

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: P917401

Luminaire Tested: DFN2DIP-SQ3F0-080D050US930-FLLONL

Issue Date: 11/21/2024

**Test Information**

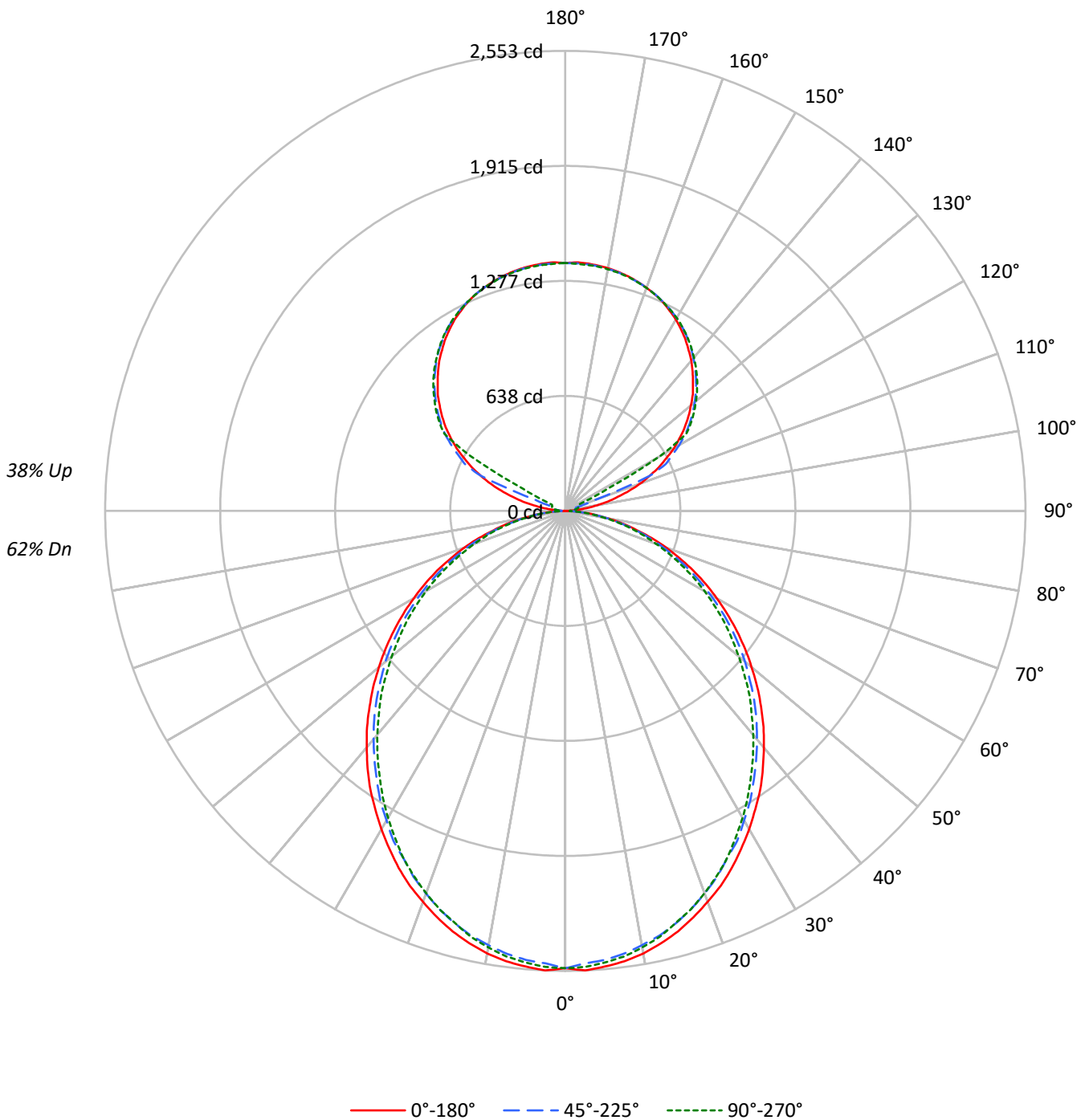
Test Method: LM-79-2019  
Report Number: P917401  
REPORT IS A COMBINATION OF REPORTS P901407 AND P898289  
Test Lab: INNOVATION CENTER  
Issue Date: 11/21/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: NEO-RAY  
Catalog Number: DFN2DIP-SQ3F0-080D050US930-FLLONL  
Description: 3 foot, Square Define Geo, with Direct Frosted Lens, Indirect Open No Lens  
Light Source: -  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 10492.9 lumens  
Efficiency: N/A  
Efficacy: 92.8 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-Direct  
  
