

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: P910791

Luminaire Tested: DFN2DIP-HX3F0-060D070US850-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P910791
REPORT IS A COMBINATION OF REPORTS P900783 AND P897645
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX3F0-060D070US850-FLLONL
Description: 3 foot, Hexagon Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

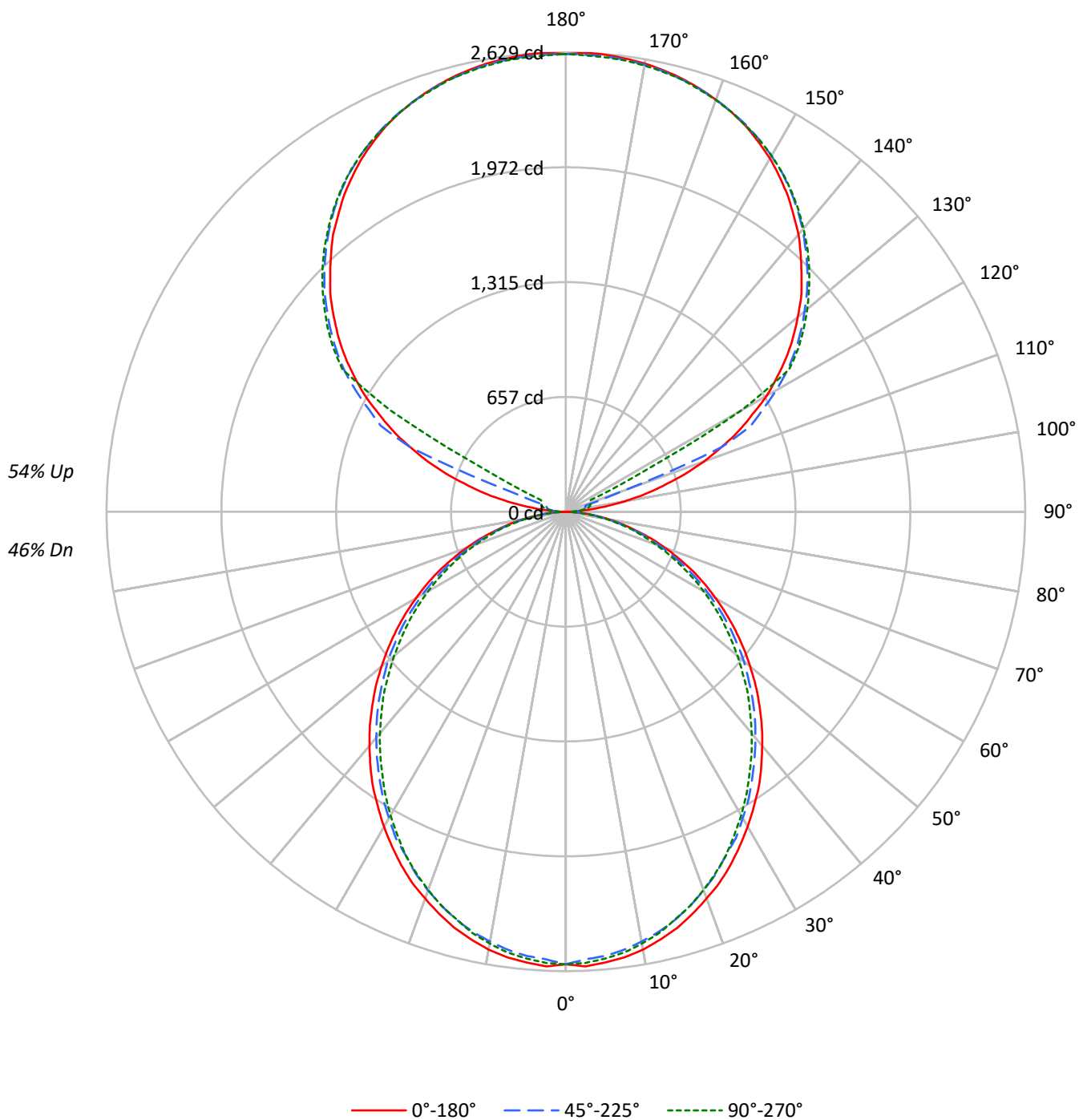
Lumens per Lamp: N/A
Luminaire Lumens: 14272.8 lumens
Efficiency: N/A
Efficacy: 129.6 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 2.84' x L: 3.28' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 110.1
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9933
Total Harmonic Distortion (THDi): 0.066
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	50	30	10
RCR																				
0	106	106	106	106	98	98	98	98	81	81	81	66	66	66	53	53	53			46
1	97	93	89	85	89	85	82	79	71	69	67	58	57	55	46	45	44			39
2	88	81	75	70	81	74	69	65	62	59	55	51	48	46	41	39	37			33
3	81	71	64	58	74	66	59	54	55	50	46	45	42	39	36	34	32			28
4	74	63	55	49	67	58	51	46	49	44	40	40	37	33	32	30	27			24
5	68	56	48	42	62	52	45	39	44	38	34	36	32	29	29	26	24			21
6	62	50	42	36	57	46	39	34	39	34	30	33	29	25	26	23	21			18
7	58	45	37	32	53	42	35	30	36	30	26	30	26	22	24	21	19			16
8	53	41	33	28	49	38	31	26	33	27	23	27	23	20	22	19	17			14
9	50	38	30	25	46	35	28	24	30	24	21	25	21	18	21	17	15			13
10	46	34	27	22	43	32	26	21	27	22	19	23	19	16	19	16	14			12

