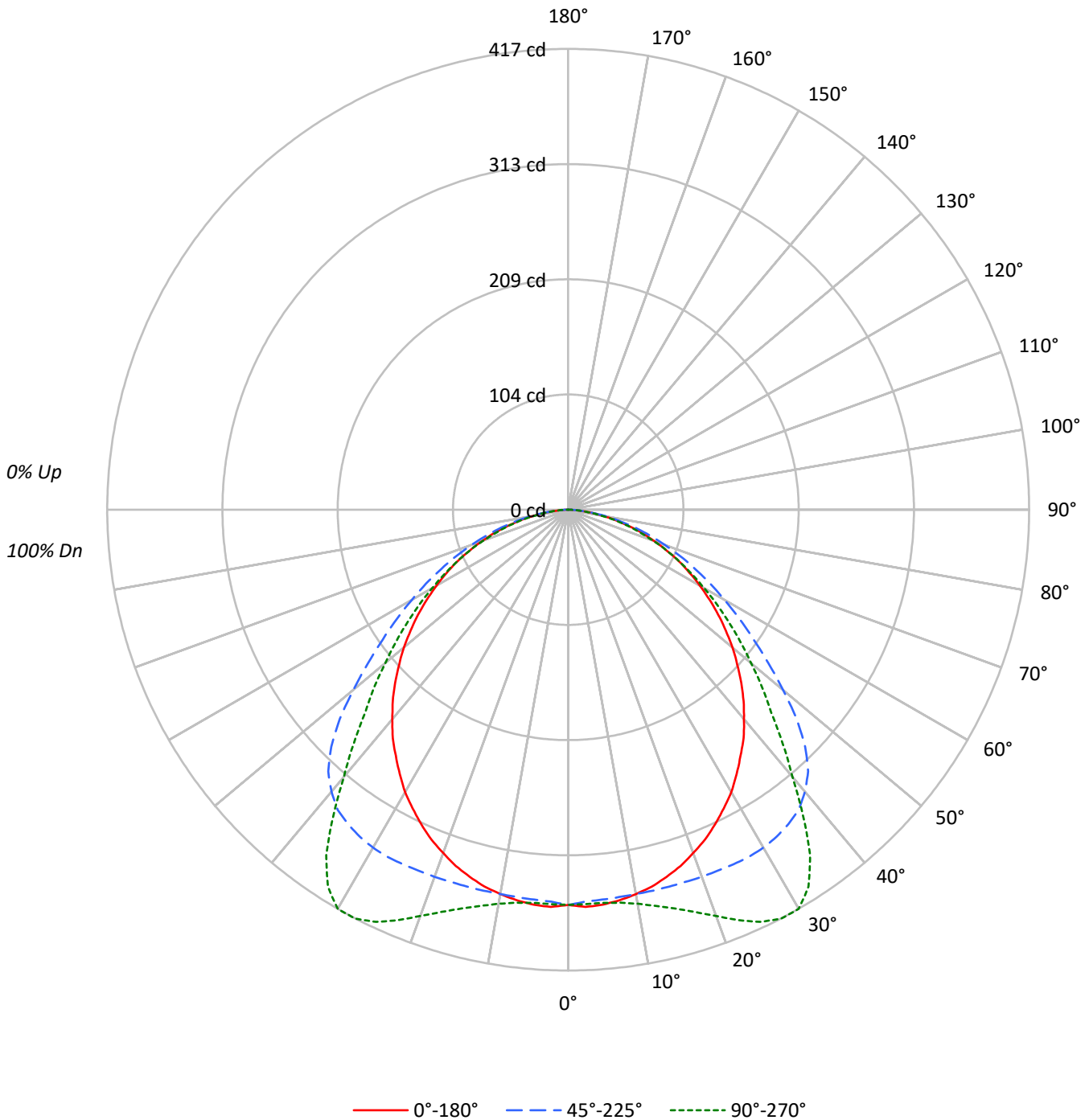
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 1081.5 lumens  
Efficiency: N/A  
Efficacy: 92.4 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 (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	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					100			
1	109	105	100	97	106	102	99	95	98	95	92	94	92	89	91	89	87	85					85			
2	100	92	85	79	97	90	84	78	86	81	77	83	79	75	80	76	73	71					71			
3	91	81	73	66	88	79	72	66	76	70	65	73	68	63	71	66	62	60					60			
4	83	72	63	56	81	70	62	56	68	61	55	65	59	54	63	58	54	52					52			
5	77	64	55	49	75	63	54	48	61	53	48	59	52	47	57	51	47	45					45			
6	71	58	49	42	69	57	48	42	55	47	42	53	47	41	52	46	41	39					39			
7	66	52	43	37	64	51	43	37	50	42	37	48	42	37	47	41	36	34					34			
8	61	48	39	33	59	47	39	33	46	38	33	44	38	33	43	37	33	31					31			
9	57	44	35	30	56	43	35	30	42	35	30	41	34	30	40	34	29	28					28			
10	53	40	32	27	52	40	32	27	39	32	27	38	31	27	37	31	27	25					25			

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	4311	4311	4311
5°	4341	4287	4323
10°	4323	4323	4432
15°	4292	4407	4662
20°	4242	4535	5019
25°	4181	4708	5474
30°	4108	4916	5807
35°	4000	5110	5616
40°	3894	5244	4970
45°	3777	5170	4426
50°	3641	4759	4050
55°	3483	4307	3723
60°	3318	3940	3424
65°	3155	3609	3164
70°	2919	3271	2866
75°	2637	2911	2567
80°	2208	2437	2104
85°	1688	1784	1591

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 45°  
 Vertical Angle: 45°  
 Luminance: 5170 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	34.0	3.1
10°-20°	101.2	9.4
20°-30°	165.8	15.3
30°-40°	209.7	19.4
40°-50°	204.9	18.9
50°-60°	168.3	15.6
60°-70°	118.8	11.0
70°-80°	63.3	5.9
80°-90°	15.4	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°	301.0	27.8
0°-40°	510.8	47.2
0°-60°	884.0	81.7
0°-90°	1081.5	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1081.5	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	358	358	358	358	358	
5°	359	357	354	358	357	34
15°	344	346	353	369	374	97
25°	314	324	354	397	412	145
35°	272	291	347	388	382	170
45°	222	247	303	274	260	171
55°	166	190	205	184	177	148
65°	111	126	126	115	111	109
75°	57	64	62	57	55	60
85°	12	13	13	12	12	15
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	357.6	357.6	357.6	357.6	357.6
2.5°	359.8	358.7	355.0	358.3	357.2
5°	358.7	357.2	354.2	357.9	357.2
7.5°	356.5	355.7	353.5	359.0	358.7
