

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: P906024

Luminaire Tested: DFN2DIP-PN4F0-080D060US835-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P906024
REPORT IS A COMBINATION OF REPORTS P899653 AND P896497
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN4F0-080D060US835-FLLFLL
Description: 4 foot, Pentagon Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

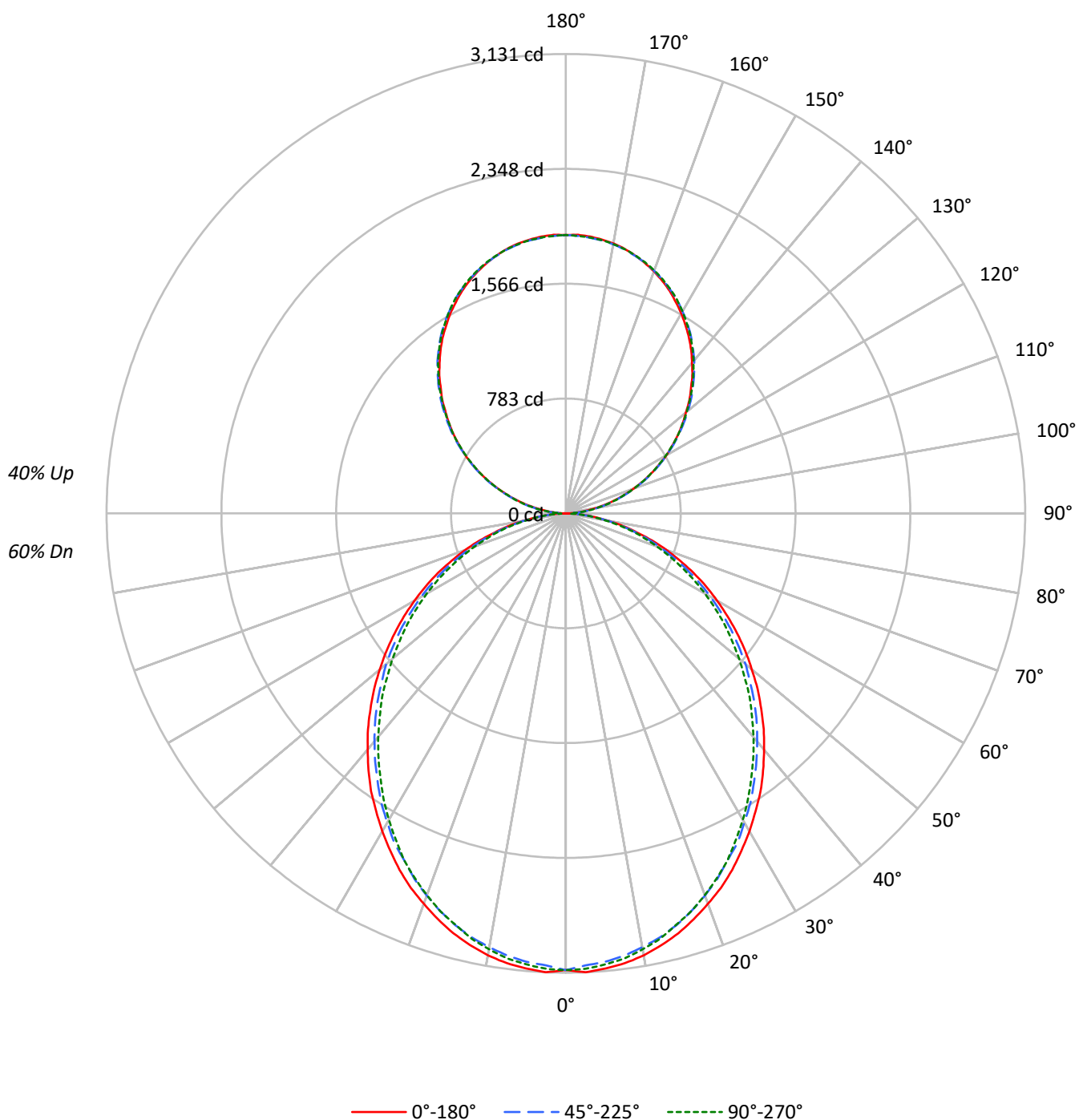
Lumens per Lamp: N/A
Luminaire Lumens: 13230.0 lumens
Efficiency: N/A
Efficacy: 108.2 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 3.74' x L: 3.94' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 122.3
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9971
Total Harmonic Distortion (THDi): 0.049
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P906024

