

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: P911821

Luminaire Tested: DFN2DIP-SQ3F0-040D100US850-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P911821
REPORT IS A COMBINATION OF REPORTS P901489 AND P898289
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ3F0-040D100US850-FLLONL
Description: 3 foot, Square Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

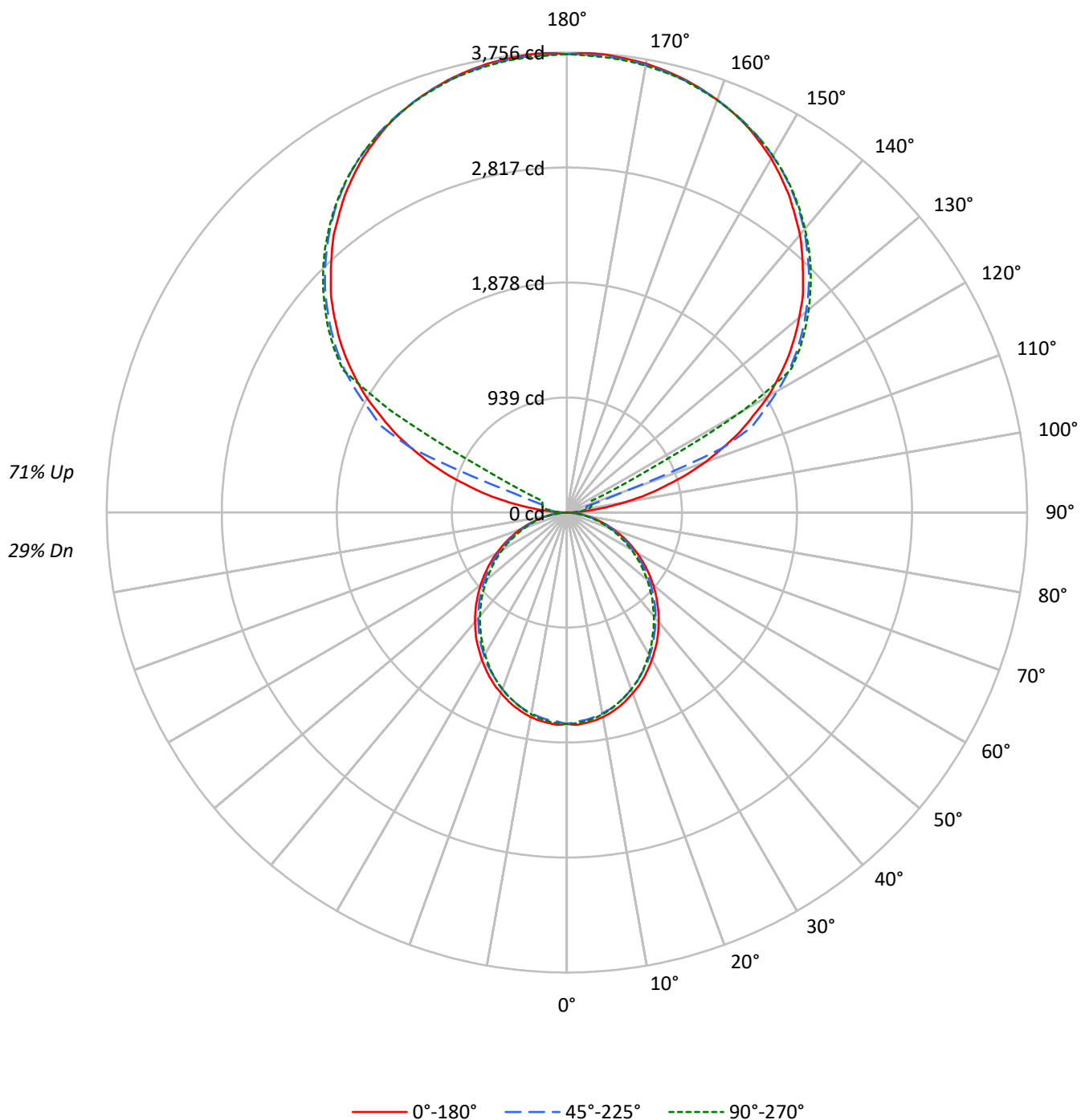
Lumens per Lamp: N/A
Luminaire Lumens: 15370.8 lumens
Efficiency: N/A
Efficacy: 140.0 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 3.06' x L: 3.06' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 109.8
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9933
Total Harmonic Distortion (THDi): 0.066
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P911821

