

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: P905051

Luminaire Tested: DFN2DIP-4P4F0-050D030US835-FLONL

Issue Date: 11/21/2024

**Test Information**

Test Method: LM-79-2019  
Report Number: P905051  
REPORT IS A COMBINATION OF REPORTS P900603 AND P897523  
Test Lab: INNOVATION CENTER  
Issue Date: 11/21/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: NEO-RAY  
Catalog Number: DFN2DIP-4P4F0-050D030US835-FLLONL  
Description: 4 foot, 90deg - 4way Define Geo, with Direct Frosted Lens, Indirect Open No Lens  
Light Source: -  
Ballast/Driver: -

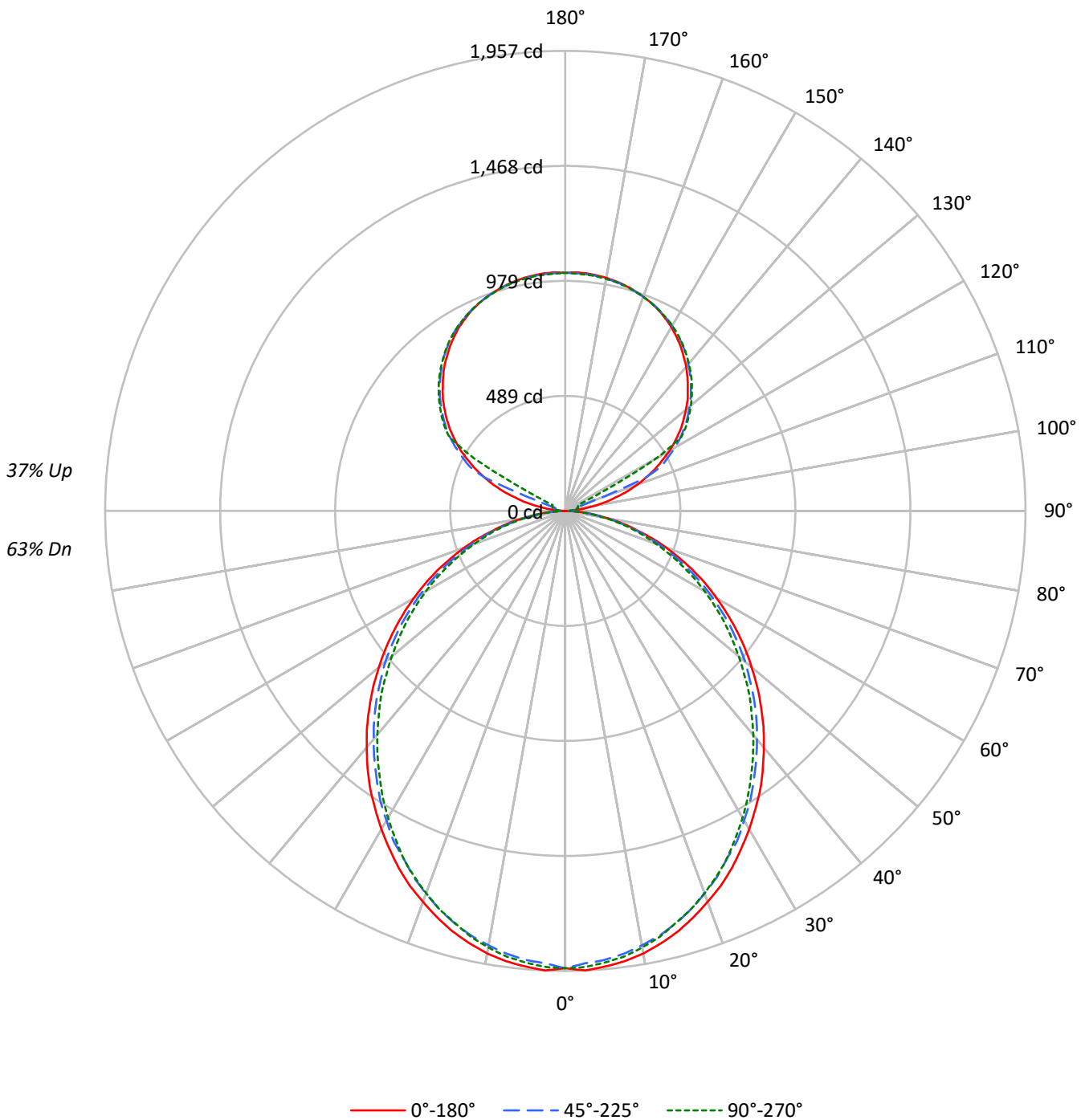
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 7920.0 lumens  
Efficiency: N/A  
Efficacy: 108.3 lumens/watt  
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29  
Luminous Opening: Rectangular w/ Sides (W: 4.07' x L: 4.07' x H: 0.1')  
CIE Type: Semi-Direct

