

Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269



Scaled data based on original data using
LM-79-2019 Approved Method: Electrical and Photometric Measurements of Solid-
State Lighting Products

Test Report Prepared for
Cooper Lighting Solutions

Brand: NEO-RAY

Report Number: P931000

Luminaire Tested: DFN2DS-SQ3F0-090DS850-RLL

Issue Date: 11/20/2024

Test Information

Test Method: LM-79-2019
Report Number: P931000
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P333882)
Test Lab: INNOVATION CENTER
Issue Date: 11/20/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DS-SQ3F0-090DS850-RLL
Description: 3 foot, Square Define Geo, with Direct 1in Regressed Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

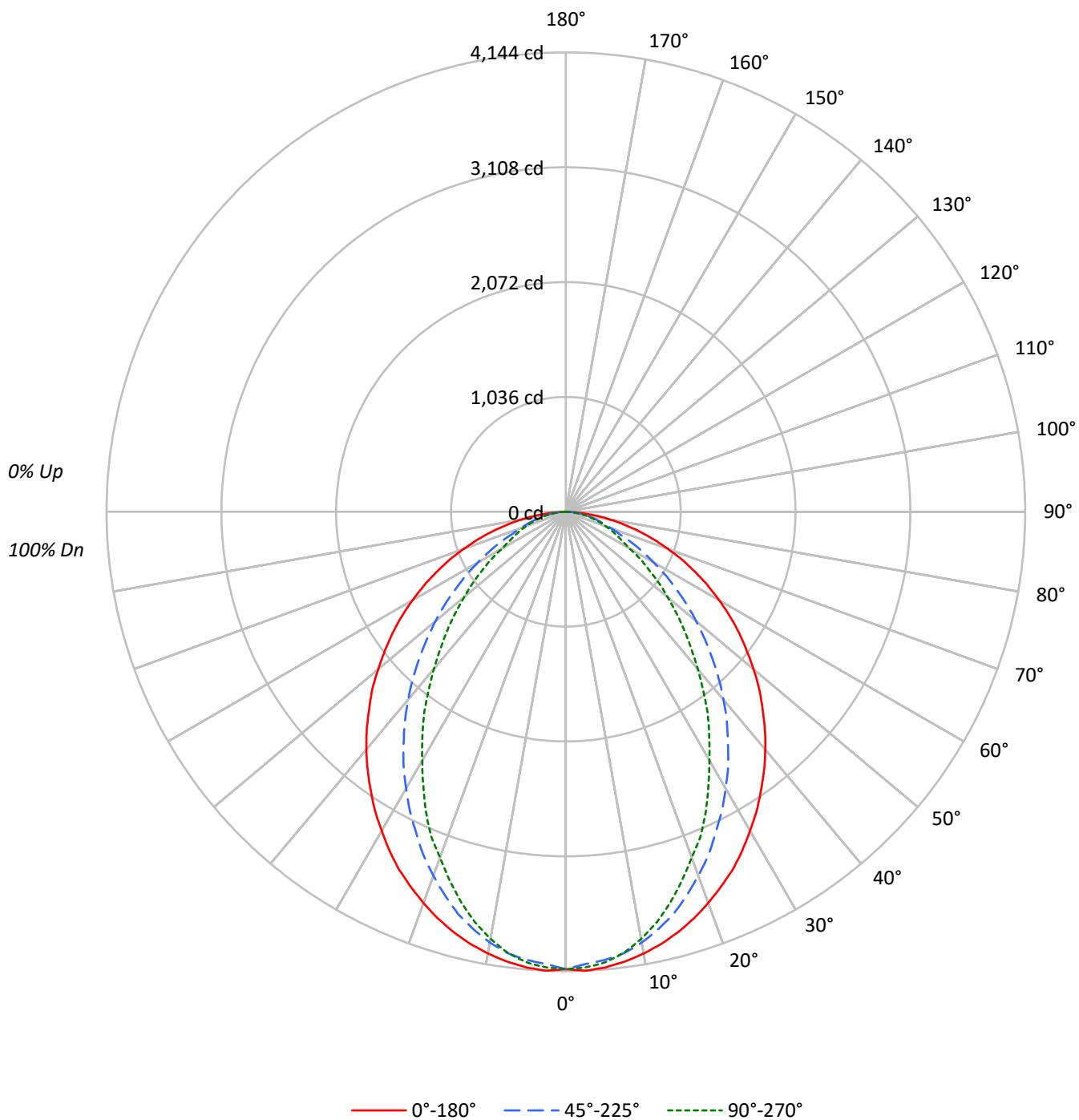
Lumens per Lamp: N/A
Luminaire Lumens: 8483.9 lumens
Efficiency: N/A
Efficacy: 90.6 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular (W 3.06' x L: 3.06' x H: 0')
CIE Type: Direct

