

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: P906253

Luminaire Tested: DFN2DIP-SQ2F0-050D050US835-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P906253
REPORT IS A COMBINATION OF REPORTS P901319 AND P898215
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ2F0-050D050US835-FLLONL
Description: 2 foot, Square Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

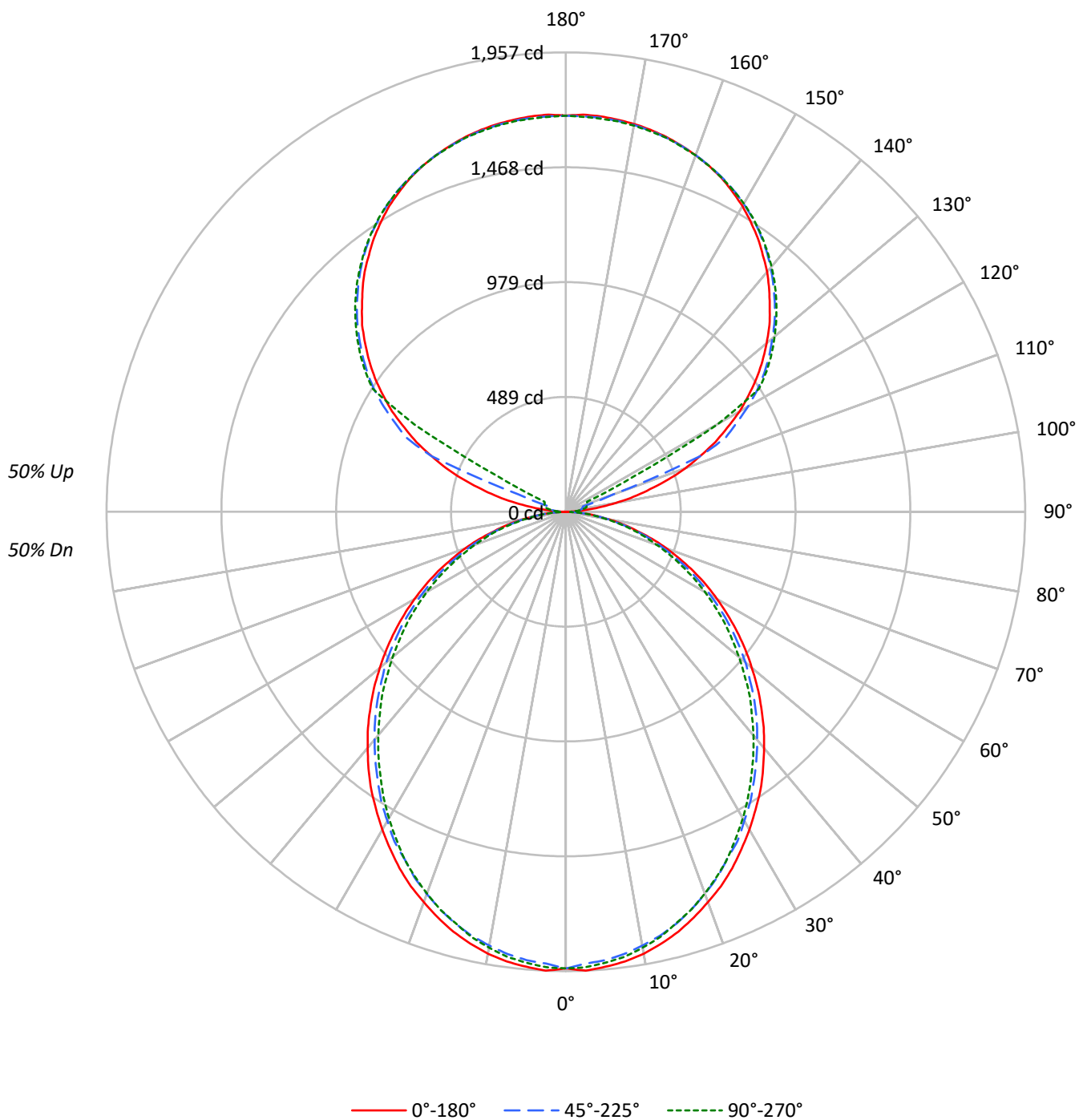
Lumens per Lamp: N/A
Luminaire Lumens: 9900.0 lumens
Efficiency: N/A
Efficacy: 121.2 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 2.21' x L: 2.21' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 81.7
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.996
Total Harmonic Distortion (THDi): 0.064
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	107	107	107	107	99	99	99	99	83	83	83	69	69	69	56	56	56
1	98	93	90	86	90	86	83	80	73	71	68	61	59	58	50	48	47
2	89	82	75	70	82	76	70	66	64	60	57	53	51	48	44	42	40
3	81	72	64	59	75	66	60	55	56	52	48	47	44	41	39	36	34
4	74	64	56	50	68	59	52	47	50	45	41	42	38	35	35	32	29
5	68	57	48	42	63	53	45	40	45	39	35	38	34	30	31	28	26
6	63	51	43	37	58	47	40	35	40	35	31	34	30	27	28	25	23
7	58	46	38	32	53	43	36	30	37	31	27	31	27	23	26	23	20
8	54	42	34	29	50	39	32	27	33	28	24	28	24	21	24	20	18
9	50	38	30	25	46	35	29	24	31	25	21	26	22	19	22	19	16
10	47	35	28	23	43	33	26	22	28	23	19	24	20	17	20	17	15

