

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: P917384

Luminaire Tested: DFN2DIP-SQ3F0-070D100US930-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P917384
REPORT IS A COMBINATION OF REPORTS P899975 AND P896733
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ3F0-070D100US930-FLLFLL
Description: 3 foot, Square Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

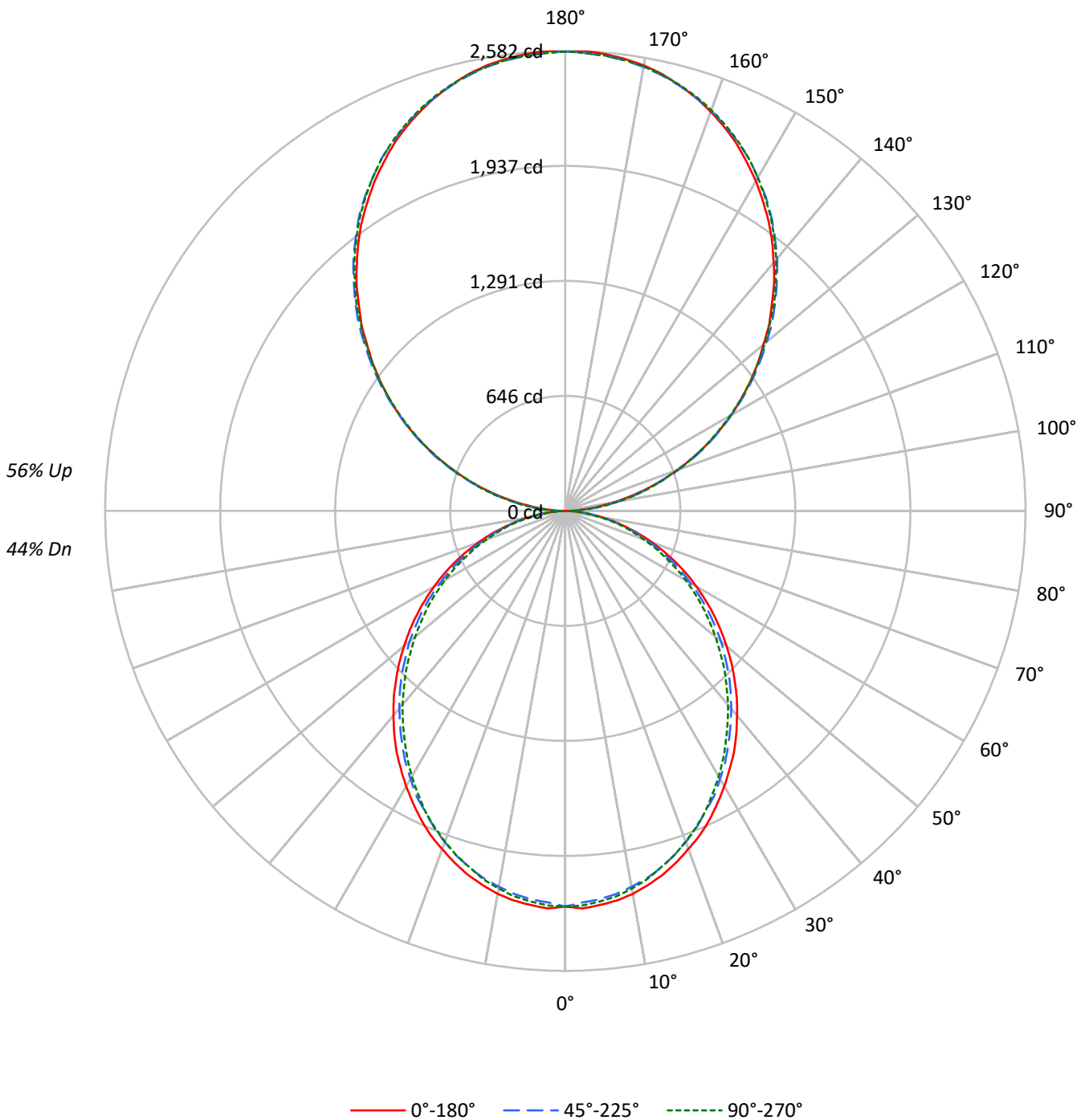
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 12865.4 lumens
Efficiency: N/A
Efficacy: 89.9 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 3.06' x L: 3.06' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 143.1
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9963
Total Harmonic Distortion (THDi): 0.065
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	
RCR																					
0	106	106	106	106	97	97	97	97	80	80	80	65	65	65	51	51	51	44	44	44	
1	96	92	88	85	88	84	81	78	70	68	66	57	55	54	45	44	43	37	37	37	
2	88	80	74	69	80	74	69	64	61	58	54	50	47	45	39	38	36	31	31	31	
3	80	71	63	58	73	65	59	54	54	49	46	44	41	38	35	33	31	26	26	26	
4	73	63	55	49	67	58	51	45	48	43	39	39	36	33	31	29	26	23	23	23	
5	67	56	48	42	61	51	44	39	43	38	33	35	31	28	28	25	23	20	20	20	
6	62	50	42	36	56	46	39	34	39	33	29	32	28	25	25	23	20	17	17	17	
7	57	45	37	32	52	42	35	30	35	30	26	29	25	22	23	20	18	15	15	15	
8	53	41	33	28	48	38	31	26	32	27	23	26	22	19	21	18	16	14	14	14	
9	49	37	30	25	45	35	28	23	29	24	20	24	20	17	20	17	15	12	12	12	
10	46	34	27	22	42	32	25	21	27	22	18	22	19	16	18	15	13	11	11	11	

