

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: P924077

Luminaire Tested: DFN2DIP-4P3F0-050D060US950-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P924077
REPORT IS A COMBINATION OF REPORTS P900596 AND P897473
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-4P3F0-050D060US950-RLLONL
Description: 3 foot, 90deg - 4way Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

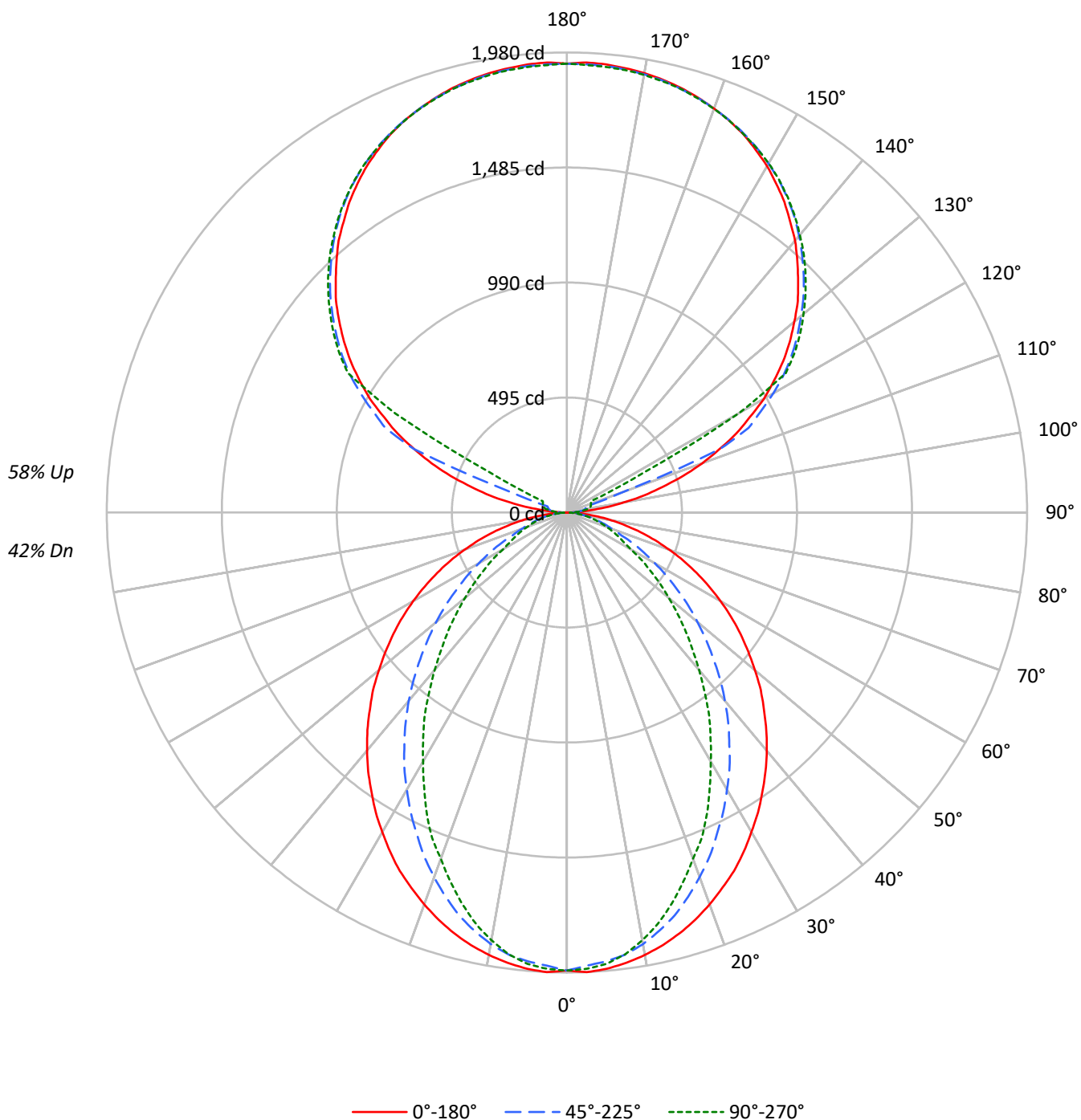
Lumens per Lamp: N/A
Luminaire Lumens: 9721.3 lumens
Efficiency: N/A
Efficacy: 101.3 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.07' x L: 3.07' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 96
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
RCR																	
0	105	105	105	105	96	96	96	96	79	79	79	63	63	63	49	49	49
1	96	92	89	85	88	84	81	78	70	67	65	56	55	53	43	43	42
2	88	81	75	70	80	74	69	65	61	58	55	50	47	45	39	37	36
3	81	72	65	59	73	66	60	55	55	50	46	44	41	39	35	33	31
4	74	64	56	50	67	58	52	47	49	44	40	40	36	33	31	29	27
5	68	57	49	43	62	52	45	40	44	39	35	36	32	29	28	26	24
6	63	51	43	38	57	47	40	35	39	34	30	32	29	26	26	23	21
7	58	46	38	33	53	43	36	31	36	31	27	30	26	23	24	21	19
8	54	42	34	29	49	39	32	27	33	28	24	27	23	20	22	19	17
9	50	38	31	26	46	35	29	25	30	25	22	25	21	18	20	17	15
10	47	35	28	23	43	33	26	22	28	23	19	23	19	17	19	16	14