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	4278	4278	4278
5°	4277	4209	4241
10°	4235	4143	4177
15°	4166	4066	4082
20°	4074	3962	3984
25°	3983	3839	3872
30°	3870	3724	3731
35°	3763	3591	3583
40°	3632	3455	3441
45°	3501	3319	3295
50°	3358	3176	3127
55°	3207	3010	2971
60°	3036	2815	2793
65°	2849	2611	2582
70°	2611	2363	2354
75°	2284	2065	2136
80°	1887	1686	1735
85°	1274	1064	1090

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 3501 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	183.1	1.8
10°-20°	515.2	5.2
20°-30°	757.2	7.6
30°-40°	879.4	8.9
40°-50°	878.3	8.9
50°-60°	765.8	7.7
60°-70°	566.1	5.7
70°-80°	320.3	3.2
80°-90°	87.5	0.9
90°-100°	55.7	0.6
100°-110°	207.4	2.1
110°-120°	550.1	5.6
120°-130°	912.4	9.2
130°-140°	969.2	9.8
140°-150°	900.8	9.1
150°-160°	724.2	7.3
160°-170°	466.6	4.7
170°-180°	160.6	1.6
0°-30°	1455.5	14.7
0°-40°	2334.9	23.6
0°-60°	3979.0	40.2
0°-90°	4953.0	50.0
90°-120°	813.2	8.2
90°-150°	3595.6	36.3
90°-180°	4947.0	50.0
0°-180°	9900.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1946	1946	1946	1946	1946	
5°	1946	1938	1918	1932	1929	185
15°	1852	1841	1816	1824	1815	522
25°	1676	1661	1630	1633	1630	771
35°	1446	1428	1398	1386	1377	903
45°	1177	1164	1136	1115	1108	908
55°	891	879	857	834	825	796
65°	601	589	571	554	544	594
75°	314	311	301	290	294	335
85°	77	75	73	67	66	85
90°	1	15	24	31	33	9
95°	79	39	48	54	52	94
105°	371	408	74	88	93	397
115°	702	723	753	188	100	691
125°	993	1009	1032	1040	1044	885
135°	1228	1248	1259	1271	1269	949
145°	1425	1424	1444	1453	1447	891
155°	1569	1558	1573	1580	1570	723
165°	1653	1646	1650	1658	1650	467
175°	1691	1682	1685	1694	1681	161
180°	1687	1687	1687	1687	1687	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1945.5	1945.5	1945.5	1945.5	1945.5
2.5°	1956.8	1947.5	1926.9	1945.5	1942.0
5°	1945.5	1938.2	1917.5	1932.4	1928.9
7.5°	1932.4	1921.3	1900.7	1915.8	1912.0
10°	1912.0	1898.9	1876.5	1891.3	1885.8
12.5°	1883.8	1872.7	1850.3	1859.6	1855.8
15°	1852.0	1840.9	1816.5	1824.1	1814.7
17.5°	1812.7	1801.6	1777.2	1786.5	1777.2
20°	1769.7	1758.6	1732.4	1737.9	1730.6
22.5°	1726.8	1709.9	1685.5	1685.5	1681.7
25°	1676.2	1661.3	1629.5	1633.1	1629.5
27.5°	1620.0	1606.9	1582.7	1577.1	1567.8
30°	1564.0	1549.0	1521.0	1515.4	1507.9
32.5°	1504.1	1493.0	1463.0	1451.7	1444.2
35°	1446.1	1427.5	1397.5	1386.2	1376.9
37.5°	1380.6	1363.8	1333.8	1320.7	1311.4
40°	1313.4	1298.3	1268.3	1251.6	1244.1
42.5°	1247.9	1232.8	1203.0	1184.1	1173.0
45°	1176.8	1163.7	1135.5	1115.1	1107.5
47.5°	1107.5	1094.4	1064.5	1043.8	1032.7
50°	1034.5	1025.2	999.0	972.8	963.4
52.5°	963.4	950.3	926.1	905.5	892.4
55°	890.6	879.3	856.8	834.4	825.1
57.5°	817.5	808.2	783.8	761.4	753.8
60°	744.5	737.2	711.0	690.3	684.8
62.5°	673.5	660.4	641.7	623.0	615.5
65°	600.6	589.3	570.6	553.8	544.4
67.5°	525.8	516.3	499.6	486.5	478.9
70°	456.5	449.0	432.1	419.0	411.7
72.5°	385.5	377.9	368.6	355.5	349.9
75°	314.2	310.6	301.1	290.0	293.8
77.5°	250.7	243.1	239.4	233.8	228.3
80°	187.2	185.2	181.4	175.9	172.1
82.5°	127.2	127.2	125.4	117.9	117.9
85°	76.6	74.8	73.0	67.3	65.5
87.5°	33.7	30.0	26.2	20.6	18.7
90°	1.2	14.6	24.4	30.6	32.9
92.5°	30.6	25.7	29.3	31.8	32.9
95°	79.3	39.0	47.6	53.8	52.5
97.5°	142.8	42.8	62.2	66.0	67.1
100°	216.2	48.9	69.6	79.3	81.8
102.5°	296.7	294.3	72.1	85.4	89.2
105°	371.2	407.9	74.5	87.9	92.8
107.5°	457.9	488.3	77.0	90.3	95.3
110°	541.0	566.5	213.7	91.6	96.4

