

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: P931126

Luminaire Tested: DFN2DS-SQ4F0-090DS850-RLL

Issue Date: 11/20/2024

Test Information

Test Method: LM-79-2019
Report Number: P931126
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-SQ4F0-090DS850-RLL
Description: 4 foot, Square Define Geo, with Direct 1in Regressed Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

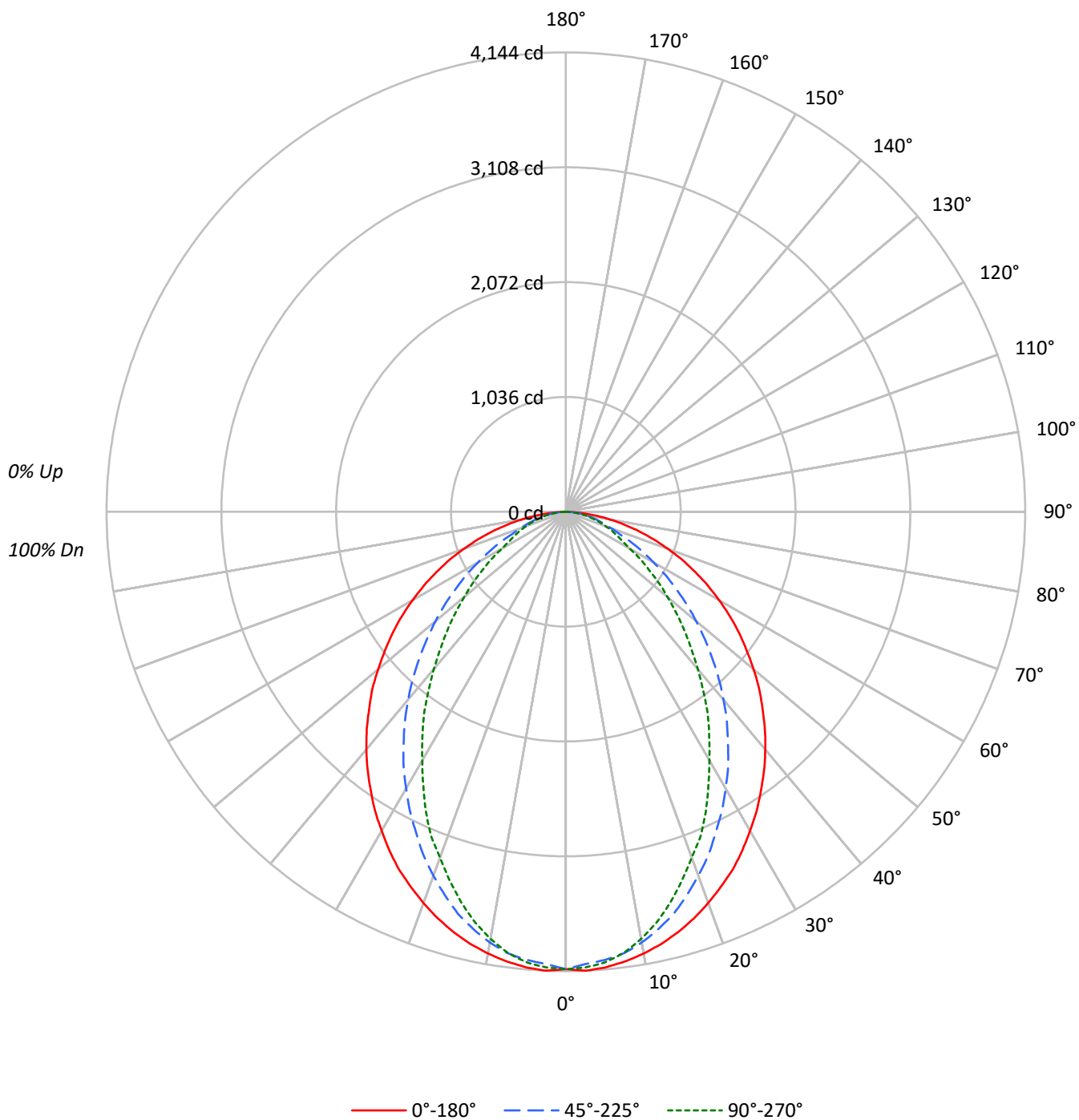
Lumens per Lamp: N/A
Luminaire Lumens: 8483.9 lumens
Efficiency: N/A
Efficacy: 93.6 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular (W 3.92' x L: 3.92' x H: 0')
CIE Type: Direct

