

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: P925593

Luminaire Tested: DFN2DIP-SQ3F0-080D070US950-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P925593
REPORT IS A COMBINATION OF REPORTS P901443 AND P898289
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ3F0-080D070US950-FLLONL
Description: 3 foot, Square Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

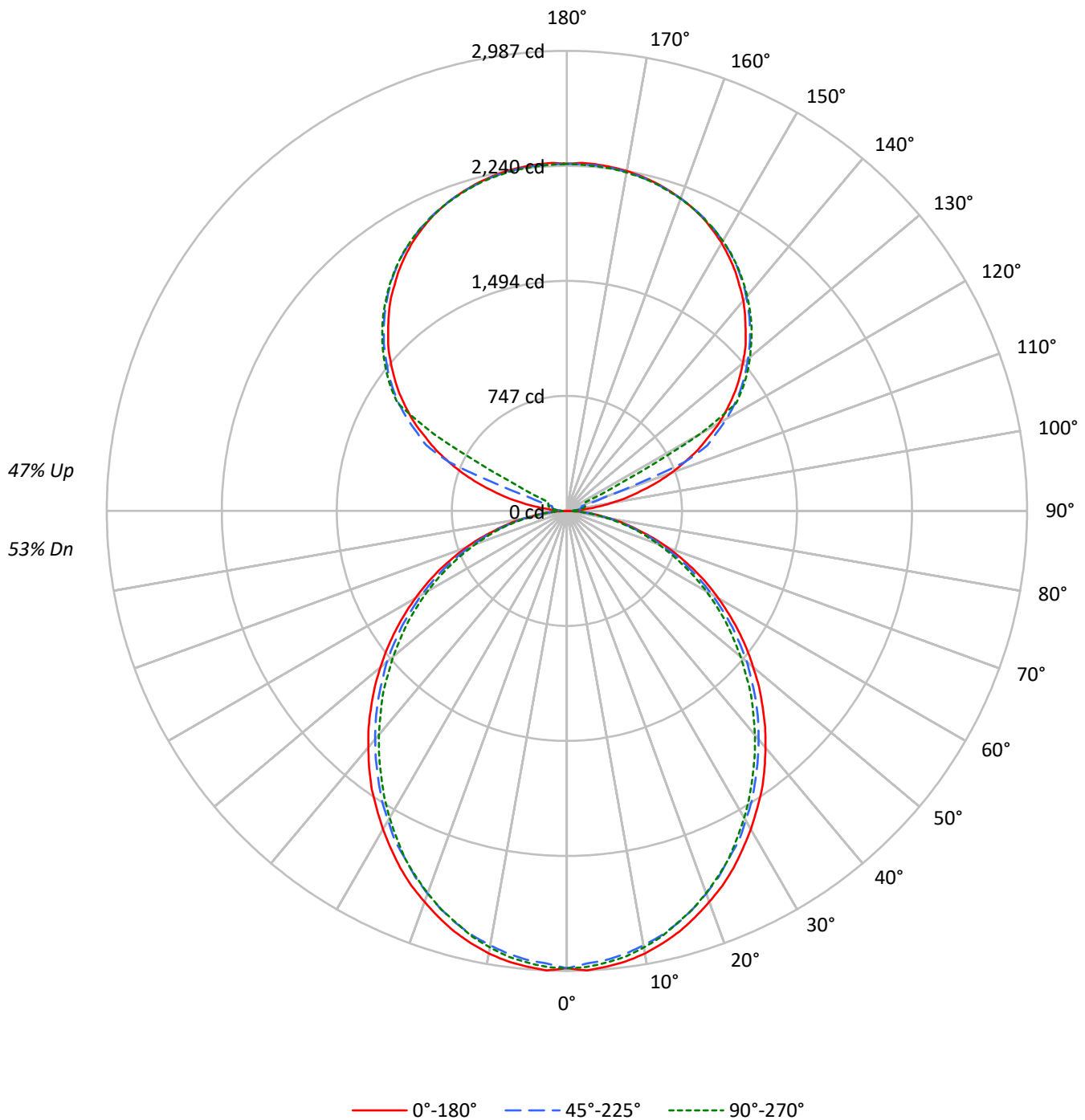
Lumens per Lamp: N/A
Luminaire Lumens: 14166.9 lumens
Efficiency: N/A
Efficacy: 110.1 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 3.06' x L: 3.06' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 128.7
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: P925593

