

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: P910695

Luminaire Tested: DFN2DIP-HX2F0-060D050US850-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P910695
REPORT IS A COMBINATION OF REPORTS P900709 AND P897595
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX2F0-060D050US850-FLLONL
Description: 2 foot, Hexagon Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

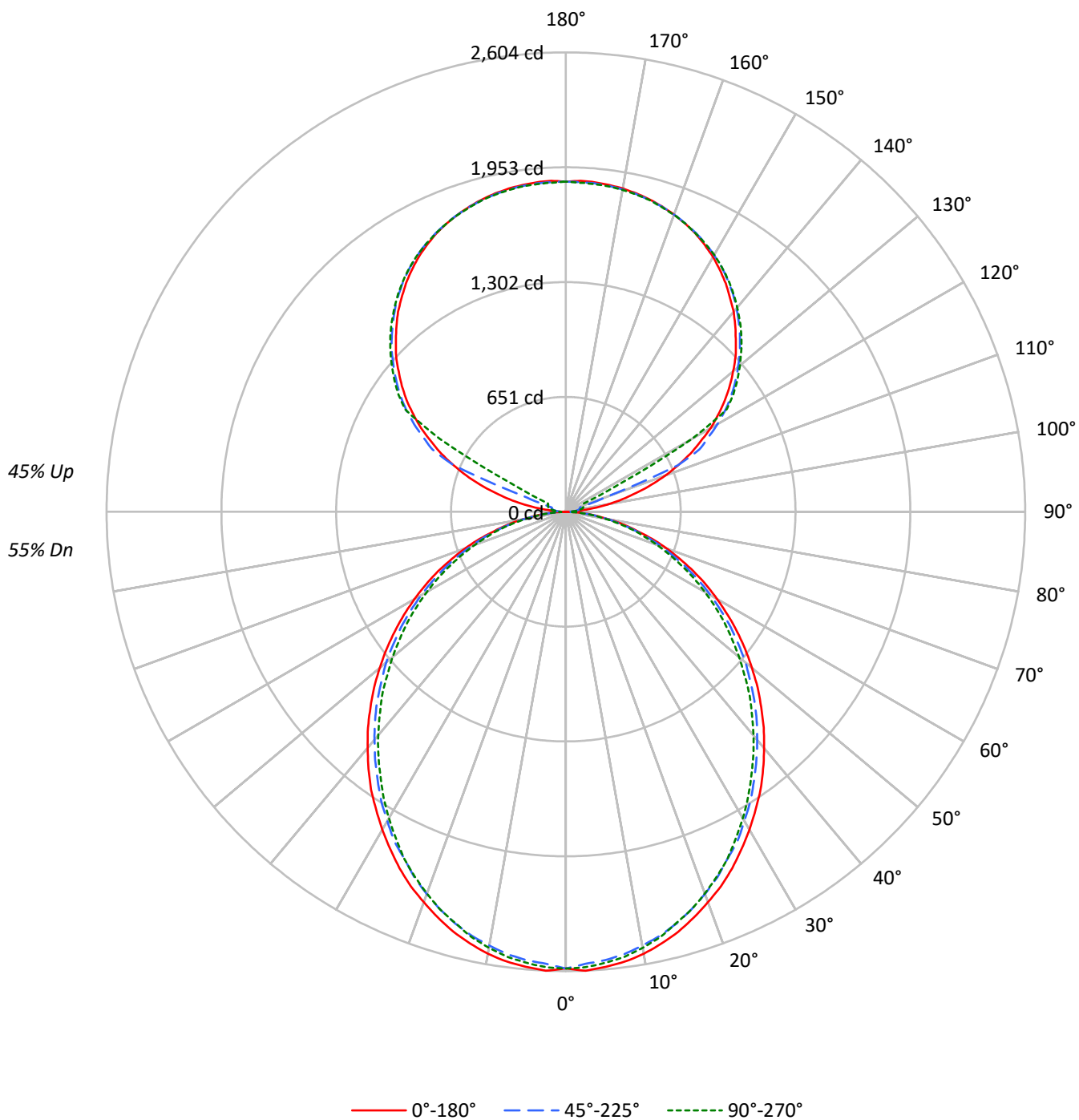
Lumens per Lamp: N/A
Luminaire Lumens: 12077.0 lumens
Efficiency: N/A
Efficacy: 123.4 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 1.99' x L: 2.3' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 97.9
Input Voltage (V): 120
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: P910695

