

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: P922734

Luminaire Tested: DFN2DIP-SQ3F0-040D100US940-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P922734
REPORT IS A COMBINATION OF REPORTS P899970 AND P896733
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ3F0-040D100US940-RLLFLL
Description: 3 foot, Square Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

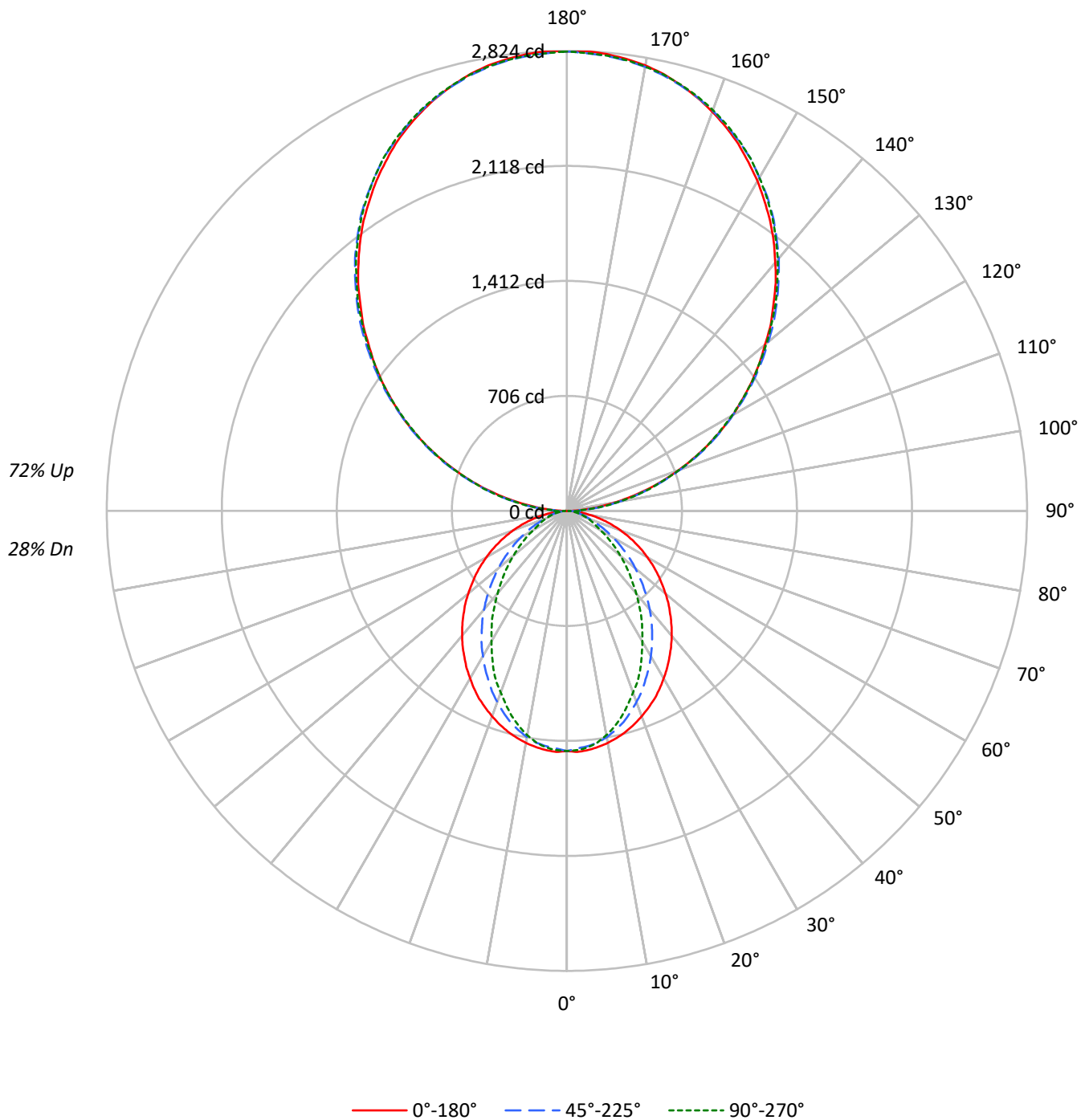
Lumens per Lamp: N/A
Luminaire Lumens: 10923.5 lumens
Efficiency: N/A
Efficacy: 99.5 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.06' x L: 3.06' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 109.8
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9933
Total Harmonic Distortion (THDi): 0.066
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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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
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10
RCR																	
0	102	102	102	102	91	91	91	91	71	71	71	53	53	53	36	36	36
1	93	89	85	82	83	80	77	74	62	60	59	47	45	44	32	31	31
2	85	78	72	67	76	70	65	61	55	52	49	41	39	37	28	27	26
3	78	69	62	56	69	62	56	51	49	45	41	37	34	32	25	24	23
4	71	61	53	48	63	55	48	44	43	39	35	33	30	27	23	21	20
5	65	54	47	41	58	49	42	37	39	34	31	29	26	24	21	19	17
6	60	49	41	35	54	44	37	32	35	30	27	27	23	21	19	17	15
7	55	44	36	31	50	40	33	28	32	27	23	24	21	19	17	15	14
8	51	40	32	27	46	36	30	25	29	24	21	22	19	16	16	14	12
9	48	36	29	24	43	33	27	22	26	22	19	20	17	15	15	13	11
10	45	33	26	22	40	30	24	20	24	20	17	19	16	13	14	12	10

