

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: P920001

Luminaire Tested: DFN2DIP-SQ3F0-040D090US935-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P920001
REPORT IS A COMBINATION OF REPORTS P901471 AND P898289
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ3F0-040D090US935-FLLONL
Description: 3 foot, Square Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

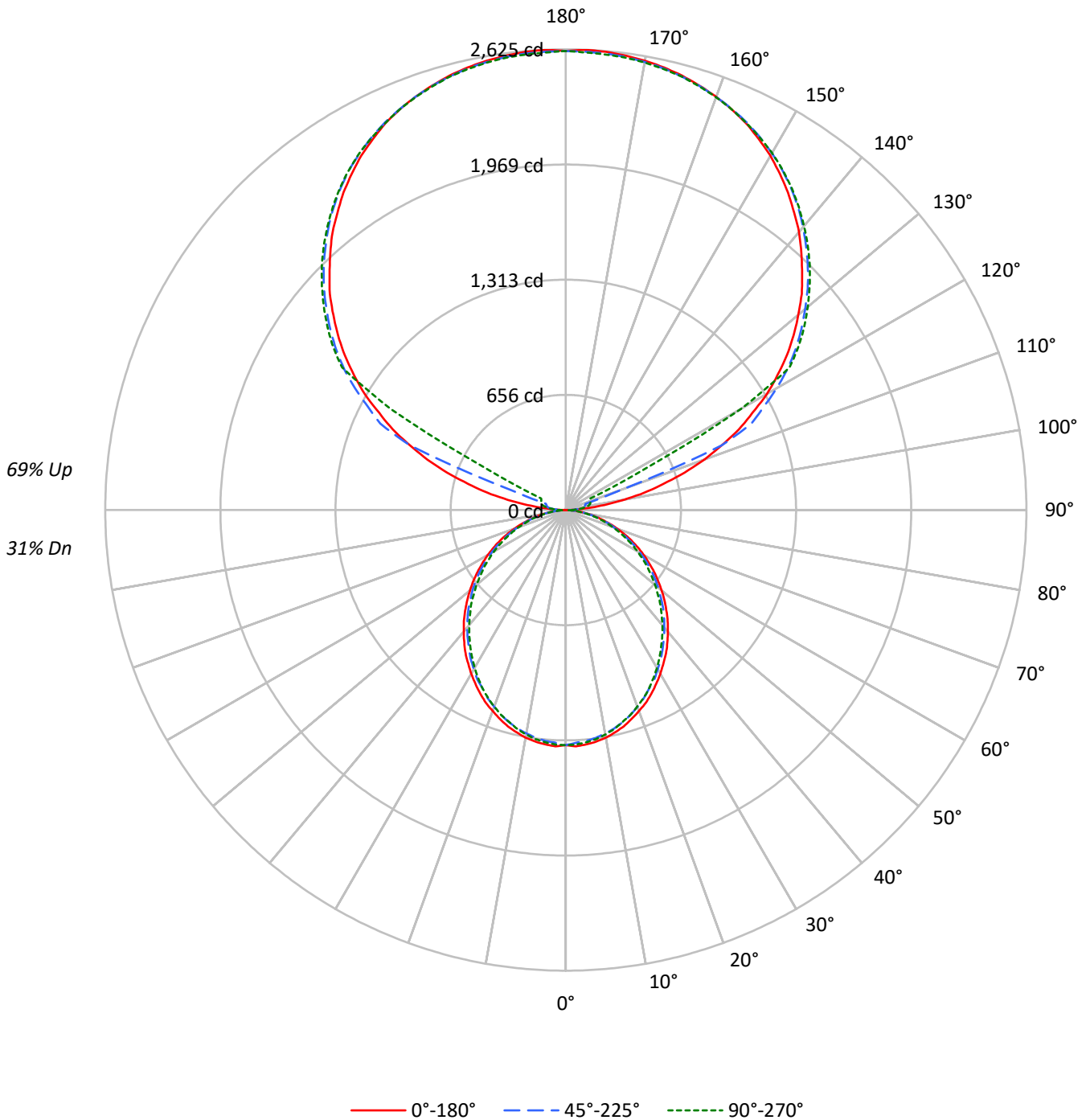
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 11081.0 lumens
Efficiency: N/A
Efficacy: 109.9 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): 100.8
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				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	0	
RCR																						
0	103	103	103	103	92	92	92	92	73	73	73	55	55	55	38	38	38	31				31
1	93	89	86	82	84	80	77	74	64	61	59	48	47	46	34	33	32	26				26
2	85	78	72	67	76	70	65	61	56	52	49	42	40	38	30	29	27	22				22
3	78	68	61	56	69	62	56	51	49	45	41	37	35	32	26	25	23	18				18
4	71	60	53	47	63	55	48	43	44	39	35	33	30	27	24	22	20	16				16
5	65	54	46	40	58	49	42	37	39	34	30	30	26	24	21	19	17	14				14
6	60	48	40	35	53	44	37	32	35	30	26	27	23	21	19	17	15	12				12
7	55	43	36	30	49	39	33	28	32	27	23	24	21	18	18	15	14	11				11
8	51	39	32	27	46	36	29	24	29	24	20	22	19	16	16	14	12	10				10
9	47	36	28	24	43	32	26	22	26	21	18	20	17	14	15	13	11	9				9
10	44	33	26	21	40	30	23	19	24	19	16	19	15	13	14	12	10	8				8

