

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: P921727

Luminaire Tested: DFN2DIP-HX3F0-070D070US940-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P921727
REPORT IS A COMBINATION OF REPORTS P900785 AND P897645
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX3F0-070D070US940-FLLONL
Description: 3 foot, Hexagon Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

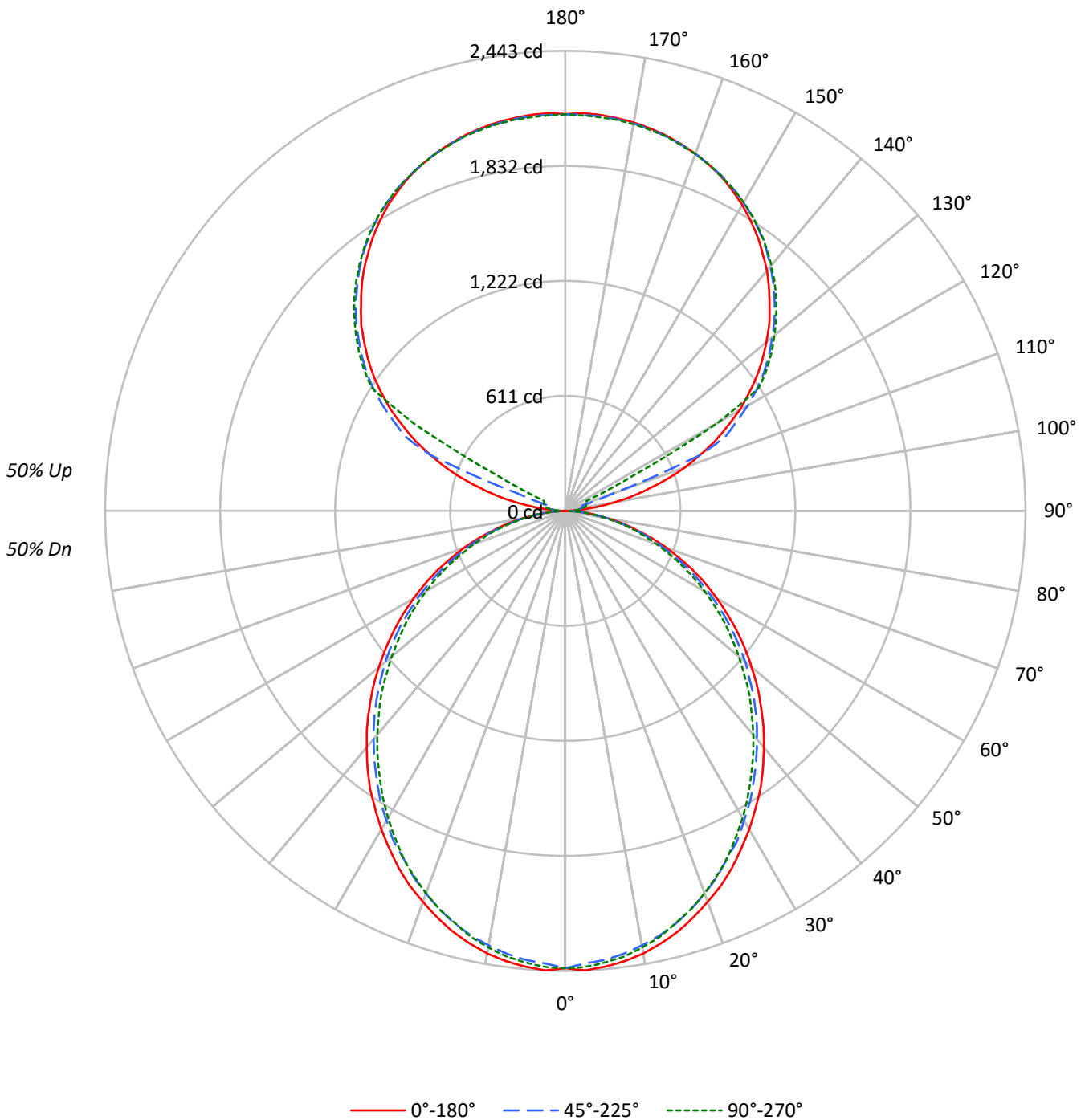
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 12359.2 lumens
Efficiency: N/A
Efficacy: 100.8 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): 122.6
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9789
Total Harmonic Distortion (THDi): 0.074
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			0	
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0
RCR																					
0	107	107	107	107	99	99	99	99	83	83	83	69	69	69	56	56	56	56	56	56	50
1	98	93	90	86	90	86	83	80	73	71	68	61	59	58	50	48	47	47	47	47	42
2	89	82	75	70	82	76	70	66	64	60	57	53	51	48	44	42	40	40	40	40	35
3	81	72	64	59	75	66	60	55	56	52	48	47	44	41	39	36	34	34	34	34	30
4	74	64	56	50	68	59	52	47	50	45	41	42	38	35	35	32	29	29	29	29	26
5	68	57	48	42	63	53	45	40	45	39	35	38	34	30	31	28	26	26	26	26	22
6	63	51	43	37	58	47	40	35	40	35	31	34	30	27	28	25	23	23	23	23	20
7	58	46	38	32	53	43	36	30	37	31	27	31	27	23	26	23	20	20	20	20	17
8	54	42	34	29	50	39	32	27	33	28	24	28	24	21	24	20	18	18	18	18	16
9	50	38	30	25	46	35	29	24	31	25	21	26	22	19	22	19	16	16	16	16	14
10	47	35	28	23	43	33	26	22	28	23	19	24	20	17	20	17	15	15	15	15	13

