

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: P919995

Luminaire Tested: DFN2DIP-SQ3F0-040D070US935-RLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P919995
REPORT IS A COMBINATION OF REPORTS P901436 AND P898289
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ3F0-040D070US935-RLLONL
Description: 3 foot, Square Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

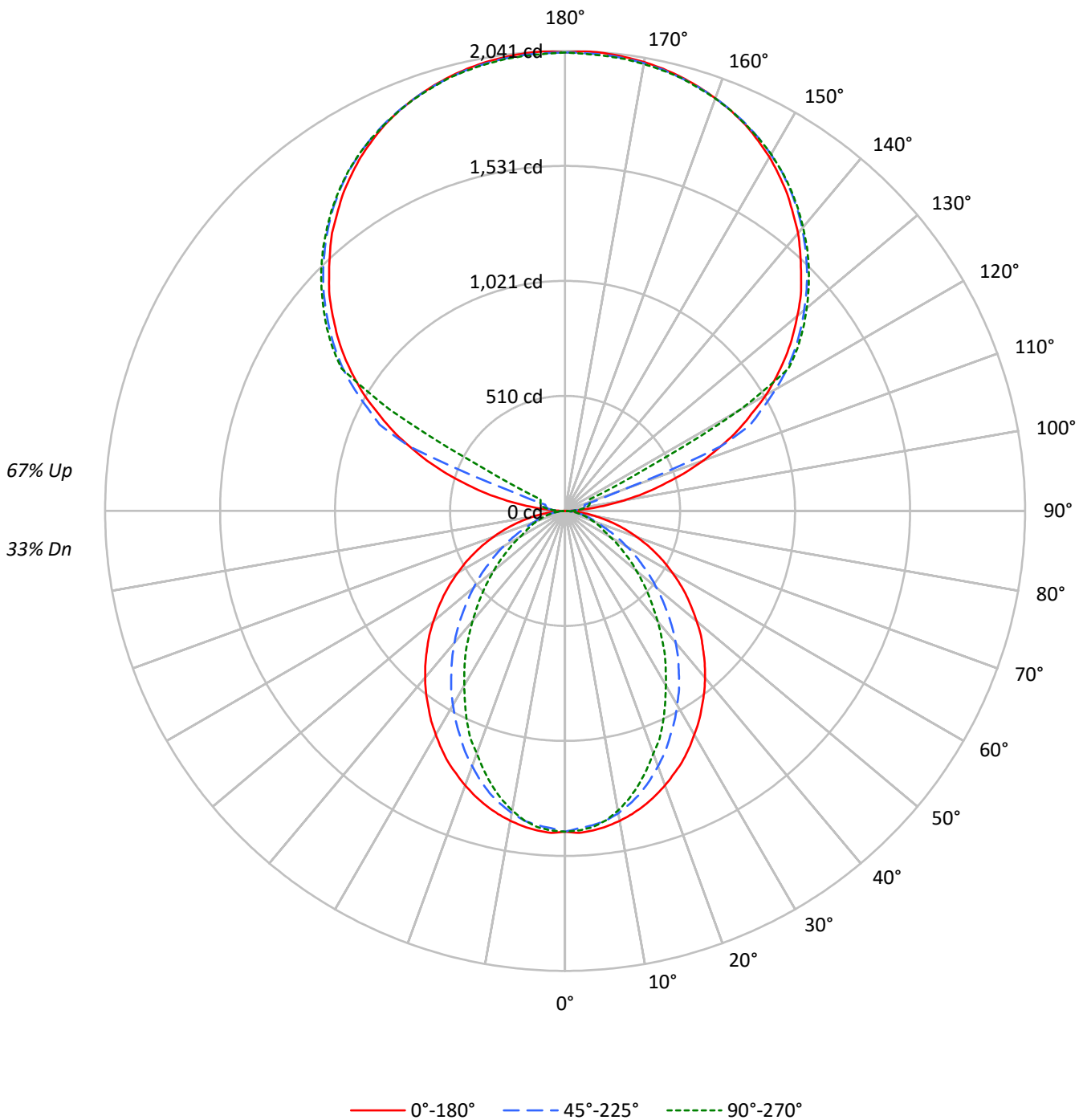
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 8894.1 lumens
Efficiency: N/A
Efficacy: 104.9 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): 84.8
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	93	93	93	93	74	74	74	56	56	56	40	40	40	33				33
1	94	90	87	83	85	81	78	76	65	63	61	50	49	48	36	35	35	28				28
2	86	79	73	68	77	72	67	62	57	54	51	44	42	40	32	31	30	24				24
3	79	70	63	57	71	63	57	53	51	47	43	39	37	34	29	27	26	21				21
4	72	62	54	49	65	56	50	45	45	41	37	35	32	30	26	24	22	18				18
5	66	55	47	42	59	50	43	38	41	36	32	32	28	26	24	21	20	16				16
6	61	49	42	36	55	45	38	33	37	32	28	29	25	23	21	19	17	14				14
7	56	45	37	32	51	41	34	29	33	28	25	26	23	20	20	17	16	13				13
8	52	41	33	28	47	37	31	26	30	25	22	24	21	18	18	16	14	12				12
9	49	37	30	25	44	34	27	23	28	23	20	22	19	16	17	14	13	10				10
10	45	34	27	22	41	31	25	21	26	21	18	20	17	15	16	13	12	10				10

