

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: P911677

Luminaire Tested: DFN2DIP-SQ2F0-040D030US850-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P911677
REPORT IS A COMBINATION OF REPORTS P901293 AND P898215
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ2F0-040D030US850-FLLONL
Description: 2 foot, Square Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

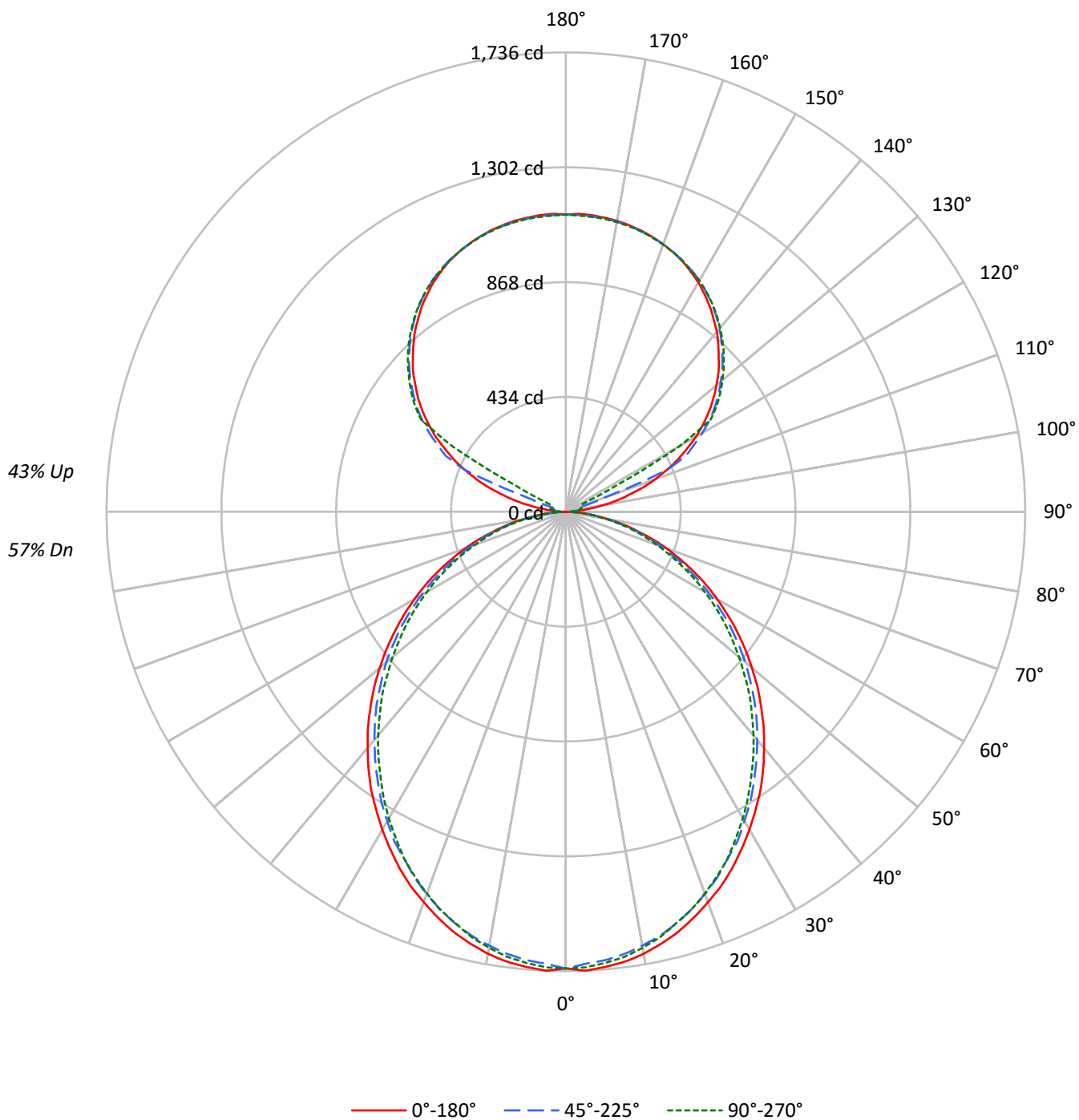
Lumens per Lamp: N/A
Luminaire Lumens: 7685.4 lumens
Efficiency: N/A
Efficacy: 136.0 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 2.21' x L: 2.21' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 56.5
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9952
Total Harmonic Distortion (THDi): 0.069
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P911677

