

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: P914939

Luminaire Tested: DFN2DIP-SQ4F0-080D100US927-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P914939
REPORT IS A COMBINATION OF REPORTS P901656 AND P898471
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ4F0-080D100US927-RLLONL
Description: 4 foot, Square Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

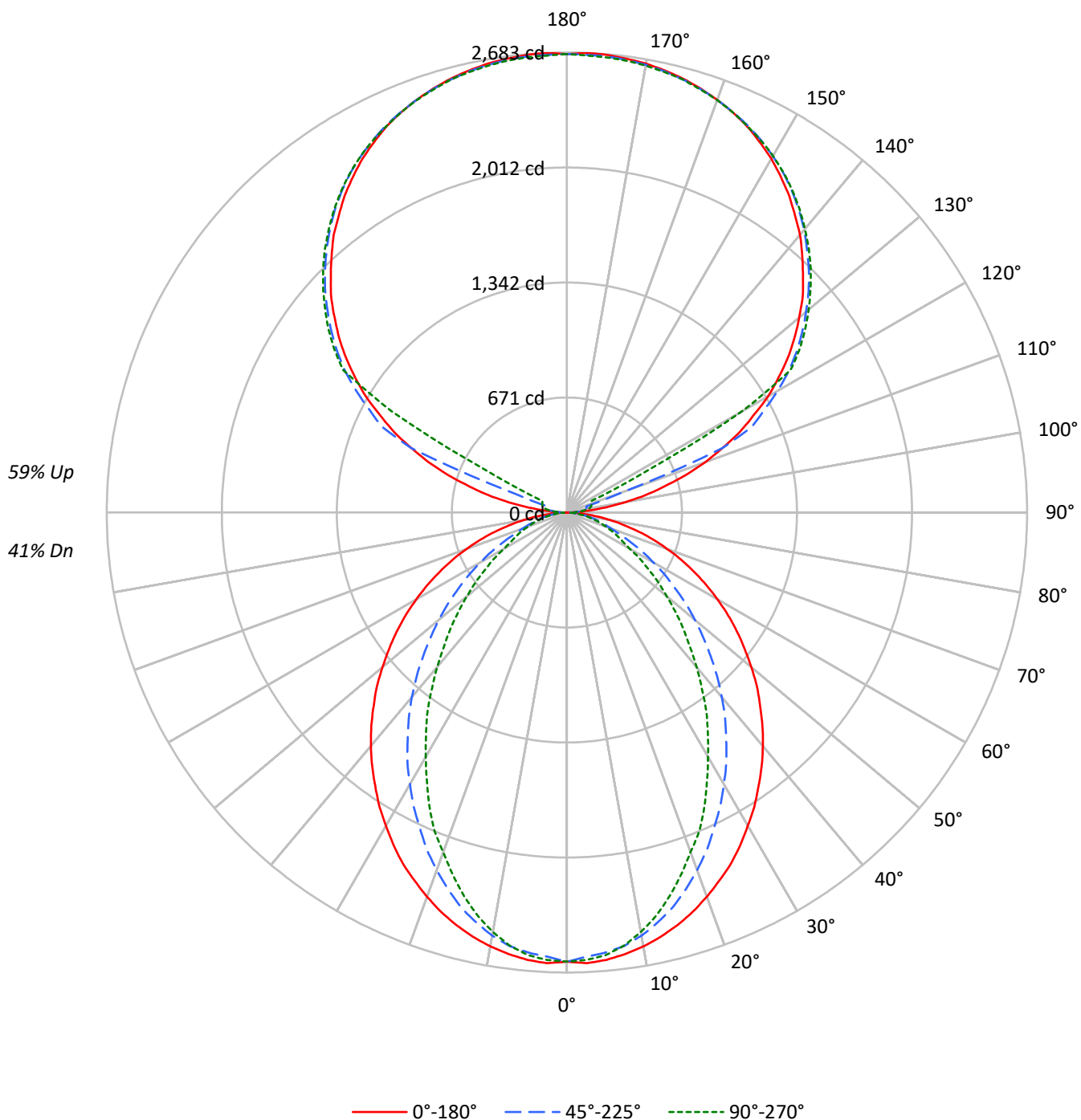
Lumens per Lamp: N/A
Luminaire Lumens: 13229.4 lumens
Efficiency: N/A
Efficacy: 90.6 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.92' x L: 3.92' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 146.1
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9954
Total Harmonic Distortion (THDi): 0.076
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	105	105	105	105	96	96	96	96	78	78	78	62	62	62	48	48	48
1	96	92	88	85	87	84	81	78	69	67	65	55	54	53	43	42	41
2	88	81	75	70	80	74	69	65	61	57	54	49	47	44	38	36	35
3	80	71	64	59	73	65	59	54	54	50	46	44	41	38	34	32	30
4	74	63	56	50	67	58	52	46	48	43	40	39	36	33	31	28	26
5	68	57	49	43	62	52	45	40	43	38	34	35	32	29	28	25	23
6	62	51	43	37	57	47	40	35	39	34	30	32	28	25	25	23	21
7	58	46	38	33	53	42	36	31	36	30	27	29	25	23	23	21	19
8	54	42	34	29	49	39	32	27	33	27	24	27	23	20	21	19	17
9	50	38	31	26	46	35	29	24	30	25	21	25	21	18	20	17	15
10	47	35	28	23	43	32	26	22	28	23	19	23	19	17	18	16	14