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1631	1631	1631
5°	1633	1604	1615
10°	1615	1571	1562
15°	1592	1518	1480
20°	1562	1446	1380
25°	1530	1365	1283
30°	1489	1282	1161
35°	1448	1192	1053
40°	1407	1100	930
45°	1358	998	819
50°	1308	894	709
55°	1256	785	605
60°	1196	670	498
65°	1126	553	447
70°	1042	444	404
75°	935	389	366
80°	781	323	316
85°	530	211	235

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°
 Vertical Angle: 90°
 Luminance: 1394 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	133.4	1.5
10°-20°	366.2	4.1
20°-30°	514.2	5.8
30°-40°	560.5	6.3
40°-50°	515.1	5.8
50°-60°	404.5	4.5
60°-70°	263.3	3.0
70°-80°	135.6	1.5
80°-90°	38.2	0.4
90°-100°	67.1	0.8
100°-110°	250.0	2.8
110°-120°	663.1	7.5
120°-130°	1099.8	12.4
130°-140°	1168.3	13.1
140°-150°	1085.8	12.2
150°-160°	872.9	9.8
160°-170°	562.5	6.3
170°-180°	193.6	2.2
0°-30°	1013.8	11.4
0°-40°	1574.2	17.7
0°-60°	2493.9	28.0
0°-90°	2931.0	33.0
90°-120°	980.2	11.0
90°-150°	4334.1	48.7
90°-180°	5963.0	67.0
0°-180°	8894.1	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1423	1423	1423	1423	1423	
5°	1423	1417	1400	1412	1408	135
15°	1354	1340	1296	1271	1259	382
25°	1229	1188	1103	1050	1030	565
35°	1059	993	880	799	770	663
45°	866	779	644	553	522	668
55°	658	558	419	341	317	588
65°	444	340	224	180	176	441
75°	237	147	103	94	93	251
85°	55	28	24	24	24	64
90°	1	18	29	37	40	8
95°	96	47	57	65	63	113
105°	448	492	90	106	112	478
115°	846	871	908	227	121	833
125°	1196	1216	1244	1254	1258	1067
135°	1481	1504	1517	1532	1529	1144
145°	1718	1716	1741	1751	1744	1074
155°	1891	1878	1896	1904	1893	872
165°	1993	1984	1988	1999	1988	563
175°	2038	2028	2031	2041	2027	194
180°	2034	2034	2034	2034	2034	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1423.4	1423.4	1423.4	1423.4	1423.4
2.5°	1429.9	1423.4	1409.2	1422.2	1419.5
5°	1423.4	1416.9	1400.2	1411.8	1408.0
7.5°	1411.8	1404.1	1386.1	1391.1	1384.7
10°	1396.4	1387.3	1361.6	1357.6	1350.0
12.5°	1377.1	1365.5	1330.6	1322.9	1308.7
15°	1353.8	1339.6	1295.9	1271.4	1258.6
17.5°	1326.8	1306.1	1252.0	1223.7	1203.1
20°	1295.9	1270.1	1205.7	1173.5	1145.1
22.5°	1262.4	1232.8	1158.0	1114.2	1095.0
25°	1228.9	1187.7	1102.6	1049.9	1030.4
27.5°	1189.0	1145.1	1051.1	990.6	960.9
30°	1146.5	1097.4	994.4	928.8	894.0
32.5°	1105.3	1045.9	940.4	863.1	830.8
35°	1058.9	993.2	879.9	798.7	770.2
37.5°	1013.8	942.9	823.1	734.2	702.1
40°	966.1	888.9	763.9	672.4	638.9
42.5°	917.1	834.7	704.6	609.2	577.1
45°	865.6	779.3	644.1	552.6	521.7
47.5°	816.7	725.3	586.2	494.6	466.3
50°	762.6	671.1	529.4	440.5	413.5
52.5°	709.7	613.1	475.4	390.3	365.8
55°	658.2	557.8	418.6	341.4	316.9
57.5°	605.5	502.4	368.4	296.3	275.7
60°	551.3	448.2	315.6	249.9	229.4
62.5°	498.6	395.5	270.4	208.7	198.5
65°	444.4	340.0	224.1	180.4	176.4
67.5°	393.0	288.5	180.4	158.4	154.5
70°	338.8	238.3	149.4	136.6	131.3
72.5°	287.3	191.9	124.9	114.7	112.1
75°	236.9	146.8	103.1	94.0	92.8
77.5°	186.8	104.3	81.2	76.0	73.4
80°	140.3	74.7	61.7	56.7	56.7
82.5°	97.9	50.3	42.5	39.9	39.9
85°	55.4	28.3	24.5	24.5	24.5
87.5°	20.7	10.2	10.2	9.0	9.0
90°	1.4	17.7	29.4	36.9	39.7
92.5°	36.9	30.9	35.3	38.3	39.7
95°	95.6	47.0	57.3	64.8	63.3
97.5°	172.1	51.6	75.0	79.6	80.9
100°	260.6	58.9	83.9	95.6	98.6
102.5°	357.6	354.8	86.9	103.0	107.5
105°	447.5	491.6	89.8	105.9	111.8
107.5°	551.9	588.7	92.8	108.9	114.9
110°	652.1	682.9	257.6	110.5	116.2



