

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: P908722

Luminaire Tested: DFN2DIP-PN4F0-070D070US840-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P908722
REPORT IS A COMBINATION OF REPORTS P899670 AND P896497
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN4F0-070D070US840-RLLFLL
Description: 4 foot, Pentagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

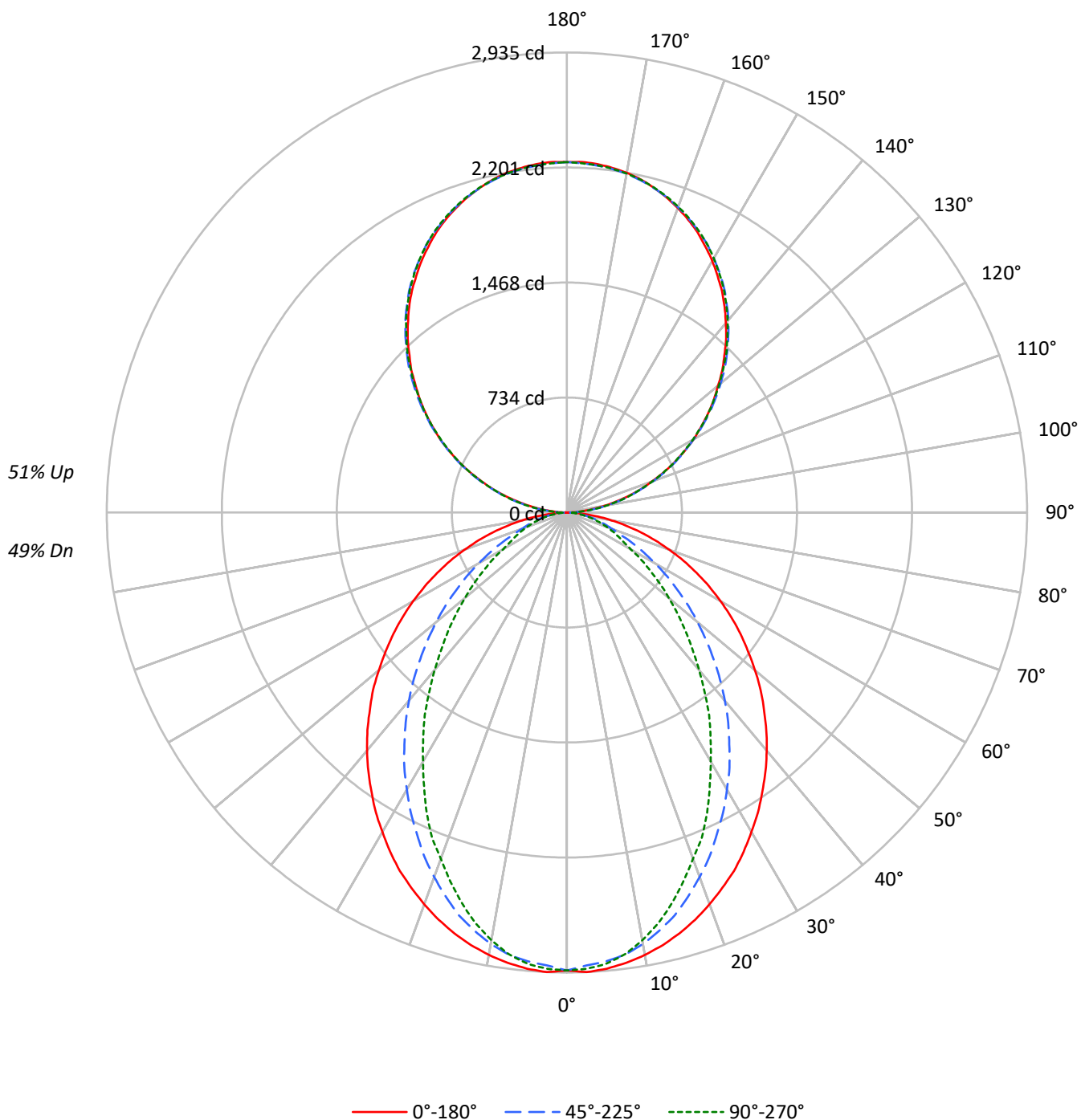
Lumens per Lamp: N/A
Luminaire Lumens: 12264.8 lumens
Efficiency: N/A
Efficacy: 102.9 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.74' x L: 3.94' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 119.2
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9789
Total Harmonic Distortion (THDi): 0.074
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P908722

