

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: P925079

Luminaire Tested: DFN2DIP-PN4F0-070D040US950-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P925079
REPORT IS A COMBINATION OF REPORTS P901136 AND P898053
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN4F0-070D040US950-RLLONL
Description: 4 foot, Pentagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

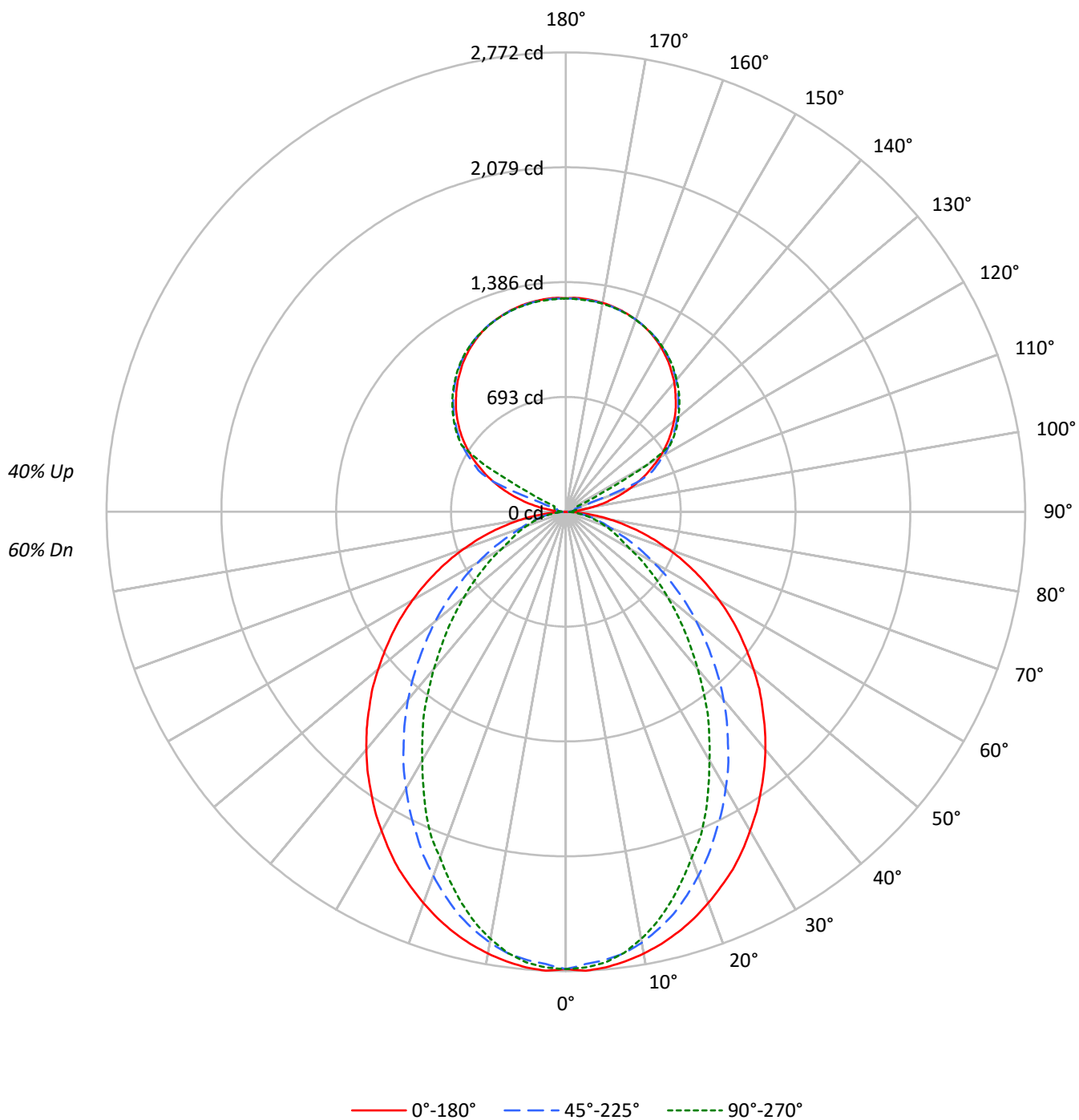
Lumens per Lamp: N/A
Luminaire Lumens: 9454.1 lumens
Efficiency: N/A
Efficacy: 97.5 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.74' x L: 3.94' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 97
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: P925079

CATALOG NUMBER: DFN2DIP-PN4F0-070D040US950-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
RCR																	
0	110	110	110	110	102	102	102	102	89	89	89		77	77	77		65
1	101	96	93	89	94	90	87	84	79	77	74		68	67	65		59
2	92	85	79	74	86	80	74	70	70	66	62		61	58	55		52
3	84	75	68	62	79	71	64	59	62	57	53		54	51	47		47
4	78	67	59	53	72	63	56	51	56	50	46		49	45	41		42
5	71	60	52	46	67	57	49	44	50	44	40		44	40	36		38
6	66	54	46	40	62	51	44	39	45	40	35		40	35	32		35
7	61	49	41	36	57	46	39	34	41	36	31		37	32	29		32
8	57	45	37	32	53	42	35	31	38	32	28		34	29	26		30
9	53	41	34	29	50	39	32	28	35	29	25		31	27	23		28
10	50	38	31	26	47	36	29	25	32	27	23		29	24	21		26

