

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: P925383

Luminaire Tested: DFN2DIP-SQ2F0-060D070US950-RLLONL

Issue Date: 11/21/2024

**Test Information**

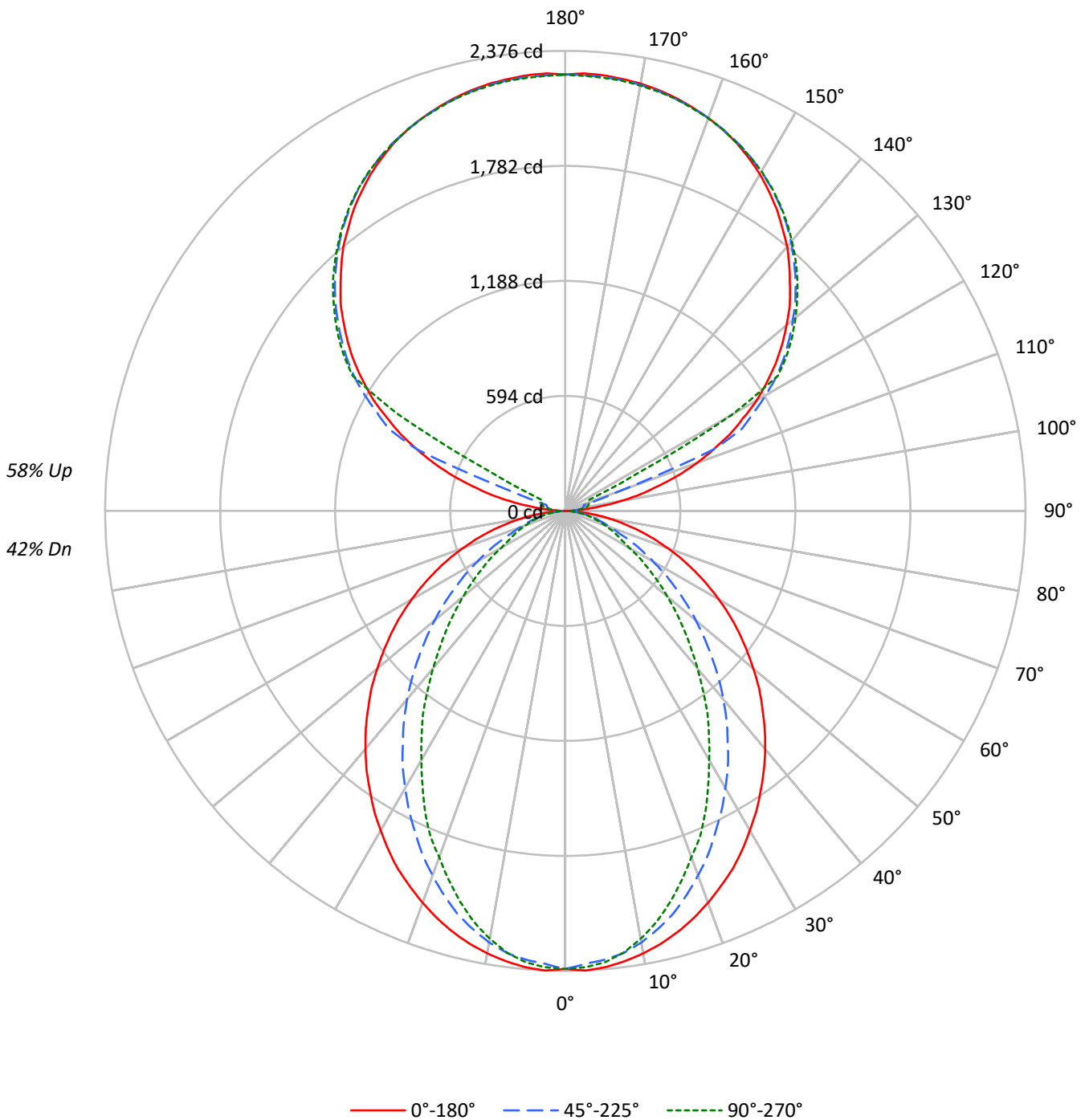
Test Method: LM-79-2019  
Report Number: P925383  
REPORT IS A COMBINATION OF REPORTS P901346 AND P898215  
Test Lab: INNOVATION CENTER  
Issue Date: 11/21/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: NEO-RAY  
Catalog Number: DFN2DIP-SQ2F0-060D070US950-RLLONL  
Description: 2 foot, 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: 11476.6 lumens  
Efficiency: N/A  
Efficacy: 104.8 lumens/watt  
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16  
Luminous Opening: Rectangular w/ Sides (W: 2.21' x L: 2.21' x H: 0.1')  
CIE Type: General Diffuse  
  
