

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: P931120

Luminaire Tested: DFN2DS-SQ4F0-090DS830-RLL

Issue Date: 11/20/2024

Test Information

Test Method: LM-79-2019
Report Number: P931120
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-SQ4F0-090DS830-RLL
Description: 4 foot, Square Define Geo, with Direct 1in Regressed Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

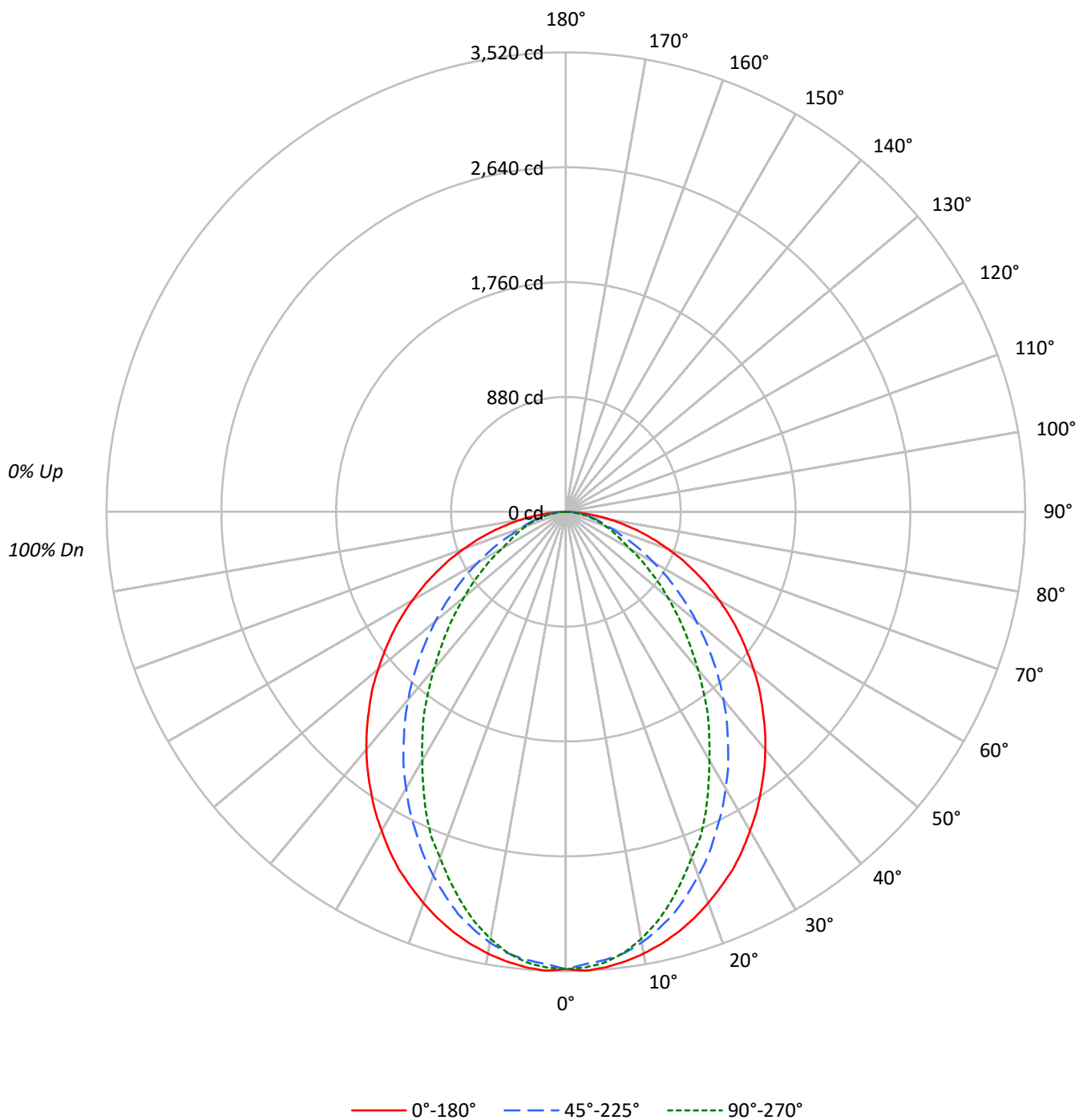
Lumens per Lamp: N/A
Luminaire Lumens: 7206.4 lumens
Efficiency: N/A
Efficacy: 79.5 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular (W 3.92' x L: 3.92' x H: 0')
CIE Type: Direct

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

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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	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°	2459	2459	2459
5°	2468	2428	2441
10°	2449	2388	2368
15°	2421	2317	2251
20°	2382	2216	2105
25°	2342	2102	1964
30°	2287	1983	1783
35°	2233	1855	1624
40°	2178	1722	1441
45°	2115	1573	1274
50°	2049	1423	1111
55°	1982	1261	954
60°	1904	1090	792
65°	1816	916	721
70°	1711	755	663
75°	1582	688	619
80°	1396	614	564
85°	1097	485	485