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2813	2813	2813
5°	2817	2772	2791
10°	2792	2733	2752
15°	2750	2686	2691
20°	2693	2622	2629
25°	2637	2545	2558
30°	2566	2473	2468
35°	2500	2389	2372
40°	2417	2304	2281
45°	2335	2219	2188
50°	2246	2129	2080
55°	2152	2026	1980
60°	2045	1903	1867
65°	1929	1776	1732
70°	1781	1620	1587
75°	1576	1434	1451
80°	1328	1196	1194
85°	943	791	775

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 2335 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	228.6	1.8
10°-20°	643.2	5.2
20°-30°	945.2	7.6
30°-40°	1097.8	8.9
40°-50°	1096.5	8.9
50°-60°	956.1	7.7
60°-70°	706.8	5.7
70°-80°	399.9	3.2
80°-90°	109.3	0.9
90°-100°	69.5	0.6
100°-110°	259.0	2.1
110°-120°	686.8	5.6
120°-130°	1139.1	9.2
130°-140°	1209.9	9.8
140°-150°	1124.5	9.1
150°-160°	904.1	7.3
160°-170°	582.6	4.7
170°-180°	200.5	1.6
0°-30°	1817.0	14.7
0°-40°	2914.9	23.6
0°-60°	4967.4	40.2
0°-90°	6183.3	50.0
90°-120°	1015.2	8.2
90°-150°	4488.7	36.3
90°-180°	6176.0	50.0
0°-180°	12359.2	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2429	2429	2429	2429	2429	
5°	2429	2420	2394	2412	2408	231
15°	2312	2298	2268	2277	2266	651
25°	2093	2074	2034	2039	2034	963
35°	1805	1782	1745	1730	1719	1127
45°	1469	1453	1418	1392	1383	1134
55°	1112	1098	1070	1042	1030	994
65°	750	736	712	691	680	741
75°	392	388	376	362	367	419
85°	96	94	91	84	82	107
90°	1	18	30	38	41	11
95°	99	49	59	67	66	117
105°	463	509	93	110	116	495
115°	876	902	940	235	125	863
125°	1239	1259	1288	1299	1303	1105
135°	1534	1558	1572	1587	1584	1185
145°	1779	1777	1803	1814	1806	1113
155°	1959	1945	1963	1972	1960	903
165°	2064	2055	2059	2070	2059	583
175°	2111	2100	2104	2114	2099	201
180°	2107	2107	2107	2107	2107	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2428.8	2428.8	2428.8	2428.8	2428.8
2.5°	2442.9	2431.2	2405.5	2428.8	2424.3
5°	2428.8	2419.7	2393.9	2412.4	2408.0
7.5°	2412.4	2398.5	2372.8	2391.7	2386.9
10°	2386.9	2370.5	2342.5	2361.2	2354.2
12.5°	2351.7	2337.9	2309.9	2321.5	2316.8
15°	2312.1	2298.2	2267.7	2277.2	2265.5
17.5°	2263.0	2249.2	2218.7	2230.3	2218.7
20°	2209.2	2195.4	2162.7	2169.6	2160.4
22.5°	2155.7	2134.7	2104.2	2104.2	2099.4
25°	2092.6	2073.9	2034.3	2038.8	2034.3
27.5°	2022.4	2006.1	1975.9	1968.9	1957.2
30°	1952.6	1933.7	1898.8	1891.9	1882.4
32.5°	1877.7	1863.9	1826.4	1812.3	1802.9
35°	1805.4	1782.1	1744.6	1730.5	1718.9
37.5°	1723.6	1702.5	1665.1	1648.8	1637.1
40°	1639.6	1620.8	1583.3	1562.5	1553.1
42.5°	1557.8	1539.0	1501.8	1478.3	1464.4
45°	1469.1	1452.8	1417.6	1392.0	1382.6
47.5°	1382.6	1366.3	1328.8	1303.1	1289.2
50°	1291.5	1279.8	1247.1	1214.4	1202.7
52.5°	1202.7	1186.4	1156.2	1130.4	1114.0
55°	1111.8	1097.7	1069.7	1041.7	1030.0
57.5°	1020.7	1009.0	978.5	950.5	941.1
60°	929.4	920.2	887.6	861.8	854.9
62.5°	840.7	824.4	801.1	777.8	768.4
65°	749.8	735.7	712.4	691.3	679.7
67.5°	656.4	644.5	623.7	607.3	597.9
70°	569.9	560.5	539.4	523.1	513.9
72.5°	481.2	471.8	460.1	443.8	436.8
75°	392.3	387.8	375.9	362.0	366.8
77.5°	313.0	303.5	298.8	291.9	285.0
80°	233.6	231.2	226.5	219.5	214.8
82.5°	158.8	158.8	156.6	147.2	147.2
85°	95.7	93.5	91.2	84.0	81.8
87.5°	42.1	37.5	32.7	25.8	23.3
90°	1.4	18.3	30.4	38.2	41.1
92.5°	38.2	32.0	36.6	39.7	41.1
95°	99.0	48.7	59.4	67.1	65.5
97.5°	178.3	53.4	77.7	82.4	83.8
100°	269.9	61.0	86.9	99.0	102.1
102.5°	370.3	367.5	90.0	106.6	111.3
105°	463.4	509.2	93.0	109.7	115.8
107.5°	571.6	609.7	96.1	112.8	119.0
110°	675.4	707.2	266.8	114.4	120.4