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2999	2999	2999
5°	3003	2955	2976
10°	2977	2913	2934
15°	2932	2863	2869
20°	2871	2795	2803
25°	2811	2713	2727
30°	2736	2637	2630
35°	2665	2547	2529
40°	2577	2456	2432
45°	2490	2365	2332
50°	2394	2270	2217
55°	2294	2159	2111
60°	2180	2029	1990
65°	2056	1893	1846
70°	1898	1727	1691
75°	1680	1528	1546
80°	1416	1274	1273
85°	1004	843	826

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
Vertical Angle: 45°
Luminance: 2490 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	243.7	1.7
10°-20°	685.6	4.8
20°-30°	1007.6	7.1
30°-40°	1170.3	8.2
40°-50°	1168.8	8.2
50°-60°	1019.2	7.1
60°-70°	753.4	5.3
70°-80°	426.3	3.0
80°-90°	117.1	0.8
90°-100°	86.4	0.6
100°-110°	322.1	2.3
110°-120°	854.1	6.0
120°-130°	1416.6	9.9
130°-140°	1504.8	10.5
140°-150°	1398.5	9.8
150°-160°	1124.4	7.9
160°-170°	724.5	5.1
170°-180°	249.4	1.7
0°-30°	1937.0	13.6
0°-40°	3107.2	21.8
0°-60°	5295.3	37.1
0°-90°	6592.0	46.2
90°-120°	1262.6	8.8
90°-150°	5582.5	39.1
90°-180°	7681.0	53.8
0°-180°	14272.8	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	38	48	51	13
95°	123	61	74	84	82	146
105°	576	633	116	136	144	616
115°	1090	1122	1170	292	156	1073
125°	1541	1566	1602	1615	1621	1375
135°	1907	1938	1954	1974	1970	1473
145°	2212	2210	2243	2256	2246	1384
155°	2436	2419	2442	2453	2438	1123
165°	2567	2556	2561	2574	2561	725
175°	2626	2612	2616	2629	2610	250
180°	2620	2620	2620	2620	2620	

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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°	1.8	22.7	37.8	47.5	51.1
92.5°	47.5	39.8	45.5	49.4	51.1
95°	123.1	60.6	73.9	83.5	81.5
97.5°	221.7	66.4	96.6	102.5	104.2
100°	335.7	75.9	108.0	123.1	127.0
102.5°	460.6	457.0	111.9	132.6	138.4
105°	576.3	633.2	115.7	136.4	144.1
107.5°	710.9	758.2	119.6	140.3	147.9
110°	840.0	879.5	331.8	142.3	149.7

