

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: P912175

Luminaire Tested: DFN2DIP-SQ4F0-070D100US850-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P912175
REPORT IS A COMBINATION OF REPORTS P901654 AND P898471
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ4F0-070D100US850-RLLONL
Description: 4 foot, Square Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

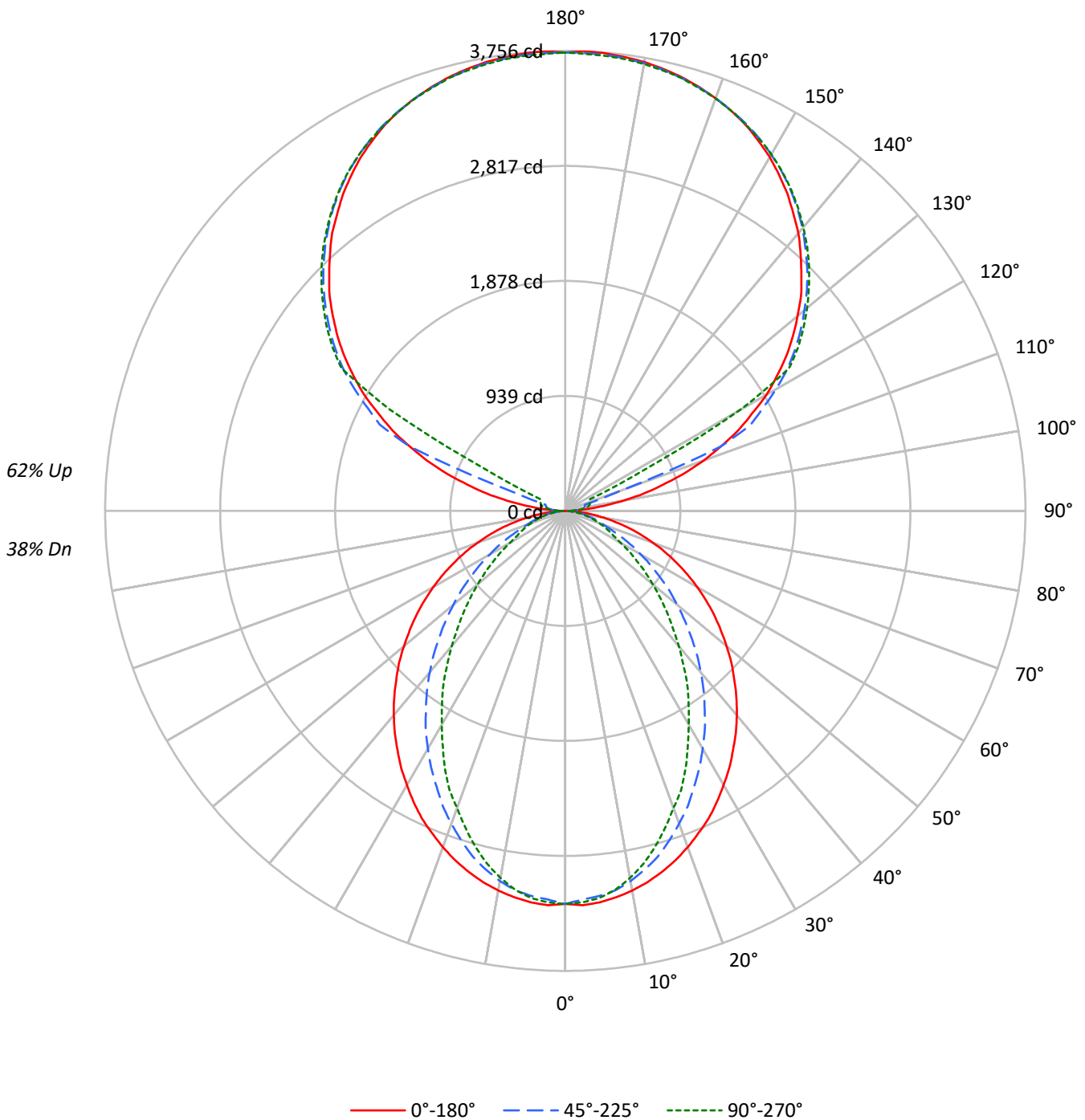
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 17577.6 lumens
Efficiency: N/A
Efficacy: 129.2 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.92' x L: 3.92' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 136
Input Voltage (V):
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: 0.9967
Total Harmonic Distortion (THDi): 0.063
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P912175
CATALOG NUMBER: DFN2DIP-SQ4F0-070D100US850-RLLONL