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	772.9	800.2	774.4	117.3	122.0
115°	876.5	902.3	940.5	234.8	125.1
117.5°	966.4	996.8	1022.9	804.8	405.5
120°	1067.0	1089.8	1117.4	1135.7	929.9
122.5°	1152.3	1176.7	1207.4	1216.4	1218.0
125°	1239.2	1259.1	1288.1	1298.8	1303.2
127.5°	1318.5	1339.8	1362.8	1378.0	1379.5
130°	1393.2	1417.6	1434.3	1451.2	1449.7
132.5°	1469.4	1489.3	1506.0	1519.7	1518.3
135°	1533.5	1557.9	1571.6	1586.9	1583.9
137.5°	1600.4	1618.8	1634.1	1649.4	1644.8
140°	1666.0	1678.3	1695.0	1708.7	1701.1
142.5°	1721.0	1731.7	1751.4	1763.5	1756.0
145°	1779.0	1777.4	1803.2	1813.9	1806.3
147.5°	1829.1	1824.6	1850.5	1858.1	1852.1
150°	1877.9	1867.3	1891.8	1900.8	1893.2
152.5°	1919.0	1906.9	1929.8	1938.9	1928.3
155°	1958.7	1945.1	1963.4	1972.5	1960.3
157.5°	1990.7	1978.6	1992.3	2003.0	1990.7
160°	2018.3	2009.0	2018.3	2027.3	2016.6
162.5°	2042.6	2033.5	2041.0	2051.7	2038.0
165°	2063.9	2054.9	2059.3	2070.0	2059.3
167.5°	2080.7	2071.4	2076.2	2086.9	2073.1
170°	2094.4	2085.3	2088.3	2099.0	2085.3
172.5°	2103.5	2094.4	2097.6	2108.2	2094.4
175°	2111.1	2100.4	2103.5	2114.2	2099.0
177.5°	2114.2	2103.5	2105.1	2115.9	2102.0
180°	2106.6	2106.6	2106.6	2106.6	2106.6



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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	10.83	11.69	11.78	12.66	13.93	10.40	11.26	11.35	12.23	13.50
	3H	12.48	13.25	13.45	14.23	15.53	12.01	12.78	12.98	13.76	15.06
	4H	13.06	13.79	14.04	14.78	16.08	12.59	13.32	13.57	14.31	15.61
	6H	13.45	14.13	14.45	15.12	16.43	12.98	13.66	13.98	14.65	15.96
	8H	13.56	14.20	14.55	15.20	16.52	13.09	13.73	14.09	14.74	16.05
	12H	13.60	14.21	14.61	15.21	16.55	13.13	13.74	14.13	14.74	16.07
4H	2H	11.28	12.02	12.27	13.00	14.30	10.94	11.67	11.93	12.66	13.96
	3H	13.14	13.75	14.14	14.77	16.08	12.75	13.36	13.75	14.38	15.69
	4H	13.85	14.41	14.85	15.42	16.75	13.45	14.01	14.45	15.01	16.35
	6H	14.36	14.84	15.37	15.87	17.20	13.95	14.43	14.97	15.46	16.80
	8H	14.50	14.95	15.52	15.98	17.33	14.10	14.55	15.11	15.57	16.92
	12H	14.57	14.98	15.61	16.02	17.37	14.16	14.56	15.19	15.60	16.96
8H	4H	14.04	14.49	15.06	15.52	16.87	13.69	14.13	14.70	15.16	16.51
	6H	14.66	15.04	15.71	16.10	17.45	14.31	14.68	15.35	15.74	17.09
	8H	14.88	15.21	15.93	16.26	17.63	14.52	14.84	15.57	15.89	17.26
	12H	15.01	15.29	16.06	16.34	17.75	14.63	14.92	15.68	15.96	17.37
12H	4H	14.03	14.43	15.06	15.47	16.83	13.68	14.08	14.71	15.12	16.48
	6H	14.69	15.02	15.74	16.07	17.44	14.34	14.67	15.40	15.72	17.09
	8H	14.93	15.22	15.98	16.26	17.67	14.58	14.86	15.63	15.91	17.32