CATALOG NUMBER: DFN2DIP-SQ3F0-040D100US850-FLLONL

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	30	10
RCR																	
0	102	102	102	102	91	91	91	91	71	71	71	53	53	53	36	36	36
1	93	89	85	82	83	80	77	74	62	60	58	47	45	44	32	31	31
2	85	77	72	67	76	70	65	60	55	51	48	41	39	37	28	27	26
3	77	68	61	55	69	61	55	50	48	44	41	36	33	31	25	23	22
4	71	60	53	47	63	54	48	43	43	38	34	32	29	27	22	21	19
5	65	53	46	40	58	48	41	36	38	33	30	29	26	23	20	18	16
6	59	48	40	34	53	43	36	31	34	29	26	26	23	20	18	16	14
7	55	43	35	30	49	39	32	27	31	26	23	24	20	18	17	14	13
8	51	39	31	26	45	35	29	24	28	23	20	22	18	16	15	13	11
9	47	35	28	23	42	32	26	21	26	21	18	20	16	14	14	12	10
10	44	32	25	21	39	29	23	19	24	19	16	18	15	13	13	11	9

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1978	1978	1978
5°	1980	1949	1963
10°	1962	1921	1935
15°	1932	1888	1893
20°	1892	1843	1850
25°	1852	1789	1800
30°	1802	1739	1737
35°	1755	1680	1671
40°	1696	1620	1607
45°	1638	1560	1542
50°	1575	1498	1467
55°	1508	1425	1397
60°	1433	1339	1318
65°	1350	1249	1224
70°	1245	1140	1123
75°	1100	1009	1028
80°	924	841	850
85°	651	558	556

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 2564 cd/sqm

TEST NUMBER: P911821

CATALOG NUMBER: DFN2DIP-SQ3F0-040D100US850-FLONL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	162.5	1.1
10°-20°	457.1	3.0
20°-30°	671.7	4.4
30°-40°	780.2	5.1
40°-50°	779.2	5.1
50°-60°	679.5	4.4
60°-70°	502.3	3.3
70°-80°	284.2	1.8
80°-90°	81.6	0.5
90°-100°	123.4	0.8
100°-110°	460.1	3.0
110°-120°	1220.2	7.9
120°-130°	2023.8	13.2
130°-140°	2149.7	14.0
140°-150°	1997.9	13.0
150°-160°	1606.3	10.5
160°-170°	1035.0	6.7
170°-180°	356.2	2.3
0°-30°	1291.3	8.4
0°-40°	2071.5	13.5
0°-60°	3530.2	23.0
0°-90°	4398.2	28.6
90°-120°	1803.7	11.7
90°-150°	7975.0	51.9
90°-180°	10973.0	71.4
0°-180°	15370.8	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1726	1726	1726	1726	1726	
5°	1726	1720	1701	1714	1711	164
15°	1643	1633	1612	1618	1610	463
25°	1487	1474	1446	1449	1446	684
35°	1283	1266	1240	1230	1222	801
45°	1044	1032	1007	989	983	806
55°	790	780	760	740	732	706
65°	533	523	506	491	483	527
75°	279	276	267	257	261	298
85°	68	66	65	60	58	76
90°	3	32	54	68	73	14
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: P911821

