

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: P920386

Luminaire Tested: DFN2DIP-SQ4F0-080D080US935-RLLFLL

Issue Date: 11/21/2024

**Test Information**

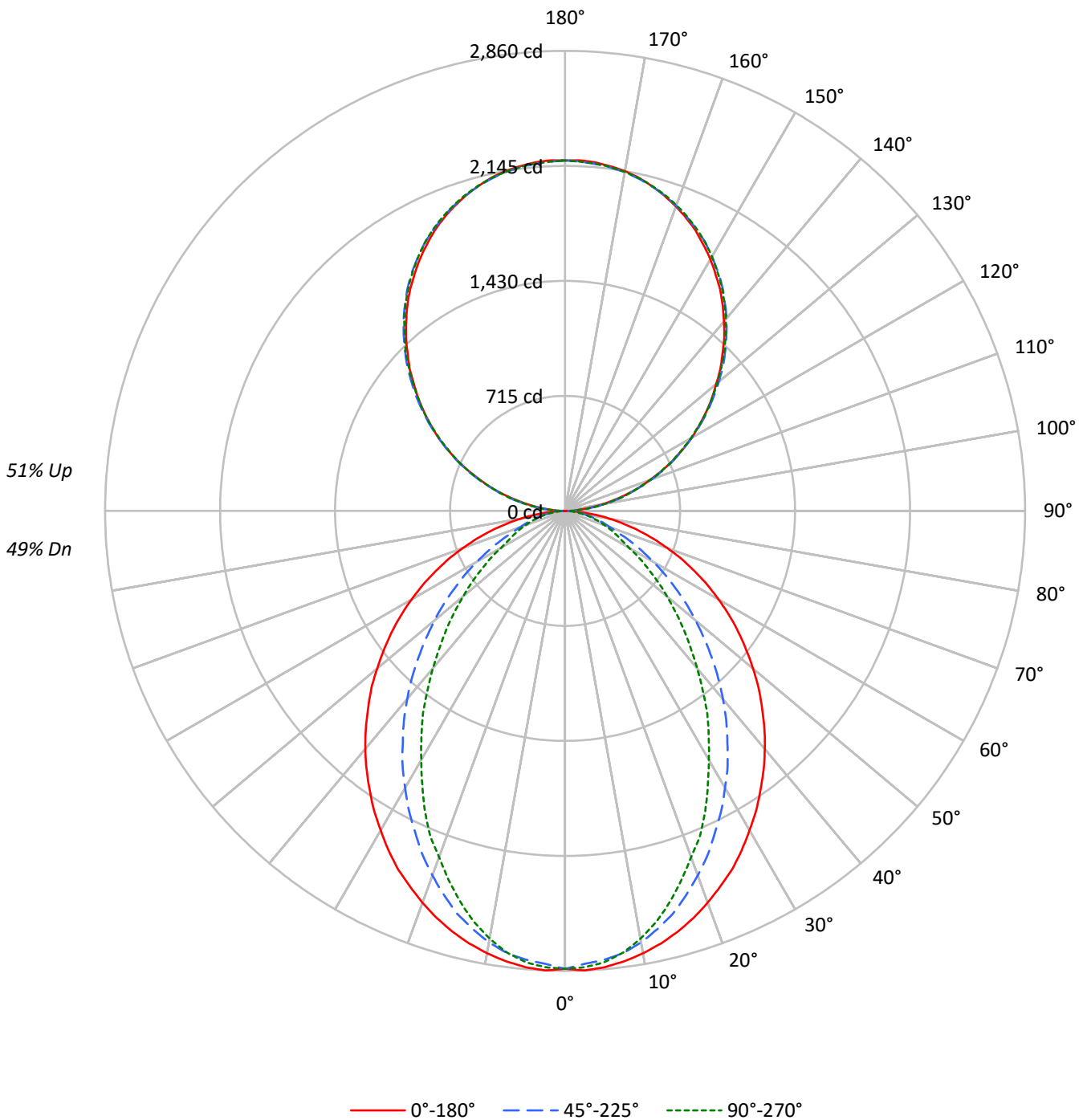
Test Method: LM-79-2019  
Report Number: P920386  
REPORT IS A COMBINATION OF REPORTS P900100 AND P896915  
Test Lab: INNOVATION CENTER  
Issue Date: 11/21/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: NEO-RAY  
Catalog Number: DFN2DIP-SQ4F0-080D080US935-RLLFLL  
Description: 4 foot, Square Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens  
Light Source: -  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 11950.7 lumens  
Efficiency: N/A  
Efficacy: 91.3 lumens/watt  
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16  
Luminous Opening: Rectangular w/ Sides (W: 3.92' x L: 3.92' x H: 0.1')  
CIE Type: General Diffuse  
  
