

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: P906409

Luminaire Tested: DFN2DIP-SQ3F0-050D120US835-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P906409
REPORT IS A COMBINATION OF REPORTS P901527 AND P898289
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ3F0-050D120US835-FLLONL
Description: 3 foot, Square Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

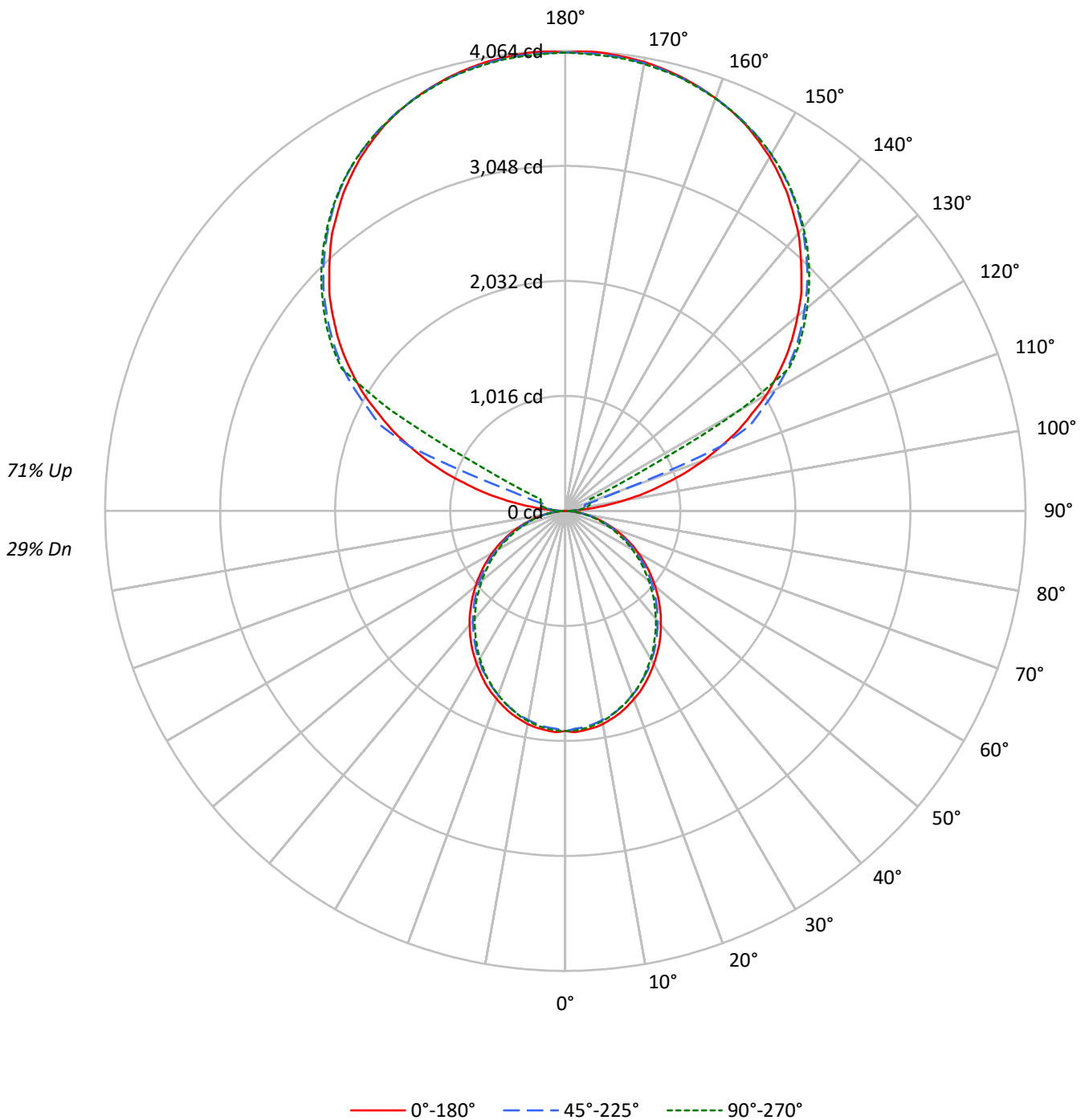
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 16830.0 lumens
Efficiency: N/A
Efficacy: 123.5 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 3.06' x L: 3.06' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 136.3
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9789
Total Harmonic Distortion (THDi): 0.074
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P906409
CATALOG NUMBER: DFN2DIP-SQ3F0-050D120US835-FLLONL

