

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: P914420

Luminaire Tested: DFN2DIP-SQ2F0-040D070US927-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P914420
REPORT IS A COMBINATION OF REPORTS P899821 AND P896659
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ2F0-040D070US927-FLLFLL
Description: 2 foot, Square Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

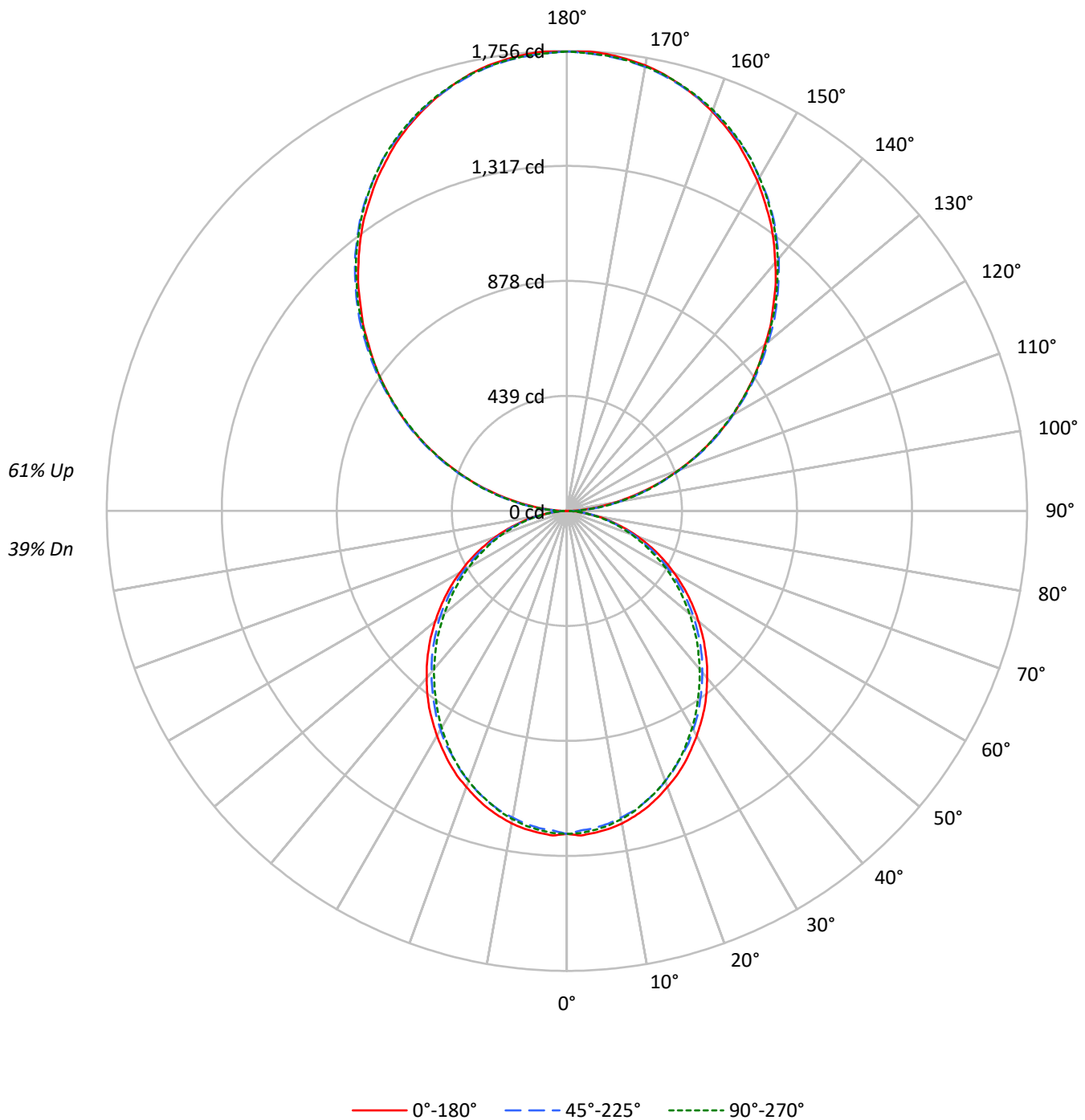
Lumens per Lamp: N/A
Luminaire Lumens: 8044.6 lumens
Efficiency: N/A
Efficacy: 91.2 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 2.21' x L: 2.21' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 88.2
Input Voltage (V):
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: P914420

CATALOG NUMBER: DFN2DIP-SQ2F0-040D070US927-FLLFLL

Luminous Intensity Polar Plot



TEST NUMBER: P914420

CATALOG NUMBER: DFN2DIP-SQ2F0-040D070US927-FLLFLL

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	77	77	77	61	61	61	46	46	46
1	95	91	87	84	86	83	80	77	68	65	63	54	52	51	41	40	39
2	87	79	73	68	79	72	67	63	59	56	52	47	45	42	36	34	33
3	79	70	63	57	72	64	58	53	52	48	44	42	38	36	32	30	28
4	72	62	54	48	65	56	50	44	46	41	37	37	33	31	28	26	24
5	66	55	47	41	60	50	43	38	41	36	32	33	29	27	26	23	21
6	61	49	41	36	55	45	38	33	37	32	28	30	26	23	23	20	18
7	56	44	37	31	51	41	34	29	34	28	25	27	23	20	21	18	16
8	52	40	33	27	47	37	30	26	31	26	22	25	21	18	19	17	15
9	49	37	29	24	44	34	27	23	28	23	19	23	19	16	18	15	13
10	45	34	26	22	41	31	25	20	26	21	18	21	17	15	17	14	12

