

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: P925800

Luminaire Tested: DFN2DIP-SQ4F0-070D070US950-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P925800
REPORT IS A COMBINATION OF REPORTS P900079 AND P896915
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ4F0-070D070US950-FLLFLL
Description: 4 foot, Square Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

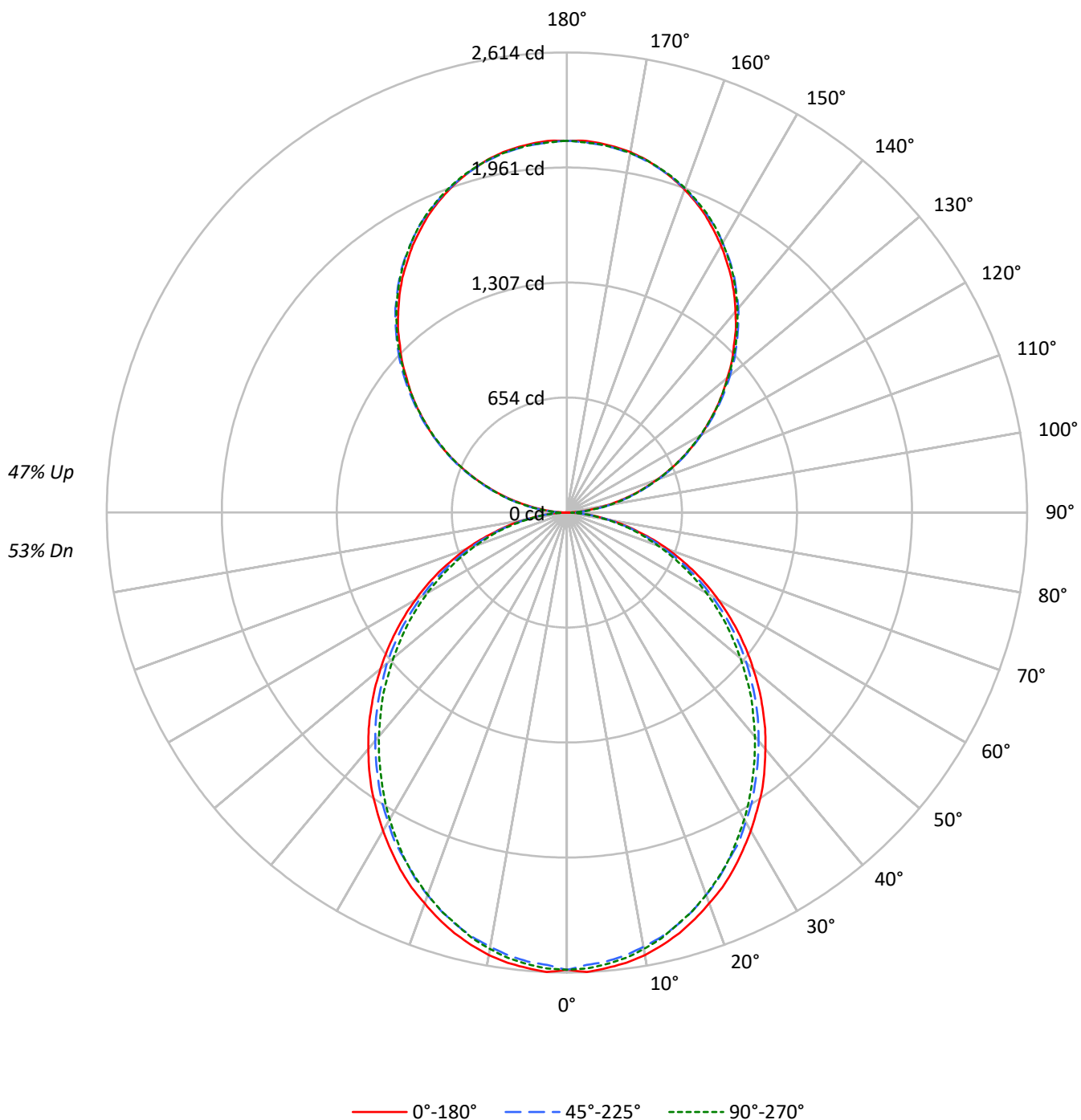
Lumens per Lamp: N/A
Luminaire Lumens: 12521.3 lumens
Efficiency: N/A
Efficacy: 110.3 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 3.92' x L: 3.92' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 113.5
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9967
Total Harmonic Distortion (THDi): 0.063
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P925800