CATALOG NUMBER: DFN2DIP-PN4F0-070D070US840-RLLFLL

Luminous Intensity Polar Plot



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CATALOG NUMBER: DFN2DIP-PN4F0-070D070US840-RLLFLL

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	107	107	107	107	99	99	99	99	83	83	83	68	68	68	55	55	55
1	98	94	90	87	90	87	84	81	73	71	69	61	59	58	50	49	48
2	90	83	77	72	82	76	71	67	65	61	58	54	51	49	44	42	41
3	82	73	66	60	75	68	61	57	58	53	49	48	45	42	40	37	35
4	75	65	57	51	69	60	54	48	51	46	42	43	40	36	36	33	31
5	69	58	50	44	64	54	47	42	46	41	37	39	35	32	32	29	27
6	64	52	44	39	59	49	42	37	42	36	32	35	31	28	30	26	24
7	59	47	40	34	55	44	37	32	38	33	29	32	28	25	27	24	22
8	55	43	36	30	51	40	33	29	35	29	26	30	26	23	25	22	20
9	51	39	32	27	47	37	30	26	32	27	23	27	23	20	23	20	18
10	48	36	29	24	44	34	28	23	30	24	21	25	21	19	22	18	16

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2133	2133	2133
5°	2136	2099	2113
10°	2115	2058	2044
15°	2086	1990	1938
20°	2047	1897	1808
25°	2008	1792	1683
30°	1955	1684	1523
35°	1903	1569	1383
40°	1850	1449	1222
45°	1789	1316	1077
50°	1725	1182	934
55°	1659	1039	798
60°	1583	889	657
65°	1494	737	592
70°	1387	594	536
75°	1253	524	489
80°	1059	441	425
85°	737	296	322

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 1789 cd/sqm

TEST NUMBER: P908722

CATALOG NUMBER: DFN2DIP-PN4F0-070D070US840-RLFL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	273.8	2.2
10°-20°	751.7	6.1
20°-30°	1055.3	8.6
30°-40°	1150.4	9.4
40°-50°	1057.3	8.6
50°-60°	830.4	6.8
60°-70°	540.5	4.4
70°-80°	278.2	2.3
80°-90°	77.4	0.6
90°-100°	138.3	1.1
100°-110°	439.6	3.6
110°-120°	752.2	6.1
120°-130°	989.3	8.1
130°-140°	1110.5	9.1
140°-150°	1088.9	8.9
150°-160°	913.5	7.4
160°-170°	605.8	4.9
170°-180°	211.7	1.7
0°-30°	2080.9	17.0
0°-40°	3231.2	26.3
0°-60°	5118.9	41.7
0°-90°	6015.0	49.0
90°-120°	1330.1	10.8
90°-150°	4518.8	36.8
90°-180°	6250.0	51.0
0°-180°	12264.8	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	24	66	62	64	12
95°	98	117	121	121	117	109
105°	406	411	415	419	419	428
115°	755	766	762	760	755	747
125°	1098	1115	1109	1103	1101	981
135°	1420	1441	1445	1443	1438	1098
145°	1724	1738	1748	1750	1743	1077
155°	1972	1977	1983	1992	1986	907
165°	2145	2143	2143	2156	2147	605
175°	2232	2226	2222	2236	2224	212
180°	2236	2236	2236	2236	2236	

TEST NUMBER: P908722

CATALOG NUMBER: DFN2DIP-PN4F0-070D070US840-RLFL

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°	2.0	24.2	66.0	62.0	64.0
92.5°	41.8	56.7	58.7	60.7	60.7
95°	98.4	117.2	120.7	120.7	117.2
97.5°	163.8	181.3	188.7	188.7	188.7
100°	239.2	254.8	260.1	260.1	258.1
102.5°	318.8	330.2	337.7	339.7	337.7
105°	405.8	411.1	415.2	418.6	418.6
107.5°	492.0	500.1	500.1	501.5	492.0
110°	575.6	586.4	586.4	586.4	581.0

