

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: P919417

Luminaire Tested: DFN2DIP-PN3F0-060D070US935-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P919417
REPORT IS A COMBINATION OF REPORTS P901093 AND P897955
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN3F0-060D070US935-FLLONL
Description: 3 foot, Pentagon Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

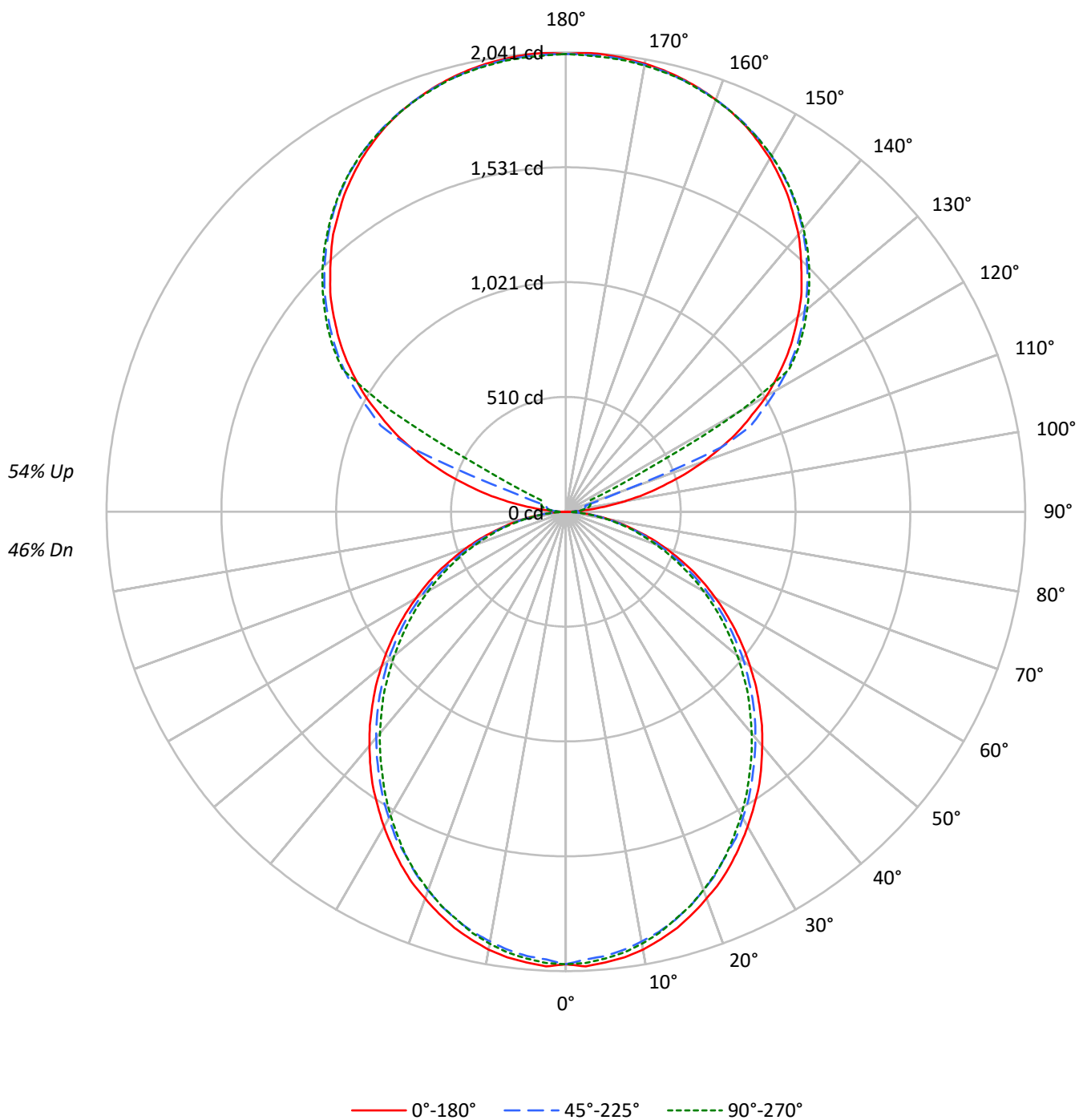
Lumens per Lamp: N/A
Luminaire Lumens: 11081.1 lumens
Efficiency: N/A
Efficacy: 99.6 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 2.96' x L: 3.11' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 111.3
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9821
Total Harmonic Distortion (THDi): 0.08
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
RCR																	
0	106	106	106	106	98	98	98	98	81	81	81		66	66	66		53
1	97	93	89	85	89	85	82	79	71	69	67		58	57	55		46
2	88	81	75	70	81	74	69	65	62	59	55		51	48	46		41
3	81	71	64	58	74	66	59	54	55	50	46		45	42	39		36
4	74	63	55	49	67	58	51	46	49	44	40		40	37	33		32
5	68	56	48	42	62	52	45	39	44	38	34		36	32	29		29
6	62	50	42	36	57	46	39	34	39	34	30		33	29	25		26
7	58	45	37	32	53	42	35	30	36	30	26		30	26	22		24
8	53	41	33	28	49	38	31	26	33	27	23		27	23	20		22
9	50	38	30	25	46	35	28	24	30	24	21		25	21	18		21
10	46	34	27	22	43	32	26	21	27	22	19		23	19	16		19

