

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: P920250

Luminaire Tested: DFN2DIP-SQ3F0-110D080US935-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P920250
REPORT IS A COMBINATION OF REPORTS P899948 AND P896733
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ3F0-110D080US935-RLLFLL
Description: 3 foot, Square Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

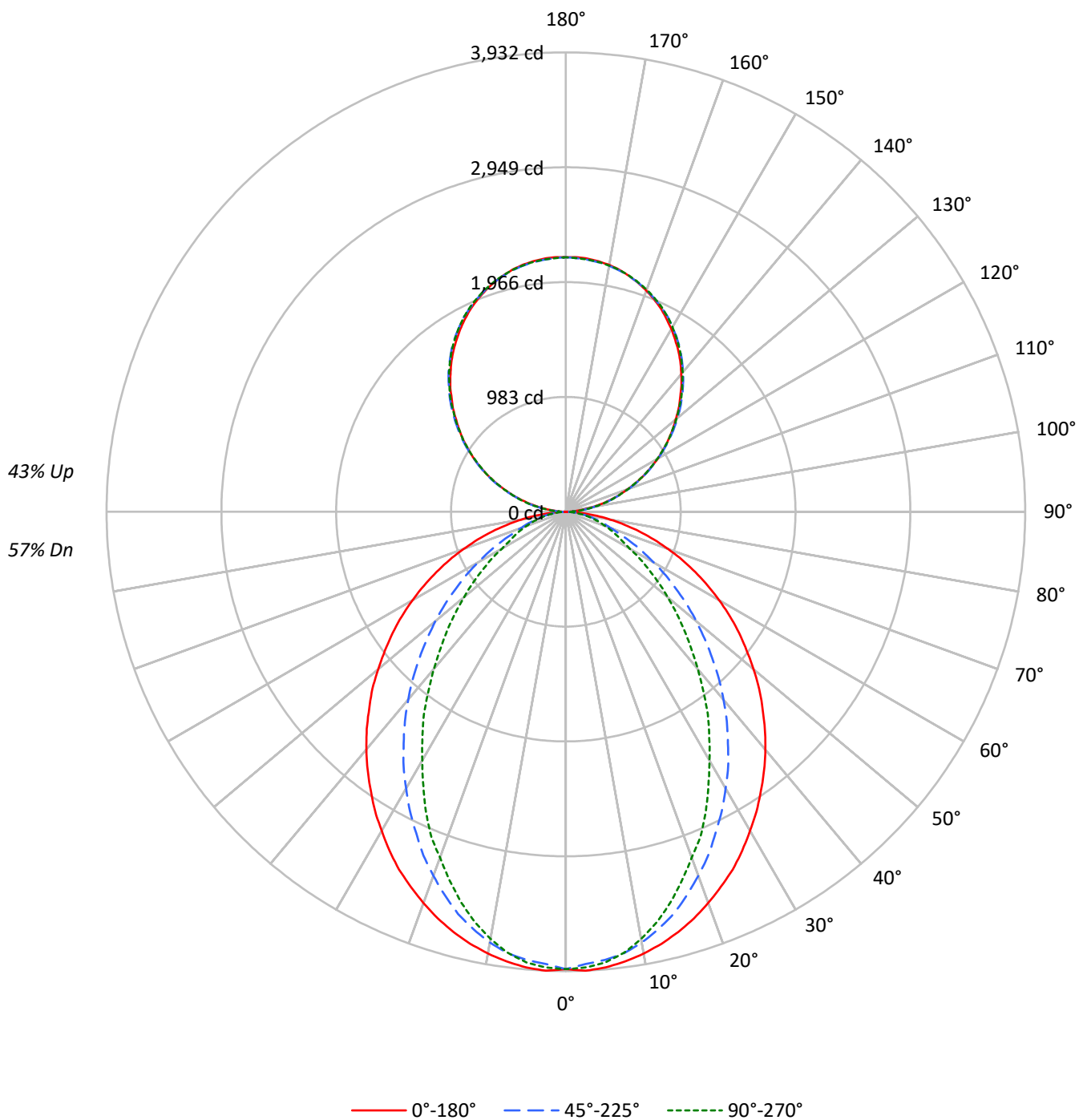
Lumens per Lamp: N/A
Luminaire Lumens: 14146.2 lumens
Efficiency: N/A
Efficacy: 82.1 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.06' x L: 3.06' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 172.3
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9977
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: P920250

CATALOG NUMBER: DFN2DIP-SQ3F0-110D080US935-RLLFLL

Luminous Intensity Polar Plot



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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	100	96	92	89	93	89	86	83	77	75	73	66	65	63	56	55	54
2	91	84	78	73	85	79	74	69	68	65	61	59	56	54	50	48	46
3	84	75	67	62	78	70	64	58	61	56	52	53	49	46	45	42	40
4	77	66	59	53	71	62	55	50	54	49	45	47	43	40	40	37	35
5	71	59	52	46	66	56	49	43	49	43	39	43	38	35	37	33	31
6	65	54	46	40	61	50	43	38	44	39	34	39	34	31	34	30	27
7	61	49	41	35	57	46	39	34	40	35	31	35	31	28	31	27	25
8	56	44	37	31	53	42	35	30	37	31	27	33	28	25	28	25	22
9	53	41	33	28	49	38	32	27	34	29	25	30	26	22	26	23	20
10	49	37	30	26	46	35	29	24	32	26	22	28	24	20	24	21	18

