

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: P914827

Luminaire Tested: DFN2DIP-SQ3F0-120D070US927-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P914827
REPORT IS A COMBINATION OF REPORTS P901452 AND P898289
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ3F0-120D070US927-RLLONL
Description: 3 foot, Square Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

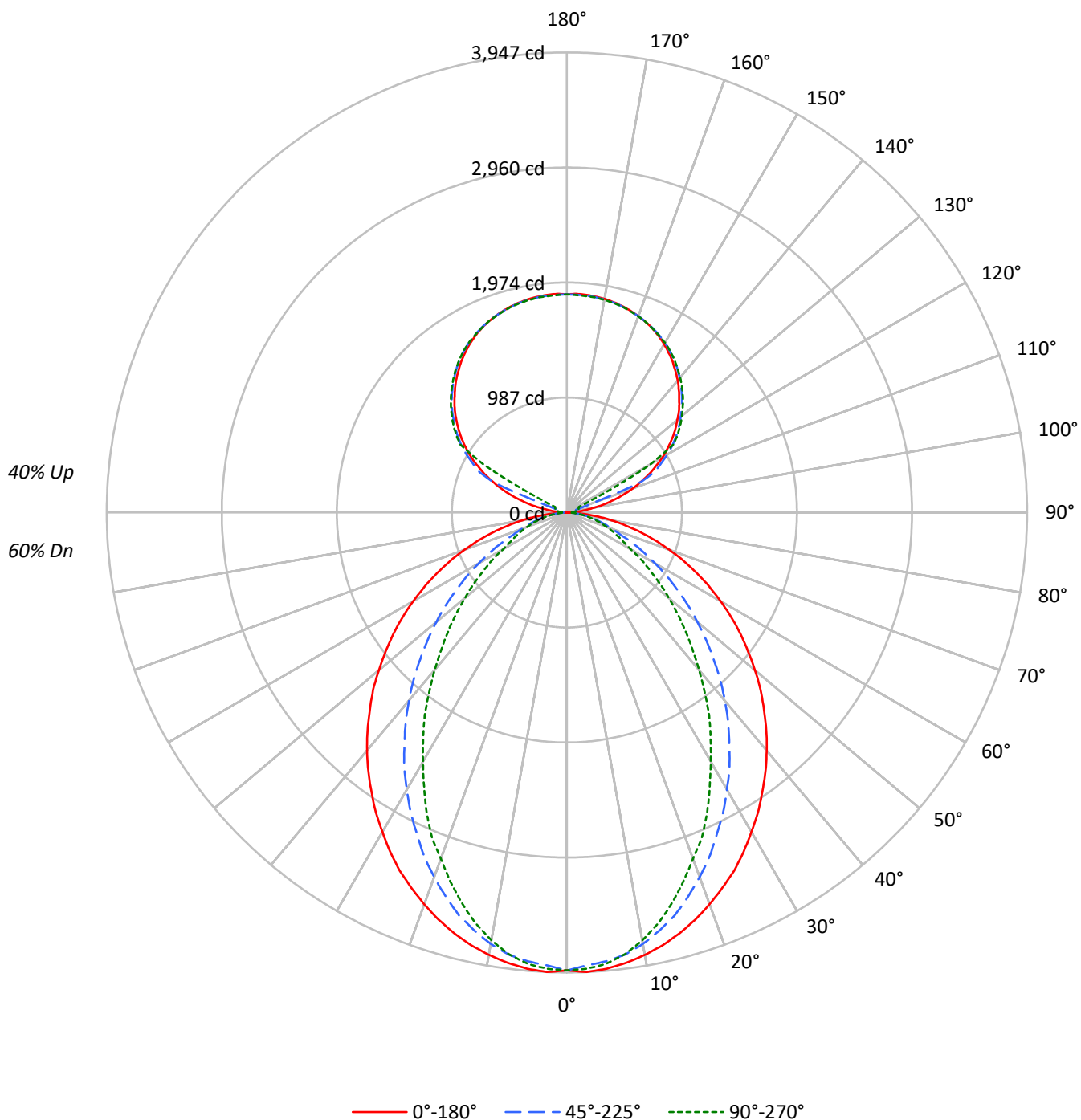
Lumens per Lamp: N/A
Luminaire Lumens: 13570.1 lumens
Efficiency: N/A
Efficacy: 76.1 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.06' x L: 3.06' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 178.3
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9957
Total Harmonic Distortion (THDi): 0.049
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P914827

