

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: P917467

Luminaire Tested: DFN2DIP-SQ3F0-090D120US930-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P917467
REPORT IS A COMBINATION OF REPORTS P901536 AND P898289
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ3F0-090D120US930-RLLONL
Description: 3 foot, Square Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

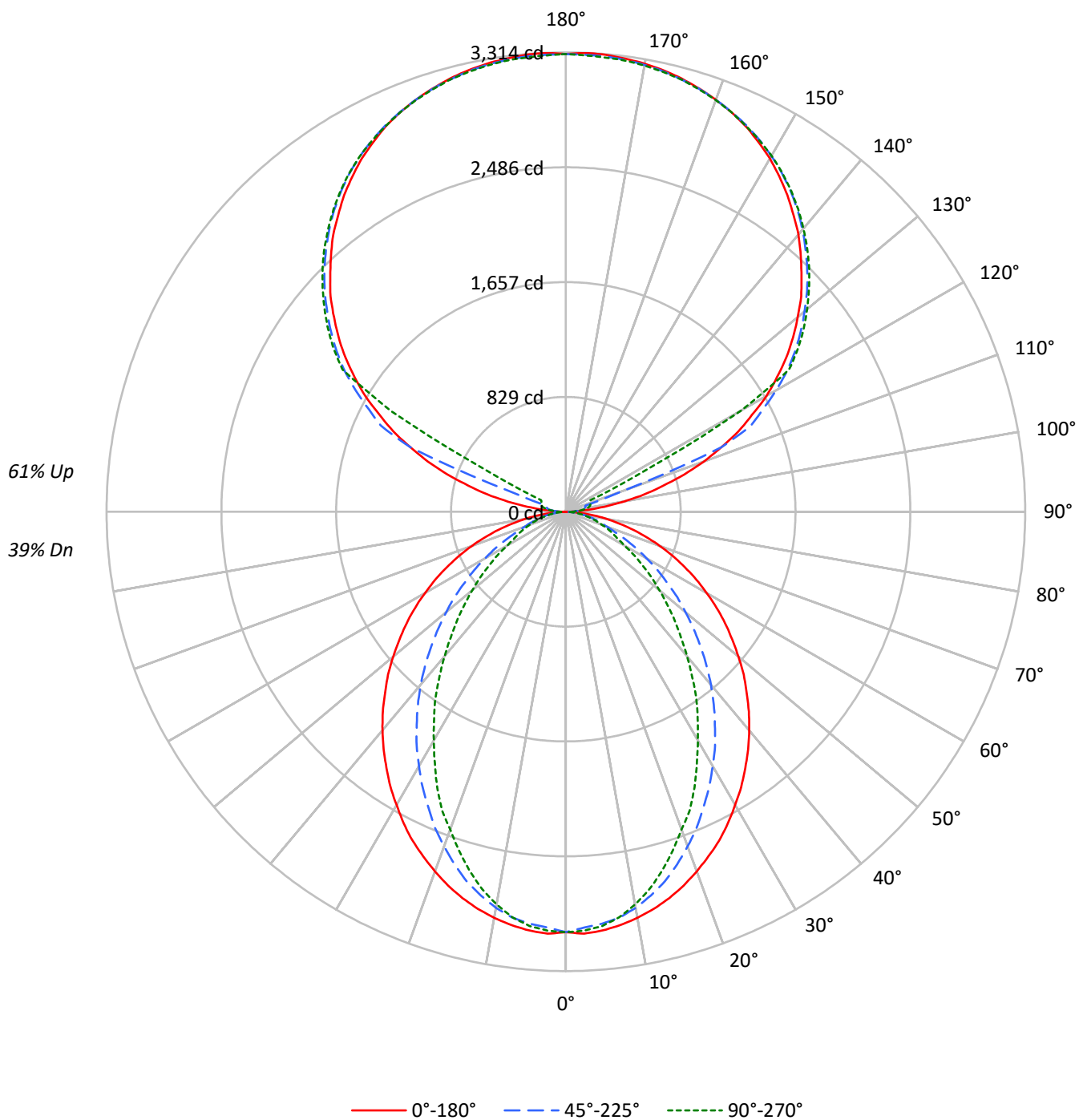
Lumens per Lamp: N/A
Luminaire Lumens: 15922.8 lumens
Efficiency: N/A
Efficacy: 87.5 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.06' x L: 3.06' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 181.9
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.996
Total Harmonic Distortion (THDi): 0.064
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	95	95	95	95	77	77	77	61	61	61	46	46	46
1	96	92	88	85	87	83	80	78	68	66	64	54	53	52	41	41	40
2	87	80	75	70	79	73	68	64	60	57	54	48	46	44	37	35	34
3	80	71	64	58	73	65	59	54	53	49	46	43	40	37	33	31	29
4	73	63	55	50	67	58	51	46	48	43	39	38	35	32	30	27	26
5	67	56	48	43	61	52	45	40	43	38	34	35	31	28	27	25	23
6	62	51	43	37	56	46	40	35	39	34	30	31	28	25	25	22	20
7	57	46	38	33	52	42	35	31	35	30	26	29	25	22	23	20	18
8	53	42	34	29	49	38	32	27	32	27	23	26	22	20	21	18	16
9	50	38	31	26	45	35	29	24	29	24	21	24	20	18	19	17	15
10	46	35	28	23	42	32	26	22	27	22	19	22	19	16	18	15	13