TEST NUMBER: P908722

CATALOG NUMBER: DFN2DIP-PN4F0-070D070US840-RLFL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	665.9	677.4	675.4	669.9	665.9
115°	754.9	765.7	762.3	760.3	754.9
117.5°	843.1	858.0	848.6	843.1	837.8
120°	932.1	947.0	932.1	932.1	926.0
122.5°	1013.0	1031.9	1022.5	1017.0	1013.0
125°	1097.9	1114.8	1109.4	1103.4	1101.4
127.5°	1180.8	1201.7	1194.4	1186.3	1180.8
130°	1258.4	1282.6	1279.3	1275.3	1267.8
132.5°	1345.3	1364.2	1365.5	1356.1	1350.7
135°	1420.2	1441.0	1445.1	1443.0	1437.6
137.5°	1503.7	1520.6	1523.9	1522.6	1514.5
140°	1577.2	1594.1	1603.5	1603.5	1596.1
142.5°	1652.6	1669.5	1674.9	1676.9	1669.5
145°	1724.1	1737.6	1748.4	1750.4	1743.0
147.5°	1788.2	1805.0	1813.1	1816.4	1809.1
150°	1854.2	1865.6	1873.1	1879.2	1873.1
152.5°	1912.8	1924.3	1933.7	1941.2	1933.7
155°	1971.5	1976.8	1983.0	1992.4	1986.3
157.5°	2022.1	2026.1	2029.4	2043.0	2033.5
160°	2067.2	2071.2	2073.3	2084.7	2076.6
162.5°	2109.0	2109.0	2111.0	2123.7	2114.4
165°	2144.7	2142.6	2142.6	2156.2	2146.7
167.5°	2177.1	2171.0	2171.0	2184.4	2175.0
170°	2201.3	2196.0	2193.9	2207.4	2196.0
172.5°	2218.2	2212.7	2210.7	2224.2	2212.7
175°	2231.6	2226.2	2222.2	2235.6	2224.2
177.5°	2239.1	2233.6	2229.6	2241.1	2229.6
180°	2235.6	2235.6	2235.6	2235.6	2235.6

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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	9.69	10.52	10.67	11.50	12.78	5.66	6.48	6.63	7.46	8.75
	3H	11.37	12.11	12.36	13.10	14.41	6.85	7.58	7.83	8.57	9.88
	4H	11.98	12.68	12.98	13.67	14.99	7.30	7.99	8.29	8.99	10.30
	6H	12.41	13.05	13.41	14.05	15.38	7.62	8.26	8.63	9.26	10.59
	8H	12.53	13.14	13.55	14.16	15.49	7.71	8.32	8.72	9.33	10.66
	12H	12.60	13.18	13.62	14.19	15.54	7.75	8.33	8.77	9.34	10.69
4H	2H	9.71	10.41	10.71	11.40	12.72	6.25	6.95	7.26	7.94	9.26
	3H	11.54	12.12	12.55	13.14	14.48	7.60	8.18	8.62	9.21	10.54
	4H	12.24	12.76	13.26	13.78	15.14	8.15	8.68	9.17	9.70	11.05
	6H	12.75	13.21	13.78	14.25	15.60	8.57	9.03	9.60	10.07	11.42
	8H	12.93	13.35	13.96	14.39	15.75	8.70	9.13	9.73	10.16	11.52
	12H	13.03	13.41	14.08	14.46	15.83	8.77	9.15	9.82	10.20	11.57
8H	4H	12.20	12.63	13.23	13.66	15.03	8.43	8.86	9.46	9.89	11.26
	6H	12.77	13.12	13.83	14.20	15.56	8.95	9.30	10.01	10.38	11.74
	8H	12.99	13.30	14.05	14.36	15.74	9.15	9.45	10.21	10.51	11.89
	12H	13.13	13.40	14.20	14.46	15.88	9.27	9.54	10.33	10.59	12.01
12H	4H	12.16	12.54	13.20	13.58	14.96	8.44	8.82	9.49	9.87	11.24
	6H	12.75	13.06	13.81	14.11	15.50	9.00	9.31	10.07	10.37	11.75
	8H	12.97	13.24	14.04	14.29	15.72	9.22	9.49	10.28	10.54	11.96

END OF REPORT