

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: P931123

Luminaire Tested: DFN2DS-SQ4F0-090DS840-FLL

Issue Date: 11/20/2024

Test Information

Test Method: LM-79-2019
Report Number: P931123
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-SQ4F0-090DS840-FLL
Description: 4 foot, Square Define Geo, with Direct Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

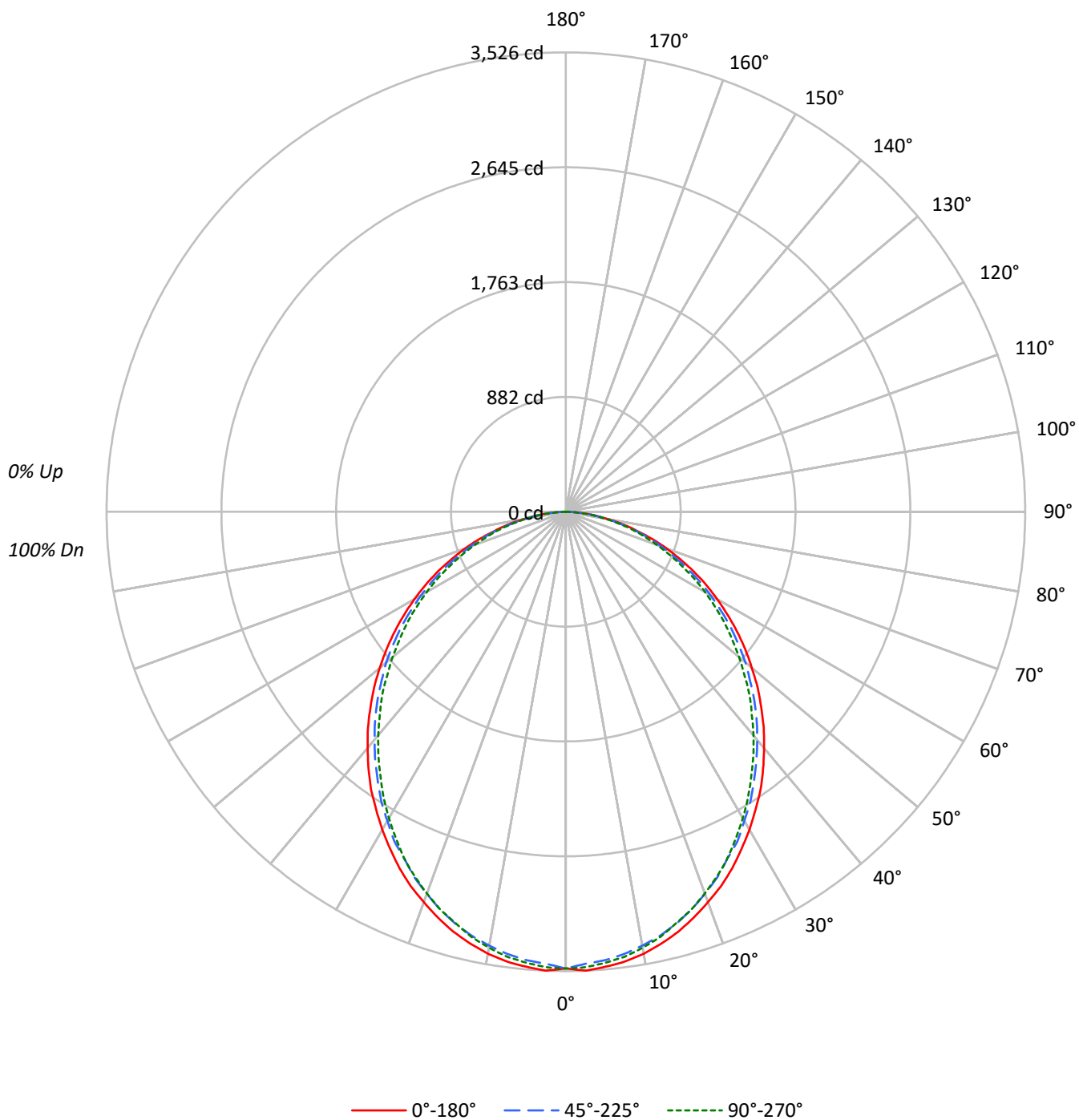
Lumens per Lamp: N/A
Luminaire Lumens: 8918.9 lumens
Efficiency: N/A
Efficacy: 98.4 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular (W 3.92' x L: 3.92' x H: 0')
CIE Type: Direct

Input Watts (W): 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

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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
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°	2460	2460	2460
5°	2469	2434	2448
10°	2455	2409	2421
15°	2424	2378	2375
20°	2381	2331	2328
25°	2338	2273	2273
30°	2283	2220	2201
35°	2232	2157	2125
40°	2168	2093	2053
45°	2104	2030	1980
50°	2035	1965	1895
55°	1963	1889	1819
60°	1882	1798	1731
65°	1797	1707	1629
70°	1687	1597	1522
75°	1535	1471	1435
80°	1363	1321	1253
85°	1111	1059	950

