

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: P920065

Luminaire Tested: DFN2DIP-SQ3F0-060D070US935-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P920065
REPORT IS A COMBINATION OF REPORTS P901439 AND P898289
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ3F0-060D070US935-FLLONL
Description: 3 foot, Square Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

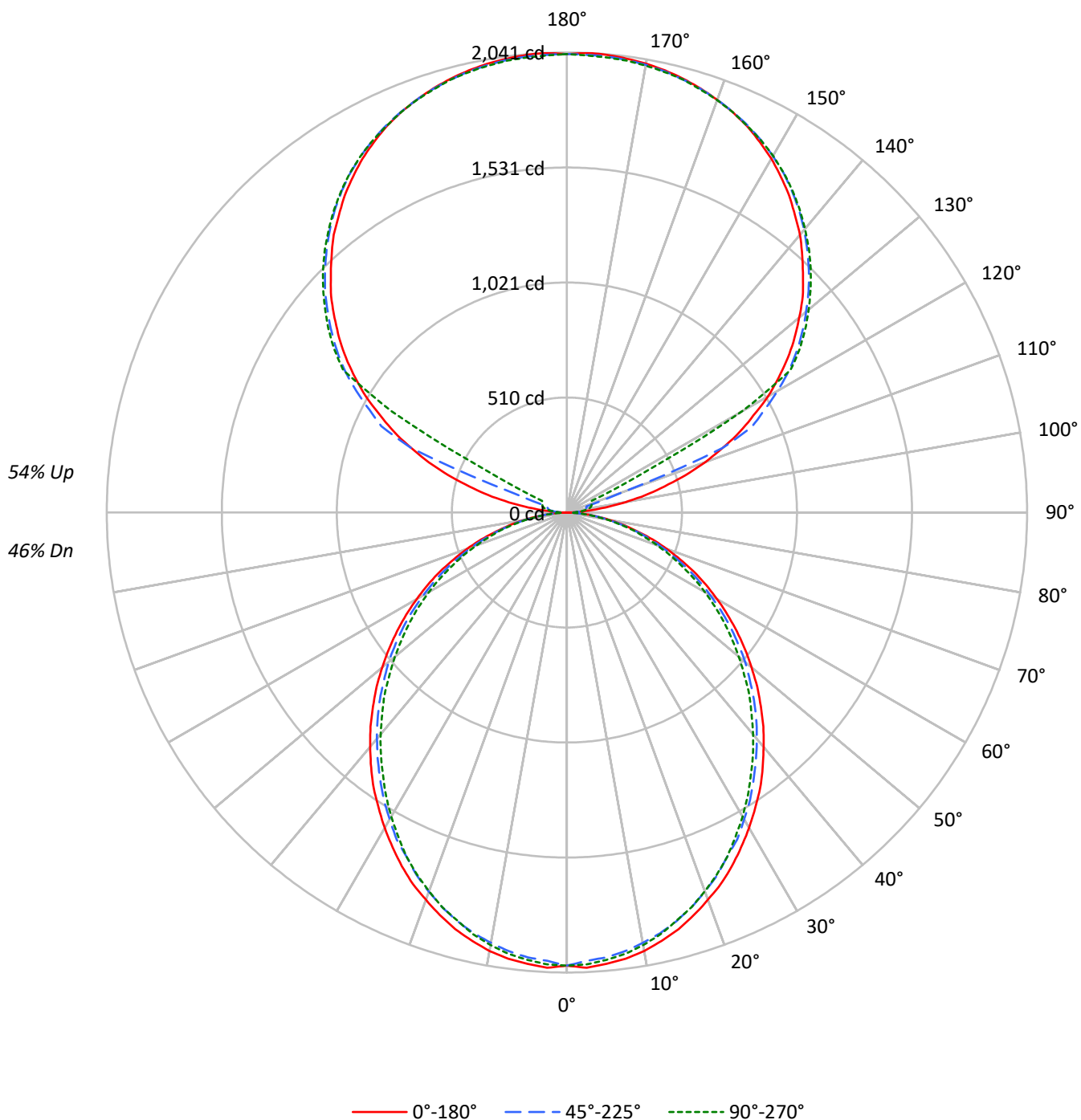
Lumens per Lamp: N/A
Luminaire Lumens: 11081.1 lumens
Efficiency: N/A
Efficacy: 104.6 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 3.06' x L: 3.06' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 105.9
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9971
Total Harmonic Distortion (THDi): 0.049
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	50	30	10
RCR																				
0	106	106	106	106	98	98	98	98	81	81	81	66	66	66	53	53	53			46
1	97	93	89	85	89	85	82	79	71	69	67	58	57	55	46	45	44			39
2	88	81	75	70	81	74	69	65	62	59	55	51	48	46	41	39	37			33
3	81	71	64	58	74	66	59	54	55	50	46	45	42	39	36	34	32			28
4	74	63	55	49	67	58	51	46	49	44	40	40	37	33	32	30	27			24
5	68	56	48	42	62	52	45	39	44	38	34	36	32	29	29	26	24			21
6	62	50	42	36	57	46	39	34	39	34	30	33	29	25	26	23	21			18
7	58	45	37	32	53	42	35	30	36	30	26	30	26	22	24	21	19			16
8	53	41	33	28	49	38	31	26	33	27	23	27	23	20	22	19	17			14
9	50	38	30	25	46	35	28	24	30	24	21	25	21	18	21	17	15			13
10	46	34	27	22	43	32	26	21	27	22	19	23	19	16	19	16	14			12

