

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: P917392

Luminaire Tested: DFN2DIP-SQ3F0-070D120US930-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P917392
REPORT IS A COMBINATION OF REPORTS P900011 AND P896733
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ3F0-070D120US930-FLLFLL
Description: 3 foot, Square Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

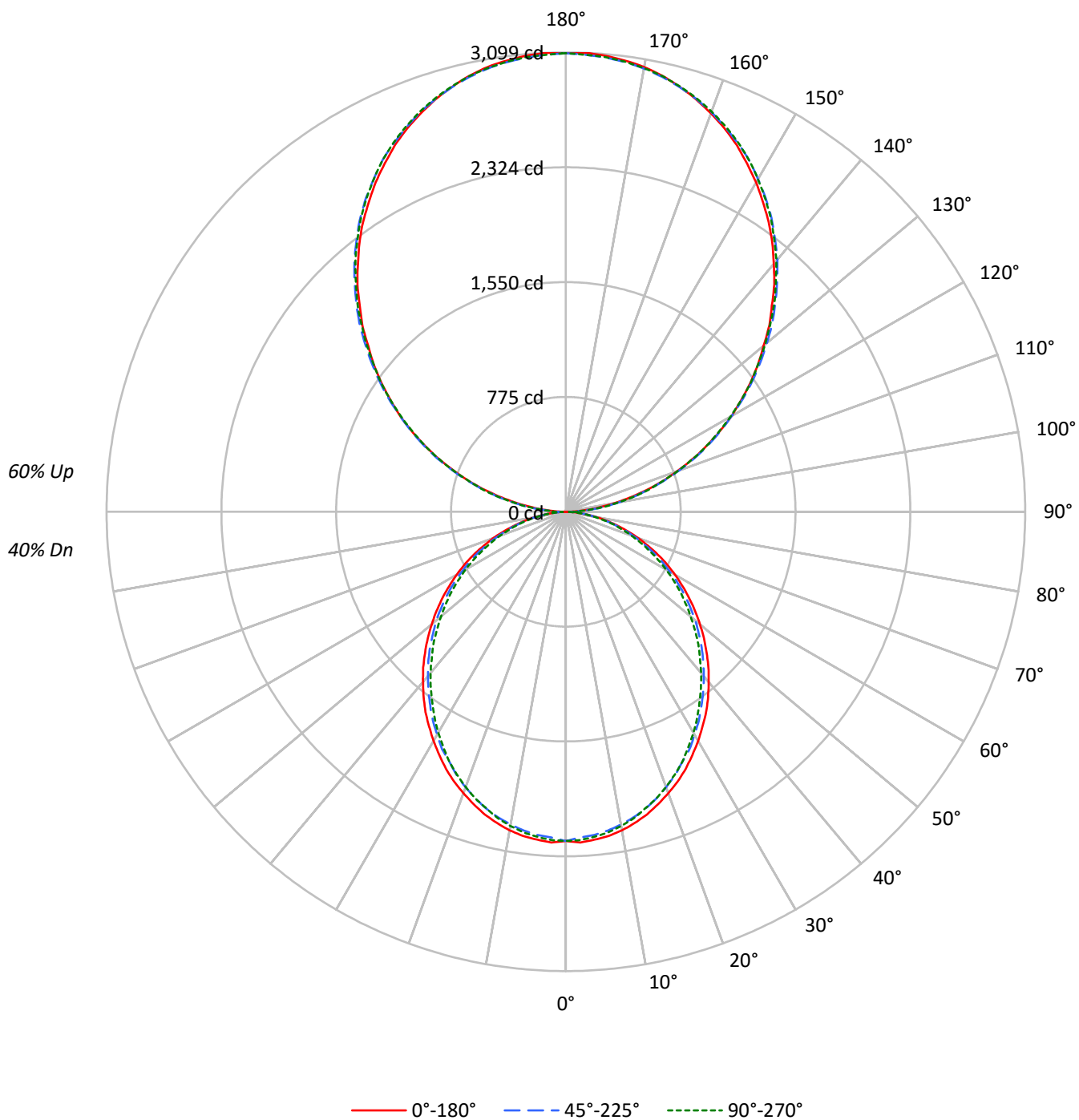
Lumens per Lamp: N/A
Luminaire Lumens: 14308.5 lumens
Efficiency: N/A
Efficacy: 89.6 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 3.06' x L: 3.06' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 159.7
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9963
Total Harmonic Distortion (THDi): 0.065
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P917392

