

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: P902252

Luminaire Tested: DFN2DIP-4P3F0-050D060US830-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P902252
REPORT IS A COMBINATION OF REPORTS P899076 AND P895917
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-4P3F0-050D060US830-RLLFLL
Description: 3 foot, 90deg - 4way Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

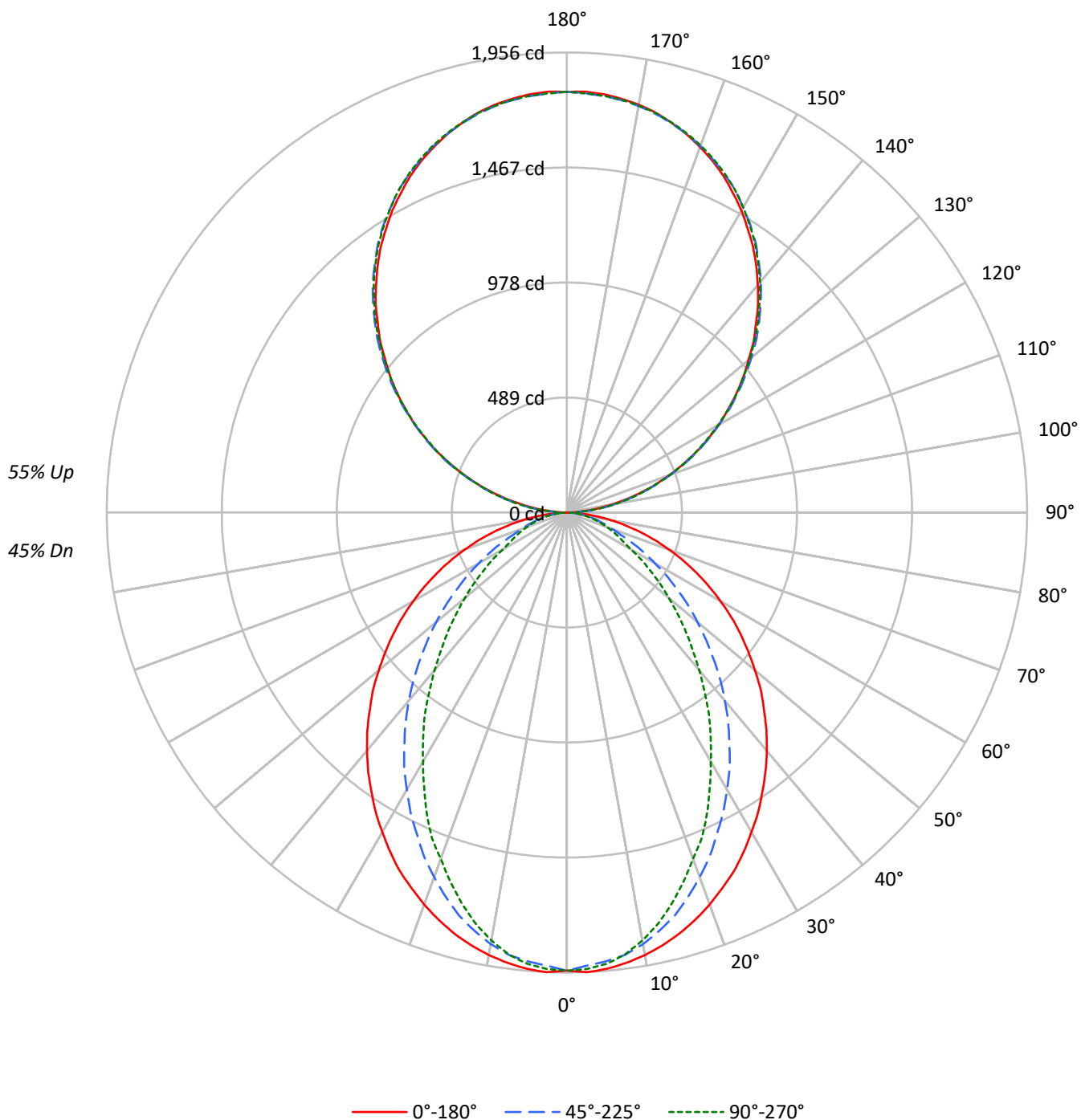
Lumens per Lamp: N/A
Luminaire Lumens: 9010.7 lumens
Efficiency: N/A
Efficacy: 93.9 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.07' x L: 3.07' x H: 0.1')
CIE Type: General Diffuse