CATALOG NUMBER: DFN2DIP-SQ2F0-040D030US850-FLLONL

Luminous Intensity Polar Plot



TEST NUMBER: P911677

CATALOG NUMBER: DFN2DIP-SQ2F0-040D030US850-FLLONL

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	109	109	109	109	101	101	101	101	87	87	87	74	74	74	63	63	63
1	99	95	91	88	92	89	85	82	77	74	72	66	64	62	55	54	53
2	91	83	77	72	84	77	72	67	67	63	59	58	55	52	49	47	45
3	83	73	66	60	77	68	62	56	59	54	50	51	47	44	43	40	38
4	76	65	57	50	70	61	53	48	53	47	43	45	41	38	39	35	33
5	69	58	49	43	64	54	47	41	47	41	37	41	36	33	35	31	29
6	64	52	44	38	59	49	41	36	43	37	32	37	32	29	32	28	25
7	59	47	39	33	55	44	37	31	39	33	28	34	29	25	29	25	22
8	55	43	35	29	51	40	33	28	35	29	25	31	26	23	27	23	20
9	51	39	31	26	48	37	30	25	32	27	23	28	24	20	25	21	18
10	48	36	28	24	45	34	27	22	30	24	20	26	22	18	23	19	17

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3795	3795	3795
5°	3795	3734	3762
10°	3758	3676	3706
15°	3696	3607	3621
20°	3614	3515	3535
25°	3534	3406	3435
30°	3434	3304	3310
35°	3338	3186	3179
40°	3222	3065	3053
45°	3106	2945	2923
50°	2979	2817	2774
55°	2846	2671	2636
60°	2694	2498	2478
65°	2528	2317	2291
70°	2316	2097	2089
75°	2027	1833	1894
80°	1673	1495	1539
85°	1131	945	967

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 3106 cd/sqm

TEST NUMBER: P911677

CATALOG NUMBER: DFN2DIP-SQ2F0-040D030US850-FLLONL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	162.5	2.1
10°-20°	457.1	5.9
20°-30°	671.7	8.7
30°-40°	780.2	10.2
40°-50°	779.2	10.1
50°-60°	679.5	8.8
60°-70°	502.3	6.5
70°-80°	284.2	3.7
80°-90°	77.0	1.0
90°-100°	37.0	0.5
100°-110°	138.0	1.8
110°-120°	366.1	4.8
120°-130°	607.1	7.9
130°-140°	644.9	8.4
140°-150°	599.4	7.8
150°-160°	481.9	6.3
160°-170°	310.5	4.0
170°-180°	106.9	1.4
0°-30°	1291.3	16.8
0°-40°	2071.5	27.0
0°-60°	3530.2	45.9
0°-90°	4393.6	57.2
90°-120°	541.1	7.0
90°-150°	2392.5	31.1
90°-180°	3292.0	42.8
0°-180°	7685.4	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1726	1726	1726	1726	1726	
5°	1726	1720	1701	1714	1711	164
15°	1643	1633	1612	1618	1610	463
25°	1487	1474	1446	1449	1446	684
35°	1283	1266	1240	1230	1222	801
45°	1044	1032	1007	989	983	806
55°	790	780	760	740	732	706
65°	533	523	506	491	483	527
75°	279	276	267	257	261	298
85°	68	66	65	60	58	76
90°	1	10	16	20	22	7
95°	53	26	32	36	35	63
105°	247	271	50	58	62	264
115°	467	481	501	125	67	460
125°	660	671	687	692	695	589
135°	817	830	838	846	844	631
145°	948	947	961	967	963	593
155°	1044	1037	1046	1051	1045	481
165°	1100	1095	1098	1103	1098	311
175°	1125	1120	1121	1127	1119	107
180°	1123	1123	1123	1123	1123	