Input Watts (W): 73.1  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: 0.9951  
Total Harmonic Distortion (THDi): 0.07  
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			0	
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0
RCR																					
0	110	110	110	110	103	103	103	103	90	90	90	78	78	78	68	68	68	68	68	68	63
1	101	96	92	89	94	90	87	84	79	77	74	69	67	65	60	58	57	60	58	57	53
2	92	84	78	72	86	79	73	69	69	65	62	61	58	55	53	50	48	53	50	48	44
3	84	74	66	60	78	70	63	57	61	56	52	54	50	46	47	44	41	47	44	41	37
4	77	65	57	51	71	62	54	49	55	49	44	48	43	40	42	38	35	42	38	35	32
5	70	58	50	44	66	55	48	42	49	43	38	43	38	34	38	34	31	38	34	31	28
6	65	53	44	38	61	50	42	37	44	38	33	39	34	30	34	30	27	34	30	27	25
7	60	47	39	34	56	45	38	32	40	34	30	35	31	27	31	27	24	31	27	24	22
8	56	43	35	30	52	41	34	29	37	31	26	33	28	24	29	25	22	29	25	22	19
9	52	40	32	27	49	37	30	26	34	28	24	30	25	22	27	23	20	27	23	20	18
10	49	36	29	24	46	34	28	23	31	25	21	28	23	20	25	21	18	25	21	18	16

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	1262	1262	1262
5°	1264	1245	1253
10°	1254	1229	1237
15°	1236	1209	1211
20°	1211	1181	1184
25°	1186	1148	1153
30°	1155	1117	1114
35°	1126	1081	1072
40°	1090	1044	1032
45°	1054	1007	992
50°	1014	968	945
55°	973	923	902
60°	927	870	852
65°	876	815	794
70°	811	748	732
75°	721	668	675
80°	614	566	564
85°	445	389	381

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 1054 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	183.1	2.3
10°-20°	515.2	6.5
20°-30°	757.2	9.6
30°-40°	879.4	11.1
40°-50°	878.3	11.1
50°-60°	765.8	9.7
60°-70°	566.1	7.1
70°-80°	320.3	4.0
80°-90°	86.3	1.1
90°-100°	33.4	0.4
100°-110°	124.4	1.6
110°-120°	330.1	4.2
120°-130°	547.5	6.9
130°-140°	581.5	7.3
140°-150°	540.5	6.8
150°-160°	434.5	5.5
160°-170°	280.0	3.5
170°-180°	96.4	1.2
0°-30°	1455.5	18.4
0°-40°	2334.9	29.5
0°-60°	3979.0	50.2
0°-90°	4951.8	62.5
90°-120°	487.9	6.2
90°-150°	2157.3	27.2
90°-180°	2968.0	37.5
0°-180°	7920.0	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	9	15	18	20	7
95°	48	23	28	32	32	56
105°	223	245	45	53	56	238
115°	421	434	452	113	60	415
125°	596	605	619	624	626	531
135°	737	749	755	763	761	569
145°	855	854	867	872	868	535
155°	941	935	944	948	942	434
165°	992	988	990	995	990	280
175°	1015	1010	1011	1016	1009	97
180°	1012	1012	1012	1012	1012	



