

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: P923126

Luminaire Tested: DFN2DIP-SQ4F0-080D110US940-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P923126
REPORT IS A COMBINATION OF REPORTS P900154 AND P896915
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ4F0-080D110US940-RLLFLL
Description: 4 foot, Square Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

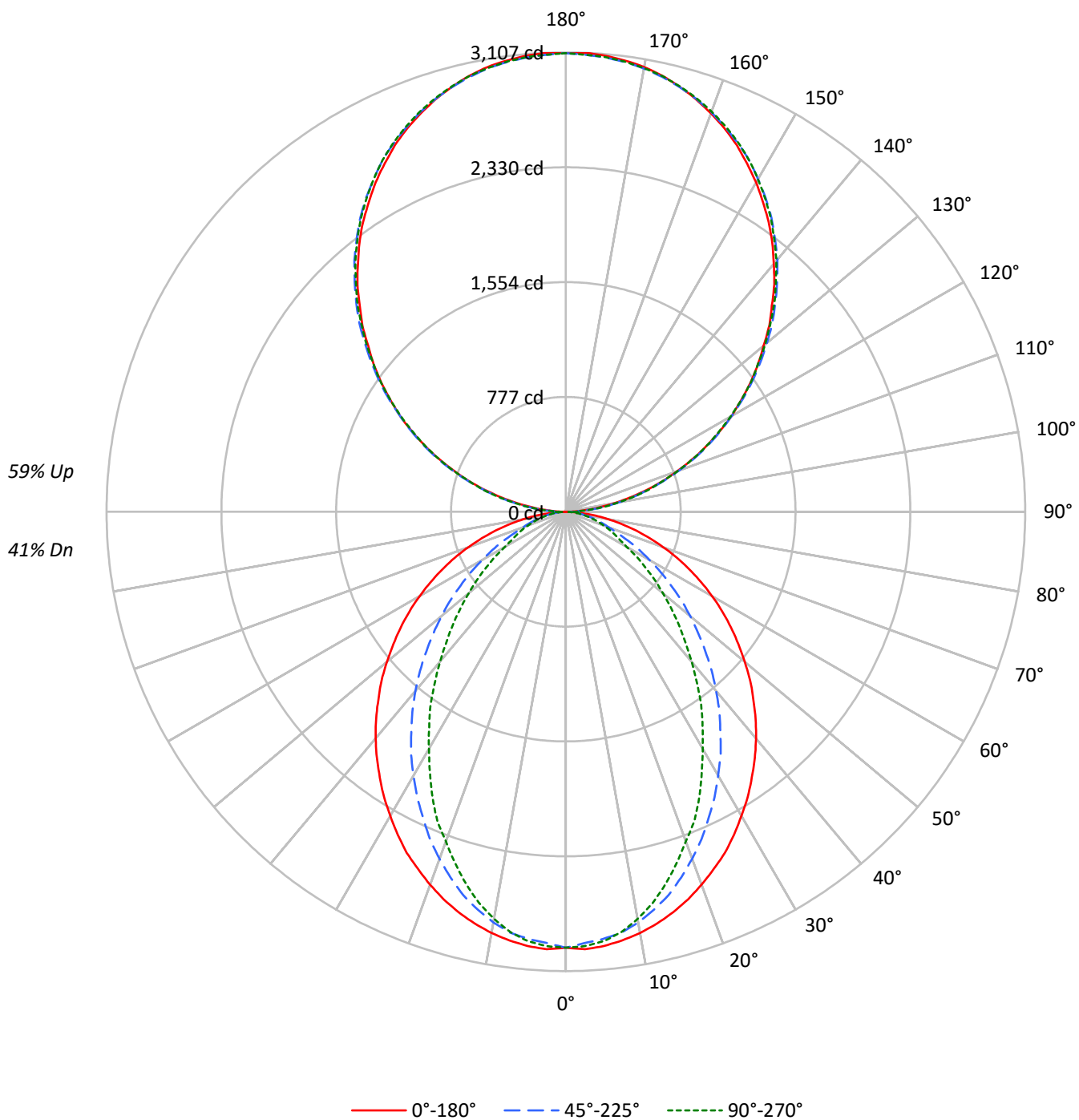
Lumens per Lamp: N/A
Luminaire Lumens: 14744.5 lumens
Efficiency: N/A
Efficacy: 95.6 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.92' x L: 3.92' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 154.2
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9954
Total Harmonic Distortion (THDi): 0.076
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P923126