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2104 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	329.9	3.7
10°-20°	928.3	10.4
20°-30°	1364.2	15.3
30°-40°	1584.5	17.8
40°-50°	1582.5	17.7
50°-60°	1379.9	15.5
60°-70°	1020.1	11.4
70°-80°	577.1	6.5
80°-90°	152.3	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°	2622.5	29.4
0°-40°	4207.0	47.2
0°-60°	7169.4	80.4
0°-90°	8918.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	8918.9	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3505	3505	3505	3505	3505	
5°	3505	3492	3455	3482	3475	333
15°	3337	3317	3273	3287	3270	940
25°	3020	2993	2936	2942	2936	1390
35°	2606	2572	2518	2498	2481	1627
45°	2120	2097	2046	2009	1996	1636
55°	1605	1584	1544	1504	1487	1435
65°	1082	1062	1028	998	981	1070
75°	566	560	542	522	529	604
85°	138	135	132	121	118	162
90°	0	0	0	0	0	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	3505.4	3505.4	3505.4	3505.4	3505.4
2.5°	3525.8	3509.0	3471.9	3505.4	3499.0
5°	3505.4	3492.2	3455.1	3481.9	3475.4
7.5°	3481.9	3461.9	3424.6	3451.8	3445.0
10°	3445.0	3421.4	3381.0	3407.8	3397.8
12.5°	3394.2	3374.2	3333.8	3350.5	3343.8
15°	3337.0	3317.0	3273.0	3286.6	3269.8
17.5°	3266.2	3246.1	3202.2	3219.0	3202.2
20°	3188.6	3168.6	3121.3	3131.3	3118.1
22.5°	3111.3	3081.0	3036.9	3036.9	3030.1
25°	3020.1	2993.3	2936.1	2942.5	2936.1
27.5°	2918.9	2895.3	2851.7	2841.7	2824.9
30°	2818.1	2790.9	2740.4	2730.4	2716.9
32.5°	2710.1	2690.1	2636.0	2615.7	2602.1
35°	2605.7	2572.1	2518.0	2497.7	2480.9
37.5°	2487.7	2457.3	2403.2	2379.7	2362.9
40°	2366.4	2339.2	2285.2	2255.2	2241.6
42.5°	2248.3	2221.2	2167.6	2133.6	2113.6
45°	2120.3	2096.8	2045.9	2009.1	1995.6
47.5°	1995.6	1972.0	1917.9	1880.8	1860.8
50°	1864.0	1847.1	1799.9	1752.8	1735.9
52.5°	1735.9	1712.3	1668.7	1631.5	1607.9
55°	1604.7	1584.3	1543.8	1503.5	1486.7
57.5°	1473.1	1456.3	1412.3	1371.9	1358.3
60°	1341.4	1328.2	1281.0	1243.8	1233.8
62.5°	1213.4	1189.8	1156.2	1122.6	1109.0
65°	1082.2	1061.8	1028.1	997.8	981.0
67.5°	947.3	930.2	900.1	876.6	863.0
70°	822.5	808.9	778.6	755.0	741.7
72.5°	694.5	680.9	664.1	640.5	630.5
75°	566.2	559.7	542.5	522.5	529.3
77.5°	451.7	438.1	431.3	421.3	411.3
80°	337.2	333.6	326.8	316.8	310.1
82.5°	229.2	229.2	226.0	212.4	212.4
85°	138.0	134.8	131.6	121.2	118.0
87.5°	60.8	54.0	47.2	37.2	33.6
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	14.41	16.02	14.77	16.33	16.65	13.97	15.58	14.33	15.89	16.20
	3H	16.16	17.61	16.54	17.94	18.30	15.67	17.12	16.05	17.45	17.81
	4H	16.81	18.18	17.20	18.52	18.90	16.31	17.68	16.71	18.03	18.40
	6H	17.28	18.54	17.69	18.91	19.30	16.77	18.04	17.19	18.41	18.80
	8H	17.42	18.63	17.84	19.02	19.42	16.92	18.13	17.34	18.52	18.91
	12H	17.51	18.67	17.94	19.05	19.48	17.00	18.16	17.43	18.54	18.97
4H	2H	14.97	16.34	15.37	16.69	17.06	14.62	15.99	15.02	16.33	16.71
	3H	16.95	18.09	17.35	18.49	18.89	16.54	17.68	16.95	18.08	18.48
	4H	17.72	18.76	18.15	19.17	19.61	17.30	18.33	17.73	18.75	19.18
	6H	18.32	19.22	18.77	19.66	20.12	17.89	18.79	18.34	19.23	19.69
	8H	18.51	19.35	18.97	19.80	20.26	18.07	18.92	18.53	19.36	19.82
	12H	18.64	19.40	19.12	19.88	20.34	18.19	18.95	18.67	19.42	19.89
8H	4H	18.00	18.84	18.46	19.28	19.75	17.62	18.47	18.08	18.91	19.38
	6H	18.71	19.41	19.20	19.90	20.38	18.33	19.03	18.82	19.52	19.99
	8H	18.97	19.60	19.48	20.11	20.59	18.58	19.21	19.09	19.71	20.20
	12H	19.17	19.73	19.68	20.22	20.78	18.76	19.31	19.26	19.80	20.36
12H	4H	18.02	18.78	18.50	19.26	19.73	17.66	18.42	18.14	18.89	19.36
	6H	18.75	19.39	19.26	19.89	20.38	18.39	19.02	18.90	19.52	20.01
	8H	19.07	19.63	19.58	20.12	20.68	18.69	19.25	19.20	19.74	20.30