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1535	1535	1535
5°	1537	1513	1524
10°	1524	1492	1503
15°	1500	1466	1470
20°	1469	1431	1437
25°	1438	1389	1398
30°	1399	1350	1349
35°	1362	1304	1297
40°	1317	1258	1248
45°	1272	1211	1197
50°	1223	1163	1139
55°	1171	1106	1085
60°	1112	1039	1023
65°	1048	970	950
70°	967	885	872
75°	854	783	798
80°	718	653	660
85°	506	433	432

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°
 Vertical Angle: 90°
 Luminance: 1791 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	126.1	1.1
10°-20°	354.9	3.2
20°-30°	521.5	4.7
30°-40°	605.7	5.5
40°-50°	605.0	5.5
50°-60°	527.5	4.8
60°-70°	389.9	3.5
70°-80°	220.6	2.0
80°-90°	62.8	0.6
90°-100°	86.2	0.8
100°-110°	321.5	2.9
110°-120°	852.6	7.7
120°-130°	1414.1	12.8
130°-140°	1502.1	13.6
140°-150°	1396.0	12.6
150°-160°	1122.4	10.1
160°-170°	723.2	6.5
170°-180°	248.9	2.2
0°-30°	1002.5	9.0
0°-40°	1608.3	14.5
0°-60°	2740.7	24.7
0°-90°	3414.1	30.8
90°-120°	1260.3	11.4
90°-150°	5572.4	50.3
90°-180°	7667.0	69.2
0°-180°	11081.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1340	1340	1340	1340	1340	
5°	1340	1335	1321	1331	1329	127
15°	1276	1268	1251	1256	1250	359
25°	1154	1144	1122	1125	1122	531
35°	996	983	963	955	948	622
45°	810	802	782	768	763	626
55°	614	606	590	575	568	548
65°	414	406	393	381	375	409
75°	216	214	207	200	202	231
85°	53	52	50	46	45	59
90°	2	23	38	47	51	10
95°	123	60	74	83	81	146
105°	575	632	116	136	144	615
115°	1088	1120	1168	291	155	1071
125°	1538	1563	1599	1612	1618	1372
135°	1904	1934	1951	1970	1966	1471
145°	2208	2206	2239	2252	2242	1381
155°	2432	2415	2437	2449	2434	1121
165°	2562	2551	2557	2570	2557	724
175°	2621	2608	2611	2625	2606	249
180°	2615	2615	2615	2615	2615	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1340.1	1340.1	1340.1	1340.1	1340.1
2.5°	1347.9	1341.4	1327.2	1340.1	1337.6
5°	1340.1	1335.0	1320.8	1331.0	1328.6
7.5°	1331.0	1323.4	1309.1	1319.6	1317.0
10°	1317.0	1307.9	1292.5	1302.8	1298.9
12.5°	1297.5	1289.9	1274.4	1280.9	1278.2
15°	1275.7	1268.0	1251.2	1256.4	1250.0
17.5°	1248.6	1241.0	1224.2	1230.5	1224.2
20°	1218.9	1211.3	1193.3	1197.0	1192.1
22.5°	1189.4	1177.8	1161.0	1161.0	1158.4
25°	1154.5	1144.3	1122.4	1124.9	1122.4
27.5°	1115.9	1106.8	1090.2	1086.3	1079.9
30°	1077.3	1066.9	1047.7	1043.8	1038.6
32.5°	1036.0	1028.4	1007.7	1000.0	994.7
35°	996.1	983.3	962.6	954.8	948.4
37.5°	951.0	939.3	918.7	909.7	903.3
40°	904.7	894.2	873.6	862.1	857.0
42.5°	859.5	849.1	828.6	815.6	808.0
45°	810.5	801.6	782.1	768.1	762.8
47.5°	762.8	753.8	733.2	719.0	711.4
50°	712.6	706.1	688.1	670.0	663.6
52.5°	663.6	654.6	637.9	623.7	614.7
55°	613.5	605.6	590.2	574.7	568.3
57.5°	563.1	556.7	539.8	524.4	519.3
60°	512.8	507.7	489.7	475.5	471.7
62.5°	463.9	454.9	442.0	429.1	424.0
65°	413.7	405.9	393.0	381.4	375.1
67.5°	362.1	355.6	344.1	335.1	329.9
70°	314.4	309.3	297.6	288.6	283.5
72.5°	265.5	260.3	253.9	244.9	241.0
75°	216.5	214.0	207.4	199.8	202.3
77.5°	172.6	167.5	164.9	161.0	157.2
80°	128.9	127.5	124.9	121.1	118.6
82.5°	87.6	87.6	86.4	81.2	81.2
85°	52.8	51.6	50.3	46.3	45.1
87.5°	23.2	20.7	18.1	14.2	12.8
90°	1.8	22.7	37.7	47.4	51.0
92.5°	47.4	39.8	45.4	49.2	51.0
95°	123.0	60.4	73.7	83.3	81.4
97.5°	221.4	66.3	96.4	102.2	104.0
100°	335.0	75.8	107.9	123.0	126.7
102.5°	459.8	456.2	111.7	132.3	138.2
105°	575.2	632.1	115.5	136.2	143.8
107.5°	709.6	756.8	119.3	140.0	147.7
110°	838.4	878.0	331.2	142.0	149.5