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3475	3475	3475
5°	3478	3417	3440
10°	3442	3348	3327
15°	3392	3235	3153
20°	3327	3080	2940
25°	3261	2908	2734
30°	3172	2730	2473
35°	3085	2540	2244
40°	2997	2343	1982
45°	2894	2126	1744
50°	2788	1906	1512
55°	2677	1672	1289
60°	2548	1427	1060
65°	2399	1178	952
70°	2219	946	860
75°	1993	829	780
80°	1665	688	673
85°	1129	448	499

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2894 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	284.2	1.8
10°-20°	780.3	4.9
20°-30°	1095.5	6.9
30°-40°	1194.1	7.5
40°-50°	1097.5	6.9
50°-60°	861.9	5.4
60°-70°	561.0	3.5
70°-80°	288.8	1.8
80°-90°	79.5	0.5
90°-100°	108.9	0.7
100°-110°	405.9	2.5
110°-120°	1076.4	6.8
120°-130°	1785.3	11.2
130°-140°	1896.5	11.9
140°-150°	1762.5	11.1
150°-160°	1417.0	8.9
160°-170°	913.1	5.7
170°-180°	314.3	2.0
0°-30°	2159.9	13.6
0°-40°	3354.0	21.1
0°-60°	5313.5	33.4
0°-90°	6242.9	39.2
90°-120°	1591.2	10.0
90°-150°	7035.5	44.2
90°-180°	9680.0	60.8
0°-180°	15922.8	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3033	3033	3033	3033	3033	
5°	3033	3019	2983	3008	3000	288
15°	2884	2854	2761	2709	2682	813
25°	2618	2530	2349	2237	2196	1204
35°	2256	2116	1875	1702	1641	1412
45°	1844	1660	1372	1177	1111	1424
55°	1402	1188	892	727	675	1253
65°	947	724	478	384	376	939
75°	505	313	220	200	198	534
85°	118	60	52	52	52	135
90°	2	29	48	60	64	15
95°	155	76	93	105	103	184
105°	726	798	146	172	182	776
115°	1374	1414	1474	368	196	1352
125°	1942	1974	2019	2036	2043	1732
135°	2404	2442	2463	2487	2482	1857
145°	2788	2786	2826	2843	2831	1744
155°	3070	3049	3077	3092	3073	1415
165°	3235	3221	3228	3245	3228	914
175°	3309	3292	3297	3314	3290	315
180°	3302	3302	3302	3302	3302	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	3032.7	3032.7	3032.7	3032.7	3032.7
2.5°	3046.4	3032.7	3002.3	3030.1	3024.5
5°	3032.7	3019.0	2983.2	3007.9	2999.7
7.5°	3007.9	2991.6	2953.2	2963.9	2950.2
10°	2975.0	2955.8	2901.1	2892.6	2876.3
12.5°	2933.9	2909.2	2835.0	2818.6	2788.3
15°	2884.4	2854.2	2761.0	2708.8	2681.5
17.5°	2826.8	2782.9	2667.5	2607.2	2563.3
20°	2761.0	2706.0	2568.8	2500.4	2439.8
22.5°	2689.7	2626.5	2467.2	2374.0	2333.0
25°	2618.3	2530.4	2349.3	2236.9	2195.5
27.5°	2533.3	2439.8	2239.5	2110.5	2047.3
30°	2442.7	2338.2	2118.6	1978.9	1904.6
32.5°	2354.7	2228.4	2003.6	1838.8	1770.1
35°	2256.1	2116.0	1874.6	1701.7	1641.1
37.5°	2160.0	2008.9	1753.8	1564.2	1495.8
40°	2058.4	1893.9	1627.4	1432.6	1361.3
42.5°	1954.1	1778.6	1501.3	1298.1	1229.6
45°	1844.4	1660.4	1372.3	1177.2	1111.4
47.5°	1740.1	1545.3	1248.9	1053.8	993.5
50°	1624.8	1430.0	1128.0	938.5	881.1
52.5°	1512.1	1306.3	1012.8	831.6	779.5
55°	1402.3	1188.3	891.9	727.4	675.2
57.5°	1290.0	1070.4	785.1	631.3	587.3
60°	1174.6	955.0	672.4	532.6	488.6
62.5°	1062.3	842.7	576.3	444.7	422.8
65°	946.9	724.5	477.5	384.3	375.9
67.5°	837.1	614.7	384.3	337.5	329.3
70°	721.9	507.8	318.3	290.9	279.8
72.5°	612.0	408.8	266.1	244.3	238.8
75°	504.9	312.7	219.6	200.3	197.7
77.5°	398.0	222.2	172.9	161.9	156.4
80°	299.1	159.3	131.6	120.8	120.8
82.5°	208.5	107.1	90.6	85.0	85.0
85°	117.9	60.3	52.1	52.1	52.1
87.5°	43.9	21.8	21.8	19.2	19.2
90°	2.3	28.6	47.7	59.8	64.4
92.5°	59.8	50.2	57.3	62.1	64.4
95°	155.2	76.3	93.0	105.3	102.7
97.5°	279.5	83.7	121.7	129.1	131.3
100°	423.0	95.6	136.2	155.2	160.0
102.5°	580.5	575.9	141.0	167.1	174.5
105°	726.3	798.1	145.9	171.9	181.6
107.5°	895.9	955.5	150.7	176.8	186.4
110°	1058.5	1108.5	418.2	179.3	188.7