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2247	2247	2247
5°	2249	2210	2224
10°	2225	2165	2151
15°	2193	2092	2039
20°	2151	1992	1901
25°	2108	1880	1768
30°	2051	1765	1599
35°	1995	1642	1451
40°	1938	1515	1281
45°	1871	1374	1128
50°	1803	1232	978
55°	1731	1081	833
60°	1648	922	685
65°	1551	762	616
70°	1435	612	556
75°	1289	536	505
80°	1077	446	435
85°	731	290	323

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 1871 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	184.8	1.9
10°-20°	507.2	5.2
20°-30°	712.1	7.3
30°-40°	776.3	8.0
40°-50°	713.5	7.3
50°-60°	560.3	5.8
60°-70°	364.7	3.8
70°-80°	187.7	1.9
80°-90°	51.3	0.5
90°-100°	63.7	0.7
100°-110°	237.5	2.4
110°-120°	629.8	6.5
120°-130°	1044.5	10.7
130°-140°	1109.5	11.4
140°-150°	1031.2	10.6
150°-160°	829.1	8.5
160°-170°	534.2	5.5
170°-180°	183.9	1.9
0°-30°	1404.1	14.4
0°-40°	2180.4	22.4
0°-60°	3454.1	35.5
0°-90°	4057.9	41.7
90°-120°	930.9	9.6
90°-150°	4116.2	42.3
90°-180°	5663.0	58.3
0°-180°	9721.3	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1971	1971	1971	1971	1971	
5°	1971	1963	1939	1955	1950	187
15°	1875	1855	1795	1761	1743	528
25°	1702	1645	1527	1454	1427	783
35°	1467	1376	1219	1106	1067	918
45°	1199	1079	892	765	722	926
55°	912	772	580	473	439	815
65°	616	471	310	250	244	610
75°	328	203	143	130	128	347
85°	77	39	34	34	34	88
90°	1	17	28	35	38	9
95°	91	45	54	62	60	108
105°	425	467	85	101	106	454
115°	804	828	862	215	115	791
125°	1136	1155	1181	1191	1195	1014
135°	1406	1429	1441	1455	1452	1086
145°	1631	1630	1654	1663	1656	1020
155°	1796	1784	1800	1809	1798	828
165°	1893	1884	1888	1898	1888	535
175°	1936	1926	1929	1939	1925	184
180°	1932	1932	1932	1932	1932	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1971.4	1971.4	1971.4	1971.4	1971.4
2.5°	1980.3	1971.4	1951.8	1969.7	1966.1
5°	1971.4	1962.6	1939.3	1955.3	1950.1
7.5°	1955.3	1944.7	1919.7	1926.8	1917.8
10°	1933.9	1921.5	1885.9	1880.4	1869.7
12.5°	1907.2	1891.2	1842.9	1832.3	1812.6
15°	1875.1	1855.4	1794.9	1761.0	1743.1
17.5°	1837.6	1809.1	1734.1	1694.9	1666.3
20°	1794.9	1759.1	1669.9	1625.4	1586.0
22.5°	1748.5	1707.4	1603.9	1543.3	1516.6
25°	1702.0	1644.9	1527.2	1454.1	1427.2
27.5°	1646.8	1586.0	1455.8	1371.9	1330.9
30°	1587.9	1520.0	1377.3	1286.4	1238.1
32.5°	1530.8	1448.6	1302.5	1195.4	1150.7
35°	1466.6	1375.6	1218.6	1106.2	1066.9
37.5°	1404.1	1305.9	1140.1	1016.9	972.4
40°	1338.1	1231.1	1057.9	931.3	884.9
42.5°	1270.3	1156.2	975.9	843.8	799.4
45°	1199.0	1079.4	892.1	765.3	722.5
47.5°	1131.2	1004.6	811.9	685.1	645.9
50°	1056.3	929.6	733.3	610.1	572.8
52.5°	983.0	849.2	658.4	540.6	506.8
55°	911.6	772.5	579.7	472.8	438.9
57.5°	838.6	695.8	510.3	410.4	381.8
60°	763.6	620.9	437.0	346.2	317.6
62.5°	690.5	547.8	374.6	289.1	274.8
65°	615.5	471.0	310.4	249.9	244.4
67.5°	544.2	399.6	249.9	219.4	214.1
70°	469.3	330.1	206.9	189.1	181.9
72.5°	397.9	265.8	173.1	158.8	155.2
75°	328.3	203.3	142.7	130.2	128.5
77.5°	258.7	144.4	112.5	105.2	101.6
80°	194.4	103.5	85.6	78.5	78.5
82.5°	135.6	69.6	58.9	55.2	55.2
85°	76.7	39.2	33.9	33.9	33.9
87.5°	28.6	14.2	14.2	12.5	12.5
90°	1.3	16.8	27.9	35.0	37.7
92.5°	35.0	29.4	33.5	36.3	37.7
95°	90.8	44.6	54.5	61.6	60.1
97.5°	163.5	48.9	71.2	75.6	76.9
100°	247.5	55.9	79.7	90.8	93.6
102.5°	339.6	337.0	82.5	97.8	102.1
105°	424.9	466.9	85.3	100.6	106.3
107.5°	524.2	559.0	88.1	103.4	109.0
110°	619.3	648.5	244.7	104.9	110.4