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2544	2544	2544
5°	2547	2507	2525
10°	2525	2472	2490
15°	2486	2429	2436
20°	2434	2371	2380
25°	2383	2302	2316
30°	2318	2237	2235
35°	2257	2161	2149
40°	2183	2085	2067
45°	2108	2008	1984
50°	2026	1927	1887
55°	1940	1833	1798
60°	1843	1722	1695
65°	1737	1607	1575
70°	1602	1466	1445
75°	1415	1298	1323
80°	1189	1083	1094
85°	838	718	716

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°
Vertical Angle: 90°
Luminance: 2595 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	209.0	1.6
10°-20°	588.1	4.6
20°-30°	864.2	6.7
30°-40°	1003.7	7.8
40°-50°	1002.5	7.8
50°-60°	874.2	6.8
60°-70°	646.2	5.0
70°-80°	365.6	2.8
80°-90°	103.8	0.8
90°-100°	159.6	1.2
100°-110°	507.0	3.9
110°-120°	867.6	6.7
120°-130°	1141.0	8.9
130°-140°	1280.7	10.0
140°-150°	1255.9	9.8
150°-160°	1053.5	8.2
160°-170°	698.7	5.4
170°-180°	244.2	1.9
0°-30°	1661.3	12.9
0°-40°	2665.1	20.7
0°-60°	4541.7	35.3
0°-90°	5657.4	44.0
90°-120°	1534.1	11.9
90°-150°	5211.7	40.5
90°-180°	7208.0	56.0
0°-180°	12865.4	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2221	2221	2221	2221	2221	
5°	2221	2212	2189	2206	2202	211
15°	2114	2101	2073	2082	2071	595
25°	1913	1896	1860	1864	1860	880
35°	1651	1629	1595	1582	1572	1031
45°	1343	1328	1296	1273	1264	1037
55°	1016	1004	978	952	942	909
65°	686	673	651	632	621	678
75°	359	355	344	331	335	383
85°	88	85	83	77	75	98
90°	2	28	76	72	74	13
95°	114	135	139	139	135	126
105°	468	474	479	483	483	494
115°	871	883	879	877	871	861
125°	1266	1286	1280	1272	1270	1132
135°	1638	1662	1667	1664	1658	1266
145°	1988	2004	2016	2019	2010	1242
155°	2274	2280	2287	2298	2291	1047
165°	2474	2471	2471	2487	2476	698
175°	2574	2568	2563	2578	2565	245
180°	2578	2578	2578	2578	2578	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2220.6	2220.6	2220.6	2220.6	2220.6
2.5°	2233.6	2222.9	2199.3	2220.6	2216.6
5°	2220.6	2212.3	2188.7	2205.7	2201.6
7.5°	2205.7	2193.0	2169.4	2186.7	2182.4
10°	2182.4	2167.4	2141.8	2158.8	2152.5
12.5°	2150.2	2137.5	2111.9	2122.5	2118.2
15°	2114.0	2101.3	2073.4	2082.0	2071.3
17.5°	2069.1	2056.4	2028.5	2039.2	2028.5
20°	2019.9	2007.3	1977.3	1983.7	1975.3
22.5°	1971.0	1951.7	1923.9	1923.9	1919.5
25°	1913.3	1896.2	1860.0	1864.1	1860.0
27.5°	1849.1	1834.2	1806.5	1800.2	1789.5
30°	1785.3	1768.0	1736.1	1729.7	1721.1
32.5°	1716.8	1704.1	1669.9	1657.0	1648.4
35°	1650.7	1629.4	1595.1	1582.2	1571.6
37.5°	1575.9	1556.6	1522.4	1507.5	1496.8
40°	1499.1	1481.9	1447.6	1428.6	1420.0
42.5°	1424.3	1407.1	1373.1	1351.6	1338.9
45°	1343.2	1328.3	1296.1	1272.8	1264.1
47.5°	1264.1	1249.2	1215.0	1191.4	1178.8
50°	1180.8	1170.1	1140.2	1110.4	1099.7
52.5°	1099.7	1084.8	1057.1	1033.6	1018.6
55°	1016.5	1003.6	978.0	952.4	941.8
57.5°	933.2	922.5	894.6	869.0	860.5
60°	849.8	841.4	811.5	788.0	781.6
62.5°	768.7	753.7	732.5	711.2	702.5
65°	685.6	672.6	651.3	632.1	621.4
67.5°	600.1	589.3	570.2	555.3	546.7
70°	521.1	512.5	493.2	478.3	469.9
72.5°	439.9	431.4	420.7	405.8	399.4
75°	358.6	354.6	343.6	331.0	335.3
77.5°	286.2	277.5	273.2	266.8	260.6
80°	213.6	211.4	207.1	200.7	196.4
82.5°	145.2	145.2	143.2	134.6	134.6
85°	87.5	85.4	83.4	76.8	74.8
87.5°	38.5	34.2	29.9	23.6	21.3
90°	2.4	28.0	76.1	71.5	73.9
92.5°	48.2	65.3	67.7	70.0	70.0
95°	113.5	135.3	139.2	139.2	135.3
97.5°	188.9	209.1	217.7	217.7	217.7
100°	276.0	293.8	300.0	300.0	297.7
102.5°	367.7	380.9	389.5	391.8	389.5
105°	468.0	474.2	478.8	482.7	482.7
107.5°	567.4	576.8	576.8	578.4	567.4
110°	663.9	676.3	676.3	676.3	670.1



