

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: P914683

Luminaire Tested: DFN2DIP-SQ3F0-080D070US927-RLLONL

Issue Date: 11/21/2024

**Test Information**

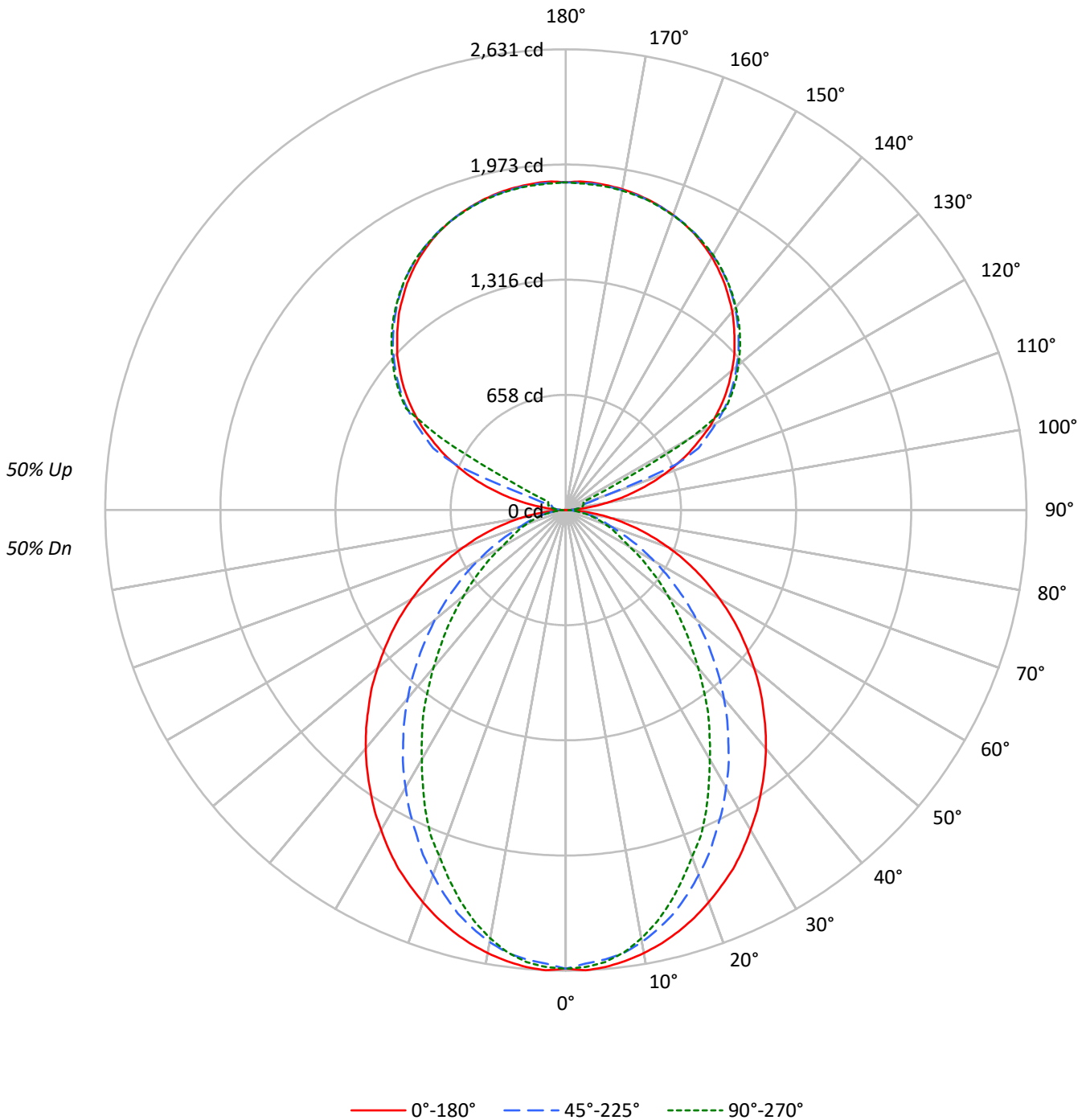
Test Method: LM-79-2019  
Report Number: P914683  
REPORT IS A COMBINATION OF REPORTS P901444 AND P898289  
Test Lab: INNOVATION CENTER  
Issue Date: 11/21/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: NEO-RAY  
Catalog Number: DFN2DIP-SQ3F0-080D070US927-RLONL  
Description: 3 foot, 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: 10876.6 lumens  
Efficiency: N/A  
Efficacy: 84.5 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: 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

