

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: P931165

Luminaire Tested: DFN2DS-SQ4F0-110DS930-FLL

Issue Date: 11/20/2024

Test Information

Test Method: LM-79-2019
Report Number: P931165
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-SQ4F0-110DS930-FLL
Description: 4 foot, Square Define Geo, with Direct Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

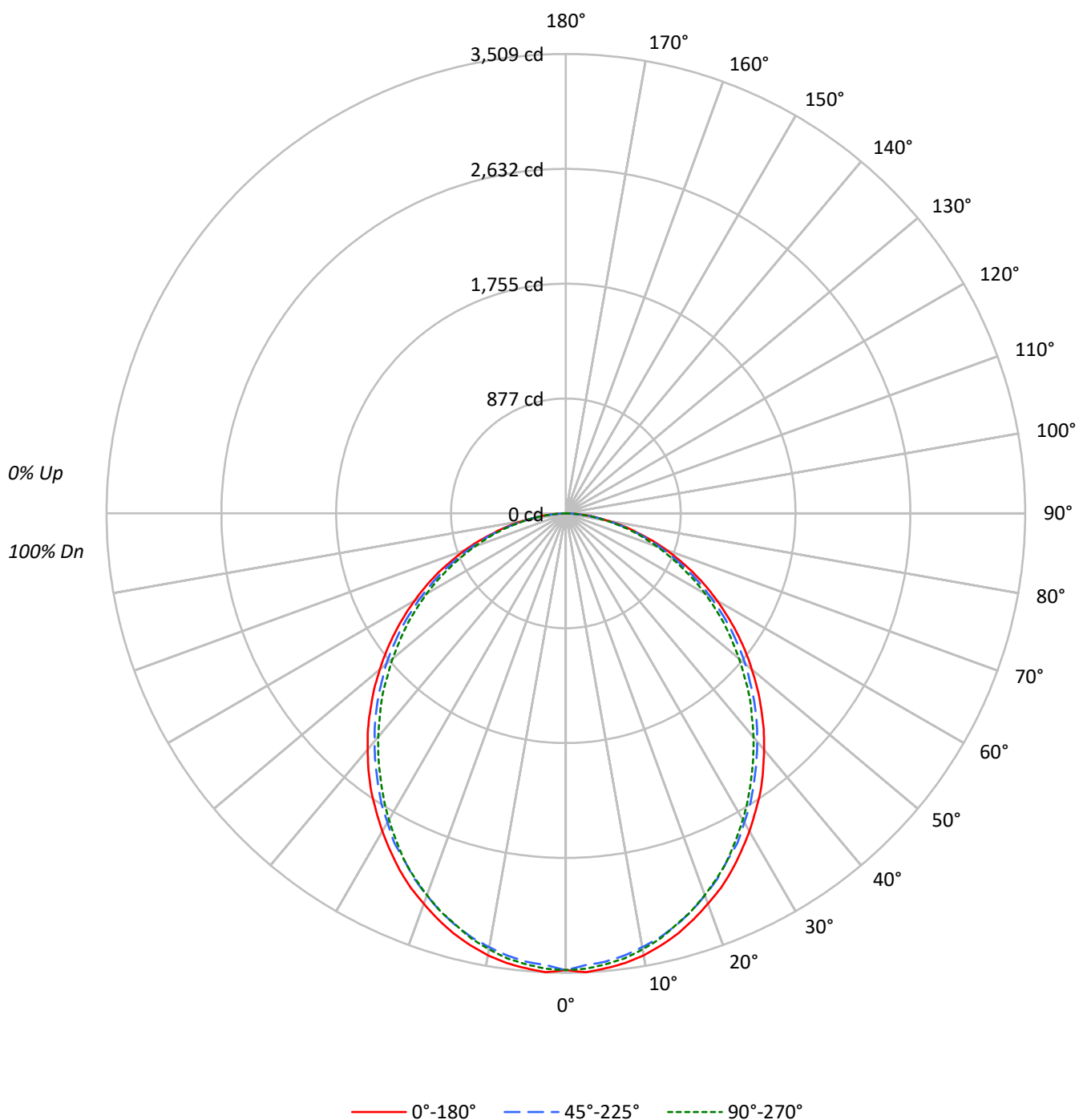
Lumens per Lamp: N/A
Luminaire Lumens: 8875.4 lumens
Efficiency: N/A
Efficacy: 78.5 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular (W 3.92' x L: 3.92' x H: 0')
CIE Type: Direct

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

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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°	2448	2448	2448
5°	2457	2422	2436
10°	2443	2397	2409
15°	2412	2366	2364
20°	2369	2319	2317
25°	2327	2262	2262
30°	2272	2210	2191
35°	2221	2146	2115
40°	2157	2083	2043
45°	2094	2020	1971
50°	2025	1955	1886
55°	1953	1880	1810
60°	1873	1789	1723
65°	1788	1699	1621
70°	1679	1589	1514
75°	1527	1464	1428
80°	1356	1314	1247
85°	1106	1055	945

