

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: P910831

Luminaire Tested: DFN2DIP-HX3F0-080D050US850-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P910831
REPORT IS A COMBINATION OF REPORTS P900759 AND P897645
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX3F0-080D050US850-FLLONL
Description: 3 foot, Hexagon Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

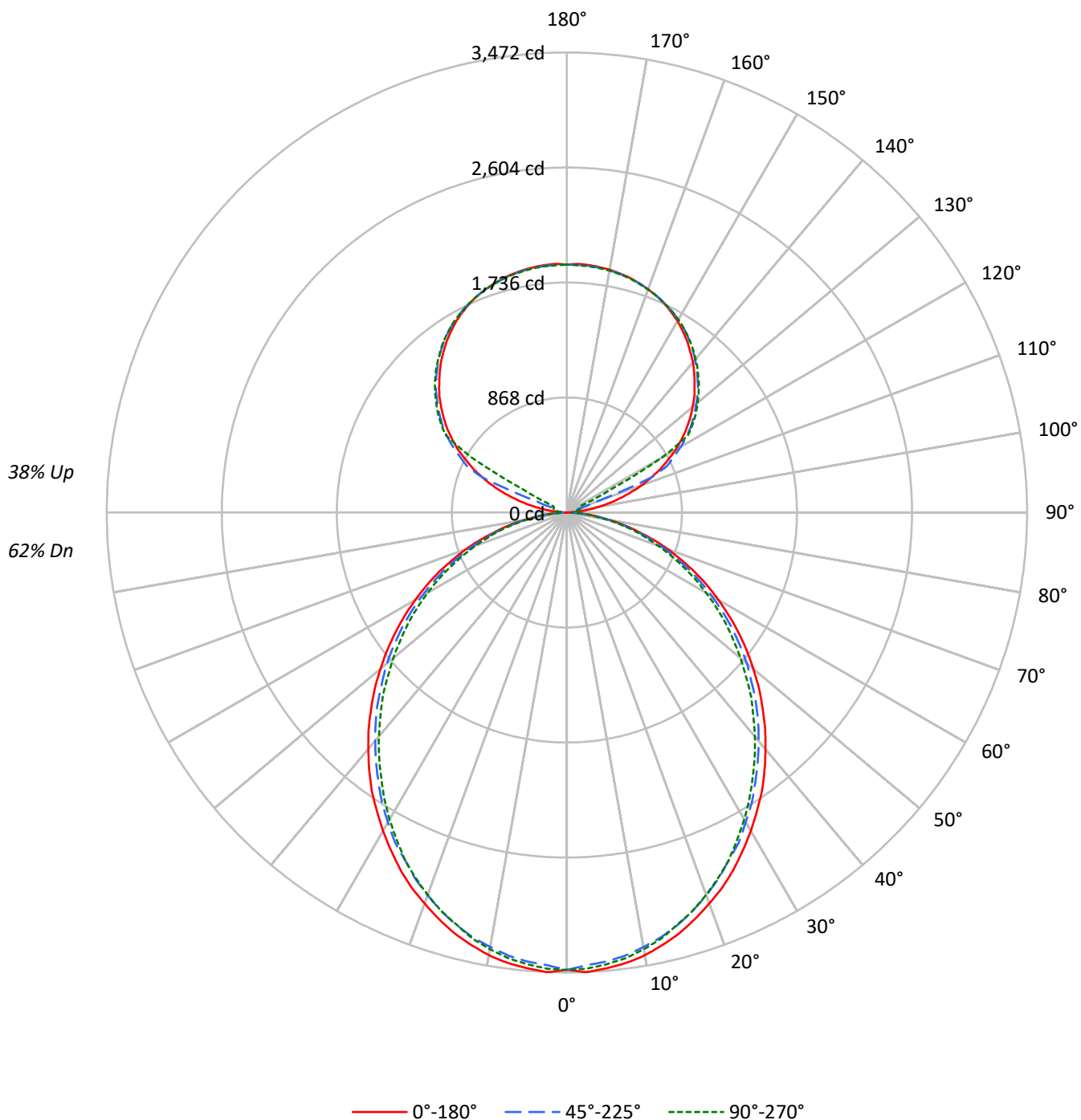
Lumens per Lamp: N/A
Luminaire Lumens: 14272.9 lumens
Efficiency: N/A
Efficacy: 122.4 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 2.84' x L: 3.28' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 116.6
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: P910831