Input Watts (W): 90.6
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.983
Total Harmonic Distortion (THDi): 0.073
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P931126

CATALOG NUMBER: DFN2DS-SQ4F0-090DS850-RLL

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
RW	70	50	30	10	70	50	30	10	50	30	10		50	30	10		50
RCR																	
0	119	119	119	119	116	116	116	116	111	111	111		106	106	106		102
1	110	106	102	98	107	103	100	97	99	96	94		95	93	91		92
2	101	94	87	82	98	92	86	81	88	83	79		85	81	78		82
3	93	83	76	70	90	82	75	69	79	73	68		76	71	67		74
4	86	75	66	60	83	73	66	60	71	64	59		69	63	58		66
5	79	67	59	53	77	66	58	52	64	57	52		62	56	51		60
6	74	61	53	47	72	60	52	46	58	51	46		57	50	46		55
7	68	56	47	42	67	55	47	42	53	46	41		52	46	41		51
8	64	51	43	38	62	51	43	37	49	42	37		48	42	37		47
9	60	47	39	34	59	47	39	34	46	39	34		44	38	34		44
10	56	44	36	31	55	43	36	31	42	36	31		41	35	31		41

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2894	2894	2894
5°	2906	2858	2874
10°	2883	2812	2788
15°	2850	2728	2650
20°	2804	2609	2478
25°	2757	2474	2312
30°	2692	2335	2099
35°	2629	2184	1912
40°	2565	2028	1696
45°	2490	1852	1500
50°	2413	1675	1308
55°	2334	1484	1124
60°	2242	1284	933
65°	2138	1078	849
70°	2014	888	781
75°	1862	810	729
80°	1644	723	664
85°	1291	571	571

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2490 cd/sqm

TEST NUMBER: P931126

CATALOG NUMBER: DFN2DS-SQ4F0-090DS850-RLL

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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CATALOG NUMBER: DFN2DS-SQ4F0-090DS850-RLL

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	14.93	16.45	15.29	16.76	17.08	10.89	12.41	11.25	12.72	13.04
	3H	16.69	18.06	17.07	18.39	18.75	12.15	13.52	12.53	13.85	14.21
	4H	17.36	18.64	17.76	18.99	19.37	12.65	13.94	13.05	14.28	14.66
	6H	17.85	19.03	18.26	19.40	19.79	13.04	14.22	13.45	14.58	14.98
	8H	18.01	19.14	18.44	19.53	19.93	13.16	14.29	13.59	14.68	15.08
	12H	18.12	19.19	18.55	19.58	20.01	13.24	14.32	13.67	14.70	15.13
4H	2H	15.03	16.31	15.43	16.66	17.04	11.58	12.86	11.98	13.21	13.59
	3H	16.96	18.03	17.38	18.43	18.83	13.03	14.09	13.44	14.49	14.89
	4H	17.71	18.67	18.15	19.09	19.52	13.63	14.58	14.06	15.00	15.44
	6H	18.31	19.14	18.76	19.58	20.04	14.11	14.95	14.57	15.39	15.85
	8H	18.52	19.30	18.98	19.74	20.21	14.28	15.05	14.74	15.50	15.96
	12H	18.67	19.37	19.16	19.85	20.32	14.39	15.09	14.88	15.57	16.04
8H	4H	17.74	18.52	18.20	18.96	19.43	13.98	14.76	14.44	15.20	15.67
	6H	18.38	19.02	18.87	19.51	19.99	14.57	15.21	15.06	15.70	16.18
	8H	18.63	19.20	19.14	19.71	20.20	14.79	15.36	15.30	15.87	16.36
	12H	18.83	19.34	19.34	19.83	20.40	14.97	15.48	15.48	15.97	16.53
12H	4H	17.72	18.42	18.20	18.90	19.37	14.02	14.72	14.51	15.20	15.67
	6H	18.36	18.93	18.87	19.44	19.93	14.63	15.21	15.14	15.72	16.20
	8H	18.64	19.15	19.15	19.64	20.21	14.90	15.41	15.41	15.91	16.47