CATALOG NUMBER: DFN2DIP-PN4F0-080D060US835-FLLFLL

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	110	110	110	110	102	102	102	102	89	89	89	77	77	77	65	65	65
1	100	96	92	88	93	89	86	83	78	75	73	67	66	64	58	56	55
2	91	84	77	72	85	78	73	68	68	64	61	59	56	53	51	48	46
3	83	73	66	60	77	69	62	57	60	55	51	52	48	45	45	42	40
4	76	65	57	51	71	61	54	48	54	48	43	47	42	39	40	37	34
5	70	58	50	44	65	55	47	42	48	42	38	42	37	34	36	33	30
6	64	52	44	38	60	49	42	36	43	37	33	38	33	29	33	29	26
7	60	47	39	33	56	44	37	32	39	33	29	35	30	26	30	26	23
8	55	43	35	30	52	40	33	28	36	30	26	32	27	23	28	24	21
9	52	39	32	26	48	37	30	25	33	27	23	29	24	21	26	22	19
10	48	36	29	24	45	34	27	23	30	25	21	27	22	19	24	20	17

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2272	2272	2272
5°	2276	2241	2256
10°	2257	2211	2226
15°	2224	2175	2179
20°	2179	2125	2130
25°	2135	2065	2074
30°	2079	2009	2003
35°	2026	1942	1927
40°	1961	1876	1855
45°	1896	1809	1782
50°	1824	1739	1697
55°	1750	1658	1618
60°	1666	1561	1529
65°	1574	1461	1423
70°	1457	1340	1310
75°	1295	1195	1205
80°	1100	1009	1005
85°	796	689	672

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 1896 cd/sqm

TEST NUMBER: P906024

CATALOG NUMBER: DFN2DIP-PN4F0-080D060US835-FLLFLL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	293.0	2.2
10°-20°	824.3	6.2
20°-30°	1211.5	9.2
30°-40°	1407.0	10.6
40°-50°	1405.3	10.6
50°-60°	1225.4	9.3
60°-70°	905.8	6.8
70°-80°	512.5	3.9
80°-90°	140.7	1.1
90°-100°	117.4	0.9
100°-110°	373.1	2.8
110°-120°	638.5	4.8
120°-130°	839.7	6.3
130°-140°	942.5	7.1
140°-150°	924.2	7.0
150°-160°	775.3	5.9
160°-170°	514.2	3.9
170°-180°	179.7	1.4
0°-30°	2328.8	17.6
0°-40°	3735.8	28.2
0°-60°	6366.4	48.1
0°-90°	7925.4	59.9
90°-120°	1129.0	8.5
90°-150°	3835.4	29.0
90°-180°	5305.0	40.1
0°-180°	13230.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3113	3113	3113	3113	3113	
5°	3113	3101	3068	3092	3086	295
15°	2963	2946	2906	2918	2904	835
25°	2682	2658	2607	2613	2607	1234
35°	2314	2284	2236	2218	2203	1445
45°	1883	1862	1817	1784	1772	1453
55°	1425	1407	1371	1335	1320	1274
65°	961	943	913	886	871	950
75°	503	497	482	464	470	537
85°	123	120	117	108	105	137
90°	2	21	56	53	54	13
95°	84	100	102	102	100	93
105°	344	349	352	355	355	363
115°	641	650	647	645	641	634
125°	932	946	942	936	935	833
135°	1205	1223	1226	1225	1220	932
145°	1463	1475	1484	1486	1479	914
155°	1673	1678	1683	1691	1686	770
165°	1820	1819	1819	1830	1822	514
175°	1894	1890	1886	1898	1888	180
180°	1898	1898	1898	1898	1898	

