

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: P923086

Luminaire Tested: DFN2DIP-SQ4F0-070D100US940-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P923086
REPORT IS A COMBINATION OF REPORTS P900134 AND P896915
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ4F0-070D100US940-RLLFLL
Description: 4 foot, Square Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

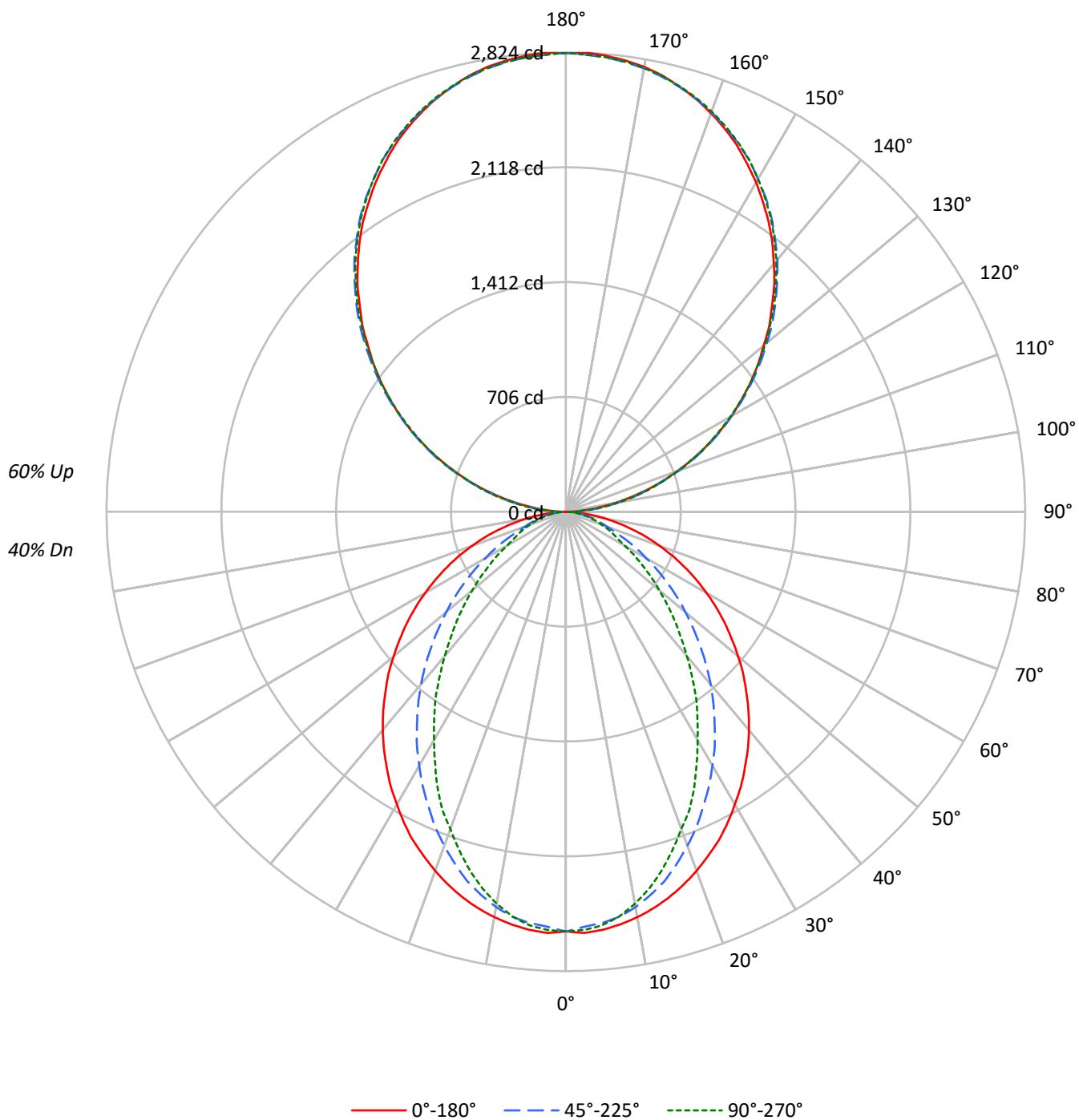
Lumens per Lamp: N/A
Luminaire Lumens: 13197.3 lumens
Efficiency: N/A
Efficacy: 97.0 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.92' x L: 3.92' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 136
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: P923086