CATALOG NUMBER: DFN2DIP-HX2F0-060D050US850-FLLONL

Luminous Intensity Polar Plot



TEST NUMBER: P910695

CATALOG NUMBER: DFN2DIP-HX2F0-060D050US850-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	30	10
RCR																	
0	108	108	108	108	100	100	100	100	86	86	86	73	73	73	60	60	60
1	99	94	91	87	92	88	84	81	75	73	71	64	62	60	53	52	51
2	90	82	76	71	83	77	71	67	66	62	58	56	53	51	47	45	43
3	82	73	65	59	76	68	61	56	58	53	49	50	46	43	42	39	37
4	75	64	56	50	69	60	53	47	52	46	42	44	40	37	37	34	32
5	69	57	49	43	64	53	46	41	46	41	36	40	35	32	34	30	27
6	64	51	43	37	59	48	41	35	42	36	32	36	31	28	30	27	24
7	59	46	38	33	54	43	36	31	38	32	28	33	28	25	28	24	22
8	55	42	34	29	51	40	33	28	35	29	25	30	25	22	26	22	19
9	51	39	31	26	47	36	29	25	32	26	22	28	23	20	24	20	17
10	48	35	28	23	44	33	27	22	29	24	20	25	21	18	22	18	16

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	6100	6100	6100
5°	6100	6001	6044
10°	6041	5905	5951
15°	5942	5794	5813
20°	5813	5644	5671
25°	5684	5468	5508
30°	5524	5304	5305
35°	5372	5112	5091
40°	5186	4918	4886
45°	5001	4722	4676
50°	4797	4516	4434
55°	4584	4279	4208
60°	4342	3999	3950
65°	4076	3706	3646
70°	3738	3350	3316
75°	3274	2924	2996
80°	2711	2380	2418
85°	1839	1493	1497

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 5001 cd/sqm

TEST NUMBER: P910695

CATALOG NUMBER: DFN2DIP-HX2F0-060D050US850-FLONL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	243.7	2.0
10°-20°	685.6	5.7
20°-30°	1007.6	8.3
30°-40°	1170.3	9.7
40°-50°	1168.8	9.7
50°-60°	1019.2	8.4
60°-70°	753.4	6.2
70°-80°	426.3	3.5
80°-90°	115.8	1.0
90°-100°	61.7	0.5
100°-110°	230.0	1.9
110°-120°	610.1	5.1
120°-130°	1011.9	8.4
130°-140°	1074.8	8.9
140°-150°	999.0	8.3
150°-160°	803.1	6.7
160°-170°	517.5	4.3
170°-180°	178.1	1.5
0°-30°	1937.0	16.0
0°-40°	3107.2	25.7
0°-60°	5295.3	43.8
0°-90°	6590.7	54.6
90°-120°	901.9	7.5
90°-150°	3987.5	33.0
90°-180°	5486.0	45.4
0°-180°	12077.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2589	2589	2589	2589	2589	
5°	2589	2579	2552	2572	2567	246
15°	2465	2450	2417	2428	2415	694
25°	2231	2211	2168	2173	2168	1026
35°	1925	1900	1860	1845	1832	1202
45°	1566	1549	1511	1484	1474	1209
55°	1185	1170	1140	1110	1098	1060
65°	799	784	759	737	724	790
75°	418	413	401	386	391	446
85°	102	100	97	90	87	114
90°	1	16	27	34	36	11
95°	88	43	53	60	58	104
105°	412	452	83	98	103	440
115°	779	802	836	209	111	767
125°	1101	1118	1144	1154	1158	982
135°	1362	1384	1396	1410	1407	1052
145°	1580	1579	1602	1611	1605	988
155°	1740	1728	1744	1752	1742	802
165°	1833	1825	1829	1839	1829	518
175°	1875	1866	1869	1878	1865	178
180°	1871	1871	1871	1871	1871	