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2303	2303	2303
5°	2305	2270	2286
10°	2285	2237	2254
15°	2250	2199	2205
20°	2203	2146	2155
25°	2157	2084	2097
30°	2099	2025	2023
35°	2043	1956	1945
40°	1975	1887	1871
45°	1908	1817	1796
50°	1834	1744	1708
55°	1756	1659	1627
60°	1668	1559	1535
65°	1572	1455	1425
70°	1450	1327	1308
75°	1281	1175	1198
80°	1077	980	990
85°	757	649	648

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
Vertical Angle: 45°
Luminance: 1908 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	189.2	1.7
10°-20°	532.3	4.8
20°-30°	782.3	7.1
30°-40°	908.6	8.2
40°-50°	907.5	8.2
50°-60°	791.3	7.1
60°-70°	584.9	5.3
70°-80°	330.9	3.0
80°-90°	90.9	0.8
90°-100°	67.1	0.6
100°-110°	250.0	2.3
110°-120°	663.1	6.0
120°-130°	1099.8	9.9
130°-140°	1168.3	10.5
140°-150°	1085.8	9.8
150°-160°	872.9	7.9
160°-170°	562.5	5.1
170°-180°	193.6	1.7
0°-30°	1503.8	13.6
0°-40°	2412.4	21.8
0°-60°	4111.1	37.1
0°-90°	5117.9	46.2
90°-120°	980.2	8.8
90°-150°	4334.1	39.1
90°-180°	5963.0	53.8
0°-180°	11081.1	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2010	2010	2010	2010	2010	
5°	2010	2002	1981	1997	1993	191
15°	1914	1902	1877	1885	1875	539
25°	1732	1716	1684	1687	1684	797
35°	1494	1475	1444	1432	1422	933
45°	1216	1202	1173	1152	1144	938
55°	920	908	885	862	852	823
65°	620	609	590	572	562	614
75°	325	321	311	300	304	347
85°	79	77	75	70	68	88
90°	1	18	29	37	40	10
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°	2010.1	2010.1	2010.1	2010.1	2010.1
2.5°	2021.8	2012.2	1990.8	2010.1	2006.4
5°	2010.1	2002.5	1981.2	1996.6	1992.9
7.5°	1996.6	1985.1	1963.8	1979.3	1975.5
10°	1975.5	1962.0	1938.7	1954.1	1948.4
12.5°	1946.4	1934.8	1911.7	1921.3	1917.4
15°	1913.5	1902.0	1876.8	1884.6	1875.0
17.5°	1872.9	1861.5	1836.3	1845.8	1836.3
20°	1828.4	1817.0	1789.8	1795.6	1788.0
22.5°	1784.2	1766.7	1741.5	1741.5	1737.6
25°	1731.8	1716.5	1683.6	1687.3	1683.6
27.5°	1673.8	1660.3	1635.2	1629.5	1619.9
30°	1616.0	1600.3	1571.5	1565.7	1557.9
32.5°	1554.0	1542.6	1511.6	1499.9	1492.1
35°	1494.2	1474.9	1443.9	1432.2	1422.5