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2115 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	328.4	4.6
10°-20°	901.5	12.5
20°-30°	1265.7	17.6
30°-40°	1379.7	19.1
40°-50°	1268.1	17.6
50°-60°	995.9	13.8
60°-70°	648.2	9.0
70°-80°	333.7	4.6
80°-90°	85.2	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°	2495.6	34.6
0°-40°	3875.3	53.8
0°-60°	6139.3	85.2
0°-90°	7206.4	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	7206.4	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3504	3504	3504	3504	3504	
5°	3504	3488	3447	3475	3466	332
15°	3333	3298	3190	3130	3098	939
25°	3025	2924	2714	2584	2537	1391
35°	2607	2445	2166	1966	1896	1632
45°	2131	1918	1586	1360	1284	1646
55°	1620	1373	1030	840	780	1448
65°	1094	837	552	444	434	1085
75°	583	361	254	231	228	617
85°	136	70	60	60	60	163
90°	0	0	0	0	0	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	3504.0	3504.0	3504.0	3504.0	3504.0
2.5°	3519.8	3504.0	3468.9	3500.9	3494.5
5°	3504.0	3488.1	3446.8	3475.3	3465.9
7.5°	3475.3	3456.5	3412.1	3424.5	3408.7
10°	3437.4	3415.1	3351.9	3342.1	3323.3
12.5°	3389.9	3361.3	3275.5	3256.7	3221.6
15°	3332.7	3297.8	3190.1	3129.8	3098.2
17.5°	3266.1	3215.3	3082.0	3012.4	2961.6
20°	3190.1	3126.5	2968.0	2888.9	2818.9
22.5°	3107.7	3034.7	2850.6	2742.9	2695.5
25°	3025.2	2923.6	2714.4	2584.5	2536.7
27.5°	2927.0	2818.9	2587.5	2438.5	2365.5
30°	2822.3	2701.6	2447.9	2286.4	2200.6
32.5°	2720.7	2574.7	2315.0	2124.6	2045.2
35°	2606.7	2444.9	2165.9	1966.1	1896.2
37.5°	2495.6	2321.1	2026.3	1807.3	1728.3
40°	2378.3	2188.2	1880.3	1655.3	1572.9
42.5°	2257.8	2055.0	1734.6	1499.9	1420.7
45°	2131.0	1918.4	1585.6	1360.2	1284.1
47.5°	2010.5	1785.5	1443.0	1217.5	1147.9
50°	1877.3	1652.2	1303.4	1084.3	1018.0
52.5°	1747.1	1509.3	1170.2	960.8	900.6
55°	1620.2	1373.0	1030.5	840.5	780.2
57.5°	1490.4	1236.8	907.1	729.4	678.6
60°	1357.1	1103.5	776.9	615.3	564.5
62.5°	1227.3	973.7	665.8	513.8	488.5
65°	1094.0	837.1	551.7	444.1	434.4
67.5°	967.2	710.2	444.1	389.9	380.5
70°	834.0	586.8	367.8	336.1	323.3
72.5°	707.2	472.3	307.5	282.2	275.9
75°	583.4	361.4	253.7	231.4	228.4
77.5°	459.9	256.7	199.8	187.1	180.7
80°	345.5	184.1	152.0	139.6	139.6
82.5°	240.9	123.8	104.7	98.3	98.3
85°	136.2	69.6	60.2	60.2	60.2
87.5°	50.8	25.2	25.2	22.2	22.2
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	14.36	15.88	14.73	16.20	16.51	10.32	11.84	10.69	12.16	12.47
	3H	16.13	17.49	16.50	17.82	18.18	11.59	12.95	11.96	13.28	13.64
	4H	16.79	18.07	17.19	18.42	18.80	12.09	13.37	12.49	13.72	14.10
	6H	17.28	18.46	17.69	18.83	19.22	12.47	13.65	12.88	14.02	14.41
	8H	17.45	18.57	17.87	18.96	19.36	12.59	13.72	13.02	14.11	14.51
	12H	17.55	18.63	17.98	19.01	19.44	12.67	13.75	13.10	14.13	14.56
4H	2H	14.46	15.75	14.86	16.09	16.47	11.02	12.30	11.42	12.65	13.02
	3H	16.40	17.46	16.81	17.86	18.26	12.46	13.52	12.87	13.92	14.32
	4H	17.15	18.10	17.58	18.52	18.96	13.06	14.02	13.49	14.43	14.87
	6H	17.74	18.57	18.20	19.01	19.47	13.55	14.38	14.00	14.82	15.28
	8H	17.95	18.73	18.42	19.17	19.64	13.71	14.49	14.17	14.93	15.40
	12H	18.11	18.80	18.59	19.28	19.75	13.83	14.52	14.31	15.00	15.47
8H	4H	17.17	17.95	17.63	18.39	18.86	13.41	14.19	13.88	14.63	15.10
	6H	17.81	18.45	18.31	18.94	19.42	14.00	14.64	14.50	15.13	15.61
	8H	18.06	18.64	18.57	19.15	19.63	14.22	14.80	14.73	15.31	15.79
	12H	18.26	18.77	18.77	19.27	19.83	14.40	14.91	14.91	15.40	15.97
12H	4H	17.16	17.85	17.64	18.33	18.80	13.46	14.15	13.94	14.63	15.10
	6H	17.79	18.37	18.30	18.88	19.37	14.06	14.64	14.58	15.15	15.64
	8H	18.07	18.58	18.58	19.08	19.64	14.34	14.85	14.85	15.34	15.90