

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: P925818

Luminaire Tested: DFN2DIP-SQ4F0-070D110US950-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P925818
REPORT IS A COMBINATION OF REPORTS P900152 AND P896915
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ4F0-070D110US950-RLLFLL
Description: 4 foot, Square Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

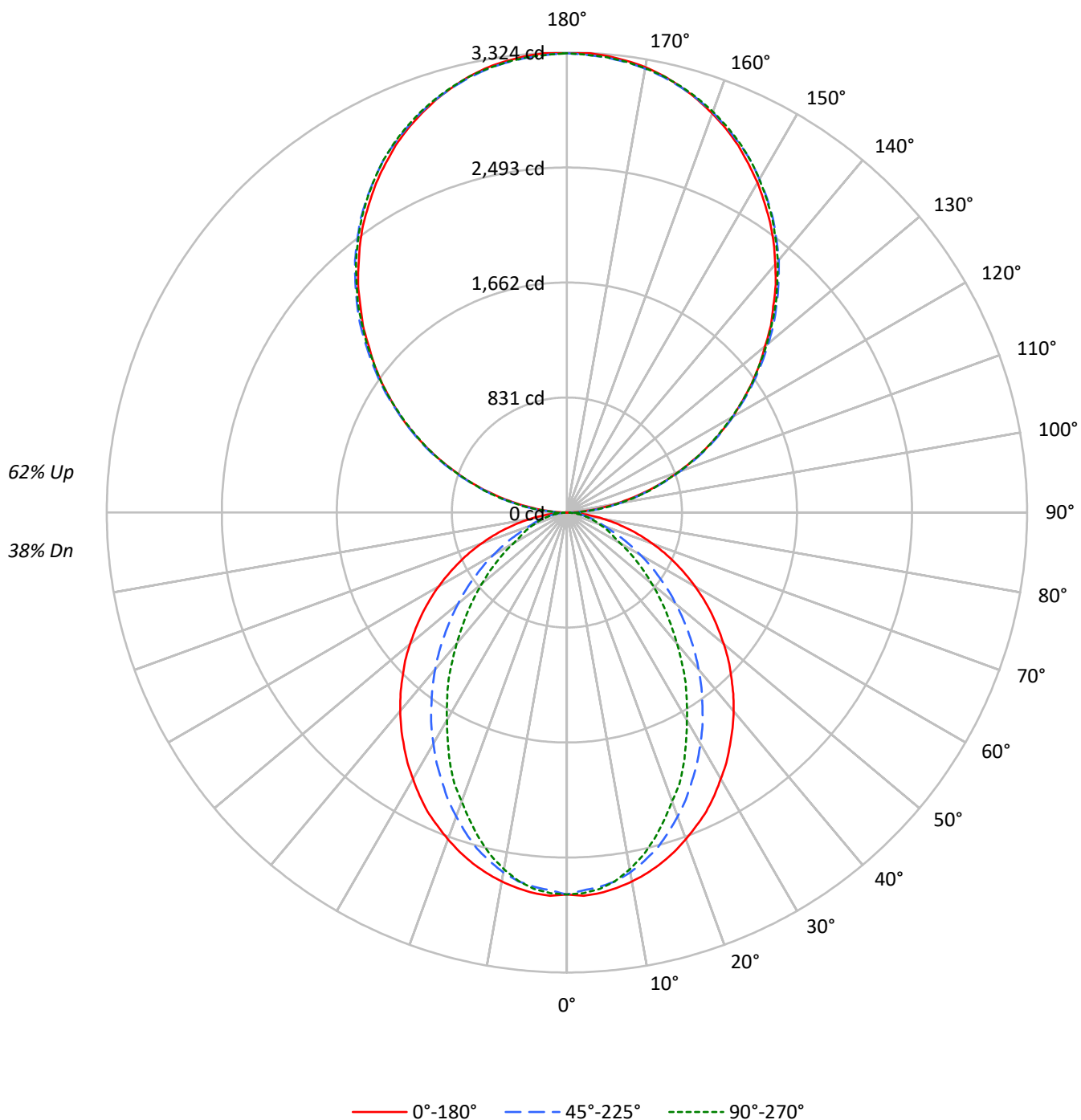
Lumens per Lamp: N/A
Luminaire Lumens: 14963.5 lumens
Efficiency: N/A
Efficacy: 103.8 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.92' x L: 3.92' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 144.1
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: P925818