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2015	2015	2015
5°	2018	1983	1996
10°	1998	1944	1931
15°	1970	1880	1831
20°	1934	1792	1708
25°	1897	1693	1590
30°	1847	1591	1439
35°	1798	1482	1307
40°	1748	1369	1155
45°	1690	1244	1017
50°	1630	1117	883
55°	1567	981	753
60°	1495	840	621
65°	1411	696	559
70°	1311	561	506
75°	1184	495	461
80°	1000	417	402
85°	696	279	304

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 1690 cd/sqm

TEST NUMBER: P925079

CATALOG NUMBER: DFN2DIP-PN4F0-070D040US950-RLLONL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	258.7	2.7
10°-20°	710.1	7.5
20°-30°	997.0	10.5
30°-40°	1086.8	11.5
40°-50°	998.8	10.6
50°-60°	784.4	8.3
60°-70°	510.6	5.4
70°-80°	262.8	2.8
80°-90°	69.4	0.7
90°-100°	42.5	0.4
100°-110°	158.3	1.7
110°-120°	419.9	4.4
120°-130°	696.4	7.4
130°-140°	739.7	7.8
140°-150°	687.5	7.3
150°-160°	552.7	5.8
160°-170°	356.1	3.8
170°-180°	122.6	1.3
0°-30°	1965.7	20.8
0°-40°	3052.5	32.3
0°-60°	4835.8	51.1
0°-90°	5678.5	60.1
90°-120°	620.6	6.6
90°-150°	2744.1	29.0
90°-180°	3776.0	39.9
0°-180°	9454.1	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2760	2760	2760	2760	2760	
5°	2760	2748	2715	2738	2730	262
15°	2625	2598	2513	2465	2440	740
25°	2383	2303	2138	2036	1998	1096
35°	2053	1926	1706	1549	1494	1285
45°	1679	1511	1249	1071	1012	1296
55°	1276	1082	812	662	615	1140
65°	862	659	435	350	342	854
75°	460	285	200	182	180	486
85°	107	55	47	47	47	123
90°	1	11	19	23	25	9
95°	60	30	36	41	40	72
105°	283	311	57	67	71	303
115°	536	552	575	144	76	527
125°	758	770	787	794	797	676
135°	938	952	961	970	968	724
145°	1088	1087	1102	1109	1104	680
155°	1198	1189	1200	1206	1198	552
165°	1262	1256	1259	1266	1259	356
175°	1291	1284	1286	1292	1283	123
180°	1288	1288	1288	1288	1288	

TEST NUMBER: P925079

CATALOG NUMBER: DFN2DIP-PN4F0-070D040US950-RLLONL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2760.0	2760.0	2760.0	2760.0	2760.0
2.5°	2772.4	2760.0	2732.4	2757.6	2752.6
5°	2760.0	2747.5	2715.0	2737.5	2730.1
7.5°	2737.5	2722.6	2687.7	2697.4	2685.0
10°	2707.5	2690.1	2640.2	2632.6	2617.7
12.5°	2670.2	2647.6	2580.1	2565.2	2537.6
15°	2625.1	2597.6	2512.7	2465.3	2440.4
17.5°	2572.7	2532.7	2427.7	2372.8	2332.8
20°	2512.7	2462.7	2337.9	2275.6	2220.4
22.5°	2447.9	2390.3	2245.3	2160.5	2123.2
25°	2382.9	2302.9	2138.0	2035.7	1998.2
27.5°	2305.5	2220.4	2038.1	1920.8	1863.3
30°	2223.1	2128.0	1928.1	1801.0	1733.4
32.5°	2143.1	2028.1	1823.5	1673.5	1610.9
35°	2053.2	1925.7	1706.1	1548.7	1493.6
37.5°	1965.8	1828.2	1596.1	1423.6	1361.4
40°	1873.3	1723.6	1481.1	1303.8	1238.9
42.5°	1778.4	1618.7	1366.3	1181.3	1119.1
45°	1678.6	1511.0	1249.0	1071.4	1011.5
47.5°	1583.6	1406.4	1136.6	959.1	904.2
50°	1478.7	1301.4	1026.6	854.1	801.9
52.5°	1376.1	1188.8	921.7	756.8	709.4
55°	1276.3	1081.5	811.7	662.0	614.6
57.5°	1174.0	974.1	714.5	574.5	534.5
60°	1069.1	869.2	611.9	484.7	444.7
62.5°	966.7	766.9	524.4	404.7	384.7
65°	861.7	659.3	434.6	349.8	342.1
67.5°	761.9	559.4	349.8	307.1	299.7
70°	656.9	462.1	289.6	264.7	254.6
72.5°	557.0	372.1	242.2	222.4	217.3
75°	459.5	284.6	199.8	182.3	179.9
77.5°	362.2	202.2	157.4	147.3	142.3
80°	272.2	144.9	119.8	110.0	110.0
82.5°	189.8	97.5	82.4	77.4	77.4
85°	107.3	54.9	47.4	47.4	47.4
87.5°	40.0	19.8	19.8	17.5	17.5
90°	0.9	11.2	18.6	23.4	25.1
92.5°	23.4	19.6	22.3	24.2	25.1
95°	60.5	29.8	36.3	41.0	40.1
97.5°	109.0	32.6	47.5	50.4	51.2
100°	164.9	37.3	53.1	60.5	62.4
102.5°	226.4	224.7	55.0	65.2	68.0
105°	283.2	311.3	56.9	67.1	70.8
107.5°	349.5	372.7	58.8	69.0	72.7
110°	412.9	432.4	163.1	69.9	73.6