Input Watts (W): 113.1  
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

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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		0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10		0
RCR																			
0	110	110	110	110	103	103	103	103	90	90	90	78	78	78	67	67	67		62
1	100	96	92	88	94	90	87	83	79	76	74	69	67	65	59	58	56		52
2	91	84	78	72	85	79	73	69	69	65	61	60	57	54	52	50	48		43
3	83	74	66	60	78	69	63	57	61	56	51	53	49	46	46	43	40		37
4	76	65	57	51	71	61	54	49	54	48	44	47	43	39	41	38	35		32
5	70	58	50	44	65	55	47	42	49	43	38	43	38	34	37	33	30		27
6	65	52	44	38	60	49	42	36	44	38	33	39	34	30	34	30	27		24
7	60	47	39	34	56	45	37	32	40	34	29	35	30	27	31	27	24		21
8	56	43	35	30	52	41	34	29	36	30	26	32	27	24	28	24	21		19
9	52	39	32	27	49	37	30	26	33	28	23	30	25	21	26	22	19		17
10	49	36	29	24	45	34	28	23	31	25	21	27	23	19	24	20	18		16

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	2908	2908	2908
5°	2911	2865	2886
10°	2885	2825	2846
15°	2841	2777	2784
20°	2782	2710	2720
25°	2723	2631	2647
30°	2650	2557	2554
35°	2580	2470	2456
40°	2494	2382	2363
45°	2409	2294	2267
50°	2316	2202	2156
55°	2217	2095	2054
60°	2107	1968	1937
65°	1985	1836	1800
70°	1831	1676	1651
75°	1618	1483	1512
80°	1360	1238	1250
85°	958	820	818

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 2409 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	238.9	2.3
10°-20°	672.1	6.4
20°-30°	987.7	9.4
30°-40°	1147.1	10.9
40°-50°	1145.7	10.9
50°-60°	999.0	9.5
60°-70°	738.5	7.0
70°-80°	417.8	4.0
80°-90°	112.7	1.1
90°-100°	45.4	0.4
100°-110°	169.1	1.6
110°-120°	448.5	4.3
120°-130°	743.9	7.1
130°-140°	790.2	7.5
140°-150°	734.4	7.0
150°-160°	590.4	5.6
160°-170°	380.5	3.6
170°-180°	130.9	1.2
0°-30°	1898.6	18.1
0°-40°	3045.8	29.0
0°-60°	5190.5	49.5
0°-90°	6459.6	61.6
90°-120°	663.0	6.3
90°-150°	2931.5	27.9
90°-180°	4033.0	38.4
0°-180°	10492.9	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2538	2538	2538	2538	2538	
5°	2538	2528	2501	2521	2516	241
15°	2416	2402	2370	2379	2367	680
25°	2186	2167	2126	2130	2126	1006
35°	1886	1862	1823	1808	1796	1178
45°	1535	1518	1481	1455	1445	1185
55°	1162	1147	1118	1088	1076	1039
65°	784	769	744	722	710	775
75°	410	405	393	378	383	438
85°	100	98	95	88	85	112
90°	1	12	20	25	27	10
95°	65	32	39	44	43	77
105°	303	333	61	72	76	323
115°	572	589	614	153	82	564
125°	809	822	841	848	851	722
135°	1002	1018	1026	1036	1034	774
145°	1162	1161	1178	1185	1180	727
155°	1279	1270	1282	1288	1280	589
165°	1348	1342	1345	1352	1345	381
175°	1379	1372	1374	1381	1371	131
180°	1376	1376	1376	1376	1376	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2537.9	2537.9	2537.9	2537.9	2537.9
2.5°	2552.6	2540.5	2513.6	2537.9	2533.2
5°	2537.9	2528.3	2501.4	2520.8	2516.2
7.5°	2520.8	2506.3	2479.4	2499.1	2494.2
10°	2494.2	2477.0	2447.8	2467.2	2460.0
12.5°	2457.4	2442.9	2413.6	2425.8	2420.9
15°	2416.0	2401.5	2369.6	2379.4	2367.3
17.5°	2364.7	2350.2	2318.3	2330.5	2318.3
20°	2308.5	2294.0	2259.8	2267.1	2257.5
22.5°	2252.6	2230.6	2198.7	2198.7	2193.8
25°	2186.5	2167.1	2125.7	2130.4	2125.7
27.5°	2113.3	2096.2	2064.6	2057.3	2045.2
30°	2040.3	2020.6	1984.1	1976.9	1967.0
32.5°	1962.1	1947.6	1908.5	1893.7	1883.9
35°	1886.4	1862.1	1823.0	1808.2	1796.1
37.5°	1801.0	1779.0	1739.9	1722.8	1710.7
40°	1713.3	1693.5	1654.5	1632.7	1622.9
42.5°	1627.8	1608.1	1569.3	1544.7	1530.2
45°	1535.1	1518.0	1481.2	1454.6	1444.8
47.5°	1444.8	1427.7	1388.5	1361.6	1347.1
50°	1349.5	1337.3	1303.1	1268.9	1256.8
52.5°	1256.8	1239.7	1208.1	1181.2	1164.1
55°	1161.7	1147.0	1117.8	1088.5	1076.3
57.5°	1066.5	1054.3	1022.5	993.2	983.3
60°	971.2	961.6	927.4	900.5	893.2
62.5°	878.5	861.4	837.1	812.8	802.9
65°	783.5	768.7	744.4	722.4	710.2
67.5°	685.8	673.4	651.7	634.6	624.8
70°	595.5	585.6	563.7	546.6	537.0
72.5°	502.8	493.0	480.8	463.7	456.5
75°	409.9	405.2	392.8	378.3	383.2
77.5°	327.0	317.2	312.3	305.0	297.7
80°	244.2	241.6	236.7	229.4	224.5
82.5°	166.0	166.0	163.6	153.8	153.8
85°	100.0	97.6	95.3	87.8	85.4
87.5°	44.0	39.1	34.2	26.9	24.4
90°	1.0	11.9	19.9	24.9	26.8
92.5°	24.9	21.0	23.9	25.9	26.8
95°	64.7	31.8	38.8	43.9	42.8
97.5°	116.4	34.9	50.7	53.8	54.7
100°	176.3	39.9	56.7	64.7	66.7
102.5°	241.9	239.9	58.8	69.6	72.7
105°	302.6	332.6	60.7	71.7	75.7
107.5°	373.3	398.1	62.8	73.6	77.7
110°	441.1	461.9	174.2	74.7	78.6