CATALOG NUMBER: DFN2DIP-SQ4F0-070D110US950-RLLFLL

Luminous Intensity Polar Plot



TEST NUMBER: P925818

CATALOG NUMBER: DFN2DIP-SQ4F0-070D110US950-RLLFLL

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	104	104	104	104	95	95	95	95	77	77	77	60	60	60	45	45	45
1	95	91	88	84	87	83	80	77	68	66	64	53	52	51	40	40	39
2	87	80	74	69	79	73	68	64	60	56	53	47	45	43	36	34	33
3	80	71	64	58	72	65	59	54	53	49	45	42	39	37	32	30	29
4	73	63	55	49	66	57	51	46	47	42	39	38	34	32	29	27	25
5	67	56	48	43	61	51	45	40	42	37	34	34	30	28	26	24	22
6	62	50	43	37	56	46	39	34	38	33	29	31	27	24	24	21	20
7	57	45	38	32	52	42	35	30	35	30	26	28	24	22	22	19	17
8	53	41	34	29	48	38	31	27	32	27	23	26	22	19	20	18	16
9	49	38	30	26	45	35	28	24	29	24	21	24	20	17	19	16	14
10	46	35	28	23	42	32	26	22	27	22	19	22	18	16	17	15	13

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1937	1937	1937
5°	1940	1906	1919
10°	1920	1869	1857
15°	1894	1808	1761
20°	1859	1723	1643
25°	1823	1628	1529
30°	1775	1530	1384
35°	1728	1425	1257
40°	1680	1317	1111
45°	1624	1196	979
50°	1567	1074	850
55°	1506	944	725
60°	1437	808	598
65°	1356	670	539
70°	1259	541	488
75°	1137	477	445
80°	961	402	388
85°	669	270	295

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 2611 cd/sqm

TEST NUMBER: P925818

CATALOG NUMBER: DFN2DIP-SQ4F0-070D110US950-RLFL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	258.7	1.7
10°-20°	710.1	4.7
20°-30°	997.0	6.7
30°-40°	1086.8	7.3
40°-50°	998.8	6.7
50°-60°	784.4	5.2
60°-70°	510.6	3.4
70°-80°	262.8	1.8
80°-90°	76.5	0.5
90°-100°	205.4	1.4
100°-110°	652.5	4.4
110°-120°	1116.7	7.5
120°-130°	1468.6	9.8
130°-140°	1648.4	11.0
140°-150°	1616.5	10.8
150°-160°	1356.0	9.1
160°-170°	899.3	6.0
170°-180°	314.3	2.1
0°-30°	1965.7	13.1
0°-40°	3052.5	20.4
0°-60°	4835.8	32.3
0°-90°	5685.7	38.0
90°-120°	1974.6	13.2
90°-150°	6708.2	44.8
90°-180°	9278.0	62.0
0°-180°	14963.5	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2760	2760	2760	2760	2760	
5°	2760	2748	2715	2738	2730	262
15°	2625	2598	2513	2465	2440	740
25°	2383	2303	2138	2036	1998	1096
35°	2053	1926	1706	1549	1494	1285
45°	1679	1511	1249	1071	1012	1296
55°	1276	1082	812	662	615	1140
65°	862	659	435	350	342	854
75°	460	285	200	182	180	486
85°	107	55	47	47	47	123
90°	3	36	98	92	95	15
95°	146	174	179	179	174	163
105°	602	610	616	621	621	636
115°	1121	1137	1132	1129	1121	1108
125°	1630	1655	1647	1638	1635	1457
135°	2108	2139	2145	2142	2134	1630
145°	2559	2579	2596	2598	2587	1599
155°	2927	2935	2944	2958	2949	1347
165°	3184	3181	3181	3201	3187	898
175°	3313	3305	3299	3319	3302	315
180°	3319	3319	3319	3319	3319	

