

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: P919905

Luminaire Tested: DFN2DIP-SQ2F0-050D080US935-FLLONL

Issue Date: 11/21/2024

**Test Information**

Test Method: LM-79-2019  
Report Number: P919905  
REPORT IS A COMBINATION OF REPORTS P901355 AND P898215  
Test Lab: INNOVATION CENTER  
Issue Date: 11/21/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: NEO-RAY  
Catalog Number: DFN2DIP-SQ2F0-050D080US935-FLLONL  
Description: 2 foot, Square Define Geo, with Direct Frosted Lens, Indirect Open No Lens  
Light Source: -  
Ballast/Driver: -

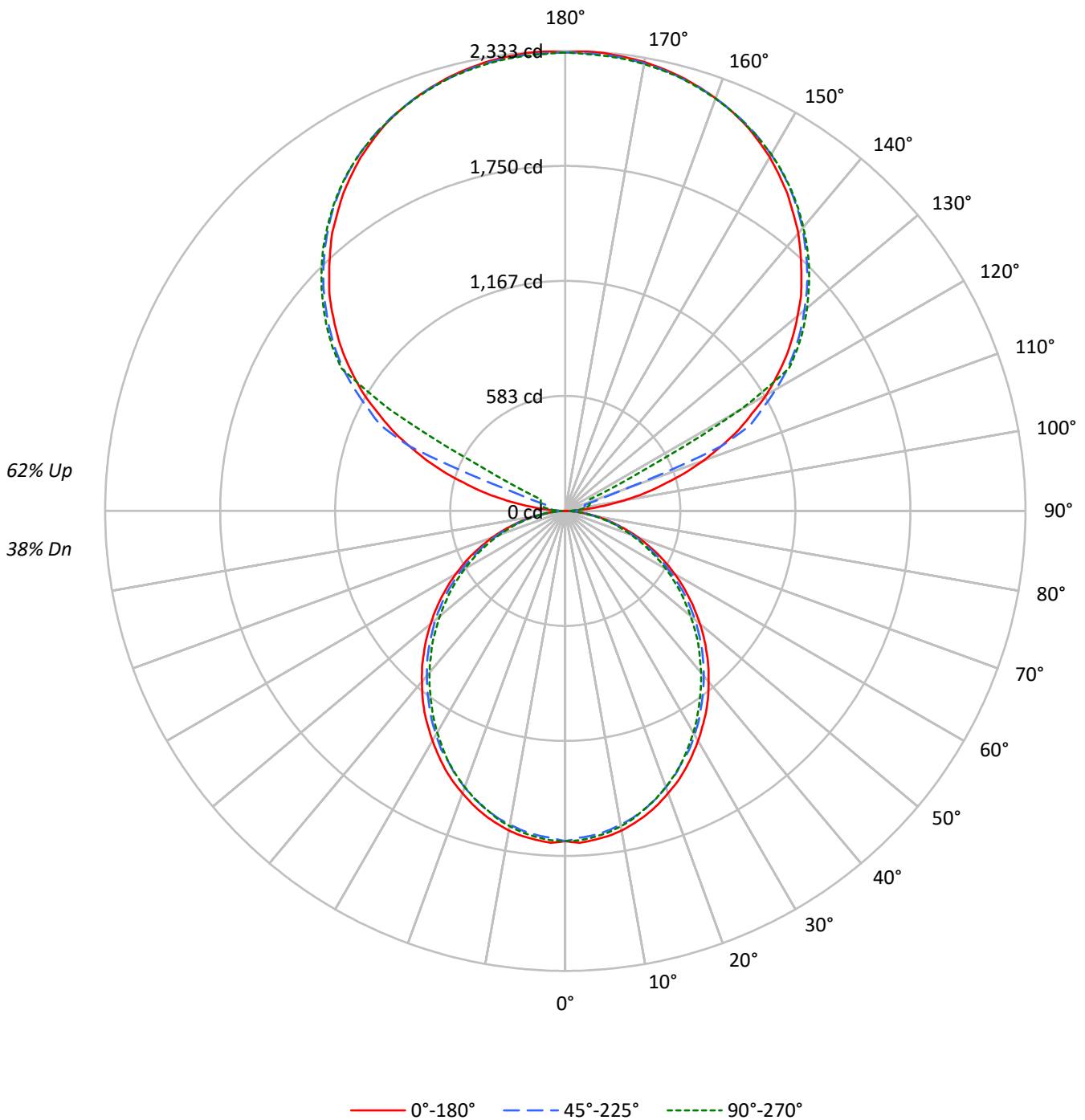
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 11081.0 lumens  
Efficiency: N/A  
Efficacy: 101.5 lumens/watt  
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29  
Luminous Opening: Rectangular w/ Sides (W: 2.21' x L: 2.21' x H: 0.1')  
CIE Type: Semi-Indirect