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	961.3	995.2	963.1	145.8	151.7
115°	1090.0	1122.2	1169.7	292.0	155.6
117.5°	1201.9	1239.8	1272.1	1000.9	504.3
120°	1327.0	1355.4	1389.7	1412.4	1156.5
122.5°	1433.0	1463.4	1501.6	1512.8	1514.8
125°	1541.2	1565.9	1602.0	1615.3	1620.8
127.5°	1639.8	1666.3	1694.9	1713.8	1715.6
130°	1732.7	1763.1	1783.8	1804.8	1803.0
132.5°	1827.5	1852.3	1873.0	1890.1	1888.3
135°	1907.1	1937.5	1954.5	1973.6	1969.8
137.5°	1990.4	2013.3	2032.4	2051.3	2045.7
140°	2071.9	2087.2	2108.0	2125.1	2115.6
142.5°	2140.4	2153.7	2178.2	2193.3	2183.8
145°	2212.5	2210.5	2242.6	2255.9	2246.5
147.5°	2274.8	2269.2	2301.4	2310.8	2303.4
150°	2335.6	2322.4	2352.7	2363.9	2354.5
152.5°	2386.7	2371.6	2400.0	2411.4	2398.2
155°	2436.0	2419.1	2441.8	2453.1	2438.0
157.5°	2475.8	2460.8	2477.8	2491.1	2475.8
160°	2510.1	2498.6	2510.1	2521.3	2508.0
162.5°	2540.3	2529.0	2538.4	2551.7	2534.6
165°	2566.8	2555.6	2561.1	2574.4	2561.1
167.5°	2587.7	2576.2	2582.1	2595.4	2578.3
170°	2604.8	2593.4	2597.2	2610.5	2593.4
172.5°	2616.1	2604.8	2608.7	2621.9	2604.8
175°	2625.6	2612.2	2616.1	2629.3	2610.5
177.5°	2629.3	2616.1	2618.1	2631.4	2614.2
180°	2619.9	2619.9	2619.9	2619.9	2619.9

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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	10.68	11.51	11.67	12.51	13.84	10.25	11.08	11.24	12.08	13.41
	3H	12.33	13.07	13.33	14.08	15.43	11.86	12.60	12.86	13.61	14.96
	4H	12.91	13.62	13.92	14.63	15.98	12.44	13.15	13.46	14.16	15.51
	6H	13.30	13.95	14.33	14.97	16.34	12.83	13.48	13.86	14.50	15.87
	8H	13.40	14.02	14.43	15.06	16.42	12.94	13.55	13.96	14.59	15.95
	12H	13.45	14.04	14.48	15.06	16.45	12.97	13.56	14.01	14.59	15.98
4H	2H	11.14	11.84	12.15	12.85	14.21	10.79	11.50	11.81	12.51	13.86
	3H	12.99	13.58	14.02	14.62	15.99	12.60	13.19	13.63	14.23	15.60
	4H	13.70	14.23	14.73	15.27	16.66	13.29	13.83	14.33	14.87	16.26
	6H	14.20	14.66	15.25	15.72	17.11	13.80	14.26	14.84	15.32	16.70
	8H	14.35	14.78	15.39	15.83	17.23	13.94	14.37	14.99	15.42	16.82
	12H	14.42	14.81	15.48	15.87	17.28	14.00	14.39	15.06	15.45	16.86
8H	4H	13.89	14.32	14.93	15.37	16.77	13.53	13.96	14.58	15.01	16.41
	6H	14.51	14.86	15.58	15.96	17.35	14.15	14.51	15.22	15.60	17.00
	8H	14.72	15.04	15.80	16.11	17.53	14.36	14.67	15.44	15.75	17.17
	12H	14.85	15.12	15.93	16.19	17.65	14.47	14.74	15.55	15.82	17.27
12H	4H	13.87	14.26	14.93	15.33	16.73	13.52	13.91	14.59	14.98	16.38
	6H	14.54	14.85	15.61	15.93	17.34	14.19	14.50	15.26	15.58	17.00
	8H	14.77	15.05	15.85	16.12	17.58	14.42	14.69	15.50	15.76	17.22

END OF REPORT