

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: P922605

Luminaire Tested: DFN2DIP-SQ2F0-040D070US940-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P922605
REPORT IS A COMBINATION OF REPORTS P901341 AND P898215
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ2F0-040D070US940-FLLONL
Description: 2 foot, Square Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

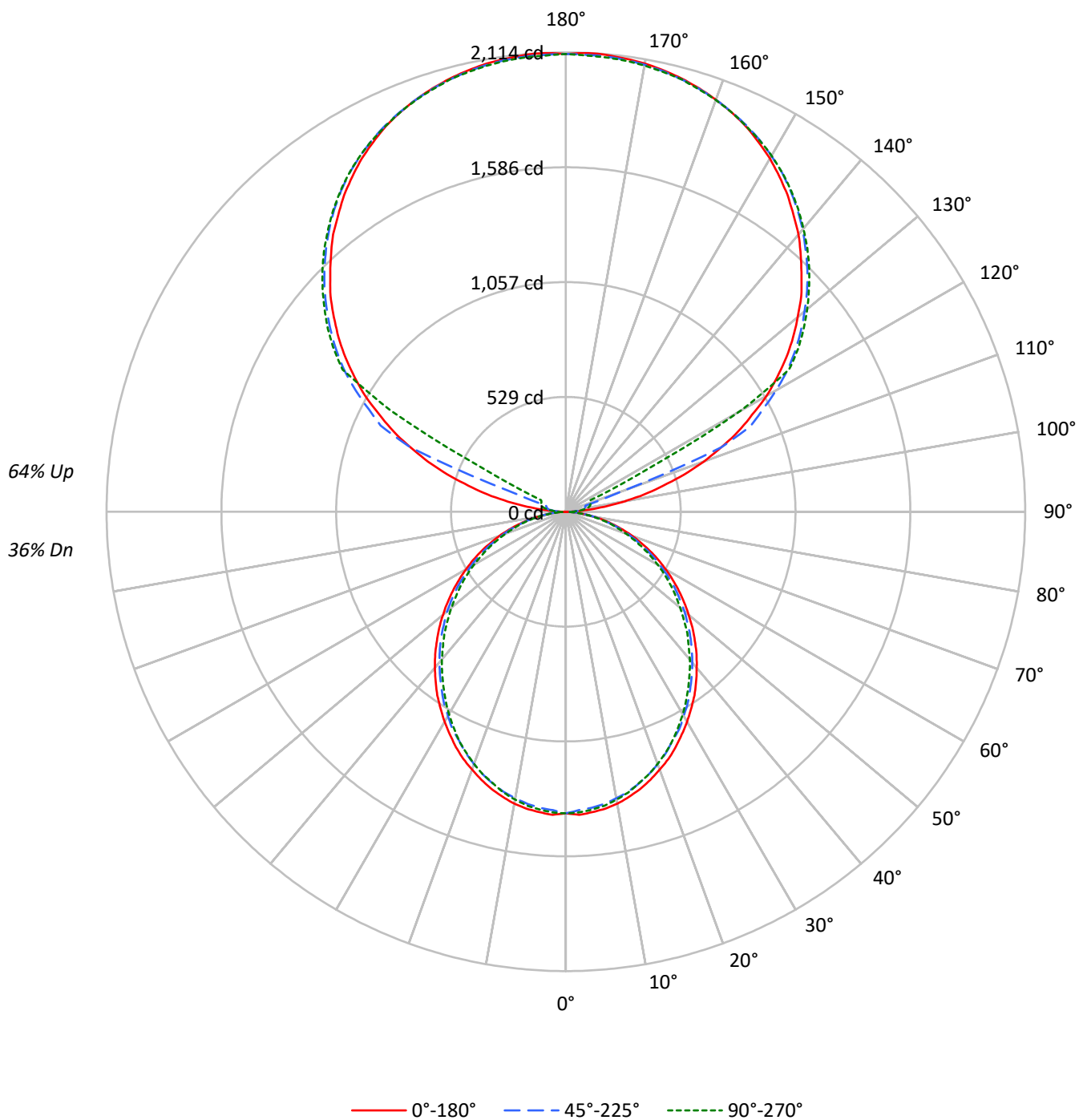
Lumens per Lamp: N/A
Luminaire Lumens: 9710.8 lumens
Efficiency: N/A
Efficacy: 110.1 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 2.21' x L: 2.21' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 88.2
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9952
Total Harmonic Distortion (THDi): 0.069
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P922605