CATALOG NUMBER: DFN2DIP-SQ3F0-080D070US950-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	108	108	108	108	100	100	100	100	85	85	85	72	72	72	59	59	59
1	99	94	90	87	91	87	84	81	75	72	70	63	61	60	52	51	50
2	90	82	76	71	83	76	71	66	65	61	58	55	52	50	46	44	42
3	82	72	65	59	76	67	61	56	58	53	49	49	45	42	41	38	36
4	75	64	56	50	69	60	53	47	51	46	42	44	40	36	37	33	31
5	69	57	49	43	63	53	46	41	46	40	36	39	35	31	33	30	27
6	63	51	43	37	59	48	41	35	41	36	31	35	31	28	30	26	24
7	59	46	38	33	54	43	36	31	38	32	28	32	28	24	27	24	21
8	54	42	34	29	50	39	32	27	34	29	25	30	25	22	25	22	19
9	51	38	31	26	47	36	29	25	31	26	22	27	23	20	23	20	17
10	47	35	28	23	44	33	26	22	29	24	20	25	21	18	21	18	16

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3403	3403	3403
5°	3406	3353	3377
10°	3376	3306	3330
15°	3324	3249	3257
20°	3255	3171	3183
25°	3186	3078	3098
30°	3100	2992	2989
35°	3019	2890	2874
40°	2919	2788	2765
45°	2819	2685	2653
50°	2709	2576	2523
55°	2595	2451	2404
60°	2465	2303	2267
65°	2323	2149	2106
70°	2142	1961	1932
75°	1893	1736	1770
80°	1591	1448	1462
85°	1120	960	958

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
Vertical Angle: 45°
Luminance: 2819 cd/sqm

TEST NUMBER: P925593

CATALOG NUMBER: DFN2DIP-SQ3F0-080D070US950-FLONL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	279.5	2.0
10°-20°	786.4	5.6
20°-30°	1155.7	8.2
30°-40°	1342.3	9.5
40°-50°	1340.6	9.5
50°-60°	1169.0	8.3
60°-70°	864.1	6.1
70°-80°	488.9	3.5
80°-90°	133.0	0.9
90°-100°	74.3	0.5
100°-110°	277.0	2.0
110°-120°	734.8	5.2
120°-130°	1218.6	8.6
130°-140°	1294.5	9.1
140°-150°	1203.1	8.5
150°-160°	967.2	6.8
160°-170°	623.3	4.4
170°-180°	214.5	1.5
0°-30°	2221.6	15.7
0°-40°	3563.9	25.2
0°-60°	6073.6	42.9
0°-90°	7559.6	53.4
90°-120°	1086.1	7.7
90°-150°	4802.2	33.9
90°-180°	6607.0	46.6
0°-180°	14166.9	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2970	2970	2970	2970	2970	
5°	2970	2958	2927	2950	2944	282
15°	2827	2810	2773	2784	2770	796
25°	2558	2536	2487	2493	2487	1177
35°	2207	2179	2133	2116	2102	1378
45°	1796	1776	1733	1702	1691	1386
55°	1359	1342	1308	1274	1259	1215
65°	917	900	871	845	831	906
75°	480	474	460	443	448	512
85°	117	114	112	103	100	130
90°	2	20	32	41	44	13
95°	106	52	64	72	70	125
105°	496	545	100	117	124	530
115°	938	965	1006	251	134	923
125°	1326	1347	1378	1390	1394	1182
135°	1641	1667	1681	1698	1694	1267
145°	1903	1902	1929	1941	1932	1190
155°	2096	2081	2100	2110	2097	966
165°	2208	2198	2203	2215	2203	624
175°	2259	2247	2250	2262	2246	215
180°	2254	2254	2254	2254	2254	

