

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: P931169

Luminaire Tested: DFN2DS-SQ4F0-110DS940-FLL

Issue Date: 11/20/2024

Test Information

Test Method: LM-79-2019
Report Number: P931169
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P333812)
Test Lab: INNOVATION CENTER
Issue Date: 11/20/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DS-SQ4F0-110DS940-FLL
Description: 4 foot, Square Define Geo, with Direct Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

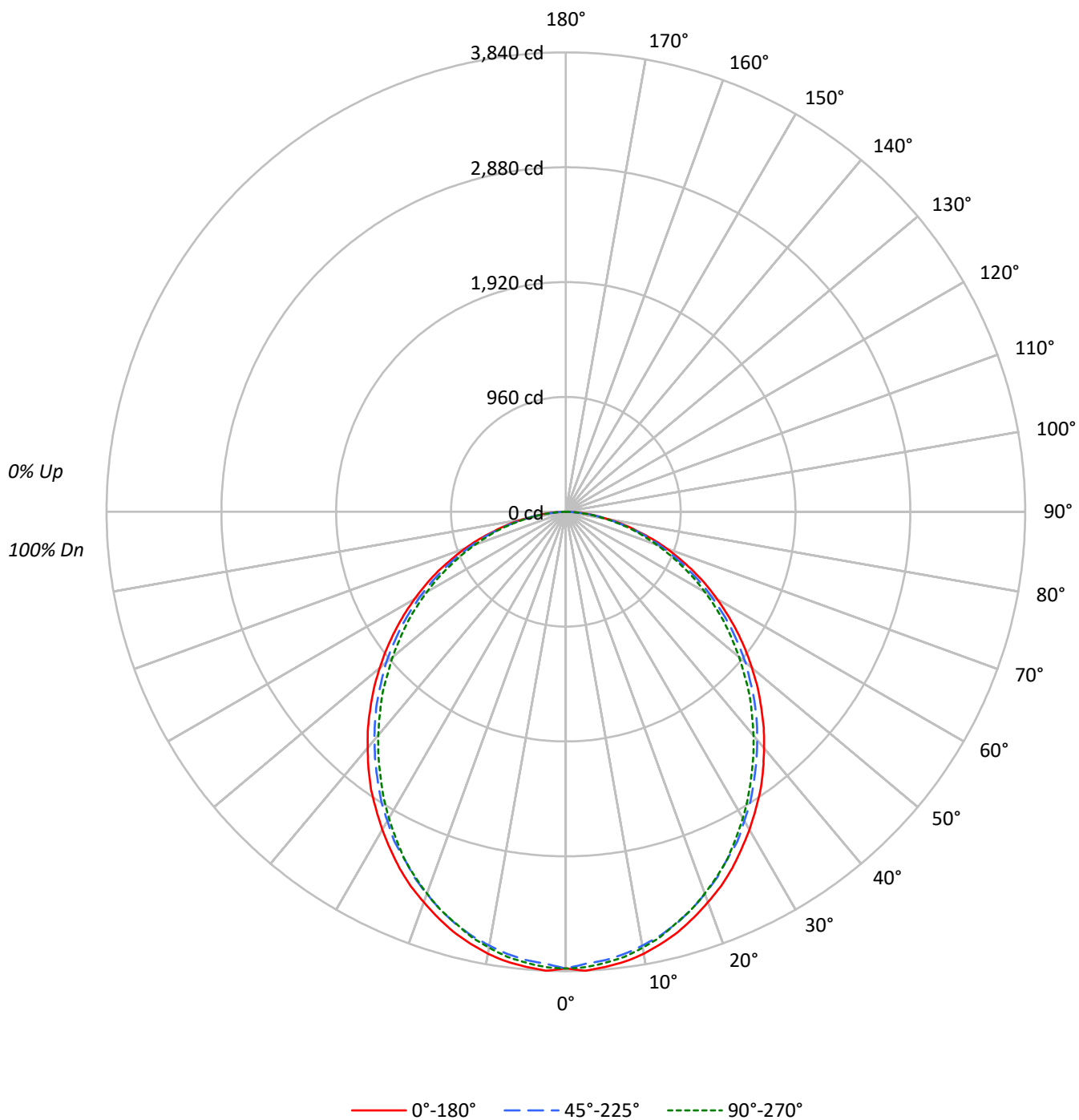
Lumens per Lamp: N/A
Luminaire Lumens: 9713.9 lumens
Efficiency: N/A
Efficacy: 86.0 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular (W 3.92' x L: 3.92' x H: 0')
CIE Type: Direct