TEST NUMBER: P925818

CATALOG NUMBER: DFN2DIP-SQ4F0-070D110US950-RLFL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2760.0	2760.0	2760.0	2760.0	2760.0
2.5°	2772.4	2760.0	2732.4	2757.6	2752.6
5°	2760.0	2747.5	2715.0	2737.5	2730.1
7.5°	2737.5	2722.6	2687.7	2697.4	2685.0
10°	2707.5	2690.1	2640.2	2632.6	2617.7
12.5°	2670.2	2647.6	2580.1	2565.2	2537.6
15°	2625.1	2597.6	2512.7	2465.3	2440.4
17.5°	2572.7	2532.7	2427.7	2372.8	2332.8
20°	2512.7	2462.7	2337.9	2275.6	2220.4
22.5°	2447.9	2390.3	2245.3	2160.5	2123.2
25°	2382.9	2302.9	2138.0	2035.7	1998.2
27.5°	2305.5	2220.4	2038.1	1920.8	1863.3
30°	2223.1	2128.0	1928.1	1801.0	1733.4
32.5°	2143.1	2028.1	1823.5	1673.5	1610.9
35°	2053.2	1925.7	1706.1	1548.7	1493.6
37.5°	1965.8	1828.2	1596.1	1423.6	1361.4
40°	1873.3	1723.6	1481.1	1303.8	1238.9
42.5°	1778.4	1618.7	1366.3	1181.3	1119.1
45°	1678.6	1511.0	1249.0	1071.4	1011.5
47.5°	1583.6	1406.4	1136.6	959.1	904.2
50°	1478.7	1301.4	1026.6	854.1	801.9
52.5°	1376.1	1188.8	921.7	756.8	709.4
55°	1276.3	1081.5	811.7	662.0	614.6
57.5°	1174.0	974.1	714.5	574.5	534.5
60°	1069.1	869.2	611.9	484.7	444.7
62.5°	966.7	766.9	524.4	404.7	384.7
65°	861.7	659.3	434.6	349.8	342.1
67.5°	761.9	559.4	349.8	307.1	299.7
70°	656.9	462.1	289.6	264.7	254.6
72.5°	557.0	372.1	242.2	222.4	217.3
75°	459.5	284.6	199.8	182.3	179.9
77.5°	362.2	202.2	157.4	147.3	142.3
80°	272.2	144.9	119.8	110.0	110.0
82.5°	189.8	97.5	82.4	77.4	77.4
85°	107.3	54.9	47.4	47.4	47.4
87.5°	40.0	19.8	19.8	17.5	17.5
90°	3.0	36.1	98.1	92.1	95.0
92.5°	62.0	84.0	87.0	90.1	90.1
95°	146.1	174.1	179.1	179.1	174.1
97.5°	243.2	269.1	280.2	280.2	280.2
100°	355.2	378.2	386.2	386.2	383.2
102.5°	473.3	490.3	501.3	504.3	501.3
105°	602.4	610.4	616.4	621.3	621.3
107.5°	730.4	742.4	742.4	744.4	730.4
110°	854.5	870.5	870.5	870.5	862.5

