

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: P925520

Luminaire Tested: DFN2DIP-SQ3F0-060D070US950-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P925520
REPORT IS A COMBINATION OF REPORTS P899919 AND P896733
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ3F0-060D070US950-FLLFLL
Description: 3 foot, Square Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

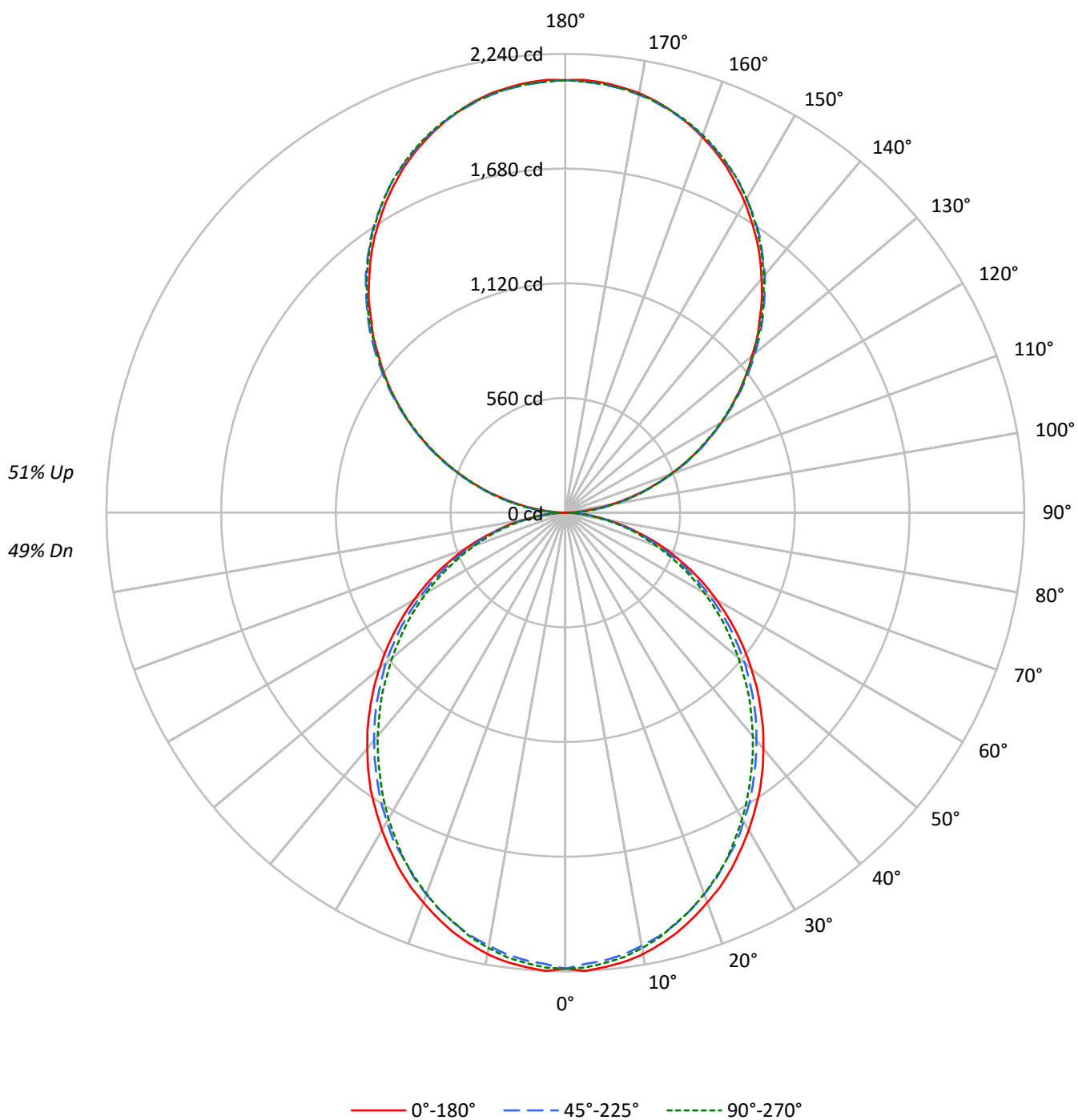
Lumens per Lamp: N/A
Luminaire Lumens: 11576.8 lumens
Efficiency: N/A
Efficacy: 109.3 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 3.06' x L: 3.06' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 105.9
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: P925520