TEST NUMBER: P906024

CATALOG NUMBER: DFN2DIP-PN4F0-080D060US835-FLLFL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	3112.8	3112.8	3112.8	3112.8	3112.8
2.5°	3130.9	3116.0	3083.0	3112.8	3107.1
5°	3112.8	3101.1	3068.1	3091.9	3086.2
7.5°	3091.9	3074.1	3041.1	3065.2	3059.2
10°	3059.2	3038.2	3002.3	3026.1	3017.3
12.5°	3014.1	2996.3	2960.4	2975.3	2969.3
15°	2963.3	2945.5	2906.4	2918.5	2903.6
17.5°	2900.4	2882.6	2843.5	2858.5	2843.5
20°	2831.5	2813.7	2771.8	2780.7	2768.9
22.5°	2762.9	2735.9	2696.8	2696.8	2690.8
25°	2681.9	2658.1	2607.3	2613.0	2607.3
27.5°	2592.0	2571.1	2532.3	2523.4	2508.5
30°	2502.5	2478.3	2433.6	2424.7	2412.6
32.5°	2406.6	2388.8	2340.8	2322.7	2310.7
35°	2313.8	2284.0	2236.0	2217.9	2203.0
37.5°	2209.0	2182.0	2134.1	2113.1	2098.2
40°	2101.4	2077.2	2029.3	2002.6	1990.5
42.5°	1996.6	1972.4	1924.8	1894.6	1876.9
45°	1882.9	1861.9	1816.8	1784.1	1772.1
47.5°	1772.1	1751.1	1703.1	1670.1	1652.3
50°	1655.2	1640.3	1598.3	1556.4	1541.5
52.5°	1541.5	1520.5	1481.8	1448.8	1427.8
55°	1424.9	1406.8	1371.0	1335.1	1320.1
57.5°	1308.1	1293.2	1254.1	1218.2	1206.1
60°	1191.2	1179.5	1137.5	1104.5	1095.6
62.5°	1077.5	1056.6	1026.7	996.9	984.8
65°	961.0	942.9	913.0	886.0	871.1
67.5°	841.2	826.0	799.3	778.4	766.3
70°	730.4	718.3	691.4	670.4	658.6
72.5°	616.7	604.7	589.7	568.8	559.9
75°	502.7	497.0	481.8	464.0	470.0
77.5°	401.1	389.0	383.0	374.1	365.2
80°	299.5	296.3	290.3	281.4	275.3
82.5°	203.6	203.6	200.7	188.6	188.6
85°	122.6	119.7	116.9	107.7	104.8
87.5°	54.0	48.0	41.9	33.0	29.9
90°	1.7	20.6	56.1	52.6	54.3
92.5°	35.5	48.1	49.8	51.5	51.5
95°	83.5	99.5	102.4	102.4	99.5
97.5°	139.0	153.9	160.2	160.2	160.2
100°	203.1	216.2	220.8	220.8	219.1
102.5°	270.6	280.3	286.6	288.3	286.6
105°	344.4	349.0	352.4	355.3	355.3
107.5°	417.6	424.5	424.5	425.6	417.6
110°	488.6	497.7	497.7	497.7	493.1