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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	50	30	10	0
RCR																					
0	107	107	107	107	99	99	99	99	83	83	83	69	69	69	56	56	56	56	56	56	50
1	98	94	90	87	90	87	84	81	74	71	69	61	60	58	50	49	48	50	49	48	43
2	90	83	77	72	83	77	71	67	65	61	58	54	52	49	45	43	41	45	43	41	37
3	82	73	66	60	76	68	62	57	58	53	49	49	45	42	40	38	36	40	38	36	32
4	75	65	57	52	69	60	54	48	52	47	42	44	40	37	36	33	31	36	33	31	27
5	69	58	50	44	64	54	47	42	46	41	37	39	35	32	33	30	27	33	30	27	24
6	64	52	44	39	59	49	42	37	42	37	32	36	32	28	30	27	24	30	27	24	21
7	59	47	40	34	55	44	37	32	38	33	29	33	28	25	27	24	22	27	24	22	19
8	55	43	36	30	51	40	34	29	35	30	26	30	26	23	25	22	20	25	22	20	17
9	51	39	32	27	48	37	30	26	32	27	23	28	23	21	23	20	18	23	20	18	16
10	48	36	29	25	45	34	28	23	30	25	21	26	22	19	22	19	16	22	19	16	14

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

	0°	45°	90°
0°	3001	3001	3001
5°	3004	2952	2971
10°	2972	2892	2874
15°	2930	2794	2723
20°	2874	2661	2539
25°	2816	2511	2361
30°	2740	2358	2136
35°	2665	2194	1938
40°	2588	2024	1712
45°	2500	1836	1506
50°	2408	1646	1306
55°	2312	1444	1113
60°	2200	1232	915
65°	2072	1017	823
70°	1917	817	743
75°	1721	716	674
80°	1438	595	581
85°	976	387	431

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 2500 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	245.5	2.3
10°-20°	673.9	6.2
20°-30°	946.1	8.7
30°-40°	1031.3	9.5
40°-50°	947.9	8.7
50°-60°	744.4	6.8
60°-70°	484.5	4.5
70°-80°	249.4	2.3
80°-90°	67.0	0.6
90°-100°	61.7	0.6
100°-110°	230.0	2.1
110°-120°	610.1	5.6
120°-130°	1011.9	9.3
130°-140°	1074.9	9.9
140°-150°	999.0	9.2
150°-160°	803.2	7.4
160°-170°	517.5	4.8
170°-180°	178.1	1.6
0°-30°	1865.5	17.2
0°-40°	2896.8	26.6
0°-60°	4589.2	42.2
0°-90°	5390.1	49.6
90°-120°	901.9	8.3
90°-150°	3987.7	36.7
90°-180°	5487.0	50.4
0°-180°	10876.6	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2619	2619	2619	2619	2619	
5°	2619	2608	2576	2598	2591	248
15°	2491	2465	2385	2340	2316	702
25°	2261	2186	2029	1932	1896	1040
35°	1948	1828	1619	1470	1417	1220
45°	1593	1434	1185	1017	960	1230
55°	1211	1026	770	628	583	1082
65°	818	626	412	332	325	811
75°	436	270	190	173	171	461
85°	102	52	45	45	45	117
90°	1	16	27	34	36	10
95°	88	43	53	60	58	104
105°	412	452	83	97	103	440
115°	779	802	836	209	111	767
125°	1101	1119	1144	1154	1158	982
135°	1362	1384	1396	1410	1407	1052
145°	1580	1579	1602	1612	1605	988
155°	1740	1728	1744	1752	1742	802
165°	1834	1826	1830	1839	1830	518
175°	1876	1866	1869	1878	1865	178
180°	1871	1871	1871	1871	1871	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2619.3	2619.3	2619.3	2619.3	2619.3
2.5°	2631.1	2619.3	2593.1	2617.0	2612.2
5°	2619.3	2607.5	2576.5	2597.9	2590.8
7.5°	2597.9	2583.8	2550.6	2559.9	2548.1
10°	2569.4	2552.9	2505.6	2498.3	2484.2
12.5°	2534.0	2512.6	2448.5	2434.4	2408.2
15°	2491.3	2465.1	2384.6	2339.6	2315.9
17.5°	2441.4	2403.5	2303.9	2251.9	2213.8
20°	2384.6	2337.1	2218.7	2159.6	2107.2
22.5°	2323.0	2268.4	2130.9	2050.4	2014.9
25°	2261.4	2185.5	2029.0	1932.0	1896.2
27.5°	2187.9	2107.2	1934.2	1822.8	1768.2
30°	2109.7	2019.4	1829.9	1709.1	1645.0
32.5°	2033.8	1924.7	1730.5	1588.2	1528.8
35°	1948.5	1827.6	1619.1	1469.7	1417.4
37.5°	1865.5	1735.0	1514.7	1351.0	1291.9
40°	1777.8	1635.7	1405.6	1237.3	1175.7
42.5°	1687.7	1536.1	1296.6	1121.2	1062.0
45°	1592.9	1434.0	1185.3	1016.8	960.0
47.5°	1502.9	1334.7	1078.6	910.1	858.1
50°	1403.3	1235.1	974.3	810.6	761.0
52.5°	1306.0	1128.1	874.6	718.3	673.3
55°	1211.2	1026.3	770.3	628.2	583.2
57.5°	1114.1	924.5	678.0	545.3	507.2
60°	1014.5	824.9	580.7	459.9	422.0
62.5°	917.4	727.8	497.7	384.0	365.2
65°	817.8	625.7	412.4	332.0	324.6
67.5°	723.0	530.9	332.0	291.4	284.5
70°	623.4	438.6	274.9	251.2	241.7
72.5°	528.6	353.1	229.9	211.0	206.2
75°	436.1	270.1	189.6	173.0	170.8
77.5°	343.8	191.9	149.4	139.8	135.1
80°	258.3	137.6	113.7	104.3	104.3
82.5°	180.1	92.5	78.2	73.4	73.4
85°	101.9	52.0	45.0	45.0	45.0
87.5°	37.9	18.9	18.9	16.6	16.6
90°	1.3	16.2	27.0	33.9	36.5
92.5°	33.9	28.4	32.5	35.3	36.5
95°	87.9	43.3	52.8	59.7	58.2
97.5°	158.4	47.5	69.0	73.2	74.5
100°	239.8	54.2	77.2	87.9	90.7
102.5°	329.0	326.5	79.9	94.7	98.9
105°	411.7	452.3	82.6	97.4	102.9
107.5°	507.8	541.6	85.4	100.2	105.7
110°	600.0	628.3	237.0	101.6	106.9



