

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: P908943

Luminaire Tested: DFN2DIP-SQ2F0-030D070US840-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P908943
REPORT IS A COMBINATION OF REPORTS P901340 AND P898215
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ2F0-030D070US840-RLLONL
Description: 2 foot, Square Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

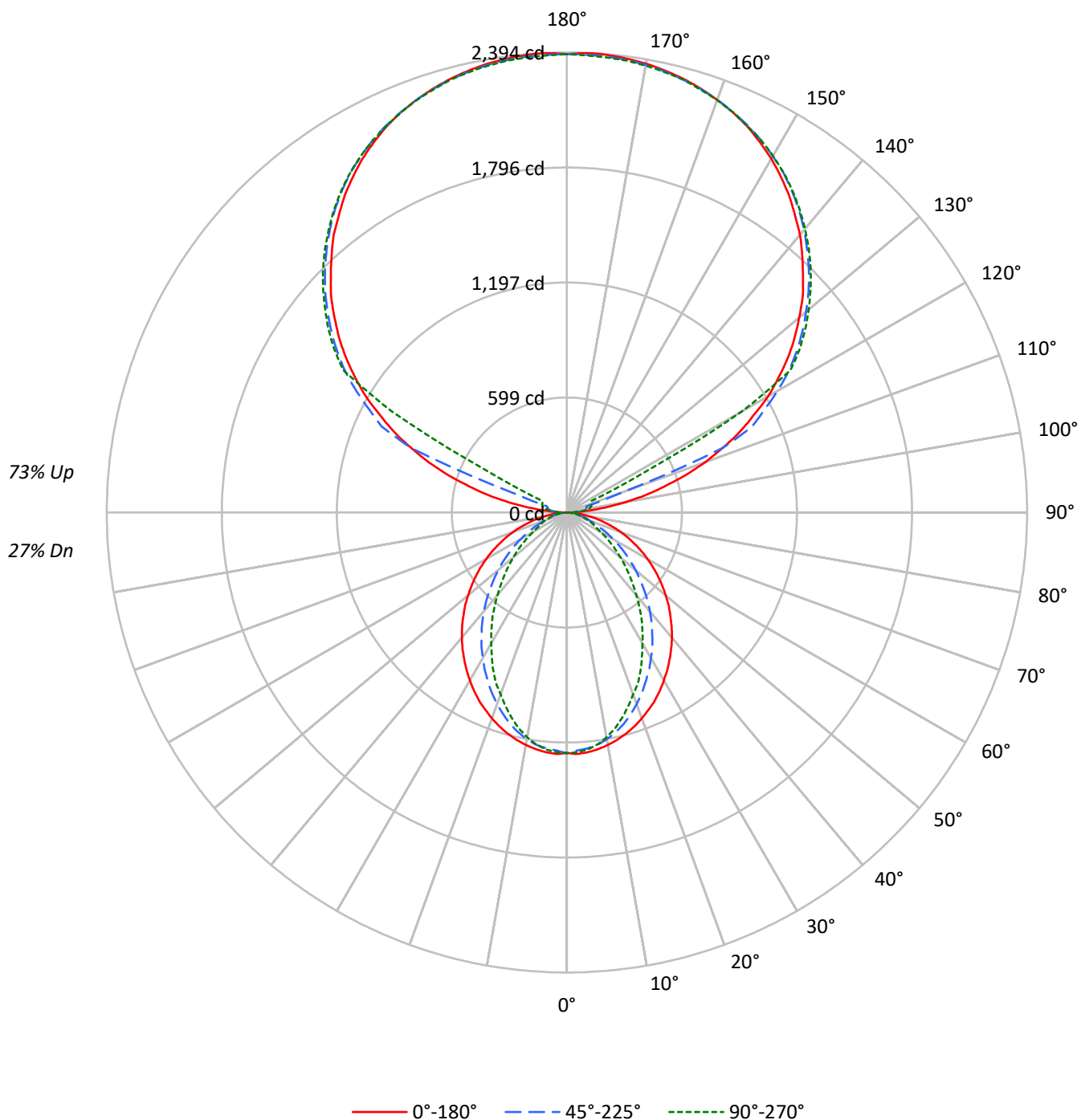
Lumens per Lamp: N/A
Luminaire Lumens: 9573.5 lumens
Efficiency: N/A
Efficacy: 123.5 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 2.21' x L: 2.21' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 77.5
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9963
Total Harmonic Distortion (THDi): 0.065
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P908943

CATALOG NUMBER: DFN2DIP-SQ2F0-030D070US840-RLLONL

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		52	52	52		35	35	35
1	93	89	85	82		83	79	76	74		62	60	58		46	45	44		31	31	30
2	85	78	72	67		75	70	65	61		55	51	49		41	39	37		28	27	26
3	77	69	62	56		69	62	56	51		48	44	41		36	34	31		25	23	22
4	71	61	53	48		63	55	48	43		43	39	35		32	29	27		22	21	19
5	65	54	46	41		58	49	42	37		39	34	30		29	26	23		20	18	17
6	60	48	41	35		53	44	37	32		35	30	26		26	23	21		18	16	15
7	55	44	36	31		49	39	33	28		31	27	23		24	21	18		17	15	13
8	51	40	32	27		46	36	29	25		29	24	21		22	19	16		16	13	12
9	48	36	29	24		43	33	26	22		26	22	18		20	17	15		14	12	11
10	44	33	26	22		40	30	24	20		24	20	16		19	15	13		13	11	10

