

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: P909430

Luminaire Tested: DFN2DIP-SQ4F0-070D060US840-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P909430
REPORT IS A COMBINATION OF REPORTS P900062 AND P896915
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ4F0-070D060US840-RLLFLL
Description: 4 foot, Square Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

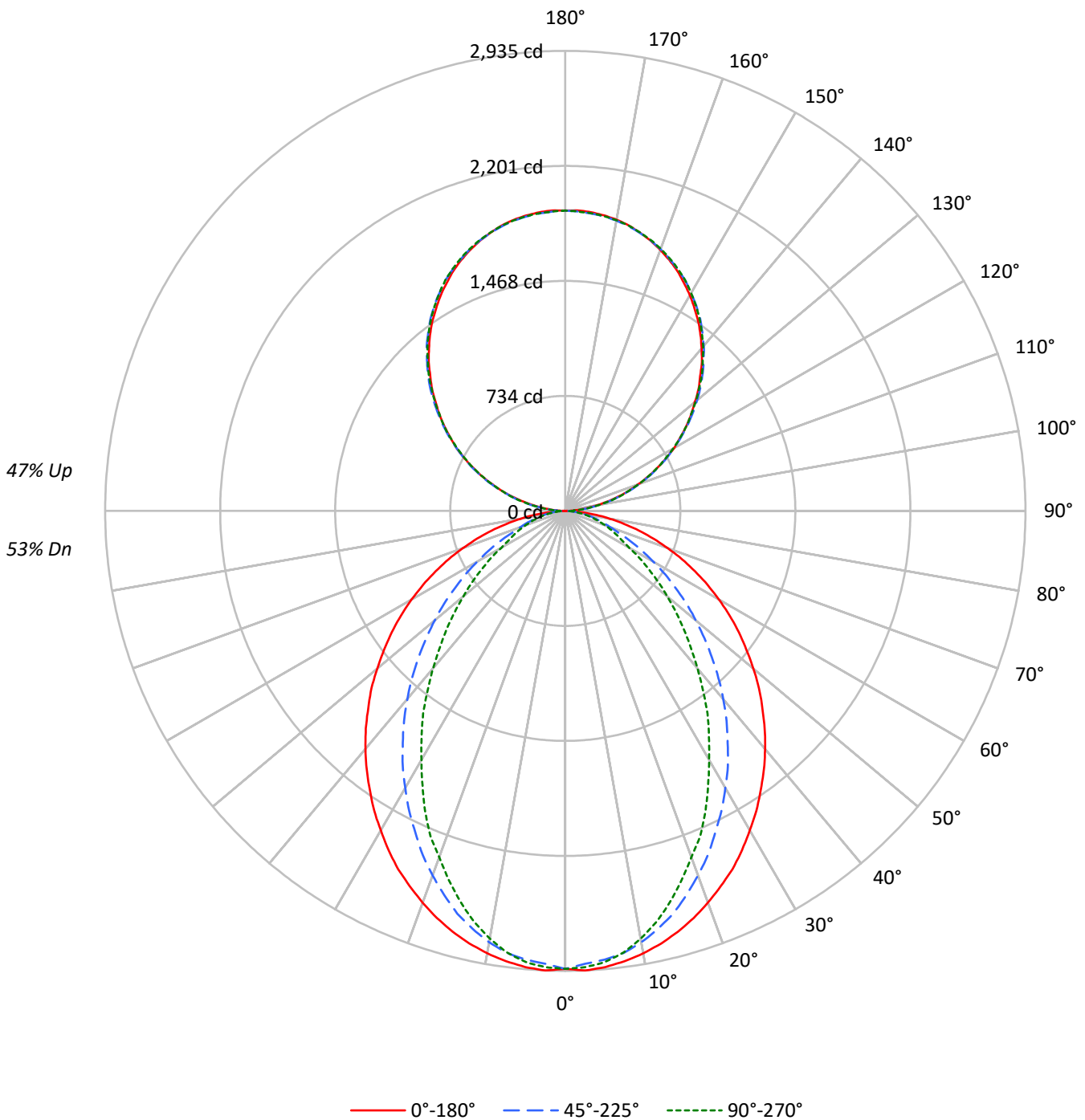
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 11371.0 lumens
Efficiency: N/A
Efficacy: 106.8 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: General Diffuse

Input Watts (W): 106.5
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: P909430
CATALOG NUMBER: DFN2DIP-SQ4F0-070D060US840-RLLFLL

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	108	108	108	108	100	100	100	100	85	85	85	71	71	71	59	59	59	53	53	53	53
1	99	95	91	88	92	88	85	82	75	73	71	64	62	60	53	52	51	46	46	46	46
2	91	83	77	72	84	78	72	68	67	63	59	56	54	51	47	45	43	39	39	39	39
3	83	74	67	61	77	69	62	57	59	54	51	50	47	44	42	40	38	34	34	34	34
4	76	66	58	52	70	61	54	49	53	48	44	45	41	38	38	35	33	29	29	29	29
5	70	59	51	45	65	55	48	43	48	42	38	41	37	33	34	31	29	26	26	26	26
6	65	53	45	39	60	50	42	37	43	38	33	37	33	30	31	28	26	23	23	23	23
7	60	48	40	35	56	45	38	33	39	34	30	34	30	26	29	26	23	21	21	21	21
8	56	44	36	31	52	41	34	29	36	30	27	31	27	24	27	23	21	19	19	19	19
9	52	40	33	28	48	38	31	26	33	28	24	29	24	21	25	21	19	17	17	17	17
10	49	37	30	25	45	35	28	24	31	25	22	27	22	19	23	20	17	15	15	15	15