Input Watts (W): 93.6
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.996
Total Harmonic Distortion (THDi): 0.064
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	110	106	102	98	107	103	100	97	99	96	94		95	93	91		92	90	88	86
2	101	94	87	82	98	92	86	81	88	83	79		85	81	78		82	79	76	74
3	93	83	76	70	90	82	75	69	79	73	68		76	71	67		74	69	66	64
4	86	75	66	60	83	73	66	60	71	64	59		69	63	58		66	62	57	55
5	79	67	59	53	77	66	58	52	64	57	52		62	56	51		60	55	51	49
6	74	61	53	47	72	60	52	46	58	51	46		57	50	46		55	50	45	43
7	68	56	47	42	67	55	47	42	53	46	41		52	46	41		51	45	41	39
8	64	51	43	38	62	51	43	37	49	42	37		48	42	37		47	41	37	35
9	60	47	39	34	59	47	39	34	46	39	34		44	38	34		44	38	34	32
10	56	44	36	31	55	43	36	31	42	36	31		41	35	31		41	35	31	29

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	4727	4727	4727
5°	4745	4667	4693
10°	4708	4591	4552
15°	4654	4455	4327
20°	4579	4260	4047
25°	4503	4040	3776
30°	4396	3813	3428
35°	4293	3567	3122
40°	4188	3311	2770
45°	4065	3025	2450
50°	3940	2735	2136
55°	3811	2423	1835
60°	3661	2096	1523
65°	3492	1761	1387
70°	3289	1451	1275
75°	3040	1322	1190
80°	2684	1181	1085
85°	2109	932	932

