

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: P919953

Luminaire Tested: DFN2DIP-SQ2F0-070D080US935-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P919953
REPORT IS A COMBINATION OF REPORTS P901359 AND P898215
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ2F0-070D080US935-FLLONL
Description: 2 foot, Square Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

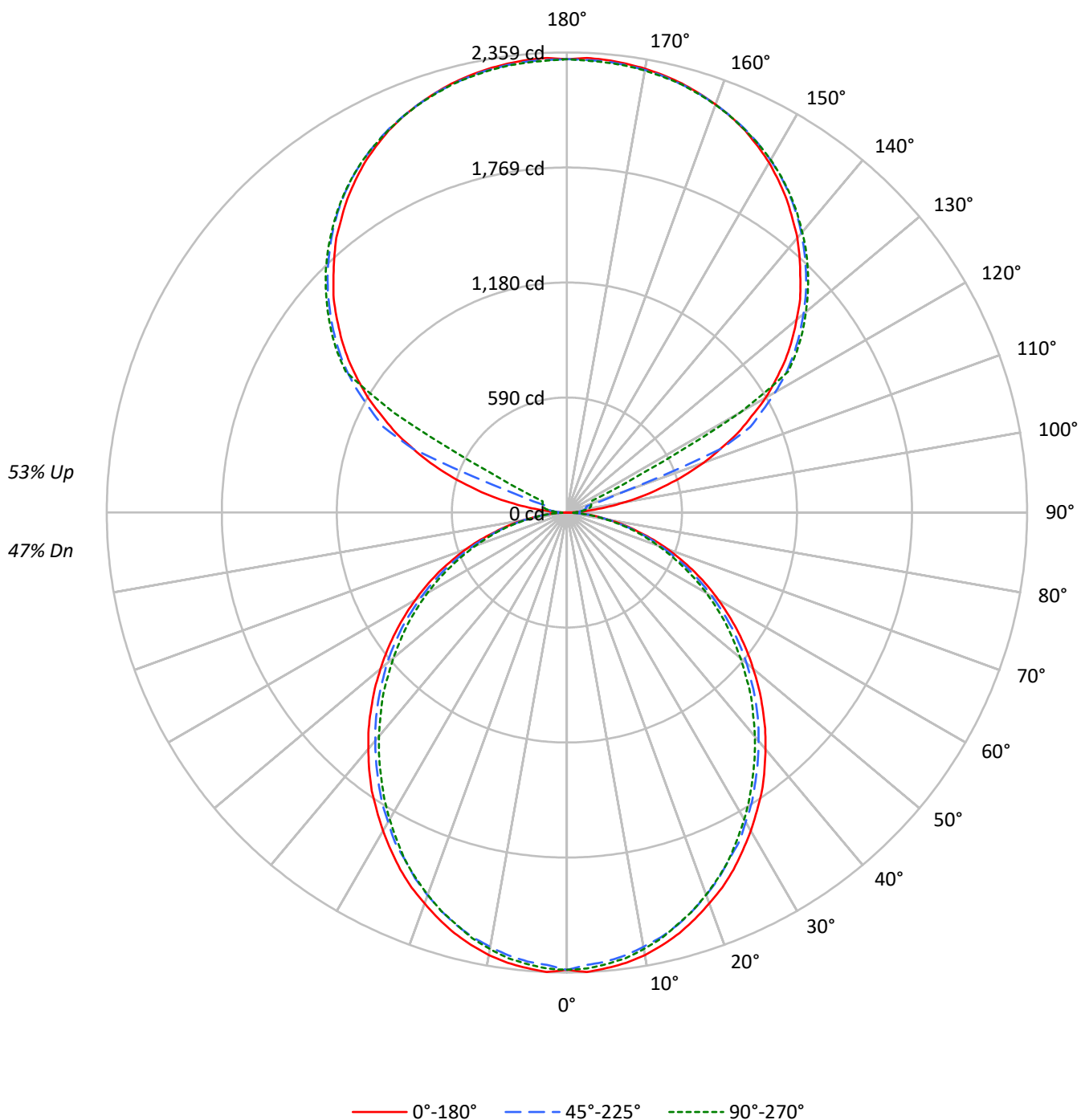
Lumens per Lamp: N/A
Luminaire Lumens: 12785.8 lumens
Efficiency: N/A
Efficacy: 96.4 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 2.21' x L: 2.21' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 132.7
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9977
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: P919953