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1689	1689	1689
5°	1691	1661	1672
10°	1673	1627	1617
15°	1649	1573	1533
20°	1617	1497	1429
25°	1585	1413	1329
30°	1542	1327	1202
35°	1500	1235	1091
40°	1457	1139	963
45°	1407	1033	848
50°	1355	926	735
55°	1301	812	626
60°	1239	693	515
65°	1166	573	463
70°	1079	460	418
75°	968	403	379
80°	809	334	327
85°	549	218	242

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 2838 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	138.2	1.3
10°-20°	379.3	3.5
20°-30°	532.5	4.9
30°-40°	580.5	5.3
40°-50°	533.5	4.9
50°-60°	419.0	3.8
60°-70°	272.7	2.5
70°-80°	140.4	1.3
80°-90°	43.9	0.4
90°-100°	174.5	1.6
100°-110°	554.5	5.1
110°-120°	948.9	8.7
120°-130°	1247.9	11.4
130°-140°	1400.8	12.8
140°-150°	1373.6	12.6
150°-160°	1152.3	10.5
160°-170°	764.1	7.0
170°-180°	267.1	2.4
0°-30°	1049.9	9.6
0°-40°	1630.4	14.9
0°-60°	2582.9	23.6
0°-90°	3039.8	27.8
90°-120°	1677.9	15.4
90°-150°	5700.1	52.2
90°-180°	7884.0	72.2
0°-180°	10923.5	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1474	1474	1474	1474	1474	
5°	1474	1468	1450	1462	1458	140
15°	1402	1387	1342	1317	1304	395
25°	1273	1230	1142	1087	1067	585
35°	1097	1029	911	827	798	686
45°	896	807	667	572	540	692
55°	682	578	434	354	328	609
65°	460	352	232	187	183	456
75°	245	152	107	97	96	260
85°	57	29	25	25	25	66
90°	3	31	83	78	81	11
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	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1474.2	1474.2	1474.2	1474.2	1474.2
2.5°	1480.9	1474.2	1459.5	1472.9	1470.2
5°	1474.2	1467.5	1450.1	1462.1	1458.2
7.5°	1462.1	1454.2	1435.6	1440.7	1434.1
10°	1446.2	1436.8	1410.2	1406.0	1398.2
12.5°	1426.2	1414.2	1378.0	1370.1	1355.4
15°	1402.1	1387.4	1342.1	1316.8	1303.5
17.5°	1374.1	1352.7	1296.6	1267.4	1246.0
20°	1342.1	1315.4	1248.7	1215.4	1186.0
22.5°	1307.4	1276.8	1199.3	1154.0	1134.1
25°	1272.7	1230.0	1141.9	1087.4	1067.2
27.5°	1231.5	1186.0	1088.6	1025.9	995.1
30°	1187.4	1136.6	1029.8	961.9	925.9
32.5°	1144.7	1083.2	973.9	893.9	860.4
35°	1096.7	1028.6	911.2	827.2	797.7
37.5°	1050.0	976.5	852.5	760.4	727.1
40°	1000.6	920.6	791.1	696.4	661.7
42.5°	949.8	864.5	729.8	631.0	597.7
45°	896.5	807.1	667.1	572.3	540.3
47.5°	845.9	751.2	607.1	512.3	483.0
50°	789.8	695.1	548.3	456.2	428.3
52.5°	735.0	635.0	492.3	404.2	378.9
55°	681.7	577.6	433.5	353.6	328.2
57.5°	627.1	520.3	381.6	306.8	285.5
60°	571.0	464.2	326.8	258.9	237.6
62.5°	516.4	409.7	280.1	216.2	205.5
65°	460.3	352.1	232.1	186.8	182.7
67.5°	407.0	298.8	186.8	164.1	160.1
70°	350.9	246.8	154.7	141.4	136.0
72.5°	297.6	198.8	129.4	118.8	116.1
75°	245.4	152.0	106.7	97.4	96.1
77.5°	193.5	108.0	84.1	78.7	76.0
80°	145.3	77.4	63.9	58.8	58.8
82.5°	101.4	52.1	44.1	41.3	41.3
85°	57.3	29.3	25.3	25.3	25.3
87.5°	21.4	10.6	10.6	9.4	9.4
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