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1838	1838	1838
5°	1841	1809	1821
10°	1822	1774	1762
15°	1797	1716	1671
20°	1764	1635	1559
25°	1730	1545	1451
30°	1685	1452	1313
35°	1640	1353	1193
40°	1594	1250	1054
45°	1541	1135	929
50°	1487	1020	806
55°	1430	896	688
60°	1363	767	567
65°	1287	636	511
70°	1195	513	463
75°	1079	453	423
80°	912	381	368
85°	635	256	280

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 1541 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	245.5	1.9
10°-20°	673.9	5.1
20°-30°	946.1	7.2
30°-40°	1031.3	7.8
40°-50°	947.9	7.2
50°-60°	744.4	5.6
60°-70°	484.5	3.7
70°-80°	249.4	1.9
80°-90°	68.4	0.5
90°-100°	88.1	0.7
100°-110°	328.6	2.5
110°-120°	871.6	6.6
120°-130°	1445.6	10.9
130°-140°	1535.6	11.6
140°-150°	1427.1	10.8
150°-160°	1147.4	8.7
160°-170°	739.3	5.6
170°-180°	254.5	1.9
0°-30°	1865.5	14.1
0°-40°	2896.8	21.9
0°-60°	4589.2	34.7
0°-90°	5391.5	40.8
90°-120°	1288.4	9.7
90°-150°	5696.7	43.1
90°-180°	7838.0	59.2
0°-180°	13229.4	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2619	2619	2619	2619	2619	
5°	2619	2608	2576	2598	2591	248
15°	2491	2465	2385	2340	2316	702
25°	2261	2186	2029	1932	1896	1040
35°	1948	1828	1619	1470	1417	1220
45°	1593	1434	1185	1017	960	1230
55°	1211	1026	770	628	583	1082
65°	818	626	412	332	325	811
75°	436	270	190	173	171	461
85°	102	52	45	45	45	117
90°	2	23	39	48	52	12
95°	126	62	75	85	83	149
105°	588	646	118	139	147	628
115°	1112	1145	1194	298	159	1095
125°	1573	1598	1635	1648	1654	1403
135°	1946	1977	1994	2014	2010	1503
145°	2258	2256	2288	2302	2292	1412
155°	2486	2469	2492	2503	2488	1146
165°	2619	2608	2614	2627	2614	740
175°	2679	2666	2670	2683	2664	255
180°	2674	2674	2674	2674	2674	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2619.3	2619.3	2619.3	2619.3	2619.3
2.5°	2631.1	2619.3	2593.1	2617.0	2612.2
5°	2619.3	2607.5	2576.5	2597.9	2590.8
7.5°	2597.9	2583.8	2550.6	2559.9	2548.1
10°	2569.4	2552.9	2505.6	2498.3	2484.2
12.5°	2534.0	2512.6	2448.5	2434.4	2408.2
15°	2491.3	2465.1	2384.6	2339.6	2315.9
17.5°	2441.4	2403.5	2303.9	2251.9	2213.8
20°	2384.6	2337.1	2218.7	2159.6	2107.2
22.5°	2323.0	2268.4	2130.9	2050.4	2014.9
25°	2261.4	2185.5	2029.0	1932.0	1896.2
27.5°	2187.9	2107.2	1934.2	1822.8	1768.2
30°	2109.7	2019.4	1829.9	1709.1	1645.0
32.5°	2033.8	1924.7	1730.5	1588.2	1528.8
35°	1948.5	1827.6	1619.1	1469.7	1417.4
37.5°	1865.5	1735.0	1514.7	1351.0	1291.9
40°	1777.8	1635.7	1405.6	1237.3	1175.7
42.5°	1687.7	1536.1	1296.6	1121.2	1062.0
45°	1592.9	1434.0	1185.3	1016.8	960.0
47.5°	1502.9	1334.7	1078.6	910.1	858.1
50°	1403.3	1235.1	974.3	810.6	761.0
52.5°	1306.0	1128.1	874.6	718.3	673.3
55°	1211.2	1026.3	770.3	628.2	583.2
57.5°	1114.1	924.5	678.0	545.3	507.2
60°	1014.5	824.9	580.7	459.9	422.0
62.5°	917.4	727.8	497.7	384.0	365.2
65°	817.8	625.7	412.4	332.0	324.6
67.5°	723.0	530.9	332.0	291.4	284.5
70°	623.4	438.6	274.9	251.2	241.7
72.5°	528.6	353.1	229.9	211.0	206.2
75°	436.1	270.1	189.6	173.0	170.8
77.5°	343.8	191.9	149.4	139.8	135.1
80°	258.3	137.6	113.7	104.3	104.3
82.5°	180.1	92.5	78.2	73.4	73.4
85°	101.9	52.0	45.0	45.0	45.0
87.5°	37.9	18.9	18.9	16.6	16.6
90°	1.8	23.2	38.6	48.5	52.1
92.5°	48.5	40.6	46.4	50.3	52.1
95°	125.6	61.8	75.3	85.2	83.2
97.5°	226.2	67.7	98.5	104.5	106.4
100°	342.5	77.4	110.3	125.6	129.6
102.5°	470.0	466.4	114.2	135.3	141.2
105°	588.1	646.2	118.1	139.2	147.0
107.5°	725.5	773.7	122.0	143.1	150.9
110°	857.1	897.5	338.6	145.2	152.7