CATALOG NUMBER: DFN2DIP-SQ2F0-070D080US935-FLLONL

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
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10
RCR																	
0	106	106	106	106	98	98	98	98	81	81	81	67	67	67	53	53	53
1	97	93	89	85	89	85	82	79	71	69	67	59	57	56	47	46	45
2	88	81	75	70	81	75	69	65	63	59	55	52	49	46	41	39	38
3	81	71	64	58	74	66	59	54	55	50	47	46	42	39	37	34	32
4	74	63	55	49	67	58	51	46	49	44	40	41	37	34	33	30	28
5	68	56	48	42	62	52	45	39	44	38	34	36	32	29	29	27	24
6	62	50	42	36	57	47	39	34	40	34	30	33	29	25	27	24	21
7	58	45	37	32	53	42	35	30	36	30	26	30	26	23	24	21	19
8	53	41	33	28	49	38	31	27	33	27	23	27	23	20	22	19	17
9	50	38	30	25	46	35	28	24	30	25	21	25	21	18	21	18	15
10	46	34	27	22	43	32	26	21	28	22	19	23	19	16	19	16	14

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	5157	5157	5157
5°	5156	5074	5112
10°	5105	4994	5035
15°	5021	4901	4920
20°	4911	4775	4802
25°	4801	4628	4667
30°	4665	4489	4498
35°	4536	4328	4319
40°	4378	4165	4147
45°	4220	4001	3972
50°	4048	3828	3770
55°	3866	3629	3581
60°	3660	3393	3366
65°	3434	3148	3113
70°	3147	2848	2838
75°	2754	2489	2574
80°	2274	2033	2090
85°	1537	1284	1314

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 4220 cd/sqm

TEST NUMBER: P919953

CATALOG NUMBER: DFN2DIP-SQ2F0-070D080US935-FLLONL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	220.7	1.7
10°-20°	621.0	4.9
20°-30°	912.7	7.1
30°-40°	1060.0	8.3
40°-50°	1058.7	8.3
50°-60°	923.2	7.2
60°-70°	682.4	5.3
70°-80°	386.1	3.0
80°-90°	106.0	0.8
90°-100°	76.7	0.6
100°-110°	285.7	2.2
110°-120°	757.9	5.9
120°-130°	1256.9	9.8
130°-140°	1335.2	10.4
140°-150°	1240.9	9.7
150°-160°	997.6	7.8
160°-170°	642.8	5.0
170°-180°	221.3	1.7
0°-30°	1754.4	13.7
0°-40°	2814.4	22.0
0°-60°	4796.3	37.5
0°-90°	5970.8	46.7
90°-120°	1120.2	8.8
90°-150°	4953.3	38.7
90°-180°	6815.0	53.3
0°-180°	12785.8	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2345	2345	2345	2345	2345	
5°	2345	2336	2311	2329	2325	223
15°	2232	2219	2190	2199	2188	629
25°	2020	2002	1964	1969	1964	930
35°	1743	1721	1684	1671	1660	1089
45°	1418	1403	1369	1344	1335	1095
55°	1074	1060	1033	1006	994	960
65°	724	710	688	668	656	716
75°	379	374	363	350	354	404
85°	92	90	88	81	79	103
90°	2	20	34	42	45	12
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	