TEST NUMBER: P911677

CATALOG NUMBER: DFN2DIP-SQ2F0-040D030US850-FLLONL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1726.0	1726.0	1726.0	1726.0	1726.0
2.5°	1736.1	1727.8	1709.5	1726.0	1722.9
5°	1726.0	1719.5	1701.2	1714.4	1711.3
7.5°	1714.4	1704.5	1686.2	1699.7	1696.3
10°	1696.3	1684.7	1664.8	1678.0	1673.0
12.5°	1671.3	1661.4	1641.5	1649.9	1646.4
15°	1643.1	1633.2	1611.6	1618.3	1610.0
17.5°	1608.3	1598.4	1576.8	1585.0	1576.8
20°	1570.0	1560.1	1537.0	1541.8	1535.4
22.5°	1532.0	1517.0	1495.4	1495.4	1492.0
25°	1487.1	1473.9	1445.7	1448.9	1445.7
27.5°	1437.3	1425.6	1404.2	1399.2	1391.0
30°	1387.6	1374.3	1349.4	1344.4	1337.8
32.5°	1334.5	1324.6	1298.0	1288.0	1281.2
35°	1283.0	1266.5	1239.9	1229.9	1221.6
37.5°	1224.9	1209.9	1183.3	1171.8	1163.5
40°	1165.2	1151.8	1125.2	1110.4	1103.8
42.5°	1107.1	1093.7	1067.3	1050.6	1040.7
45°	1044.0	1032.5	1007.4	989.3	982.6
47.5°	982.6	970.9	944.4	926.1	916.3
50°	917.8	909.5	886.3	863.0	854.7
52.5°	854.7	843.2	821.7	803.4	791.7
55°	790.2	780.1	760.2	740.3	732.1
57.5°	725.3	717.1	695.3	675.5	668.8
60°	660.5	654.0	630.8	612.5	607.5
62.5°	597.5	585.9	569.4	552.7	546.1
65°	532.9	522.8	506.3	491.3	483.1
67.5°	466.4	458.0	443.3	431.6	425.0
70°	405.0	398.4	383.4	371.7	365.2
72.5°	342.0	335.3	327.0	315.4	310.4
75°	278.8	275.6	267.2	257.3	260.6
77.5°	222.4	215.7	212.4	207.4	202.5
80°	166.0	164.2	160.9	156.0	152.7
82.5°	112.9	112.9	111.3	104.6	104.6
85°	68.0	66.4	64.8	59.7	58.1
87.5°	29.9	26.6	23.3	18.3	16.5
90°	0.8	9.8	16.2	20.4	21.8
92.5°	20.4	17.1	19.5	21.2	21.8
95°	52.8	26.0	31.6	35.8	34.9
97.5°	95.0	28.5	41.4	43.9	44.7
100°	143.8	32.5	46.4	52.8	54.5
102.5°	197.4	195.8	47.9	56.8	59.3
105°	247.0	271.4	49.6	58.4	61.8
107.5°	304.6	324.9	51.2	60.1	63.4
110°	360.0	376.9	142.2	61.0	64.2