CATALOG NUMBER: DFN2DIP-SQ2F0-040D070US940-FLLONL

Luminous Intensity Polar Plot



TEST NUMBER: P922605

CATALOG NUMBER: DFN2DIP-SQ2F0-040D070US940-FLONL

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	104	104	104	104	94	94	94	94	76	76	76	59	59	59	44	44	44
1	95	90	87	83	86	82	79	76	66	64	62	52	50	49	39	38	37
2	86	79	73	68	78	72	67	62	58	54	51	46	43	41	34	32	31
3	79	69	62	57	71	63	57	52	51	47	43	40	37	35	30	28	26
4	72	61	54	48	65	56	49	44	45	41	37	36	32	30	27	25	23
5	66	55	47	41	59	50	43	38	41	35	32	32	28	26	24	22	20
6	61	49	41	35	55	45	38	33	37	31	27	29	25	22	22	19	17
7	56	44	36	31	51	40	33	29	33	28	24	26	23	20	20	17	15
8	52	40	32	27	47	37	30	25	30	25	21	24	20	18	18	16	14
9	48	36	29	24	44	33	27	22	28	23	19	22	18	16	17	14	12
10	45	33	26	21	41	31	24	20	25	20	17	20	17	14	16	13	11

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3052	3052	3052
5°	3051	3003	3025
10°	3021	2956	2980
15°	2972	2900	2912
20°	2906	2826	2842
25°	2841	2739	2762
30°	2761	2657	2662
35°	2684	2561	2556
40°	2591	2465	2454
45°	2498	2368	2351
50°	2396	2265	2231
55°	2288	2147	2120
60°	2166	2008	1992
65°	2032	1863	1842
70°	1863	1686	1679
75°	1630	1473	1524
80°	1346	1203	1238
85°	910	760	777

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2498 cd/sqm

TEST NUMBER: P922605

CATALOG NUMBER: DFN2DIP-SQ2F0-040D070US940-FLONL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	130.6	1.3
10°-20°	367.5	3.8
20°-30°	540.1	5.6
30°-40°	627.3	6.5
40°-50°	626.6	6.5
50°-60°	546.3	5.6
60°-70°	403.9	4.2
70°-80°	228.5	2.4
80°-90°	64.0	0.7
90°-100°	69.5	0.7
100°-110°	259.0	2.7
110°-120°	686.8	7.1
120°-130°	1139.1	11.7
130°-140°	1209.9	12.5
140°-150°	1124.5	11.6
150°-160°	904.1	9.3
160°-170°	582.6	6.0
170°-180°	200.5	2.1
0°-30°	1038.3	10.7
0°-40°	1665.6	17.2
0°-60°	2838.5	29.2
0°-90°	3534.9	36.4
90°-120°	1015.2	10.5
90°-150°	4488.7	46.2
90°-180°	6176.0	63.6
0°-180°	9710.8	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1388	1388	1388	1388	1388	
5°	1388	1383	1368	1378	1376	132
15°	1321	1313	1296	1301	1295	372
25°	1196	1185	1162	1165	1162	550
35°	1032	1018	997	989	982	644
45°	840	830	810	796	790	648
55°	635	627	611	595	589	568
65°	428	420	407	395	388	424
75°	224	222	215	207	210	239
85°	55	53	52	48	47	61
90°	1	18	30	38	41	9
95°	99	49	59	67	66	117
105°	463	509	93	110	116	495
115°	876	902	940	235	125	863
125°	1239	1259	1288	1299	1303	1105
135°	1534	1558	1572	1587	1584	1185
145°	1779	1777	1803	1814	1806	1113
155°	1959	1945	1963	1972	1960	903
165°	2064	2055	2059	2070	2059	583
175°	2111	2100	2104	2114	2099	201
180°	2107	2107	2107	2107	2107	