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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

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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	6.39	7.07	7.52	8.19	9.75	2.35	3.03	3.48	4.15	5.71
	3H	8.05	8.66	9.19	9.79	11.36	3.52	4.13	4.66	5.26	6.83
	4H	8.65	9.23	9.80	10.35	11.93	3.96	4.53	5.11	5.66	7.24
	6H	9.06	9.59	10.22	10.72	12.31	4.27	4.80	5.42	5.93	7.52
	8H	9.18	9.68	10.34	10.83	12.41	4.35	4.85	5.51	6.00	7.58
	12H	9.24	9.71	10.40	10.85	12.46	4.39	4.86	5.55	6.00	7.61
4H	2H	6.39	6.96	7.54	8.09	9.67	2.92	3.50	4.08	4.63	6.21
	3H	8.20	8.68	9.36	9.83	11.42	4.25	4.73	5.41	5.89	7.48
	4H	8.88	9.32	10.04	10.46	12.07	4.79	5.23	5.95	6.37	7.98
	6H	9.38	9.76	10.55	10.92	12.53	5.19	5.57	6.36	6.74	8.34
	8H	9.55	9.90	10.72	11.06	12.68	5.32	5.67	6.48	6.83	8.44
	12H	9.64	9.96	10.82	11.12	12.75	5.37	5.69	6.55	6.86	8.48
8H	4H	8.84	9.19	10.00	10.34	11.96	5.06	5.41	6.22	6.56	8.18
	6H	9.39	9.68	10.58	10.88	12.49	5.56	5.85	6.75	7.05	8.66
	8H	9.60	9.85	10.80	11.03	12.67	5.75	6.00	6.94	7.18	8.81
	12H	9.73	9.95	10.93	11.13	12.79	5.85	6.07	7.05	7.25	8.92
12H	4H	8.78	9.10	9.96	10.27	11.89	5.05	5.37	6.24	6.54	8.16
	6H	9.36	9.62	10.56	10.79	12.43	5.61	5.86	6.80	7.04	8.67
	8H	9.57	9.80	10.77	10.97	12.64	5.81	6.03	7.00	7.20	8.87

END OF REPORT