

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: P911912

Luminaire Tested: DFN2DIP-SQ3F0-070D060US850-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P911912
REPORT IS A COMBINATION OF REPORTS P899903 AND P896733
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ3F0-070D060US850-FLLFL
Description: 3 foot, Square Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

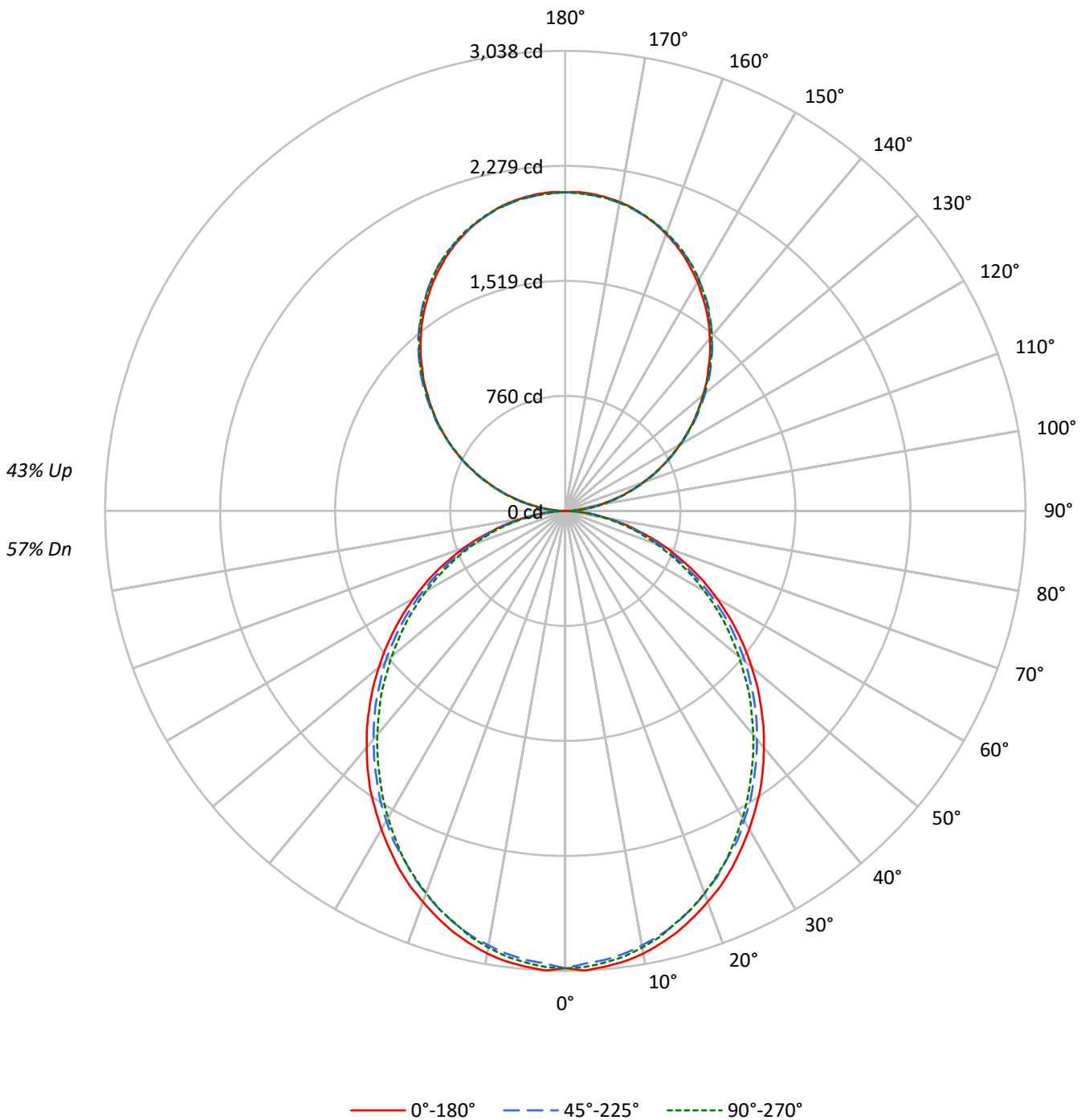
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 13574.2 lumens
Efficiency: N/A
Efficacy: 122.6 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): 110.7
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9963
Total Harmonic Distortion (THDi): 0.065
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P911912
CATALOG NUMBER: DFN2DIP-SQ3F0-070D060US850-FLLFL

