

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: P917387

Luminaire Tested: DFN2DIP-SQ3F0-070D100US930-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P917387
REPORT IS A COMBINATION OF REPORTS P901496 AND P898289
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ3F0-070D100US930-RLLONL
Description: 3 foot, Square Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

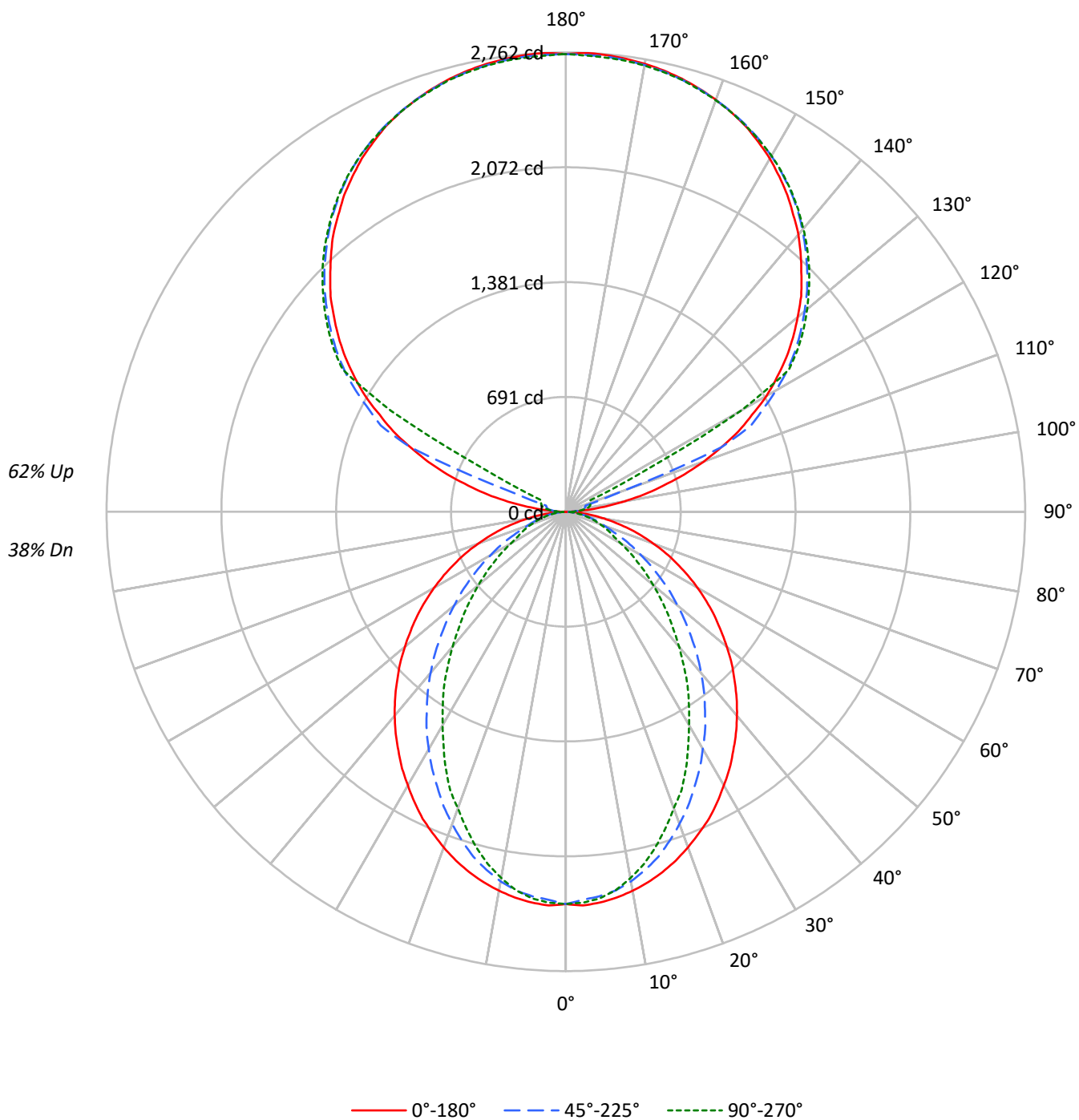
Lumens per Lamp: N/A
Luminaire Lumens: 12922.4 lumens
Efficiency: N/A
Efficacy: 90.3 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.06' x L: 3.06' x H: 0.1')
CIE Type: Semi-Indirect

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
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10
RCR																	
0	104	104	104	104	95	95	95	95	76	76	76	60	60	60	45	45	45
1	95	91	88	84	86	83	80	77	67	65	63	53	52	51	40	39	38
2	87	80	74	69	79	73	68	64	60	56	53	47	45	43	36	34	33
3	80	71	64	58	72	64	58	54	53	48	45	42	39	37	32	30	28
4	73	63	55	49	66	57	51	46	47	42	39	38	34	32	29	27	25
5	67	56	48	42	61	51	44	39	42	37	33	34	30	28	26	24	22
6	62	50	43	37	56	46	39	34	38	33	29	31	27	24	24	21	19
7	57	45	38	32	52	42	35	30	35	30	26	28	24	22	22	19	17
8	53	41	34	29	48	38	31	27	32	27	23	26	22	19	20	18	16
9	49	38	30	26	45	35	28	24	29	24	21	24	20	17	19	16	14
10	46	35	28	23	42	32	26	21	27	22	19	22	18	16	17	15	13