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			0	
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0
RCR																					
0	104	104	104	104	95	95	95	95	76	76	76	60	60	60	45	45	45	38			38
1	95	91	88	84	86	83	80	77	67	65	63	53	52	51	40	39	38	32			32
2	87	80	74	69	79	73	68	64	60	56	53	47	45	43	36	34	33	28			28
3	80	71	64	58	72	64	58	54	53	48	45	42	39	37	32	30	28	24			24
4	73	63	55	49	66	57	51	46	47	42	39	38	34	32	29	27	25	21			21
5	67	56	48	42	61	51	44	39	42	37	33	34	30	28	26	24	22	18			18
6	62	50	43	37	56	46	39	34	38	33	29	31	27	24	24	21	19	16			16
7	57	45	38	32	52	42	35	30	35	30	26	28	24	22	22	19	17	15			15
8	53	41	34	29	48	38	31	27	32	27	23	26	22	19	20	18	16	13			13
9	49	38	30	26	45	35	28	24	29	24	21	24	20	17	19	16	14	12			12
10	46	35	28	23	42	32	26	21	27	22	19	22	18	16	17	15	13	11			11

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2251	2251	2251
5°	2255	2216	2230
10°	2233	2173	2158
15°	2202	2102	2047
20°	2161	2003	1910
25°	2119	1892	1777
30°	2063	1779	1609
35°	2009	1657	1461
40°	1953	1531	1291
45°	1888	1391	1138
50°	1821	1249	988
55°	1751	1098	843
60°	1670	939	695
65°	1577	779	626
70°	1464	628	567
75°	1322	555	518
80°	1117	467	451
85°	778	314	343

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°
 Vertical Angle: 90°
 Luminance: 2006 cd/sqm



TEST NUMBER: P912175

CATALOG NUMBER: DFN2DIP-SQ4F0-070D100US850-RLLONL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	300.7	1.7
10°-20°	825.5	4.7
20°-30°	1158.9	6.6
30°-40°	1263.3	7.2
40°-50°	1161.1	6.6
50°-60°	911.9	5.2
60°-70°	593.5	3.4
70°-80°	305.5	1.7
80°-90°	84.6	0.5
90°-100°	123.4	0.7
100°-110°	460.1	2.6
110°-120°	1220.2	6.9
120°-130°	2023.8	11.5
130°-140°	2149.7	12.2
140°-150°	1997.9	11.4
150°-160°	1606.3	9.1
160°-170°	1035.0	5.9
170°-180°	356.2	2.0
0°-30°	2285.1	13.0
0°-40°	3548.4	20.2
0°-60°	5621.4	32.0
0°-90°	6605.1	37.6
90°-120°	1803.7	10.3
90°-150°	7975.0	45.4
90°-180°	10973.0	62.4
0°-180°	17577.6	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3208	3208	3208	3208	3208	
5°	3208	3194	3156	3182	3174	304
15°	3052	3020	2921	2866	2837	860
25°	2770	2677	2485	2366	2323	1274
35°	2387	2239	1983	1800	1736	1494
45°	1951	1756	1452	1246	1176	1507
55°	1484	1257	944	770	714	1326
65°	1002	766	505	407	398	993
75°	534	331	232	212	209	565
85°	125	64	55	55	55	143
90°	3	32	54	68	73	16
95°	176	86	106	119	116	208
105°	823	905	165	195	206	880
115°	1557	1603	1671	417	222	1533
125°	2202	2237	2288	2308	2316	1964
135°	2725	2768	2792	2819	2814	2105
145°	3161	3158	3204	3223	3209	1977
155°	3480	3456	3488	3504	3483	1604
165°	3667	3651	3659	3678	3659	1036
175°	3751	3732	3737	3756	3729	357
180°	3743	3743	3743	3743	3743	



