

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: P910437

Luminaire Tested: DFN2DIP-4P3F0-050D060US850-RLLONL

Issue Date: 11/21/2024

**Test Information**

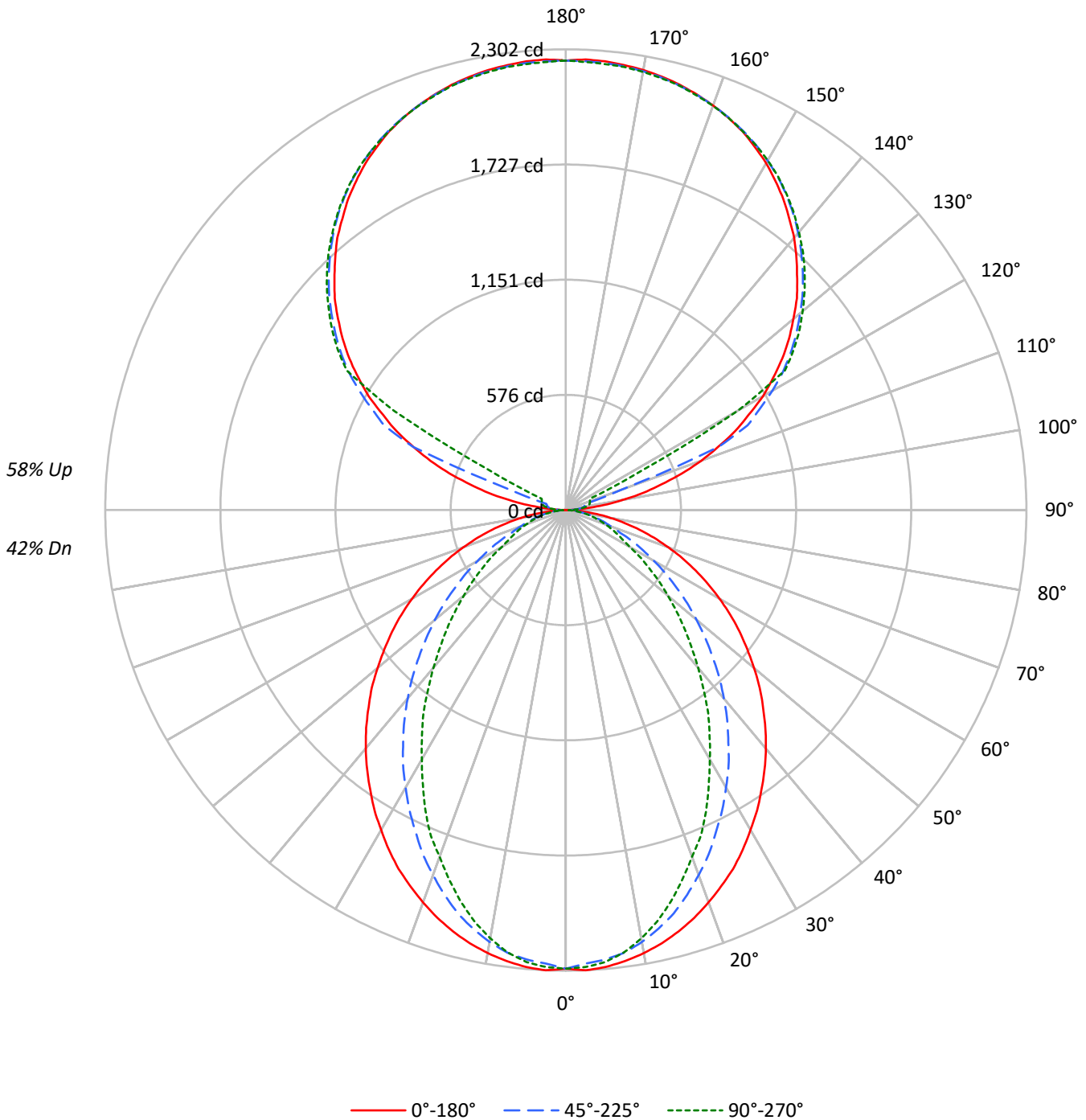
Test Method: LM-79-2019  
Report Number: P910437  
REPORT IS A COMBINATION OF REPORTS P900596 AND P897473  
Test Lab: INNOVATION CENTER  
Issue Date: 11/21/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: NEO-RAY  
Catalog Number: DFN2DIP-4P3F0-050D060US850-RLLONL  
Description: 3 foot, 90deg - 4way Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens  
Light Source: -  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 11300.7 lumens  
Efficiency: N/A  
Efficacy: 117.7 lumens/watt  
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16  
Luminous Opening: Rectangular w/ Sides (W: 3.07' x L: 3.07' x H: 0.1')  
CIE Type: General Diffuse  
  