CATALOG NUMBER: DFN2DIP-SQ3F0-040D100US850-FLLONL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1726.0	1726.0	1726.0	1726.0	1726.0
2.5°	1736.1	1727.8	1709.5	1726.0	1722.9
5°	1726.0	1719.5	1701.2	1714.4	1711.3
7.5°	1714.4	1704.5	1686.2	1699.7	1696.3
10°	1696.3	1684.7	1664.8	1678.0	1673.0
12.5°	1671.3	1661.4	1641.5	1649.9	1646.4
15°	1643.1	1633.2	1611.6	1618.3	1610.0
17.5°	1608.3	1598.4	1576.8	1585.0	1576.8
20°	1570.0	1560.1	1537.0	1541.8	1535.4
22.5°	1532.0	1517.0	1495.4	1495.4	1492.0
25°	1487.1	1473.9	1445.7	1448.9	1445.7
27.5°	1437.3	1425.6	1404.2	1399.2	1391.0
30°	1387.6	1374.3	1349.4	1344.4	1337.8
32.5°	1334.5	1324.6	1298.0	1288.0	1281.2
35°	1283.0	1266.5	1239.9	1229.9	1221.6
37.5°	1224.9	1209.9	1183.3	1171.8	1163.5
40°	1165.2	1151.8	1125.2	1110.4	1103.8
42.5°	1107.1	1093.7	1067.3	1050.6	1040.7
45°	1044.0	1032.5	1007.4	989.3	982.6
47.5°	982.6	970.9	944.4	926.1	916.3
50°	917.8	909.5	886.3	863.0	854.7
52.5°	854.7	843.2	821.7	803.4	791.7
55°	790.2	780.1	760.2	740.3	732.1
57.5°	725.3	717.1	695.3	675.5	668.8
60°	660.5	654.0	630.8	612.5	607.5
62.5°	597.5	585.9	569.4	552.7	546.1
65°	532.9	522.8	506.3	491.3	483.1
67.5°	466.4	458.0	443.3	431.6	425.0
70°	405.0	398.4	383.4	371.7	365.2
72.5°	342.0	335.3	327.0	315.4	310.4
75°	278.8	275.6	267.2	257.3	260.6
77.5°	222.4	215.7	212.4	207.4	202.5
80°	166.0	164.2	160.9	156.0	152.7
82.5°	112.9	112.9	111.3	104.6	104.6
85°	68.0	66.4	64.8	59.7	58.1
87.5°	29.9	26.6	23.3	18.3	16.5
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: P911821

CATALOG NUMBER: DFN2DIP-SQ3F0-040D100US850-FLLONL

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	7.20	7.90	8.32	9.01	10.56	6.76	7.45	7.88	8.57	10.12
	3H	8.84	9.47	9.97	10.59	12.15	8.35	8.98	9.48	10.10	11.66
	4H	9.42	10.01	10.56	11.14	12.71	8.93	9.52	10.07	10.64	12.21
	6H	9.81	10.35	10.96	11.48	13.06	9.31	9.85	10.46	10.98	12.56
	8H	9.91	10.43	11.06	11.57	13.14	9.40	9.92	10.56	11.07	12.64
	12H	9.95	10.44	11.10	11.58	13.17	9.44	9.93	10.59	11.07	12.66
4H	2H	7.64	8.23	8.78	9.35	10.92	7.28	7.88	8.43	9.00	10.57
	3H	9.48	9.98	10.64	11.13	12.71	9.08	9.57	10.23	10.72	12.30
	4H	10.19	10.64	11.34	11.78	13.38	9.76	10.22	10.92	11.36	12.96
	6H	10.69	11.08	11.85	12.24	13.83	10.26	10.65	11.42	11.81	13.40
	8H	10.83	11.20	11.99	12.35	13.96	10.39	10.76	11.55	11.91	13.52
	12H	10.89	11.22	12.07	12.39	14.00	10.45	10.78	11.62	11.94	13.55
8H	4H	10.37	10.73	11.53	11.88	13.49	9.99	10.35	11.15	11.51	13.11
	6H	10.98	11.28	12.16	12.48	14.08	10.60	10.90	11.78	12.10	13.70
	8H	11.20	11.46	12.38	12.63	14.26	10.81	11.07	11.99	12.24	13.87
	12H	11.32	11.55	12.51	12.72	14.38	10.91	11.14	12.10	12.31	13.97
12H	4H	10.34	10.67	11.52	11.84	13.45	9.97	10.30	11.15	11.47	13.08
	6H	11.01	11.27	12.20	12.45	14.07	10.64	10.90	11.82	12.07	13.70
	8H	11.24	11.47	12.43	12.64	14.30	10.86	11.09	12.05	12.26	13.92

END OF REPORT