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2703	2703	2703
5°	2705	2658	2676
10°	2677	2604	2588
15°	2638	2516	2453
20°	2588	2396	2287
25°	2536	2261	2126
30°	2467	2124	1924
35°	2400	1976	1746
40°	2331	1823	1541
45°	2251	1653	1357
50°	2168	1482	1176
55°	2082	1300	1002
60°	1982	1110	824
65°	1866	916	741
70°	1726	736	669
75°	1550	645	607
80°	1295	536	523
85°	878	349	388

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2251 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	221.1	1.7
10°-20°	606.9	4.7
20°-30°	852.0	6.6
30°-40°	928.8	7.2
40°-50°	853.6	6.6
50°-60°	670.4	5.2
60°-70°	436.4	3.4
70°-80°	224.6	1.7
80°-90°	62.2	0.5
90°-100°	90.7	0.7
100°-110°	338.2	2.6
110°-120°	897.0	6.9
120°-130°	1487.8	11.5
130°-140°	1580.4	12.2
140°-150°	1468.8	11.4
150°-160°	1180.9	9.1
160°-170°	760.9	5.9
170°-180°	261.9	2.0
0°-30°	1679.9	13.0
0°-40°	2608.7	20.2
0°-60°	4132.7	32.0
0°-90°	4855.8	37.6
90°-120°	1326.0	10.3
90°-150°	5862.9	45.4
90°-180°	8067.0	62.4
0°-180°	12922.4	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2359	2359	2359	2359	2359	
5°	2359	2348	2320	2340	2333	224
15°	2244	2220	2147	2107	2086	632
25°	2036	1968	1827	1740	1708	937
35°	1755	1646	1458	1324	1276	1098
45°	1434	1291	1067	916	864	1108
55°	1091	924	694	566	525	975
65°	736	564	371	299	292	730
75°	393	243	171	156	154	415
85°	92	47	40	40	40	105
90°	2	24	40	50	54	12
95°	129	64	78	88	86	153
105°	605	665	122	143	151	647
115°	1145	1179	1228	307	163	1127
125°	1619	1645	1682	1696	1702	1444
135°	2003	2035	2053	2073	2069	1547
145°	2324	2322	2355	2369	2359	1453
155°	2558	2541	2564	2576	2560	1179
165°	2696	2684	2690	2704	2690	762
175°	2757	2744	2748	2762	2742	262
180°	2752	2752	2752	2752	2752	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2358.7	2358.7	2358.7	2358.7	2358.7
2.5°	2369.3	2358.7	2335.2	2356.7	2352.4
5°	2358.7	2348.1	2320.3	2339.5	2333.1
7.5°	2339.5	2326.8	2296.9	2305.3	2294.7
10°	2313.9	2299.0	2256.3	2249.8	2237.1
12.5°	2281.9	2262.7	2205.0	2192.3	2168.7
15°	2243.5	2219.9	2147.4	2106.9	2085.6
17.5°	2198.6	2164.5	2074.8	2027.8	1993.6
20°	2147.4	2104.6	1998.0	1944.7	1897.6
22.5°	2092.0	2042.8	1918.9	1846.4	1814.5
25°	2036.5	1968.0	1827.2	1739.8	1707.6
27.5°	1970.3	1897.6	1741.8	1641.5	1592.4
30°	1899.9	1818.6	1647.8	1539.1	1481.4
32.5°	1831.5	1733.2	1558.4	1430.2	1376.7
35°	1754.7	1645.8	1458.1	1323.6	1276.4
37.5°	1680.0	1562.4	1364.1	1216.6	1163.4
40°	1600.9	1473.0	1265.8	1114.3	1058.7
42.5°	1519.9	1383.3	1167.7	1009.6	956.4
45°	1434.5	1291.4	1067.4	915.7	864.5
47.5°	1353.4	1201.9	971.3	819.6	772.7
50°	1263.7	1112.2	877.3	729.9	685.3
52.5°	1176.1	1015.9	787.7	646.8	606.3
55°	1090.7	924.2	693.7	565.7	525.2
57.5°	1003.3	832.5	610.6	491.0	456.8
60°	913.6	742.8	522.9	414.3	380.0
62.5°	826.1	655.4	448.2	345.8	328.8
65°	736.5	563.5	371.4	299.0	292.4
67.5°	651.1	478.1	299.0	262.4	256.2
70°	561.4	394.9	247.5	226.2	217.6
72.5°	476.1	318.0	207.0	190.0	185.7
75°	392.7	243.2	170.7	155.8	153.8
77.5°	309.6	172.8	134.5	125.9	121.6
80°	232.6	123.8	102.4	94.0	94.0
82.5°	162.2	83.3	70.4	66.1	66.1
85°	91.7	46.9	40.5	40.5	40.5
87.5°	34.2	17.0	17.0	14.9	14.9
90°	1.9	23.9	39.7	49.9	53.6
92.5°	49.9	41.8	47.8	51.8	53.6
95°	129.3	63.6	77.5	87.7	85.6
97.5°	232.8	69.7	101.4	107.5	109.5
100°	352.5	79.7	113.5	129.3	133.4
102.5°	483.7	480.0	117.5	139.3	145.4
105°	605.3	665.0	121.6	143.2	151.3
107.5°	746.7	796.3	125.6	147.3	155.3
110°	882.1	923.7	348.5	149.4	157.2