Luminous Intensity Polar Plot





TEST NUMBER: P906409
 CATALOG NUMBER: DFN2DIP-SQ3F0-050D120US835-FLLONL

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	102	102	102	102	92	92	92	92	72	72	72	54	54	54	37	37	37	29			29
1	93	89	85	82	83	80	77	74	63	61	59	47	46	45	33	32	31	25			25
2	85	78	72	67	76	70	65	61	55	52	49	41	39	37	29	28	26	21			21
3	77	68	61	56	69	61	55	51	49	44	41	37	34	32	26	24	22	18			18
4	71	60	53	47	63	54	48	43	43	38	35	33	29	27	23	21	19	15			15
5	65	54	46	40	58	48	42	37	38	34	30	29	26	23	21	19	17	13			13
6	60	48	40	34	53	43	36	32	35	30	26	26	23	20	19	16	15	12			12
7	55	43	35	30	49	39	32	28	31	26	23	24	20	18	17	15	13	10			10
8	51	39	32	26	46	35	29	24	28	23	20	22	18	16	16	13	12	9			9
9	47	35	28	23	42	32	26	22	26	21	18	20	17	14	14	12	11	8			8
10	44	32	25	21	40	29	23	19	24	19	16	18	15	13	13	11	10	8			8

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2229	2229	2229
5°	2231	2197	2212
10°	2212	2166	2182
15°	2178	2128	2134
20°	2133	2077	2085
25°	2087	2017	2029
30°	2031	1960	1958
35°	1978	1894	1883
40°	1912	1826	1811
45°	1847	1759	1738
50°	1775	1688	1653
55°	1700	1606	1575
60°	1615	1509	1485
65°	1522	1408	1379
70°	1404	1285	1266
75°	1240	1137	1159
80°	1042	949	958
85°	733	628	627

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°
 Vertical Angle: 90°
 Luminance: 2774 cd/sqm



TEST NUMBER: P906409

CATALOG NUMBER: DFN2DIP-SQ3F0-050D120US835-FLLONL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	183.1	1.1
10°-20°	515.2	3.1
20°-30°	757.2	4.5
30°-40°	879.4	5.2
40°-50°	878.3	5.2
50°-60°	765.8	4.6
60°-70°	566.1	3.4
70°-80°	320.3	1.9
80°-90°	91.7	0.5
90°-100°	133.5	0.8
100°-110°	497.8	3.0
110°-120°	1320.3	7.8
120°-130°	2189.8	13.0
130°-140°	2326.1	13.8
140°-150°	2161.8	12.8
150°-160°	1738.1	10.3
160°-170°	1119.9	6.7
170°-180°	385.5	2.3
0°-30°	1455.5	8.6
0°-40°	2334.9	13.9
0°-60°	3979.0	23.6
0°-90°	4957.1	29.5
90°-120°	1951.7	11.6
90°-150°	8629.4	51.3
90°-180°	11873.0	70.5
0°-180°	16830.0	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°	3	35	58	73	79	15
95°	190	94	114	129	126	225
105°	891	979	179	211	223	952
115°	1685	1735	1808	451	240	1659
125°	2382	2421	2476	2497	2506	2125
135°	2948	2995	3021	3051	3045	2277
145°	3420	3417	3467	3487	3472	2139
155°	3766	3739	3775	3792	3769	1735
165°	3968	3950	3959	3980	3959	1121
175°	4058	4038	4044	4064	4035	386
180°	4050	4050	4050	4050	4050	



TEST NUMBER: P906409

CATALOG NUMBER: DFN2DIP-SQ3F0-050D120US835-FLLONL

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°	2.8	35.1	58.5	73.4	79.0
92.5°	73.4	61.6	70.3	76.2	79.0
95°	190.3	93.6	114.1	129.1	126.0
97.5°	342.8	102.7	149.3	158.3	161.1
100°	518.8	117.3	167.0	190.3	196.3
102.5°	712.0	706.4	172.9	205.0	214.0
105°	890.8	978.9	178.9	210.9	222.7
107.5°	1098.9	1172.0	184.8	216.8	228.6
110°	1298.3	1359.6	512.9	219.9	231.4