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2350	2350	2350
5°	2352	2315	2332
10°	2332	2283	2299
15°	2296	2243	2249
20°	2248	2189	2197
25°	2201	2125	2138
30°	2142	2066	2063
35°	2085	1995	1983
40°	2016	1924	1907
45°	1948	1853	1830
50°	1872	1778	1740
55°	1793	1692	1657
60°	1704	1589	1563
65°	1606	1483	1451
70°	1481	1353	1330
75°	1309	1197	1217
80°	1101	998	1004
85°	776	660	655

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
Vertical Angle: 45°
Luminance: 1948 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	9.84	10.67	10.83	11.67	12.99	9.40	10.23	10.39	11.23	12.55
	3H	11.49	12.23	12.49	13.24	14.59	11.01	11.75	12.01	12.76	14.11
	4H	12.07	12.78	13.08	13.79	15.14	11.59	12.29	12.60	13.30	14.66
	6H	12.47	13.11	13.49	14.13	15.50	11.98	12.62	13.00	13.64	15.01
	8H	12.57	13.18	13.60	14.22	15.58	12.08	12.69	13.11	13.73	15.09
	12H	12.61	13.20	13.65	14.23	15.61	12.11	12.70	13.15	13.73	15.12
4H	2H	10.29	10.99	11.31	12.01	13.36	9.94	10.64	10.96	11.66	13.01
	3H	12.15	12.73	13.18	13.78	15.14	11.75	12.33	12.77	13.37	14.74
	4H	12.86	13.39	13.89	14.43	15.82	12.44	12.98	13.47	14.01	15.40
	6H	13.36	13.83	14.41	14.88	16.27	12.94	13.40	13.99	14.46	15.85
	8H	13.51	13.94	14.56	14.99	16.39	13.08	13.51	14.13	14.56	15.96
	12H	13.58	13.97	14.64	15.03	16.44	13.14	13.53	14.20	14.59	16.00
8H	4H	13.05	13.48	14.09	14.53	15.93	12.68	13.11	13.72	14.16	15.56
	6H	13.67	14.02	14.74	15.12	16.51	13.29	13.65	14.36	14.74	16.14
	8H	13.88	14.20	14.96	15.27	16.69	13.50	13.81	14.58	14.89	16.31
	12H	14.01	14.29	15.09	15.36	16.82	13.61	13.89	14.69	14.96	16.42
12H	4H	13.03	13.42	14.09	14.48	15.89	12.67	13.06	13.73	14.12	15.53
	6H	13.70	14.01	14.77	15.09	16.50	13.33	13.65	14.41	14.72	16.14
	8H	13.93	14.21	15.01	15.28	16.74	13.56	13.84	14.64	14.91	16.37