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1009.5	1045.2	1011.5	153.2	159.4
115°	1144.8	1178.6	1228.5	306.6	163.4
117.5°	1262.2	1302.0	1336.0	1051.2	529.6
120°	1393.8	1423.5	1459.5	1483.4	1214.5
122.5°	1505.1	1537.0	1576.9	1588.8	1590.9
125°	1618.6	1644.6	1682.4	1696.4	1702.3
127.5°	1722.2	1750.0	1780.0	1799.9	1801.8
130°	1819.7	1851.7	1873.5	1895.4	1893.5
132.5°	1919.3	1945.3	1967.1	1985.0	1983.1
135°	2003.0	2034.9	2052.7	2072.7	2068.7
137.5°	2090.5	2114.4	2134.5	2154.3	2148.4
140°	2176.0	2192.2	2213.9	2231.9	2221.9
142.5°	2247.9	2261.9	2287.6	2303.5	2293.6
145°	2323.6	2321.5	2355.3	2369.3	2359.3
147.5°	2389.1	2383.2	2417.0	2426.9	2419.2
150°	2452.9	2439.0	2470.9	2482.7	2472.8
152.5°	2506.6	2490.7	2520.6	2532.6	2518.6
155°	2558.4	2540.6	2564.5	2576.3	2560.5
157.5°	2600.2	2584.4	2602.4	2616.3	2600.2
160°	2636.2	2624.1	2636.2	2648.0	2634.1
162.5°	2667.8	2656.0	2665.9	2679.9	2661.9
165°	2695.7	2683.9	2689.8	2703.8	2689.8
167.5°	2717.7	2705.6	2711.8	2725.8	2707.8
170°	2735.7	2723.7	2727.7	2741.6	2723.7
172.5°	2747.5	2735.7	2739.7	2753.7	2735.7
175°	2757.4	2743.5	2747.5	2761.5	2741.6
177.5°	2761.5	2747.5	2749.7	2763.6	2745.6
180°	2751.6	2751.6	2751.6	2751.6	2751.6

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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	9.28	10.02	10.35	11.08	12.52	5.25	5.98	6.31	7.04	8.49
	3H	10.95	11.61	12.02	12.68	14.14	6.42	7.08	7.49	8.15	9.61
	4H	11.55	12.18	12.63	13.25	14.71	6.86	7.49	7.94	8.56	10.02
	6H	11.96	12.54	13.06	13.62	15.09	7.17	7.75	8.26	8.82	10.30
	8H	12.09	12.63	13.18	13.72	15.20	7.26	7.80	8.35	8.90	10.37
	12H	12.14	12.66	13.24	13.75	15.24	7.29	7.81	8.39	8.90	10.39
4H	2H	9.29	9.91	10.38	10.99	12.45	5.83	6.45	6.92	7.52	8.99
	3H	11.10	11.62	12.20	12.72	14.20	7.16	7.68	8.26	8.78	10.26
	4H	11.79	12.27	12.89	13.36	14.86	7.70	8.18	8.80	9.27	10.77
	6H	12.30	12.70	13.40	13.82	15.31	8.11	8.52	9.22	9.63	11.12
	8H	12.47	12.85	13.57	13.95	15.46	8.23	8.61	9.34	9.72	11.22
	12H	12.55	12.90	13.68	14.02	15.53	8.29	8.63	9.41	9.75	11.26
8H	4H	11.75	12.13	12.86	13.23	14.74	7.97	8.35	9.08	9.46	10.96
	6H	12.31	12.62	13.44	13.77	15.27	8.48	8.79	9.61	9.94	11.44
	8H	12.52	12.79	13.66	13.92	15.45	8.66	8.94	9.80	10.07	11.59
	12H	12.65	12.89	13.79	14.02	15.58	8.77	9.01	9.91	10.14	11.70
12H	4H	11.70	12.04	12.82	13.16	14.67	7.97	8.32	9.10	9.43	10.95
	6H	12.28	12.56	13.42	13.68	15.21	8.52	8.80	9.66	9.93	11.45
	8H	12.49	12.74	13.63	13.86	15.42	8.73	8.97	9.87	10.09	11.65