Input Watts (W): 113
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9951
Total Harmonic Distortion (THDi): 0.07
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P931169

CATALOG NUMBER: DFN2DS-SQ4F0-110DS940-FLL

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	109	104	100	96	106	102	98	95	98	95	92		94	91	89		90
2	99	91	85	79	97	89	83	78	86	81	76		83	78	74		80
3	91	80	72	66	88	79	71	65	76	69	64		73	68	63		71
4	83	71	63	56	81	70	62	56	68	61	55		65	59	54		63
5	77	64	55	49	75	63	55	48	61	53	48		59	52	47		57
6	71	58	49	43	69	57	48	42	55	48	42		53	47	42		52
7	66	52	44	38	64	52	43	38	50	43	37		49	42	37		47
8	61	48	40	34	60	47	39	34	46	39	33		45	38	33		44
9	57	44	36	30	56	43	36	30	42	35	30		41	35	30		40
10	54	41	33	28	53	40	33	28	39	32	27		38	32	27		37

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2679	2679	2679
5°	2689	2650	2666
10°	2673	2624	2637
15°	2640	2590	2587
20°	2593	2539	2536
25°	2547	2476	2476
30°	2487	2418	2397
35°	2431	2349	2315
40°	2361	2280	2236
45°	2292	2211	2157
50°	2216	2140	2064
55°	2138	2057	1981
60°	2050	1958	1886
65°	1957	1859	1774
70°	1838	1740	1657
75°	1672	1602	1563
80°	1484	1439	1365
85°	1211	1154	1035

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2292 cd/sqm

TEST NUMBER: P931169

CATALOG NUMBER: DFN2DS-SQ4F0-110DS940-FLL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	359.3	3.7
10°-20°	1011.1	10.4
20°-30°	1485.8	15.3
30°-40°	1725.7	17.8
40°-50°	1723.6	17.7
50°-60°	1502.9	15.5
60°-70°	1111.0	11.4
70°-80°	628.6	6.5
80°-90°	165.9	1.7
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°	2856.2	29.4
0°-40°	4582.0	47.2
0°-60°	7808.4	80.4
0°-90°	9713.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	9713.9	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3818	3818	3818	3818	3818	
5°	3818	3804	3763	3792	3785	362
15°	3634	3613	3565	3580	3561	1024
25°	3289	3260	3198	3205	3198	1514
35°	2838	2801	2742	2720	2702	1772
45°	2309	2284	2228	2188	2173	1782
55°	1748	1726	1682	1637	1619	1563
65°	1179	1156	1120	1087	1068	1165
75°	617	610	591	569	576	658
85°	150	147	143	132	128	177
90°	0	0	0	0	0	