Input Watts (W): 109.5  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: 0.9781  
Total Harmonic Distortion (THDi): 0.075  
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				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	105	105	105	105	96	96	96	96	79	79	79	64	64	64	49	49	49	49	49	49	49	42
1	96	92	89	85	88	85	81	79	70	68	66	56	55	54	44	43	42	44	43	42	44	37
2	88	81	75	70	80	74	69	65	62	58	55	50	48	45	39	38	36	39	38	36	39	31
3	81	72	65	59	74	66	60	55	55	50	47	45	42	39	35	33	31	35	33	31	35	27
4	74	64	56	50	67	59	52	47	49	44	40	40	36	34	32	29	27	32	29	27	32	24
5	68	57	49	43	62	52	46	40	44	39	35	36	32	29	29	26	24	29	26	24	29	21
6	63	51	43	38	57	47	40	35	40	34	31	33	29	26	26	23	21	26	23	21	26	18
7	58	46	39	33	53	43	36	31	36	31	27	30	26	23	24	21	19	24	21	19	24	16
8	54	42	35	29	49	39	32	28	33	28	24	27	24	21	22	19	17	22	19	17	22	15
9	50	38	31	26	46	36	29	25	30	25	22	25	21	19	21	18	16	21	18	16	21	13
10	47	35	28	24	43	33	26	22	28	23	20	23	20	17	19	16	14	19	16	14	19	12

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

	0°	45°	90°
0°	5202	5202	5202
5°	5201	5108	5145
10°	5141	4997	4970
15°	5061	4820	4705
20°	4958	4583	4381
25°	4853	4318	4070
30°	4715	4047	3677
35°	4579	3757	3331
40°	4441	3459	2937
45°	4280	3129	2580
50°	4114	2797	2231
55°	3940	2444	1897
60°	3737	2077	1554
65°	3504	1704	1391
70°	3220	1357	1248
75°	2864	1174	1122
80°	2351	954	950
85°	1530	592	675

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 4280 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	221.7	1.9
10°-20°	608.7	5.3
20°-30°	854.5	7.4
30°-40°	931.5	8.1
40°-50°	856.2	7.5
50°-60°	672.4	5.9
60°-70°	437.7	3.8
70°-80°	225.3	2.0
80°-90°	61.5	0.5
90°-100°	74.3	0.6
100°-110°	277.0	2.4
110°-120°	734.8	6.4
120°-130°	1218.6	10.6
130°-140°	1294.5	11.3
140°-150°	1203.1	10.5
150°-160°	967.2	8.4
160°-170°	623.3	5.4
170°-180°	214.5	1.9
0°-30°	1684.9	14.7
0°-40°	2616.4	22.8
0°-60°	4144.9	36.1
0°-90°	4869.4	42.4
90°-120°	1086.1	9.5
90°-150°	4802.2	41.8
90°-180°	6607.0	57.6
0°-180°	11476.6	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2366	2366	2366	2366	2366	
5°	2366	2355	2327	2346	2340	224
15°	2250	2226	2154	2113	2092	634
25°	2042	1974	1833	1745	1713	939
35°	1760	1651	1462	1327	1280	1102
45°	1439	1295	1071	918	867	1111
55°	1094	927	696	567	527	978
65°	739	565	372	300	293	732
75°	394	244	171	156	154	417
85°	92	47	41	41	41	106
90°	2	20	32	41	44	11
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: P925383