CATALOG NUMBER: DFN2DIP-SQ3F0-060D070US950-FLLFLL

Luminous Intensity Polar Plot



TEST NUMBER: P925520

CATALOG NUMBER: DFN2DIP-SQ3F0-060D070US950-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	107	107	107	107	98	98	98	98	83	83	83	68	68	68	55	55	55
1	98	93	89	86	90	86	83	80	73	70	68	60	59	57	49	48	47
2	89	81	75	70	82	75	70	65	64	60	56	53	50	48	43	41	39
3	81	72	64	58	74	66	60	55	56	51	47	47	43	40	38	36	33
4	74	63	55	49	68	59	52	46	50	45	40	42	38	34	34	31	29
5	68	56	48	42	62	52	45	40	45	39	35	37	33	30	31	28	25
6	63	51	43	37	58	47	40	35	40	35	30	34	29	26	28	25	22
7	58	46	38	32	53	42	35	30	36	31	27	31	26	23	25	22	20
8	54	41	34	28	49	39	32	27	33	28	24	28	24	21	23	20	18
9	50	38	30	25	46	35	29	24	30	25	21	26	22	19	22	18	16
10	47	35	28	23	43	32	26	22	28	23	19	24	20	17	20	17	14

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2552	2552	2552
5°	2554	2515	2532
10°	2532	2479	2497
15°	2493	2437	2443
20°	2441	2378	2387
25°	2390	2309	2323
30°	2325	2244	2242
35°	2264	2168	2155
40°	2189	2091	2073
45°	2114	2013	1990
50°	2032	1932	1892
55°	1946	1838	1803
60°	1849	1727	1700
65°	1742	1612	1579
70°	1607	1471	1449
75°	1420	1302	1327
80°	1193	1086	1097
85°	840	720	718

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 2125 cd/sqm

TEST NUMBER: P925520

CATALOG NUMBER: DFN2DIP-SQ3F0-060D070US950-FLLFLL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	209.6	1.8
10°-20°	589.8	5.1
20°-30°	866.8	7.5
30°-40°	1006.7	8.7
40°-50°	1005.5	8.7
50°-60°	876.7	7.6
60°-70°	648.1	5.6
70°-80°	366.7	3.2
80°-90°	102.8	0.9
90°-100°	130.7	1.1
100°-110°	415.3	3.6
110°-120°	710.6	6.1
120°-130°	934.6	8.1
130°-140°	1049.0	9.1
140°-150°	1028.7	8.9
150°-160°	862.9	7.5
160°-170°	572.3	4.9
170°-180°	200.0	1.7
0°-30°	1666.2	14.4
0°-40°	2673.0	23.1
0°-60°	4555.2	39.3
0°-90°	5672.8	49.0
90°-120°	1256.6	10.9
90°-150°	4268.9	36.9
90°-180°	5904.0	51.0
0°-180°	11576.8	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2227	2227	2227	2227	2227	
5°	2227	2219	2195	2212	2208	211
15°	2120	2108	2080	2088	2078	597
25°	1919	1902	1866	1870	1866	883
35°	1656	1634	1600	1587	1576	1034
45°	1347	1332	1300	1276	1268	1040
55°	1020	1007	981	955	945	912
65°	688	675	653	634	623	680
75°	360	356	345	332	336	384
85°	88	86	84	77	75	98
90°	2	23	62	59	60	11
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: P925520

