

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: P919117

Luminaire Tested: DFN2DIP-HX4F0-070D080US935-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P919117
REPORT IS A COMBINATION OF REPORTS P899378 AND P896188
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX4F0-070D080US935-RLLFLL
Description: 4 foot, Hexagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

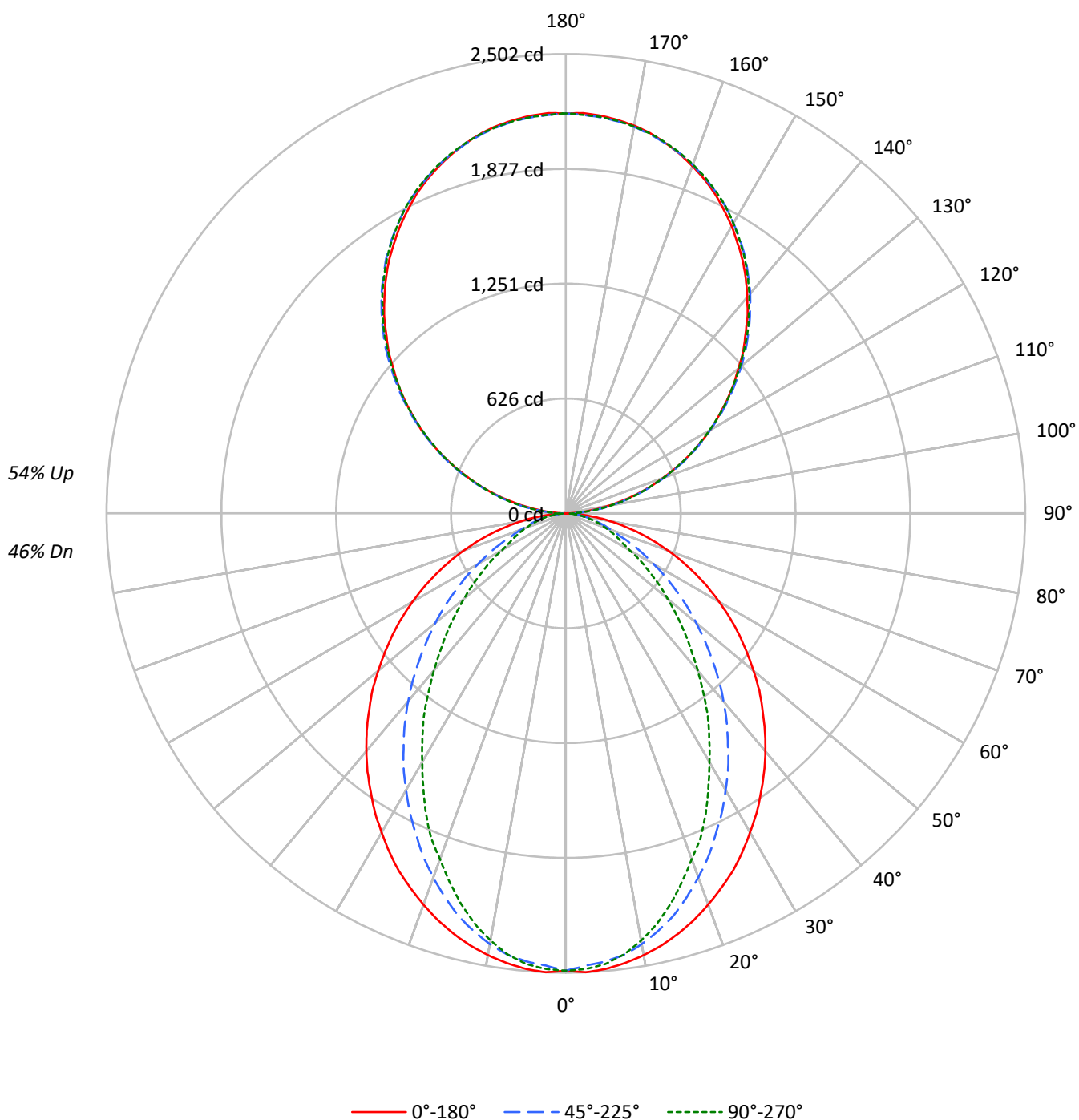
Lumens per Lamp: N/A
Luminaire Lumens: 11218.8 lumens
Efficiency: N/A
Efficacy: 100.5 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.54' x L: 4.09' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 111.6
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9972
Total Harmonic Distortion (THDi): 0.128
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	106	106	106	106	97	97	97	97	81	81	81	66	66	66	52	52	52
1	97	93	89	86	89	86	82	80	72	69	67	59	57	56	47	46	45
2	89	82	76	71	81	75	70	66	63	60	56	52	49	47	42	40	38
3	81	72	65	60	74	67	61	56	56	52	48	46	43	40	37	35	33
4	75	64	57	51	68	59	53	48	50	45	41	42	38	35	34	31	29
5	69	57	50	44	63	53	46	41	45	40	36	38	34	31	31	28	26
6	63	52	44	38	58	48	41	36	41	35	31	34	30	27	28	25	23
7	59	47	39	34	54	43	37	32	37	32	28	31	27	24	26	23	20
8	55	43	35	30	50	40	33	28	34	29	25	29	25	22	24	21	18
9	51	39	32	27	47	36	30	25	31	26	22	26	22	20	22	19	17
10	47	36	29	24	44	33	27	23	29	24	20	24	20	18	20	17	15

