

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: P919809

Luminaire Tested: DFN2DIP-PN4F0-120D060US935-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P919809
REPORT IS A COMBINATION OF REPORTS P901181 AND P898053
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN4F0-120D060US935-FLLONL
Description: 4 foot, Pentagon Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

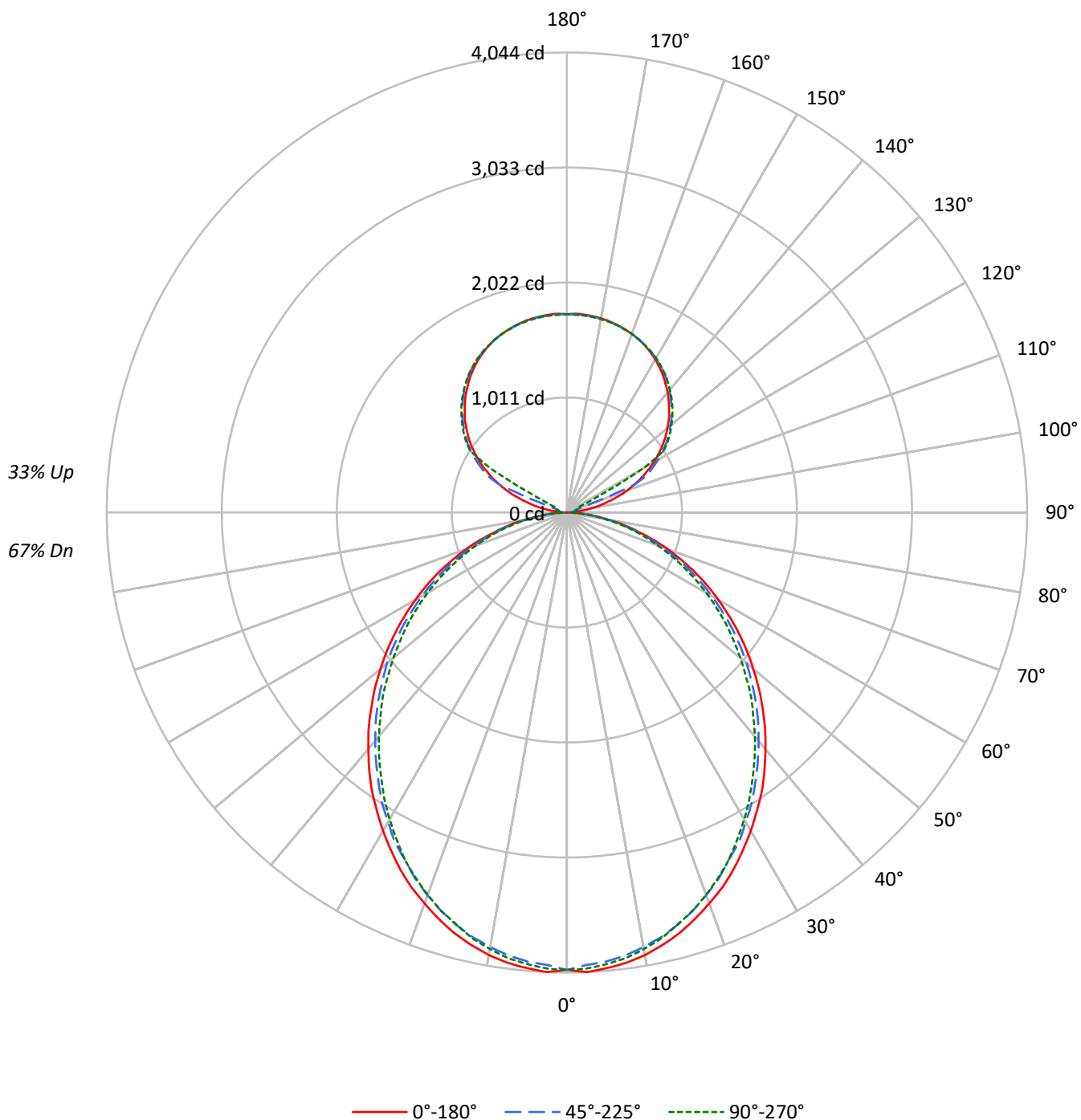
Lumens per Lamp: N/A
Luminaire Lumens: 15343.0 lumens
Efficiency: N/A
Efficacy: 89.5 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 3.74' x L: 3.94' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 171.4
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9781
Total Harmonic Distortion (THDi): 0.075
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P919809