Input Watts (W): 109.2  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: 0.996  
Total Harmonic Distortion (THDi): 0.064  
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	104	104	104	104	95	95	95	95	77	77	77	61	61	61	46	46	46	38				38
1	95	91	87	84	86	83	80	77	67	65	63	53	52	50	40	39	38	32				32
2	87	79	73	68	78	72	67	63	59	55	52	47	44	42	35	34	32	27				27
3	79	70	63	57	71	64	57	52	52	48	44	41	38	36	31	29	28	23				23
4	72	62	54	48	65	56	50	44	46	41	37	37	33	30	28	26	24	20				20
5	66	55	47	41	60	50	43	38	41	36	32	33	29	26	25	23	21	17				17
6	61	49	41	36	55	45	38	33	37	32	28	30	26	23	23	20	18	15				15
7	56	44	36	31	51	41	34	29	34	28	25	27	23	20	21	18	16	13				13
8	52	40	33	27	47	37	30	25	31	25	22	25	21	18	19	16	14	12				12
9	49	37	29	24	44	34	27	23	28	23	19	23	19	16	18	15	13	11				11
10	45	33	26	22	41	31	25	20	26	21	17	21	17	15	16	14	12	10				10

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

	0°	45°	90°
0°	3683	3683	3683
5°	3683	3624	3651
10°	3647	3567	3597
15°	3587	3500	3514
20°	3508	3411	3430
25°	3429	3305	3334
30°	3332	3207	3213
35°	3240	3091	3085
40°	3127	2975	2962
45°	3015	2858	2837
50°	2891	2734	2693
55°	2761	2592	2558
60°	2614	2424	2405
65°	2453	2248	2223
70°	2248	2034	2027
75°	1966	1778	1839
80°	1625	1452	1494
85°	1098	917	938