CATALOG NUMBER: DFN2DIP-SQ4F0-070D070US950-FLLFLL

Luminous Intensity Polar Plot



TEST NUMBER: P925800

CATALOG NUMBER: DFN2DIP-SQ4F0-070D070US950-FLLFLL

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	108	108	108	108	100	100	100	100	85	85	85	71	71	71	59	59	59
1	98	94	90	87	91	87	84	81	74	72	70	63	61	59	52	51	50
2	90	82	76	71	83	76	71	66	65	61	58	55	52	50	46	44	42
3	82	72	65	59	75	67	61	55	58	53	49	49	45	42	41	38	36
4	75	64	56	50	69	60	52	47	51	46	41	43	39	36	36	33	31
5	69	57	49	43	63	53	46	40	46	40	36	39	35	31	33	29	27
6	63	51	43	37	58	48	40	35	41	36	31	35	31	27	30	26	24
7	59	46	38	33	54	43	36	31	37	32	28	32	28	24	27	24	21
8	54	42	34	29	50	39	32	27	34	29	24	29	25	22	25	21	19
9	51	38	31	26	47	36	29	24	31	26	22	27	23	19	23	20	17
10	47	35	28	23	44	33	26	22	29	23	20	25	21	18	21	18	15

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1823	1823	1823
5°	1826	1798	1811
10°	1811	1774	1787
15°	1785	1746	1749
20°	1749	1705	1710
25°	1713	1657	1665
30°	1668	1612	1608
35°	1625	1559	1548
40°	1573	1506	1490
45°	1521	1453	1431
50°	1464	1396	1363
55°	1404	1331	1301
60°	1336	1254	1229
65°	1263	1175	1145
70°	1169	1077	1054
75°	1039	961	971
80°	882	813	811
85°	638	556	545

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 1663 cd/sqm

TEST NUMBER: P925800

CATALOG NUMBER: DFN2DIP-SQ4F0-070D070US950-FLLFLL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	244.6	2.0
10°-20°	688.1	5.5
20°-30°	1011.3	8.1
30°-40°	1174.5	9.4
40°-50°	1173.1	9.4
50°-60°	1022.9	8.2
60°-70°	756.1	6.0
70°-80°	427.8	3.4
80°-90°	118.9	0.9
90°-100°	130.7	1.0
100°-110°	415.3	3.3
110°-120°	710.6	5.7
120°-130°	934.6	7.5
130°-140°	1049.0	8.4
140°-150°	1028.7	8.2
150°-160°	862.9	6.9
160°-170°	572.3	4.6
170°-180°	200.0	1.6
0°-30°	1943.9	15.5
0°-40°	3118.5	24.9
0°-60°	5314.4	42.4
0°-90°	6617.3	52.8
90°-120°	1256.6	10.0
90°-150°	4268.9	34.1
90°-180°	5904.0	47.2
0°-180°	12521.3	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2598	2598	2598	2598	2598	
5°	2598	2589	2561	2581	2576	247
15°	2474	2459	2426	2436	2424	697
25°	2239	2219	2176	2181	2176	1030
35°	1932	1907	1866	1851	1839	1206
45°	1572	1554	1517	1489	1479	1213
55°	1189	1174	1144	1114	1102	1063
65°	802	787	762	740	727	793
75°	420	415	402	387	392	448
85°	102	100	98	90	88	114
90°	2	23	62	59	60	12
95°	93	111	114	114	111	103
105°	383	388	392	395	395	405
115°	713	723	720	718	713	705
125°	1037	1053	1048	1042	1040	927
135°	1342	1361	1365	1363	1358	1037
145°	1629	1642	1652	1654	1647	1018
155°	1862	1868	1873	1882	1876	857
165°	2026	2024	2024	2037	2028	572
175°	2108	2103	2099	2112	2101	200
180°	2112	2112	2112	2112	2112	