Input Watts (W): 96  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: 0.9971  
Total Harmonic Distortion (THDi): 0.049  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 24 FT

TEST NUMBER: P910437  
CATALOG NUMBER: DFN2DIP-4P3F0-050D060US850-RLLONL

### Luminous Intensity Polar Plot





TEST NUMBER: P910437

CATALOG NUMBER: DFN2DIP-4P3F0-050D060US850-RLLONL

**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	63	63	63	49	49	49	49	49	49	42
1	96	92	89	85	88	84	81	78	70	67	65	56	55	53	43	43	42	42	42	42	36
2	88	81	75	70	80	74	69	65	61	58	55	50	47	45	39	37	36	36	36	36	31
3	81	72	65	59	73	66	60	55	55	50	46	44	41	39	35	33	31	31	31	31	27
4	74	64	56	50	67	58	52	47	49	44	40	40	36	33	31	29	27	27	27	27	23
5	68	57	49	43	62	52	45	40	44	39	35	36	32	29	28	26	24	24	24	24	20
6	63	51	43	38	57	47	40	35	39	34	30	32	29	26	26	23	21	21	21	21	18
7	58	46	38	33	53	43	36	31	36	31	27	30	26	23	24	21	19	19	19	19	16
8	54	42	34	29	49	39	32	27	33	28	24	27	23	20	22	19	17	17	17	17	15
9	50	38	31	26	46	35	29	25	30	25	22	25	21	18	20	17	15	15	15	15	13
10	47	35	28	23	43	33	26	22	28	23	19	23	19	17	19	16	14	14	14	14	12

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

	0°	45°	90°
0°	2612	2612	2612
5°	2614	2569	2586
10°	2587	2516	2501
15°	2549	2432	2370
20°	2501	2315	2210
25°	2451	2185	2055
30°	2384	2052	1859
35°	2319	1909	1687
40°	2253	1761	1490
45°	2176	1598	1311
50°	2096	1433	1136
55°	2012	1256	969
60°	1915	1072	797
65°	1804	886	716
70°	1668	711	647
75°	1498	623	587
80°	1252	518	506
85°	850	338	376

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 2176 cd/sqm



TEST NUMBER: P910437

CATALOG NUMBER: DFN2DIP-4P3F0-050D060US850-RLLONL

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	214.8	1.9
10°-20°	589.6	5.2
20°-30°	827.8	7.3
30°-40°	902.4	8.0
40°-50°	829.4	7.3
50°-60°	651.3	5.8
60°-70°	424.0	3.8
70°-80°	218.2	1.9
80°-90°	59.7	0.5
90°-100°	74.1	0.7
100°-110°	276.0	2.4
110°-120°	732.1	6.5
120°-130°	1214.2	10.7
130°-140°	1289.8	11.4
140°-150°	1198.7	10.6
150°-160°	963.8	8.5
160°-170°	621.0	5.5
170°-180°	213.7	1.9
<hr/>		
0°-30°	1632.2	14.4
0°-40°	2534.6	22.4
0°-60°	4015.3	35.5
0°-90°	4717.2	41.7
90°-120°	1082.2	9.6
90°-150°	4785.0	42.3
90°-180°	6583.0	58.3
0°-180°	11300.7	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2292	2292	2292	2292	2292	
5°	2292	2281	2254	2273	2267	217
15°	2180	2157	2086	2047	2026	614
25°	1979	1912	1775	1690	1659	910
35°	1705	1599	1417	1286	1240	1067
45°	1394	1255	1037	890	840	1076
55°	1060	898	674	550	510	947
65°	716	548	361	290	284	709
75°	382	236	166	151	149	404
85°	89	46	39	39	39	102
90°	2	20	32	41	44	11
95°	106	52	63	72	70	125
105°	494	543	99	117	124	528
115°	934	962	1003	250	133	920
125°	1321	1342	1373	1384	1389	1178
135°	1635	1661	1675	1692	1688	1263
145°	1896	1895	1922	1934	1926	1186
155°	2088	2074	2093	2103	2090	962
165°	2200	2190	2195	2207	2195	622
175°	2250	2239	2242	2254	2238	214
180°	2246	2246	2246	2246	2246	