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CATALOG NUMBER: DFN2DS-SQ4F0-110DS940-FLL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	3817.9	3817.9	3817.9	3817.9	3817.9
2.5°	3840.1	3821.8	3781.3	3817.9	3810.9
5°	3817.9	3803.5	3763.0	3792.2	3785.2
7.5°	3792.2	3770.4	3729.9	3759.5	3752.1
10°	3752.1	3726.3	3682.4	3711.5	3700.6
12.5°	3696.8	3675.0	3631.0	3649.3	3641.9
15°	3634.5	3612.6	3564.7	3579.5	3561.2
17.5°	3557.3	3535.5	3487.6	3505.9	3487.6
20°	3472.8	3451.0	3399.6	3410.5	3396.1
22.5°	3388.7	3355.5	3307.6	3307.6	3300.2
25°	3289.3	3260.2	3197.8	3204.9	3197.8
27.5°	3179.1	3153.4	3105.9	3095.0	3076.7
30°	3069.3	3039.7	2984.7	2973.8	2959.0
32.5°	2951.6	2929.9	2871.0	2848.8	2834.0
35°	2837.9	2801.3	2742.5	2720.2	2702.0
37.5°	2709.4	2676.3	2617.5	2591.7	2573.4
40°	2577.3	2547.7	2488.9	2456.2	2441.4
42.5°	2448.8	2419.2	2360.8	2323.7	2302.0
45°	2309.4	2283.6	2228.3	2188.3	2173.4
47.5°	2173.4	2147.8	2088.9	2048.4	2026.5
50°	2030.1	2011.8	1960.3	1909.0	1890.7
52.5°	1890.7	1864.9	1817.4	1776.9	1751.2
55°	1747.7	1725.5	1681.5	1637.4	1619.2
57.5°	1604.4	1586.1	1538.2	1494.1	1479.3
60°	1461.0	1446.6	1395.2	1354.7	1343.8
62.5°	1321.6	1295.9	1259.2	1222.7	1207.9
65°	1178.6	1156.4	1119.8	1086.7	1068.4
67.5°	1031.8	1013.1	980.4	954.7	939.9
70°	895.8	881.0	847.9	822.2	807.8
72.5°	756.4	741.6	723.3	697.6	686.7
75°	616.6	609.6	590.9	569.1	576.5
77.5°	491.9	477.1	469.7	458.8	448.0
80°	367.3	363.4	356.0	345.1	337.7
82.5°	249.7	249.7	246.2	231.4	231.4
85°	150.4	146.8	143.3	132.0	128.5
87.5°	66.2	58.8	51.4	40.5	36.6
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	14.71	16.32	15.07	16.63	16.95	14.26	15.87	14.63	16.19	16.50
	3H	16.46	17.91	16.83	18.24	18.60	15.97	17.42	16.34	17.75	18.11
	4H	17.10	18.47	17.50	18.82	19.20	16.61	17.98	17.01	18.32	18.70
	6H	17.57	18.84	17.98	19.20	19.60	17.07	18.34	17.48	18.70	19.09
	8H	17.71	18.93	18.14	19.31	19.71	17.21	18.42	17.64	18.81	19.21
	12H	17.81	18.97	18.23	19.35	19.78	17.29	18.45	17.72	18.83	19.26
4H	2H	15.27	16.64	15.67	16.98	17.36	14.91	16.28	15.31	16.63	17.01
	3H	17.24	18.39	17.65	18.79	19.19	16.83	17.98	17.24	18.38	18.78
	4H	18.02	19.05	18.45	19.47	19.90	17.59	18.63	18.03	19.04	19.48
	6H	18.61	19.52	19.07	19.96	20.42	18.18	19.09	18.64	19.53	19.98
	8H	18.80	19.65	19.26	20.09	20.56	18.37	19.21	18.83	19.66	20.12
	12H	18.94	19.70	19.42	20.17	20.64	18.48	19.24	18.96	19.72	20.19
8H	4H	18.29	19.14	18.75	19.58	20.05	17.92	18.76	18.38	19.21	19.67
	6H	19.01	19.71	19.50	20.20	20.67	18.62	19.33	19.12	19.82	20.29
	8H	19.27	19.90	19.78	20.40	20.89	18.87	19.50	19.38	20.01	20.50
	12H	19.47	20.02	19.97	20.51	21.07	19.05	19.61	19.56	20.10	20.66
12H	4H	18.32	19.08	18.80	19.55	20.02	17.95	18.71	18.43	19.19	19.66
	6H	19.05	19.68	19.56	20.19	20.68	18.68	19.31	19.19	19.82	20.31
	8H	19.37	19.92	19.87	20.41	20.97	18.99	19.55	19.49	20.04	20.60

END OF REPORT