CATALOG NUMBER: DFN2DIP-PN4F0-120D060US935-FLLONL

Luminous Intensity Polar Plot



TEST NUMBER: P919809

CATALOG NUMBER: DFN2DIP-PN4F0-120D060US935-FLLONL

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	111	111	111	111	105	105	105	105	93	93	93		82	82	82		71
1	102	97	93	90	95	92	88	85	81	79	76		72	70	68		63
2	92	85	79	73	87	80	75	70	71	67	63		63	60	57		56
3	84	75	67	61	79	71	64	58	63	58	53		56	52	48		49
4	77	66	58	52	72	63	55	50	56	50	45		50	45	41		44
5	71	59	51	44	67	56	48	43	50	44	39		45	40	36		40
6	66	53	45	39	62	50	43	37	45	39	34		41	35	32		36
7	61	48	40	34	57	46	38	33	41	35	30		37	32	28		33
8	56	44	36	30	53	42	34	29	38	31	27		34	29	25		30
9	53	40	32	27	50	38	31	26	35	29	24		31	26	23		28
10	49	37	29	24	46	35	28	24	32	26	22		29	24	20		26

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2935	2935	2935
5°	2939	2894	2914
10°	2915	2856	2875
15°	2873	2809	2814
20°	2815	2744	2751
25°	2757	2666	2679
30°	2685	2594	2586
35°	2616	2509	2489
40°	2532	2422	2396
45°	2448	2336	2301
50°	2356	2246	2191
55°	2260	2141	2090
60°	2151	2016	1974
65°	2033	1887	1838
70°	1882	1731	1692
75°	1673	1543	1557
80°	1421	1304	1298
85°	1028	889	868

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
Vertical Angle: 45°
Luminance: 2448 cd/sqm

TEST NUMBER: P919809

CATALOG NUMBER: DFN2DIP-PN4F0-120D060US935-FLLONL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	378.4	2.5
10°-20°	1064.6	6.9
20°-30°	1564.6	10.2
30°-40°	1817.2	11.8
40°-50°	1814.9	11.8
50°-60°	1582.5	10.3
60°-70°	1169.9	7.6
70°-80°	661.9	4.3
80°-90°	177.8	1.2
90°-100°	57.5	0.4
100°-110°	214.3	1.4
110°-120°	568.4	3.7
120°-130°	942.7	6.1
130°-140°	1001.4	6.5
140°-150°	930.7	6.1
150°-160°	748.2	4.9
160°-170°	482.1	3.1
170°-180°	165.9	1.1
0°-30°	3007.6	19.6
0°-40°	4824.8	31.4
0°-60°	8222.2	53.6
0°-90°	10231.7	66.7
90°-120°	840.2	5.5
90°-150°	3714.9	24.2
90°-180°	5111.0	33.3
0°-180°	15343.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	4020	4020	4020	4020	4020	
5°	4020	4005	3962	3993	3986	382
15°	3827	3804	3754	3769	3750	1078
25°	3464	3433	3367	3375	3367	1594
35°	2988	2950	2888	2864	2845	1866
45°	2432	2405	2346	2304	2289	1877
55°	1840	1817	1771	1724	1705	1645
65°	1241	1218	1179	1144	1125	1227
75°	649	642	622	599	607	693
85°	158	155	151	139	135	177
90°	1	15	25	32	34	14
95°	82	40	49	56	54	97
105°	384	421	77	91	96	410
115°	725	747	778	194	104	714
125°	1026	1042	1066	1075	1079	915
135°	1269	1289	1301	1313	1311	980
145°	1472	1471	1492	1501	1495	921
155°	1621	1610	1625	1632	1622	747
165°	1708	1701	1704	1713	1704	483
175°	1747	1738	1741	1750	1737	166
180°	1743	1743	1743	1743	1743	