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 3015 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	157.7	1.4
10°-20°	443.6	4.0
20°-30°	651.9	5.9
30°-40°	757.2	6.8
40°-50°	756.2	6.8
50°-60°	659.4	6.0
60°-70°	487.4	4.4
70°-80°	275.8	2.5
80°-90°	76.9	0.7
90°-100°	76.7	0.7
100°-110°	285.7	2.6
110°-120°	757.9	6.8
120°-130°	1256.9	11.3
130°-140°	1335.2	12.0
140°-150°	1240.9	11.2
150°-160°	997.6	9.0
160°-170°	642.8	5.8
170°-180°	221.3	2.0
0°-30°	1253.2	11.3
0°-40°	2010.3	18.1
0°-60°	3425.9	30.9
0°-90°	4266.0	38.5
90°-120°	1120.2	10.1
90°-150°	4953.3	44.7
90°-180°	6815.0	61.5
0°-180°	11081.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1675	1675	1675	1675	1675	
5°	1675	1669	1651	1664	1661	159
15°	1595	1585	1564	1570	1562	449
25°	1443	1430	1403	1406	1403	664
35°	1245	1229	1203	1194	1186	778
45°	1013	1002	978	960	954	782
55°	767	757	738	718	710	686
65°	517	507	491	477	469	511
75°	270	267	259	250	253	289
85°	66	64	63	58	56	74
90°	2	20	34	42	45	10
95°	109	54	66	74	72	129
105°	511	562	103	121	128	546
115°	967	996	1038	259	138	952
125°	1367	1389	1421	1433	1438	1220
135°	1692	1719	1734	1751	1748	1307
145°	1963	1961	1990	2002	1993	1228
155°	2161	2146	2167	2177	2163	996
165°	2278	2268	2272	2284	2272	643
175°	2330	2318	2321	2333	2316	222
180°	2325	2325	2325	2325	2325	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1675.1	1675.1	1675.1	1675.1	1675.1
2.5°	1684.8	1676.8	1659.1	1675.1	1672.1
5°	1675.1	1668.8	1651.0	1663.8	1660.8
7.5°	1663.8	1654.2	1636.5	1649.5	1646.2
10°	1646.2	1634.9	1615.7	1628.4	1623.7
12.5°	1621.9	1612.4	1593.1	1601.1	1597.8
15°	1594.6	1585.0	1564.0	1570.5	1562.5
17.5°	1560.7	1551.2	1530.2	1538.2	1530.2
20°	1523.7	1514.2	1491.6	1496.3	1490.0
22.5°	1486.8	1472.2	1451.2	1451.2	1447.9
25°	1443.2	1430.4	1403.0	1406.1	1403.0
27.5°	1394.8	1383.5	1362.7	1357.9	1349.9
30°	1346.6	1333.7	1309.6	1304.8	1298.3
32.5°	1295.0	1285.5	1259.6	1249.9	1243.5
35°	1245.1	1229.1	1203.2	1193.5	1185.5
37.5°	1188.7	1174.2	1148.4	1137.1	1129.1
40°	1130.8	1117.8	1092.0	1077.6	1071.2
42.5°	1074.4	1061.4	1035.8	1019.5	1010.0
45°	1013.2	1001.9	977.7	960.1	953.6
47.5°	953.6	942.3	916.5	898.7	889.2
50°	890.7	882.7	860.1	837.6	829.5
52.5°	829.5	818.2	797.4	779.6	768.4
55°	766.8	757.1	737.7	718.4	710.4
57.5°	703.9	695.9	674.9	655.6	649.0
60°	641.0	634.7	612.2	594.3	589.6
62.5°	579.9	568.6	552.5	536.4	529.9
65°	517.1	507.4	491.3	476.8	468.7
67.5°	452.7	444.5	430.2	418.9	412.3
70°	393.0	386.6	372.0	360.8	354.5
72.5°	331.9	325.4	317.4	306.1	301.3
75°	270.5	267.4	259.2	249.7	253.0
77.5°	215.9	209.3	206.1	201.3	196.6
80°	161.2	159.5	156.2	151.4	148.2
82.5°	109.5	109.5	108.0	101.5	101.5
85°	66.0	64.4	62.9	57.9	56.4
87.5°	29.0	25.8	22.6	17.7	16.1
90°	1.6	20.1	33.6	42.1	45.4
92.5°	42.1	35.4	40.4	43.7	45.4
95°	109.3	53.7	65.5	74.1	72.3
97.5°	196.7	58.9	85.7	90.9	92.5
100°	297.8	67.3	95.9	109.3	112.6
102.5°	408.7	405.4	99.3	117.6	122.9
105°	511.3	561.9	102.6	121.1	127.9
107.5°	630.8	672.7	106.1	124.4	131.2
110°	745.3	780.4	294.5	126.2	132.9