TEST NUMBER: P925079

CATALOG NUMBER: DFN2DIP-PN4F0-070D040US950-RLLONL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	472.5	489.2	473.4	71.7	74.6
115°	535.8	551.6	575.0	143.5	76.5
117.5°	590.8	609.4	625.3	492.0	247.8
120°	652.3	666.3	683.1	694.3	568.5
122.5°	704.4	719.4	738.1	743.6	744.6
125°	757.6	769.8	787.4	794.0	796.8
127.5°	806.0	819.1	833.1	842.5	843.3
130°	851.7	866.7	876.8	887.1	886.3
132.5°	898.3	910.5	920.7	929.1	928.2
135°	937.5	952.5	960.8	970.1	968.3
137.5°	978.4	989.6	999.0	1008.3	1005.5
140°	1018.5	1026.0	1036.2	1044.6	1040.0
142.5°	1052.2	1058.7	1070.8	1078.1	1073.5
145°	1087.6	1086.6	1102.3	1108.9	1104.3
147.5°	1118.2	1115.4	1131.3	1135.9	1132.3
150°	1148.0	1141.6	1156.5	1162.1	1157.4
152.5°	1173.2	1165.8	1179.7	1185.3	1178.9
155°	1197.5	1189.2	1200.3	1205.9	1198.4
157.5°	1217.0	1209.6	1218.1	1224.6	1217.0
160°	1233.8	1228.2	1233.8	1239.3	1232.9
162.5°	1248.7	1243.2	1247.8	1254.3	1245.9
165°	1261.8	1256.2	1259.0	1265.5	1259.0
167.5°	1272.1	1266.3	1269.3	1275.8	1267.4
170°	1280.5	1274.8	1276.6	1283.2	1274.8
172.5°	1286.0	1280.5	1282.4	1288.9	1280.5
175°	1290.6	1284.1	1286.0	1292.5	1283.2
177.5°	1292.5	1286.0	1286.9	1293.5	1285.1
180°	1287.9	1287.9	1287.9	1287.9	1287.9

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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	10.48	11.40	11.35	12.29	13.41	6.44	7.36	7.32	8.25	9.37
	3H	12.17	12.99	13.05	13.89	15.04	7.64	8.46	8.53	9.36	10.51
	4H	12.78	13.56	13.68	14.46	15.62	8.09	8.87	9.00	9.78	10.93
	6H	13.21	13.92	14.12	14.83	16.01	8.42	9.14	9.33	10.05	11.22
	8H	13.34	14.02	14.26	14.95	16.12	8.51	9.19	9.44	10.12	11.29
	12H	13.41	14.05	14.33	14.97	16.17	8.56	9.21	9.49	10.13	11.33
4H	2H	10.51	11.28	11.41	12.19	13.35	7.05	7.83	7.96	8.73	9.89
	3H	12.35	12.99	13.26	13.93	15.10	8.41	9.06	9.33	9.99	11.16
	4H	13.05	13.63	13.97	14.56	15.76	8.96	9.55	9.89	10.48	11.68
	6H	13.57	14.07	14.51	15.03	16.23	9.39	9.89	10.33	10.85	12.05
	8H	13.75	14.22	14.69	15.17	16.38	9.52	9.99	10.46	10.94	12.15
	12H	13.85	14.27	14.81	15.24	16.46	9.59	10.01	10.55	10.98	12.20
8H	4H	13.02	13.49	13.96	14.44	15.65	9.25	9.72	10.19	10.67	11.89
	6H	13.59	13.98	14.56	14.97	16.19	9.77	10.16	10.74	11.15	12.37
	8H	13.81	14.16	14.79	15.14	16.37	9.97	10.31	10.95	11.29	12.52
	12H	13.96	14.26	14.94	15.23	16.51	10.09	10.39	11.07	11.37	12.65
12H	4H	12.98	13.40	13.94	14.37	15.59	9.26	9.69	10.22	10.65	11.87
	6H	13.57	13.91	14.55	14.89	16.12	9.82	10.17	10.80	11.15	12.38
	8H	13.80	14.10	14.78	15.07	16.35	10.04	10.34	11.02	11.32	12.60