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	106	106	106	106	97	97	97	97	80	80	80	65	65	65	51	51	51
1	97	93	89	86	89	85	82	79	71	69	67	58	56	55	46	45	44
2	89	82	76	71	81	75	70	66	63	59	56	51	49	47	41	39	38
3	81	72	65	59	74	66	60	55	56	51	47	46	43	40	37	34	33
4	74	64	56	51	68	59	52	47	50	45	41	41	37	35	33	30	28
5	68	57	49	44	63	53	46	41	45	39	35	37	33	30	30	27	25
6	63	51	44	38	58	48	41	36	40	35	31	34	30	27	27	24	22
7	58	47	39	33	54	43	36	31	37	31	28	31	27	24	25	22	20
8	54	42	35	30	50	39	33	28	34	28	25	28	24	21	23	20	18
9	51	39	31	27	46	36	29	25	31	26	22	26	22	19	21	18	16
10	47	36	29	24	43	33	27	23	28	23	20	24	20	17	20	17	15

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2220	2220	2220
5°	2222	2183	2198
10°	2198	2139	2125
15°	2167	2067	2014
20°	2125	1968	1878
25°	2083	1857	1746
30°	2026	1744	1580
35°	1971	1623	1434
40°	1914	1497	1266
45°	1849	1358	1114
50°	1781	1218	966
55°	1710	1068	823
60°	1628	912	677
65°	1533	753	609
70°	1418	605	550
75°	1273	530	499
80°	1064	440	430
85°	722	287	319

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 1849 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	182.5	2.0
10°-20°	501.1	5.6
20°-30°	703.6	7.8
30°-40°	766.9	8.5
40°-50°	704.9	7.8
50°-60°	553.6	6.1
60°-70°	360.3	4.0
70°-80°	185.5	2.1
80°-90°	52.4	0.6
90°-100°	110.7	1.2
100°-110°	351.6	3.9
110°-120°	601.8	6.7
120°-130°	791.4	8.8
130°-140°	888.4	9.9
140°-150°	871.1	9.7
150°-160°	730.8	8.1
160°-170°	484.6	5.4
170°-180°	169.4	1.9
0°-30°	1387.2	15.4
0°-40°	2154.2	23.9
0°-60°	3412.7	37.9
0°-90°	4010.9	44.5
90°-120°	1064.1	11.8
90°-150°	3615.0	40.1
90°-180°	5000.0	55.5
0°-180°	9010.7	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1948	1948	1948	1948	1948	
5°	1948	1939	1916	1932	1927	185
15°	1853	1833	1773	1740	1722	522
25°	1682	1625	1509	1437	1410	773
35°	1449	1359	1204	1093	1054	907
45°	1185	1066	881	756	714	915
55°	901	763	573	467	434	805
65°	608	465	307	247	242	603
75°	324	201	141	129	127	343
85°	76	39	34	34	34	87
90°	2	19	53	50	51	9
95°	79	94	96	96	94	88
105°	325	329	332	335	335	343
115°	604	613	610	608	604	597
125°	878	892	888	883	881	785
135°	1136	1153	1156	1154	1150	878
145°	1379	1390	1399	1400	1394	862
155°	1577	1582	1586	1594	1589	726
165°	1716	1714	1714	1725	1717	484
175°	1785	1781	1778	1789	1779	170
180°	1789	1789	1789	1789	1789	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1947.8	1947.8	1947.8	1947.8	1947.8
2.5°	1956.5	1947.8	1928.3	1946.1	1942.5
5°	1947.8	1939.0	1916.0	1931.8	1926.7
7.5°	1931.8	1921.4	1896.7	1903.7	1894.8
10°	1910.7	1898.4	1863.2	1857.8	1847.3
12.5°	1884.3	1868.5	1820.8	1810.3	1790.8
15°	1852.6	1833.2	1773.3	1739.8	1722.2
17.5°	1815.5	1787.3	1713.3	1674.5	1646.2
20°	1773.3	1738.0	1649.8	1605.9	1567.0
22.5°	1727.5	1686.9	1584.6	1524.8	1498.4
25°	1681.6	1625.1	1508.8	1436.6	1410.0
27.5°	1627.0	1567.0	1438.3	1355.5	1314.9
30°	1568.9	1501.8	1360.7	1270.9	1223.2
32.5°	1512.4	1431.3	1286.9	1181.0	1136.9
35°	1449.0	1359.1	1204.0	1092.9	1054.0
37.5°	1387.2	1290.2	1126.4	1004.7	960.7
40°	1322.0	1216.4	1045.2	920.1	874.3
42.5°	1255.1	1142.3	964.2	833.7	789.8
45°	1184.6	1066.4	881.4	756.1	713.8
47.5°	1117.6	992.5	802.1	676.8	638.1
50°	1043.6	918.4	724.5	602.8	565.9
52.5°	971.2	839.0	650.4	534.1	500.7
55°	900.7	763.2	572.8	467.1	433.7
57.5°	828.5	687.5	504.2	405.5	377.2
60°	754.4	613.4	431.8	342.0	313.8
62.5°	682.2	541.2	370.1	285.6	271.5
65°	608.1	465.3	306.7	246.9	241.5
67.5°	537.6	394.8	246.9	216.8	211.5
70°	463.6	326.1	204.4	186.8	179.7
72.5°	393.1	262.6	171.0	156.9	153.4
75°	324.3	200.9	141.0	128.7	127.0
77.5°	255.6	142.7	111.1	104.0	100.4
80°	192.1	102.3	84.5	77.6	77.6
82.5°	133.9	68.8	58.2	54.6	54.6
85°	75.8	38.7	33.5	33.5	33.5
87.5°	28.3	14.0	14.0	12.3	12.3
90°	1.6	19.4	52.9	49.6	51.2
92.5°	33.5	45.3	46.9	48.5	48.5
95°	78.7	93.8	96.5	96.5	93.8
97.5°	131.0	145.1	151.0	151.0	151.0
100°	191.4	203.8	208.1	208.1	206.5
102.5°	255.1	264.2	270.1	271.7	270.1
105°	324.6	328.9	332.2	334.9	334.9
107.5°	393.6	400.1	400.1	401.1	393.6
110°	460.5	469.1	469.1	469.1	464.8