CATALOG NUMBER: DFN2DIP-SQ3F0-120D070US927-RLLONL

Luminous Intensity Polar Plot



TEST NUMBER: P914827

CATALOG NUMBER: DFN2DIP-SQ3F0-120D070US927-RLLONL

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
RCR																	
0	109	109	109	109	102	102	102	102	89	89	89		76	76	76		65
1	101	96	93	89	94	90	87	84	79	76	74		68	66	65		58
2	92	85	79	74	86	80	74	70	70	66	62		60	58	55		52
3	84	75	68	62	79	71	64	59	62	57	53		54	50	47		47
4	77	67	59	53	72	63	56	51	55	50	46		48	44	41		42
5	71	60	52	46	67	56	49	44	50	44	40		44	39	36		38
6	66	54	46	40	62	51	44	39	45	39	35		40	35	32		35
7	61	49	41	36	57	46	39	34	41	35	31		36	32	28		32
8	57	45	37	32	53	42	35	31	38	32	28		34	29	26		30
9	53	41	34	29	50	39	32	27	35	29	25		31	26	23		27
10	50	38	31	26	47	36	29	25	32	27	23		29	24	21		25

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	4502	4502	4502
5°	4506	4427	4457
10°	4459	4337	4311
15°	4394	4191	4085
20°	4310	3991	3809
25°	4224	3767	3542
30°	4110	3537	3204
35°	3997	3291	2907
40°	3882	3036	2568
45°	3749	2754	2260
50°	3612	2469	1959
55°	3468	2166	1670
60°	3301	1848	1373
65°	3109	1526	1234
70°	2875	1226	1115
75°	2581	1074	1011
80°	2158	892	871
85°	1463	581	646

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 3749 cd/sqm

TEST NUMBER: P914827

CATALOG NUMBER: DFN2DIP-SQ3F0-120D070US927-RLLONL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	368.2	2.7
10°-20°	1010.8	7.4
20°-30°	1419.2	10.5
30°-40°	1547.0	11.4
40°-50°	1421.9	10.5
50°-60°	1116.7	8.2
60°-70°	726.9	5.4
70°-80°	374.2	2.8
80°-90°	98.8	0.7
90°-100°	61.7	0.5
100°-110°	230.0	1.7
110°-120°	610.1	4.5
120°-130°	1011.9	7.5
130°-140°	1074.9	7.9
140°-150°	999.0	7.4
150°-160°	803.2	5.9
160°-170°	517.5	3.8
170°-180°	178.1	1.3
0°-30°	2798.2	20.6
0°-40°	4345.2	32.0
0°-60°	6883.7	50.7
0°-90°	8083.6	59.6
90°-120°	901.9	6.6
90°-150°	3987.7	29.4
90°-180°	5487.0	40.4
0°-180°	13570.1	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3929	3929	3929	3929	3929	
5°	3929	3911	3865	3897	3886	373
15°	3737	3698	3577	3509	3474	1053
25°	3392	3278	3044	2898	2844	1560
35°	2923	2741	2429	2205	2126	1829
45°	2389	2151	1778	1525	1440	1845
55°	1817	1540	1156	942	875	1623
65°	1227	939	619	498	487	1216
75°	654	405	284	260	256	692
85°	153	78	68	68	68	175
90°	1	16	27	34	36	13
95°	88	43	53	60	58	104
105°	412	452	83	97	103	440
115°	779	802	836	209	111	767
125°	1101	1119	1144	1154	1158	982
135°	1362	1384	1396	1410	1407	1052
145°	1580	1579	1602	1612	1605	988
155°	1740	1728	1744	1752	1742	802
165°	1834	1826	1830	1839	1830	518
175°	1876	1866	1869	1878	1865	178
180°	1871	1871	1871	1871	1871	

