

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: P911859

Luminaire Tested: DFN2DIP-SQ3F0-050D100US850-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P911859
REPORT IS A COMBINATION OF REPORTS P901492 AND P898289
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ3F0-050D100US850-RLLONL
Description: 3 foot, Square Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

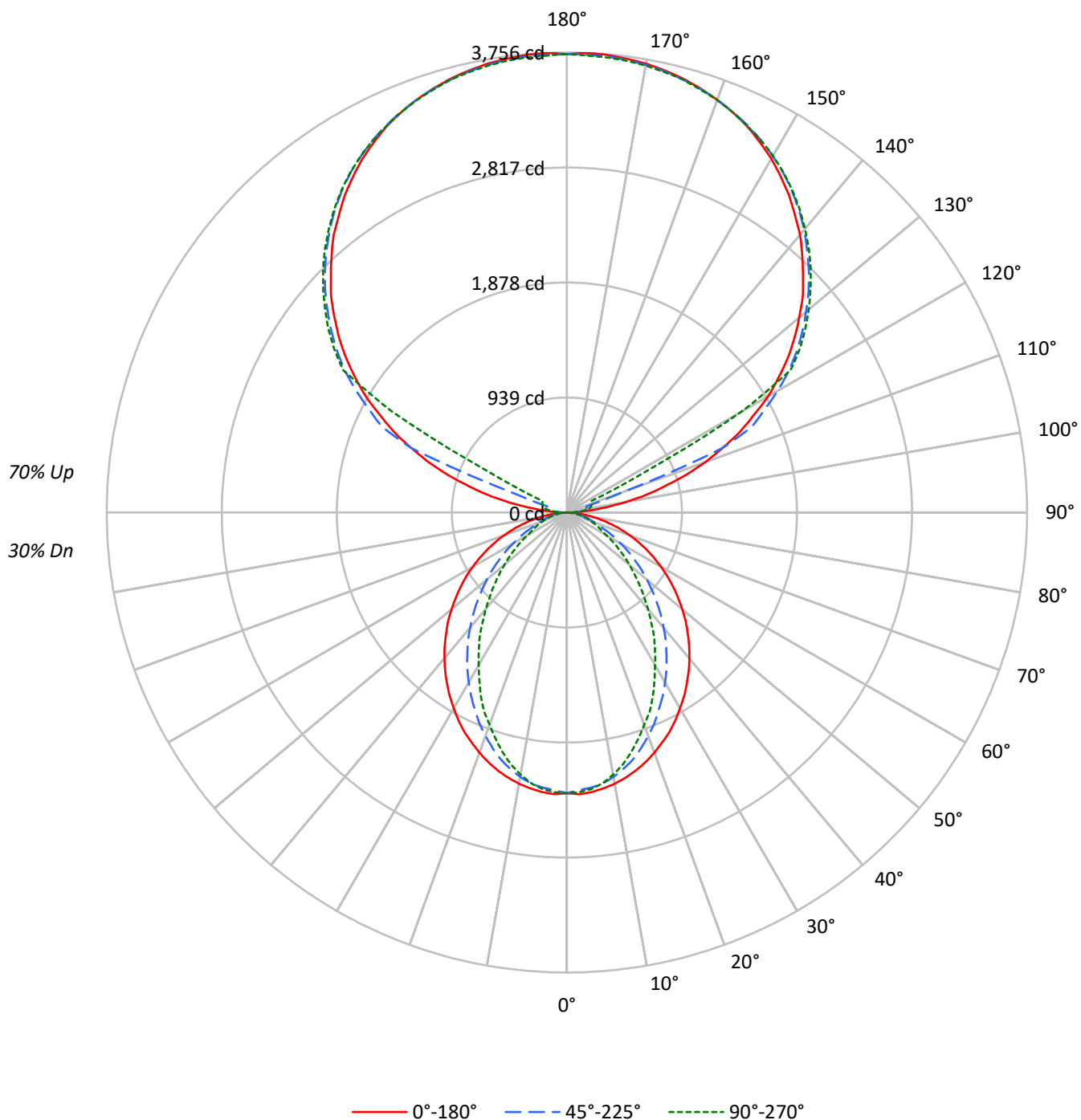
Lumens per Lamp: N/A
Luminaire Lumens: 15692.4 lumens
Efficiency: N/A
Efficacy: 131.1 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.06' x L: 3.06' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 119.7
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9789
Total Harmonic Distortion (THDi): 0.074
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P911859

