

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: P910698

Luminaire Tested: DFN2DIP-HX2F0-060D060US850-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P910698
REPORT IS A COMBINATION OF REPORTS P899199 AND P896039
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX2F0-060D060US850-FLLFLL
Description: 2 foot, Hexagon Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

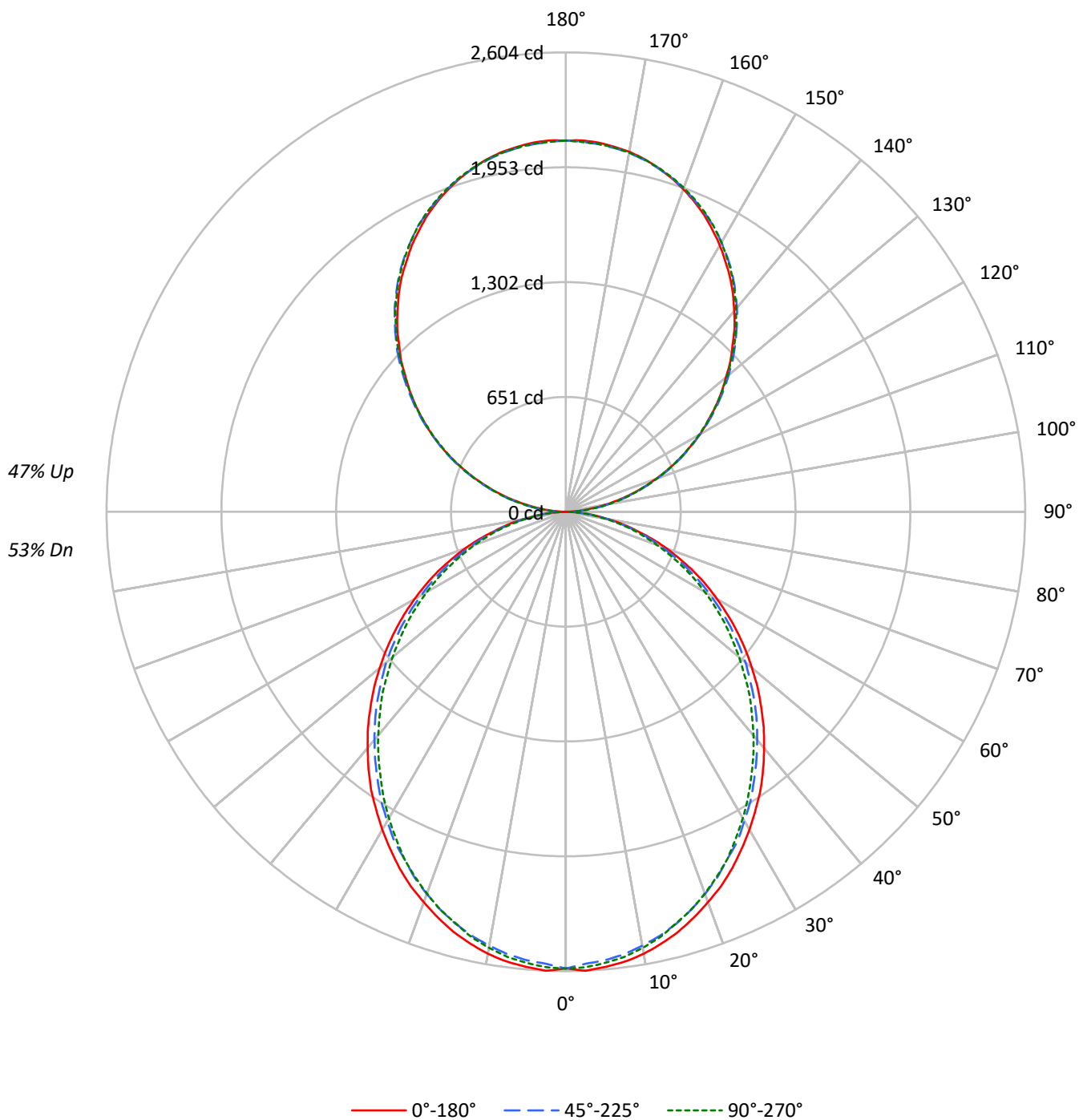
Lumens per Lamp: N/A
Luminaire Lumens: 12476.2 lumens
Efficiency: N/A
Efficacy: 115.7 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 1.99' x L: 2.3' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 107.8
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

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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	108	108	108	108	100	100	100	100	85	85	85	71	71	71	59	59	59
1	98	94	90	87	91	87	84	81	74	72	70	63	61	59	52	51	50
2	90	82	76	71	83	76	71	66	65	61	58	55	52	50	46	44	42
3	82	72	65	59	75	67	61	55	58	53	49	49	45	42	41	38	36
4	75	64	56	50	69	60	52	47	51	46	41	43	39	36	36	33	31
5	69	57	49	43	63	53	46	40	46	40	36	39	35	31	33	29	27
6	63	51	43	37	58	48	40	35	41	36	31	35	31	27	30	26	24
7	59	46	38	33	54	43	36	31	37	32	28	32	28	24	27	24	21
8	54	42	34	29	50	39	32	27	34	29	24	29	25	22	25	21	19
9	51	38	31	26	47	36	29	24	31	26	22	27	23	19	23	20	17
10	47	35	28	23	44	33	26	22	29	23	20	25	21	18	21	18	15