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2711	2711	2711
5°	2711	2667	2688
10°	2684	2626	2647
15°	2640	2577	2587
20°	2582	2511	2525
25°	2524	2433	2454
30°	2453	2360	2365
35°	2385	2276	2271
40°	2302	2190	2181
45°	2219	2103	2088
50°	2128	2012	1982
55°	2033	1908	1883
60°	1924	1784	1770
65°	1805	1655	1637
70°	1654	1498	1492
75°	1448	1309	1354
80°	1195	1068	1100
85°	808	675	690

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 2442 cd/sqm

TEST NUMBER: P914420

CATALOG NUMBER: DFN2DIP-SQ2F0-040D070US927-FLLFLL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	116.0	1.4
10°-20°	326.5	4.1
20°-30°	479.8	6.0
30°-40°	557.3	6.9
40°-50°	556.6	6.9
50°-60°	485.3	6.0
60°-70°	358.8	4.5
70°-80°	203.0	2.5
80°-90°	58.6	0.7
90°-100°	108.5	1.3
100°-110°	344.8	4.3
110°-120°	590.1	7.3
120°-130°	776.1	9.6
130°-140°	871.1	10.8
140°-150°	854.2	10.6
150°-160°	716.6	8.9
160°-170°	475.2	5.9
170°-180°	166.1	2.1
0°-30°	922.4	11.5
0°-40°	1479.7	18.4
0°-60°	2521.7	31.3
0°-90°	3142.0	39.1
90°-120°	1043.4	13.0
90°-150°	3544.8	44.1
90°-180°	4903.0	60.9
0°-180°	8044.6	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1233	1233	1233	1233	1233	
5°	1233	1228	1215	1225	1222	117
15°	1174	1167	1151	1156	1150	331
25°	1062	1053	1033	1035	1033	489
35°	916	905	886	878	873	572
45°	746	738	720	707	702	576
55°	564	557	543	529	523	505
65°	381	373	362	351	345	376
75°	199	197	191	184	186	213
85°	49	48	46	43	42	54
90°	2	19	52	49	50	8
95°	77	92	95	95	92	86
105°	318	322	326	328	328	336
115°	592	601	598	596	592	586
125°	861	874	870	866	864	770
135°	1114	1130	1134	1132	1128	861
145°	1352	1363	1372	1373	1367	845
155°	1546	1551	1556	1563	1558	712
165°	1682	1681	1681	1691	1684	475
175°	1751	1746	1743	1754	1745	166
180°	1754	1754	1754	1754	1754	

TEST NUMBER: P914420

CATALOG NUMBER: DFN2DIP-SQ2F0-040D070US927-FLLFLL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1233.0	1233.0	1233.0	1233.0	1233.0
2.5°	1240.2	1234.2	1221.1	1233.0	1230.7
5°	1233.0	1228.3	1215.2	1224.6	1222.4
7.5°	1224.6	1217.6	1204.5	1214.1	1211.7
10°	1211.7	1203.4	1189.2	1198.6	1195.1
12.5°	1193.8	1186.8	1172.6	1178.5	1176.1
15°	1173.7	1166.6	1151.2	1156.0	1150.1
17.5°	1148.8	1141.8	1126.3	1132.2	1126.3
20°	1121.5	1114.4	1097.9	1101.4	1096.8
22.5°	1094.3	1083.6	1068.2	1068.2	1065.8
25°	1062.2	1052.8	1032.7	1035.0	1032.7
27.5°	1026.7	1018.3	1003.1	999.5	993.6
30°	991.2	981.7	963.9	960.4	955.6
32.5°	953.2	946.2	927.2	920.0	915.2
35°	916.5	904.7	885.7	878.5	872.6
37.5°	875.0	864.3	845.3	837.0	831.1
40°	832.3	822.8	803.7	793.2	788.5
42.5°	790.8	781.2	762.4	750.4	743.4
45°	745.8	737.5	719.6	706.7	701.9
47.5°	701.9	693.6	674.6	661.6	654.5
50°	655.6	649.7	633.1	616.5	610.5
52.5°	610.5	602.3	586.9	573.9	565.5
55°	564.4	557.2	543.0	528.8	522.9
57.5°	518.1	512.2	496.7	482.5	477.8
60°	471.8	467.1	450.6	437.5	434.0
62.5°	426.8	418.5	406.7	394.8	390.1
65°	380.6	373.4	361.6	350.9	345.1
67.5°	333.2	327.2	316.6	308.3	303.6
70°	289.3	284.6	273.9	265.5	260.9
72.5°	244.3	239.5	233.6	225.3	221.7
75°	199.2	196.9	190.8	183.8	186.2
77.5°	158.8	154.1	151.7	148.1	144.7
80°	118.6	117.3	114.9	111.5	109.1
82.5°	80.6	80.6	79.5	74.7	74.7
85°	48.6	47.5	46.3	42.6	41.5
87.5°	21.4	19.0	16.6	13.1	11.8
90°	1.6	19.0	51.8	48.6	50.2
92.5°	32.8	44.4	46.0	47.6	47.6
95°	77.2	92.0	94.7	94.7	92.0
97.5°	128.5	142.2	148.1	148.1	148.1
100°	187.7	199.9	204.1	204.1	202.5
102.5°	250.1	259.0	264.9	266.5	264.9
105°	318.3	322.5	325.7	328.4	328.4
107.5°	386.0	392.3	392.3	393.4	386.0
110°	451.5	460.0	460.0	460.0	455.7