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	4485	4485	4485
5°	4489	4411	4441
10°	4442	4321	4295
15°	4378	4176	4070
20°	4294	3976	3795
25°	4209	3753	3529
30°	4094	3524	3192
35°	3982	3279	2897
40°	3868	3025	2558
45°	3736	2744	2251
50°	3598	2460	1951
55°	3455	2158	1664
60°	3288	1841	1368
65°	3097	1521	1229
70°	2865	1221	1111
75°	2572	1070	1007
80°	2149	889	869
85°	1457	578	643

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 3736 cd/sqm

TEST NUMBER: P920250

CATALOG NUMBER: DFN2DIP-SQ3F0-110D080US935-RLLFLL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	366.9	2.6
10°-20°	1007.1	7.1
20°-30°	1413.9	10.0
30°-40°	1541.3	10.9
40°-50°	1416.6	10.0
50°-60°	1112.5	7.9
60°-70°	724.2	5.1
70°-80°	372.8	2.6
80°-90°	101.4	0.7
90°-100°	134.8	1.0
100°-110°	428.3	3.0
110°-120°	733.0	5.2
120°-130°	964.0	6.8
130°-140°	1082.0	7.6
140°-150°	1061.0	7.5
150°-160°	890.1	6.3
160°-170°	590.3	4.2
170°-180°	206.3	1.5
0°-30°	2787.9	19.7
0°-40°	4329.1	30.6
0°-60°	6858.3	48.5
0°-90°	8056.5	57.0
90°-120°	1296.1	9.2
90°-150°	4403.1	31.1
90°-180°	6090.0	43.1
0°-180°	14146.2	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3914	3914	3914	3914	3914	
5°	3914	3897	3850	3882	3872	371
15°	3723	3684	3564	3496	3461	1049
25°	3380	3266	3032	2887	2834	1554
35°	2912	2731	2420	2196	2118	1823
45°	2381	2143	1771	1520	1435	1838
55°	1810	1534	1151	939	872	1617
65°	1222	935	616	496	485	1212
75°	652	404	283	259	255	689
85°	152	78	67	67	67	175
90°	2	24	64	60	62	14
95°	96	114	118	118	114	107
105°	395	401	405	408	408	417
115°	736	746	743	741	736	728
125°	1070	1086	1081	1075	1073	956
135°	1384	1404	1408	1406	1401	1070
145°	1680	1693	1704	1706	1698	1050
155°	1921	1926	1932	1941	1935	884
165°	2090	2088	2088	2101	2092	590
175°	2174	2169	2165	2178	2167	207
180°	2178	2178	2178	2178	2178	

TEST NUMBER: P920250

CATALOG NUMBER: DFN2DIP-SQ3F0-110D080US935-RLFL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	3914.4	3914.4	3914.4	3914.4	3914.4
2.5°	3932.0	3914.4	3875.3	3911.0	3903.9
5°	3914.4	3896.7	3850.5	3882.4	3871.9
7.5°	3882.4	3861.3	3811.7	3825.7	3807.9
10°	3840.0	3815.1	3744.5	3733.5	3712.5
12.5°	3786.9	3755.0	3659.2	3638.1	3599.0
15°	3723.0	3684.0	3563.7	3496.4	3461.0
17.5°	3648.7	3591.9	3443.0	3365.2	3308.5
20°	3563.7	3492.6	3315.6	3227.3	3149.1
22.5°	3471.6	3390.0	3184.5	3064.2	3011.2
25°	3379.5	3266.0	3032.3	2887.2	2833.8
27.5°	3269.8	3149.1	2890.5	2724.0	2642.5
30°	3152.9	3018.0	2734.6	2554.2	2458.3
32.5°	3039.4	2876.2	2586.1	2373.4	2284.7
35°	2912.0	2731.2	2419.7	2196.4	2118.2
37.5°	2788.0	2592.9	2263.6	2019.0	1930.7
40°	2656.8	2444.5	2100.6	1849.1	1757.0
42.5°	2522.2	2295.6	1937.8	1675.5	1587.2
45°	2380.6	2143.0	1771.3	1519.5	1434.6
47.5°	2246.0	1994.6	1612.0	1360.1	1282.4
50°	2097.1	1845.7	1456.0	1211.3	1137.3
52.5°	1951.7	1686.0	1307.2	1073.4	1006.1
55°	1810.0	1533.8	1151.2	938.8	871.6
57.5°	1665.0	1381.6	1013.2	814.8	758.0
60°	1516.1	1232.8	867.8	687.4	630.7
62.5°	1371.1	1087.7	743.8	573.9	545.7
65°	1222.2	935.0	616.4	496.1	485.2
67.5°	1080.6	793.4	496.1	435.6	425.1
70°	931.7	655.5	410.8	375.5	361.2
72.5°	790.0	527.7	343.5	315.3	308.2
75°	651.7	403.6	283.4	258.6	255.2
77.5°	513.8	286.8	223.3	209.0	201.8
80°	386.0	205.6	169.9	156.0	156.0
82.5°	269.1	138.3	116.9	109.8	109.8
85°	152.2	77.8	67.2	67.2	67.2
87.5°	56.7	28.2	28.2	24.8	24.8
90°	2.0	23.7	64.4	60.4	62.4
92.5°	40.7	55.2	57.2	59.1	59.1
95°	95.9	114.3	117.5	117.5	114.3
97.5°	159.6	176.7	183.9	183.9	183.9
100°	233.2	248.2	253.5	253.5	251.5
102.5°	310.6	321.8	329.0	331.0	329.0
105°	395.4	400.6	404.6	407.9	407.9
107.5°	479.4	487.3	487.3	488.6	479.4
110°	560.9	571.4	571.4	571.4	566.1