TEST NUMBER: P919905

CATALOG NUMBER: DFN2DIP-SQ2F0-050D080US935-FLLONL

**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°
112.5°	852.9	883.0	854.5	129.4	134.7
115°	967.2	995.7	1037.8	259.1	138.0
117.5°	1066.4	1100.0	1128.8	888.0	447.5
120°	1177.5	1202.6	1233.0	1253.2	1026.1
122.5°	1271.5	1298.6	1332.3	1342.3	1344.1
125°	1367.4	1389.4	1421.3	1433.1	1438.1
127.5°	1454.9	1478.5	1503.9	1520.6	1522.2
130°	1537.4	1564.3	1582.8	1601.4	1599.7
132.5°	1621.5	1643.5	1661.9	1677.1	1675.4
135°	1692.2	1719.2	1734.1	1751.2	1747.7
137.5°	1766.2	1786.3	1803.3	1820.1	1815.1
140°	1838.4	1852.0	1870.4	1885.6	1877.1
142.5°	1899.2	1910.9	1932.7	1946.1	1937.7
145°	1963.1	1961.3	1989.9	2001.6	1993.2
147.5°	2018.4	2013.4	2041.9	2050.4	2043.8
150°	2072.3	2060.5	2087.5	2097.5	2089.1
152.5°	2117.7	2104.3	2129.4	2139.7	2127.9
155°	2161.4	2146.5	2166.6	2176.6	2163.3
157.5°	2196.7	2183.4	2198.6	2210.4	2196.7
160°	2227.1	2217.0	2227.1	2237.1	2225.3
162.5°	2253.9	2243.9	2252.3	2264.1	2248.9
165°	2277.5	2267.5	2272.5	2284.2	2272.5
167.5°	2296.0	2285.9	2291.0	2302.8	2287.7
170°	2311.3	2301.0	2304.5	2316.3	2301.0
172.5°	2321.3	2311.3	2314.6	2326.4	2311.3
175°	2329.6	2317.8	2321.3	2333.0	2316.3
177.5°	2333.0	2321.3	2323.0	2334.8	2319.6
180°	2324.6	2324.6	2324.6	2324.6	2324.6



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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	10.52	11.29	11.57	12.34	13.77	10.08	10.84	11.13	11.90	13.32
	3H	12.15	12.84	13.21	13.90	15.35	11.66	12.35	12.72	13.41	14.86
	4H	12.72	13.38	13.80	14.44	15.89	12.23	12.88	13.30	13.95	15.40
	6H	13.10	13.70	14.18	14.77	16.24	12.60	13.20	13.69	14.27	15.74
	8H	13.20	13.77	14.28	14.85	16.31	12.70	13.27	13.78	14.35	15.81
	12H	13.24	13.78	14.33	14.86	16.34	12.73	13.27	13.82	14.35	15.83
4H	2H	10.96	11.61	12.04	12.68	14.13	10.60	11.25	11.68	12.32	13.77
	3H	12.79	13.34	13.88	14.43	15.89	12.39	12.93	13.47	14.02	15.49
	4H	13.49	13.99	14.58	15.07	16.56	13.06	13.56	14.15	14.65	16.13
	6H	13.98	14.41	15.08	15.51	16.99	13.55	13.98	14.65	15.08	16.56
	8H	14.12	14.52	15.22	15.61	17.11	13.68	14.08	14.78	15.18	16.67
	12H	14.18	14.54	15.29	15.65	17.15	13.73	14.09	14.84	15.20	16.70
8H	4H	13.67	14.06	14.76	15.16	16.66	13.29	13.69	14.39	14.79	16.28
	6H	14.27	14.60	15.39	15.74	17.23	13.88	14.21	15.00	15.35	16.85
	8H	14.48	14.76	15.60	15.89	17.40	14.08	14.37	15.21	15.49	17.01
	12H	14.59	14.84	15.72	15.96	17.51	14.18	14.43	15.31	15.55	17.10
12H	4H	13.64	14.01	14.76	15.12	16.62	13.27	13.64	14.39	14.75	16.25
	6H	14.29	14.58	15.42	15.70	17.22	13.92	14.21	15.05	15.33	16.84
	8H	14.51	14.77	15.65	15.89	17.44	14.13	14.39	15.26	15.51	17.06