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	619.1	641.0	620.3	94.0	97.7
115°	702.1	722.8	753.4	188.1	100.2
117.5°	774.1	798.5	819.4	644.6	324.8
120°	854.7	873.0	895.0	909.7	744.8
122.5°	923.0	942.6	967.1	974.4	975.7
125°	992.6	1008.6	1031.8	1040.3	1044.0
127.5°	1056.1	1073.2	1091.7	1103.8	1105.0
130°	1116.0	1135.6	1148.9	1162.4	1161.3
132.5°	1177.1	1193.0	1206.3	1217.4	1216.2
135°	1228.4	1248.0	1258.8	1271.2	1268.7
137.5°	1282.0	1296.7	1309.0	1321.2	1317.6
140°	1334.5	1344.4	1357.7	1368.7	1362.7
142.5°	1378.6	1387.2	1403.0	1412.7	1406.6
145°	1425.0	1423.7	1444.4	1453.0	1446.9
147.5°	1465.2	1461.5	1482.3	1488.4	1483.6
150°	1504.3	1495.8	1515.3	1522.6	1516.5
152.5°	1537.2	1527.5	1545.8	1553.2	1544.6
155°	1569.0	1558.1	1572.7	1580.0	1570.3
157.5°	1594.6	1584.9	1595.9	1604.5	1594.6
160°	1616.7	1609.3	1616.7	1623.9	1615.4
162.5°	1636.1	1628.9	1634.9	1643.5	1632.5
165°	1653.2	1646.0	1649.6	1658.1	1649.6
167.5°	1666.7	1659.3	1663.1	1671.6	1660.6
170°	1677.7	1670.3	1672.8	1681.3	1670.3
172.5°	1685.0	1677.7	1680.2	1688.7	1677.7
175°	1691.1	1682.5	1685.0	1693.5	1681.3
177.5°	1693.5	1685.0	1686.3	1694.8	1683.8
180°	1687.4	1687.4	1687.4	1687.4	1687.4

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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	12.21	13.07	13.17	14.04	15.31	11.77	12.63	12.72	13.60	14.87
	3H	13.85	14.62	14.82	15.60	16.90	13.36	14.13	14.33	15.11	16.41
	4H	14.43	15.16	15.41	16.14	17.44	13.93	14.66	14.91	15.65	16.95
	6H	14.81	15.48	15.80	16.47	17.79	14.31	14.98	15.30	15.98	17.29
	8H	14.91	15.55	15.91	16.56	17.87	14.41	15.05	15.41	16.06	17.37
	12H	14.95	15.56	15.95	16.56	17.90	14.44	15.05	15.44	16.05	17.39
4H	2H	12.66	13.39	13.65	14.38	15.68	12.30	13.04	13.29	14.02	15.32
	3H	14.50	15.11	15.50	16.13	17.44	14.10	14.71	15.09	15.72	17.04
	4H	15.20	15.76	16.21	16.77	18.11	14.78	15.34	15.78	16.34	17.68
	6H	15.70	16.18	16.72	17.21	18.55	15.27	15.75	16.28	16.78	18.11
	8H	15.84	16.29	16.86	17.31	18.66	15.40	15.85	16.42	16.87	18.23
	12H	15.90	16.31	16.94	17.35	18.70	15.45	15.86	16.49	16.90	18.26
8H	4H	15.39	15.84	16.40	16.86	18.21	15.01	15.46	16.03	16.48	17.83
	6H	15.99	16.37	17.04	17.43	18.78	15.61	15.98	16.65	17.05	18.40
	8H	16.20	16.53	17.25	17.58	18.95	15.81	16.14	16.86	17.19	18.55
	12H	16.32	16.61	17.37	17.65	19.06	15.91	16.20	16.96	17.24	18.65
12H	4H	15.37	15.78	16.41	16.81	18.17	15.00	15.41	16.04	16.45	17.80
	6H	16.02	16.35	17.07	17.40	18.77	15.65	15.97	16.70	17.02	18.39
	8H	16.25	16.53	17.30	17.58	18.99	15.86	16.15	16.92	17.20	18.61