

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: P905311

Luminaire Tested: DFN2DIP-HX3F0-050D070US835-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P905311
REPORT IS A COMBINATION OF REPORTS P900781 AND P897645
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX3F0-050D070US835-FLLONL
Description: 3 foot, Hexagon Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

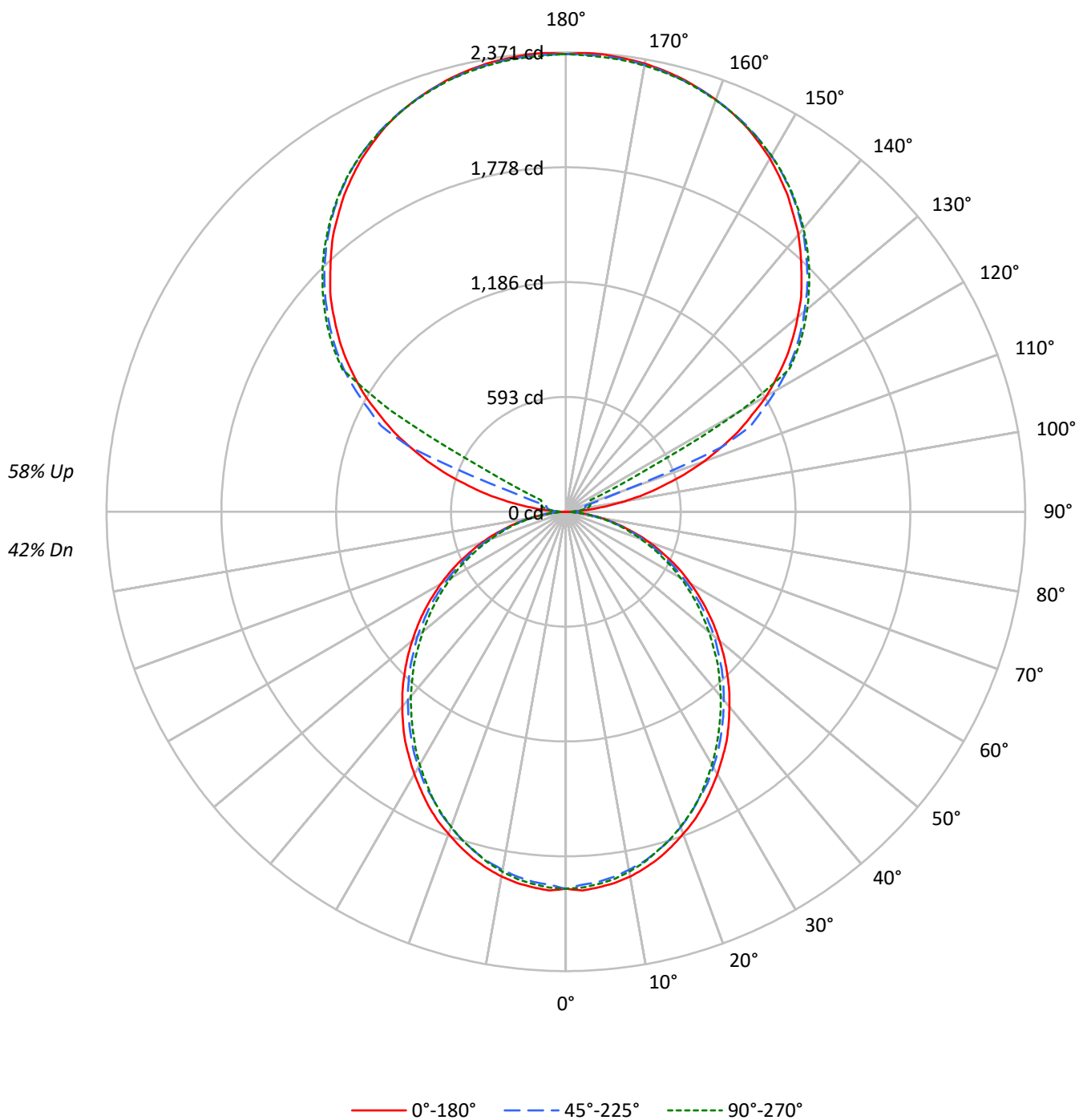
Lumens per Lamp: N/A
Luminaire Lumens: 11880.0 lumens
Efficiency: N/A
Efficacy: 121.0 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 2.84' x L: 3.28' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 98.2
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9951
Total Harmonic Distortion (THDi): 0.07
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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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	105	105	105	105	96	96	96	96	79	79	79	63	63	63	49	49	49
1	96	92	88	84	87	84	80	78	69	67	65	55	54	52	43	42	41
2	87	80	74	69	79	73	68	64	60	57	53	49	46	44	38	36	34
3	80	70	63	57	72	64	58	53	53	49	45	43	40	37	33	31	29
4	73	62	54	48	66	57	50	45	47	42	38	38	35	32	30	27	25
5	67	55	47	41	61	51	44	39	42	37	33	34	30	27	27	24	22
6	62	50	42	36	56	46	39	33	38	33	29	31	27	24	24	22	19
7	57	45	37	31	52	41	34	29	34	29	25	28	24	21	22	19	17
8	53	41	33	28	48	37	31	26	31	26	22	26	22	19	20	18	15
9	49	37	30	25	45	34	28	23	29	24	20	24	20	17	19	16	14
10	46	34	27	22	42	31	25	21	26	21	18	22	18	15	18	15	13