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1852	1852	1852
5°	1855	1823	1835
10°	1837	1787	1775
15°	1812	1728	1683
20°	1779	1647	1570
25°	1745	1556	1460
30°	1699	1463	1322
35°	1654	1362	1200
40°	1608	1258	1060
45°	1555	1143	934
50°	1500	1026	810
55°	1443	902	691
60°	1376	771	569
65°	1300	639	512
70°	1208	516	464
75°	1092	455	422
80°	924	382	367
85°	646	256	276

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 1643 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	233.5	2.1
10°-20°	640.9	5.7
20°-30°	899.8	8.0
30°-40°	980.8	8.7
40°-50°	901.5	8.0
50°-60°	708.0	6.3
60°-70°	460.8	4.1
70°-80°	237.2	2.1
80°-90°	66.7	0.6
90°-100°	134.8	1.2
100°-110°	428.3	3.8
110°-120°	733.0	6.5
120°-130°	964.0	8.6
130°-140°	1082.0	9.6
140°-150°	1061.0	9.5
150°-160°	890.1	7.9
160°-170°	590.3	5.3
170°-180°	206.3	1.8
0°-30°	1774.1	15.8
0°-40°	2754.9	24.6
0°-60°	4364.3	38.9
0°-90°	5129.1	45.7
90°-120°	1296.1	11.6
90°-150°	4403.1	39.2
90°-180°	6090.0	54.3
0°-180°	11218.8	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2491	2491	2491	2491	2491	
5°	2491	2480	2450	2471	2464	236
15°	2369	2344	2268	2225	2202	668
25°	2151	2078	1930	1837	1803	989
35°	1853	1738	1540	1398	1348	1160
45°	1515	1364	1127	967	913	1170
55°	1152	976	732	597	555	1029
65°	778	595	392	316	309	771
75°	415	257	180	164	162	439
85°	97	50	43	43	43	111
90°	2	24	64	60	62	11
95°	96	114	118	118	114	107
105°	395	401	405	408	408	417
115°	736	746	743	741	736	728
125°	1070	1086	1081	1075	1073	956
135°	1384	1404	1408	1406	1401	1070
145°	1680	1693	1704	1706	1698	1050
155°	1921	1926	1932	1941	1935	884
165°	2090	2088	2088	2101	2092	590
175°	2174	2169	2165	2178	2167	207
180°	2178	2178	2178	2178	2178	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2491.0	2491.0	2491.0	2491.0	2491.0
2.5°	2502.1	2491.0	2466.1	2488.8	2484.2
5°	2491.0	2479.7	2450.3	2470.6	2463.9
7.5°	2470.6	2457.2	2425.7	2434.5	2423.3
10°	2443.6	2427.8	2382.8	2375.9	2362.5
12.5°	2409.8	2389.5	2328.6	2315.1	2290.3
15°	2369.2	2344.3	2267.8	2225.0	2202.5
17.5°	2321.9	2285.8	2191.1	2141.5	2105.4
20°	2267.8	2222.6	2110.0	2053.7	2004.0
22.5°	2209.2	2157.3	2026.4	1949.9	1916.2
25°	2150.6	2078.4	1929.6	1837.3	1803.4
27.5°	2080.8	2004.0	1839.4	1733.5	1681.6
30°	2006.4	1920.5	1740.2	1625.4	1564.4
32.5°	1934.1	1830.4	1645.7	1510.4	1453.9
35°	1853.0	1738.0	1539.8	1397.7	1348.0
37.5°	1774.2	1650.0	1440.5	1284.8	1228.6
40°	1690.7	1555.6	1336.7	1176.7	1118.1
42.5°	1605.1	1460.9	1233.1	1066.2	1010.0
45°	1514.9	1363.7	1127.2	967.0	912.9
47.5°	1429.3	1269.3	1025.8	865.6	816.1
50°	1334.5	1174.6	926.5	770.9	723.8
52.5°	1242.0	1072.9	831.8	683.0	640.2
55°	1151.8	976.0	732.5	597.4	554.7
57.5°	1059.5	879.2	644.8	518.5	482.4
60°	964.8	784.5	552.2	437.5	401.3
62.5°	872.4	692.2	473.3	365.2	347.2
65°	777.7	595.0	392.3	315.7	308.8
67.5°	687.6	504.9	315.7	277.2	270.5
70°	592.9	417.1	261.4	238.9	229.8
72.5°	502.7	335.8	218.6	200.7	196.1
75°	414.7	256.8	180.3	164.5	162.4
77.5°	326.9	182.4	142.1	132.9	128.5
80°	245.6	130.8	108.1	99.3	99.3
82.5°	171.3	88.0	74.4	69.8	69.8
85°	96.9	49.5	42.8	42.8	42.8
87.5°	36.1	17.9	17.9	15.8	15.8
90°	2.0	23.7	64.4	60.4	62.4
92.5°	40.7	55.2	57.2	59.1	59.1
95°	95.9	114.3	117.5	117.5	114.3
97.5°	159.6	176.7	183.9	183.9	183.9
100°	233.2	248.2	253.5	253.5	251.5
102.5°	310.6	321.8	329.0	331.0	329.0
105°	395.4	400.6	404.6	407.9	407.9
107.5°	479.4	487.3	487.3	488.6	479.4
110°	560.9	571.4	571.4	571.4	566.1