TEST NUMBER: P919809

CATALOG NUMBER: DFN2DIP-PN4F0-120D060US935-FLLONL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	4020.3	4020.3	4020.3	4020.3	4020.3
2.5°	4043.6	4024.3	3981.7	4020.3	4012.9
5°	4020.3	4005.0	3962.4	3993.1	3985.7
7.5°	3993.1	3970.1	3927.5	3958.7	3950.9
10°	3950.9	3923.8	3877.5	3908.2	3896.8
12.5°	3892.7	3869.7	3823.3	3842.6	3834.8
15°	3827.0	3804.1	3753.6	3769.2	3749.9
17.5°	3745.9	3722.9	3672.4	3691.7	3672.4
20°	3656.8	3633.8	3579.8	3591.2	3576.1
22.5°	3568.2	3533.4	3482.9	3482.9	3475.2
25°	3463.6	3432.9	3367.3	3374.7	3367.3
27.5°	3347.6	3320.5	3270.5	3259.0	3239.8
30°	3231.9	3200.8	3142.9	3131.4	3115.9
32.5°	3108.0	3085.1	3023.1	2999.8	2984.2
35°	2988.3	2949.8	2887.8	2864.5	2845.2
37.5°	2852.9	2818.1	2756.1	2729.1	2709.8
40°	2714.0	2682.8	2620.8	2586.4	2570.8
42.5°	2578.6	2547.4	2485.9	2447.0	2424.0
45°	2431.7	2404.7	2346.4	2304.2	2288.6
47.5°	2288.6	2261.5	2199.6	2157.0	2134.0
50°	2137.7	2118.4	2064.2	2010.1	1990.8
52.5°	1990.8	1963.8	1913.7	1871.0	1844.0
55°	1840.3	1817.0	1770.6	1724.2	1704.9
57.5°	1689.4	1670.1	1619.6	1573.3	1557.7
60°	1538.4	1523.3	1469.1	1426.5	1415.0
62.5°	1391.6	1364.5	1326.0	1287.5	1271.9
65°	1241.1	1217.7	1179.1	1144.3	1125.1
67.5°	1086.5	1066.8	1032.3	1005.3	989.7
70°	943.3	927.7	892.9	865.8	850.7
72.5°	796.5	780.9	761.6	734.6	723.1
75°	649.3	641.9	622.2	599.3	607.0
77.5°	518.0	502.4	494.6	483.1	471.7
80°	386.8	382.6	374.9	363.4	355.6
82.5°	262.9	262.9	259.2	243.7	243.7
85°	158.3	154.6	150.9	139.1	135.3
87.5°	69.7	61.9	54.2	42.6	38.6
90°	1.2	15.2	25.1	31.6	34.0
92.5°	31.6	26.5	30.2	32.8	34.0
95°	82.0	40.3	49.2	55.6	54.2
97.5°	147.6	44.2	64.2	68.2	69.4
100°	223.3	50.5	71.9	82.0	84.5
102.5°	306.5	304.1	74.5	88.3	92.1
105°	383.5	421.4	77.0	90.7	95.9
107.5°	473.1	504.5	79.6	93.3	98.4
110°	559.0	585.3	220.8	94.7	99.6