TEST NUMBER: P914420

CATALOG NUMBER: DFN2DIP-SQ2F0-040D070US927-FLLFLL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	522.4	531.4	529.8	525.5	522.4
115°	592.2	600.6	598.0	596.4	592.2
117.5°	661.4	673.0	665.7	661.4	657.2
120°	731.2	742.8	731.2	731.2	726.4
122.5°	794.6	809.5	802.1	797.8	794.6
125°	861.3	874.5	870.3	865.5	864.0
127.5°	926.3	942.7	936.9	930.6	926.3
130°	987.1	1006.1	1003.5	1000.4	994.5
132.5°	1055.3	1070.2	1071.2	1063.8	1059.5
135°	1114.0	1130.4	1133.6	1131.9	1127.7
137.5°	1179.6	1192.8	1195.4	1194.4	1188.0
140°	1237.2	1250.5	1257.8	1257.8	1252.0
142.5°	1296.4	1309.6	1313.8	1315.4	1309.6
145°	1352.5	1363.0	1371.5	1373.1	1367.3
147.5°	1402.7	1415.9	1422.3	1424.9	1419.1
150°	1454.5	1463.5	1469.3	1474.1	1469.3
152.5°	1500.5	1509.5	1516.9	1522.7	1516.9
155°	1546.5	1550.7	1555.5	1562.9	1558.1
157.5°	1586.2	1589.4	1592.0	1602.6	1595.1
160°	1621.6	1624.8	1626.3	1635.3	1629.0
162.5°	1654.4	1654.4	1656.0	1666.0	1658.6
165°	1682.4	1680.8	1680.8	1691.4	1683.9
167.5°	1707.8	1703.0	1703.0	1713.6	1706.2
170°	1726.8	1722.6	1721.0	1731.5	1722.6
172.5°	1740.0	1735.7	1734.2	1744.8	1735.7
175°	1750.6	1746.4	1743.2	1753.7	1744.8
177.5°	1756.4	1752.1	1749.0	1758.0	1749.0
180°	1753.7	1753.7	1753.7	1753.7	1753.7

TEST NUMBER: P914420

CATALOG NUMBER: DFN2DIP-SQ2F0-040D070US927-FLLFLL

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	9.51	10.29	10.56	11.34	12.76	9.07	9.84	10.12	10.89	12.31
	3H	11.15	11.84	12.20	12.90	14.34	10.66	11.35	11.71	12.41	13.85
	4H	11.72	12.38	12.79	13.44	14.88	11.23	11.88	12.29	12.94	14.39
	6H	12.10	12.70	13.18	13.77	15.23	11.60	12.20	12.68	13.27	14.73
	8H	12.19	12.77	13.28	13.85	15.30	11.69	12.27	12.77	13.35	14.80
	12H	12.23	12.78	13.32	13.85	15.33	11.72	12.27	12.81	13.35	14.82
4H	2H	9.95	10.61	11.03	11.67	13.12	9.60	10.25	10.67	11.32	12.76
	3H	11.79	12.34	12.87	13.42	14.88	11.38	11.93	12.46	13.02	14.47
	4H	12.48	12.99	13.57	14.07	15.54	12.06	12.56	13.15	13.64	15.12
	6H	12.98	13.41	14.07	14.51	15.98	12.54	12.97	13.64	14.08	15.55
	8H	13.11	13.52	14.21	14.61	16.10	12.68	13.08	13.77	14.17	15.66
	12H	13.17	13.54	14.29	14.65	16.14	12.72	13.09	13.84	14.20	15.69
8H	4H	12.66	13.06	13.76	14.16	15.65	12.28	12.69	13.38	13.78	15.27
	6H	13.26	13.60	14.38	14.73	16.22	12.88	13.21	14.00	14.35	15.84
	8H	13.47	13.76	14.60	14.88	16.39	13.08	13.37	14.20	14.49	15.99
	12H	13.59	13.84	14.71	14.96	16.50	13.18	13.43	14.30	14.55	16.09
12H	4H	12.64	13.00	13.75	14.11	15.61	12.27	12.63	13.38	13.74	15.24
	6H	13.29	13.58	14.41	14.70	16.20	12.92	13.21	14.04	14.33	15.83
	8H	13.51	13.77	14.64	14.88	16.42	13.13	13.39	14.26	14.50	16.04