TEST NUMBER: P911677

CATALOG NUMBER: DFN2DIP-SQ2F0-040D030US850-FLLONL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	412.0	426.5	412.8	62.5	65.0
115°	467.1	481.0	501.3	125.1	66.7
117.5°	515.1	531.3	545.2	429.0	216.1
120°	568.7	580.9	595.5	605.3	495.6
122.5°	614.2	627.3	643.6	648.3	649.2
125°	660.5	671.1	686.6	692.2	694.7
127.5°	702.8	714.1	726.4	734.5	735.3
130°	742.6	755.7	764.5	773.4	772.8
132.5°	783.2	793.8	802.7	810.0	809.2
135°	817.3	830.4	837.6	845.8	844.2
137.5°	853.0	862.8	871.0	879.1	876.7
140°	888.0	894.5	903.4	910.7	906.7
142.5°	917.4	923.0	933.6	940.0	936.0
145°	948.2	947.3	961.2	966.8	962.7
147.5°	974.9	972.5	986.3	990.3	987.1
150°	1001.0	995.3	1008.3	1013.1	1009.1
152.5°	1022.8	1016.4	1028.6	1033.5	1027.8
155°	1044.0	1036.8	1046.5	1051.3	1044.9
157.5°	1061.1	1054.7	1062.0	1067.6	1061.1
160°	1075.7	1070.9	1075.7	1080.6	1074.8
162.5°	1088.7	1083.8	1087.9	1093.6	1086.3
165°	1100.0	1095.2	1097.7	1103.3	1097.7
167.5°	1109.0	1104.1	1106.6	1112.3	1105.0
170°	1116.3	1111.4	1113.1	1118.8	1111.4
172.5°	1121.2	1116.3	1118.0	1123.6	1116.3
175°	1125.2	1119.5	1121.2	1126.9	1118.8
177.5°	1126.9	1121.2	1122.1	1127.7	1120.4
180°	1122.9	1122.9	1122.9	1122.9	1122.9

TEST NUMBER: P911677

CATALOG NUMBER: DFN2DIP-SQ2F0-040D030US850-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	12.43	13.36	13.32	14.27	15.44	11.98	12.91	12.88	13.83	14.99
	3H	14.07	14.91	14.98	15.83	17.02	13.58	14.42	14.49	15.34	16.53
	4H	14.65	15.44	15.57	16.37	17.57	14.16	14.95	15.08	15.87	17.07
	6H	15.04	15.77	15.97	16.70	17.91	14.54	15.27	15.47	16.20	17.41
	8H	15.14	15.83	16.08	16.78	17.99	14.64	15.33	15.58	16.28	17.49
	12H	15.18	15.84	16.13	16.79	18.02	14.67	15.33	15.62	16.28	17.52
4H	2H	12.89	13.68	13.81	14.60	15.80	12.53	13.32	13.46	14.25	15.45
	3H	14.74	15.39	15.67	16.35	17.57	14.33	14.99	15.26	15.94	17.16
	4H	15.44	16.04	16.38	16.99	18.23	15.01	15.61	15.96	16.57	17.81
	6H	15.94	16.46	16.90	17.43	18.67	15.51	16.02	16.46	17.00	18.24
	8H	16.08	16.56	17.04	17.53	18.79	15.64	16.13	16.60	17.10	18.35
	12H	16.15	16.58	17.13	17.57	18.83	15.70	16.14	16.68	17.12	18.38
8H	4H	15.63	16.11	16.59	17.08	18.34	15.25	15.73	16.21	16.70	17.96
	6H	16.24	16.64	17.23	17.65	18.90	15.85	16.25	16.84	17.27	18.52
	8H	16.45	16.80	17.44	17.80	19.07	16.05	16.41	17.05	17.41	18.68
	12H	16.57	16.88	17.57	17.87	19.19	16.16	16.47	17.16	17.46	18.78
12H	4H	15.61	16.05	16.60	17.04	18.30	15.24	15.68	16.23	16.67	17.93
	6H	16.26	16.62	17.26	17.62	18.89	15.89	16.24	16.89	17.25	18.51
	8H	16.49	16.81	17.49	17.80	19.12	16.11	16.42	17.11	17.42	18.73