

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: P919989

Luminaire Tested: DFN2DIP-SQ3F0-040D060US935-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P919989
REPORT IS A COMBINATION OF REPORTS P901417 AND P898289
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ3F0-040D060US935-FLLONL
Description: 3 foot, Square Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

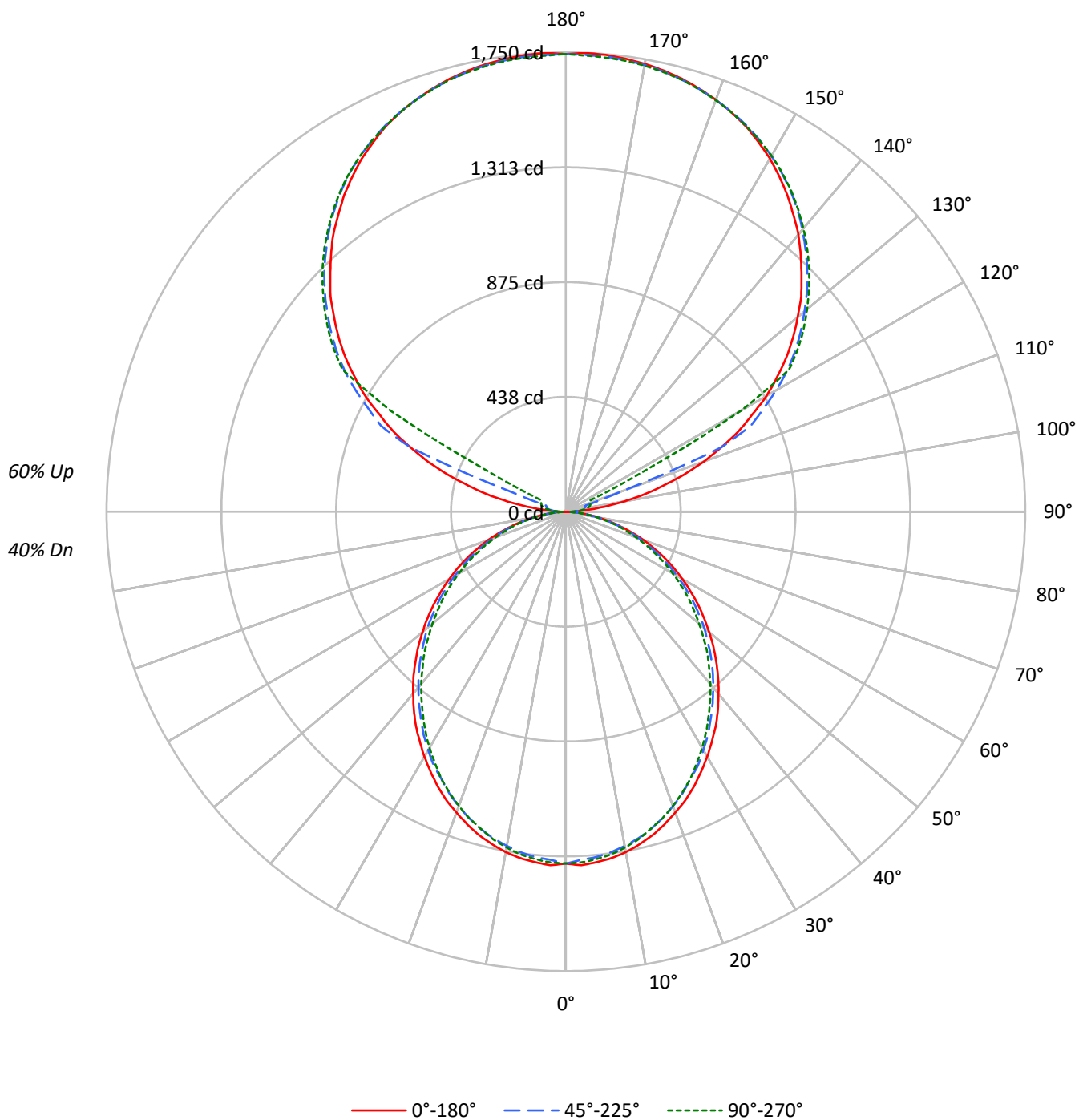
Lumens per Lamp: N/A
Luminaire Lumens: 8523.8 lumens
Efficiency: N/A
Efficacy: 110.1 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 3.06' x L: 3.06' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 77.4
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9933
Total Harmonic Distortion (THDi): 0.066
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P919989