TEST NUMBER: P906409

CATALOG NUMBER: DFN2DIP-SQ3F0-050D120US835-FLLONL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1485.9	1538.4	1488.7	225.5	234.5
115°	1684.9	1734.7	1808.1	451.3	240.5
117.5°	1857.9	1916.4	1966.5	1547.1	779.5
120°	2051.4	2095.2	2148.1	2183.3	1787.6
122.5°	2215.3	2262.3	2321.1	2338.5	2341.6
125°	2382.3	2420.6	2476.3	2496.8	2505.5
127.5°	2534.7	2575.8	2620.0	2649.2	2652.0
130°	2678.4	2725.4	2757.4	2789.8	2787.0
132.5°	2824.9	2863.2	2895.2	2921.7	2918.9
135°	2948.1	2995.1	3021.2	3050.8	3044.9
137.5°	3076.9	3112.0	3141.6	3170.8	3162.1
140°	3202.9	3226.5	3258.5	3285.0	3270.4
142.5°	3308.6	3329.2	3367.1	3390.4	3375.8
145°	3420.0	3416.9	3466.6	3487.2	3472.5
147.5°	3516.4	3507.7	3557.5	3572.1	3560.6
150°	3610.3	3589.8	3636.8	3654.2	3639.6
152.5°	3689.3	3666.0	3709.9	3727.6	3707.1
155°	3765.5	3739.4	3774.6	3792.0	3768.7
157.5°	3827.1	3803.8	3830.3	3850.8	3827.1
160°	3880.0	3862.3	3880.0	3897.4	3876.9
162.5°	3926.7	3909.3	3923.9	3944.4	3918.0
165°	3967.7	3950.3	3959.0	3979.6	3959.0
167.5°	4000.1	3982.3	3991.4	4011.9	3985.5
170°	4026.5	4008.8	4014.7	4035.2	4008.8
172.5°	4043.9	4026.5	4032.5	4053.0	4026.5
175°	4058.5	4038.0	4043.9	4064.5	4035.2
177.5°	4064.5	4043.9	4047.1	4067.6	4041.2
180°	4049.9	4049.9	4049.9	4049.9	4049.9



TEST NUMBER: P906409
 CATALOG NUMBER: DFN2DIP-SQ3F0-050D120US835-FLLONL

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	7.73	8.44	8.85	9.55	11.08	7.29	7.99	8.41	9.10	10.64
	3H	9.38	10.01	10.50	11.13	12.68	8.89	9.52	10.01	10.64	12.19
	4H	9.96	10.55	11.09	11.67	13.23	9.46	10.06	10.59	11.18	12.74
	6H	10.34	10.89	11.49	12.01	13.59	9.84	10.39	10.99	11.51	13.09
	8H	10.44	10.96	11.59	12.10	13.67	9.94	10.46	11.09	11.60	13.16
	12H	10.48	10.98	11.63	12.11	13.70	9.97	10.47	11.12	11.60	13.19
4H	2H	8.17	8.77	9.31	9.89	11.45	7.82	8.41	8.96	9.53	11.09
	3H	10.02	10.52	11.16	11.66	13.23	9.61	10.11	10.76	11.25	12.82
	4H	10.72	11.18	11.87	12.31	13.91	10.30	10.76	11.45	11.89	13.48
	6H	11.22	11.62	12.38	12.77	14.35	10.79	11.18	11.95	12.34	13.92
	8H	11.37	11.73	12.52	12.88	14.48	10.93	11.30	12.08	12.45	14.04
	12H	11.43	11.76	12.60	12.92	14.53	10.98	11.31	12.15	12.47	14.08
8H	4H	10.90	11.27	12.06	12.42	14.01	10.52	10.89	11.68	12.04	13.64
	6H	11.52	11.82	12.69	13.01	14.61	11.14	11.44	12.31	12.63	14.22
	8H	11.74	12.00	12.92	13.17	14.78	11.34	11.61	12.52	12.78	14.39
	12H	11.86	12.09	13.04	13.25	14.90	11.45	11.68	12.63	12.84	14.49
12H	4H	10.88	11.21	12.05	12.37	13.97	10.51	10.84	11.68	12.00	13.61
	6H	11.55	11.81	12.73	12.98	14.59	11.17	11.44	12.35	12.61	14.22
	8H	11.78	12.01	12.96	13.18	14.82	11.40	11.63	12.58	12.79	14.44