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°
112.5°	504.8	522.6	505.7	76.6	79.7
115°	572.4	589.3	614.2	153.4	81.7
117.5°	631.1	651.0	668.1	525.5	264.8
120°	696.8	711.8	729.7	741.7	607.2
122.5°	752.5	768.5	788.5	794.4	795.5
125°	809.3	822.3	841.2	848.2	851.2
127.5°	861.0	875.0	890.1	899.9	900.9
130°	909.9	925.9	936.7	947.7	946.8
132.5°	959.7	972.7	983.5	992.5	991.6
135°	1001.5	1017.5	1026.3	1036.4	1034.4
137.5°	1045.2	1057.2	1067.2	1077.2	1074.2
140°	1088.0	1096.1	1106.9	1115.9	1111.0
142.5°	1124.0	1131.0	1143.9	1151.8	1146.8
145°	1161.8	1160.7	1177.6	1184.6	1179.7
147.5°	1194.6	1191.6	1208.5	1213.5	1209.6
150°	1226.5	1219.5	1235.4	1241.4	1236.4
152.5°	1253.3	1245.4	1260.3	1266.3	1259.3
155°	1279.2	1270.3	1282.2	1288.2	1280.3
157.5°	1300.1	1292.2	1301.1	1308.1	1300.1
160°	1318.1	1312.1	1318.1	1324.0	1317.0
162.5°	1333.9	1328.0	1332.9	1339.9	1331.0
165°	1347.9	1342.0	1344.9	1351.8	1344.9
167.5°	1358.9	1352.8	1355.9	1362.9	1353.9
170°	1367.8	1361.8	1363.8	1370.8	1361.8
172.5°	1373.8	1367.8	1369.9	1376.8	1367.8
175°	1378.8	1371.7	1373.8	1380.7	1370.8
177.5°	1380.7	1373.8	1374.8	1381.8	1372.8
180°	1375.7	1375.7	1375.7	1375.7	1375.7



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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	11.95	12.93	12.80	13.80	14.89	11.51	12.48	12.36	13.35	14.45
	3H	13.61	14.49	14.48	15.37	16.50	13.12	14.00	13.99	14.88	16.01
	4H	14.20	15.03	15.08	15.92	17.05	13.71	14.54	14.59	15.43	16.56
	6H	14.61	15.37	15.50	16.27	17.41	14.11	14.87	15.00	15.77	16.91
	8H	14.71	15.44	15.61	16.35	17.50	14.21	14.94	15.11	15.85	17.00
	12H	14.76	15.46	15.67	16.36	17.53	14.25	14.95	15.16	15.85	17.02
4H	2H	12.42	13.25	13.31	14.14	15.27	12.07	12.89	12.95	13.78	14.92
	3H	14.29	14.98	15.19	15.90	17.05	13.88	14.57	14.78	15.50	16.64
	4H	15.01	15.64	15.91	16.55	17.73	14.58	15.21	15.49	16.13	17.30
	6H	15.52	16.07	16.45	17.01	18.18	15.09	15.64	16.01	16.58	17.75
	8H	15.67	16.18	16.60	17.12	18.31	15.24	15.75	16.16	16.68	17.87
	12H	15.75	16.21	16.69	17.16	18.36	15.30	15.76	16.25	16.71	17.91
8H	4H	15.21	15.72	16.13	16.65	17.84	14.83	15.34	15.76	16.27	17.46
	6H	15.84	16.26	16.79	17.24	18.42	15.45	15.88	16.41	16.85	18.04
	8H	16.06	16.43	17.02	17.40	18.60	15.66	16.04	16.62	17.00	18.21
	12H	16.19	16.52	17.15	17.48	18.73	15.78	16.11	16.74	17.07	18.32
12H	4H	15.20	15.66	16.14	16.61	17.80	14.83	15.29	15.77	16.24	17.44
	6H	15.87	16.24	16.83	17.21	18.41	15.49	15.87	16.45	16.83	18.04
	8H	16.11	16.44	17.07	17.40	18.65	15.73	16.06	16.69	17.02	18.27