TEST NUMBER: P914827

CATALOG NUMBER: DFN2DIP-SQ3F0-120D070US927-RLLONL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	3928.9	3928.9	3928.9	3928.9	3928.9
2.5°	3946.6	3928.9	3889.7	3925.5	3918.3
5°	3928.9	3911.2	3864.7	3896.8	3886.3
7.5°	3896.8	3875.7	3825.9	3839.9	3822.1
10°	3854.2	3829.3	3758.3	3747.4	3726.3
12.5°	3801.0	3769.0	3672.7	3651.6	3612.4
15°	3736.9	3697.7	3576.9	3509.4	3474.0
17.5°	3662.2	3605.2	3455.8	3377.8	3320.8
20°	3576.9	3505.6	3328.0	3239.3	3160.8
22.5°	3484.5	3402.7	3196.3	3075.6	3022.4
25°	3392.1	3278.1	3043.5	2897.9	2844.3
27.5°	3281.9	3160.8	2901.3	2734.2	2652.3
30°	3164.6	3029.2	2744.7	2563.7	2467.5
32.5°	3050.7	2886.9	2595.7	2382.2	2293.2
35°	2922.8	2741.3	2428.6	2204.6	2126.1
37.5°	2798.3	2602.6	2272.1	2026.5	1937.8
40°	2666.6	2453.5	2108.4	1856.0	1763.6
42.5°	2531.6	2304.1	1945.0	1681.7	1593.1
45°	2389.4	2151.0	1777.9	1525.2	1439.9
47.5°	2254.3	2002.0	1618.0	1365.2	1287.1
50°	2105.0	1852.6	1461.4	1215.8	1141.5
52.5°	1959.0	1692.3	1312.0	1077.4	1009.9
55°	1816.8	1539.5	1155.5	942.3	874.8
57.5°	1671.1	1386.7	1017.0	817.8	760.9
60°	1521.8	1237.3	871.0	690.0	633.0
62.5°	1376.2	1091.7	746.6	576.1	547.7
65°	1226.8	938.6	618.7	498.0	487.0
67.5°	1084.6	796.3	498.0	437.2	426.7
70°	935.2	657.9	412.3	376.8	362.5
72.5°	793.0	529.7	344.8	316.5	309.3
75°	654.1	405.1	284.5	259.5	256.1
77.5°	515.7	287.8	224.1	209.8	202.6
80°	387.5	206.4	170.5	156.5	156.5
82.5°	270.1	138.8	117.3	110.1	110.1
85°	152.8	78.1	67.5	67.5	67.5
87.5°	57.0	28.3	28.3	24.9	24.9
90°	1.3	16.2	27.0	33.9	36.5
92.5°	33.9	28.4	32.5	35.3	36.5
95°	87.9	43.3	52.8	59.7	58.2
97.5°	158.4	47.5	69.0	73.2	74.5
100°	239.8	54.2	77.2	87.9	90.7
102.5°	329.0	326.5	79.9	94.7	98.9
105°	411.7	452.3	82.6	97.4	102.9
107.5°	507.8	541.6	85.4	100.2	105.7
110°	600.0	628.3	237.0	101.6	106.9