CATALOG NUMBER: DFN2DIP-SQ4F0-080D110US940-RLLFLL

Luminous Intensity Polar Plot



TEST NUMBER: P923126

CATALOG NUMBER: DFN2DIP-SQ4F0-080D110US940-RLFL

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	105	105	105	105	96	96	96	96	78	78	78	63	63	63	48	48	48
1	96	92	88	85	88	84	81	78	69	67	65	56	54	53	43	42	41
2	88	81	75	70	80	74	69	65	61	58	55	49	47	45	38	37	35
3	80	71	64	59	73	65	59	55	54	50	46	44	41	38	34	32	31
4	74	63	56	50	67	58	52	47	48	44	40	39	36	33	31	29	27
5	68	57	49	43	62	52	45	40	43	38	34	36	32	29	28	26	23
6	63	51	43	37	57	47	40	35	39	34	30	32	28	25	26	23	21
7	58	46	38	33	53	42	36	31	36	31	27	29	26	23	23	21	19
8	54	42	34	29	49	39	32	27	33	27	24	27	23	20	22	19	17
9	50	38	31	26	46	35	29	24	30	25	21	25	21	18	20	17	15
10	47	35	28	23	43	32	26	22	28	23	19	23	19	17	19	16	14

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2069	2069	2069
5°	2072	2036	2050
10°	2052	1997	1983
15°	2023	1931	1881
20°	1986	1841	1755
25°	1948	1739	1633
30°	1896	1635	1478
35°	1846	1523	1343
40°	1795	1407	1187
45°	1735	1278	1046
50°	1673	1148	907
55°	1609	1009	775
60°	1535	863	638
65°	1449	715	575
70°	1345	577	522
75°	1215	510	476
80°	1026	429	414
85°	715	288	315

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 2440 cd/sqm

TEST NUMBER: P923126

CATALOG NUMBER: DFN2DIP-SQ4F0-080D110US940-RLFL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	276.3	1.9
10°-20°	758.6	5.1
20°-30°	1065.0	7.2
30°-40°	1160.9	7.9
40°-50°	1067.0	7.2
50°-60°	838.0	5.7
60°-70°	545.4	3.7
70°-80°	280.8	1.9
80°-90°	80.5	0.5
90°-100°	192.0	1.3
100°-110°	609.9	4.1
110°-120°	1043.8	7.1
120°-130°	1372.7	9.3
130°-140°	1540.8	10.5
140°-150°	1511.0	10.2
150°-160°	1267.5	8.6
160°-170°	840.6	5.7
170°-180°	293.8	2.0
0°-30°	2099.9	14.2
0°-40°	3260.8	22.1
0°-60°	5165.8	35.0
0°-90°	6072.5	41.2
90°-120°	1845.7	12.5
90°-150°	6270.1	42.5
90°-180°	8672.0	58.8
0°-180°	14744.5	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2948	2948	2948	2948	2948	
5°	2948	2935	2900	2924	2916	280
15°	2804	2775	2684	2634	2607	790
25°	2546	2460	2284	2175	2134	1171
35°	2193	2057	1822	1654	1595	1373
45°	1793	1614	1334	1144	1081	1385
55°	1363	1155	867	707	656	1218
65°	921	704	464	374	365	913
75°	491	304	214	195	192	519
85°	115	59	51	51	51	132
90°	3	34	92	86	89	15
95°	136	163	167	167	163	152
105°	563	570	576	581	581	594
115°	1048	1062	1058	1055	1048	1036
125°	1524	1547	1539	1531	1528	1361
135°	1970	2000	2005	2002	1995	1523
145°	2392	2411	2426	2429	2418	1495
155°	2736	2743	2752	2765	2756	1259
165°	2976	2973	2973	2992	2979	840
175°	3097	3089	3083	3102	3086	294
180°	3102	3102	3102	3102	3102	