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	980.9	1015.6	982.8	148.9	154.9
115°	1112.3	1145.2	1193.7	297.9	158.8
117.5°	1226.5	1265.1	1298.1	1021.4	514.6
120°	1354.2	1383.1	1418.1	1441.3	1180.1
122.5°	1462.4	1493.4	1532.2	1543.7	1545.8
125°	1572.7	1598.0	1634.7	1648.3	1654.0
127.5°	1673.3	1700.4	1729.6	1748.9	1750.7
130°	1768.1	1799.2	1820.4	1841.7	1839.8
132.5°	1864.9	1890.1	1911.3	1928.7	1926.9
135°	1946.2	1977.2	1994.5	2014.0	2010.1
137.5°	2031.2	2054.4	2073.9	2093.3	2087.5
140°	2114.3	2130.0	2151.1	2168.6	2158.9
142.5°	2184.2	2197.7	2222.8	2238.1	2228.6
145°	2257.7	2255.7	2288.5	2302.1	2292.4
147.5°	2321.3	2315.6	2348.4	2358.1	2350.6
150°	2383.4	2369.8	2400.9	2412.4	2402.7
152.5°	2435.5	2420.1	2449.1	2460.8	2447.2
155°	2485.9	2468.6	2491.8	2503.3	2487.9
157.5°	2526.5	2511.1	2528.6	2542.1	2526.5
160°	2561.4	2549.7	2561.4	2572.9	2559.4
162.5°	2592.2	2580.7	2590.4	2603.9	2586.5
165°	2619.3	2607.8	2613.6	2627.1	2613.6
167.5°	2640.7	2628.9	2635.0	2648.5	2631.0
170°	2658.1	2646.4	2650.3	2663.9	2646.4
172.5°	2669.6	2658.1	2662.0	2675.6	2658.1
175°	2679.2	2665.7	2669.6	2683.2	2663.9
177.5°	2683.2	2669.6	2671.7	2685.3	2667.7
180°	2673.5	2673.5	2673.5	2673.5	2673.5

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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	8.35	9.11	9.38	10.15	11.55	4.31	5.07	5.35	6.11	7.51
	3H	10.02	10.70	11.07	11.75	13.17	5.49	6.17	6.54	7.22	8.64
	4H	10.63	11.27	11.69	12.33	13.75	5.94	6.58	7.00	7.63	9.06
	6H	11.05	11.64	12.12	12.70	14.14	6.26	6.85	7.33	7.90	9.34
	8H	11.18	11.74	12.25	12.81	14.25	6.34	6.91	7.42	7.98	9.41
	12H	11.24	11.77	12.32	12.84	14.30	6.39	6.92	7.46	7.99	9.44
4H	2H	8.36	9.00	9.42	10.05	11.48	4.90	5.54	5.96	6.59	8.02
	3H	10.18	10.72	11.26	11.80	13.24	6.24	6.78	7.31	7.85	9.29
	4H	10.88	11.37	11.96	12.44	13.90	6.79	7.28	7.87	8.35	9.81
	6H	11.39	11.81	12.48	12.90	14.36	7.20	7.62	8.29	8.72	10.17
	8H	11.57	11.96	12.66	13.05	14.52	7.33	7.72	8.42	8.81	10.28
	12H	11.66	12.02	12.77	13.12	14.59	7.39	7.75	8.50	8.85	10.32
8H	4H	10.84	11.23	11.93	12.32	13.79	7.06	7.46	8.15	8.54	10.01
	6H	11.41	11.73	12.52	12.86	14.32	7.58	7.90	8.69	9.03	10.50
	8H	11.63	11.91	12.74	13.02	14.51	7.77	8.06	8.89	9.17	10.65
	12H	11.76	12.01	12.88	13.12	14.64	7.89	8.14	9.01	9.24	10.77
12H	4H	10.79	11.14	11.89	12.24	13.72	7.07	7.42	8.17	8.52	9.99
	6H	11.38	11.67	12.50	12.78	14.26	7.63	7.91	8.75	9.02	10.51
	8H	11.60	11.85	12.72	12.96	14.48	7.84	8.09	8.96	9.19	10.72