

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: P905752

Luminaire Tested: DFN2DIP-PN3F0-050D080US835-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P905752
REPORT IS A COMBINATION OF REPORTS P899585 AND P896399
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN3F0-050D080US835-FLLFLL
Description: 3 foot, Pentagon Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

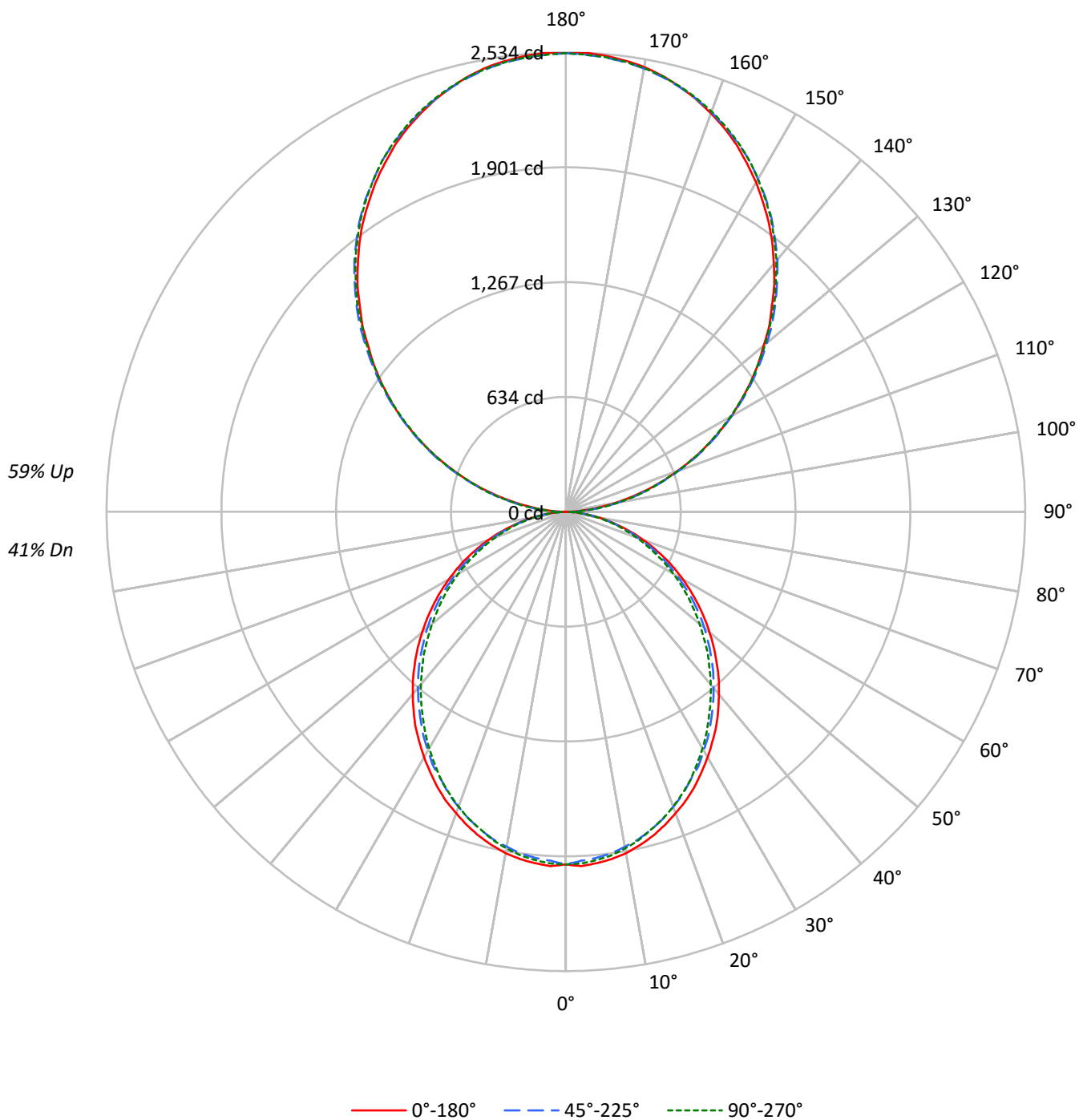
Lumens per Lamp: N/A
Luminaire Lumens: 12030.0 lumens
Efficiency: N/A
Efficacy: 113.1 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 2.96' x L: 3.11' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 106.4
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9613
Total Harmonic Distortion (THDi): 0.083
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P905752