TEST NUMBER: P910695

CATALOG NUMBER: DFN2DIP-HX2F0-060D050US850-FLLONL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2589.1	2589.1	2589.1	2589.1	2589.1
2.5°	2604.2	2591.7	2564.2	2589.1	2584.3
5°	2589.1	2579.3	2551.8	2571.7	2566.9
7.5°	2571.7	2556.9	2529.4	2549.5	2544.5
10°	2544.5	2527.1	2497.1	2517.0	2509.6
12.5°	2507.0	2492.1	2462.3	2474.7	2469.7
15°	2464.6	2449.9	2417.4	2427.5	2415.1
17.5°	2412.4	2397.7	2365.2	2377.5	2365.2
20°	2355.1	2340.3	2305.4	2312.8	2303.1
22.5°	2298.1	2275.6	2243.1	2243.1	2238.1
25°	2230.6	2210.9	2168.5	2173.3	2168.5
27.5°	2155.9	2138.5	2106.2	2098.9	2086.5
30°	2081.5	2061.3	2024.1	2016.7	2006.6
32.5°	2001.6	1986.9	1947.0	1931.9	1921.9
35°	1924.6	1899.7	1859.8	1844.7	1832.3
37.5°	1837.4	1814.9	1775.1	1757.5	1745.1
40°	1747.8	1727.7	1687.9	1665.7	1655.6
42.5°	1660.6	1640.5	1601.0	1575.9	1561.0
45°	1566.1	1548.6	1511.1	1484.0	1473.9
47.5°	1473.9	1456.4	1416.6	1389.1	1374.3
50°	1376.7	1364.3	1329.5	1294.5	1282.1
52.5°	1282.1	1264.7	1232.4	1205.0	1187.6
55°	1185.2	1170.1	1140.3	1110.4	1098.0
57.5°	1088.0	1075.6	1043.1	1013.3	1003.2
60°	990.8	981.0	946.2	918.7	911.3
62.5°	896.2	878.8	853.9	829.1	819.1
65°	799.3	784.3	759.4	736.9	724.5
67.5°	699.7	687.0	664.8	647.4	637.3
70°	607.5	597.5	575.0	557.6	547.8
72.5°	512.9	502.9	490.5	473.1	465.7
75°	418.1	413.4	400.7	385.9	390.9
77.5°	333.6	323.6	318.5	311.2	303.8
80°	249.1	246.4	241.4	234.0	229.0
82.5°	169.3	169.3	166.9	156.9	156.9
85°	101.9	99.6	97.1	89.5	87.2
87.5°	44.9	39.9	34.8	27.5	24.8
90°	1.3	16.2	27.1	33.9	36.5
92.5°	33.9	28.5	32.5	35.3	36.5
95°	87.9	43.3	52.8	59.7	58.2
97.5°	158.4	47.5	69.0	73.2	74.4
100°	239.8	54.2	77.2	87.9	90.7
102.5°	329.0	326.4	80.0	94.7	98.9
105°	411.7	452.4	82.6	97.5	102.9
107.5°	507.8	541.5	85.4	100.1	105.7
110°	600.0	628.2	237.0	101.6	106.9