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1211.5	1254.3	1213.7	183.8	191.2
115°	1373.7	1414.3	1474.1	367.9	196.1
117.5°	1514.7	1562.4	1603.3	1261.3	635.5
120°	1672.5	1708.2	1751.3	1780.0	1457.4
122.5°	1806.1	1844.4	1892.4	1906.6	1909.1
125°	1942.3	1973.5	2018.9	2035.6	2042.7
127.5°	2066.5	2100.0	2136.1	2159.9	2162.2
130°	2183.7	2222.0	2248.1	2274.5	2272.2
132.5°	2303.1	2334.4	2360.5	2382.1	2379.8
135°	2403.6	2441.9	2463.2	2487.3	2482.5
137.5°	2508.6	2537.2	2561.3	2585.1	2578.1
140°	2611.3	2630.6	2656.6	2678.3	2666.4
142.5°	2697.5	2714.3	2745.2	2764.2	2752.3
145°	2788.3	2785.8	2826.3	2843.1	2831.1
147.5°	2866.9	2859.8	2900.4	2912.3	2903.0
150°	2943.5	2926.8	2965.1	2979.3	2967.4
152.5°	3007.9	2988.9	3024.7	3039.1	3022.4
155°	3070.0	3048.7	3077.4	3091.6	3072.6
157.5°	3120.2	3101.2	3122.8	3139.6	3120.2
160°	3163.4	3148.9	3163.4	3177.5	3160.8
162.5°	3201.4	3187.2	3199.1	3215.9	3194.3
165°	3234.9	3220.7	3227.8	3244.6	3227.8
167.5°	3261.3	3246.8	3254.2	3270.9	3249.4
170°	3282.8	3268.4	3273.2	3289.9	3268.4
172.5°	3297.0	3282.8	3287.7	3304.4	3282.8
175°	3308.9	3292.2	3297.0	3313.8	3289.9
177.5°	3313.8	3297.0	3299.6	3316.3	3294.8
180°	3301.9	3301.9	3301.9	3301.9	3301.9

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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	10.34	11.09	11.39	12.14	13.56	6.30	7.05	7.35	8.10	9.52
	3H	12.01	12.68	13.07	13.74	15.18	7.48	8.15	8.54	9.21	10.65
	4H	12.61	13.25	13.68	14.31	15.75	7.92	8.56	8.99	9.62	11.06
	6H	13.02	13.61	14.11	14.67	16.13	8.23	8.82	9.31	9.88	11.34
	8H	13.15	13.70	14.23	14.78	16.23	8.32	8.87	9.40	9.95	11.40
	12H	13.20	13.73	14.29	14.81	16.28	8.35	8.88	9.44	9.96	11.43
4H	2H	10.35	10.98	11.43	12.04	13.49	6.89	7.52	7.96	8.58	10.03
	3H	12.16	12.69	13.25	13.78	15.24	8.22	8.75	9.31	9.84	11.30
	4H	12.85	13.33	13.94	14.41	15.89	8.76	9.24	9.85	10.32	11.80
	6H	13.36	13.77	14.46	14.87	16.35	9.17	9.58	10.27	10.69	12.16
	8H	13.53	13.91	14.63	15.01	16.50	9.29	9.68	10.39	10.77	12.26
	12H	13.62	13.97	14.73	15.07	16.57	9.35	9.70	10.46	10.81	12.30
8H	4H	12.81	13.20	13.91	14.29	15.78	9.03	9.42	10.13	10.51	12.00
	6H	13.37	13.69	14.49	14.82	16.31	9.54	9.86	10.66	10.99	12.48
	8H	13.58	13.86	14.71	14.98	16.48	9.72	10.00	10.85	11.12	12.63
	12H	13.71	13.96	14.84	15.07	16.62	9.83	10.08	10.96	11.19	12.74
12H	4H	12.76	13.11	13.87	14.22	15.71	9.03	9.38	10.15	10.49	11.98
	6H	13.34	13.62	14.47	14.74	16.25	9.59	9.87	10.71	10.98	12.49
	8H	13.56	13.80	14.69	14.92	16.46	9.79	10.03	10.92	11.15	12.69

END OF REPORT