Input Watts (W): 130.9  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: 0.9954  
Total Harmonic Distortion (THDi): 0.076  
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	107	107	107	107	99	99	99	99	83	83	83	68	68	68	55	55	55	49				49
1	98	94	90	87	90	87	84	81	73	71	69	61	59	58	50	49	48	42				42
2	90	83	77	72	82	76	71	67	65	61	58	54	51	49	44	42	41	36				36
3	82	73	66	60	75	68	61	57	58	53	49	48	45	42	40	37	35	31				31
4	75	65	57	51	69	60	54	48	51	46	42	43	40	36	36	33	31	27				27
5	69	58	50	44	64	54	47	42	46	41	37	39	35	32	32	29	27	24				24
6	64	52	44	39	59	49	42	37	42	36	32	35	31	28	30	26	24	21				21
7	59	47	40	34	55	44	37	32	38	33	29	32	28	25	27	24	22	19				19
8	55	43	36	30	51	40	33	29	35	29	26	30	26	23	25	22	20	17				17
9	51	39	32	27	47	37	30	26	32	27	23	27	23	20	23	20	18	16				16
10	48	36	29	24	44	34	28	23	30	24	21	25	21	19	22	18	16	14				14

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

	0°	45°	90°
0°	1998	1998	1998
5°	2001	1966	1979
10°	1981	1928	1915
15°	1954	1865	1816
20°	1918	1777	1694
25°	1880	1679	1577
30°	1831	1578	1428
35°	1782	1470	1296
40°	1733	1358	1146
45°	1675	1234	1010
50°	1616	1108	876
55°	1554	974	748
60°	1482	834	616
65°	1399	691	555
70°	1299	558	504
75°	1173	492	459
80°	991	415	400
85°	690	279	305