CATALOG NUMBER: DFN2DIP-HX3F0-080D050US850-FLLONL

Luminous Intensity Polar Plot



TEST NUMBER: P910831

CATALOG NUMBER: DFN2DIP-HX3F0-080D050US850-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	110	110	110	110	103	103	103	103	90	90	90	78	78	78	67	67	67
1	100	96	92	88	94	90	87	83	79	76	74	69	67	65	59	58	56
2	91	84	78	72	85	79	73	69	69	65	61	60	57	54	52	50	48
3	83	74	66	60	78	69	63	57	61	56	51	53	49	46	46	43	40
4	76	65	57	51	71	61	54	49	54	48	44	47	43	39	41	38	35
5	70	58	50	44	65	55	47	42	49	43	38	43	38	34	37	33	30
6	65	52	44	38	60	49	42	36	44	38	33	39	34	30	34	30	27
7	60	47	39	34	56	45	37	32	40	34	29	35	30	27	31	27	24
8	56	43	35	30	52	41	34	29	36	30	26	32	27	24	28	24	21
9	52	39	32	27	49	37	30	26	33	28	23	30	25	21	26	22	19
10	49	36	29	24	45	34	28	23	31	25	21	27	23	19	24	20	18

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3999	3999	3999
5°	4003	3940	3967
10°	3969	3884	3912
15°	3909	3818	3825
20°	3828	3726	3737
25°	3748	3617	3636
30°	3648	3516	3507
35°	3553	3396	3372
40°	3436	3275	3242
45°	3319	3154	3110
50°	3192	3026	2956
55°	3058	2879	2815
60°	2907	2705	2653
65°	2741	2523	2462
70°	2531	2303	2255
75°	2240	2038	2061
80°	1888	1699	1697
85°	1340	1125	1101

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 3319 cd/sqm

TEST NUMBER: P910831

CATALOG NUMBER: DFN2DIP-HX3F0-080D050US850-FLLONL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	324.9	2.3
10°-20°	914.2	6.4
20°-30°	1343.5	9.4
30°-40°	1560.4	10.9
40°-50°	1558.4	10.9
50°-60°	1358.9	9.5
60°-70°	1004.5	7.0
70°-80°	568.4	4.0
80°-90°	153.3	1.1
90°-100°	61.7	0.4
100°-110°	230.0	1.6
110°-120°	610.1	4.3
120°-130°	1011.9	7.1
130°-140°	1074.8	7.5
140°-150°	999.0	7.0
150°-160°	803.1	5.6
160°-170°	517.5	3.6
170°-180°	178.1	1.2
0°-30°	2582.6	18.1
0°-40°	4143.0	29.0
0°-60°	7060.4	49.5
0°-90°	8786.6	61.6
90°-120°	901.9	6.3
90°-150°	3987.5	27.9
90°-180°	5486.0	38.4
0°-180°	14272.9	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3452	3452	3452	3452	3452	
5°	3452	3439	3402	3429	3423	328
15°	3286	3267	3223	3237	3220	926
25°	2974	2948	2892	2898	2892	1369
35°	2566	2533	2480	2460	2443	1602
45°	2088	2065	2015	1979	1965	1612
55°	1580	1560	1520	1481	1464	1413
65°	1066	1046	1012	983	966	1054
75°	558	551	534	515	521	595
85°	136	133	130	119	116	152
90°	1	16	27	34	36	13
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: P910831