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2753	2753	2753
5°	2753	2704	2723
10°	2721	2645	2631
15°	2679	2551	2490
20°	2624	2425	2319
25°	2569	2285	2154
30°	2496	2142	1946
35°	2424	1989	1763
40°	2350	1831	1555
45°	2266	1656	1365
50°	2178	1480	1181
55°	2085	1293	1004
60°	1978	1099	823
65°	1854	902	736
70°	1704	719	661
75°	1515	622	593
80°	1245	505	503
85°	810	313	358

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 2267 cd/sqm

TEST NUMBER: P908943

CATALOG NUMBER: DFN2DIP-SQ2F0-030D070US840-RLLONL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	117.4	1.2
10°-20°	322.1	3.4
20°-30°	452.3	4.7
30°-40°	493.0	5.1
40°-50°	453.1	4.7
50°-60°	355.9	3.7
60°-70°	231.6	2.4
70°-80°	119.2	1.2
80°-90°	34.6	0.4
90°-100°	78.7	0.8
100°-110°	293.3	3.1
110°-120°	777.8	8.1
120°-130°	1290.0	13.5
130°-140°	1370.3	14.3
140°-150°	1273.5	13.3
150°-160°	1023.9	10.7
160°-170°	659.7	6.9
170°-180°	227.1	2.4
0°-30°	891.8	9.3
0°-40°	1384.8	14.5
0°-60°	2193.8	22.9
0°-90°	2579.3	26.9
90°-120°	1149.7	12.0
90°-150°	5083.5	53.1
90°-180°	6994.0	73.1
0°-180°	9573.5	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1252	1252	1252	1252	1252	
5°	1252	1246	1232	1242	1238	119
15°	1191	1178	1140	1118	1107	336
25°	1081	1045	970	924	906	497
35°	932	874	774	703	678	583
45°	762	686	567	486	459	588
55°	579	491	368	300	279	517
65°	391	299	197	159	155	388
75°	208	129	91	83	82	220
85°	49	25	22	22	22	56
90°	2	21	34	43	47	9
95°	112	55	67	76	74	133
105°	525	577	105	124	131	561
115°	993	1022	1065	266	142	977
125°	1403	1426	1459	1471	1476	1252
135°	1737	1764	1780	1797	1794	1342
145°	2015	2013	2042	2054	2046	1260
155°	2218	2203	2224	2234	2220	1022
165°	2337	2327	2332	2344	2332	660
175°	2391	2379	2382	2394	2377	228
180°	2386	2386	2386	2386	2386	

TEST NUMBER: P908943

CATALOG NUMBER: DFN2DIP-SQ2F0-030D070US840-RLLONL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1252.1	1252.1	1252.1	1252.1	1252.1
2.5°	1257.8	1252.1	1239.6	1251.0	1248.8
5°	1252.1	1246.5	1231.7	1241.9	1238.5
7.5°	1241.9	1235.2	1219.3	1223.8	1218.1
10°	1228.3	1220.4	1197.8	1194.3	1187.6
12.5°	1211.3	1201.1	1170.5	1163.8	1151.2
15°	1190.9	1178.4	1139.9	1118.4	1107.1
17.5°	1167.1	1149.0	1101.4	1076.5	1058.3
20°	1139.9	1117.2	1060.6	1032.4	1007.3
22.5°	1110.5	1084.4	1018.7	980.2	963.2
25°	1081.1	1044.7	970.0	923.5	906.5
27.5°	1045.9	1007.3	924.6	871.4	845.3
30°	1008.6	965.4	874.7	817.1	786.4
32.5°	972.2	920.1	827.3	759.2	730.8
35°	931.5	873.6	774.0	702.6	677.6
37.5°	891.8	829.4	724.1	645.8	617.6
40°	849.9	781.9	672.0	591.5	562.1
42.5°	806.8	734.4	619.9	535.9	507.7
45°	761.5	685.5	566.6	486.0	458.9
47.5°	718.4	638.0	515.6	435.1	410.2
50°	670.9	590.4	465.7	387.5	363.8
52.5°	624.3	539.4	418.2	343.4	321.8
55°	579.0	490.6	368.2	300.3	278.8
57.5°	532.6	441.9	324.2	260.6	242.5
60°	484.9	394.4	277.6	219.8	201.8
62.5°	438.6	347.9	237.9	183.6	174.6
65°	390.9	299.1	197.1	158.6	155.2
67.5°	345.7	253.8	158.6	139.4	135.9
70°	298.0	209.6	131.4	120.1	115.5
72.5°	252.7	168.7	109.9	100.9	98.6
75°	208.4	129.2	90.7	82.7	81.6
77.5°	164.3	91.7	71.4	66.9	64.5
80°	123.5	65.7	54.3	49.9	49.9
82.5°	86.0	44.2	37.4	35.1	35.1
85°	48.7	24.8	21.5	21.5	21.5
87.5°	18.2	9.0	9.0	8.0	8.0
90°	1.6	20.7	34.4	43.2	46.6
92.5°	43.2	36.3	41.4	44.9	46.6
95°	112.1	55.1	67.3	76.0	74.2
97.5°	201.9	60.5	88.0	93.3	94.9
100°	305.7	69.1	98.4	112.1	115.6
102.5°	419.4	416.2	101.9	120.8	126.0
105°	524.8	576.6	105.3	124.2	131.2
107.5°	647.3	690.4	108.9	127.7	134.7
110°	764.9	800.9	302.2	129.6	136.3