CATALOG NUMBER: DFN2DIP-SQ3F0-040D060US935-FLLONL

Luminous Intensity Polar Plot



TEST NUMBER: P919989

CATALOG NUMBER: DFN2DIP-SQ3F0-040D060US935-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	105	105	105	105	95	95	95	95	78	78	78	62	62	62	47	47	47
1	96	91	87	84	87	83	80	77	68	66	64	54	53	51	41	41	40
2	87	80	74	69	79	73	68	63	60	56	53	48	45	43	37	35	33
3	79	70	63	57	72	64	58	53	53	48	44	42	39	36	32	30	28
4	73	62	54	48	66	57	50	45	47	42	38	37	34	31	29	26	24
5	67	55	47	41	60	50	44	38	42	37	33	34	30	27	26	23	21
6	61	49	41	36	56	45	38	33	38	32	28	30	26	23	24	21	19
7	57	45	37	31	51	41	34	29	34	29	25	28	24	21	22	19	17
8	52	40	33	27	48	37	30	26	31	26	22	25	21	18	20	17	15
9	49	37	29	24	44	34	27	23	28	23	20	23	19	17	18	15	13
10	46	34	27	22	41	31	25	20	26	21	18	21	18	15	17	14	12

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1535	1535	1535
5°	1537	1513	1524
10°	1524	1492	1503
15°	1500	1466	1470
20°	1469	1431	1437
25°	1438	1389	1398
30°	1399	1350	1349
35°	1362	1304	1297
40°	1317	1258	1248
45°	1272	1211	1197
50°	1223	1163	1139
55°	1171	1106	1085
60°	1112	1039	1023
65°	1048	970	950
70°	967	885	872
75°	854	783	798
80°	718	653	660
85°	506	433	432

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 1272 cd/sqm

TEST NUMBER: P919989

CATALOG NUMBER: DFN2DIP-SQ3F0-040D060US935-FLLONL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	126.1	1.5
10°-20°	354.9	4.2
20°-30°	521.5	6.1
30°-40°	605.7	7.1
40°-50°	605.0	7.1
50°-60°	527.5	6.2
60°-70°	389.9	4.6
70°-80°	220.6	2.6
80°-90°	61.3	0.7
90°-100°	57.5	0.7
100°-110°	214.3	2.5
110°-120°	568.4	6.7
120°-130°	942.7	11.1
130°-140°	1001.4	11.7
140°-150°	930.7	10.9
150°-160°	748.2	8.8
160°-170°	482.1	5.7
170°-180°	165.9	1.9
0°-30°	1002.5	11.8
0°-40°	1608.3	18.9
0°-60°	2740.7	32.2
0°-90°	3412.6	40.0
90°-120°	840.2	9.9
90°-150°	3714.9	43.6
90°-180°	5111.0	60.0
0°-180°	8523.8	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1340	1340	1340	1340	1340	
5°	1340	1335	1321	1331	1329	127
15°	1276	1268	1251	1256	1250	359
25°	1154	1144	1122	1125	1122	531
35°	996	983	963	955	948	622
45°	810	802	782	768	763	626
55°	614	606	590	575	568	548
65°	414	406	393	381	375	409
75°	216	214	207	200	202	231
85°	53	52	50	46	45	59
90°	1	15	25	32	34	8
95°	82	40	49	56	54	97
105°	384	421	77	91	96	410
115°	725	747	778	194	104	714
125°	1026	1042	1066	1075	1079	915
135°	1269	1289	1301	1313	1311	980
145°	1472	1471	1492	1501	1495	921
155°	1621	1610	1625	1632	1622	747
165°	1708	1701	1704	1713	1704	483
175°	1747	1738	1741	1750	1737	166
180°	1743	1743	1743	1743	1743	

