

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: P1439816

Luminaire Tested: S123DR-S290D840-X4F0-XX-UDD-FLB-W

Issue Date: 4/2/2026

Test Information

Test Method: LM-79-2024
Report Number: P1439816
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-S290D840-X4F0-XX-UDD-FLB-W
Description: DEFINE 3, DIRECT RECESSED WITH BATWING FLUSH OPTIC
CORE LIGHT ENGINE
Light Source: 4000K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

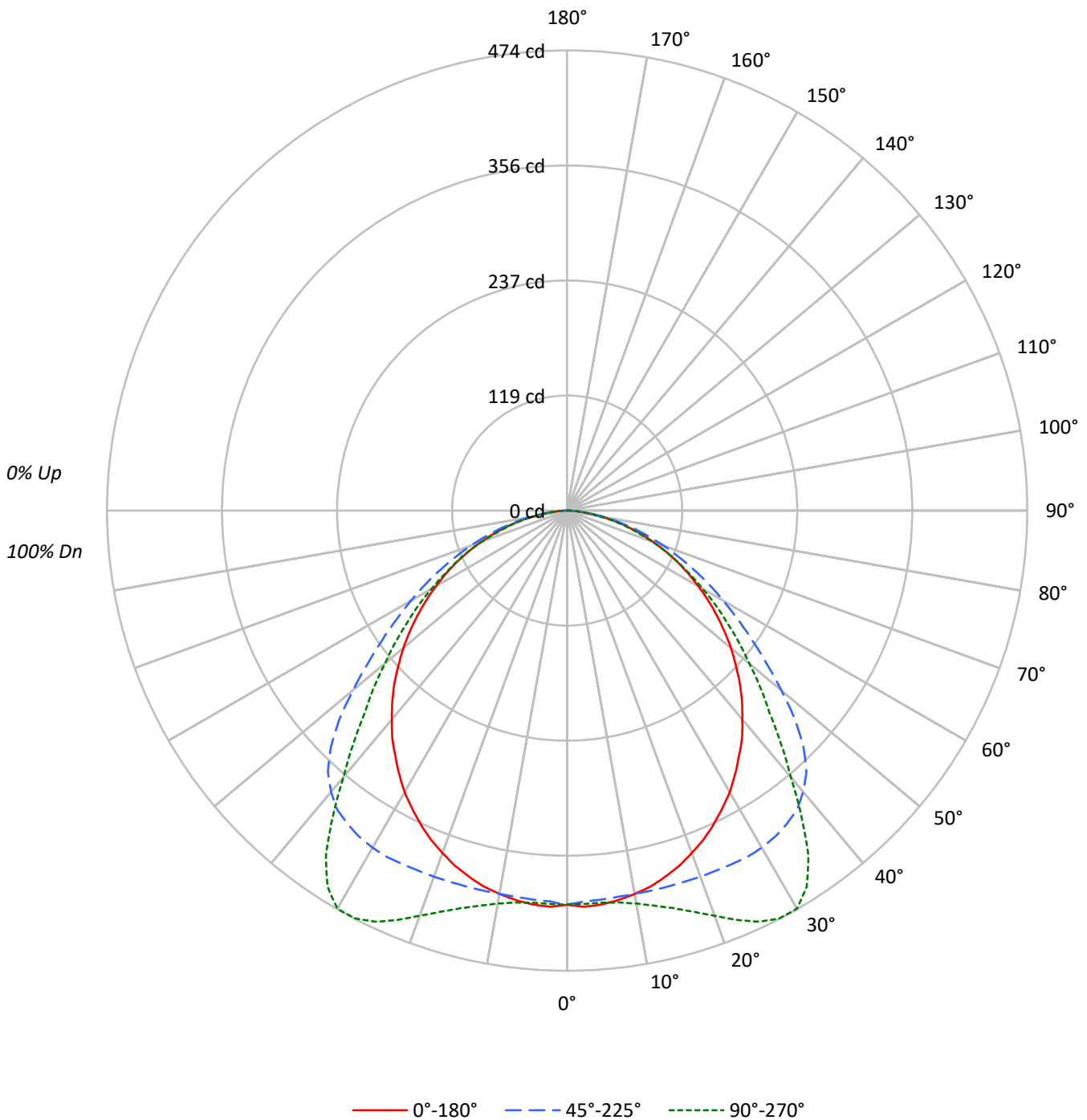
Lumens per Lamp: N/A
Luminaire Lumens: 1227.8 lumens
Efficiency: N/A
Efficacy: 97.4 lumens/watt
Spacing Criteria (0/90/45): 1.22 / 1.52 / 1.52
Luminous Opening: Rectangular (W 0.23' x L: 3.9' x H: 0')
CIE Type: Direct

Input Watts (W): 12.6
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	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°	4894	4894	4894
5°	4928	4868	4908
10°	4908	4908	5032
15°	4873	5004	5292
20°	4815	5149	5698
25°	4746	5344	6215
30°	4664	5581	6592
35°	4541	5802	6376
40°	4419	5952	5642
45°	4288	5869	5025
50°	4134	5402	4599
55°	3954	4889	4227
60°	3766	4473	3887
65°	3580	4097	3592
70°	3314	3715	3257
75°	2991	3303	2911
80°	2506	2770	2388
85°	1923	2033	1798