TEST NUMBER: P925800

CATALOG NUMBER: DFN2DIP-SQ4F0-070D070US950-FLLFLL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2598.4	2598.4	2598.4	2598.4	2598.4
2.5°	2613.6	2601.1	2573.5	2598.4	2593.6
5°	2598.4	2588.7	2561.1	2581.0	2576.2
7.5°	2581.0	2566.1	2538.5	2558.7	2553.7
10°	2553.7	2536.1	2506.2	2526.1	2518.7
12.5°	2516.0	2501.2	2471.2	2483.6	2478.6
15°	2473.6	2458.7	2426.1	2436.2	2423.7
17.5°	2421.1	2406.3	2373.6	2386.1	2373.6
20°	2363.5	2348.7	2313.7	2321.2	2311.4
22.5°	2306.3	2283.8	2251.2	2251.2	2246.1
25°	2238.8	2218.8	2176.5	2181.2	2176.5
27.5°	2163.7	2146.2	2113.9	2106.4	2093.9
30°	2089.0	2068.7	2031.4	2024.0	2013.9
32.5°	2008.8	1994.1	1954.0	1938.9	1928.8
35°	1931.5	1906.6	1866.5	1851.4	1838.9
37.5°	1844.0	1821.5	1781.4	1763.9	1751.4
40°	1754.1	1734.0	1693.9	1671.7	1661.6
42.5°	1666.6	1646.5	1606.7	1581.5	1566.7
45°	1571.7	1554.3	1516.6	1489.3	1479.2
47.5°	1479.2	1461.7	1421.7	1394.1	1379.3
50°	1381.7	1369.2	1334.2	1299.3	1286.8
52.5°	1286.8	1269.3	1237.0	1209.4	1191.8
55°	1189.4	1174.4	1144.4	1114.5	1102.0
57.5°	1091.9	1079.5	1046.8	1016.9	1006.9
60°	994.4	984.5	949.6	922.0	914.6
62.5°	899.4	882.0	857.1	832.2	822.1
65°	802.2	787.0	762.2	739.6	727.1
67.5°	702.2	689.6	667.2	649.8	639.7
70°	609.7	599.7	577.1	559.6	549.8
72.5°	514.8	504.8	492.3	474.8	467.4
75°	419.7	414.9	402.1	387.3	392.4
77.5°	334.9	324.7	319.7	312.2	304.9
80°	249.9	247.4	242.3	234.9	229.8
82.5°	169.9	169.9	167.5	157.5	157.5
85°	102.4	100.0	97.6	89.9	87.5
87.5°	45.0	40.1	35.0	27.6	24.9
90°	1.9	22.9	62.4	58.6	60.5
92.5°	39.5	53.5	55.4	57.3	57.3
95°	92.9	110.8	114.0	114.0	110.8
97.5°	154.7	171.2	178.3	178.3	178.3
100°	226.0	240.7	245.8	245.8	243.8
102.5°	301.2	312.0	319.0	320.9	319.0
105°	383.3	388.4	392.2	395.4	395.4
107.5°	464.8	472.4	472.4	473.8	464.8
110°	543.8	554.0	554.0	554.0	548.8