TEST NUMBER: P912175

CATALOG NUMBER: DFN2DIP-SQ4F0-070D100US850-RLLONL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	3208.4	3208.4	3208.4	3208.4	3208.4
2.5°	3222.9	3208.4	3176.4	3205.7	3199.8
5°	3208.4	3193.9	3156.1	3182.3	3173.6
7.5°	3182.3	3165.0	3124.4	3135.7	3121.3
10°	3147.5	3127.2	3069.2	3060.3	3043.0
12.5°	3104.0	3077.8	2999.3	2982.0	2949.9
15°	3051.6	3019.6	2921.0	2865.9	2836.9
17.5°	2990.6	2944.2	2822.2	2758.3	2711.8
20°	2921.0	2862.8	2717.7	2645.3	2581.2
22.5°	2845.6	2778.7	2610.1	2511.6	2468.2
25°	2770.1	2677.0	2485.4	2366.5	2322.8
27.5°	2680.1	2581.2	2369.3	2232.9	2166.0
30°	2584.3	2473.7	2241.4	2093.6	2015.1
32.5°	2491.3	2357.6	2119.7	1945.4	1872.7
35°	2386.8	2238.6	1983.3	1800.4	1736.3
37.5°	2285.2	2125.3	1855.5	1654.8	1582.5
40°	2177.6	2003.6	1721.7	1515.7	1440.1
42.5°	2067.4	1881.6	1588.3	1373.3	1301.0
45°	1951.3	1756.5	1451.9	1245.5	1175.9
47.5°	1840.9	1634.9	1321.3	1114.9	1051.1
50°	1719.0	1512.9	1193.4	992.9	932.2
52.5°	1599.7	1381.9	1071.4	879.8	824.7
55°	1483.6	1257.2	943.5	769.5	714.4
57.5°	1364.7	1132.4	830.5	667.8	621.4
60°	1242.7	1010.4	711.3	563.5	516.9
62.5°	1123.7	891.5	609.6	470.4	447.3
65°	1001.8	766.4	505.3	406.7	397.7
67.5°	885.6	650.3	406.7	357.0	348.4
70°	763.7	537.2	336.7	307.7	296.0
72.5°	647.5	432.5	281.6	258.5	252.6
75°	534.2	330.8	232.2	211.9	209.2
77.5°	421.1	235.0	183.0	171.2	165.5
80°	316.4	168.5	139.3	127.9	127.9
82.5°	220.6	113.3	95.8	89.9	89.9
85°	124.8	63.8	55.1	55.1	55.1
87.5°	46.5	23.1	23.1	20.3	20.3
90°	2.6	32.5	54.0	67.9	73.0
92.5°	67.9	56.9	65.0	70.4	73.0
95°	175.9	86.5	105.5	119.3	116.4
97.5°	316.7	94.8	138.0	146.3	148.9
100°	479.5	108.3	154.4	175.9	181.4
102.5°	658.0	652.9	159.8	189.4	197.7
105°	823.3	904.6	165.4	194.9	205.8
107.5°	1015.6	1083.2	170.8	200.4	211.3
110°	1199.8	1256.5	474.0	203.3	213.8