TEST NUMBER: P925593

CATALOG NUMBER: DFN2DIP-SQ3F0-080D070US950-FLLONL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2969.6	2969.6	2969.6	2969.6	2969.6
2.5°	2986.9	2972.7	2941.2	2969.6	2964.2
5°	2969.6	2958.4	2927.0	2949.7	2944.2
7.5°	2949.7	2932.7	2901.2	2924.2	2918.5
10°	2918.5	2898.4	2864.2	2886.9	2878.5
12.5°	2875.5	2858.5	2824.2	2838.4	2832.7
15°	2827.0	2810.0	2772.7	2784.2	2770.0
17.5°	2767.0	2750.0	2712.7	2727.0	2712.7
20°	2701.3	2684.3	2644.3	2652.8	2641.5
22.5°	2635.8	2610.0	2572.7	2572.7	2567.0
25°	2558.5	2535.8	2487.4	2492.8	2487.4
27.5°	2472.8	2452.8	2415.8	2407.3	2393.1
30°	2387.4	2364.3	2321.7	2313.2	2301.6
32.5°	2295.9	2278.9	2233.1	2215.9	2204.4
35°	2207.4	2178.9	2133.1	2115.9	2101.7
37.5°	2107.4	2081.6	2035.9	2015.9	2001.7
40°	2004.7	1981.6	1936.0	1910.5	1898.9
42.5°	1904.8	1881.7	1836.3	1807.4	1790.6
45°	1796.3	1776.3	1733.2	1702.0	1690.6
47.5°	1690.6	1670.5	1624.8	1593.3	1576.3
50°	1579.1	1564.8	1524.8	1484.8	1470.6
52.5°	1470.6	1450.6	1413.6	1382.2	1362.1
55°	1359.4	1342.1	1307.9	1273.7	1259.4
57.5°	1247.9	1233.7	1196.4	1162.2	1150.6
60°	1136.4	1125.2	1085.2	1053.7	1045.2
62.5°	1027.9	1008.0	979.5	951.0	939.5
65°	916.8	899.5	871.0	845.2	831.0
67.5°	802.5	788.0	762.5	742.6	731.1
70°	696.8	685.3	659.6	639.6	628.3
72.5°	588.3	576.9	562.6	542.6	534.1
75°	479.6	474.1	459.6	442.7	448.4
77.5°	382.6	371.1	365.4	356.9	348.4
80°	285.7	282.7	276.9	268.5	262.6
82.5°	194.2	194.2	191.5	179.9	179.9
85°	117.0	114.2	111.5	102.7	100.0
87.5°	51.5	45.8	40.0	31.5	28.5
90°	1.5	19.6	32.5	40.8	44.0
92.5°	40.8	34.2	39.1	42.5	44.0
95°	105.9	52.1	63.5	71.8	70.1
97.5°	190.7	57.1	83.1	88.1	89.7
100°	288.8	65.3	92.9	105.9	109.2
102.5°	396.2	393.1	96.3	114.1	119.1
105°	495.8	544.7	99.5	117.3	123.9
107.5°	611.5	652.2	102.8	120.7	127.3
110°	722.6	756.6	285.4	122.4	128.8