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 90°  
 Vertical Angle: 90°  
 Luminance: 1715 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	266.8	2.2
10°-20°	732.4	6.1
20°-30°	1028.3	8.6
30°-40°	1120.9	9.4
40°-50°	1030.3	8.6
50°-60°	809.1	6.8
60°-70°	526.6	4.4
70°-80°	271.1	2.3
80°-90°	75.4	0.6
90°-100°	134.8	1.1
100°-110°	428.3	3.6
110°-120°	733.0	6.1
120°-130°	964.0	8.1
130°-140°	1082.0	9.1
140°-150°	1061.0	8.9
150°-160°	890.1	7.4
160°-170°	590.3	4.9
170°-180°	206.3	1.7
0°-30°	2027.6	17.0
0°-40°	3148.5	26.3
0°-60°	4987.8	41.7
0°-90°	5861.0	49.0
90°-120°	1296.1	10.8
90°-150°	4403.1	36.8
90°-180°	6090.0	51.0
0°-180°	11950.7	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2847	2847	2847	2847	2847	
5°	2847	2834	2800	2824	2816	270
15°	2708	2679	2592	2543	2517	763
25°	2458	2375	2205	2100	2061	1130
35°	2118	1986	1760	1597	1540	1326
45°	1731	1559	1288	1105	1043	1337
55°	1316	1116	837	683	634	1176
65°	889	680	448	361	353	881
75°	474	294	206	188	186	501
85°	111	57	49	49	49	127
90°	2	24	64	60	62	12
95°	96	114	118	118	114	107
105°	395	401	405	408	408	417
115°	736	746	743	741	736	728
125°	1070	1086	1081	1075	1073	956
135°	1384	1404	1408	1406	1401	1070
145°	1680	1693	1704	1706	1698	1050
155°	1921	1926	1932	1941	1935	884
165°	2090	2088	2088	2101	2092	590
175°	2174	2169	2165	2178	2167	207
180°	2178	2178	2178	2178	2178	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2846.8	2846.8	2846.8	2846.8	2846.8
2.5°	2859.6	2846.8	2818.4	2844.3	2839.1
5°	2846.8	2834.0	2800.3	2823.6	2815.9
7.5°	2823.6	2808.2	2772.2	2782.3	2769.4
10°	2792.6	2774.7	2723.3	2715.3	2700.0
12.5°	2754.2	2730.9	2661.2	2645.8	2617.4
15°	2707.7	2679.3	2591.8	2542.9	2517.1
17.5°	2653.5	2612.3	2504.0	2447.5	2406.1
20°	2591.8	2540.1	2411.4	2347.2	2290.3
22.5°	2524.8	2465.5	2316.0	2228.5	2189.9
25°	2457.8	2375.3	2205.3	2099.8	2061.0
27.5°	2378.0	2290.3	2102.2	1981.2	1921.8
30°	2293.0	2194.9	1988.8	1857.6	1787.9
32.5°	2210.4	2091.9	1880.8	1726.1	1661.6
35°	2117.8	1986.3	1759.7	1597.4	1540.5
37.5°	2027.6	1885.8	1646.3	1468.3	1404.1
40°	1932.3	1777.8	1527.7	1344.8	1277.8
42.5°	1834.4	1669.6	1409.3	1218.6	1154.3
45°	1731.3	1558.6	1288.2	1105.1	1043.4
47.5°	1633.5	1450.6	1172.3	989.2	932.6
50°	1525.2	1342.4	1058.9	881.0	827.1
52.5°	1419.4	1226.1	950.6	780.7	731.8
55°	1316.4	1115.5	837.2	682.8	633.9
57.5°	1210.9	1004.8	736.9	592.6	551.3
60°	1102.6	896.6	631.1	499.9	458.7
62.5°	997.1	791.0	541.0	417.4	396.9
65°	888.9	680.0	448.2	360.8	352.8
67.5°	785.8	577.0	360.8	316.8	309.2
70°	677.6	476.7	298.8	273.0	262.7
72.5°	574.5	383.7	249.9	229.4	224.1
75°	474.0	293.6	206.1	188.0	185.6
77.5°	373.7	208.5	162.4	152.0	146.8
80°	280.7	149.6	123.6	113.4	113.4
82.5°	195.7	100.6	85.0	79.8	79.8
85°	110.7	56.6	48.9	48.9	48.9
87.5°	41.2	20.5	20.5	18.1	18.1
90°	2.0	23.7	64.4	60.4	62.4
92.5°	40.7	55.2	57.2	59.1	59.1
95°	95.9	114.3	117.5	117.5	114.3
97.5°	159.6	176.7	183.9	183.9	183.9
100°	233.2	248.2	253.5	253.5	251.5
102.5°	310.6	321.8	329.0	331.0	329.0
105°	395.4	400.6	404.6	407.9	407.9
107.5°	479.4	487.3	487.3	488.6	479.4
110°	560.9	571.4	571.4	571.4	566.1