37.5°	1426.5	1409.0	1378.1	1364.5	1354.9
40°	1356.9	1341.3	1310.4	1293.2	1285.4
42.5°	1289.3	1273.7	1242.9	1223.5	1211.9
45°	1215.9	1202.3	1173.2	1152.1	1144.3
47.5°	1144.3	1130.7	1099.8	1078.5	1066.9
50°	1068.8	1059.2	1032.2	1005.0	995.4
52.5°	995.4	981.9	956.8	935.6	922.0
55°	920.1	908.4	885.3	862.1	852.5
57.5°	844.7	835.1	809.9	786.7	778.9
60°	769.2	761.6	734.6	713.3	707.5
62.5°	695.8	682.3	663.0	643.7	635.9
65°	620.5	608.9	589.6	572.1	562.5
67.5°	543.2	533.4	516.2	502.7	494.8
70°	471.7	463.9	446.4	432.9	425.3
72.5°	398.2	390.5	380.8	367.3	361.5
75°	324.6	321.0	311.1	299.6	303.5
77.5°	259.0	251.2	247.3	241.6	235.8
80°	193.4	191.3	187.4	181.7	177.8
82.5°	131.5	131.5	129.6	121.8	121.8
85°	79.1	77.3	75.4	69.5	67.7
87.5°	34.9	31.0	27.0	21.4	19.3
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	9.77	10.60	10.76	11.60	12.93	9.33	10.16	10.32	11.16	12.48
	3H	11.43	12.17	12.43	13.18	14.53	10.94	11.68	11.94	12.69	14.04
	4H	12.01	12.71	13.02	13.73	15.08	11.52	12.22	12.53	13.23	14.59
	6H	12.40	13.05	13.43	14.07	15.44	11.90	12.55	12.93	13.57	14.94
	8H	12.51	13.12	13.54	14.16	15.52	12.00	12.62	13.03	13.66	15.02
	12H	12.55	13.14	13.59	14.17	15.55	12.04	12.63	13.08	13.66	15.04
4H	2H	10.23	10.93	11.25	11.94	13.30	9.87	10.57	10.89	11.59	12.94
	3H	12.08	12.67	13.11	13.71	15.08	11.68	12.26	12.70	13.30	14.67
	4H	12.79	13.33	13.83	14.36	15.75	12.37	12.91	13.40	13.94	15.33
	6H	13.30	13.76	14.35	14.82	16.21	12.87	13.33	13.91	14.39	15.77
	8H	13.45	13.88	14.49	14.93	16.33	13.01	13.44	14.06	14.49	15.89
	12H	13.52	13.91	14.58	14.97	16.38	13.07	13.46	14.13	14.52	15.93
8H	4H	12.98	13.41	14.03	14.46	15.87	12.61	13.04	13.65	14.09	15.49
	6H	13.61	13.96	14.68	15.06	16.45	13.22	13.58	14.29	14.67	16.07
	8H	13.82	14.14	14.90	15.21	16.63	13.43	13.74	14.51	14.82	16.24
	12H	13.95	14.23	15.03	15.30	16.76	13.54	13.82	14.62	14.89	16.34
12H	4H	12.97	13.36	14.03	14.42	15.83	12.60	12.99	13.66	14.05	15.46
	6H	13.63	13.95	14.71	15.02	16.44	13.26	13.58	14.34	14.65	16.07
	8H	13.87	14.15	14.95	15.22	16.68	13.49	13.77	14.57	14.84	16.30