

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: P931159

Luminaire Tested: DFN2DS-SQ4F0-110DS840-FLL

Issue Date: 11/20/2024

Test Information

Test Method: LM-79-2019
Report Number: P931159
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-SQ4F0-110DS840-FLL
Description: 4 foot, Square Define Geo, with Direct Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

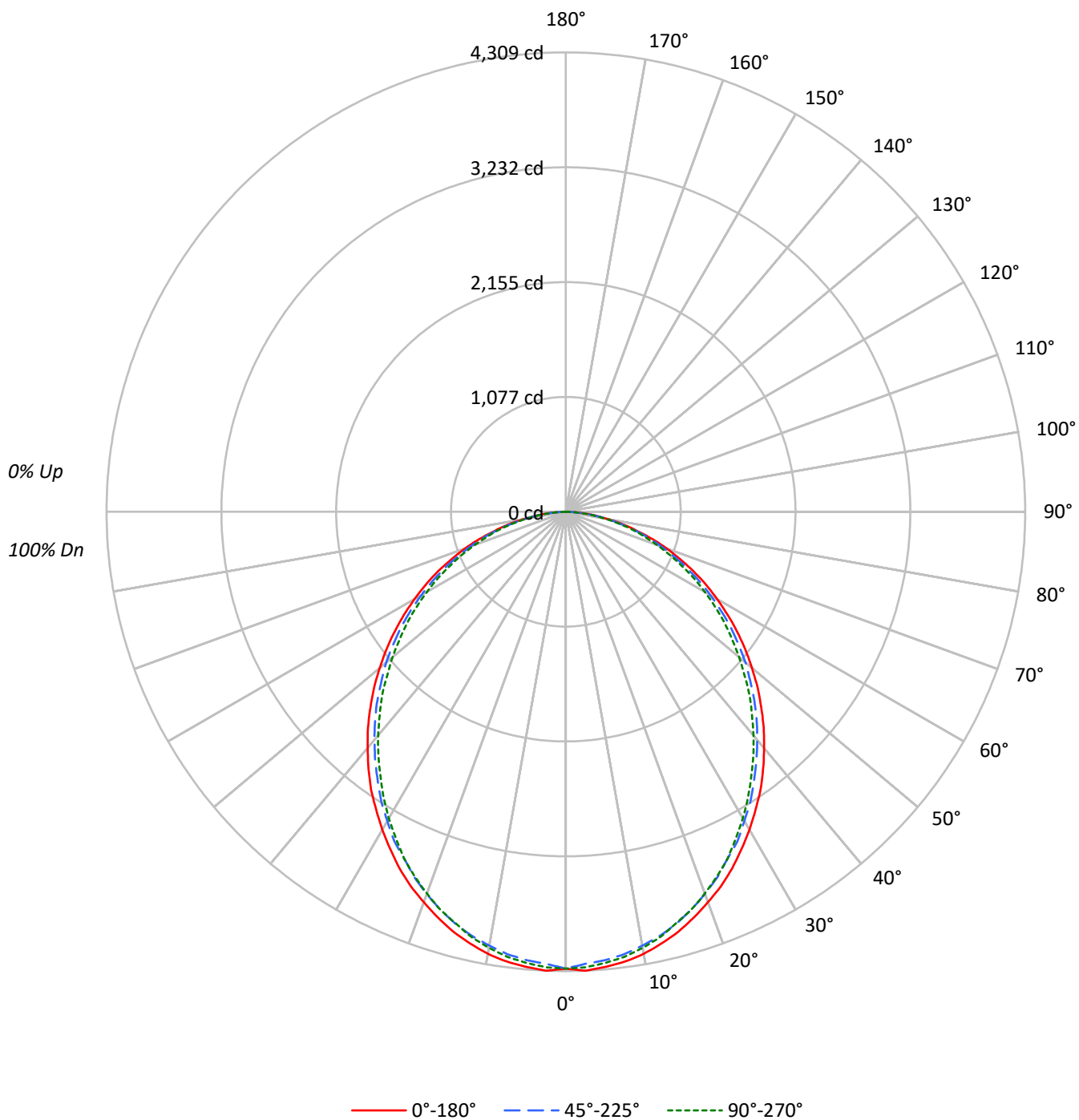
Lumens per Lamp: N/A
Luminaire Lumens: 10900.9 lumens
Efficiency: N/A
Efficacy: 96.5 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular (W 3.92' x L: 3.92' x H: 0')
CIE Type: Direct

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: P931159

CATALOG NUMBER: DFN2DS-SQ4F0-110DS840-FLL

Luminous Intensity Polar Plot



TEST NUMBER: P931159

CATALOG NUMBER: DFN2DS-SQ4F0-110DS840-FLL

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°	3006	3006	3006
5°	3018	2974	2992
10°	3000	2944	2959
15°	2963	2906	2903
20°	2910	2849	2846
25°	2858	2778	2778
30°	2791	2714	2690
35°	2728	2636	2597
40°	2649	2558	2509
45°	2572	2481	2420
50°	2487	2401	2316
55°	2399	2308	2223
60°	2301	2197	2116
65°	2196	2087	1991
70°	2062	1952	1860
75°	1876	1798	1754
80°	1666	1614	1531
85°	1359	1295	1161