CATALOG NUMBER: DFN2DIP-SQ3F0-070D120US930-FLLFLL

Luminous Intensity Polar Plot



TEST NUMBER: P917392

CATALOG NUMBER: DFN2DIP-SQ3F0-070D120US930-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	78	78	78	61	61	61	47	47	47
1	95	91	87	84	87	83	80	77	68	66	64	54	52	51	41	40	39
2	87	80	74	68	79	73	67	63	59	56	53	47	45	43	36	35	33
3	79	70	63	57	72	64	58	53	52	48	44	42	39	36	32	30	28
4	72	62	54	48	66	57	50	45	47	42	38	37	34	31	29	26	24
5	66	55	47	41	60	50	43	38	42	36	32	33	30	27	26	23	21
6	61	49	41	36	55	45	38	33	37	32	28	30	26	23	23	21	19
7	56	44	37	31	51	41	34	29	34	29	25	27	24	21	21	19	16
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	16	18	15	13
10	45	34	27	22	41	31	25	20	26	21	18	21	17	15	17	14	12

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2544	2544	2544
5°	2547	2507	2525
10°	2525	2472	2490
15°	2486	2429	2436
20°	2434	2371	2380
25°	2383	2302	2316
30°	2318	2237	2235
35°	2257	2161	2149
40°	2183	2085	2067
45°	2108	2008	1984
50°	2026	1927	1887
55°	1940	1833	1798
60°	1843	1722	1695
65°	1737	1607	1575
70°	1602	1466	1445
75°	1415	1298	1323
80°	1189	1083	1094
85°	838	718	716

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 3112 cd/sqm

TEST NUMBER: P917392

CATALOG NUMBER: DFN2DIP-SQ3F0-070D120US930-FLLFLL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	209.0	1.5
10°-20°	588.1	4.1
20°-30°	864.2	6.0
30°-40°	1003.7	7.0
40°-50°	1002.5	7.0
50°-60°	874.2	6.1
60°-70°	646.2	4.5
70°-80°	365.6	2.6
80°-90°	105.3	0.7
90°-100°	191.5	1.3
100°-110°	608.3	4.3
110°-120°	1041.1	7.3
120°-130°	1369.2	9.6
130°-140°	1536.9	10.7
140°-150°	1507.1	10.5
150°-160°	1264.2	8.8
160°-170°	838.4	5.9
170°-180°	293.0	2.0
0°-30°	1661.3	11.6
0°-40°	2665.1	18.6
0°-60°	4541.7	31.7
0°-90°	5658.8	39.5
90°-120°	1840.9	12.9
90°-150°	6254.0	43.7
90°-180°	8650.0	60.5
0°-180°	14308.5	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2221	2221	2221	2221	2221	
5°	2221	2212	2189	2206	2202	211
15°	2114	2101	2073	2082	2071	595
25°	1913	1896	1860	1864	1860	880
35°	1651	1629	1595	1582	1572	1031
45°	1343	1328	1296	1273	1264	1037
55°	1016	1004	978	952	942	909
65°	686	673	651	632	621	678
75°	359	355	344	331	335	383
85°	88	85	83	77	75	98
90°	3	34	91	86	89	14
95°	136	162	167	167	162	152
105°	562	569	575	579	579	593
115°	1045	1060	1055	1052	1045	1033
125°	1520	1543	1536	1527	1524	1358
135°	1965	1994	2000	1997	1990	1519
145°	2386	2405	2420	2423	2412	1491
155°	2728	2736	2744	2757	2749	1256
165°	2968	2966	2966	2984	2971	837
175°	3089	3081	3076	3094	3078	293
180°	3094	3094	3094	3094	3094	