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	648.8	660.0	658.1	652.8	648.8
115°	735.6	746.1	742.8	740.8	735.6
117.5°	821.6	836.0	826.8	821.6	816.3
120°	908.3	922.7	908.3	908.3	902.3
122.5°	987.0	1005.5	996.3	991.0	987.0
125°	1069.8	1086.2	1081.0	1075.0	1073.1
127.5°	1150.6	1171.0	1163.7	1155.9	1150.6
130°	1226.1	1249.7	1246.5	1242.6	1235.4
132.5°	1310.9	1329.2	1330.6	1321.4	1316.1
135°	1383.7	1404.1	1408.1	1406.1	1400.8
137.5°	1465.2	1481.6	1484.9	1483.6	1475.7
140°	1536.8	1553.2	1562.4	1562.4	1555.1
142.5°	1610.3	1626.8	1632.0	1634.0	1626.8
145°	1680.0	1693.1	1703.6	1705.6	1698.3
147.5°	1742.3	1758.8	1766.6	1770.0	1762.7
150°	1806.7	1817.8	1825.1	1831.0	1825.1
152.5°	1863.8	1875.0	1884.2	1891.4	1884.2
155°	1921.0	1926.2	1932.2	1941.3	1935.4
157.5°	1970.2	1974.2	1977.5	1990.5	1981.4
160°	2014.2	2018.2	2020.2	2031.3	2023.4
162.5°	2054.9	2054.9	2056.9	2069.4	2060.2
165°	2089.7	2087.7	2087.7	2100.9	2091.7
167.5°	2121.2	2115.4	2115.4	2128.5	2119.3
170°	2144.9	2139.7	2137.7	2150.9	2139.7
172.5°	2161.4	2156.1	2154.1	2167.2	2156.1
175°	2174.5	2169.2	2165.2	2178.4	2167.2
177.5°	2181.7	2176.4	2172.5	2183.7	2172.5
180°	2178.4	2178.4	2178.4	2178.4	2178.4

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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	8.87	9.67	9.87	10.68	12.01	4.85	5.64	5.85	6.65	7.98
	3H	10.55	11.26	11.56	12.28	13.63	6.03	6.75	7.04	7.76	9.12
	4H	11.16	11.83	12.18	12.85	14.21	6.48	7.16	7.51	8.18	9.54
	6H	11.58	12.20	12.61	13.22	14.59	6.81	7.43	7.84	8.45	9.82
	8H	11.70	12.29	12.74	13.33	14.70	6.90	7.49	7.93	8.52	9.89
	12H	11.76	12.33	12.81	13.36	14.75	6.94	7.50	7.98	8.53	9.93
4H	2H	8.89	9.56	9.92	10.58	11.94	5.44	6.11	6.47	7.13	8.49
	3H	10.72	11.28	11.75	12.32	13.70	6.79	7.35	7.82	8.39	9.77
	4H	11.41	11.92	12.45	12.96	14.36	7.34	7.85	8.38	8.89	10.28
	6H	11.92	12.36	12.98	13.42	14.82	7.76	8.20	8.81	9.26	10.65
	8H	12.10	12.51	13.15	13.56	14.97	7.88	8.30	8.94	9.35	10.76
	12H	12.19	12.56	13.26	13.63	15.04	7.95	8.32	9.02	9.39	10.80
8H	4H	11.37	11.78	12.43	12.84	14.25	7.61	8.02	8.67	9.08	10.49
	6H	11.94	12.28	13.02	13.37	14.78	8.13	8.47	9.21	9.57	10.97
	8H	12.16	12.45	13.24	13.53	14.96	8.33	8.62	9.41	9.70	11.13
	12H	12.29	12.56	13.38	13.63	15.10	8.44	8.71	9.53	9.78	11.25
12H	4H	11.32	11.69	12.40	12.76	14.18	7.62	7.99	8.69	9.06	10.47
	6H	11.91	12.21	13.00	13.29	14.72	8.18	8.48	9.27	9.56	10.99
	8H	12.13	12.40	13.22	13.47	14.94	8.39	8.66	9.48	9.73	11.20