CATALOG NUMBER: DFN2DIP-SQ4F0-070D100US940-RLLFLL

Luminous Intensity Polar Plot



TEST NUMBER: P923086

CATALOG NUMBER: DFN2DIP-SQ4F0-070D100US940-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	95	95	95	95	78	78	78	62	62	62	47	47	47
1	96	92	88	85	87	84	81	78	69	67	65	55	54	52	42	41	41
2	88	81	75	70	80	74	69	65	61	57	54	49	46	44	38	36	35
3	80	71	64	59	73	65	59	54	54	50	46	43	40	38	34	32	30
4	74	63	56	50	67	58	51	46	48	43	39	39	35	33	30	28	26
5	68	56	49	43	61	52	45	40	43	38	34	35	31	29	28	25	23
6	62	51	43	37	57	47	40	35	39	34	30	32	28	25	25	23	20
7	58	46	38	33	53	42	35	31	35	30	27	29	25	22	23	20	18
8	54	42	34	29	49	38	32	27	32	27	24	27	23	20	21	19	17
9	50	38	31	26	45	35	29	24	30	25	21	25	21	18	20	17	15
10	47	35	28	23	43	32	26	22	27	22	19	23	19	16	18	16	14

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1810	1810	1810
5°	1813	1782	1793
10°	1795	1747	1736
15°	1770	1690	1646
20°	1738	1611	1536
25°	1704	1522	1429
30°	1659	1430	1294
35°	1615	1332	1175
40°	1570	1231	1038
45°	1518	1118	915
50°	1464	1004	794
55°	1408	883	678
60°	1343	755	559
65°	1268	626	503
70°	1177	505	456
75°	1063	446	416
80°	898	376	363
85°	625	252	276

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 2221 cd/sqm

TEST NUMBER: P923086

CATALOG NUMBER: DFN2DIP-SQ4F0-070D100US940-RLFL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	241.8	1.8
10°-20°	663.7	5.0
20°-30°	931.9	7.1
30°-40°	1015.8	7.7
40°-50°	933.6	7.1
50°-60°	733.2	5.6
60°-70°	477.3	3.6
70°-80°	245.7	1.9
80°-90°	70.7	0.5
90°-100°	174.5	1.3
100°-110°	554.5	4.2
110°-120°	948.9	7.2
120°-130°	1247.9	9.5
130°-140°	1400.8	10.6
140°-150°	1373.6	10.4
150°-160°	1152.3	8.7
160°-170°	764.1	5.8
170°-180°	267.1	2.0
0°-30°	1837.4	13.9
0°-40°	2853.2	21.6
0°-60°	4520.0	34.2
0°-90°	5313.7	40.3
90°-120°	1677.9	12.7
90°-150°	5700.1	43.2
90°-180°	7884.0	59.7
0°-180°	13197.3	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2580	2580	2580	2580	2580	
5°	2580	2568	2538	2559	2552	245
15°	2454	2428	2349	2304	2281	691
25°	2227	2152	1998	1903	1868	1024
35°	1919	1800	1595	1448	1396	1201
45°	1569	1412	1167	1002	946	1212
55°	1193	1011	759	619	574	1066
65°	806	616	406	327	320	799
75°	430	266	187	170	168	454
85°	100	51	44	44	44	115
90°	3	31	83	78	81	13
95°	124	148	152	152	148	138
105°	512	519	524	528	528	540
115°	952	966	962	959	952	942
125°	1385	1406	1400	1392	1389	1238
135°	1791	1818	1823	1820	1814	1385
145°	2175	2192	2206	2208	2199	1359
155°	2487	2494	2501	2513	2506	1145
165°	2705	2703	2703	2720	2708	763
175°	2815	2808	2803	2820	2806	267
180°	2820	2820	2820	2820	2820	