TEST NUMBER: P917392

CATALOG NUMBER: DFN2DIP-SQ3F0-070D120US930-FLLFLL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2220.6	2220.6	2220.6	2220.6	2220.6
2.5°	2233.6	2222.9	2199.3	2220.6	2216.6
5°	2220.6	2212.3	2188.7	2205.7	2201.6
7.5°	2205.7	2193.0	2169.4	2186.7	2182.4
10°	2182.4	2167.4	2141.8	2158.8	2152.5
12.5°	2150.2	2137.5	2111.9	2122.5	2118.2
15°	2114.0	2101.3	2073.4	2082.0	2071.3
17.5°	2069.1	2056.4	2028.5	2039.2	2028.5
20°	2019.9	2007.3	1977.3	1983.7	1975.3
22.5°	1971.0	1951.7	1923.9	1923.9	1919.5
25°	1913.3	1896.2	1860.0	1864.1	1860.0
27.5°	1849.1	1834.2	1806.5	1800.2	1789.5
30°	1785.3	1768.0	1736.1	1729.7	1721.1
32.5°	1716.8	1704.1	1669.9	1657.0	1648.4
35°	1650.7	1629.4	1595.1	1582.2	1571.6
37.5°	1575.9	1556.6	1522.4	1507.5	1496.8
40°	1499.1	1481.9	1447.6	1428.6	1420.0
42.5°	1424.3	1407.1	1373.1	1351.6	1338.9
45°	1343.2	1328.3	1296.1	1272.8	1264.1
47.5°	1264.1	1249.2	1215.0	1191.4	1178.8
50°	1180.8	1170.1	1140.2	1110.4	1099.7
52.5°	1099.7	1084.8	1057.1	1033.6	1018.6
55°	1016.5	1003.6	978.0	952.4	941.8
57.5°	933.2	922.5	894.6	869.0	860.5
60°	849.8	841.4	811.5	788.0	781.6
62.5°	768.7	753.7	732.5	711.2	702.5
65°	685.6	672.6	651.3	632.1	621.4
67.5°	600.1	589.3	570.2	555.3	546.7
70°	521.1	512.5	493.2	478.3	469.9
72.5°	439.9	431.4	420.7	405.8	399.4
75°	358.6	354.6	343.6	331.0	335.3
77.5°	286.2	277.5	273.2	266.8	260.6
80°	213.6	211.4	207.1	200.7	196.4
82.5°	145.2	145.2	143.2	134.6	134.6
85°	87.5	85.4	83.4	76.8	74.8
87.5°	38.5	34.2	29.9	23.6	21.3
90°	2.8	33.6	91.4	85.9	88.6
92.5°	57.8	78.4	81.1	84.0	84.0
95°	136.2	162.3	167.0	167.0	162.3
97.5°	226.7	250.9	261.2	261.2	261.2
100°	331.2	352.6	360.0	360.0	357.3
102.5°	441.2	457.1	467.3	470.2	467.3
105°	561.6	569.0	574.6	579.3	579.3
107.5°	680.9	692.2	692.2	694.0	680.9
110°	796.6	811.5	811.5	811.5	804.1