CATALOG NUMBER: DFN2DIP-PN3F0-050D080US835-FLLFLL

Luminous Intensity Polar Plot



TEST NUMBER: P905752

CATALOG NUMBER: DFN2DIP-PN3F0-050D080US835-FLLFL

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	105	105	105	105	96	96	96	96	78	78	78	63	63	63	48	48	48
1	96	92	88	84	87	84	80	77	69	66	64	55	53	52	42	41	41
2	87	80	74	69	79	73	68	63	60	56	53	48	46	43	37	36	34
3	80	70	63	57	72	64	58	53	53	48	45	43	39	37	33	31	29
4	73	62	54	48	66	57	50	45	47	42	38	38	34	31	30	27	25
5	67	55	47	41	61	51	44	38	42	37	33	34	30	27	27	24	22
6	61	50	42	36	56	46	38	33	38	33	29	31	27	24	24	21	19
7	57	45	37	31	52	41	34	29	34	29	25	28	24	21	22	19	17
8	53	40	33	28	48	37	31	26	31	26	22	26	22	19	20	17	15
9	49	37	30	25	45	34	27	23	29	23	20	24	20	17	19	16	14
10	46	34	27	22	42	31	25	21	26	21	18	22	18	15	17	15	13

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2274	2274	2274
5°	2277	2241	2257
10°	2257	2209	2225
15°	2222	2171	2176
20°	2176	2119	2127
25°	2130	2057	2069
30°	2073	1999	1996
35°	2018	1931	1920
40°	1952	1863	1846
45°	1885	1794	1771
50°	1812	1721	1684
55°	1735	1637	1604
60°	1649	1538	1513
65°	1554	1435	1404
70°	1434	1309	1288
75°	1267	1158	1178
80°	1066	966	972
85°	751	639	634

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 2508 cd/sqm

TEST NUMBER: P905752

CATALOG NUMBER: DFN2DIP-PN3F0-050D080US835-FLLFLL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	183.1	1.5
10°-20°	515.2	4.3
20°-30°	757.2	6.3
30°-40°	879.4	7.3
40°-50°	878.3	7.3
50°-60°	765.8	6.4
60°-70°	566.1	4.7
70°-80°	320.3	2.7
80°-90°	91.7	0.8
90°-100°	156.6	1.3
100°-110°	497.5	4.1
110°-120°	851.3	7.1
120°-130°	1119.6	9.3
130°-140°	1256.7	10.4
140°-150°	1232.3	10.2
150°-160°	1033.7	8.6
160°-170°	685.6	5.7
170°-180°	239.6	2.0
0°-30°	1455.5	12.1
0°-40°	2334.9	19.4
0°-60°	3979.0	33.1
0°-90°	4957.2	41.2
90°-120°	1505.3	12.5
90°-150°	5113.9	42.5
90°-180°	7073.0	58.8
0°-180°	12030.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1946	1946	1946	1946	1946	
5°	1946	1938	1918	1932	1929	185
15°	1852	1841	1816	1824	1815	522
25°	1676	1661	1630	1633	1630	771
35°	1446	1428	1398	1386	1377	903
45°	1177	1164	1136	1115	1108	908
55°	891	879	857	834	825	796
65°	601	589	571	554	544	594
75°	314	311	301	290	294	335
85°	77	75	73	67	66	85
90°	2	28	75	70	72	12
95°	111	133	136	136	133	124
105°	459	465	470	474	474	485
115°	854	866	863	860	854	845
125°	1242	1262	1256	1249	1246	1110
135°	1607	1631	1635	1633	1627	1242
145°	1951	1966	1979	1981	1972	1219
155°	2231	2237	2244	2255	2248	1027
165°	2427	2425	2425	2440	2429	685
175°	2526	2519	2515	2530	2517	240
180°	2530	2530	2530	2530	2530	

