

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: P917277

Luminaire Tested: DFN2DIP-SQ3F0-040D100US930-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P917277
REPORT IS A COMBINATION OF REPORTS P901489 AND P898289
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ3F0-040D100US930-FLLONL
Description: 3 foot, Square Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

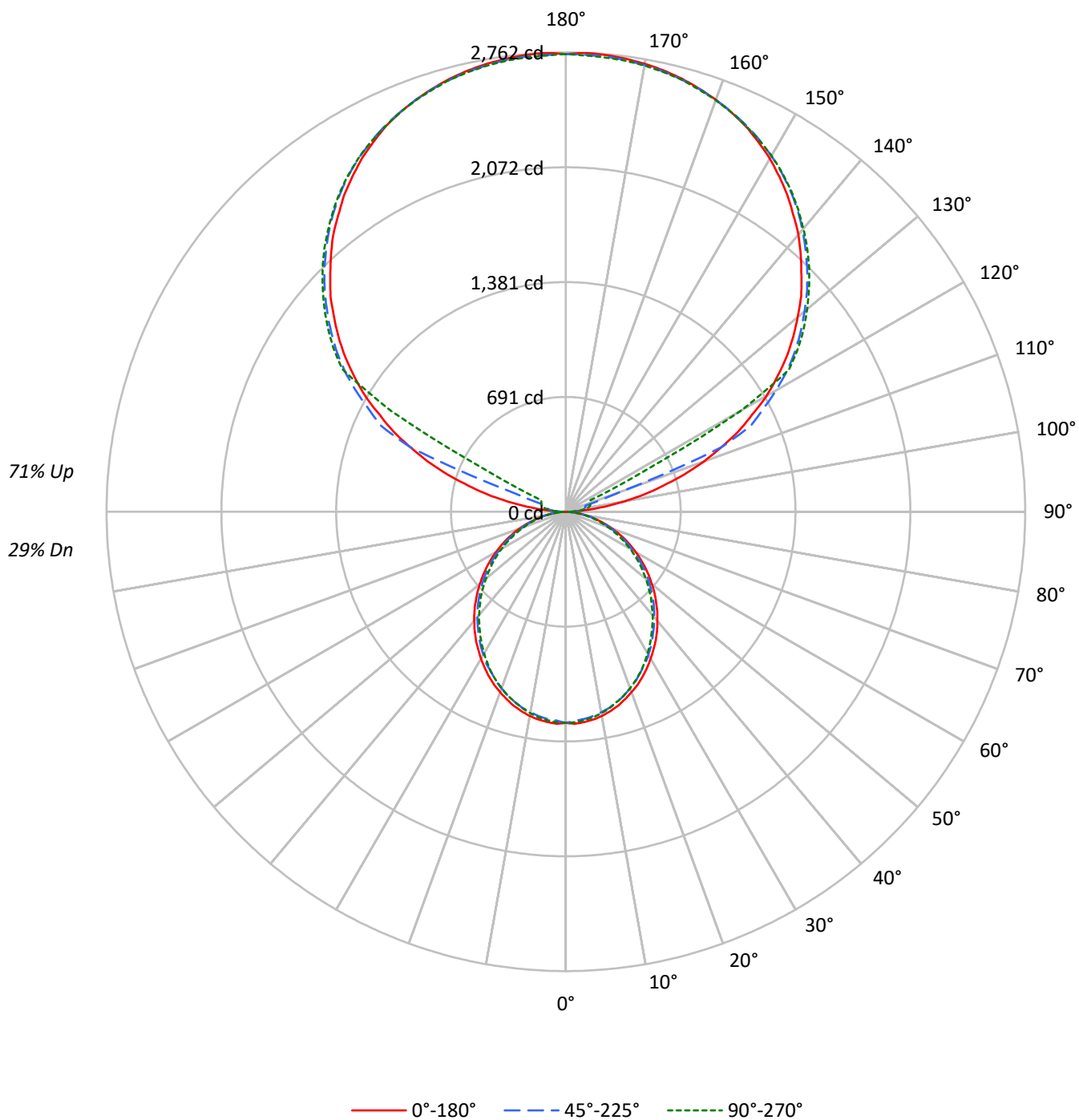
Lumens per Lamp: N/A
Luminaire Lumens: 11300.0 lumens
Efficiency: N/A
Efficacy: 102.9 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 3.06' x L: 3.06' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 109.8
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9933
Total Harmonic Distortion (THDi): 0.066
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	102	102	102	102	91	91	91	91	71	71	71	53	53	53	36	36	36
1	93	89	85	82	83	80	77	74	62	60	58	47	45	44	32	31	31
2	85	77	72	67	76	70	65	60	55	51	48	41	39	37	28	27	26
3	77	68	61	55	69	61	55	50	48	44	41	36	33	31	25	23	22
4	71	60	53	47	63	54	48	43	43	38	34	32	29	27	22	21	19
5	65	53	46	40	58	48	41	36	38	33	30	29	26	23	20	18	16
6	59	48	40	34	53	43	36	31	34	29	26	26	23	20	18	16	14
7	55	43	35	30	49	39	32	27	31	26	23	24	20	18	17	14	13
8	51	39	31	26	45	35	29	24	28	23	20	22	18	16	15	13	11
9	47	35	28	23	42	32	26	21	26	21	18	20	16	14	14	12	10
10	44	32	25	21	39	29	23	19	24	19	16	18	15	13	13	11	9