CATALOG NUMBER: DFN2DIP-SQ3F0-060D070US950-FLLFLL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2227.2	2227.2	2227.2	2227.2	2227.2
2.5°	2240.2	2229.5	2205.8	2227.2	2223.1
5°	2227.2	2218.8	2195.2	2212.2	2208.1
7.5°	2212.2	2199.5	2175.9	2193.2	2188.9
10°	2188.9	2173.9	2148.1	2165.2	2158.8
12.5°	2156.6	2143.8	2118.2	2128.9	2124.6
15°	2120.2	2107.5	2079.5	2088.2	2077.5
17.5°	2075.2	2062.5	2034.6	2045.2	2034.6
20°	2025.9	2013.2	1983.2	1989.6	1981.2
22.5°	1976.9	1957.5	1929.6	1929.6	1925.3
25°	1918.9	1901.9	1865.5	1869.6	1865.5
27.5°	1854.6	1839.6	1811.8	1805.5	1794.9
30°	1790.6	1773.2	1741.2	1734.8	1726.2
32.5°	1721.9	1709.2	1674.8	1661.9	1653.3
35°	1655.6	1634.2	1599.9	1586.9	1576.2
37.5°	1580.6	1561.2	1527.0	1511.9	1501.2
40°	1503.5	1486.2	1452.0	1432.9	1424.2
42.5°	1428.5	1411.3	1377.2	1355.6	1342.9
45°	1347.2	1332.2	1299.9	1276.5	1267.9
47.5°	1267.9	1252.9	1218.6	1195.0	1182.2
50°	1184.3	1173.6	1143.7	1113.6	1102.9
52.5°	1102.9	1087.9	1060.2	1036.6	1021.6
55°	1019.5	1006.6	980.9	955.2	944.6
57.5°	936.0	925.3	897.3	871.7	863.0
60°	852.3	843.9	814.0	790.3	783.9
62.5°	770.9	755.9	734.6	713.2	704.6
65°	687.5	674.7	653.3	633.9	623.2
67.5°	601.9	591.0	571.9	556.9	548.3
70°	522.6	514.0	494.6	479.7	471.3
72.5°	441.2	432.6	422.0	407.0	400.6
75°	359.7	355.7	344.7	332.0	336.3
77.5°	287.0	278.4	274.0	267.7	261.3
80°	214.3	212.0	207.7	201.3	197.0
82.5°	145.7	145.7	143.6	135.0	135.0
85°	87.7	85.7	83.6	77.0	75.0
87.5°	38.6	34.3	30.0	23.7	21.4
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: P925520

CATALOG NUMBER: DFN2DIP-SQ3F0-060D070US950-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: P925520

CATALOG NUMBER: DFN2DIP-SQ3F0-060D070US950-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	10.40	11.25	11.36	12.23	13.52	9.95	10.81	10.92	11.79	13.07
	3H	12.05	12.82	13.03	13.81	15.11	11.56	12.33	12.54	13.32	14.62
	4H	12.64	13.36	13.63	14.35	15.67	12.14	12.87	13.13	13.86	15.18
	6H	13.03	13.70	14.03	14.70	16.03	12.53	13.20	13.53	14.20	15.53
	8H	13.14	13.77	14.14	14.79	16.11	12.63	13.27	13.64	14.28	15.61
	12H	13.18	13.79	14.19	14.80	16.14	12.67	13.28	13.69	14.29	15.64
4H	2H	10.85	11.58	11.85	12.57	13.89	10.50	11.22	11.50	12.22	13.53
	3H	12.71	13.32	13.72	14.34	15.67	12.31	12.91	13.31	13.93	15.26
	4H	13.42	13.98	14.44	14.99	16.34	13.00	13.55	14.01	14.57	15.92
	6H	13.93	14.41	14.96	15.45	16.80	13.50	13.98	14.53	15.02	16.37
	8H	14.08	14.53	15.11	15.56	16.92	13.64	14.09	14.67	15.12	16.48
	12H	14.15	14.55	15.20	15.60	16.97	13.70	14.10	14.75	15.15	16.52
8H	4H	13.62	14.06	14.64	15.09	16.46	13.24	13.68	14.26	14.71	16.08
	6H	14.24	14.61	15.29	15.68	17.04	13.86	14.22	14.91	15.30	16.66
	8H	14.46	14.78	15.52	15.84	17.22	14.07	14.39	15.12	15.45	16.83
	12H	14.59	14.87	15.65	15.92	17.35	14.18	14.46	15.24	15.51	16.94
12H	4H	13.60	14.00	14.64	15.05	16.42	13.23	13.63	14.28	14.68	16.05
	6H	14.27	14.59	15.33	15.65	17.03	13.90	14.22	14.95	15.28	16.66
	8H	14.51	14.79	15.57	15.84	17.27	14.13	14.41	15.19	15.46	16.89