

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: P905641

Luminaire Tested: DFN2DIP-PN2F0-050D030US835-FLLONL

Issue Date: 11/21/2024

**Test Information**

Test Method: LM-79-2019  
Report Number: P905641  
REPORT IS A COMBINATION OF REPORTS P900997 AND P897905  
Test Lab: INNOVATION CENTER  
Issue Date: 11/21/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: NEO-RAY  
Catalog Number: DFN2DIP-PN2F0-050D030US835-FLONL  
Description: 2 foot, Pentagon Define Geo, with Direct Frosted Lens, Indirect Open No Lens  
Light Source: -  
Ballast/Driver: -

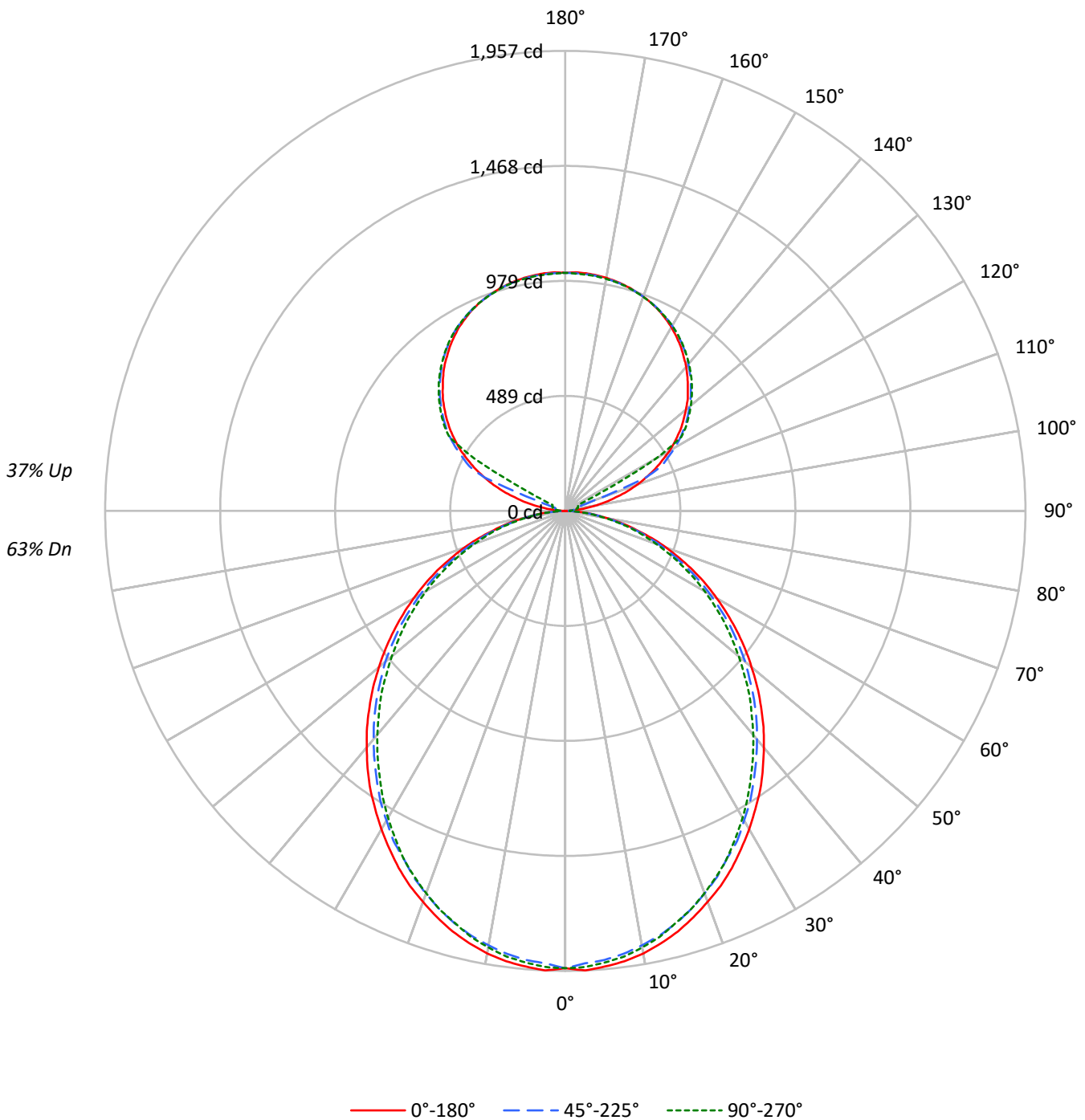
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 7920.0 lumens  
Efficiency: N/A  
Efficacy: 113.3 lumens/watt  
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29  
Luminous Opening: Rectangular w/ Sides (W: 2.17' x L: 2.29' x H: 0.1')  
CIE Type: Semi-Direct

Input Watts (W): 69.9  
Input Voltage (V): 120  
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			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°	4214	4214	4214
5°	4214	4146	4177
10°	4173	4081	4114
15°	4105	4005	4020
20°	4015	3903	3923
25°	3926	3782	3812
30°	3815	3669	3674
35°	3710	3538	3527
40°	3582	3405	3387
45°	3453	3271	3243
50°	3313	3129	3077
55°	3165	2967	2924
60°	2998	2775	2747
65°	2814	2574	2540
70°	2581	2330	2315
75°	2260	2037	2098
80°	1871	1664	1702
85°	1269	1051	1067

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 3453 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	13.23	14.22	14.08	15.08	16.16	12.80	13.78	13.64	14.65	15.73
	3H	14.88	15.77	15.74	16.64	17.75	14.40	15.29	15.26	16.16	17.27
	4H	15.46	16.30	16.33	17.18	18.30	14.98	15.82	15.85	16.70	17.82
	6H	15.85	16.63	16.74	17.51	18.64	15.37	16.14	16.25	17.03	18.16
	8H	15.95	16.69	16.85	17.59	18.72	15.47	16.20	16.36	17.11	18.24
	12H	16.00	16.70	16.90	17.60	18.76	15.51	16.21	16.40	17.11	18.26
4H	2H	13.70	14.54	14.58	15.42	16.53	13.35	14.19	14.23	15.07	16.18
	3H	15.55	16.25	16.44	17.16	18.30	15.15	15.85	16.04	16.76	17.90
	4H	16.26	16.89	17.16	17.80	18.96	15.84	16.48	16.74	17.39	18.55
	6H	16.76	17.31	17.67	18.24	19.40	16.34	16.89	17.25	17.82	18.98
	8H	16.90	17.42	17.82	18.34	19.52	16.48	16.99	17.39	17.92	19.09
	12H	16.97	17.44	17.91	18.38	19.56	16.54	17.00	17.47	17.95	19.13
8H	4H	16.45	16.97	17.37	17.89	19.07	16.08	16.60	17.00	17.52	18.70
	6H	17.06	17.49	18.01	18.46	19.63	16.69	17.12	17.63	18.09	19.26
	8H	17.27	17.65	18.22	18.61	19.80	16.89	17.27	17.84	18.23	19.42
	12H	17.40	17.73	18.35	18.68	19.92	17.00	17.33	17.96	18.28	19.53
12H	4H	16.44	16.91	17.38	17.85	19.03	16.08	16.54	17.02	17.49	18.67
	6H	17.09	17.47	18.04	18.43	19.62	16.73	17.11	17.68	18.06	19.26
	8H	17.32	17.65	18.28	18.61	19.85	16.95	17.29	17.91	18.24	19.48