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	708.7	733.8	710.1	107.5	111.9
115°	803.7	827.5	862.5	215.3	114.7
117.5°	886.2	914.1	938.0	738.0	371.8
120°	978.5	999.4	1024.7	1041.4	852.7
122.5°	1056.7	1079.1	1107.1	1115.4	1116.9
125°	1136.4	1154.6	1181.1	1191.0	1195.1
127.5°	1209.1	1228.7	1249.7	1263.7	1265.0
130°	1277.6	1300.0	1315.3	1330.7	1329.4
132.5°	1347.5	1365.7	1381.0	1393.6	1392.3
135°	1406.3	1428.7	1441.1	1455.2	1452.4
137.5°	1467.6	1484.4	1498.5	1512.5	1508.4
140°	1527.7	1539.1	1554.4	1566.9	1560.0
142.5°	1578.2	1588.0	1606.2	1617.2	1610.3
145°	1631.3	1629.8	1653.6	1663.4	1656.4
147.5°	1677.3	1673.1	1696.9	1703.8	1698.4
150°	1722.2	1712.3	1734.8	1743.1	1736.1
152.5°	1759.8	1748.7	1769.6	1778.1	1768.2
155°	1796.2	1783.7	1800.5	1808.8	1797.6
157.5°	1825.6	1814.4	1827.0	1836.8	1825.6
160°	1850.8	1842.3	1850.8	1859.1	1849.3
162.5°	1873.0	1864.7	1871.7	1881.5	1868.9
165°	1892.6	1884.3	1888.4	1898.3	1888.4
167.5°	1908.0	1899.6	1903.9	1913.7	1901.0
170°	1920.7	1912.2	1915.1	1924.8	1912.2
172.5°	1929.0	1920.7	1923.5	1933.3	1920.7
175°	1936.0	1926.1	1929.0	1938.7	1924.8
177.5°	1938.7	1929.0	1930.4	1940.2	1927.7
180°	1931.8	1931.8	1931.8	1931.8	1931.8

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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	9.10	9.87	10.13	10.90	12.29	5.06	5.83	6.10	6.87	8.25
	3H	10.77	11.46	11.81	12.50	13.91	6.24	6.93	7.28	7.97	9.38
	4H	11.37	12.02	12.43	13.07	14.48	6.68	7.33	7.74	8.38	9.79
	6H	11.79	12.39	12.85	13.44	14.86	7.00	7.59	8.06	8.64	10.07
	8H	11.91	12.48	12.98	13.54	14.97	7.08	7.65	8.15	8.71	10.14
	12H	11.97	12.51	13.04	13.57	15.01	7.12	7.66	8.19	8.72	10.16
4H	2H	9.11	9.76	10.17	10.81	12.22	5.65	6.30	6.71	7.34	8.76
	3H	10.93	11.47	12.00	12.54	13.97	6.99	7.53	8.05	8.60	10.03
	4H	11.62	12.11	12.69	13.17	14.62	7.53	8.02	8.60	9.08	10.53
	6H	12.12	12.55	13.21	13.63	15.08	7.93	8.36	9.02	9.45	10.89
	8H	12.29	12.69	13.38	13.77	15.23	8.06	8.45	9.14	9.53	10.99
	12H	12.38	12.74	13.48	13.84	15.30	8.12	8.47	9.22	9.57	11.03
8H	4H	11.58	11.97	12.66	13.05	14.51	7.80	8.20	8.88	9.27	10.73
	6H	12.14	12.46	13.24	13.58	15.04	8.31	8.63	9.41	9.75	11.21
	8H	12.35	12.64	13.46	13.74	15.21	8.49	8.78	9.60	9.88	11.36
	12H	12.48	12.73	13.60	13.83	15.35	8.60	8.85	9.72	9.95	11.47
12H	4H	11.53	11.88	12.63	12.98	14.44	7.80	8.16	8.90	9.25	10.71
	6H	12.11	12.40	13.22	13.50	14.98	8.35	8.64	9.46	9.74	11.22
	8H	12.33	12.58	13.44	13.68	15.19	8.56	8.81	9.67	9.91	11.42

END OF REPORT

FIELD PERFORMANCE MAY DIFFER FROM LABORATORY PERFORMANCE

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