TEST NUMBER: P908943

CATALOG NUMBER: DFN2DIP-SQ2F0-030D070US840-RLLONL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	875.4	906.3	877.0	132.8	138.1
115°	992.6	1021.9	1065.1	265.9	141.7
117.5°	1094.5	1128.9	1158.4	911.4	459.2
120°	1208.4	1234.3	1265.5	1286.2	1053.1
122.5°	1304.9	1332.6	1367.4	1377.6	1379.4
125°	1403.4	1425.9	1458.8	1470.9	1475.9
127.5°	1493.2	1517.3	1543.4	1560.6	1562.3
130°	1577.8	1605.5	1624.4	1643.5	1641.8
132.5°	1664.2	1686.7	1705.6	1721.1	1719.5
135°	1736.7	1764.3	1779.8	1797.2	1793.7
137.5°	1812.5	1833.3	1850.7	1867.9	1862.8
140°	1886.7	1900.7	1919.6	1935.1	1926.5
142.5°	1949.0	1961.2	1983.5	1997.2	1988.6
145°	2014.7	2012.9	2042.2	2054.3	2045.7
147.5°	2071.4	2066.4	2095.7	2104.3	2097.5
150°	2126.8	2114.8	2142.4	2152.6	2144.0
152.5°	2173.3	2159.6	2185.5	2195.9	2183.8
155°	2218.3	2202.8	2223.5	2233.8	2220.1
157.5°	2254.5	2240.8	2256.3	2268.5	2254.5
160°	2285.7	2275.2	2285.7	2295.9	2283.8
162.5°	2313.2	2302.9	2311.5	2323.6	2308.0
165°	2337.3	2327.1	2332.2	2344.3	2332.2
167.5°	2356.4	2345.9	2351.3	2363.4	2347.8
170°	2372.0	2361.6	2365.0	2377.1	2361.6
172.5°	2382.3	2372.0	2375.5	2387.5	2372.0
175°	2390.9	2378.7	2382.3	2394.3	2377.1
177.5°	2394.3	2382.3	2384.1	2396.2	2380.6
180°	2385.7	2385.7	2385.7	2385.7	2385.7

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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	7.88	8.55	9.02	9.68	11.24	3.84	4.51	4.98	5.64	7.20
	3H	9.53	10.13	10.67	11.26	12.84	5.00	5.60	6.14	6.73	8.32
	4H	10.11	10.68	11.27	11.82	13.41	5.43	6.00	6.58	7.13	8.72
	6H	10.51	11.04	11.67	12.17	13.77	5.72	6.25	6.89	7.38	8.98
	8H	10.62	11.12	11.79	12.27	13.87	5.80	6.30	6.97	7.45	9.04
	12H	10.67	11.15	11.84	12.29	13.90	5.83	6.31	7.00	7.45	9.06
4H	2H	7.87	8.44	9.04	9.58	11.17	4.40	4.98	5.57	6.11	7.70
	3H	9.67	10.14	10.83	11.30	12.90	5.72	6.19	6.89	7.35	8.95
	4H	10.34	10.77	11.50	11.92	13.54	6.25	6.68	7.41	7.83	9.45
	6H	10.82	11.20	12.00	12.37	13.98	6.64	7.01	7.81	8.18	9.79
	8H	10.98	11.33	12.16	12.49	14.12	6.75	7.10	7.92	8.26	9.89
	12H	11.06	11.38	12.25	12.55	14.18	6.80	7.12	7.99	8.29	9.92
8H	4H	10.29	10.64	11.46	11.80	13.42	6.50	6.85	7.67	8.01	9.64
	6H	10.83	11.11	12.02	12.32	13.94	6.99	7.28	8.18	8.48	10.11
	8H	11.03	11.28	12.23	12.46	14.10	7.17	7.42	8.36	8.60	10.24
	12H	11.15	11.37	12.35	12.55	14.22	7.26	7.48	8.46	8.66	10.34
12H	4H	10.23	10.55	11.42	11.72	13.35	6.50	6.81	7.69	7.99	9.62
	6H	10.80	11.05	12.00	12.23	13.88	7.03	7.28	8.23	8.47	10.11
	8H	11.00	11.22	12.20	12.40	14.07	7.22	7.44	8.42	8.62	10.30