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1454	1454	1454
5°	1455	1433	1443
10°	1443	1412	1423
15°	1420	1388	1392
20°	1391	1355	1360
25°	1361	1315	1324
30°	1325	1279	1277
35°	1290	1235	1228
40°	1247	1191	1181
45°	1204	1147	1134
50°	1158	1101	1078
55°	1109	1047	1027
60°	1053	984	969
65°	993	918	900
70°	915	838	826
75°	809	742	756
80°	680	619	625
85°	479	410	409

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 1882 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	119.4	1.1
10°-20°	336.0	3.0
20°-30°	493.8	4.4
30°-40°	573.6	5.1
40°-50°	572.9	5.1
50°-60°	499.5	4.4
60°-70°	369.3	3.3
70°-80°	208.9	1.8
80°-90°	60.0	0.5
90°-100°	90.7	0.8
100°-110°	338.2	3.0
110°-120°	897.0	7.9
120°-130°	1487.8	13.2
130°-140°	1580.4	14.0
140°-150°	1468.8	13.0
150°-160°	1180.9	10.5
160°-170°	760.9	6.7
170°-180°	261.9	2.3
0°-30°	949.3	8.4
0°-40°	1522.9	13.5
0°-60°	2595.3	23.0
0°-90°	3233.4	28.6
90°-120°	1326.0	11.7
90°-150°	5862.9	51.9
90°-180°	8067.0	71.4
0°-180°	11300.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1269	1269	1269	1269	1269	
5°	1269	1264	1251	1260	1258	120
15°	1208	1201	1185	1190	1184	340
25°	1093	1084	1063	1065	1063	503
35°	943	931	912	904	898	589
45°	768	759	741	727	722	592
55°	581	574	559	544	538	519
65°	392	384	372	361	355	387
75°	205	203	196	189	192	219
85°	50	49	48	44	43	56
90°	2	24	40	50	54	10
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°	1268.9	1268.9	1268.9	1268.9	1268.9
2.5°	1276.3	1270.2	1256.8	1268.9	1266.6
5°	1268.9	1264.1	1250.7	1260.4	1258.1
7.5°	1260.4	1253.1	1239.7	1249.5	1247.1
10°	1247.1	1238.5	1223.9	1233.6	1230.0
12.5°	1228.7	1221.4	1206.8	1212.9	1210.4
15°	1207.9	1200.7	1184.8	1189.7	1183.6
17.5°	1182.3	1175.1	1159.2	1165.2	1159.2
20°	1154.2	1147.0	1129.9	1133.5	1128.8
22.5°	1126.3	1115.2	1099.3	1099.3	1096.9
25°	1093.2	1083.5	1062.8	1065.2	1062.8
27.5°	1056.6	1048.1	1032.3	1028.7	1022.6
30°	1020.1	1010.3	992.1	988.4	983.5
32.5°	981.0	973.8	954.2	946.9	941.9