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°
112.5°	648.8	660.0	658.1	652.8	648.8
115°	735.6	746.1	742.8	740.8	735.6
117.5°	821.6	836.0	826.8	821.6	816.3
120°	908.3	922.7	908.3	908.3	902.3
122.5°	987.0	1005.5	996.3	991.0	987.0
125°	1069.8	1086.2	1081.0	1075.0	1073.1
127.5°	1150.6	1171.0	1163.7	1155.9	1150.6
130°	1226.1	1249.7	1246.5	1242.6	1235.4
132.5°	1310.9	1329.2	1330.6	1321.4	1316.1
135°	1383.7	1404.1	1408.1	1406.1	1400.8
137.5°	1465.2	1481.6	1484.9	1483.6	1475.7
140°	1536.8	1553.2	1562.4	1562.4	1555.1
142.5°	1610.3	1626.8	1632.0	1634.0	1626.8
145°	1680.0	1693.1	1703.6	1705.6	1698.3
147.5°	1742.3	1758.8	1766.6	1770.0	1762.7
150°	1806.7	1817.8	1825.1	1831.0	1825.1
152.5°	1863.8	1875.0	1884.2	1891.4	1884.2
155°	1921.0	1926.2	1932.2	1941.3	1935.4
157.5°	1970.2	1974.2	1977.5	1990.5	1981.4
160°	2014.2	2018.2	2020.2	2031.3	2023.4
162.5°	2054.9	2054.9	2056.9	2069.4	2060.2
165°	2089.7	2087.7	2087.7	2100.9	2091.7
167.5°	2121.2	2115.4	2115.4	2128.5	2119.3
170°	2144.9	2139.7	2137.7	2150.9	2139.7
172.5°	2161.4	2156.1	2154.1	2167.2	2156.1
175°	2174.5	2169.2	2165.2	2178.4	2167.2
177.5°	2181.7	2176.4	2172.5	2183.7	2172.5
180°	2178.4	2178.4	2178.4	2178.4	2178.4



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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	9.47	10.29	10.44	11.28	12.56	5.43	6.25	6.40	7.24	8.52
	3H	11.15	11.89	12.14	12.88	14.19	6.62	7.36	7.60	8.35	9.66
	4H	11.76	12.46	12.76	13.45	14.77	7.07	7.77	8.07	8.76	10.08
	6H	12.19	12.83	13.20	13.83	15.16	7.39	8.03	8.40	9.03	10.36
	8H	12.32	12.93	13.33	13.94	15.27	7.48	8.09	8.50	9.11	10.43
	12H	12.38	12.96	13.40	13.97	15.32	7.53	8.11	8.54	9.11	10.46
4H	2H	9.49	10.18	10.49	11.18	12.50	6.03	6.72	7.03	7.72	9.04
	3H	11.32	11.90	12.33	12.92	14.25	7.38	7.96	8.39	8.98	10.31
	4H	12.02	12.55	13.04	13.56	14.92	7.93	8.46	8.95	9.47	10.83
	6H	12.54	12.99	13.57	14.03	15.38	8.35	8.80	9.38	9.84	11.19
	8H	12.71	13.14	13.74	14.17	15.54	8.48	8.90	9.51	9.93	11.30
	12H	12.81	13.19	13.86	14.24	15.61	8.54	8.92	9.59	9.97	11.34
8H	4H	11.98	12.41	13.02	13.44	14.81	8.21	8.63	9.24	9.67	11.03
	6H	12.56	12.91	13.61	13.98	15.34	8.73	9.08	9.78	10.15	11.52
	8H	12.77	13.08	13.84	14.14	15.52	8.92	9.23	9.98	10.29	11.67
	12H	12.92	13.19	13.98	14.24	15.67	9.04	9.31	10.11	10.36	11.79
12H	4H	11.94	12.32	12.98	13.37	14.74	8.22	8.60	9.26	9.64	11.02
	6H	12.53	12.84	13.59	13.90	15.28	8.78	9.09	9.84	10.15	11.53
	8H	12.75	13.02	13.82	14.08	15.50	8.99	9.26	10.06	10.32	11.74