TEST NUMBER: P919953

CATALOG NUMBER: DFN2DIP-SQ2F0-070D080US935-FLLONL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2345.1	2345.1	2345.1	2345.1	2345.1
2.5°	2358.8	2347.5	2322.6	2345.1	2340.8
5°	2345.1	2336.3	2311.4	2329.3	2325.0
7.5°	2329.3	2315.9	2291.0	2309.3	2304.7
10°	2304.7	2288.9	2261.8	2279.8	2273.1
12.5°	2270.7	2257.4	2230.3	2241.5	2237.0
15°	2232.5	2219.0	2189.6	2198.7	2187.5
17.5°	2185.0	2171.7	2142.2	2153.5	2142.2
20°	2133.1	2119.8	2088.2	2094.9	2086.0
22.5°	2081.5	2061.1	2031.7	2031.7	2027.1
25°	2020.5	2002.5	1964.3	1968.6	1964.3
27.5°	1952.7	1937.0	1907.8	1901.1	1889.8
30°	1885.3	1867.1	1833.4	1826.7	1817.6
32.5°	1813.0	1799.7	1763.5	1749.9	1740.8
35°	1743.2	1720.7	1684.5	1670.9	1659.7
37.5°	1664.2	1643.9	1607.7	1592.0	1580.7
40°	1583.1	1564.9	1528.8	1508.7	1499.6
42.5°	1504.2	1486.0	1450.1	1427.4	1413.9
45°	1418.5	1402.7	1368.7	1344.1	1335.0
47.5°	1335.0	1319.2	1283.1	1258.2	1244.8
50°	1247.0	1235.7	1204.1	1172.6	1161.3
52.5°	1161.3	1145.6	1116.4	1091.5	1075.6
55°	1073.5	1059.9	1032.9	1005.8	994.5
57.5°	985.5	974.2	944.8	917.7	908.7
60°	897.4	888.5	857.0	832.2	825.4
62.5°	811.7	796.0	773.5	751.0	741.9
65°	724.0	710.3	687.9	667.5	656.3
67.5°	633.8	622.3	602.2	586.4	577.3
70°	550.3	541.2	520.8	505.1	496.2
72.5°	464.6	455.6	444.3	428.5	421.8
75°	378.8	374.4	362.9	349.6	354.1
77.5°	302.2	293.1	288.5	281.8	275.2
80°	225.6	223.3	218.7	212.0	207.4
82.5°	153.3	153.3	151.2	142.2	142.2
85°	92.4	90.2	88.1	81.1	79.0
87.5°	40.6	36.2	31.6	24.9	22.5
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: P919953

CATALOG NUMBER: DFN2DIP-SQ2F0-070D080US935-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	12.54	13.37	13.53	14.37	15.69	12.10	12.93	13.08	13.93	15.25
	3H	14.18	14.93	15.18	15.93	17.27	13.69	14.44	14.69	15.44	16.78
	4H	14.75	15.46	15.76	16.47	17.82	14.26	14.97	15.27	15.98	17.32
	6H	15.14	15.79	16.16	16.80	18.16	14.64	15.29	15.66	16.30	17.66
	8H	15.23	15.85	16.26	16.89	18.24	14.73	15.35	15.76	16.38	17.74
	12H	15.27	15.86	16.30	16.89	18.27	14.77	15.36	15.80	16.38	17.76
4H	2H	12.99	13.70	14.00	14.71	16.05	12.63	13.34	13.65	14.35	15.70
	3H	14.83	15.42	15.85	16.46	17.82	14.42	15.01	15.45	16.05	17.41
	4H	15.53	16.07	16.56	17.10	18.48	15.10	15.64	16.13	16.67	18.06
	6H	16.02	16.49	17.06	17.54	18.92	15.59	16.05	16.63	17.11	18.49
	8H	16.16	16.60	17.20	17.64	19.04	15.72	16.16	16.77	17.21	18.60
	12H	16.22	16.62	17.29	17.68	19.08	15.78	16.17	16.84	17.23	18.63
8H	4H	15.71	16.14	16.75	17.19	18.58	15.33	15.77	16.37	16.81	18.21
	6H	16.32	16.68	17.38	17.76	19.16	15.93	16.29	17.00	17.38	18.77
	8H	16.52	16.84	17.60	17.91	19.32	16.13	16.45	17.20	17.52	18.93
	12H	16.64	16.92	17.72	17.99	19.44	16.23	16.51	17.31	17.58	19.03
12H	4H	15.69	16.08	16.75	17.15	18.54	15.32	15.71	16.38	16.78	18.17
	6H	16.34	16.66	17.41	17.73	19.14	15.97	16.28	17.04	17.36	18.77
	8H	16.57	16.84	17.64	17.91	19.36	16.18	16.46	17.26	17.53	18.98

END OF REPORT