TEST NUMBER: P917392

CATALOG NUMBER: DFN2DIP-SQ3F0-070D120US930-FLLFLL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	921.6	937.5	934.7	927.2	921.6
115°	1044.7	1059.7	1055.0	1052.2	1044.7
117.5°	1166.9	1187.5	1174.4	1166.9	1159.5
120°	1290.1	1310.6	1290.1	1290.1	1281.7
122.5°	1402.1	1428.2	1415.1	1407.6	1402.1
125°	1519.6	1542.9	1535.5	1527.1	1524.2
127.5°	1634.3	1663.2	1652.9	1641.8	1634.3
130°	1741.6	1775.1	1770.5	1764.9	1754.6
132.5°	1861.9	1888.1	1889.9	1876.8	1869.4
135°	1965.4	1994.4	2000.0	1997.2	1989.7
137.5°	2081.1	2104.4	2109.1	2107.2	2096.1
140°	2182.8	2206.1	2219.2	2219.2	2208.9
142.5°	2287.3	2310.6	2318.1	2320.8	2310.6
145°	2386.1	2404.8	2419.7	2422.6	2412.3
147.5°	2474.8	2498.1	2509.3	2514.0	2503.7
150°	2566.2	2582.0	2592.3	2600.7	2592.3
152.5°	2647.4	2663.2	2676.3	2686.6	2676.3
155°	2728.5	2736.0	2744.4	2757.4	2749.0
157.5°	2798.5	2804.1	2808.7	2827.4	2814.3
160°	2861.0	2866.6	2869.4	2885.3	2874.0
162.5°	2918.8	2918.8	2921.6	2939.3	2926.3
165°	2968.3	2965.5	2965.5	2984.1	2971.0
167.5°	3013.0	3004.6	3004.6	3023.3	3010.2
170°	3046.6	3039.1	3036.3	3055.0	3039.1
172.5°	3069.9	3062.4	3059.7	3078.3	3062.4
175°	3088.6	3081.1	3075.5	3094.1	3078.3
177.5°	3098.9	3091.4	3085.7	3101.6	3085.7
180°	3094.1	3094.1	3094.1	3094.1	3094.1

TEST NUMBER: P917392

CATALOG NUMBER: DFN2DIP-SQ3F0-070D120US930-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	9.43	10.20	10.47	11.25	12.67	8.99	9.76	10.03	10.81	12.22
	3H	11.08	11.77	12.13	12.83	14.26	10.59	11.28	11.64	12.34	13.77
	4H	11.66	12.32	12.72	13.38	14.82	11.17	11.82	12.23	12.88	14.32
	6H	12.05	12.66	13.12	13.72	15.17	11.55	12.16	12.62	13.22	14.67
	8H	12.15	12.73	13.23	13.81	15.25	11.65	12.23	12.73	13.31	14.75
	12H	12.20	12.74	13.28	13.82	15.29	11.69	12.23	12.77	13.31	14.78
4H	2H	9.88	10.53	10.95	11.59	13.03	9.52	10.18	10.59	11.24	12.68
	3H	11.73	12.28	12.81	13.36	14.82	11.32	11.87	12.40	12.96	14.41
	4H	12.44	12.94	13.52	14.02	15.49	12.01	12.52	13.10	13.59	15.07
	6H	12.94	13.37	14.03	14.47	15.94	12.51	12.94	13.60	14.04	15.51
	8H	13.09	13.49	14.18	14.58	16.07	12.65	13.05	13.74	14.15	15.63
	12H	13.15	13.52	14.26	14.62	16.11	12.70	13.07	13.81	14.18	15.66
8H	4H	12.62	13.03	13.71	14.12	15.60	12.24	12.65	13.34	13.74	15.22
	6H	13.24	13.58	14.36	14.71	16.19	12.86	13.19	13.97	14.33	15.81
	8H	13.46	13.75	14.58	14.87	16.37	13.07	13.36	14.19	14.47	15.97
	12H	13.58	13.84	14.71	14.95	16.49	13.17	13.43	14.30	14.54	16.08
12H	4H	12.60	12.97	13.71	14.07	15.56	12.23	12.60	13.34	13.70	15.19
	6H	13.27	13.56	14.39	14.68	16.18	12.90	13.19	14.02	14.31	15.81
	8H	13.50	13.76	14.63	14.87	16.41	13.12	13.38	14.25	14.49	16.03