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2050	2050	2050
5°	2053	2018	2031
10°	2033	1979	1965
15°	2005	1914	1864
20°	1968	1824	1739
25°	1930	1723	1618
30°	1879	1620	1465
35°	1829	1509	1330
40°	1778	1394	1176
45°	1719	1266	1036
50°	1658	1137	899
55°	1595	1000	768
60°	1521	855	633
65°	1436	709	570
70°	1333	572	517
75°	1204	505	472
80°	1017	425	411
85°	708	286	313

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 1719 cd/sqm



TEST NUMBER: P909430

CATALOG NUMBER: DFN2DIP-SQ4F0-070D060US840-RLFL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	273.8	2.4
10°-20°	751.7	6.6
20°-30°	1055.3	9.3
30°-40°	1150.4	10.1
40°-50°	1057.3	9.3
50°-60°	830.4	7.3
60°-70°	540.5	4.8
70°-80°	278.2	2.4
80°-90°	76.5	0.7
90°-100°	118.6	1.0
100°-110°	376.8	3.3
110°-120°	644.8	5.7
120°-130°	848.0	7.5
130°-140°	951.8	8.4
140°-150°	933.4	8.2
150°-160°	783.0	6.9
160°-170°	519.2	4.6
170°-180°	181.5	1.6
0°-30°	2080.9	18.3
0°-40°	3231.2	28.4
0°-60°	5118.9	45.0
0°-90°	6014.1	52.9
90°-120°	1140.1	10.0
90°-150°	3873.3	34.1
90°-180°	5357.0	47.1
0°-180°	11371.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2922	2922	2922	2922	2922	
5°	2922	2908	2874	2898	2890	277
15°	2779	2750	2660	2610	2583	783
25°	2522	2438	2263	2155	2115	1160
35°	2173	2038	1806	1639	1581	1360
45°	1777	1600	1322	1134	1071	1372
55°	1351	1145	859	701	651	1207
65°	912	698	460	370	362	904
75°	486	301	212	193	190	515
85°	114	58	50	50	50	130
90°	2	21	57	53	55	11
95°	84	100	103	103	100	94
105°	348	352	356	359	359	367
115°	647	656	653	652	647	640
125°	941	956	951	946	944	841
135°	1217	1235	1239	1237	1232	941
145°	1478	1489	1499	1500	1494	923
155°	1690	1694	1700	1708	1702	778
165°	1838	1836	1836	1848	1840	519
175°	1913	1908	1905	1916	1906	182
180°	1916	1916	1916	1916	1916	



TEST NUMBER: P909430

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2921.6	2921.6	2921.6	2921.6	2921.6
2.5°	2934.8	2921.6	2892.5	2919.1	2913.8
5°	2921.6	2908.4	2874.0	2897.8	2889.9
7.5°	2897.8	2882.1	2845.1	2855.4	2842.3
10°	2866.1	2847.6	2794.8	2786.7	2771.0
12.5°	2826.5	2802.7	2731.2	2715.4	2686.2
15°	2778.8	2749.7	2659.9	2609.7	2583.3
17.5°	2723.3	2681.0	2569.9	2511.7	2469.4
20°	2659.9	2606.9	2474.8	2408.8	2350.5
22.5°	2591.2	2530.3	2376.8	2287.0	2247.6
25°	2522.4	2437.7	2263.2	2155.0	2115.2
27.5°	2440.5	2350.5	2157.5	2033.3	1972.4
30°	2353.3	2252.6	2041.0	1906.4	1834.9
32.5°	2268.6	2146.9	1930.3	1771.5	1705.3
35°	2173.4	2038.5	1806.0	1639.4	1581.0
37.5°	2080.9	1935.3	1689.6	1506.9	1441.1
40°	1983.0	1824.5	1567.8	1380.2	1311.4
42.5°	1882.6	1713.4	1446.3	1250.5	1184.7
45°	1776.9	1599.5	1322.1	1134.2	1070.8
47.5°	1676.4	1488.7	1203.2	1015.2	957.2
50°	1565.3	1377.7	1086.7	904.1	848.9
52.5°	1456.7	1258.4	975.6	801.1	750.9
55°	1351.0	1144.8	859.2	700.7	650.6
57.5°	1242.7	1031.2	756.3	608.1	565.8
60°	1131.7	920.1	647.7	513.1	470.7
62.5°	1023.3	811.8	555.1	428.4	407.3
65°	912.2	697.9	460.1	370.3	362.1
67.5°	806.5	592.2	370.3	325.1	317.3
70°	695.4	489.2	306.6	280.2	269.5
72.5°	589.7	393.8	256.4	235.4	230.0
75°	486.5	301.2	211.5	193.0	190.5
77.5°	383.4	214.0	166.6	155.9	150.7
80°	288.1	153.4	126.8	116.4	116.4
82.5°	200.9	103.2	87.3	81.9	81.9
85°	113.6	58.1	50.2	50.2	50.2
87.5°	42.3	21.0	21.0	18.5	18.5
90°	1.7	20.8	56.7	53.1	54.8
92.5°	35.9	48.6	50.3	52.0	52.0
95°	84.3	100.5	103.4	103.4	100.5
97.5°	140.4	155.4	161.8	161.8	161.8
100°	205.1	218.3	223.0	223.0	221.3
102.5°	273.3	283.1	289.4	291.1	289.4
105°	347.8	352.4	355.9	358.8	358.8
107.5°	421.7	428.7	428.7	429.8	421.7
110°	493.4	502.6	502.6	502.6	498.0



