

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: P911720

Luminaire Tested: DFN2DIP-SQ2F0-050D080US850-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P911720
REPORT IS A COMBINATION OF REPORTS P899835 AND P896659
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ2F0-050D080US850-FLLFLL
Description: 2 foot, Square Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

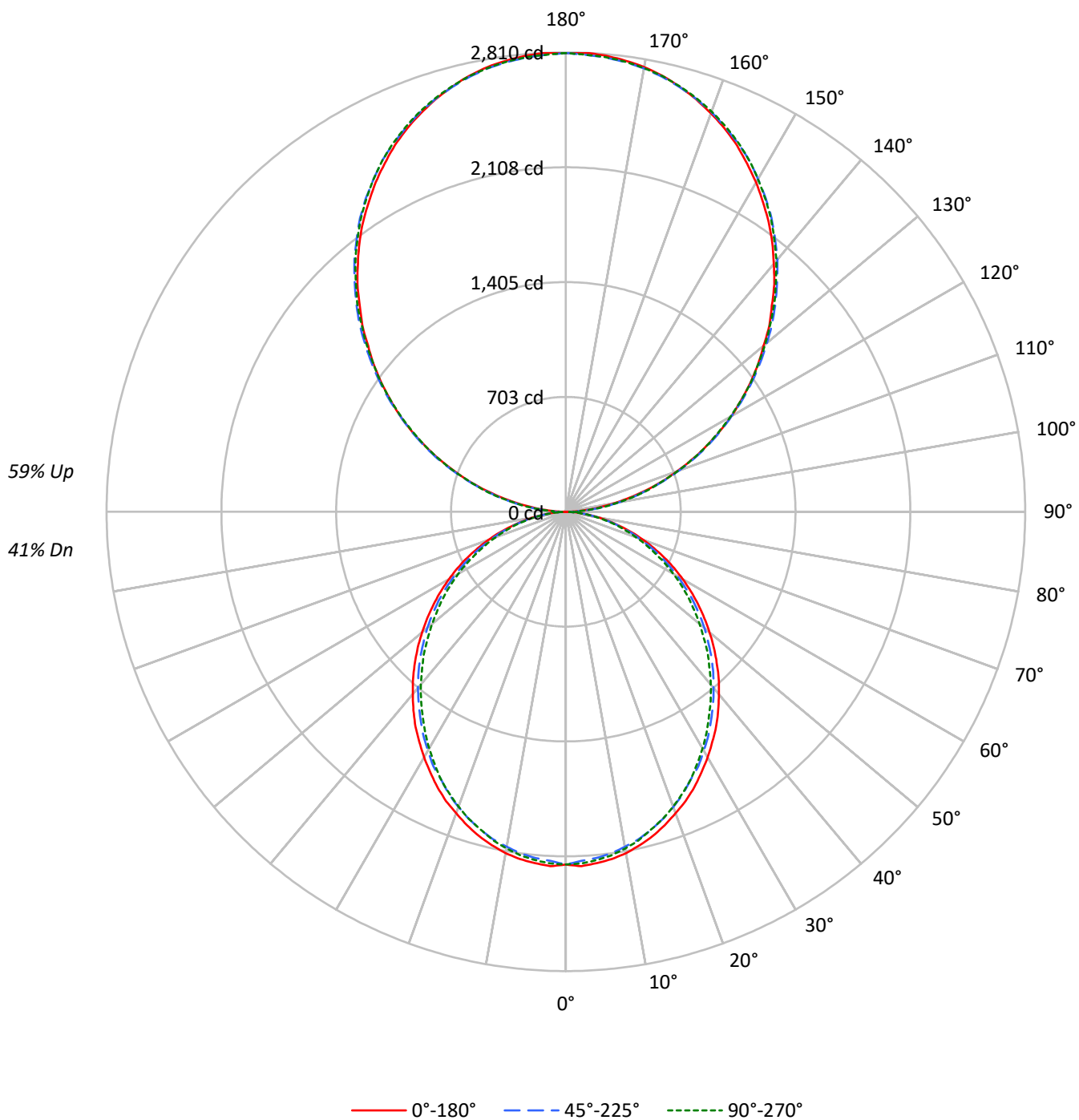
Lumens per Lamp: N/A
Luminaire Lumens: 13341.3 lumens
Efficiency: N/A
Efficacy: 122.2 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 2.21' x L: 2.21' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 109.2
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.996
Total Harmonic Distortion (THDi): 0.064
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P911720