TEST NUMBER: P910437

CATALOG NUMBER: DFN2DIP-4P3F0-050D060US850-RLLONL

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2291.7	2291.7	2291.7	2291.7	2291.7
2.5°	2302.1	2291.7	2268.9	2289.8	2285.5
5°	2291.7	2281.4	2254.4	2273.0	2266.9
7.5°	2273.0	2260.7	2231.6	2239.8	2229.4
10°	2248.2	2233.6	2192.3	2185.9	2173.5
12.5°	2217.1	2198.5	2142.4	2130.1	2107.1
15°	2179.7	2156.9	2086.5	2047.1	2026.4
17.5°	2136.2	2103.0	2015.8	1970.2	1937.0
20°	2086.5	2044.9	1941.2	1889.5	1843.7
22.5°	2032.6	1984.8	1864.5	1794.0	1763.0
25°	1978.6	1912.1	1775.3	1690.3	1659.1
27.5°	1914.4	1843.7	1692.3	1594.9	1547.2
30°	1845.9	1767.0	1601.1	1495.4	1439.3
32.5°	1779.5	1684.0	1514.1	1389.6	1337.7
35°	1704.9	1599.1	1416.6	1285.9	1240.2
37.5°	1632.2	1518.1	1325.4	1182.1	1130.4
40°	1555.5	1431.2	1229.8	1082.6	1028.7
42.5°	1476.7	1344.0	1134.5	980.9	929.2
45°	1393.8	1254.7	1037.0	889.6	839.8
47.5°	1314.9	1167.8	943.8	796.4	750.8
50°	1227.9	1080.6	852.5	709.2	665.8
52.5°	1142.7	987.1	765.3	628.5	589.1
55°	1059.8	898.0	673.9	549.6	510.3
57.5°	974.8	808.9	593.2	477.1	443.8
60°	887.6	721.7	508.0	402.5	369.2
62.5°	802.7	636.8	435.5	336.0	319.5
65°	715.5	547.5	360.9	290.4	284.1
67.5°	632.6	464.6	290.4	255.1	248.9
70°	545.5	383.7	240.5	219.8	211.5
72.5°	462.6	309.0	201.2	184.6	180.4
75°	381.6	236.3	165.9	151.4	149.4
77.5°	300.8	167.9	130.8	122.3	118.1
80°	226.0	120.3	99.5	91.3	91.3
82.5°	157.6	81.0	68.4	64.2	64.2
85°	89.2	45.6	39.4	39.4	39.4
87.5°	33.3	16.5	16.5	14.5	14.5
90°	1.6	19.5	32.4	40.7	43.8
92.5°	40.7	34.2	38.9	42.3	43.8
95°	105.6	51.9	63.3	71.6	69.9
97.5°	190.1	56.9	82.7	87.8	89.4
100°	287.7	65.0	92.6	105.6	108.8
102.5°	394.8	391.7	95.9	113.7	118.7
105°	493.9	542.7	99.1	116.9	123.5
107.5°	609.4	649.9	102.5	120.2	126.8
110°	720.0	753.9	284.5	122.0	128.3