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			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	109	109	109	109	101	101	101	101	87	87	87	74	74	74	62	62	62	57	57	57	57
1	99	95	91	87	92	88	85	82	76	74	72	65	63	62	55	54	53	48	48	48	48
2	90	83	77	71	84	77	72	67	67	63	59	57	54	52	48	46	44	40	40	40	40
3	82	73	65	60	76	68	62	56	59	54	50	51	47	44	43	40	38	34	34	34	34
4	75	65	57	50	70	60	53	48	53	47	43	45	41	37	38	35	33	29	29	29	29
5	69	58	49	43	64	54	47	41	47	41	37	41	36	32	35	31	28	25	25	25	25
6	64	52	43	38	59	48	41	36	42	36	32	37	32	28	31	28	25	22	22	22	22
7	59	47	39	33	55	44	37	31	38	33	28	33	29	25	29	25	22	20	20	20	20
8	55	42	35	29	51	40	33	28	35	29	25	31	26	23	26	23	20	18	18	18	18
9	51	39	31	26	48	37	30	25	32	27	23	28	24	20	24	21	18	16	16	16	16
10	48	36	28	23	45	34	27	22	30	24	20	26	22	18	23	19	16	14	14	14	14

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3461	3461	3461
5°	3464	3411	3435
10°	3434	3362	3387
15°	3381	3305	3313
20°	3311	3225	3238
25°	3241	3131	3151
30°	3154	3043	3040
35°	3071	2940	2923
40°	2969	2835	2812
45°	2867	2731	2698
50°	2756	2620	2567
55°	2639	2493	2445
60°	2507	2342	2306
65°	2363	2186	2142
70°	2179	1994	1965
75°	1925	1765	1800
80°	1618	1473	1488
85°	1140	977	974

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 2867 cd/sqm



TEST NUMBER: P911912

CATALOG NUMBER: DFN2DIP-SQ3F0-070D060US850-FLLFLL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	284.3	2.1
10°-20°	799.9	5.9
20°-30°	1175.6	8.7
30°-40°	1365.3	10.1
40°-50°	1363.6	10.0
50°-60°	1189.1	8.8
60°-70°	879.0	6.5
70°-80°	497.3	3.7
80°-90°	137.2	1.0
90°-100°	130.2	1.0
100°-110°	413.7	3.0
110°-120°	708.0	5.2
120°-130°	931.2	6.9
130°-140°	1045.3	7.7
140°-150°	1025.0	7.6
150°-160°	859.8	6.3
160°-170°	570.2	4.2
170°-180°	199.3	1.5
0°-30°	2259.8	16.6
0°-40°	3625.1	26.7
0°-60°	6177.8	45.5
0°-90°	7691.4	56.7
90°-120°	1252.0	9.2
90°-150°	4253.5	31.3
90°-180°	5883.0	43.3
0°-180°	13574.2	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3021	3021	3021	3021	3021	
5°	3021	3009	2977	3000	2995	287
15°	2876	2858	2820	2832	2818	810
25°	2602	2579	2530	2536	2530	1198
35°	2245	2216	2170	2152	2138	1402
45°	1827	1807	1763	1731	1720	1410
55°	1383	1365	1330	1296	1281	1236
65°	933	915	886	860	845	922
75°	488	482	467	450	456	521
85°	119	116	114	104	102	133
90°	2	23	62	58	60	13
95°	93	110	114	114	110	103
105°	382	387	391	394	394	403
115°	710	721	718	716	710	703
125°	1034	1049	1044	1039	1037	924
135°	1337	1356	1360	1358	1353	1033
145°	1623	1636	1646	1648	1641	1014
155°	1856	1861	1866	1875	1870	854
165°	2019	2017	2017	2030	2021	569
175°	2101	2096	2092	2104	2094	200
180°	2104	2104	2104	2104	2104	