TEST NUMBER: P919809

CATALOG NUMBER: DFN2DIP-PN4F0-120D060US935-FLLONL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	639.6	662.3	640.8	97.0	101.0
115°	725.4	746.8	778.4	194.3	103.5
117.5°	799.8	825.0	846.5	666.1	335.5
120°	883.1	902.0	924.8	939.9	769.6
122.5°	953.6	973.9	999.2	1006.7	1008.1
125°	1025.6	1042.1	1066.0	1074.9	1078.6
127.5°	1091.2	1108.9	1127.9	1140.5	1141.7
130°	1153.0	1173.3	1187.1	1201.0	1199.8
132.5°	1216.2	1232.6	1246.4	1257.7	1256.5
135°	1269.2	1289.4	1300.6	1313.4	1310.8
137.5°	1324.6	1339.7	1352.5	1365.0	1361.3
140°	1378.8	1389.0	1402.8	1414.2	1407.9
142.5°	1424.3	1433.2	1449.6	1459.6	1453.3
145°	1472.3	1470.9	1492.4	1501.2	1495.0
147.5°	1513.8	1510.0	1531.5	1537.7	1532.8
150°	1554.3	1545.4	1565.6	1573.1	1566.8
152.5°	1588.3	1578.2	1597.1	1604.7	1595.9
155°	1621.1	1609.8	1625.0	1632.5	1622.4
157.5°	1647.6	1637.5	1648.9	1657.8	1647.6
160°	1670.3	1662.7	1670.3	1677.8	1669.0
162.5°	1690.4	1682.9	1689.2	1698.1	1686.7
165°	1708.1	1700.6	1704.3	1713.2	1704.3
167.5°	1722.0	1714.4	1718.3	1727.2	1715.7
170°	1733.4	1725.8	1728.4	1737.1	1725.8
172.5°	1740.9	1733.4	1735.9	1744.8	1733.4
175°	1747.2	1738.4	1740.9	1749.7	1737.1
177.5°	1749.7	1740.9	1742.2	1751.1	1739.7
180°	1743.4	1743.4	1743.4	1743.4	1743.4

TEST NUMBER: P919809

CATALOG NUMBER: DFN2DIP-PN4F0-120D060US935-FLLONL

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	12.43	13.47	13.23	14.29	15.30	11.99	13.03	12.79	13.85	14.86
	3H	14.11	15.04	14.92	15.87	16.91	13.62	14.55	14.44	15.38	16.42
	4H	14.71	15.58	15.53	16.42	17.47	14.22	15.10	15.05	15.94	16.99
	6H	15.12	15.93	15.96	16.77	17.84	14.62	15.43	15.47	16.28	17.35
	8H	15.23	16.00	16.08	16.86	17.93	14.73	15.51	15.59	16.37	17.44
	12H	15.28	16.02	16.14	16.88	17.97	14.78	15.52	15.64	16.38	17.47
4H	2H	12.91	13.79	13.75	14.63	15.68	12.56	13.44	13.40	14.28	15.33
	3H	14.80	15.53	15.64	16.40	17.47	14.40	15.13	15.24	16.00	17.07
	4H	15.52	16.19	16.38	17.06	18.15	15.11	15.77	15.96	16.64	17.74
	6H	16.05	16.63	16.92	17.52	18.62	15.63	16.20	16.50	17.10	18.19
	8H	16.21	16.74	17.08	17.63	18.74	15.78	16.32	16.65	17.21	18.32
	12H	16.29	16.77	17.19	17.68	18.80	15.85	16.33	16.75	17.24	18.36
8H	4H	15.73	16.27	16.61	17.16	18.27	15.36	15.90	16.24	16.79	17.90
	6H	16.38	16.82	17.28	17.75	18.86	16.00	16.45	16.90	17.38	18.49
	8H	16.60	17.00	17.51	17.92	19.05	16.22	16.61	17.13	17.54	18.66
	12H	16.74	17.09	17.66	18.01	19.18	16.34	16.69	17.26	17.60	18.78
12H	4H	15.73	16.21	16.62	17.12	18.24	15.37	15.85	16.26	16.76	17.88
	6H	16.41	16.80	17.32	17.73	18.85	16.04	16.44	16.96	17.36	18.49
	8H	16.66	17.01	17.58	17.92	19.10	16.29	16.64	17.21	17.55	18.73

END OF REPORT