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	959.5	993.4	961.3	145.6	151.4
115°	1088.0	1120.2	1167.6	291.4	155.2
117.5°	1199.7	1237.5	1269.8	999.1	503.3
120°	1324.6	1353.0	1387.2	1409.8	1154.3
122.5°	1430.5	1460.9	1498.8	1510.0	1512.1
125°	1538.3	1563.1	1599.0	1612.3	1617.9
127.5°	1636.8	1663.3	1691.9	1710.7	1712.5
130°	1729.6	1760.0	1780.6	1801.5	1799.7
132.5°	1824.2	1848.9	1869.6	1886.7	1884.9
135°	1903.8	1934.1	1950.9	1970.0	1966.3
137.5°	1986.9	2009.6	2028.7	2047.5	2041.9
140°	2068.2	2083.5	2104.2	2121.2	2111.9
142.5°	2136.6	2149.8	2174.3	2189.3	2180.0
145°	2208.5	2206.4	2238.6	2251.9	2242.4
147.5°	2270.7	2265.1	2297.2	2306.7	2299.2
150°	2331.4	2318.2	2348.5	2359.7	2350.3
152.5°	2382.4	2367.3	2395.6	2407.1	2393.8
155°	2431.6	2414.8	2437.4	2448.7	2433.6
157.5°	2471.4	2456.3	2473.4	2486.6	2471.4
160°	2505.5	2494.1	2505.5	2516.8	2503.5
162.5°	2535.6	2524.4	2533.8	2547.1	2530.0
165°	2562.2	2550.9	2556.6	2569.8	2556.6
167.5°	2583.1	2571.6	2577.4	2590.7	2573.6
170°	2600.1	2588.7	2592.5	2605.7	2588.7
172.5°	2611.4	2600.1	2603.9	2617.2	2600.1
175°	2620.8	2607.5	2611.4	2624.6	2605.7
177.5°	2624.6	2611.4	2613.4	2626.6	2609.6
180°	2615.2	2615.2	2615.2	2615.2	2615.2



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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	6.62	7.34	7.73	8.44	9.96	6.18	6.89	7.29	7.99	9.51
	3H	8.27	8.91	9.38	10.02	11.55	7.78	8.42	8.89	9.53	11.06
	4H	8.85	9.45	9.97	10.56	12.11	8.35	8.96	9.48	10.07	11.61
	6H	9.23	9.79	10.37	10.91	12.46	8.73	9.29	9.87	10.40	11.96
	8H	9.33	9.86	10.47	10.99	12.54	8.83	9.36	9.97	10.49	12.04
	12H	9.37	9.88	10.51	11.00	12.57	8.86	9.37	10.01	10.49	12.06
4H	2H	7.06	7.67	8.19	8.78	10.32	6.71	7.31	7.84	8.42	9.97
	3H	8.91	9.41	10.05	10.55	12.11	8.50	9.01	9.64	10.14	11.70
	4H	9.61	10.08	10.75	11.20	12.78	9.19	9.65	10.33	10.78	12.36
	6H	10.12	10.51	11.26	11.66	13.23	9.68	10.08	10.83	11.23	12.80
	8H	10.26	10.63	11.41	11.77	13.36	9.82	10.19	10.97	11.33	12.92
	12H	10.32	10.66	11.49	11.81	13.40	9.87	10.21	11.04	11.36	12.95
8H	4H	9.79	10.17	10.94	11.31	12.89	9.42	9.79	10.56	10.93	12.51
	6H	10.41	10.72	11.58	11.90	13.48	10.03	10.33	11.20	11.52	13.10
	8H	10.63	10.90	11.80	12.06	13.66	10.24	10.50	11.41	11.67	13.27
	12H	10.75	10.98	11.93	12.14	13.78	10.34	10.57	11.52	11.73	13.37
12H	4H	9.77	10.11	10.93	11.26	12.85	9.40	9.74	10.57	10.89	12.48
	6H	10.44	10.71	11.61	11.87	13.47	10.07	10.33	11.24	11.50	13.10
	8H	10.67	10.90	11.85	12.06	13.70	10.29	10.52	11.47	11.68	13.32