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

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	243.7	2.0
10°-20°	685.6	5.5
20°-30°	1007.6	8.1
30°-40°	1170.3	9.4
40°-50°	1168.8	9.4
50°-60°	1019.2	8.2
60°-70°	753.4	6.0
70°-80°	426.3	3.4
80°-90°	118.5	0.9
90°-100°	130.2	1.0
100°-110°	413.7	3.3
110°-120°	708.0	5.7
120°-130°	931.2	7.5
130°-140°	1045.3	8.4
140°-150°	1025.0	8.2
150°-160°	859.8	6.9
160°-170°	570.2	4.6
170°-180°	199.3	1.6
0°-30°	1937.0	15.5
0°-40°	3107.2	24.9
0°-60°	5295.3	42.4
0°-90°	6593.4	52.8
90°-120°	1252.0	10.0
90°-150°	4253.5	34.1
90°-180°	5883.0	47.2
0°-180°	12476.2	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°	2	23	62	58	60	12
95°	93	110	114	114	110	103
105°	382	387	391	394	394	403
115°	710	721	718	716	710	703
125°	1034	1049	1044	1039	1037	924
135°	1337	1356	1360	1358	1353	1033
145°	1623	1636	1646	1648	1641	1014
155°	1856	1861	1866	1875	1870	854
165°	2019	2017	2017	2030	2021	569
175°	2101	2096	2092	2104	2094	200
180°	2104	2104	2104	2104	2104	

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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°	1.9	22.8	62.2	58.3	60.2
92.5°	39.4	53.3	55.2	57.1	57.1
95°	92.6	110.3	113.6	113.6	110.3
97.5°	154.2	170.7	177.7	177.7	177.7
100°	225.2	239.8	244.9	244.9	243.0
102.5°	300.1	310.9	317.8	319.7	317.8
105°	381.9	387.0	390.8	394.0	394.0
107.5°	463.1	470.8	470.8	472.0	463.1
110°	541.9	551.9	551.9	551.9	546.8

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	626.8	637.6	635.7	630.6	626.8
115°	710.5	720.7	717.5	715.6	710.5
117.5°	793.7	807.7	798.7	793.7	788.6
120°	877.4	891.4	877.4	877.4	871.7
122.5°	953.5	971.3	962.4	957.4	953.5
125°	1033.5	1049.3	1044.2	1038.6	1036.7
127.5°	1111.6	1131.2	1124.2	1116.7	1111.6
130°	1184.5	1207.4	1204.2	1200.4	1193.4
132.5°	1266.4	1284.1	1285.3	1276.5	1271.4
135°	1336.8	1356.4	1360.2	1358.3	1353.2
137.5°	1415.4	1431.3	1434.5	1433.2	1425.6
140°	1484.6	1500.5	1509.3	1509.3	1502.4
142.5°	1555.6	1571.5	1576.6	1578.4	1571.5
145°	1622.9	1635.6	1645.8	1647.6	1640.7
147.5°	1683.1	1699.0	1706.6	1709.7	1702.8
150°	1745.3	1756.1	1763.1	1768.7	1763.1
152.5°	1800.5	1811.3	1820.2	1827.2	1820.2
155°	1855.7	1860.8	1866.4	1875.4	1869.7
157.5°	1903.3	1907.1	1910.3	1923.0	1914.1
160°	1945.9	1949.6	1951.5	1962.3	1954.7
162.5°	1985.1	1985.1	1987.0	1999.1	1990.2
165°	2018.7	2016.8	2016.8	2029.6	2020.7
167.5°	2049.2	2043.6	2043.6	2056.2	2047.3
170°	2072.1	2067.0	2065.1	2077.7	2067.0
172.5°	2087.9	2082.8	2080.9	2093.6	2082.8
175°	2100.6	2095.6	2091.7	2104.4	2093.6
177.5°	2107.5	2102.6	2098.7	2109.4	2098.7
180°	2104.4	2104.4	2104.4	2104.4	2104.4

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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	13.68	14.56	14.61	15.51	16.74	13.25	14.14	14.19	15.09	16.32
	3H	15.31	16.11	16.26	17.07	18.32	14.85	15.65	15.80	16.61	17.86
	4H	15.89	16.64	16.84	17.60	18.86	15.43	16.18	16.38	17.14	18.41
	6H	16.27	16.96	17.24	17.93	19.21	15.81	16.50	16.78	17.47	18.75
	8H	16.36	17.02	17.34	18.01	19.28	15.91	16.57	16.88	17.55	18.82
	12H	16.40	17.03	17.38	18.01	19.31	15.94	16.57	16.92	17.55	18.85
4H	2H	14.13	14.88	15.09	15.85	17.11	13.79	14.55	14.76	15.51	16.77
	3H	15.97	16.60	16.94	17.59	18.87	15.59	16.22	16.56	17.21	18.49
	4H	16.67	17.24	17.65	18.23	19.53	16.27	16.85	17.25	17.83	19.13
	6H	17.16	17.65	18.15	18.66	19.96	16.76	17.26	17.76	18.27	19.57
	8H	17.30	17.76	18.29	18.76	20.08	16.90	17.36	17.90	18.37	19.68
	12H	17.36	17.78	18.37	18.80	20.12	16.96	17.37	17.97	18.39	19.71
8H	4H	16.85	17.32	17.85	18.32	19.63	16.50	16.97	17.50	17.97	19.28
	6H	17.46	17.84	18.48	18.88	20.20	17.10	17.49	18.13	18.53	19.84
	8H	17.66	18.00	18.69	19.03	20.36	17.30	17.64	18.33	18.67	20.00
	12H	17.78	18.07	18.81	19.10	20.47	17.41	17.71	18.44	18.73	20.11
12H	4H	16.84	17.26	17.85	18.28	19.59	16.49	16.91	17.51	17.93	19.25
	6H	17.48	17.82	18.51	18.85	20.18	17.14	17.48	18.17	18.51	19.84
	8H	17.71	18.00	18.74	19.03	20.40	17.36	17.66	18.39	18.68	20.06