TEST NUMBER: P910695

CATALOG NUMBER: DFN2DIP-HX2F0-060D050US850-FLLONL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	686.6	710.9	687.9	104.2	108.3
115°	778.6	801.6	835.5	208.6	111.1
117.5°	858.5	885.5	908.7	714.9	360.2
120°	947.9	968.2	992.6	1008.9	826.0
122.5°	1023.6	1045.3	1072.5	1080.6	1082.1
125°	1100.8	1118.5	1144.3	1153.7	1157.8
127.5°	1171.2	1190.2	1210.7	1224.1	1225.4
130°	1237.6	1259.4	1274.1	1289.1	1287.9
132.5°	1305.4	1323.0	1337.8	1350.1	1348.8
135°	1362.3	1384.0	1396.0	1409.8	1407.0
137.5°	1421.7	1438.0	1451.7	1465.2	1461.2
140°	1480.0	1490.9	1505.7	1517.9	1511.2
142.5°	1528.9	1538.4	1555.9	1566.7	1559.9
145°	1580.3	1578.9	1601.8	1611.4	1604.6
147.5°	1624.9	1620.8	1643.9	1650.6	1645.3
150°	1668.3	1658.8	1680.5	1688.6	1681.8
152.5°	1704.8	1694.0	1714.3	1722.5	1713.0
155°	1740.0	1727.9	1744.1	1752.2	1741.5
157.5°	1768.4	1757.7	1769.9	1779.4	1768.4
160°	1792.9	1784.7	1792.9	1800.9	1791.5
162.5°	1814.4	1806.5	1813.1	1822.6	1810.4
165°	1833.4	1825.4	1829.4	1838.8	1829.4
167.5°	1848.4	1840.2	1844.4	1853.8	1841.6
170°	1860.6	1852.4	1855.1	1864.6	1852.4
172.5°	1868.7	1860.6	1863.3	1872.8	1860.6
175°	1875.4	1865.9	1868.7	1878.1	1864.6
177.5°	1878.1	1868.7	1870.1	1879.5	1867.3
180°	1871.3	1871.3	1871.3	1871.3	1871.3

TEST NUMBER: P910695

CATALOG NUMBER: DFN2DIP-HX2F0-060D050US850-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	13.83	14.73	14.75	15.67	16.87	13.41	14.31	14.32	15.25	16.45
	3H	15.47	16.28	16.40	17.22	18.45	15.01	15.82	15.94	16.76	17.99
	4H	16.04	16.81	16.98	17.76	19.00	15.58	16.35	16.53	17.30	18.54
	6H	16.42	17.13	17.38	18.09	19.34	15.97	16.67	16.92	17.63	18.88
	8H	16.52	17.19	17.48	18.17	19.41	16.06	16.74	17.02	17.71	18.96
	12H	16.56	17.20	17.53	18.17	19.44	16.10	16.74	17.07	17.71	18.98
4H	2H	14.29	15.05	15.24	16.00	17.24	13.95	14.72	14.90	15.67	16.90
	3H	16.13	16.77	17.09	17.75	19.00	15.74	16.38	16.70	17.36	18.62
	4H	16.82	17.41	17.79	18.38	19.66	16.43	17.02	17.40	17.99	19.26
	6H	17.32	17.82	18.30	18.82	20.09	16.92	17.43	17.90	18.42	19.70
	8H	17.46	17.93	18.44	18.92	20.21	17.06	17.53	18.04	18.52	19.81
	12H	17.52	17.95	18.52	18.95	20.25	17.12	17.54	18.12	18.55	19.84
8H	4H	17.01	17.48	18.00	18.48	19.76	16.66	17.13	17.64	18.12	19.41
	6H	17.62	18.01	18.62	19.04	20.33	17.27	17.66	18.27	18.69	19.98
	8H	17.82	18.17	18.84	19.18	20.49	17.47	17.81	18.48	18.83	20.14
	12H	17.94	18.24	18.96	19.26	20.61	17.57	17.87	18.59	18.89	20.24
12H	4H	17.00	17.42	18.00	18.43	19.73	16.65	17.08	17.66	18.09	19.38
	6H	17.64	17.99	18.66	19.01	20.31	17.30	17.65	18.32	18.67	19.97
	8H	17.87	18.17	18.89	19.18	20.54	17.52	17.83	18.54	18.84	20.19