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2254	2254	2254
5°	2256	2221	2236
10°	2237	2189	2204
15°	2203	2152	2156
20°	2158	2100	2106
25°	2112	2038	2049
30°	2056	1981	1977
35°	2002	1914	1900
40°	1936	1846	1827
45°	1871	1777	1752
50°	1799	1706	1666
55°	1723	1623	1586
60°	1638	1524	1495
65°	1545	1422	1387
70°	1426	1298	1271
75°	1262	1148	1162
80°	1064	957	957
85°	755	633	621

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 1871 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	183.1	1.5
10°-20°	515.2	4.3
20°-30°	757.2	6.4
30°-40°	879.4	7.4
40°-50°	878.3	7.4
50°-60°	765.8	6.4
60°-70°	566.1	4.8
70°-80°	320.3	2.7
80°-90°	88.7	0.7
90°-100°	77.9	0.7
100°-110°	290.4	2.4
110°-120°	770.2	6.5
120°-130°	1277.4	10.8
130°-140°	1356.9	11.4
140°-150°	1261.1	10.6
150°-160°	1013.9	8.5
160°-170°	653.3	5.5
170°-180°	224.9	1.9
0°-30°	1455.5	12.3
0°-40°	2334.9	19.7
0°-60°	3979.0	33.5
0°-90°	4954.2	41.7
90°-120°	1138.5	9.6
90°-150°	5033.8	42.4
90°-180°	6926.0	58.3
0°-180°	11880.0	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	20	34	43	46	11
95°	111	55	67	75	74	131
105°	520	571	104	123	130	555
115°	983	1012	1055	263	140	968
125°	1390	1412	1444	1456	1462	1239
135°	1720	1747	1762	1780	1776	1328
145°	1995	1993	2022	2034	2026	1248
155°	2197	2181	2202	2212	2198	1012
165°	2314	2304	2309	2321	2309	654
175°	2368	2356	2359	2371	2354	225
180°	2362	2362	2362	2362	2362	

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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°	1.6	20.5	34.1	42.8	46.1
92.5°	42.8	35.9	41.0	44.5	46.1
95°	111.0	54.6	66.6	75.3	73.5
97.5°	199.9	59.9	87.1	92.4	94.0
100°	302.7	68.4	97.4	111.0	114.5
102.5°	415.3	412.1	100.9	119.6	124.8
105°	519.7	571.0	104.3	123.0	129.9
107.5°	641.0	683.7	107.8	126.5	133.4
110°	757.4	793.1	299.2	128.3	135.0