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2572 cd/sqm

TEST NUMBER: P931159

CATALOG NUMBER: DFN2DS-SQ4F0-110DS840-FLL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	403.3	3.7
10°-20°	1134.6	10.4
20°-30°	1667.4	15.3
30°-40°	1936.6	17.8
40°-50°	1934.2	17.7
50°-60°	1686.5	15.5
60°-70°	1246.7	11.4
70°-80°	705.4	6.5
80°-90°	186.2	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°	3205.3	29.4
0°-40°	5141.8	47.2
0°-60°	8762.6	80.4
0°-90°	10900.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	10900.9	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	4284	4284	4284	4284	4284	
5°	4284	4268	4223	4256	4248	407
15°	4079	4054	4000	4017	3996	1149
25°	3691	3659	3589	3596	3589	1699
35°	3185	3144	3078	3053	3032	1989
45°	2592	2563	2501	2456	2439	2000
55°	1961	1936	1887	1838	1817	1753
65°	1323	1298	1257	1220	1199	1308
75°	692	684	663	639	647	739
85°	169	165	161	148	144	198
90°	0	0	0	0	0	

TEST NUMBER: P931159

CATALOG NUMBER: DFN2DS-SQ4F0-110DS840-FLL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	4284.5	4284.5	4284.5	4284.5	4284.5
2.5°	4309.3	4288.8	4243.3	4284.5	4276.6
5°	4284.5	4268.3	4222.8	4255.6	4247.7
7.5°	4255.6	4231.1	4185.7	4218.9	4210.6
10°	4210.6	4181.7	4132.3	4165.1	4152.8
12.5°	4148.5	4124.0	4074.7	4095.2	4086.9
15°	4078.6	4054.0	4000.3	4016.9	3996.4
17.5°	3992.0	3967.6	3913.8	3934.3	3913.8
20°	3897.2	3872.7	3815.0	3827.2	3811.1
22.5°	3802.8	3765.6	3711.8	3711.8	3703.5
25°	3691.3	3658.6	3588.6	3596.5	3588.6
27.5°	3567.6	3538.7	3485.4	3473.2	3452.6
30°	3444.3	3411.1	3349.4	3337.2	3320.6
32.5°	3312.3	3287.9	3221.8	3196.9	3180.3
35°	3184.7	3143.6	3077.6	3052.6	3032.1
37.5°	3040.4	3003.3	2937.3	2908.4	2887.9
40°	2892.3	2859.1	2793.1	2756.4	2739.7
42.5°	2748.0	2714.8	2649.2	2607.7	2583.3
45°	2591.6	2562.7	2500.6	2455.7	2439.0
47.5°	2439.0	2410.2	2344.1	2298.7	2274.2
50°	2278.2	2257.7	2199.9	2142.2	2121.7
52.5°	2121.7	2092.8	2039.5	1994.0	1965.2
55°	1961.3	1936.3	1887.0	1837.5	1817.0
57.5°	1800.4	1779.9	1726.1	1676.7	1660.1
60°	1639.5	1623.4	1565.7	1520.2	1508.0
62.5°	1483.1	1454.3	1413.1	1372.1	1355.5
65°	1322.6	1297.7	1256.7	1219.5	1199.0
67.5°	1157.9	1136.9	1100.2	1071.4	1054.8
70°	1005.3	988.7	951.6	922.7	906.5
72.5°	848.8	832.2	811.7	782.9	770.6
75°	691.9	684.1	663.1	638.6	646.9
77.5°	552.1	535.4	527.1	514.9	502.7
80°	412.2	407.8	399.5	387.3	379.0
82.5°	280.2	280.2	276.3	259.7	259.7
85°	168.8	164.8	160.9	148.1	144.2
87.5°	74.3	66.0	57.7	45.4	41.0
90°	0.0	0.0	0.0	0.0	0.0

TEST NUMBER: P931159

CATALOG NUMBER: DFN2DS-SQ4F0-110DS840-FLL

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	15.11	16.72	15.47	17.03	17.35	14.66	16.27	15.03	16.59	16.90
	3H	16.86	18.31	17.23	18.64	19.00	16.37	17.82	16.74	18.15	18.51
	4H	17.50	18.87	17.90	19.22	19.60	17.01	18.38	17.41	18.73	19.10
	6H	17.97	19.24	18.38	19.61	20.00	17.47	18.74	17.88	19.10	19.50
	8H	18.12	19.33	18.54	19.72	20.11	17.61	18.82	18.04	19.21	19.61
	12H	18.21	19.37	18.64	19.75	20.18	17.69	18.85	18.12	19.24	19.66
4H	2H	15.67	17.04	16.07	17.38	17.76	15.31	16.68	15.71	17.03	17.41
	3H	17.64	18.79	18.05	19.19	19.59	17.24	18.38	17.65	18.78	19.18
	4H	18.42	19.45	18.85	19.87	20.30	18.00	19.03	18.43	19.44	19.88
	6H	19.02	19.92	19.47	20.36	20.82	18.58	19.49	19.04	19.93	20.38
	8H	19.20	20.05	19.67	20.49	20.96	18.77	19.61	19.23	20.06	20.52
	12H	19.34	20.10	19.82	20.57	21.04	18.88	19.64	19.36	20.12	20.59
8H	4H	18.69	19.54	19.15	19.98	20.45	18.32	19.16	18.78	19.61	20.07
	6H	19.41	20.11	19.90	20.60	21.07	19.03	19.73	19.52	20.22	20.69
	8H	19.67	20.30	20.18	20.80	21.29	19.27	19.90	19.78	20.41	20.90
	12H	19.87	20.42	20.37	20.91	21.48	19.45	20.01	19.96	20.50	21.06
12H	4H	18.72	19.48	19.20	19.95	20.42	18.35	19.11	18.83	19.59	20.06
	6H	19.45	20.08	19.96	20.59	21.08	19.08	19.72	19.59	20.22	20.71
	8H	19.77	20.32	20.27	20.81	21.38	19.39	19.95	19.90	20.44	21.00