TEST NUMBER: P919989

CATALOG NUMBER: DFN2DIP-SQ3F0-040D060US935-FLLONL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1340.1	1340.1	1340.1	1340.1	1340.1
2.5°	1347.9	1341.4	1327.2	1340.1	1337.6
5°	1340.1	1335.0	1320.8	1331.0	1328.6
7.5°	1331.0	1323.4	1309.1	1319.6	1317.0
10°	1317.0	1307.9	1292.5	1302.8	1298.9
12.5°	1297.5	1289.9	1274.4	1280.9	1278.2
15°	1275.7	1268.0	1251.2	1256.4	1250.0
17.5°	1248.6	1241.0	1224.2	1230.5	1224.2
20°	1218.9	1211.3	1193.3	1197.0	1192.1
22.5°	1189.4	1177.8	1161.0	1161.0	1158.4
25°	1154.5	1144.3	1122.4	1124.9	1122.4
27.5°	1115.9	1106.8	1090.2	1086.3	1079.9
30°	1077.3	1066.9	1047.7	1043.8	1038.6
32.5°	1036.0	1028.4	1007.7	1000.0	994.7
35°	996.1	983.3	962.6	954.8	948.4
37.5°	951.0	939.3	918.7	909.7	903.3
40°	904.7	894.2	873.6	862.1	857.0
42.5°	859.5	849.1	828.6	815.6	808.0
45°	810.5	801.6	782.1	768.1	762.8
47.5°	762.8	753.8	733.2	719.0	711.4
50°	712.6	706.1	688.1	670.0	663.6
52.5°	663.6	654.6	637.9	623.7	614.7
55°	613.5	605.6	590.2	574.7	568.3
57.5°	563.1	556.7	539.8	524.4	519.3
60°	512.8	507.7	489.7	475.5	471.7
62.5°	463.9	454.9	442.0	429.1	424.0
65°	413.7	405.9	393.0	381.4	375.1
67.5°	362.1	355.6	344.1	335.1	329.9
70°	314.4	309.3	297.6	288.6	283.5
72.5°	265.5	260.3	253.9	244.9	241.0
75°	216.5	214.0	207.4	199.8	202.3
77.5°	172.6	167.5	164.9	161.0	157.2
80°	128.9	127.5	124.9	121.1	118.6
82.5°	87.6	87.6	86.4	81.2	81.2
85°	52.8	51.6	50.3	46.3	45.1
87.5°	23.2	20.7	18.1	14.2	12.8
90°	1.2	15.2	25.1	31.6	34.0
92.5°	31.6	26.5	30.2	32.8	34.0
95°	82.0	40.3	49.2	55.6	54.2
97.5°	147.6	44.2	64.2	68.2	69.4
100°	223.3	50.5	71.9	82.0	84.5
102.5°	306.5	304.1	74.5	88.3	92.1
105°	383.5	421.4	77.0	90.7	95.9
107.5°	473.1	504.5	79.6	93.3	98.4
110°	559.0	585.3	220.8	94.7	99.6