TEST NUMBER: P920250

CATALOG NUMBER: DFN2DIP-SQ3F0-110D080US935-RLLFLL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	648.8	660.0	658.1	652.8	648.8
115°	735.6	746.1	742.8	740.8	735.6
117.5°	821.6	836.0	826.8	821.6	816.3
120°	908.3	922.7	908.3	908.3	902.3
122.5°	987.0	1005.5	996.3	991.0	987.0
125°	1069.8	1086.2	1081.0	1075.0	1073.1
127.5°	1150.6	1171.0	1163.7	1155.9	1150.6
130°	1226.1	1249.7	1246.5	1242.6	1235.4
132.5°	1310.9	1329.2	1330.6	1321.4	1316.1
135°	1383.7	1404.1	1408.1	1406.1	1400.8
137.5°	1465.2	1481.6	1484.9	1483.6	1475.7
140°	1536.8	1553.2	1562.4	1562.4	1555.1
142.5°	1610.3	1626.8	1632.0	1634.0	1626.8
145°	1680.0	1693.1	1703.6	1705.6	1698.3
147.5°	1742.3	1758.8	1766.6	1770.0	1762.7
150°	1806.7	1817.8	1825.1	1831.0	1825.1
152.5°	1863.8	1875.0	1884.2	1891.4	1884.2
155°	1921.0	1926.2	1932.2	1941.3	1935.4
157.5°	1970.2	1974.2	1977.5	1990.5	1981.4
160°	2014.2	2018.2	2020.2	2031.3	2023.4
162.5°	2054.9	2054.9	2056.9	2069.4	2060.2
165°	2089.7	2087.7	2087.7	2100.9	2091.7
167.5°	2121.2	2115.4	2115.4	2128.5	2119.3
170°	2144.9	2139.7	2137.7	2150.9	2139.7
172.5°	2161.4	2156.1	2154.1	2167.2	2156.1
175°	2174.5	2169.2	2165.2	2178.4	2167.2
177.5°	2181.7	2176.4	2172.5	2183.7	2172.5
180°	2178.4	2178.4	2178.4	2178.4	2178.4

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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	12.95	13.84	13.85	14.76	15.93	8.91	9.80	9.81	10.72	11.89
	3H	14.63	15.43	15.54	16.35	17.55	10.10	10.90	11.01	11.82	13.02
	4H	15.24	15.99	16.17	16.92	18.13	10.55	11.30	11.48	12.23	13.44
	6H	15.66	16.35	16.60	17.29	18.51	10.87	11.56	11.81	12.50	13.71
	8H	15.78	16.44	16.73	17.40	18.61	10.96	11.61	11.90	12.57	13.78
	12H	15.85	16.47	16.80	17.42	18.66	11.00	11.62	11.95	12.57	13.81
4H	2H	12.98	13.73	13.91	14.66	15.86	9.51	10.26	10.45	11.20	12.40
	3H	14.81	15.43	15.75	16.39	17.61	10.86	11.49	11.81	12.45	13.67
	4H	15.50	16.07	16.45	17.02	18.27	11.41	11.98	12.36	12.93	14.18
	6H	16.01	16.50	16.98	17.48	18.72	11.82	12.31	12.79	13.29	14.54
	8H	16.18	16.64	17.15	17.61	18.87	11.95	12.41	12.92	13.38	14.64
	12H	16.28	16.69	17.27	17.68	18.94	12.01	12.42	13.00	13.41	14.68
8H	4H	15.47	15.92	16.44	16.90	18.16	11.69	12.15	12.66	13.12	14.38
	6H	16.03	16.41	17.02	17.42	18.68	12.20	12.58	13.19	13.59	14.85
	8H	16.24	16.58	17.25	17.58	18.86	12.39	12.72	13.39	13.72	15.00
	12H	16.38	16.67	17.39	17.67	18.99	12.50	12.80	13.51	13.79	15.12
12H	4H	15.42	15.83	16.41	16.82	18.09	11.69	12.11	12.68	13.10	14.36
	6H	16.00	16.34	17.01	17.34	18.62	12.25	12.58	13.25	13.59	14.86
	8H	16.22	16.52	17.23	17.51	18.84	12.46	12.75	13.46	13.75	15.07