CATALOG NUMBER: DFN2DIP-SQ3F0-050D100US850-RLLONL

Luminous Intensity Polar Plot



TEST NUMBER: P911859

CATALOG NUMBER: DFN2DIP-SQ3F0-050D100US850-RLLONL

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	30	10
RCR																	
0	102	102	102	102	92	92	92	92	72	72	72	54	54	54	38	38	38
1	94	90	86	83	84	81	77	75	64	62	60	48	47	46	34	33	32
2	85	78	73	68	76	71	66	62	56	53	50	43	40	39	30	29	28
3	78	69	62	57	70	62	57	52	50	46	42	38	35	33	27	25	24
4	71	61	54	48	64	55	49	44	44	40	36	34	31	28	24	22	21
5	66	55	47	41	59	49	43	38	40	35	31	30	27	25	22	20	18
6	60	49	41	36	54	44	38	33	36	31	27	28	24	22	20	18	16
7	56	44	37	31	50	40	34	29	32	28	24	25	22	19	18	16	15
8	52	40	33	28	46	36	30	25	29	25	21	23	20	17	17	15	13
9	48	37	29	25	43	33	27	23	27	22	19	21	18	15	16	13	12
10	45	33	27	22	40	30	24	20	25	20	17	20	16	14	14	12	11

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2626	2626	2626
5°	2628	2583	2600
10°	2601	2530	2514
15°	2563	2445	2383
20°	2514	2328	2222
25°	2464	2197	2066
30°	2397	2063	1869
35°	2331	1919	1696
40°	2265	1771	1498
45°	2187	1606	1318
50°	2107	1440	1142
55°	2023	1263	974
60°	1925	1078	801
65°	1813	890	720
70°	1677	715	650
75°	1506	627	590
80°	1258	520	508
85°	854	339	377

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 2564 cd/sqm

TEST NUMBER: P911859

CATALOG NUMBER: DFN2DIP-SQ3F0-050D100US850-RLLONL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	214.8	1.4
10°-20°	589.6	3.8
20°-30°	827.8	5.3
30°-40°	902.4	5.8
40°-50°	829.4	5.3
50°-60°	651.3	4.2
60°-70°	424.0	2.7
70°-80°	218.2	1.4
80°-90°	62.3	0.4
90°-100°	123.4	0.8
100°-110°	460.1	2.9
110°-120°	1220.2	7.8
120°-130°	2023.8	12.9
130°-140°	2149.7	13.7
140°-150°	1997.9	12.7
150°-160°	1606.3	10.2
160°-170°	1035.0	6.6
170°-180°	356.2	2.3
0°-30°	1632.2	10.4
0°-40°	2534.6	16.2
0°-60°	4015.3	25.6
0°-90°	4719.9	30.1
90°-120°	1803.7	11.5
90°-150°	7975.0	50.8
90°-180°	10973.0	69.9
0°-180°	15692.4	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2292	2292	2292	2292	2292	
5°	2292	2281	2254	2273	2267	217
15°	2180	2157	2086	2047	2026	614
25°	1979	1912	1775	1690	1659	910
35°	1705	1599	1417	1286	1240	1067
45°	1394	1255	1037	890	840	1076
55°	1060	898	674	550	510	947
65°	716	548	361	290	284	709
75°	382	236	166	151	149	404
85°	89	46	39	39	39	102
90°	3	32	54	68	73	15
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: P911859