TEST NUMBER: P906024

CATALOG NUMBER: DFN2DIP-PN4F0-080D060US835-FLLFLL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	565.2	574.9	573.2	568.6	565.2
115°	640.7	649.9	647.0	645.3	640.7
117.5°	715.7	728.3	720.2	715.7	711.1
120°	791.2	803.8	791.2	791.2	786.0
122.5°	859.8	875.8	867.8	863.3	859.8
125°	931.9	946.2	941.6	936.5	934.8
127.5°	1002.3	1020.0	1013.7	1006.9	1002.3
130°	1068.1	1088.7	1085.8	1082.4	1076.1
132.5°	1141.9	1157.9	1159.0	1151.0	1146.4
135°	1205.4	1223.1	1226.5	1224.8	1220.2
137.5°	1276.3	1290.6	1293.5	1292.3	1285.5
140°	1338.7	1353.0	1361.0	1361.0	1354.7
142.5°	1402.7	1417.0	1421.6	1423.3	1417.0
145°	1463.4	1474.8	1484.0	1485.7	1479.4
147.5°	1517.7	1532.0	1538.9	1541.7	1535.4
150°	1573.8	1583.5	1589.8	1594.9	1589.8
152.5°	1623.5	1633.3	1641.3	1647.6	1641.3
155°	1673.3	1677.9	1683.0	1691.1	1685.9
157.5°	1716.2	1719.7	1722.5	1734.0	1726.0
160°	1754.6	1758.0	1759.7	1769.4	1762.6
162.5°	1790.0	1790.0	1791.7	1802.6	1794.6
165°	1820.3	1818.6	1818.6	1830.1	1822.1
167.5°	1847.8	1842.7	1842.7	1854.1	1846.1
170°	1868.4	1863.8	1862.1	1873.5	1863.8
172.5°	1882.7	1878.1	1876.4	1887.8	1878.1
175°	1894.1	1889.6	1886.1	1897.6	1887.8
177.5°	1900.4	1895.9	1892.4	1902.1	1892.4
180°	1897.6	1897.6	1897.6	1897.6	1897.6

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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	11.00	11.95	11.86	12.84	13.97	10.56	11.51	11.42	12.40	13.53
	3H	12.67	13.53	13.55	14.42	15.57	12.18	13.04	13.06	13.94	15.09
	4H	13.26	14.07	14.16	14.98	16.14	12.77	13.59	13.67	14.49	15.65
	6H	13.67	14.42	14.57	15.33	16.50	13.18	13.93	14.08	14.84	16.01
	8H	13.78	14.49	14.69	15.42	16.59	13.28	14.00	14.20	14.93	16.10
	12H	13.83	14.51	14.75	15.43	16.63	13.33	14.01	14.25	14.93	16.13
4H	2H	11.47	12.28	12.37	13.19	14.34	11.12	11.93	12.02	12.84	13.99
	3H	13.35	14.03	14.26	14.96	16.13	12.94	13.62	13.86	14.56	15.73
	4H	14.07	14.69	14.99	15.62	16.82	13.65	14.27	14.57	15.20	16.40
	6H	14.59	15.13	15.53	16.08	17.28	14.17	14.70	15.10	15.66	16.86
	8H	14.74	15.24	15.68	16.19	17.41	14.32	14.82	15.25	15.76	16.98
	12H	14.82	15.27	15.78	16.24	17.46	14.38	14.83	15.34	15.80	17.02
8H	4H	14.27	14.77	15.21	15.72	16.93	13.90	14.40	14.84	15.35	16.56
	6H	14.91	15.32	15.88	16.32	17.53	14.53	14.95	15.50	15.94	17.15
	8H	15.13	15.50	16.11	16.48	17.71	14.75	15.12	15.72	16.10	17.33
	12H	15.27	15.60	16.25	16.57	17.85	14.87	15.19	15.85	16.17	17.44
12H	4H	14.26	14.71	15.22	15.68	16.90	13.90	14.35	14.86	15.32	16.54
	6H	14.94	15.31	15.92	16.29	17.52	14.58	14.94	15.55	15.92	17.15
	8H	15.19	15.51	16.17	16.49	17.76	14.82	15.14	15.80	16.11	17.39

END OF REPORT