TEST NUMBER: P914827

CATALOG NUMBER: DFN2DIP-SQ3F0-120D070US927-RLLONL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	686.7	710.9	687.9	104.2	108.4
115°	778.6	801.6	835.5	208.6	111.1
117.5°	858.6	885.6	908.7	714.9	360.2
120°	947.9	968.2	992.7	1008.9	826.1
122.5°	1023.7	1045.4	1072.6	1080.6	1082.0
125°	1100.9	1118.6	1144.3	1153.8	1157.8
127.5°	1171.3	1190.3	1210.7	1224.2	1225.5
130°	1237.7	1259.4	1274.2	1289.2	1287.9
132.5°	1305.4	1323.1	1337.9	1350.1	1348.8
135°	1362.3	1384.0	1396.1	1409.8	1407.1
137.5°	1421.8	1438.1	1451.8	1465.3	1461.3
140°	1480.0	1491.0	1505.8	1518.0	1511.2
142.5°	1528.9	1538.4	1555.9	1566.7	1560.0
145°	1580.4	1579.0	1601.9	1611.5	1604.7
147.5°	1624.9	1621.0	1643.9	1650.7	1645.4
150°	1668.3	1658.9	1680.6	1688.6	1681.9
152.5°	1704.9	1694.1	1714.4	1722.5	1713.1
155°	1740.1	1728.0	1744.2	1752.3	1741.5
157.5°	1768.5	1757.8	1770.0	1779.5	1768.5
160°	1793.0	1784.8	1793.0	1801.0	1791.5
162.5°	1814.6	1806.5	1813.2	1822.7	1810.5
165°	1833.5	1825.5	1829.5	1839.0	1829.5
167.5°	1848.5	1840.2	1844.4	1853.9	1841.7
170°	1860.7	1852.5	1855.2	1864.7	1852.5
172.5°	1868.8	1860.7	1863.4	1872.9	1860.7
175°	1875.5	1866.0	1868.8	1878.2	1864.7
177.5°	1878.2	1868.8	1870.2	1879.7	1867.4
180°	1871.4	1871.4	1871.4	1871.4	1871.4

TEST NUMBER: P914827

CATALOG NUMBER: DFN2DIP-SQ3F0-120D070US927-RLONL

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	13.19	14.10	14.07	15.00	16.13	9.15	10.06	10.03	10.96	12.09
	3H	14.87	15.69	15.76	16.59	17.75	10.34	11.16	11.23	12.06	13.22
	4H	15.48	16.25	16.38	17.16	18.33	10.79	11.56	11.69	12.47	13.64
	6H	15.90	16.61	16.82	17.53	18.71	11.11	11.82	12.03	12.73	13.91
	8H	16.03	16.70	16.95	17.64	18.81	11.20	11.87	12.12	12.81	13.98
	12H	16.09	16.73	17.02	17.66	18.86	11.24	11.88	12.17	12.81	14.01
4H	2H	13.22	13.99	14.13	14.90	16.06	9.75	10.53	10.66	11.43	12.60
	3H	15.05	15.69	15.97	16.63	17.81	11.10	11.75	12.03	12.69	13.87
	4H	15.74	16.32	16.67	17.26	18.47	11.65	12.23	12.58	13.17	14.38
	6H	16.25	16.76	17.20	17.72	18.92	12.07	12.57	13.01	13.53	14.74
	8H	16.43	16.90	17.38	17.85	19.07	12.19	12.66	13.14	13.62	14.84
	12H	16.53	16.95	17.49	17.92	19.14	12.26	12.68	13.22	13.65	14.88
8H	4H	15.71	16.18	16.66	17.13	18.35	11.93	12.40	12.88	13.36	14.58
	6H	16.28	16.66	17.25	17.66	18.88	12.45	12.83	13.42	13.83	15.05
	8H	16.49	16.83	17.47	17.82	19.05	12.63	12.98	13.61	13.96	15.20
	12H	16.63	16.93	17.61	17.91	19.19	12.75	13.05	13.73	14.03	15.31
12H	4H	15.67	16.09	16.63	17.06	18.29	11.94	12.36	12.91	13.33	14.56
	6H	16.25	16.59	17.23	17.58	18.82	12.49	12.84	13.48	13.82	15.06
	8H	16.47	16.77	17.46	17.75	19.04	12.70	13.00	13.69	13.98	15.27