35°	943.2	931.1	911.5	904.2	898.1
37.5°	900.5	889.5	869.9	861.4	855.3
40°	856.6	846.8	827.2	816.4	811.5
42.5°	813.9	804.0	784.6	772.3	765.1
45°	767.5	759.0	740.6	727.3	722.4
47.5°	722.4	713.8	694.3	680.9	673.6
50°	674.7	668.6	651.6	634.5	628.4
52.5°	628.4	619.9	604.1	590.6	582.0
55°	580.9	573.5	558.9	544.2	538.2
57.5°	533.2	527.2	511.2	496.6	491.7
60°	485.6	480.8	463.7	450.3	446.6
62.5°	439.3	430.7	418.6	406.3	401.5
65°	391.8	384.3	372.2	361.2	355.1
67.5°	342.9	336.7	325.9	317.3	312.4
70°	297.7	292.9	281.8	273.3	268.5
72.5°	251.4	246.5	240.4	231.9	228.2
75°	205.0	202.6	196.4	189.1	191.6
77.5°	163.5	158.6	156.1	152.5	148.9
80°	122.1	120.7	118.3	114.7	112.3
82.5°	83.0	83.0	81.9	76.9	76.9
85°	50.0	48.8	47.6	43.9	42.7
87.5°	22.0	19.6	17.1	13.5	12.1
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	6.13	6.83	7.25	7.94	9.49	5.69	6.38	6.81	7.50	9.05
	3H	7.78	8.40	8.90	9.52	11.09	7.29	7.91	8.41	9.03	10.60
	4H	8.35	8.95	9.49	10.07	11.64	7.86	8.45	9.00	9.57	11.14
	6H	8.74	9.29	9.89	10.41	11.99	8.24	8.79	9.39	9.91	11.49
	8H	8.84	9.36	9.99	10.50	12.07	8.34	8.86	9.49	10.00	11.57
	12H	8.88	9.37	10.03	10.51	12.10	8.37	8.86	9.52	10.00	11.59
4H	2H	6.57	7.16	7.72	8.29	9.85	6.21	6.81	7.36	7.93	9.50
	3H	8.41	8.91	9.57	10.06	11.64	8.01	8.50	9.16	9.65	11.23
	4H	9.12	9.57	10.27	10.71	12.31	8.69	9.15	9.85	10.29	11.89
	6H	9.62	10.01	10.78	11.17	12.76	9.19	9.58	10.35	10.74	12.33
	8H	9.76	10.13	10.92	11.28	12.89	9.33	9.69	10.48	10.84	12.45
	12H	9.83	10.16	11.00	11.32	12.93	9.38	9.71	10.55	10.87	12.48
8H	4H	9.30	9.66	10.46	10.81	12.42	8.92	9.28	10.08	10.44	12.04
	6H	9.91	10.22	11.09	11.41	13.01	9.53	9.83	10.71	11.03	12.63
	8H	10.13	10.39	11.32	11.57	13.19	9.74	10.00	10.92	11.17	12.80
	12H	10.25	10.48	11.44	11.65	13.31	9.84	10.07	11.03	11.24	12.90
12H	4H	9.27	9.60	10.45	10.77	12.38	8.90	9.23	10.08	10.40	12.01
	6H	9.94	10.20	11.13	11.38	13.00	9.57	9.83	10.75	11.00	12.63
	8H	10.17	10.40	11.36	11.57	13.23	9.79	10.02	10.98	11.19	12.85