TEST NUMBER: P919989

CATALOG NUMBER: DFN2DIP-SQ3F0-040D060US935-FLLONL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	639.6	662.3	640.8	97.0	101.0
115°	725.4	746.8	778.4	194.3	103.5
117.5°	799.8	825.0	846.5	666.1	335.5
120°	883.1	902.0	924.8	939.9	769.6
122.5°	953.6	973.9	999.2	1006.7	1008.1
125°	1025.6	1042.1	1066.0	1074.9	1078.6
127.5°	1091.2	1108.9	1127.9	1140.5	1141.7
130°	1153.0	1173.3	1187.1	1201.0	1199.8
132.5°	1216.2	1232.6	1246.4	1257.7	1256.5
135°	1269.2	1289.4	1300.6	1313.4	1310.8
137.5°	1324.6	1339.7	1352.5	1365.0	1361.3
140°	1378.8	1389.0	1402.8	1414.2	1407.9
142.5°	1424.3	1433.2	1449.6	1459.6	1453.3
145°	1472.3	1470.9	1492.4	1501.2	1495.0
147.5°	1513.8	1510.0	1531.5	1537.7	1532.8
150°	1554.3	1545.4	1565.6	1573.1	1566.8
152.5°	1588.3	1578.2	1597.1	1604.7	1595.9
155°	1621.1	1609.8	1625.0	1632.5	1622.4
157.5°	1647.6	1637.5	1648.9	1657.8	1647.6
160°	1670.3	1662.7	1670.3	1677.8	1669.0
162.5°	1690.4	1682.9	1689.2	1698.1	1686.7
165°	1708.1	1700.6	1704.3	1713.2	1704.3
167.5°	1722.0	1714.4	1718.3	1727.2	1715.7
170°	1733.4	1725.8	1728.4	1737.1	1725.8
172.5°	1740.9	1733.4	1735.9	1744.8	1733.4
175°	1747.2	1738.4	1740.9	1749.7	1737.1
177.5°	1749.7	1740.9	1742.2	1751.1	1739.7
180°	1743.4	1743.4	1743.4	1743.4	1743.4

TEST NUMBER: P919989

CATALOG NUMBER: DFN2DIP-SQ3F0-040D060US935-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	8.51	8.77	9.55	10.96	7.29	8.06	8.32	9.11	10.52
	3H	9.38	10.08	10.43	11.13	12.56	8.89	9.59	9.94	10.64	12.07
	4H	9.96	10.62	11.02	11.68	13.11	9.47	10.13	10.53	11.18	12.62
	6H	10.35	10.96	11.42	12.02	13.47	9.85	10.46	10.92	11.52	12.97
	8H	10.45	11.03	11.53	12.11	13.55	9.95	10.53	11.03	11.61	13.05
	12H	10.50	11.05	11.58	12.12	13.58	9.99	10.54	11.07	11.61	13.07
4H	2H	8.18	8.84	9.24	9.89	11.33	7.82	8.48	8.89	9.54	10.97
	3H	10.03	10.58	11.10	11.67	13.11	9.62	10.17	10.70	11.26	12.70
	4H	10.74	11.24	11.82	12.32	13.78	10.31	10.82	11.39	11.89	13.36
	6H	11.24	11.68	12.33	12.77	14.24	10.81	11.25	11.90	12.34	13.80
	8H	11.39	11.79	12.48	12.88	14.36	10.95	11.36	12.04	12.45	13.92
	12H	11.46	11.82	12.56	12.93	14.41	11.01	11.37	12.11	12.48	13.96
8H	4H	10.92	11.33	12.01	12.42	13.90	10.55	10.95	11.63	12.04	13.52
	6H	11.54	11.88	12.66	13.01	14.49	11.16	11.50	12.27	12.63	14.10
	8H	11.76	12.06	12.88	13.17	14.66	11.37	11.66	12.49	12.78	14.27
	12H	11.89	12.14	13.01	13.25	14.78	11.47	11.73	12.60	12.84	14.37
12H	4H	10.90	11.27	12.01	12.37	13.86	10.54	10.90	11.64	12.01	13.49
	6H	11.57	11.87	12.69	12.98	14.47	11.20	11.49	12.32	12.61	14.10
	8H	11.81	12.06	12.93	13.17	14.71	11.43	11.68	12.55	12.79	14.32

END OF REPORT