TEST NUMBER: P925800

CATALOG NUMBER: DFN2DIP-SQ4F0-070D070US950-FLLFLL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	629.1	639.9	638.0	632.9	629.1
115°	713.1	723.3	720.2	718.3	713.1
117.5°	796.5	810.5	801.6	796.5	791.4
120°	880.5	894.6	880.5	880.5	874.8
122.5°	957.0	974.8	965.9	960.8	957.0
125°	1037.2	1053.1	1048.1	1042.3	1040.4
127.5°	1115.5	1135.3	1128.3	1120.7	1115.5
130°	1188.8	1211.7	1208.5	1204.7	1197.7
132.5°	1270.9	1288.8	1290.0	1281.1	1276.0
135°	1341.6	1361.3	1365.2	1363.2	1358.1
137.5°	1420.5	1436.4	1439.6	1438.3	1430.7
140°	1490.0	1505.9	1514.8	1514.8	1507.8
142.5°	1561.2	1577.2	1582.2	1584.1	1577.2
145°	1628.8	1641.5	1651.7	1653.6	1646.6
147.5°	1689.2	1705.2	1712.8	1716.0	1709.0
150°	1751.6	1762.4	1769.5	1775.2	1769.5
152.5°	1807.0	1817.8	1826.7	1833.8	1826.7
155°	1862.4	1867.5	1873.3	1882.1	1876.4
157.5°	1910.2	1914.0	1917.2	1929.9	1921.0
160°	1952.8	1956.7	1958.6	1969.3	1961.7
162.5°	1992.3	1992.3	1994.2	2006.3	1997.4
165°	2026.0	2024.1	2024.1	2036.9	2027.9
167.5°	2056.6	2050.9	2050.9	2063.6	2054.7
170°	2079.5	2074.5	2072.6	2085.3	2074.5
172.5°	2095.5	2090.3	2088.4	2101.2	2090.3
175°	2108.1	2103.1	2099.3	2112.0	2101.2
177.5°	2115.2	2110.1	2106.2	2117.1	2106.2
180°	2112.0	2112.0	2112.0	2112.0	2112.0

TEST NUMBER: P925800

CATALOG NUMBER: DFN2DIP-SQ4F0-070D070US950-FLLFLL

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	10.52	10.56	11.47	12.70	9.19	10.07	10.12	11.02	12.25
	3H	11.30	12.09	12.24	13.05	14.30	10.81	11.60	11.75	12.56	13.81
	4H	11.89	12.64	12.85	13.60	14.87	11.39	12.15	12.35	13.11	14.37
	6H	12.29	12.99	13.26	13.96	15.23	11.79	12.49	12.76	13.46	14.73
	8H	12.40	13.06	13.38	14.05	15.32	11.90	12.56	12.87	13.55	14.82
	12H	12.45	13.08	13.43	14.06	15.36	11.94	12.57	12.92	13.55	14.85
4H	2H	10.09	10.85	11.06	11.81	13.07	9.74	10.49	10.70	11.46	12.72
	3H	11.97	12.60	12.94	13.59	14.87	11.56	12.19	12.53	13.18	14.46
	4H	12.69	13.26	13.67	14.25	15.55	12.26	12.84	13.24	13.82	15.12
	6H	13.21	13.70	14.20	14.71	16.01	12.77	13.27	13.77	14.28	15.58
	8H	13.36	13.82	14.36	14.83	16.14	12.92	13.39	13.92	14.39	15.70
	12H	13.44	13.85	14.45	14.87	16.19	12.99	13.40	14.00	14.42	15.74
8H	4H	12.89	13.35	13.88	14.35	15.66	12.51	12.97	13.50	13.97	15.29
	6H	13.52	13.91	14.54	14.95	16.26	13.14	13.52	14.16	14.57	15.88
	8H	13.75	14.08	14.78	15.12	16.45	13.35	13.69	14.38	14.72	16.05
	12H	13.88	14.18	14.92	15.21	16.58	13.47	13.77	14.50	14.79	16.17
12H	4H	12.87	13.29	13.89	14.31	15.63	12.50	12.92	13.52	13.94	15.26
	6H	13.55	13.89	14.58	14.92	16.25	13.18	13.52	14.21	14.55	15.88
	8H	13.80	14.10	14.83	15.12	16.50	13.42	13.72	14.45	14.74	16.12