TEST NUMBER: P911912

CATALOG NUMBER: DFN2DIP-SQ3F0-070D060US850-FLLFLL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	3020.6	3020.6	3020.6	3020.6	3020.6
2.5°	3038.2	3023.7	2991.6	3020.6	3015.0
5°	3020.6	3009.3	2977.2	3000.3	2994.7
7.5°	3000.3	2983.0	2950.9	2974.4	2968.6
10°	2968.6	2948.2	2913.3	2936.5	2927.9
12.5°	2924.8	2907.6	2872.8	2887.2	2881.3
15°	2875.5	2858.2	2820.3	2832.1	2817.5
17.5°	2814.4	2797.2	2759.3	2773.8	2759.3
20°	2747.5	2730.4	2689.7	2698.3	2686.9
22.5°	2681.0	2654.8	2616.9	2616.9	2611.0
25°	2602.5	2579.3	2530.1	2535.6	2530.1
27.5°	2515.2	2494.9	2457.3	2448.7	2434.1
30°	2428.4	2404.9	2361.5	2352.9	2341.1
32.5°	2335.2	2318.0	2271.5	2253.9	2242.2
35°	2245.3	2216.3	2169.8	2152.2	2137.7
37.5°	2143.6	2117.4	2070.8	2050.5	2036.0
40°	2039.1	2015.7	1969.1	1943.3	1931.5
42.5°	1937.4	1914.0	1867.8	1838.5	1821.2
45°	1827.1	1806.8	1763.0	1731.3	1719.5
47.5°	1719.5	1699.2	1652.6	1620.6	1603.4
50°	1606.2	1591.6	1550.9	1510.3	1495.8
52.5°	1495.8	1475.5	1437.9	1405.9	1385.5
55°	1382.7	1365.2	1330.4	1295.5	1281.0
57.5°	1269.4	1254.8	1216.9	1182.1	1170.4
60°	1155.9	1144.5	1103.9	1071.8	1063.2
62.5°	1045.6	1025.3	996.3	967.4	955.6
65°	932.6	914.9	886.0	859.8	845.3
67.5°	816.3	801.6	775.6	755.3	743.6
70°	708.8	697.1	670.8	650.5	639.1
72.5°	598.4	586.8	572.2	551.9	543.3
75°	487.8	482.3	467.4	450.3	456.1
77.5°	389.3	377.5	371.6	363.0	354.4
80°	290.6	287.6	281.7	273.0	267.2
82.5°	197.5	197.5	194.7	183.1	183.1
85°	119.0	116.2	113.5	104.5	101.7
87.5°	52.3	46.6	40.7	32.1	28.9
90°	1.9	22.8	62.2	58.3	60.2
92.5°	39.4	53.3	55.2	57.1	57.1
95°	92.6	110.3	113.6	113.6	110.3
97.5°	154.2	170.7	177.7	177.7	177.7
100°	225.2	239.8	244.9	244.9	243.0
102.5°	300.1	310.9	317.8	319.7	317.8
105°	381.9	387.0	390.8	394.0	394.0
107.5°	463.1	470.8	470.8	472.0	463.1
110°	541.9	551.9	551.9	551.9	546.8