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	768.0	781.2	778.9	772.7	768.0
115°	870.7	883.0	879.2	876.9	870.7
117.5°	972.5	989.6	978.7	972.5	966.2
120°	1075.1	1092.2	1075.1	1075.1	1068.1
122.5°	1168.3	1190.1	1179.2	1173.1	1168.3
125°	1266.3	1285.7	1279.5	1272.5	1270.2
127.5°	1362.0	1386.0	1377.4	1368.2	1362.0
130°	1451.3	1479.3	1475.4	1470.7	1462.2
132.5°	1551.6	1573.4	1574.9	1564.1	1557.8
135°	1637.9	1662.0	1666.6	1664.3	1658.1
137.5°	1734.3	1753.7	1757.6	1756.1	1746.7
140°	1819.0	1838.4	1849.3	1849.3	1840.8
142.5°	1906.1	1925.5	1931.7	1934.1	1925.5
145°	1988.4	2004.0	2016.5	2018.8	2010.2
147.5°	2062.3	2081.8	2091.1	2095.0	2086.4
150°	2138.5	2151.7	2160.3	2167.2	2160.3
152.5°	2206.1	2219.3	2230.2	2238.8	2230.2
155°	2273.8	2280.0	2287.0	2297.8	2290.8
157.5°	2332.1	2336.7	2340.6	2356.1	2345.3
160°	2384.2	2388.8	2391.1	2404.3	2395.0
162.5°	2432.4	2432.4	2434.6	2449.4	2438.6
165°	2473.5	2471.2	2471.2	2486.7	2475.9
167.5°	2510.9	2503.9	2503.9	2519.4	2508.5
170°	2538.8	2532.6	2530.3	2545.9	2532.6
172.5°	2558.2	2552.0	2549.7	2565.3	2552.0
175°	2573.8	2567.6	2563.0	2578.5	2565.3
177.5°	2582.4	2576.2	2571.5	2584.7	2571.5
180°	2578.5	2578.5	2578.5	2578.5	2578.5



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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	9.90	10.71	10.90	11.72	13.08	9.45	10.26	10.46	11.28	12.63
	3H	11.55	12.27	12.57	13.30	14.68	11.06	11.78	12.08	12.81	14.19
	4H	12.13	12.82	13.16	13.85	15.23	11.64	12.32	12.67	13.35	14.74
	6H	12.52	13.16	13.56	14.19	15.59	12.02	12.66	13.06	13.69	15.09
	8H	12.63	13.23	13.67	14.28	15.67	12.12	12.73	13.17	13.78	15.17
	12H	12.67	13.24	13.72	14.29	15.70	12.16	12.73	13.21	13.78	15.19
4H	2H	10.35	11.04	11.38	12.06	13.45	9.99	10.68	11.03	11.71	13.09
	3H	12.20	12.78	13.25	13.83	15.23	11.80	12.37	12.84	13.43	14.82
	4H	12.91	13.44	13.96	14.49	15.90	12.49	13.01	13.54	14.06	15.48
	6H	13.42	13.87	14.48	14.94	16.36	12.99	13.44	14.05	14.51	15.92
	8H	13.57	13.99	14.63	15.05	16.48	13.13	13.55	14.19	14.62	16.04
	12H	13.63	14.02	14.71	15.09	16.53	13.18	13.57	14.26	14.65	16.08
8H	4H	13.10	13.52	14.16	14.59	16.02	12.72	13.15	13.78	14.21	15.64
	6H	13.72	14.07	14.81	15.18	16.60	13.34	13.69	14.42	14.79	16.22
	8H	13.94	14.25	15.03	15.34	16.78	13.55	13.85	14.64	14.94	16.39
	12H	14.07	14.34	15.16	15.42	16.91	13.65	13.92	14.75	15.01	16.49
12H	4H	13.08	13.46	14.16	14.54	15.98	12.71	13.10	13.79	14.17	15.61
	6H	13.75	14.06	14.84	15.15	16.59	13.38	13.69	14.47	14.77	16.22
	8H	13.99	14.26	15.08	15.34	16.83	13.61	13.88	14.70	14.96	16.45