TEST NUMBER: P922605

CATALOG NUMBER: DFN2DIP-SQ2F0-040D070US940-FLLONL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1387.9	1387.9	1387.9	1387.9	1387.9
2.5°	1396.0	1389.3	1374.6	1387.9	1385.4
5°	1387.9	1382.6	1367.9	1378.5	1376.0
7.5°	1378.5	1370.6	1355.8	1366.6	1364.0
10°	1364.0	1354.6	1338.6	1349.2	1345.2
12.5°	1343.8	1335.9	1319.9	1326.6	1323.8
15°	1321.2	1313.2	1295.8	1301.2	1294.6
17.5°	1293.2	1285.2	1267.8	1274.4	1267.8
20°	1262.4	1254.5	1235.8	1239.7	1234.6
22.5°	1231.8	1219.8	1202.4	1202.4	1199.7
25°	1195.7	1185.1	1162.4	1165.0	1162.4
27.5°	1155.7	1146.3	1129.1	1125.1	1118.5
30°	1115.7	1105.0	1085.0	1081.0	1075.7
32.5°	1073.0	1065.1	1043.7	1035.6	1030.2
35°	1031.6	1018.3	996.9	988.9	982.2
37.5°	984.9	972.9	951.5	942.2	935.5
40°	936.9	926.1	904.7	892.9	887.5
42.5°	890.2	879.4	858.2	844.7	836.8
45°	839.5	830.2	810.0	795.5	790.1
47.5°	790.1	780.7	759.4	744.7	736.7
50°	738.0	731.3	712.7	693.9	687.2
52.5°	687.2	678.0	660.7	646.0	636.6
55°	635.3	627.2	611.3	595.2	588.6
57.5°	583.2	576.6	559.1	543.1	537.8
60°	531.1	525.8	507.2	492.5	488.5
62.5°	480.5	471.1	457.8	444.4	439.1
65°	428.5	420.4	407.1	395.0	388.4
67.5°	375.1	368.3	356.4	347.1	341.7
70°	325.7	320.3	308.3	298.9	293.6
72.5°	275.0	269.6	263.0	253.6	249.6
75°	224.2	221.6	214.8	206.9	209.6
77.5°	178.8	173.4	170.8	166.7	162.8
80°	133.5	132.1	129.4	125.5	122.8
82.5°	90.8	90.8	89.5	84.1	84.1
85°	54.7	53.4	52.1	48.0	46.7
87.5°	24.1	21.4	18.7	14.7	13.3
90°	1.4	18.3	30.4	38.2	41.1
92.5°	38.2	32.0	36.6	39.7	41.1
95°	99.0	48.7	59.4	67.1	65.5
97.5°	178.3	53.4	77.7	82.4	83.8
100°	269.9	61.0	86.9	99.0	102.1
102.5°	370.3	367.5	90.0	106.6	111.3
105°	463.4	509.2	93.0	109.7	115.8
107.5°	571.6	609.7	96.1	112.8	119.0
110°	675.4	707.2	266.8	114.4	120.4