TEST NUMBER: P911912

CATALOG NUMBER: DFN2DIP-SQ3F0-070D060US850-FLLFLL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	626.8	637.6	635.7	630.6	626.8
115°	710.5	720.7	717.5	715.6	710.5
117.5°	793.7	807.7	798.7	793.7	788.6
120°	877.4	891.4	877.4	877.4	871.7
122.5°	953.5	971.3	962.4	957.4	953.5
125°	1033.5	1049.3	1044.2	1038.6	1036.7
127.5°	1111.6	1131.2	1124.2	1116.7	1111.6
130°	1184.5	1207.4	1204.2	1200.4	1193.4
132.5°	1266.4	1284.1	1285.3	1276.5	1271.4
135°	1336.8	1356.4	1360.2	1358.3	1353.2
137.5°	1415.4	1431.3	1434.5	1433.2	1425.6
140°	1484.6	1500.5	1509.3	1509.3	1502.4
142.5°	1555.6	1571.5	1576.6	1578.4	1571.5
145°	1622.9	1635.6	1645.8	1647.6	1640.7
147.5°	1683.1	1699.0	1706.6	1709.7	1702.8
150°	1745.3	1756.1	1763.1	1768.7	1763.1
152.5°	1800.5	1811.3	1820.2	1827.2	1820.2
155°	1855.7	1860.8	1866.4	1875.4	1869.7
157.5°	1903.3	1907.1	1910.3	1923.0	1914.1
160°	1945.9	1949.6	1951.5	1962.3	1954.7
162.5°	1985.1	1985.1	1987.0	1999.1	1990.2
165°	2018.7	2016.8	2016.8	2029.6	2020.7
167.5°	2049.2	2043.6	2043.6	2056.2	2047.3
170°	2072.1	2067.0	2065.1	2077.7	2067.0
172.5°	2087.9	2082.8	2080.9	2093.6	2082.8
175°	2100.6	2095.6	2091.7	2104.4	2093.6
177.5°	2107.5	2102.6	2098.7	2109.4	2098.7
180°	2104.4	2104.4	2104.4	2104.4	2104.4



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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	12.14	13.07	13.04	13.99	15.16	11.70	12.62	12.60	13.54	14.71
	3H	13.80	14.63	14.71	15.56	16.76	13.31	14.14	14.22	15.07	16.27
	4H	14.39	15.18	15.32	16.11	17.32	13.90	14.68	14.82	15.61	16.82
	6H	14.79	15.52	15.73	16.45	17.67	14.29	15.01	15.23	15.95	17.17
	8H	14.90	15.59	15.84	16.54	17.76	14.39	15.08	15.34	16.04	17.26
	12H	14.95	15.60	15.89	16.55	17.79	14.44	15.09	15.39	16.04	17.28
4H	2H	12.61	13.39	13.54	14.33	15.53	12.25	13.04	13.18	13.97	15.18
	3H	14.47	15.13	15.42	16.09	17.31	14.07	14.72	15.01	15.68	16.91
	4H	15.19	15.79	16.14	16.74	17.99	14.76	15.36	15.71	16.32	17.57
	6H	15.70	16.22	16.67	17.20	18.45	15.27	15.79	16.23	16.77	18.01
	8H	15.85	16.33	16.82	17.31	18.57	15.41	15.90	16.38	16.87	18.13
	12H	15.93	16.36	16.91	17.35	18.62	15.48	15.91	16.46	16.90	18.17
8H	4H	15.39	15.87	16.35	16.84	18.10	15.01	15.49	15.97	16.47	17.73
	6H	16.01	16.41	17.00	17.43	18.69	15.63	16.03	16.62	17.04	18.30
	8H	16.23	16.58	17.23	17.59	18.86	15.84	16.19	16.84	17.20	18.47
	12H	16.36	16.67	17.37	17.67	18.99	15.95	16.26	16.96	17.26	18.58
12H	4H	15.37	15.81	16.36	16.80	18.07	15.00	15.44	15.99	16.43	17.70
	6H	16.04	16.39	17.04	17.40	18.68	15.67	16.02	16.67	17.03	18.30
	8H	16.28	16.59	17.29	17.59	18.91	15.90	16.21	16.91	17.21	18.53