TEST NUMBER: P925818

CATALOG NUMBER: DFN2DIP-SQ4F0-070D110US950-RLFL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	988.5	1005.5	1002.6	994.5	988.5
115°	1120.7	1136.6	1131.6	1128.7	1120.7
117.5°	1251.7	1273.7	1259.7	1251.7	1243.7
120°	1383.8	1405.8	1383.8	1383.8	1374.8
122.5°	1503.9	1531.8	1517.8	1509.8	1503.9
125°	1629.9	1654.9	1646.9	1637.9	1634.9
127.5°	1753.0	1784.0	1773.0	1761.0	1753.0
130°	1868.0	1904.1	1899.0	1893.0	1882.1
132.5°	1997.1	2025.2	2027.2	2013.1	2005.1
135°	2108.1	2139.2	2145.2	2142.2	2134.2
137.5°	2232.3	2257.3	2262.2	2260.2	2248.3
140°	2341.3	2366.3	2380.3	2380.3	2369.4
142.5°	2453.4	2478.4	2486.4	2489.4	2478.4
145°	2559.4	2579.4	2595.5	2598.4	2587.4
147.5°	2654.5	2679.5	2691.5	2696.5	2685.5
150°	2752.6	2769.6	2780.5	2789.6	2780.5
152.5°	2839.6	2856.6	2870.6	2881.7	2870.6
155°	2926.7	2934.6	2943.7	2957.7	2948.6
157.5°	3001.7	3007.7	3012.6	3032.7	3018.6
160°	3068.7	3074.7	3077.7	3094.8	3082.8
162.5°	3130.7	3130.7	3133.8	3152.8	3138.8
165°	3183.8	3180.7	3180.7	3200.8	3186.7
167.5°	3231.8	3222.8	3222.8	3242.8	3228.8
170°	3267.8	3259.8	3256.9	3276.8	3259.8
172.5°	3292.8	3284.8	3281.9	3301.9	3284.8
175°	3312.9	3304.8	3298.8	3318.9	3301.9
177.5°	3323.8	3315.8	3309.8	3326.9	3309.8
180°	3318.9	3318.9	3318.9	3318.9	3318.9

TEST NUMBER: P925818

CATALOG NUMBER: DFN2DIP-SQ4F0-070D110US950-RLLFLL

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	8.22	8.96	9.28	10.02	11.45	4.18	4.92	5.24	5.98	7.41
	3H	9.89	10.56	10.96	11.62	13.08	5.36	6.02	6.43	7.09	8.55
	4H	10.50	11.13	11.58	12.20	13.66	5.81	6.44	6.89	7.51	8.97
	6H	10.92	11.50	12.01	12.57	14.04	6.13	6.70	7.21	7.78	9.25
	8H	11.05	11.60	12.14	12.69	14.15	6.21	6.76	7.31	7.85	9.32
	12H	11.11	11.63	12.21	12.71	14.20	6.25	6.78	7.35	7.86	9.35
4H	2H	8.23	8.85	9.31	9.92	11.38	4.77	5.39	5.85	6.46	7.92
	3H	10.05	10.57	11.15	11.67	13.14	6.11	6.63	7.20	7.73	9.20
	4H	10.74	11.22	11.84	12.31	13.80	6.65	7.13	7.75	8.22	9.71
	6H	11.26	11.67	12.36	12.78	14.27	7.07	7.48	8.18	8.59	10.08
	8H	11.43	11.82	12.54	12.92	14.42	7.20	7.58	8.30	8.68	10.18
	12H	11.53	11.87	12.65	12.99	14.50	7.26	7.60	8.38	8.72	10.23
8H	4H	10.70	11.09	11.81	12.19	13.69	6.93	7.31	8.04	8.41	9.92
	6H	11.27	11.59	12.40	12.73	14.23	7.45	7.76	8.57	8.91	10.41
	8H	11.49	11.77	12.63	12.89	14.41	7.64	7.91	8.77	9.04	10.56
	12H	11.63	11.87	12.77	12.99	14.55	7.75	8.00	8.89	9.12	10.68
12H	4H	10.65	11.00	11.78	12.11	13.62	6.93	7.28	8.05	8.39	9.90
	6H	11.25	11.52	12.38	12.65	14.17	7.50	7.77	8.63	8.90	10.42
	8H	11.47	11.71	12.60	12.83	14.39	7.70	7.95	8.84	9.07	10.63