

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: P1439814

Luminaire Tested: S123DR-S290D830-X4F0-XX-UDD-FLB-W

Issue Date: 4/2/2026

**Test Information**

Test Method: LM-79-2024  
Report Number: P1439814  
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-S290D830-X4F0-XX-UDD-FLB-W  
Description: DEFINE 3, DIRECT RECESSED WITH BATWING FLUSH OPTIC  
CORE LIGHT ENGINE  
Light Source: 3000K CCT, 80 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

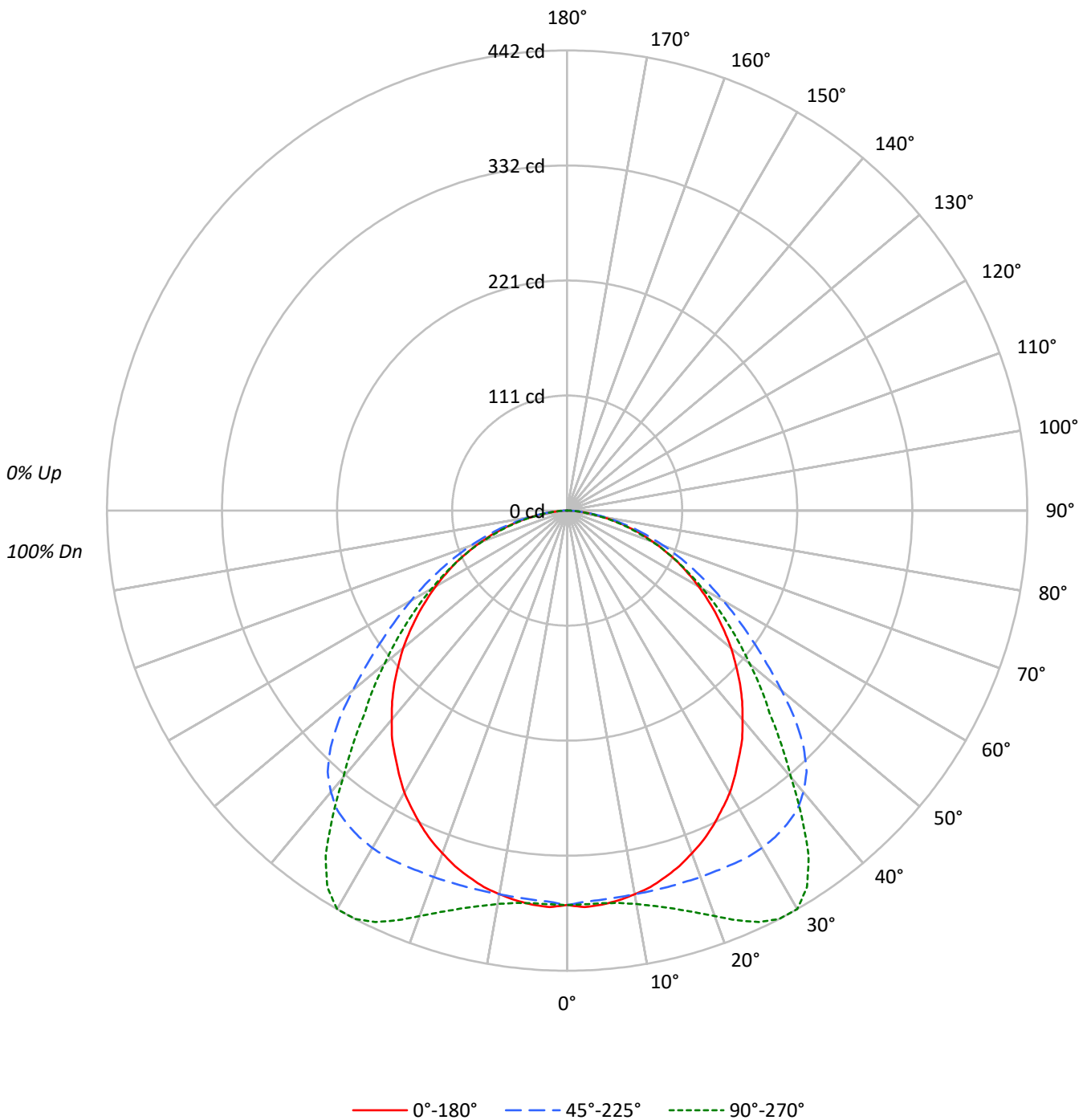
Lumens per Lamp: N/A  
Luminaire Lumens: 1145.9 lumens  
Efficiency: N/A  
Efficacy: 90.9 lumens/watt  
Spacing Criteria (0/90/45): 1.22 / 1.52 / 1.52  
Luminous Opening: Rectangular (W 0.23' x L: 3.9' x H: 0')  
CIE Type: Direct

Input Watts (W): 12.6  
Input Voltage (V): 120  
Input Current (A<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	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°	4568	4568	4568
5°	4600	4542	4581
10°	4581	4581	4696
15°	4548	4671	4939
20°	4494	4806	5318
25°	4430	4989	5801
30°	4353	5209	6153
35°	4239	5415	5951
40°	4125	5556	5266
45°	4002	5478	4689
50°	3858	5042	4291
55°	3689	4563	3945
60°	3516	4176	3629
65°	3341	3823	3352
70°	3095	3465	3039
75°	2790	3084	2720
80°	2340	2583	2229
85°	1784	1895	1674