TEST NUMBER: P923126

CATALOG NUMBER: DFN2DIP-SQ4F0-080D110US940-RLFL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2948.4	2948.4	2948.4	2948.4	2948.4
2.5°	2961.6	2948.4	2918.9	2945.8	2940.4
5°	2948.4	2935.1	2900.2	2924.3	2916.3
7.5°	2924.3	2908.4	2871.0	2881.6	2868.2
10°	2892.3	2873.6	2820.4	2812.2	2796.3
12.5°	2852.4	2828.3	2756.1	2740.2	2710.8
15°	2804.3	2774.8	2684.2	2633.6	2606.9
17.5°	2748.2	2705.4	2593.4	2534.8	2492.0
20°	2684.2	2630.7	2497.4	2430.9	2371.9
22.5°	2614.9	2553.4	2398.6	2308.0	2268.1
25°	2545.5	2460.1	2283.9	2174.7	2134.5
27.5°	2462.8	2371.9	2177.2	2051.8	1990.4
30°	2374.8	2273.1	2059.8	1923.9	1851.6
32.5°	2289.3	2166.5	1947.9	1787.7	1720.9
35°	2193.3	2057.2	1822.5	1654.4	1595.4
37.5°	2099.9	1953.0	1705.0	1520.7	1454.2
40°	2001.2	1841.2	1582.2	1392.8	1323.4
42.5°	1899.8	1729.1	1459.6	1262.0	1195.4
45°	1793.1	1614.2	1334.2	1144.5	1080.6
47.5°	1691.8	1502.4	1214.2	1024.5	965.9
50°	1579.6	1390.3	1096.7	912.4	856.6
52.5°	1470.1	1269.9	984.5	808.5	757.9
55°	1363.3	1155.3	867.1	707.1	656.5
57.5°	1254.1	1040.6	763.2	613.8	571.0
60°	1141.9	928.5	653.6	517.7	475.0
62.5°	1032.7	819.2	560.3	432.3	411.1
65°	920.6	704.3	464.2	373.7	365.4
67.5°	813.9	597.6	373.7	328.1	320.2
70°	701.8	493.7	309.4	282.8	272.1
72.5°	595.0	397.4	258.8	237.6	232.1
75°	490.9	304.1	213.5	194.7	192.3
77.5°	387.0	216.0	168.2	157.4	152.0
80°	290.7	154.9	128.0	117.4	117.4
82.5°	202.7	104.2	88.0	82.7	82.7
85°	114.7	58.6	50.6	50.6	50.6
87.5°	42.7	21.2	21.2	18.7	18.7
90°	2.8	33.7	91.7	86.1	88.8
92.5°	58.0	78.6	81.3	84.2	84.2
95°	136.5	162.7	167.4	167.4	162.7
97.5°	227.3	251.6	261.9	261.9	261.9
100°	332.0	353.5	361.0	361.0	358.2
102.5°	442.4	458.2	468.6	471.4	468.6
105°	563.0	570.5	576.1	580.8	580.8
107.5°	682.7	693.9	693.9	695.8	682.7
110°	798.7	813.7	813.7	813.7	806.2