TEST NUMBER: P923086

CATALOG NUMBER: DFN2DIP-SQ4F0-070D100US940-RLFL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2579.8	2579.8	2579.8	2579.8	2579.8
2.5°	2591.4	2579.8	2554.0	2577.6	2572.9
5°	2579.8	2568.1	2537.7	2558.8	2551.8
7.5°	2558.8	2544.9	2512.2	2521.3	2509.7
10°	2530.8	2514.4	2467.8	2460.7	2446.8
12.5°	2495.8	2474.8	2411.6	2397.7	2371.9
15°	2453.7	2427.9	2348.7	2304.4	2281.1
17.5°	2404.7	2367.3	2269.2	2217.9	2180.5
20°	2348.7	2301.9	2185.2	2127.0	2075.5
22.5°	2288.0	2234.3	2098.7	2019.5	1984.6
25°	2227.3	2152.5	1998.4	1902.8	1867.7
27.5°	2155.0	2075.5	1905.1	1795.4	1741.6
30°	2078.0	1989.0	1802.2	1683.4	1620.2
32.5°	2003.1	1895.7	1704.4	1564.2	1505.7
35°	1919.1	1800.0	1594.7	1447.6	1396.1
37.5°	1837.5	1708.9	1491.9	1330.6	1272.5
40°	1751.0	1611.1	1384.4	1218.7	1158.0
42.5°	1662.3	1513.0	1277.1	1104.2	1046.1
45°	1569.0	1412.4	1167.4	1001.5	945.5
47.5°	1480.2	1314.6	1062.4	896.4	845.2
50°	1382.2	1216.5	959.6	798.3	749.6
52.5°	1286.3	1111.2	861.5	707.4	663.1
55°	1192.9	1010.8	758.7	618.8	574.4
57.5°	1097.3	910.5	667.8	537.0	499.6
60°	999.3	812.4	571.9	453.1	415.6
62.5°	903.6	716.8	490.2	378.3	359.6
65°	805.5	616.3	406.3	327.0	319.8
67.5°	712.1	522.9	327.0	287.0	280.2
70°	614.0	431.9	270.7	247.4	238.0
72.5°	520.7	347.8	226.4	207.9	203.1
75°	429.5	266.0	186.7	170.4	168.2
77.5°	338.6	189.0	147.1	137.7	133.0
80°	254.4	135.5	112.0	102.8	102.8
82.5°	177.4	91.1	77.0	72.3	72.3
85°	100.3	51.3	44.3	44.3	44.3
87.5°	37.4	18.5	18.5	16.3	16.3
90°	2.6	30.6	83.3	78.2	80.8
92.5°	52.7	71.4	74.0	76.5	76.5
95°	124.1	147.9	152.2	152.2	147.9
97.5°	206.6	228.7	238.1	238.1	238.1
100°	301.8	321.4	328.1	328.1	325.7
102.5°	402.2	416.6	426.0	428.5	426.0
105°	511.8	518.6	523.7	528.0	528.0
107.5°	620.6	630.9	630.9	632.6	620.6
110°	726.1	739.7	739.7	739.7	732.9