TEST NUMBER: P910437

CATALOG NUMBER: DFN2DIP-4P3F0-050D060US850-RLLONL

**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°
112.5°	823.9	853.0	825.4	125.0	130.1
115°	934.3	961.9	1002.6	250.3	133.3
117.5°	1030.2	1062.6	1090.4	857.9	432.2
120°	1137.5	1161.8	1191.2	1210.6	991.2
122.5°	1228.3	1254.4	1287.0	1296.6	1298.4
125°	1321.0	1342.2	1373.1	1384.5	1389.2
127.5°	1405.5	1428.3	1452.8	1469.0	1470.5
130°	1485.2	1511.2	1529.0	1546.9	1545.4
132.5°	1566.5	1587.6	1605.4	1620.0	1618.5
135°	1634.8	1660.8	1675.3	1691.7	1688.3
137.5°	1706.1	1725.6	1742.0	1758.2	1753.4
140°	1776.0	1789.1	1806.9	1821.5	1813.4
142.5°	1834.6	1846.0	1867.1	1880.0	1871.9
145°	1896.4	1894.6	1922.2	1933.7	1925.6
147.5°	1949.8	1945.0	1972.6	1980.7	1974.4
150°	2002.0	1990.5	2016.6	2026.3	2018.2
152.5°	2045.8	2032.8	2057.1	2067.0	2055.5
155°	2088.0	2073.5	2093.0	2102.7	2089.7
157.5°	2122.2	2109.2	2123.8	2135.3	2122.2
160°	2151.5	2141.6	2151.5	2161.1	2149.8
162.5°	2177.3	2167.7	2175.7	2187.2	2172.5
165°	2200.1	2190.5	2195.3	2206.7	2195.3
167.5°	2218.0	2208.2	2213.2	2224.7	2209.9
170°	2232.7	2222.9	2226.2	2237.5	2222.9
172.5°	2242.4	2232.7	2236.0	2247.4	2232.7
175°	2250.5	2239.1	2242.4	2253.7	2237.5
177.5°	2253.7	2242.4	2244.1	2255.5	2240.8
180°	2245.6	2245.6	2245.6	2245.6	2245.6



TEST NUMBER: P910437  
 CATALOG NUMBER: DFN2DIP-4P3F0-050D060US850-RLLONL

**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	10.39	10.66	11.43	12.81	5.59	6.35	6.62	7.39	8.78
	3H	11.29	11.98	12.34	13.02	14.43	6.77	7.45	7.81	8.49	9.90
	4H	11.90	12.55	12.95	13.59	15.01	7.21	7.86	8.26	8.90	10.32
	6H	12.31	12.91	13.37	13.96	15.38	7.52	8.12	8.58	9.17	10.59
	8H	12.43	13.00	13.50	14.07	15.49	7.61	8.17	8.67	9.24	10.66
	12H	12.49	13.03	13.56	14.09	15.54	7.64	8.18	8.72	9.24	10.69
4H	2H	9.64	10.28	10.69	11.33	12.74	6.17	6.82	7.23	7.87	9.28
	3H	11.45	11.99	12.52	13.07	14.49	7.51	8.05	8.58	9.12	10.55
	4H	12.14	12.63	13.21	13.70	15.15	8.05	8.54	9.12	9.61	11.06
	6H	12.65	13.07	13.73	14.16	15.60	8.46	8.88	9.54	9.97	11.41
	8H	12.82	13.21	13.90	14.29	15.75	8.58	8.98	9.66	10.06	11.52
	12H	12.91	13.27	14.01	14.36	15.82	8.64	9.00	9.74	10.09	11.55
8H	4H	12.10	12.50	13.18	13.58	15.03	8.32	8.72	9.40	9.80	11.26
	6H	12.66	12.99	13.76	14.11	15.56	8.83	9.16	9.93	10.28	11.73
	8H	12.87	13.16	13.98	14.26	15.74	9.02	9.30	10.13	10.41	11.88
	12H	13.01	13.26	14.12	14.36	15.87	9.13	9.38	10.24	10.48	11.99
12H	4H	12.05	12.41	13.15	13.50	14.96	8.32	8.68	9.42	9.77	11.24
	6H	12.63	12.92	13.74	14.02	15.50	8.88	9.16	9.99	10.27	11.74
	8H	12.85	13.10	13.96	14.20	15.71	9.08	9.33	10.19	10.43	11.94