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°
112.5°	686.7	710.9	687.9	104.2	108.4
115°	778.6	801.6	835.5	208.6	111.1
117.5°	858.6	885.6	908.7	714.9	360.2
120°	947.9	968.2	992.7	1008.9	826.1
122.5°	1023.7	1045.4	1072.6	1080.6	1082.0
125°	1100.9	1118.6	1144.3	1153.8	1157.8
127.5°	1171.3	1190.3	1210.7	1224.2	1225.5
130°	1237.7	1259.4	1274.2	1289.2	1287.9
132.5°	1305.4	1323.1	1337.9	1350.1	1348.8
135°	1362.3	1384.0	1396.1	1409.8	1407.1
137.5°	1421.8	1438.1	1451.8	1465.3	1461.3
140°	1480.0	1491.0	1505.8	1518.0	1511.2
142.5°	1528.9	1538.4	1555.9	1566.7	1560.0
145°	1580.4	1579.0	1601.9	1611.5	1604.7
147.5°	1624.9	1621.0	1643.9	1650.7	1645.4
150°	1668.3	1658.9	1680.6	1688.6	1681.9
152.5°	1704.9	1694.1	1714.4	1722.5	1713.1
155°	1740.1	1728.0	1744.2	1752.3	1741.5
157.5°	1768.5	1757.8	1770.0	1779.5	1768.5
160°	1793.0	1784.8	1793.0	1801.0	1791.5
162.5°	1814.6	1806.5	1813.2	1822.7	1810.5
165°	1833.5	1825.5	1829.5	1839.0	1829.5
167.5°	1848.5	1840.2	1844.4	1853.9	1841.7
170°	1860.7	1852.5	1855.2	1864.7	1852.5
172.5°	1868.8	1860.7	1863.4	1872.9	1860.7
175°	1875.5	1866.0	1868.8	1878.2	1864.7
177.5°	1878.2	1868.8	1870.2	1879.7	1867.4
180°	1871.4	1871.4	1871.4	1871.4	1871.4



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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	10.89	11.72	11.86	12.69	13.97	6.85	7.68	7.82	8.65	9.94
	3H	12.56	13.30	13.54	14.29	15.59	8.03	8.77	9.01	9.76	11.06
	4H	13.17	13.87	14.16	14.86	16.17	8.48	9.18	9.47	10.17	11.48
	6H	13.59	14.23	14.59	15.22	16.55	8.79	9.44	9.80	10.43	11.75
	8H	13.71	14.32	14.72	15.33	16.65	8.88	9.49	9.89	10.50	11.82
	12H	13.77	14.35	14.78	15.36	16.70	8.92	9.50	9.93	10.51	11.85
4H	2H	10.91	11.60	11.90	12.59	13.91	7.44	8.14	8.44	9.13	10.44
	3H	12.73	13.31	13.74	14.33	15.65	8.79	9.37	9.79	10.39	11.71
	4H	13.42	13.95	14.43	14.96	16.31	9.33	9.86	10.34	10.87	12.22
	6H	13.93	14.38	14.95	15.42	16.76	9.74	10.20	10.77	11.23	12.58
	8H	14.10	14.53	15.13	15.55	16.91	9.86	10.29	10.89	11.32	12.68
	12H	14.19	14.58	15.24	15.62	16.98	9.93	10.31	10.97	11.35	12.72
8H	4H	13.38	13.81	14.41	14.84	16.20	9.61	10.03	10.63	11.06	12.42
	6H	13.94	14.30	14.99	15.37	16.72	10.11	10.47	11.17	11.54	12.89
	8H	14.16	14.47	15.22	15.52	16.90	10.30	10.61	11.36	11.66	13.04
	12H	14.29	14.56	15.35	15.61	17.03	10.41	10.69	11.48	11.74	13.15
12H	4H	13.34	13.72	14.38	14.76	16.13	9.61	9.99	10.65	11.04	12.40
	6H	13.92	14.23	14.98	15.28	16.66	10.16	10.47	11.22	11.53	12.90
	8H	14.14	14.41	15.20	15.46	16.88	10.37	10.64	11.43	11.69	13.11