TEST NUMBER: P922605

CATALOG NUMBER: DFN2DIP-SQ2F0-040D070US940-FLLONL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	772.9	800.2	774.4	117.3	122.0
115°	876.5	902.3	940.5	234.8	125.1
117.5°	966.4	996.8	1022.9	804.8	405.5
120°	1067.0	1089.8	1117.4	1135.7	929.9
122.5°	1152.3	1176.7	1207.4	1216.4	1218.0
125°	1239.2	1259.1	1288.1	1298.8	1303.2
127.5°	1318.5	1339.8	1362.8	1378.0	1379.5
130°	1393.2	1417.6	1434.3	1451.2	1449.7
132.5°	1469.4	1489.3	1506.0	1519.7	1518.3
135°	1533.5	1557.9	1571.6	1586.9	1583.9
137.5°	1600.4	1618.8	1634.1	1649.4	1644.8
140°	1666.0	1678.3	1695.0	1708.7	1701.1
142.5°	1721.0	1731.7	1751.4	1763.5	1756.0
145°	1779.0	1777.4	1803.2	1813.9	1806.3
147.5°	1829.1	1824.6	1850.5	1858.1	1852.1
150°	1877.9	1867.3	1891.8	1900.8	1893.2
152.5°	1919.0	1906.9	1929.8	1938.9	1928.3
155°	1958.7	1945.1	1963.4	1972.5	1960.3
157.5°	1990.7	1978.6	1992.3	2003.0	1990.7
160°	2018.3	2009.0	2018.3	2027.3	2016.6
162.5°	2042.6	2033.5	2041.0	2051.7	2038.0
165°	2063.9	2054.9	2059.3	2070.0	2059.3
167.5°	2080.7	2071.4	2076.2	2086.9	2073.1
170°	2094.4	2085.3	2088.3	2099.0	2085.3
172.5°	2103.5	2094.4	2097.6	2108.2	2094.4
175°	2111.1	2100.4	2103.5	2114.2	2099.0
177.5°	2114.2	2103.5	2105.1	2115.9	2102.0
180°	2106.6	2106.6	2106.6	2106.6	2106.6

TEST NUMBER: P922605

CATALOG NUMBER: DFN2DIP-SQ2F0-040D070US940-FLLONL

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	9.63	10.38	10.69	11.45	12.90	9.18	9.93	10.25	11.00	12.45
	3H	11.26	11.93	12.33	13.01	14.48	10.77	11.44	11.84	12.52	13.99
	4H	11.83	12.47	12.92	13.55	15.02	11.34	11.97	12.42	13.05	14.53
	6H	12.21	12.80	13.30	13.88	15.37	11.71	12.30	12.80	13.38	14.87
	8H	12.30	12.86	13.40	13.96	15.44	11.80	12.36	12.90	13.46	14.94
	12H	12.34	12.87	13.44	13.96	15.47	11.83	12.36	12.94	13.45	14.96
4H	2H	10.06	10.70	11.16	11.78	13.26	9.71	10.35	10.80	11.42	12.90
	3H	11.90	12.43	13.00	13.53	15.02	11.49	12.02	12.59	13.13	14.62
	4H	12.59	13.08	13.70	14.18	15.69	12.17	12.66	13.27	13.75	15.26
	6H	13.08	13.50	14.19	14.62	16.12	12.65	13.07	13.76	14.19	15.69
	8H	13.22	13.61	14.33	14.72	16.24	12.78	13.17	13.89	14.28	15.80
	12H	13.28	13.63	14.41	14.76	16.28	12.83	13.18	13.96	14.31	15.83
8H	4H	12.77	13.16	13.88	14.27	15.79	12.39	12.78	13.50	13.89	15.41
	6H	13.37	13.69	14.50	14.85	16.36	12.98	13.31	14.12	14.46	15.98
	8H	13.58	13.86	14.72	14.99	16.53	13.18	13.47	14.32	14.60	16.14
	12H	13.69	13.94	14.83	15.07	16.64	13.28	13.53	14.42	14.66	16.23
12H	4H	12.74	13.10	13.87	14.22	15.75	12.37	12.73	13.50	13.85	15.38
	6H	13.39	13.68	14.53	14.81	16.35	13.02	13.30	14.16	14.44	15.97
	8H	13.61	13.86	14.76	14.99	16.57	13.23	13.48	14.38	14.61	16.18