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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2365.7	2365.7	2365.7	2365.7	2365.7
2.5°	2376.4	2365.7	2342.1	2363.6	2359.3
5°	2365.7	2355.0	2327.1	2346.5	2340.1
7.5°	2346.5	2333.7	2303.7	2312.1	2301.4
10°	2320.7	2305.7	2263.1	2256.5	2243.7
12.5°	2288.7	2269.4	2211.5	2198.8	2175.1
15°	2250.1	2226.4	2153.8	2113.1	2091.7
17.5°	2205.2	2170.8	2080.9	2033.8	1999.6
20°	2153.8	2110.8	2003.9	1950.5	1903.2
22.5°	2098.1	2048.8	1924.6	1851.9	1819.9
25°	2042.5	1973.9	1832.6	1745.0	1712.7
27.5°	1976.2	1903.2	1747.0	1646.3	1597.1
30°	1905.5	1824.0	1652.7	1543.7	1485.8
32.5°	1836.9	1738.4	1563.0	1434.4	1380.8
35°	1759.9	1650.7	1462.4	1327.4	1280.2
37.5°	1685.0	1567.0	1368.1	1220.3	1166.8
40°	1605.7	1477.4	1269.5	1117.5	1061.9
42.5°	1524.4	1387.4	1171.1	1012.6	959.2
45°	1438.7	1295.2	1070.6	918.3	867.0
47.5°	1357.4	1205.5	974.2	822.1	775.0
50°	1267.5	1115.5	880.0	732.1	687.4
52.5°	1179.5	1019.0	790.0	648.7	608.1
55°	1094.0	927.0	695.8	567.4	526.7
57.5°	1006.3	834.9	612.4	492.5	458.1
60°	916.3	745.1	524.5	415.5	381.1
62.5°	828.6	657.4	449.5	346.9	329.8
65°	738.7	565.1	372.5	299.8	293.3
67.5°	653.0	479.5	299.8	263.3	256.9
70°	563.1	396.1	248.2	227.0	218.3
72.5°	477.5	318.9	207.6	190.6	186.2
75°	393.9	243.9	171.2	156.3	154.3
77.5°	310.5	173.3	134.9	126.3	122.0
80°	233.3	124.2	102.7	94.3	94.3
82.5°	162.7	83.6	70.6	66.3	66.3
85°	92.0	47.0	40.6	40.6	40.6
87.5°	34.3	17.1	17.1	15.0	15.0
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



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**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	12.01	12.78	13.04	13.81	15.19	7.97	8.74	9.00	9.77	11.15
	3H	13.66	14.35	14.70	15.39	16.79	9.14	9.83	10.17	10.87	12.26
	4H	14.26	14.91	15.31	15.95	17.36	9.57	10.23	10.62	11.27	12.67
	6H	14.66	15.26	15.72	16.31	17.72	9.88	10.48	10.93	11.52	12.94
	8H	14.78	15.35	15.84	16.41	17.82	9.96	10.53	11.02	11.59	13.00
	12H	14.83	15.37	15.90	16.43	17.86	9.99	10.53	11.06	11.59	13.02
4H	2H	12.02	12.67	13.07	13.71	15.12	8.55	9.20	9.60	10.24	11.65
	3H	13.82	14.36	14.88	15.43	16.85	9.87	10.42	10.94	11.49	12.90
	4H	14.49	14.99	15.56	16.05	17.49	10.40	10.90	11.47	11.96	13.40
	6H	14.99	15.41	16.06	16.50	17.93	10.80	11.23	11.88	12.31	13.75
	8H	15.15	15.55	16.23	16.62	18.07	10.92	11.32	11.99	12.39	13.84
	12H	15.23	15.59	16.33	16.68	18.13	10.97	11.33	12.06	12.42	13.87
8H	4H	14.45	14.85	15.53	15.93	17.38	10.67	11.07	11.75	12.14	13.59
	6H	14.99	15.32	16.09	16.44	17.89	11.16	11.49	12.26	12.61	14.05
	8H	15.20	15.49	16.30	16.59	18.05	11.34	11.62	12.44	12.72	14.19
	12H	15.32	15.57	16.43	16.67	18.17	11.44	11.69	12.55	12.79	14.29
12H	4H	14.40	14.76	15.49	15.85	17.30	10.67	11.03	11.76	12.12	13.57
	6H	14.97	15.26	16.07	16.36	17.82	11.20	11.49	12.31	12.59	14.06
	8H	15.17	15.43	16.28	16.52	18.03	11.40	11.65	12.50	12.74	14.25