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 45°
 Vertical Angle: 45°
 Luminance: 5869 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	38.7	3.1
10°-20°	114.9	9.4
20°-30°	188.2	15.3
30°-40°	238.1	19.4
40°-50°	232.6	18.9
50°-60°	191.1	15.6
60°-70°	134.8	11.0
70°-80°	71.8	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°	341.7	27.8
0°-40°	579.9	47.2
0°-60°	1003.6	81.7
0°-90°	1227.8	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1227.8	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	406	406	406	406	406	
5°	407	406	402	406	406	39
15°	390	392	401	419	424	110
25°	357	367	402	450	467	164
35°	308	330	394	440	433	193
45°	252	280	344	311	295	194
55°	188	216	233	209	201	168
65°	126	144	144	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°	405.9	405.9	405.9	405.9	405.9
2.5°	408.5	407.2	403.0	406.8	405.5
5°	407.2	405.5	402.2	406.4	405.5
7.5°	404.7	403.8	401.3	407.6	407.2
10°	400.9	400.5	400.9	410.1	411.0
12.5°	396.7	397.1	400.9	413.9	416.9
15°	390.4	392.5	400.9	419.0	424.0
17.5°	383.7	387.0	400.9	425.7	433.2
20°	375.3	381.2	401.3	432.8	444.1
22.5°	366.9	374.0	401.3	442.5	456.3
25°	356.8	367.3	401.7	450.4	467.2
27.5°	345.9	358.5	402.2	456.7	473.5
30°	335.0	350.1	400.9	459.3	473.5
32.5°	322.0	340.4	398.4	455.1	459.3
35°	308.5	330.0	394.2	439.9	433.2
37.5°	296.0	318.6	388.7	412.2	396.3
40°	280.8	306.4	378.2	377.0	358.5
42.5°	266.6	293.4	364.8	341.3	326.2
45°	251.5	280.0	344.2	310.6	294.7
47.5°	235.5	265.3	318.2	281.7	270.3
50°	220.4	250.2	288.0	255.2	245.2
52.5°	204.0	234.2	259.0	231.7	222.9
55°	188.1	216.2	232.6	209.1	201.1
57.5°	172.1	198.6	208.2	187.6	181.3
60°	156.2	180.1	185.5	167.9	161.2
62.5°	140.6	162.9	164.6	149.0	143.1
65°	125.5	143.6	143.6	131.0	125.9
67.5°	109.6	125.1	124.3	112.5	109.6
70°	94.0	107.0	105.4	95.7	92.4
72.5°	79.3	89.0	87.7	80.2	76.4
75°	64.2	72.2	70.9	64.2	62.5
77.5°	50.0	55.4	54.2	49.5	48.3
80°	36.1	40.3	39.9	36.5	34.4
82.5°	24.3	26.4	26.0	23.9	22.7
85°	13.9	15.1	14.7	13.4	13.0
87.5°	5.5	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	17.16	18.76	17.52	19.08	19.39	16.88	18.49	17.25	18.80	19.11
	3H	18.73	20.17	19.10	20.50	20.86	18.40	19.84	18.77	20.17	20.53
	4H	19.28	20.64	19.68	20.98	21.36	18.93	20.29	19.33	20.64	21.02
	6H	19.64	20.90	20.05	21.27	21.66	19.29	20.55	19.70	20.91	21.30
	8H	19.74	20.94	20.17	21.33	21.73	19.38	20.59	19.81	20.97	21.37
	12H	19.80	20.95	20.23	21.33	21.76	19.44	20.59	19.87	20.97	21.40
4H	2H	17.80	19.16	18.19	19.50	19.88	17.58	18.94	17.98	19.29	19.66
	3H	19.60	20.74	20.01	21.13	21.54	19.30	20.43	19.71	20.83	21.23
	4H	20.29	21.31	20.72	21.73	22.16	19.93	20.96	20.37	21.37	21.81
	6H	20.77	21.66	21.23	22.10	22.56	20.39	21.29	20.85	21.73	22.18
	8H	20.90	21.74	21.37	22.18	22.65	20.52	21.35	20.98	21.80	22.26
	12H	20.99	21.74	21.47	22.21	22.68	20.60	21.35	21.08	21.82	22.29
8H	4H	20.55	21.39	21.02	21.83	22.30	20.24	21.08	20.70	21.52	21.98
	6H	21.15	21.84	21.64	22.33	22.80	20.80	21.49	21.30	21.98	22.46
	8H	21.34	21.96	21.85	22.47	22.95	20.98	21.60	21.49	22.11	22.60
	12H	21.48	22.03	21.99	22.52	23.08	21.11	21.66	21.62	22.15	22.71
12H	4H	20.57	21.32	21.05	21.80	22.27	20.27	21.02	20.75	21.49	21.96
	6H	21.18	21.80	21.69	22.31	22.79	20.85	21.47	21.36	21.98	22.46
	8H	21.42	21.97	21.93	22.46	23.02	21.07	21.62	21.58	22.11	22.68