TEST NUMBER: P925593

CATALOG NUMBER: DFN2DIP-SQ3F0-080D070US950-FLLONL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	826.9	856.1	828.5	125.5	130.5
115°	937.7	965.4	1006.2	251.2	133.8
117.5°	1033.9	1066.5	1094.3	861.0	433.8
120°	1141.6	1166.0	1195.5	1215.0	994.8
122.5°	1232.8	1258.9	1291.7	1301.4	1303.1
125°	1325.8	1347.0	1378.1	1389.5	1394.3
127.5°	1410.6	1433.4	1458.0	1474.3	1475.8
130°	1490.5	1516.7	1534.5	1552.5	1551.0
132.5°	1572.1	1593.4	1611.2	1625.9	1624.4
135°	1640.6	1666.7	1681.3	1697.7	1694.5
137.5°	1712.2	1731.9	1748.3	1764.6	1759.7
140°	1782.4	1795.5	1813.4	1828.1	1819.9
142.5°	1841.2	1852.7	1873.8	1886.7	1878.6
145°	1903.2	1901.5	1929.2	1940.6	1932.5
147.5°	1956.8	1952.1	1979.7	1987.8	1981.5
150°	2009.1	1997.8	2023.9	2033.5	2025.4
152.5°	2053.1	2040.1	2064.6	2074.4	2063.0
155°	2095.6	2081.0	2100.5	2110.2	2097.3
157.5°	2129.8	2116.8	2131.5	2143.0	2129.8
160°	2159.3	2149.4	2159.3	2168.9	2157.5
162.5°	2185.2	2175.5	2183.6	2195.1	2180.4
165°	2208.0	2198.4	2203.2	2214.6	2203.2
167.5°	2226.1	2216.1	2221.2	2232.6	2218.0
170°	2240.8	2230.9	2234.2	2245.6	2230.9
172.5°	2250.5	2240.8	2244.1	2255.4	2240.8
175°	2258.6	2247.1	2250.5	2261.8	2245.6
177.5°	2261.8	2250.5	2252.2	2263.7	2248.9
180°	2253.7	2253.7	2253.7	2253.7	2253.7

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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	11.80	12.69	12.73	13.64	14.86	11.35	12.25	12.28	13.19	14.41
	3H	13.46	14.26	14.40	15.21	16.46	12.97	13.77	13.91	14.72	15.97
	4H	14.04	14.80	15.00	15.76	17.01	13.55	14.31	14.50	15.26	16.52
	6H	14.44	15.14	15.41	16.10	17.37	13.94	14.64	14.90	15.60	16.87
	8H	14.54	15.21	15.52	16.19	17.46	14.04	14.71	15.01	15.69	16.95
	12H	14.59	15.22	15.57	16.20	17.49	14.08	14.71	15.06	15.69	16.98
4H	2H	12.26	13.02	13.22	13.98	15.23	11.90	12.66	12.86	13.62	14.88
	3H	14.12	14.75	15.09	15.74	17.01	13.71	14.35	14.68	15.34	16.60
	4H	14.83	15.41	15.81	16.39	17.69	14.41	14.99	15.39	15.97	17.26
	6H	15.35	15.84	16.34	16.85	18.14	14.91	15.41	15.90	16.42	17.71
	8H	15.49	15.96	16.49	16.96	18.27	15.06	15.52	16.05	16.52	17.83
	12H	15.57	15.99	16.58	17.00	18.31	15.12	15.54	16.13	16.55	17.87
8H	4H	15.03	15.49	16.02	16.49	17.80	14.65	15.12	15.64	16.12	17.42
	6H	15.66	16.04	16.67	17.08	18.39	15.27	15.66	16.29	16.70	18.00
	8H	15.87	16.21	16.90	17.24	18.56	15.48	15.82	16.51	16.85	18.17
	12H	16.00	16.30	17.03	17.32	18.69	15.59	15.89	16.62	16.91	18.28
12H	4H	15.02	15.44	16.03	16.45	17.76	14.65	15.07	15.66	16.08	17.39
	6H	15.68	16.02	16.71	17.05	18.37	15.31	15.65	16.34	16.68	18.00
	8H	15.92	16.22	16.95	17.24	18.61	15.54	15.84	16.57	16.86	18.23