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	746.3	772.7	747.7	113.2	117.8
115°	846.3	871.2	908.1	226.7	120.8
117.5°	933.1	962.5	987.7	777.1	391.5
120°	1030.3	1052.3	1078.9	1096.6	897.8
122.5°	1112.6	1136.2	1165.8	1174.5	1176.0
125°	1196.5	1215.7	1243.7	1254.0	1258.3
127.5°	1273.1	1293.6	1315.9	1330.6	1332.0
130°	1345.2	1368.8	1384.9	1401.2	1399.8
132.5°	1418.8	1438.0	1454.1	1467.4	1466.0
135°	1480.7	1504.2	1517.4	1532.2	1529.3
137.5°	1545.3	1563.1	1577.9	1592.6	1588.2
140°	1608.6	1620.5	1636.6	1649.8	1642.5
142.5°	1661.7	1672.1	1691.1	1702.8	1695.5
145°	1717.7	1716.1	1741.1	1751.4	1744.1
147.5°	1766.1	1761.8	1786.7	1794.1	1788.3
150°	1813.3	1803.0	1826.6	1835.3	1828.0
152.5°	1853.0	1841.2	1863.3	1872.2	1861.9
155°	1891.3	1878.1	1895.7	1904.5	1892.8
157.5°	1922.2	1910.5	1923.7	1934.1	1922.2
160°	1948.8	1939.8	1948.8	1957.5	1947.1
162.5°	1972.2	1963.4	1970.7	1981.1	1967.8
165°	1992.8	1984.1	1988.4	1998.7	1988.4
167.5°	2009.1	2000.1	2004.7	2015.0	2001.7
170°	2022.3	2013.4	2016.4	2026.7	2013.4
172.5°	2031.1	2022.3	2025.3	2035.6	2022.3
175°	2038.4	2028.1	2031.1	2041.3	2026.7
177.5°	2041.3	2031.1	2032.6	2043.0	2029.6
180°	2034.0	2034.0	2034.0	2034.0	2034.0



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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	6.97	7.68	8.07	8.77	10.27	2.93	3.64	4.03	4.73	6.23
	3H	8.64	9.27	9.74	10.37	11.88	4.10	4.74	5.21	5.84	7.35
	4H	9.23	9.83	10.35	10.93	12.46	4.54	5.14	5.66	6.24	7.77
	6H	9.65	10.20	10.77	11.30	12.83	4.85	5.41	5.98	6.51	8.04
	8H	9.77	10.29	10.89	11.41	12.94	4.94	5.46	6.06	6.58	8.11
	12H	9.82	10.32	10.95	11.43	12.98	4.97	5.47	6.11	6.58	8.13
4H	2H	6.97	7.57	8.09	8.67	10.19	3.51	4.11	4.63	5.21	6.73
	3H	8.79	9.28	9.91	10.41	11.94	4.84	5.34	5.97	6.47	8.00
	4H	9.47	9.93	10.60	11.04	12.60	5.38	5.84	6.51	6.95	8.51
	6H	9.97	10.36	11.11	11.50	13.05	5.78	6.18	6.92	7.32	8.86
	8H	10.14	10.51	11.28	11.64	13.20	5.91	6.27	7.04	7.40	8.97
	12H	10.23	10.56	11.38	11.70	13.27	5.96	6.29	7.12	7.44	9.00
8H	4H	9.43	9.79	10.56	10.92	12.48	5.65	6.01	6.78	7.14	8.71
	6H	9.98	10.28	11.14	11.46	13.01	6.15	6.45	7.31	7.63	9.18
	8H	10.19	10.46	11.36	11.61	13.19	6.34	6.60	7.50	7.75	9.33
	12H	10.32	10.56	11.49	11.71	13.32	6.45	6.68	7.61	7.83	9.44
12H	4H	9.37	9.70	10.53	10.85	12.41	5.65	5.98	6.80	7.12	8.69
	6H	9.96	10.22	11.12	11.37	12.95	6.20	6.46	7.36	7.62	9.19
	8H	10.17	10.40	11.33	11.55	13.16	6.40	6.63	7.57	7.78	9.39