CATALOG NUMBER: DFN2DIP-HX3F0-080D050US850-FLLONL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	3452.1	3452.1	3452.1	3452.1	3452.1
2.5°	3472.2	3455.6	3419.0	3452.1	3445.8
5°	3452.1	3439.1	3402.5	3428.9	3422.6
7.5°	3428.9	3409.2	3372.6	3399.3	3392.7
10°	3392.7	3369.4	3329.6	3355.9	3346.2
12.5°	3342.6	3322.9	3283.1	3299.6	3293.0
15°	3286.3	3266.6	3223.2	3236.6	3220.1
17.5°	3216.5	3196.8	3153.4	3170.1	3153.4
20°	3140.1	3120.4	3073.9	3083.8	3070.7
22.5°	3064.1	3034.1	2990.8	2990.8	2984.1
25°	2974.2	2947.8	2891.5	2897.8	2891.5
27.5°	2874.5	2851.3	2808.3	2798.5	2781.9
30°	2775.3	2748.4	2698.9	2689.0	2675.6
32.5°	2668.9	2649.2	2595.9	2575.9	2562.6
35°	2566.0	2533.0	2479.7	2459.7	2443.1
37.5°	2449.8	2419.8	2366.7	2343.4	2326.9
40°	2330.5	2303.6	2250.5	2220.9	2207.5
42.5°	2214.2	2187.4	2134.6	2101.1	2081.5
45°	2088.1	2064.8	2014.8	1978.6	1965.3
47.5°	1965.3	1942.0	1888.7	1852.1	1832.4
50°	1835.6	1819.1	1772.5	1726.0	1709.5
52.5°	1709.5	1686.2	1643.3	1606.7	1583.4
55°	1580.2	1560.1	1520.4	1480.6	1464.0
57.5°	1450.7	1434.2	1390.8	1351.0	1337.6
60°	1321.0	1308.1	1261.5	1224.9	1215.0
62.5°	1194.9	1171.8	1138.6	1105.6	1092.1
65°	1065.7	1045.7	1012.5	982.6	966.0
67.5°	932.9	916.0	886.4	863.2	849.8
70°	810.0	796.6	766.8	743.5	730.4
72.5°	683.9	670.6	654.0	630.8	620.9
75°	557.5	551.2	534.3	514.6	521.2
77.5°	444.8	431.4	424.7	414.9	405.0
80°	332.1	328.6	321.9	312.1	305.3
82.5°	225.8	225.8	222.6	209.2	209.2
85°	136.0	132.7	129.6	119.4	116.2
87.5°	59.9	53.2	46.5	36.6	33.2
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: P910831

CATALOG NUMBER: DFN2DIP-HX3F0-080D050US850-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: P910831

CATALOG NUMBER: DFN2DIP-HX3F0-080D050US850-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	13.05	14.02	13.90	14.90	15.99	12.62	13.59	13.47	14.47	15.56
	3H	14.71	15.58	15.57	16.47	17.59	14.24	15.12	15.10	16.00	17.12
	4H	15.30	16.12	16.18	17.01	18.15	14.83	15.65	15.71	16.54	17.68
	6H	15.70	16.46	16.59	17.35	18.50	15.23	15.99	16.12	16.88	18.03
	8H	15.80	16.53	16.70	17.44	18.59	15.33	16.06	16.23	16.97	18.12
	12H	15.85	16.54	16.76	17.45	18.62	15.37	16.07	16.28	16.98	18.15
4H	2H	13.52	14.35	14.40	15.24	16.37	13.18	14.00	14.06	14.89	16.03
	3H	15.39	16.08	16.28	17.00	18.15	15.00	15.69	15.89	16.61	17.76
	4H	16.10	16.73	17.01	17.65	18.82	15.70	16.33	16.61	17.24	18.42
	6H	16.61	17.16	17.54	18.10	19.27	16.21	16.75	17.13	17.69	18.87
	8H	16.76	17.27	17.69	18.21	19.39	16.36	16.86	17.28	17.80	18.99
	12H	16.84	17.30	17.78	18.25	19.44	16.42	16.88	17.36	17.83	19.03
8H	4H	16.30	16.81	17.23	17.75	18.93	15.95	16.45	16.87	17.39	18.58
	6H	16.93	17.35	17.88	18.33	19.51	16.57	16.99	17.52	17.97	19.16
	8H	17.15	17.52	18.11	18.49	19.69	16.78	17.15	17.74	18.12	19.33
	12H	17.28	17.61	18.24	18.57	19.82	16.90	17.23	17.86	18.19	19.44
12H	4H	16.29	16.75	17.24	17.70	18.90	15.94	16.40	16.89	17.35	18.55
	6H	16.96	17.33	17.92	18.30	19.50	16.61	16.98	17.57	17.95	19.16
	8H	17.20	17.53	18.16	18.49	19.74	16.85	17.18	17.81	18.13	19.39