TEST NUMBER: P909430

CATALOG NUMBER: DFN2DIP-SQ4F0-070D060US840-RLFL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	570.8	580.6	578.9	574.2	570.8
115°	647.0	656.3	653.4	651.7	647.0
117.5°	722.8	735.5	727.3	722.8	718.1
120°	799.0	811.7	799.0	799.0	793.8
122.5°	868.3	884.4	876.4	871.8	868.3
125°	941.1	955.5	950.9	945.7	944.0
127.5°	1012.2	1030.1	1023.7	1016.8	1012.2
130°	1078.6	1099.4	1096.5	1093.1	1086.7
132.5°	1153.2	1169.3	1170.4	1162.4	1157.7
135°	1217.3	1235.2	1238.6	1236.9	1232.2
137.5°	1288.9	1303.3	1306.3	1305.0	1298.2
140°	1351.9	1366.3	1374.4	1374.4	1368.1
142.5°	1416.5	1431.0	1435.6	1437.3	1431.0
145°	1477.8	1489.3	1498.6	1500.4	1494.0
147.5°	1532.7	1547.1	1554.1	1556.9	1550.5
150°	1589.3	1599.1	1605.5	1610.6	1605.5
152.5°	1639.5	1649.4	1657.5	1663.9	1657.5
155°	1689.8	1694.5	1699.6	1707.8	1702.5
157.5°	1733.1	1736.7	1739.5	1751.1	1743.0
160°	1771.9	1775.3	1777.1	1786.9	1780.0
162.5°	1807.7	1807.7	1809.4	1820.4	1812.3
165°	1838.3	1836.5	1836.5	1848.2	1840.1
167.5°	1866.0	1860.9	1860.9	1872.4	1864.3
170°	1886.8	1882.2	1880.5	1892.0	1882.2
172.5°	1901.3	1896.6	1894.9	1906.4	1896.6
175°	1912.8	1908.2	1904.7	1916.3	1906.4
177.5°	1919.1	1914.6	1911.1	1920.9	1911.1
180°	1916.3	1916.3	1916.3	1916.3	1916.3



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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	9.92	10.77	10.86	11.72	12.96	5.88	6.73	6.82	7.68	8.92
	3H	11.60	12.37	12.55	13.33	14.58	7.07	7.83	8.02	8.79	10.05
	4H	12.22	12.94	13.18	13.90	15.17	7.52	8.24	8.49	9.21	10.47
	6H	12.64	13.31	13.62	14.28	15.55	7.84	8.51	8.82	9.48	10.76
	8H	12.77	13.40	13.75	14.39	15.66	7.94	8.57	8.92	9.56	10.83
	12H	12.84	13.44	13.82	14.42	15.72	7.98	8.58	8.97	9.56	10.86
4H	2H	9.94	10.66	10.91	11.63	12.89	6.48	7.20	7.45	8.17	9.43
	3H	11.78	12.38	12.76	13.37	14.65	7.83	8.43	8.81	9.43	10.71
	4H	12.47	13.02	13.46	14.01	15.31	8.38	8.93	9.37	9.92	11.22
	6H	12.99	13.46	13.99	14.48	15.78	8.80	9.27	9.80	10.29	11.59
	8H	13.17	13.61	14.17	14.62	15.93	8.93	9.37	9.94	10.38	11.69
	12H	13.27	13.67	14.29	14.69	16.01	9.00	9.40	10.02	10.42	11.74
8H	4H	12.44	12.88	13.44	13.89	15.20	8.67	9.11	9.67	10.11	11.43
	6H	13.01	13.38	14.04	14.42	15.74	9.19	9.55	10.21	10.60	11.91
	8H	13.23	13.55	14.27	14.59	15.92	9.38	9.70	10.41	10.73	12.06
	12H	13.38	13.66	14.41	14.68	16.06	9.50	9.78	10.54	10.81	12.18
12H	4H	12.40	12.79	13.41	13.81	15.13	8.67	9.07	9.69	10.09	11.41
	6H	12.99	13.31	14.02	14.34	15.67	9.24	9.56	10.27	10.59	11.92
	8H	13.21	13.50	14.25	14.52	15.90	9.45	9.73	10.49	10.76	12.14