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	866.8	897.4	868.4	131.5	136.8
115°	982.9	1011.9	1054.7	263.3	140.3
117.5°	1083.8	1117.9	1147.1	902.5	454.7
120°	1196.6	1222.2	1253.1	1273.6	1042.8
122.5°	1292.2	1319.6	1354.0	1364.1	1365.9
125°	1389.7	1412.0	1444.5	1456.5	1461.5
127.5°	1478.6	1502.5	1528.3	1545.4	1547.0
130°	1562.4	1589.8	1608.5	1627.4	1625.8
132.5°	1647.9	1670.2	1688.9	1704.3	1702.7
135°	1719.7	1747.1	1762.4	1779.6	1776.2
137.5°	1794.8	1815.4	1832.6	1849.7	1844.6
140°	1868.3	1882.1	1900.8	1916.2	1907.7
142.5°	1930.0	1942.0	1964.1	1977.7	1969.2
145°	1995.0	1993.2	2022.2	2034.2	2025.7
147.5°	2051.2	2046.2	2075.2	2083.7	2077.0
150°	2106.0	2094.1	2121.5	2131.6	2123.1
152.5°	2152.1	2138.5	2164.1	2174.4	2162.5
155°	2196.6	2181.3	2201.8	2212.0	2198.4
157.5°	2232.5	2218.9	2234.3	2246.3	2232.5
160°	2263.4	2253.0	2263.4	2273.5	2261.5
162.5°	2290.6	2280.4	2288.9	2300.9	2285.5
165°	2314.5	2304.4	2309.4	2321.4	2309.4
167.5°	2333.4	2323.0	2328.3	2340.3	2324.9
170°	2348.8	2338.5	2341.9	2353.9	2338.5
172.5°	2359.0	2348.8	2352.3	2364.2	2348.8
175°	2367.5	2355.5	2359.0	2370.9	2353.9
177.5°	2370.9	2359.0	2360.8	2372.8	2357.3
180°	2362.4	2362.4	2362.4	2362.4	2362.4

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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	9.23	10.02	10.26	11.06	12.44	8.80	9.60	9.83	10.63	12.01
	3H	10.88	11.59	11.92	12.63	14.04	10.41	11.12	11.45	12.16	13.57
	4H	11.46	12.13	12.51	13.18	14.59	10.99	11.66	12.04	12.71	14.12
	6H	11.85	12.47	12.91	13.52	14.94	11.38	12.00	12.44	13.05	14.47
	8H	11.95	12.54	13.01	13.60	15.02	11.48	12.07	12.54	13.13	14.55
	12H	11.99	12.55	13.06	13.61	15.05	11.52	12.08	12.58	13.14	14.58
4H	2H	9.68	10.35	10.74	11.40	12.81	9.34	10.01	10.39	11.06	12.47
	3H	11.53	12.09	12.60	13.17	14.59	11.14	11.70	12.21	12.78	14.20
	4H	12.24	12.75	13.31	13.82	15.26	11.84	12.35	12.90	13.41	14.86
	6H	12.74	13.18	13.82	14.27	15.71	12.34	12.78	13.41	13.87	15.31
	8H	12.89	13.30	13.96	14.38	15.84	12.48	12.89	13.56	13.97	15.43
	12H	12.95	13.33	14.05	14.42	15.88	12.54	12.91	13.63	14.00	15.46
8H	4H	12.43	12.84	13.50	13.92	15.37	12.07	12.48	13.15	13.56	15.02
	6H	13.05	13.39	14.15	14.51	15.96	12.69	13.03	13.79	14.15	15.60
	8H	13.26	13.56	14.37	14.66	16.14	12.90	13.20	14.00	14.30	15.77
	12H	13.38	13.65	14.49	14.75	16.26	13.00	13.27	14.12	14.37	15.88
12H	4H	12.41	12.78	13.50	13.87	15.34	12.06	12.43	13.15	13.52	14.99
	6H	13.07	13.37	14.18	14.48	15.95	12.73	13.02	13.83	14.13	15.60
	8H	13.31	13.57	14.42	14.67	16.18	12.95	13.22	14.06	14.32	15.83