TEST NUMBER: P905752

CATALOG NUMBER: DFN2DIP-PN3F0-050D080US835-FLLFLL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1945.5	1945.5	1945.5	1945.5	1945.5
2.5°	1956.8	1947.5	1926.9	1945.5	1942.0
5°	1945.5	1938.2	1917.5	1932.4	1928.9
7.5°	1932.4	1921.3	1900.7	1915.8	1912.0
10°	1912.0	1898.9	1876.5	1891.3	1885.8
12.5°	1883.8	1872.7	1850.3	1859.6	1855.8
15°	1852.0	1840.9	1816.5	1824.1	1814.7
17.5°	1812.7	1801.6	1777.2	1786.5	1777.2
20°	1769.7	1758.6	1732.4	1737.9	1730.6
22.5°	1726.8	1709.9	1685.5	1685.5	1681.7
25°	1676.2	1661.3	1629.5	1633.1	1629.5
27.5°	1620.0	1606.9	1582.7	1577.1	1567.8
30°	1564.0	1549.0	1521.0	1515.4	1507.9
32.5°	1504.1	1493.0	1463.0	1451.7	1444.2
35°	1446.1	1427.5	1397.5	1386.2	1376.9
37.5°	1380.6	1363.8	1333.8	1320.7	1311.4
40°	1313.4	1298.3	1268.3	1251.6	1244.1
42.5°	1247.9	1232.8	1203.0	1184.1	1173.0
45°	1176.8	1163.7	1135.5	1115.1	1107.5
47.5°	1107.5	1094.4	1064.5	1043.8	1032.7
50°	1034.5	1025.2	999.0	972.8	963.4
52.5°	963.4	950.3	926.1	905.5	892.4
55°	890.6	879.3	856.8	834.4	825.1
57.5°	817.5	808.2	783.8	761.4	753.8
60°	744.5	737.2	711.0	690.3	684.8
62.5°	673.5	660.4	641.7	623.0	615.5
65°	600.6	589.3	570.6	553.8	544.4
67.5°	525.8	516.3	499.6	486.5	478.9
70°	456.5	449.0	432.1	419.0	411.7
72.5°	385.5	377.9	368.6	355.5	349.9
75°	314.2	310.6	301.1	290.0	293.8
77.5°	250.7	243.1	239.4	233.8	228.3
80°	187.2	185.2	181.4	175.9	172.1
82.5°	127.2	127.2	125.4	117.9	117.9
85°	76.6	74.8	73.0	67.3	65.5
87.5°	33.7	30.0	26.2	20.6	18.7
90°	2.3	27.5	74.8	70.2	72.5
92.5°	47.3	64.1	66.4	68.6	68.6
95°	111.4	132.7	136.5	136.5	132.7
97.5°	185.4	205.2	213.6	213.6	213.6
100°	270.8	288.3	294.4	294.4	292.1
102.5°	360.8	373.8	382.1	384.4	382.1
105°	459.2	465.3	469.9	473.7	473.7
107.5°	556.8	566.0	566.0	567.5	556.8
110°	651.4	663.6	663.6	663.6	657.5