TEST NUMBER: P923126

CATALOG NUMBER: DFN2DIP-SQ4F0-080D110US940-RLFL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	924.0	939.9	937.1	929.6	924.0
115°	1047.5	1062.4	1057.7	1055.0	1047.5
117.5°	1170.0	1190.5	1177.4	1170.0	1162.5
120°	1293.4	1314.0	1293.4	1293.4	1285.0
122.5°	1405.7	1431.8	1418.7	1411.2	1405.7
125°	1523.5	1546.8	1539.4	1531.0	1528.1
127.5°	1638.5	1667.5	1657.2	1646.0	1638.5
130°	1746.1	1779.8	1775.0	1769.4	1759.2
132.5°	1866.7	1892.9	1894.8	1881.7	1874.2
135°	1970.5	1999.5	2005.1	2002.3	1994.8
137.5°	2086.5	2109.9	2114.5	2112.6	2101.5
140°	2188.4	2211.8	2224.9	2224.9	2214.7
142.5°	2293.2	2316.6	2324.1	2326.8	2316.6
145°	2392.3	2411.0	2426.0	2428.8	2418.5
147.5°	2481.2	2504.5	2515.8	2520.4	2510.2
150°	2572.9	2588.7	2599.0	2607.5	2599.0
152.5°	2654.2	2670.0	2683.2	2693.5	2683.2
155°	2735.6	2743.0	2751.5	2764.6	2756.1
157.5°	2805.7	2811.3	2815.9	2834.7	2821.5
160°	2868.4	2874.0	2876.7	2892.7	2881.5
162.5°	2926.3	2926.3	2929.2	2946.9	2933.8
165°	2975.9	2973.1	2973.1	2991.8	2978.7
167.5°	3020.8	3012.4	3012.4	3031.1	3018.0
170°	3054.5	3047.0	3044.2	3062.8	3047.0
172.5°	3077.8	3070.3	3067.6	3086.3	3070.3
175°	3096.6	3089.1	3083.4	3102.2	3086.3
177.5°	3106.8	3099.3	3093.7	3109.7	3093.7
180°	3102.2	3102.2	3102.2	3102.2	3102.2

TEST NUMBER: P923126

CATALOG NUMBER: DFN2DIP-SQ4F0-080D110US940-RLFL

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	8.80	9.56	9.84	10.60	12.00	4.76	5.53	5.80	6.56	7.96
	3H	10.48	11.16	11.52	12.21	13.62	5.95	6.63	6.99	7.68	9.09
	4H	11.09	11.73	12.14	12.78	14.20	6.39	7.04	7.45	8.09	9.51
	6H	11.51	12.10	12.57	13.16	14.59	6.71	7.31	7.78	8.36	9.79
	8H	11.63	12.20	12.71	13.27	14.70	6.80	7.37	7.87	8.43	9.86
	12H	11.70	12.23	12.77	13.30	14.75	6.84	7.38	7.92	8.44	9.89
4H	2H	8.81	9.46	9.87	10.51	11.93	5.35	6.00	6.42	7.05	8.47
	3H	10.64	11.18	11.71	12.25	13.69	6.70	7.23	7.77	8.31	9.74
	4H	11.33	11.82	12.41	12.89	14.35	7.24	7.73	8.32	8.80	10.26
	6H	11.85	12.27	12.93	13.36	14.81	7.66	8.08	8.74	9.17	10.62
	8H	12.02	12.42	13.11	13.50	14.97	7.79	8.18	8.87	9.26	10.73
	12H	12.12	12.47	13.22	13.57	15.04	7.85	8.21	8.95	9.30	10.77
8H	4H	11.29	11.69	12.38	12.77	14.24	7.52	7.91	8.61	9.00	10.46
	6H	11.86	12.19	12.97	13.31	14.77	8.04	8.36	9.14	9.49	10.95
	8H	12.08	12.37	13.20	13.47	14.96	8.23	8.51	9.34	9.62	11.10
	12H	12.22	12.47	13.34	13.57	15.09	8.35	8.60	9.46	9.70	11.22
12H	4H	11.24	11.60	12.35	12.70	14.17	7.52	7.88	8.63	8.98	10.45
	6H	11.84	12.12	12.95	13.23	14.71	8.09	8.37	9.20	9.48	10.96
	8H	12.06	12.31	13.18	13.41	14.93	8.30	8.55	9.41	9.65	11.17