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	532.7	541.9	540.3	535.9	532.7
115°	603.9	612.6	609.8	608.2	603.9
117.5°	674.6	686.5	678.8	674.6	670.2
120°	745.7	757.6	745.7	745.7	740.8
122.5°	810.4	825.5	817.9	813.7	810.4
125°	878.4	891.8	887.5	882.7	881.1
127.5°	944.7	961.4	955.5	949.0	944.7
130°	1006.7	1026.1	1023.4	1020.2	1014.3
132.5°	1076.3	1091.4	1092.4	1084.9	1080.5
135°	1136.1	1152.8	1156.0	1154.4	1150.1
137.5°	1203.0	1216.4	1219.2	1218.0	1211.6
140°	1261.8	1275.3	1282.8	1282.8	1276.9
142.5°	1322.1	1335.6	1339.9	1341.5	1335.6
145°	1379.3	1390.1	1398.7	1400.3	1394.4
147.5°	1430.5	1444.0	1450.5	1453.1	1447.2
150°	1483.4	1492.5	1498.5	1503.3	1498.5
152.5°	1530.2	1539.5	1547.0	1552.9	1547.0
155°	1577.2	1581.5	1586.3	1593.9	1589.0
157.5°	1617.6	1620.9	1623.5	1634.4	1626.8
160°	1653.8	1657.0	1658.6	1667.7	1661.3
162.5°	1687.2	1687.2	1688.8	1699.0	1691.5
165°	1715.7	1714.1	1714.1	1724.9	1717.4
167.5°	1741.6	1736.8	1736.8	1747.6	1740.0
170°	1761.0	1756.7	1755.1	1765.9	1756.7
172.5°	1774.5	1770.2	1768.6	1779.3	1770.2
175°	1785.3	1781.0	1777.7	1788.6	1779.3
177.5°	1791.2	1787.0	1783.7	1792.8	1783.7
180°	1788.6	1788.6	1788.6	1788.6	1788.6

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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	9.35	10.13	10.36	11.15	12.50	5.31	6.10	6.32	7.11	8.46
	3H	11.02	11.72	12.04	12.74	14.12	6.49	7.19	7.51	8.21	9.59
	4H	11.62	12.29	12.65	13.31	14.69	6.93	7.60	7.96	8.62	10.00
	6H	12.04	12.65	13.08	13.68	15.07	7.24	7.86	8.29	8.89	10.28
	8H	12.16	12.74	13.21	13.79	15.18	7.33	7.91	8.38	8.96	10.35
	12H	12.22	12.77	13.27	13.81	15.22	7.37	7.92	8.42	8.96	10.37
4H	2H	9.36	10.02	10.40	11.05	12.43	5.90	6.56	6.93	7.59	8.97
	3H	11.18	11.73	12.22	12.79	14.18	7.23	7.79	8.28	8.84	10.23
	4H	11.87	12.37	12.92	13.42	14.83	7.78	8.28	8.83	9.33	10.74
	6H	12.37	12.81	13.44	13.88	15.29	8.19	8.62	9.25	9.69	11.10
	8H	12.55	12.95	13.61	14.01	15.44	8.31	8.72	9.37	9.78	11.20
	12H	12.64	13.00	13.72	14.08	15.51	8.37	8.74	9.45	9.81	11.24
8H	4H	11.83	12.23	12.89	13.30	14.72	8.05	8.46	9.11	9.52	10.94
	6H	12.39	12.72	13.47	13.83	15.25	8.56	8.89	9.64	10.00	11.42
	8H	12.60	12.89	13.69	13.98	15.42	8.74	9.04	9.84	10.13	11.57
	12H	12.73	12.99	13.83	14.08	15.56	8.86	9.11	9.95	10.20	11.68
12H	4H	11.78	12.14	12.86	13.22	14.65	8.05	8.42	9.13	9.50	10.92
	6H	12.36	12.66	13.45	13.74	15.18	8.61	8.90	9.70	9.99	11.43
	8H	12.58	12.84	13.67	13.92	15.40	8.81	9.07	9.90	10.15	11.63