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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°	0.7	8.8	14.6	18.4	19.7
92.5°	18.4	15.4	17.6	19.1	19.7
95°	47.6	23.4	28.5	32.3	31.5
97.5°	85.7	25.7	37.3	39.6	40.3
100°	129.7	29.3	41.8	47.6	49.1
102.5°	178.0	176.6	43.2	51.2	53.5
105°	222.7	244.7	44.7	52.7	55.7
107.5°	274.7	293.0	46.2	54.2	57.2
110°	324.6	339.9	128.2	55.0	57.9



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°
112.5°	371.5	384.6	372.2	56.4	58.6
115°	421.2	433.7	452.0	112.8	60.1
117.5°	464.5	479.1	491.6	386.8	194.9
120°	512.8	523.8	537.0	545.8	446.9
122.5°	553.8	565.6	580.3	584.6	585.4
125°	595.6	605.1	619.1	624.2	626.4
127.5°	633.7	643.9	655.0	662.3	663.0
130°	669.6	681.4	689.4	697.4	696.8
132.5°	706.2	715.8	723.8	730.4	729.7
135°	737.0	748.8	755.3	762.7	761.2
137.5°	769.2	778.0	785.4	792.7	790.5
140°	800.7	806.6	814.6	821.2	817.6
142.5°	827.2	832.3	841.8	847.6	844.0
145°	855.0	854.2	866.7	871.8	868.1
147.5°	879.1	876.9	889.4	893.0	890.1
150°	902.6	897.5	909.2	913.5	909.9
152.5°	922.3	916.5	927.5	931.9	926.8
155°	941.4	934.9	943.6	948.0	942.2
157.5°	956.8	951.0	957.6	962.7	956.8
160°	970.0	965.6	970.0	974.4	969.2
162.5°	981.7	977.3	981.0	986.1	979.5
165°	991.9	987.6	989.8	994.9	989.8
167.5°	1000.0	995.6	997.8	1003.0	996.4
170°	1006.6	1002.2	1003.7	1008.8	1002.2
172.5°	1011.0	1006.6	1008.1	1013.2	1006.6
175°	1014.6	1009.5	1011.0	1016.1	1008.8
177.5°	1016.1	1011.0	1011.8	1016.9	1010.3
180°	1012.5	1012.5	1012.5	1012.5	1012.5



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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	9.18	10.17	10.02	11.03	12.11	8.74	9.72	9.58	10.59	11.67
	3H	10.86	11.74	11.71	12.62	13.72	10.37	11.25	11.22	12.12	13.23
	4H	11.45	12.29	12.32	13.17	14.29	10.96	11.80	11.83	12.68	13.79
	6H	11.86	12.64	12.75	13.52	14.65	11.36	12.14	12.25	13.02	14.15
	8H	11.98	12.71	12.87	13.62	14.75	11.47	12.21	12.36	13.11	14.24
	12H	12.03	12.73	12.93	13.63	14.79	11.52	12.22	12.42	13.12	14.28
4H	2H	9.66	10.49	10.53	11.37	12.49	9.30	10.14	10.18	11.02	12.14
	3H	11.54	12.24	12.43	13.15	14.29	11.13	11.83	12.02	12.74	13.88
	4H	12.27	12.90	13.16	13.81	14.97	11.84	12.48	12.74	13.39	14.55
	6H	12.79	13.34	13.71	14.28	15.44	12.36	12.91	13.27	13.84	15.00
	8H	12.95	13.46	13.86	14.39	15.56	12.51	13.03	13.43	13.95	15.13
	12H	13.03	13.49	13.97	14.44	15.62	12.58	13.05	13.52	13.99	15.17
8H	4H	12.47	12.99	13.39	13.91	15.09	12.10	12.61	13.01	13.54	14.71
	6H	13.12	13.54	14.06	14.51	15.68	12.73	13.16	13.68	14.13	15.30
	8H	13.34	13.72	14.29	14.68	15.87	12.95	13.33	13.90	14.29	15.48
	12H	13.48	13.82	14.44	14.77	16.01	13.07	13.40	14.03	14.36	15.60
12H	4H	12.47	12.93	13.40	13.87	15.05	12.10	12.56	13.03	13.51	14.69
	6H	13.15	13.53	14.10	14.48	15.68	12.78	13.15	13.73	14.11	15.30
	8H	13.40	13.73	14.36	14.68	15.92	13.02	13.35	13.98	14.30	15.54