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2094 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	328.3	3.7
10°-20°	923.8	10.4
20°-30°	1357.6	15.3
30°-40°	1576.7	17.8
40°-50°	1574.8	17.7
50°-60°	1373.2	15.5
60°-70°	1015.1	11.4
70°-80°	574.3	6.5
80°-90°	151.6	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°	2609.7	29.4
0°-40°	4186.4	47.2
0°-60°	7134.4	80.4
0°-90°	8875.4	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	8875.4	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3488	3488	3488	3488	3488	
5°	3488	3475	3438	3465	3458	331
15°	3321	3301	3257	3270	3254	935
25°	3005	2979	2922	2928	2922	1383
35°	2593	2560	2506	2485	2469	1619
45°	2110	2086	2036	1999	1986	1628
55°	1597	1576	1536	1496	1479	1428
65°	1077	1057	1023	993	976	1065
75°	563	557	540	520	527	601
85°	137	134	131	121	117	162
90°	0	0	0	0	0	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	3488.4	3488.4	3488.4	3488.4	3488.4
2.5°	3508.6	3491.9	3454.9	3488.4	3481.9
5°	3488.4	3475.2	3438.2	3464.8	3458.5
7.5°	3464.8	3444.9	3407.9	3435.0	3428.2
10°	3428.2	3404.7	3364.5	3391.1	3381.2
12.5°	3377.7	3357.7	3317.5	3334.2	3327.5
15°	3320.7	3300.8	3257.0	3270.5	3253.8
17.5°	3250.2	3230.3	3186.6	3203.3	3186.6
20°	3173.0	3153.1	3106.1	3116.1	3102.9
22.5°	3096.2	3065.9	3022.1	3022.1	3015.3
25°	3005.4	2978.7	2921.8	2928.2	2921.8
27.5°	2904.7	2881.2	2837.7	2827.8	2811.1
30°	2804.3	2777.3	2727.1	2717.1	2703.6
32.5°	2696.8	2676.9	2623.2	2602.9	2589.3
35°	2592.9	2559.5	2505.7	2485.4	2468.7
37.5°	2475.5	2445.2	2391.5	2368.0	2351.3
40°	2354.9	2327.8	2274.1	2244.2	2230.7
42.5°	2237.4	2210.4	2157.0	2123.2	2103.3
45°	2110.0	2086.5	2036.0	1999.4	1985.8
47.5°	1985.8	1962.4	1908.6	1871.6	1851.6
50°	1854.9	1838.2	1791.1	1744.2	1727.5
52.5°	1727.5	1703.9	1660.6	1623.5	1600.0
55°	1596.8	1576.5	1536.4	1496.1	1479.4
57.5°	1465.9	1449.2	1405.4	1365.1	1351.6
60°	1334.9	1321.8	1274.7	1237.7	1227.8
62.5°	1207.5	1184.0	1150.5	1117.1	1103.6
65°	1076.9	1056.6	1023.2	992.9	976.2
67.5°	942.7	925.7	895.8	872.3	858.8
70°	818.5	805.0	774.7	751.3	738.1
72.5°	691.1	677.6	660.9	637.4	627.4
75°	563.3	557.0	539.9	520.0	526.7
77.5°	449.5	435.9	429.2	419.2	409.3
80°	335.6	332.0	325.3	315.3	308.6
82.5°	228.1	228.1	224.9	211.4	211.4
85°	137.4	134.1	131.0	120.6	117.4
87.5°	60.5	53.7	46.9	37.0	33.4
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	14.39	16.00	14.76	16.32	16.63	13.95	15.56	14.31	15.87	16.19
	3H	16.14	17.60	16.52	17.92	18.28	15.65	17.11	16.03	17.43	17.79
	4H	16.79	18.16	17.19	18.51	18.88	16.29	17.66	16.69	18.01	18.39
	6H	17.26	18.53	17.67	18.89	19.28	16.76	18.03	17.17	18.39	18.78
	8H	17.40	18.61	17.83	19.00	19.40	16.90	18.11	17.32	18.50	18.90
	12H	17.49	18.65	17.92	19.03	19.46	16.98	18.14	17.41	18.52	18.95
4H	2H	14.95	16.32	15.35	16.67	17.05	14.60	15.97	15.00	16.32	16.69
	3H	16.93	18.07	17.34	18.47	18.87	16.52	17.67	16.93	18.07	18.47
	4H	17.70	18.74	18.14	19.15	19.59	17.28	18.32	17.71	18.73	19.17
	6H	18.30	19.21	18.76	19.65	20.10	17.87	18.77	18.32	19.21	19.67
	8H	18.49	19.34	18.95	19.78	20.25	18.05	18.90	18.51	19.34	19.81
	12H	18.62	19.38	19.10	19.86	20.33	18.17	18.93	18.65	19.41	19.88
8H	4H	17.98	18.82	18.44	19.27	19.73	17.60	18.45	18.06	18.89	19.36
	6H	18.69	19.40	19.19	19.88	20.36	18.31	19.01	18.80	19.50	19.98
	8H	18.95	19.58	19.46	20.09	20.58	18.56	19.19	19.07	19.70	20.18
	12H	19.15	19.71	19.66	20.20	20.76	18.74	19.30	19.25	19.79	20.35
12H	4H	18.00	18.76	18.48	19.24	19.71	17.64	18.40	18.12	18.88	19.34
	6H	18.74	19.37	19.25	19.88	20.36	18.37	19.00	18.88	19.51	19.99
	8H	19.05	19.61	19.56	20.10	20.66	18.67	19.23	19.18	19.72	20.28