TEST NUMBER: P905752

CATALOG NUMBER: DFN2DIP-PN3F0-050D080US835-FLLFLL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	753.6	766.6	764.3	758.2	753.6
115°	854.3	866.5	862.7	860.4	854.3
117.5°	954.2	971.0	960.3	954.2	948.1
120°	1054.9	1071.7	1054.9	1054.9	1048.0
122.5°	1146.4	1167.8	1157.1	1151.0	1146.4
125°	1242.5	1261.6	1255.5	1248.6	1246.4
127.5°	1336.4	1360.0	1351.6	1342.5	1336.4
130°	1424.1	1451.5	1447.7	1443.2	1434.8
132.5°	1522.5	1543.8	1545.4	1534.7	1528.6
135°	1607.1	1630.8	1635.4	1633.1	1627.0
137.5°	1701.7	1720.8	1724.6	1723.1	1713.9
140°	1784.9	1803.9	1814.6	1814.6	1806.2
142.5°	1870.3	1889.4	1895.5	1897.8	1889.4
145°	1951.2	1966.4	1978.6	1980.9	1972.5
147.5°	2023.6	2042.7	2051.8	2055.7	2047.3
150°	2098.4	2111.3	2119.7	2126.6	2119.7
152.5°	2164.7	2177.7	2188.4	2196.8	2188.4
155°	2231.1	2237.2	2244.1	2254.7	2247.9
157.5°	2288.3	2292.9	2296.7	2311.9	2301.3
160°	2339.4	2344.0	2346.3	2359.2	2350.1
162.5°	2386.7	2386.7	2389.0	2403.5	2392.8
165°	2427.1	2424.8	2424.8	2440.1	2429.4
167.5°	2463.7	2456.9	2456.9	2472.1	2461.4
170°	2491.2	2485.1	2482.8	2498.1	2485.1
172.5°	2510.3	2504.2	2501.9	2517.1	2504.2
175°	2525.5	2519.4	2514.8	2530.1	2517.1
177.5°	2533.9	2527.8	2523.2	2536.2	2523.2
180°	2530.1	2530.1	2530.1	2530.1	2530.1

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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	9.21	10.00	10.24	11.04	12.43	8.78	9.56	9.80	10.60	11.99
	3H	10.86	11.57	11.90	12.61	14.03	10.38	11.09	11.42	12.13	13.54
	4H	11.44	12.11	12.49	13.16	14.58	10.96	11.63	12.01	12.68	14.09
	6H	11.83	12.45	12.90	13.50	14.93	11.35	11.96	12.41	13.01	14.44
	8H	11.93	12.52	13.00	13.59	15.01	11.44	12.03	12.51	13.10	14.52
	12H	11.98	12.54	13.05	13.60	15.05	11.48	12.04	12.55	13.10	14.55
4H	2H	9.66	10.33	10.72	11.38	12.80	9.31	9.98	10.37	11.03	12.45
	3H	11.51	12.07	12.58	13.15	14.58	11.11	11.67	12.18	12.75	14.18
	4H	12.22	12.73	13.29	13.80	15.25	11.81	12.32	12.88	13.38	14.84
	6H	12.73	13.17	13.81	14.26	15.70	12.30	12.74	13.38	13.83	15.28
	8H	12.87	13.28	13.95	14.36	15.83	12.44	12.86	13.53	13.94	15.40
	12H	12.94	13.31	14.04	14.41	15.87	12.50	12.87	13.60	13.97	15.44
8H	4H	12.41	12.82	13.49	13.90	15.36	12.04	12.45	13.12	13.53	14.99
	6H	13.03	13.37	14.13	14.49	15.95	12.65	12.99	13.76	14.12	15.58
	8H	13.24	13.54	14.35	14.65	16.13	12.86	13.16	13.97	14.27	15.74
	12H	13.37	13.63	14.48	14.73	16.25	12.97	13.23	14.08	14.33	15.85
12H	4H	12.39	12.76	13.49	13.86	15.32	12.03	12.40	13.13	13.49	14.96
	6H	13.06	13.35	14.17	14.46	15.94	12.69	12.99	13.80	14.10	15.58
	8H	13.29	13.55	14.40	14.65	16.17	12.92	13.18	14.03	14.28	15.80