10°	353.1	352.8	353.1	361.3	362.0
12.5°	349.4	349.8	353.1	364.6	367.2
15°	343.9	345.7	353.1	369.0	373.5
17.5°	338.0	340.9	353.1	374.9	381.6
20°	330.6	335.7	353.5	381.2	391.2
22.5°	323.2	329.5	353.5	389.7	401.9
25°	314.3	323.5	353.9	396.8	411.5
27.5°	304.7	315.8	354.2	402.3	417.1
30°	295.1	308.4	353.1	404.5	417.1
32.5°	283.6	299.9	350.9	400.8	404.5
35°	271.8	290.6	347.2	387.5	381.6
37.5°	260.7	280.7	342.4	363.1	349.1
40°	247.4	269.9	333.2	332.0	315.8
42.5°	234.8	258.5	321.3	300.6	287.3
45°	221.5	246.6	303.2	273.6	259.6
47.5°	207.4	233.7	280.3	248.1	238.1
50°	194.1	220.4	253.7	224.8	215.9
52.5°	179.7	206.3	228.1	204.1	196.3
55°	165.7	190.4	204.9	184.1	177.1
57.5°	151.6	174.9	183.4	165.3	159.7
60°	137.6	158.6	163.4	147.9	142.0
62.5°	123.9	143.5	144.9	131.3	126.1
65°	110.6	126.5	126.5	115.4	110.9
67.5°	96.5	110.2	109.5	99.1	96.5
70°	82.8	94.3	92.8	84.3	81.3
72.5°	69.9	78.4	77.3	70.6	67.3
75°	56.6	63.6	62.5	56.6	55.1
77.5°	44.0	48.8	47.7	43.6	42.5
80°	31.8	35.5	35.1	32.2	30.3
82.5°	21.4	23.3	22.9	21.1	20.0
85°	12.2	13.3	12.9	11.8	11.5
87.5°	4.8	5.5	5.9	5.5	5.2
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	16.71	18.32	17.08	18.63	18.95	16.44	18.05	16.81	18.36	18.68
	3H	18.28	19.73	18.66	20.06	20.42	17.96	19.40	18.33	19.73	20.09
	4H	18.84	20.20	19.23	20.54	20.92	18.49	19.85	18.89	20.20	20.58
	6H	19.20	20.46	19.61	20.82	21.22	18.85	20.11	19.26	20.47	20.86
	8H	19.30	20.50	19.72	20.89	21.29	18.94	20.14	19.37	20.53	20.93
	12H	19.35	20.50	19.78	20.89	21.32	19.00	20.15	19.43	20.53	20.96
4H	2H	17.35	18.71	17.75	19.06	19.44	17.14	18.50	17.54	18.85	19.23
	3H	19.16	20.30	19.57	20.69	21.09	18.86	19.99	19.27	20.39	20.79
	4H	19.85	20.87	20.28	21.29	21.72	19.49	20.52	19.93	20.93	21.37
	6H	20.33	21.22	20.78	21.66	22.12	19.95	20.85	20.41	21.29	21.74
	8H	20.46	21.30	20.92	21.74	22.21	20.08	20.91	20.54	21.36	21.82
	12H	20.55	21.30	21.03	21.77	22.24	20.16	20.91	20.64	21.39	21.85
8H	4H	20.11	20.95	20.57	21.39	21.86	19.80	20.64	20.26	21.08	21.54
	6H	20.70	21.40	21.20	21.89	22.36	20.36	21.05	20.86	21.54	22.02
	8H	20.90	21.52	21.41	22.03	22.51	20.54	21.16	21.05	21.67	22.16
	12H	21.04	21.59	21.55	22.08	22.64	20.67	21.22	21.18	21.71	22.27
12H	4H	20.13	20.88	20.61	21.36	21.83	19.83	20.58	20.31	21.05	21.52
	6H	20.74	21.36	21.25	21.87	22.35	20.41	21.03	20.92	21.54	22.02
	8H	20.98	21.53	21.49	22.02	22.58	20.63	21.18	21.14	21.68	22.24