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 4065 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	386.6	4.6
10°-20°	1061.3	12.5
20°-30°	1490.1	17.6
30°-40°	1624.3	19.1
40°-50°	1492.9	17.6
50°-60°	1172.4	13.8
60°-70°	763.1	9.0
70°-80°	392.8	4.6
80°-90°	100.3	1.2
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°	2938.0	34.6
0°-40°	4562.3	53.8
0°-60°	7227.6	85.2
0°-90°	8483.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	8483.9	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	4125	4125	4125	4125	4125	
5°	4125	4106	4058	4091	4080	391
15°	3924	3882	3756	3685	3648	1106
25°	3562	3442	3196	3043	2986	1638
35°	3069	2878	2550	2315	2232	1921
45°	2509	2258	1867	1601	1512	1937
55°	1908	1616	1213	989	918	1705
65°	1288	986	650	523	511	1277
75°	687	425	299	272	269	726
85°	160	82	71	71	71	192
90°	0	0	0	0	0	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	4125.1	4125.1	4125.1	4125.1	4125.1
2.5°	4143.8	4125.1	4083.9	4121.6	4114.1
5°	4125.1	4106.5	4057.8	4091.4	4080.3
7.5°	4091.4	4069.3	4017.0	4031.7	4013.0
10°	4046.7	4020.6	3946.2	3934.6	3912.4
12.5°	3990.8	3957.2	3856.2	3834.0	3792.8
15°	3923.5	3882.4	3755.6	3684.7	3647.5
17.5°	3845.1	3785.3	3628.4	3546.5	3486.7
20°	3755.6	3680.8	3494.1	3401.1	3318.7
22.5°	3658.6	3572.6	3355.9	3229.2	3173.4
25°	3561.6	3441.9	3195.6	3042.7	2986.4
27.5°	3445.9	3318.7	3046.2	2870.8	2784.8
30°	3322.7	3180.5	2881.8	2691.8	2590.7
32.5°	3203.0	3031.1	2725.4	2501.2	2407.7
35°	3068.8	2878.3	2549.9	2314.7	2232.3
37.5°	2938.1	2732.6	2385.6	2127.7	2034.7
40°	2799.9	2576.1	2213.7	1948.7	1851.7
42.5°	2658.1	2419.3	2042.1	1765.7	1672.6
45°	2508.8	2258.5	1866.7	1601.3	1511.8
47.5°	2366.9	2102.0	1698.8	1433.4	1351.4
50°	2210.1	1945.1	1534.4	1276.6	1198.5
52.5°	2056.9	1776.8	1377.6	1131.2	1060.3
55°	1907.5	1616.4	1213.1	989.4	918.5
57.5°	1754.7	1456.0	1067.9	858.7	798.9
60°	1597.7	1299.1	914.6	724.4	664.6
62.5°	1444.9	1146.3	783.8	604.8	575.1
65°	1288.0	985.5	649.5	522.8	511.4
67.5°	1138.7	836.1	522.8	459.0	447.9
70°	981.9	690.8	433.0	395.7	380.6
72.5°	832.5	556.1	362.0	332.3	324.8
75°	686.8	425.4	298.7	272.5	268.9
77.5°	541.4	302.2	235.2	220.2	212.7
80°	406.8	216.7	179.0	164.4	164.4
82.5°	283.6	145.7	123.2	115.7	115.7
85°	160.4	82.0	70.9	70.9	70.9
87.5°	59.8	29.7	29.7	26.2	26.2
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	16.63	18.15	17.00	18.47	18.78	12.59	14.11	12.96	14.43	14.74
	3H	18.40	19.76	18.77	20.09	20.45	13.86	15.22	14.23	15.55	15.91
	4H	19.06	20.34	19.46	20.69	21.07	14.36	15.64	14.76	15.99	16.37
	6H	19.55	20.73	19.96	21.10	21.49	14.74	15.92	15.15	16.29	16.68
	8H	19.72	20.84	20.14	21.23	21.63	14.86	15.99	15.29	16.38	16.78
	12H	19.82	20.90	20.25	21.28	21.71	14.95	16.02	15.38	16.41	16.83
4H	2H	16.74	18.02	17.13	18.36	18.74	13.29	14.57	13.69	14.92	15.29
	3H	18.67	19.73	19.08	20.13	20.53	14.73	15.79	15.14	16.19	16.59
	4H	19.42	20.37	19.85	20.79	21.23	15.33	16.29	15.76	16.70	17.14
	6H	20.01	20.84	20.47	21.28	21.74	15.82	16.65	16.28	17.09	17.55
	8H	20.22	21.00	20.69	21.45	21.91	15.98	16.76	16.44	17.20	17.67
	12H	20.38	21.07	20.86	21.55	22.02	16.10	16.79	16.58	17.27	17.74
8H	4H	19.44	20.22	19.91	20.66	21.13	15.68	16.46	16.15	16.90	17.37
	6H	20.08	20.72	20.58	21.21	21.69	16.27	16.91	16.77	17.40	17.88
	8H	20.33	20.91	20.84	21.42	21.90	16.49	17.07	17.01	17.58	18.07
	12H	20.53	21.04	21.04	21.54	22.10	16.67	17.18	17.18	17.67	18.24
12H	4H	19.43	20.12	19.91	20.60	21.07	15.73	16.42	16.21	16.90	17.37
	6H	20.06	20.64	20.57	21.15	21.64	16.33	16.91	16.85	17.42	17.91
	8H	20.34	20.85	20.85	21.35	21.91	16.61	17.12	17.12	17.61	18.17