CATALOG NUMBER: DFN2DIP-SQ3F0-050D100US850-RLLONL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2291.7	2291.7	2291.7	2291.7	2291.7
2.5°	2302.1	2291.7	2268.9	2289.8	2285.5
5°	2291.7	2281.4	2254.4	2273.0	2266.9
7.5°	2273.0	2260.7	2231.6	2239.8	2229.4
10°	2248.2	2233.6	2192.3	2185.9	2173.5
12.5°	2217.1	2198.5	2142.4	2130.1	2107.1
15°	2179.7	2156.9	2086.5	2047.1	2026.4
17.5°	2136.2	2103.0	2015.8	1970.2	1937.0
20°	2086.5	2044.9	1941.2	1889.5	1843.7
22.5°	2032.6	1984.8	1864.5	1794.0	1763.0
25°	1978.6	1912.1	1775.3	1690.3	1659.1
27.5°	1914.4	1843.7	1692.3	1594.9	1547.2
30°	1845.9	1767.0	1601.1	1495.4	1439.3
32.5°	1779.5	1684.0	1514.1	1389.6	1337.7
35°	1704.9	1599.1	1416.6	1285.9	1240.2
37.5°	1632.2	1518.1	1325.4	1182.1	1130.4
40°	1555.5	1431.2	1229.8	1082.6	1028.7
42.5°	1476.7	1344.0	1134.5	980.9	929.2
45°	1393.8	1254.7	1037.0	889.6	839.8
47.5°	1314.9	1167.8	943.8	796.4	750.8
50°	1227.9	1080.6	852.5	709.2	665.8
52.5°	1142.7	987.1	765.3	628.5	589.1
55°	1059.8	898.0	673.9	549.6	510.3
57.5°	974.8	808.9	593.2	477.1	443.8
60°	887.6	721.7	508.0	402.5	369.2
62.5°	802.7	636.8	435.5	336.0	319.5
65°	715.5	547.5	360.9	290.4	284.1
67.5°	632.6	464.6	290.4	255.1	248.9
70°	545.5	383.7	240.5	219.8	211.5
72.5°	462.6	309.0	201.2	184.6	180.4
75°	381.6	236.3	165.9	151.4	149.4
77.5°	300.8	167.9	130.8	122.3	118.1
80°	226.0	120.3	99.5	91.3	91.3
82.5°	157.6	81.0	68.4	64.2	64.2
85°	89.2	45.6	39.4	39.4	39.4
87.5°	33.3	16.5	16.5	14.5	14.5
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: P911859

CATALOG NUMBER: DFN2DIP-SQ3F0-050D100US850-RLLONL

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

TEST NUMBER: P911859

CATALOG NUMBER: DFN2DIP-SQ3F0-050D100US850-RLONL

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	8.25	8.94	9.36	10.04	11.58	4.21	4.90	5.32	6.00	7.54
	3H	9.91	10.53	11.03	11.64	13.19	5.38	6.00	6.50	7.11	8.66
	4H	10.51	11.09	11.64	12.21	13.76	5.82	6.40	6.95	7.52	9.07
	6H	10.92	11.46	12.06	12.58	14.14	6.13	6.66	7.27	7.78	9.35
	8H	11.04	11.55	12.18	12.68	14.24	6.21	6.72	7.35	7.85	9.41
	12H	11.09	11.58	12.24	12.71	14.29	6.24	6.73	7.39	7.86	9.44
4H	2H	8.25	8.83	9.39	9.95	11.50	4.78	5.37	5.92	6.48	8.04
	3H	10.06	10.54	11.20	11.69	13.25	6.11	6.60	7.26	7.74	9.31
	4H	10.74	11.19	11.89	12.32	13.90	6.65	7.10	7.80	8.23	9.81
	6H	11.24	11.63	12.40	12.78	14.36	7.05	7.44	8.21	8.59	10.17
	8H	11.41	11.77	12.57	12.92	14.51	7.18	7.53	8.33	8.68	10.27
	12H	11.50	11.82	12.67	12.98	14.58	7.23	7.56	8.40	8.71	10.31
8H	4H	10.70	11.05	11.85	12.20	13.79	6.92	7.27	8.07	8.42	10.01
	6H	11.25	11.55	12.43	12.73	14.32	7.42	7.72	8.60	8.90	10.49
	8H	11.46	11.72	12.64	12.89	14.50	7.61	7.86	8.79	9.03	10.64
	12H	11.59	11.82	12.78	12.98	14.63	7.71	7.94	8.90	9.10	10.75
12H	4H	10.64	10.96	11.81	12.12	13.72	6.91	7.24	8.08	8.40	9.99
	6H	11.22	11.48	12.40	12.65	14.26	7.47	7.73	8.65	8.89	10.50
	8H	11.44	11.66	12.62	12.83	14.47	7.67	7.89	8.85	9.06	10.70