TEST NUMBER: P923086

CATALOG NUMBER: DFN2DIP-SQ4F0-070D100US940-RLFL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	840.0	854.4	851.9	845.1	840.0
115°	952.3	965.8	961.6	959.0	952.3
117.5°	1063.6	1082.4	1070.4	1063.6	1056.8
120°	1175.8	1194.5	1175.8	1175.8	1168.2
122.5°	1277.8	1301.6	1289.8	1283.0	1277.8
125°	1385.0	1406.2	1399.5	1391.8	1389.3
127.5°	1489.6	1515.9	1506.5	1496.4	1489.6
130°	1587.3	1617.9	1613.7	1608.6	1599.3
132.5°	1697.0	1720.8	1722.5	1710.7	1703.8
135°	1791.4	1817.8	1822.8	1820.3	1813.5
137.5°	1896.8	1918.1	1922.3	1920.7	1910.4
140°	1989.5	2010.7	2022.7	2022.7	2013.3
142.5°	2084.7	2106.0	2112.7	2115.3	2106.0
145°	2174.8	2191.8	2205.5	2208.0	2198.6
147.5°	2255.6	2276.9	2287.1	2291.3	2282.0
150°	2339.0	2353.4	2362.8	2370.3	2362.8
152.5°	2412.9	2427.3	2439.3	2448.6	2439.3
155°	2486.9	2493.7	2501.3	2513.2	2505.5
157.5°	2550.6	2555.7	2560.0	2577.0	2565.1
160°	2607.6	2612.7	2615.2	2629.7	2619.5
162.5°	2660.3	2660.3	2662.8	2679.0	2667.1
165°	2705.4	2702.8	2702.8	2719.8	2707.9
167.5°	2746.2	2738.5	2738.5	2755.6	2743.6
170°	2776.8	2770.0	2767.4	2784.5	2770.0
172.5°	2798.0	2791.2	2788.6	2805.7	2791.2
175°	2815.0	2808.3	2803.2	2820.1	2805.7
177.5°	2824.4	2817.6	2812.5	2826.9	2812.5
180°	2820.1	2820.1	2820.1	2820.1	2820.1

TEST NUMBER: P923086

CATALOG NUMBER: DFN2DIP-SQ4F0-070D100US940-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	8.24	8.99	9.28	10.04	11.44	4.20	4.95	5.24	6.00	7.40
	3H	9.91	10.59	10.97	11.64	13.07	5.38	6.06	6.43	7.11	8.54
	4H	10.52	11.16	11.59	12.22	13.65	5.83	6.47	6.89	7.52	8.96
	6H	10.94	11.53	12.02	12.59	14.04	6.15	6.74	7.22	7.79	9.24
	8H	11.07	11.63	12.15	12.70	14.14	6.24	6.80	7.31	7.87	9.31
	12H	11.13	11.66	12.21	12.73	14.19	6.28	6.81	7.36	7.88	9.34
4H	2H	8.25	8.89	9.32	9.94	11.37	4.79	5.43	5.86	6.48	7.91
	3H	10.07	10.61	11.15	11.69	13.13	6.13	6.66	7.21	7.75	9.19
	4H	10.77	11.25	11.85	12.33	13.79	6.68	7.16	7.76	8.24	9.70
	6H	11.28	11.70	12.37	12.80	14.26	7.09	7.51	8.18	8.61	10.07
	8H	11.46	11.85	12.55	12.94	14.41	7.22	7.61	8.31	8.70	10.18
	12H	11.55	11.91	12.66	13.01	14.49	7.28	7.64	8.39	8.74	10.22
8H	4H	10.73	11.12	11.82	12.21	13.68	6.95	7.34	8.05	8.43	9.91
	6H	11.30	11.62	12.41	12.75	14.22	7.47	7.79	8.58	8.92	10.40
	8H	11.52	11.80	12.64	12.91	14.40	7.66	7.94	8.78	9.06	10.55
	12H	11.65	11.90	12.78	13.01	14.54	7.78	8.03	8.90	9.14	10.67
12H	4H	10.68	11.03	11.79	12.13	13.61	6.96	7.31	8.06	8.41	9.89
	6H	11.27	11.55	12.39	12.67	14.16	7.52	7.80	8.64	8.92	10.41
	8H	11.49	11.74	12.62	12.85	14.38	7.73	7.98	8.85	9.09	10.62