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 45°  
 Vertical Angle: 45°  
 Luminance: 5478 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	36.1	3.1
10°-20°	107.2	9.4
20°-30°	175.7	15.3
30°-40°	222.2	19.4
40°-50°	217.1	18.9
50°-60°	178.4	15.6
60°-70°	125.8	11.0
70°-80°	67.1	5.9
80°-90°	16.3	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°	319.0	27.8
0°-40°	541.2	47.2
0°-60°	936.7	81.7
0°-90°	1145.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1145.9	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	379	379	379	379	379	
5°	380	378	375	379	378	36
15°	364	366	374	391	396	103
25°	333	343	375	420	436	153
35°	288	308	368	411	404	180
45°	235	261	321	290	275	181
55°	176	202	217	195	188	157
65°	117	134	134	122	118	116
75°	60	67	66	60	58	64
85°	13	14	14	12	12	16
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	378.9	378.9	378.9	378.9	378.9
2.5°	381.2	380.1	376.1	379.7	378.5
5°	380.1	378.5	375.3	379.3	378.5
7.5°	377.7	376.9	374.6	380.4	380.1
10°	374.2	373.8	374.2	382.8	383.6
12.5°	370.3	370.6	374.2	386.3	389.1
15°	364.4	366.3	374.2	391.0	395.7
17.5°	358.1	361.2	374.2	397.3	404.3
20°	350.3	355.8	374.6	404.0	414.5
22.5°	342.4	349.1	374.6	413.0	425.9
25°	333.0	342.8	375.0	420.4	436.1
27.5°	322.8	334.6	375.3	426.3	442.0
30°	312.7	326.8	374.2	428.6	442.0
32.5°	300.5	317.8	371.8	424.7	428.6
35°	288.0	308.0	367.9	410.6	404.3
37.5°	276.2	297.4	362.8	384.8	369.9
40°	262.1	286.0	353.0	351.8	334.6
42.5°	248.8	273.9	340.5	318.5	304.4
45°	234.7	261.3	321.3	289.9	275.0
47.5°	219.8	247.6	297.0	262.9	252.3
50°	205.7	233.5	268.8	238.2	228.8
52.5°	190.4	218.6	241.7	216.3	208.0
55°	175.5	201.8	217.1	195.1	187.7
57.5°	160.6	185.3	194.3	175.1	169.3
60°	145.8	168.1	173.2	156.7	150.5
62.5°	131.3	152.0	153.6	139.1	133.6
65°	117.1	134.0	134.0	122.2	117.5
67.5°	102.3	116.8	116.0	105.0	102.3
70°	87.8	99.9	98.3	89.3	86.2
72.5°	74.1	83.1	81.9	74.8	71.3
75°	59.9	67.4	66.2	59.9	58.4
77.5°	46.6	51.7	50.5	46.2	45.1
80°	33.7	37.6	37.2	34.1	32.1
82.5°	22.7	24.7	24.3	22.3	21.2
85°	12.9	14.1	13.7	12.5	12.1
87.5°	5.1	5.9	6.3	5.9	5.5
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	16.91	18.52	17.28	18.83	19.15	16.64	18.25	17.01	18.56	18.88
	3H	18.49	19.93	18.86	20.26	20.62	18.16	19.60	18.53	19.93	20.29
	4H	19.04	20.40	19.44	20.75	21.12	18.69	20.05	19.09	20.40	20.78
	6H	19.40	20.66	19.81	21.03	21.42	19.05	20.31	19.46	20.67	21.07
	8H	19.50	20.70	19.93	21.09	21.49	19.15	20.35	19.57	20.74	21.13
	12H	19.56	20.71	19.99	21.09	21.52	19.20	20.35	19.63	20.73	21.16
4H	2H	17.55	18.91	17.95	19.26	19.64	17.34	18.70	17.74	19.05	19.43
	3H	19.36	20.50	19.77	20.89	21.30	19.06	20.19	19.47	20.59	20.99
	4H	20.05	21.07	20.48	21.49	21.92	19.69	20.72	20.13	21.13	21.57
	6H	20.53	21.42	20.99	21.86	22.32	20.15	21.05	20.61	21.49	21.94
	8H	20.66	21.50	21.13	21.94	22.41	20.28	21.11	20.74	21.56	22.02
	12H	20.75	21.50	21.23	21.97	22.44	20.36	21.11	20.84	21.58	22.05
8H	4H	20.31	21.15	20.78	21.59	22.06	20.00	20.84	20.46	21.28	21.74
	6H	20.91	21.60	21.40	22.09	22.56	20.56	21.25	21.06	21.74	22.22
	8H	21.10	21.72	21.61	22.23	22.71	20.74	21.36	21.25	21.87	22.36
	12H	21.24	21.79	21.75	22.28	22.84	20.87	21.42	21.38	21.91	22.47
12H	4H	20.33	21.08	20.81	21.56	22.03	20.03	20.78	20.51	21.25	21.72
	6H	20.94	21.56	21.45	22.07	22.55	20.61	21.23	21.12	21.74	22.22
	8H	21.18	21.73	21.69	22.22	22.78	20.83	21.38	21.34	21.88	22.44