

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: P919638

Luminaire Tested: DFN2DIP-PN4F0-070D080US935-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P919638
REPORT IS A COMBINATION OF REPORTS P899688 AND P896497
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN4F0-070D080US935-RLLFLL
Description: 4 foot, Pentagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

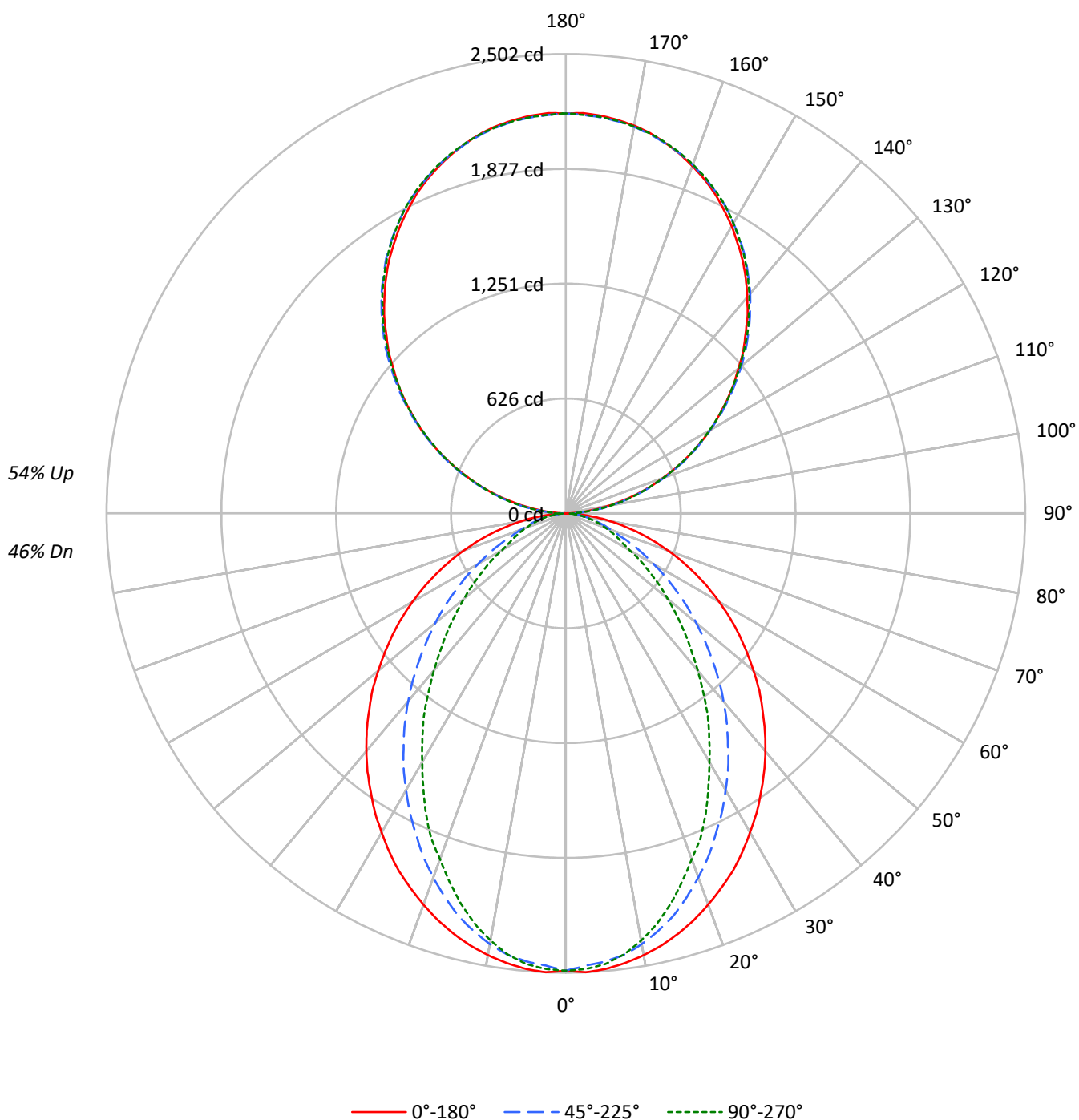
Lumens per Lamp: N/A
Luminaire Lumens: 11218.8 lumens
Efficiency: N/A
Efficacy: 90.0 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.74' x L: 3.94' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 124.6
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
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°	1818	1818	1818
5°	1821	1790	1801
10°	1803	1755	1743
15°	1778	1697	1653
20°	1746	1617	1542
25°	1712	1528	1435
30°	1667	1436	1299
35°	1622	1338	1179
40°	1577	1236	1042
45°	1525	1122	918
50°	1471	1008	797
55°	1415	886	680
60°	1349	758	560
65°	1274	628	504
70°	1183	507	457
75°	1068	447	417
80°	902	376	363
85°	629	252	275

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 1706 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	8.82	9.61	9.82	10.62	11.95	4.78	5.58	5.78	6.58	7.92
	3H	10.49	11.21	11.50	12.22	13.58	5.97	6.68	6.98	7.69	9.05
	4H	11.10	11.78	12.13	12.79	14.16	6.42	7.09	7.44	8.11	9.47
	6H	11.52	12.14	12.56	13.17	14.54	6.74	7.36	7.77	8.38	9.75
	8H	11.65	12.24	12.69	13.28	14.65	6.83	7.42	7.87	8.46	9.83
	12H	11.71	12.27	12.76	13.31	14.70	6.87	7.43	7.91	8.46	9.86
4H	2H	8.83	9.50	9.86	10.52	11.88	5.37	6.05	6.40	7.07	8.43
	3H	10.66	11.22	11.70	12.27	13.64	6.72	7.28	7.76	8.33	9.70
	4H	11.35	11.86	12.40	12.90	14.30	7.27	7.78	8.31	8.82	10.22
	6H	11.87	12.31	12.92	13.37	14.76	7.69	8.13	8.74	9.19	10.58
	8H	12.04	12.46	13.10	13.51	14.92	7.82	8.23	8.87	9.28	10.69
	12H	12.14	12.51	13.21	13.58	14.99	7.88	8.25	8.95	9.32	10.73
8H	4H	11.32	11.73	12.37	12.78	14.19	7.55	7.96	8.60	9.01	10.42
	6H	11.89	12.22	12.96	13.32	14.73	8.07	8.41	9.14	9.50	10.91
	8H	12.10	12.40	13.19	13.48	14.91	8.26	8.56	9.34	9.64	11.06
	12H	12.24	12.51	13.33	13.58	15.05	8.38	8.64	9.46	9.71	11.18
12H	4H	11.27	11.64	12.34	12.71	14.12	7.55	7.92	8.62	8.99	10.41
	6H	11.86	12.16	12.95	13.24	14.66	8.12	8.41	9.20	9.49	10.92
	8H	12.08	12.34	13.17	13.42	14.89	8.33	8.59	9.41	9.66	11.13