TEST NUMBER: P912175

CATALOG NUMBER: DFN2DIP-SQ4F0-070D100US850-RLONL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1373.2	1421.7	1375.8	208.4	216.8
115°	1557.1	1603.2	1671.0	417.1	222.2
117.5°	1717.0	1771.1	1817.3	1429.8	720.4
120°	1895.8	1936.3	1985.2	2017.7	1652.1
122.5°	2047.3	2090.7	2145.0	2161.1	2164.0
125°	2201.7	2237.1	2288.5	2307.5	2315.5
127.5°	2342.5	2380.5	2421.3	2448.3	2450.9
130°	2475.3	2518.8	2548.4	2578.2	2575.7
132.5°	2610.7	2646.1	2675.7	2700.1	2697.5
135°	2724.6	2768.0	2792.1	2819.4	2814.0
137.5°	2843.6	2876.1	2903.4	2930.4	2922.3
140°	2959.9	2981.9	3011.4	3035.9	3022.4
142.5°	3057.7	3076.7	3111.7	3133.3	3119.8
145°	3160.6	3157.8	3203.8	3222.8	3209.2
147.5°	3249.7	3241.7	3287.6	3301.2	3290.6
150°	3336.5	3317.6	3361.0	3377.1	3363.6
152.5°	3409.5	3388.0	3428.6	3444.9	3425.9
155°	3480.0	3455.9	3488.4	3504.4	3482.9
157.5°	3536.9	3515.4	3539.8	3558.8	3536.9
160°	3585.8	3569.4	3585.8	3601.9	3583.0
162.5°	3628.9	3612.8	3626.3	3645.3	3620.9
165°	3666.8	3650.7	3658.8	3677.8	3658.8
167.5°	3696.7	3680.3	3688.8	3707.7	3683.2
170°	3721.1	3704.8	3710.3	3729.2	3704.8
172.5°	3737.2	3721.1	3726.7	3745.6	3721.1
175°	3750.7	3731.8	3737.2	3756.3	3729.2
177.5°	3756.3	3737.2	3740.2	3759.2	3734.7
180°	3742.8	3742.8	3742.8	3742.8	3742.8



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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	8.70	9.43	9.76	10.50	11.94	4.66	5.39	5.72	6.46	7.90
	3H	10.37	11.03	11.44	12.10	13.56	5.84	6.50	6.91	7.57	9.03
	4H	10.98	11.60	12.06	12.68	14.14	6.29	6.91	7.37	7.98	9.45
	6H	11.40	11.97	12.49	13.05	14.53	6.60	7.18	7.69	8.25	9.73
	8H	11.52	12.07	12.62	13.16	14.63	6.69	7.24	7.79	8.33	9.80
	12H	11.59	12.10	12.69	13.19	14.68	6.73	7.25	7.83	8.34	9.83
4H	2H	8.70	9.33	9.79	10.40	11.87	5.24	5.87	6.33	6.94	8.41
	3H	10.53	11.05	11.63	12.15	13.63	6.59	7.11	7.68	8.21	9.68
	4H	11.22	11.70	12.32	12.79	14.29	7.13	7.61	8.23	8.70	10.20
	6H	11.73	12.14	12.84	13.26	14.75	7.55	7.95	8.66	9.07	10.56
	8H	11.91	12.29	13.02	13.40	14.90	7.67	8.06	8.78	9.16	10.67
	12H	12.00	12.35	13.13	13.47	14.98	7.73	8.08	8.86	9.20	10.71
8H	4H	11.18	11.56	12.29	12.67	14.18	7.41	7.79	8.52	8.89	10.40
	6H	11.75	12.06	12.88	13.21	14.71	7.92	8.24	9.05	9.38	10.89
	8H	11.97	12.24	13.10	13.37	14.90	8.11	8.39	9.25	9.52	11.04
	12H	12.11	12.35	13.25	13.47	15.03	8.23	8.47	9.37	9.60	11.16
12H	4H	11.13	11.47	12.26	12.59	14.10	7.41	7.75	8.53	8.87	10.38
	6H	11.72	12.00	12.86	13.13	14.65	7.97	8.25	9.11	9.38	10.90
	8H	11.94	12.19	13.08	13.31	14.87	8.18	8.42	9.32	9.55	11.11