CATALOG NUMBER: DFN2DIP-SQ2F0-050D080US850-FLLFLL

Luminous Intensity Polar Plot



TEST NUMBER: P911720

CATALOG NUMBER: DFN2DIP-SQ2F0-050D080US850-FLLFL

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	96	96	96	96	78	78	78	63	63	63	48	48	48
1	96	92	88	84	87	84	80	77	69	66	64	55	53	52	42	41	41
2	87	80	74	69	79	73	68	63	60	56	53	48	46	43	37	36	34
3	80	70	63	57	72	64	58	53	53	48	45	43	39	37	33	31	29
4	73	62	54	48	66	57	50	45	47	42	38	38	34	31	30	27	25
5	67	55	47	41	61	51	44	38	42	37	33	34	30	27	27	24	22
6	61	50	42	36	56	46	38	33	38	33	29	31	27	24	24	21	19
7	57	45	37	31	52	41	34	29	34	29	25	28	24	21	22	19	17
8	53	40	33	28	48	37	31	26	31	26	22	26	22	19	20	17	15
9	49	37	30	25	45	34	27	23	29	23	20	24	20	17	19	16	14
10	46	34	27	22	42	31	25	21	26	21	18	22	18	15	17	15	13

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	4744	4744	4744
5°	4744	4668	4703
10°	4697	4595	4633
15°	4620	4509	4527
20°	4518	4393	4418
25°	4417	4258	4294
30°	4292	4130	4138
35°	4173	3982	3973
40°	4028	3832	3816
45°	3883	3681	3654
50°	3724	3522	3468
55°	3557	3338	3295
60°	3368	3122	3097
65°	3159	2896	2864
70°	2896	2621	2611
75°	2533	2290	2368
80°	2092	1870	1924
85°	1412	1181	1208

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 3911 cd/sqm

TEST NUMBER: P911720

CATALOG NUMBER: DFN2DIP-SQ2F0-050D080US850-FLLFLL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	203.1	1.5
10°-20°	571.4	4.3
20°-30°	839.7	6.3
30°-40°	975.2	7.3
40°-50°	974.0	7.3
50°-60°	849.3	6.4
60°-70°	627.9	4.7
70°-80°	355.2	2.7
80°-90°	101.7	0.8
90°-100°	173.6	1.3
100°-110°	551.7	4.1
110°-120°	944.1	7.1
120°-130°	1241.6	9.3
130°-140°	1393.7	10.4
140°-150°	1366.6	10.2
150°-160°	1146.4	8.6
160°-170°	760.3	5.7
170°-180°	265.7	2.0
0°-30°	1614.1	12.1
0°-40°	2589.4	19.4
0°-60°	4412.7	33.1
0°-90°	5497.5	41.2
90°-120°	1669.4	12.5
90°-150°	5671.3	42.5
90°-180°	7844.0	58.8
0°-180°	13341.3	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2158	2158	2158	2158	2158	
5°	2158	2150	2126	2143	2139	205
15°	2054	2042	2014	2023	2012	578
25°	1859	1842	1807	1811	1807	855
35°	1604	1583	1550	1537	1527	1001
45°	1305	1290	1259	1237	1228	1007
55°	988	975	950	925	915	883
65°	666	654	633	614	604	659
75°	348	344	334	322	326	372
85°	85	83	81	75	73	95
90°	3	30	83	78	80	13
95°	124	147	151	151	147	137
105°	509	516	521	525	525	537
115°	947	961	957	954	947	937
125°	1378	1399	1392	1385	1382	1231
135°	1782	1809	1814	1811	1804	1378
145°	2164	2181	2194	2197	2188	1352
155°	2474	2481	2489	2500	2493	1139
165°	2692	2689	2689	2706	2694	759
175°	2801	2794	2789	2806	2792	266
180°	2806	2806	2806	2806	2806	

TEST NUMBER: P911720

CATALOG NUMBER: DFN2DIP-SQ2F0-050D080US850-FLLFLL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2157.6	2157.6	2157.6	2157.6	2157.6
2.5°	2170.1	2159.8	2136.9	2157.6	2153.7
5°	2157.6	2149.5	2126.5	2143.0	2139.2
7.5°	2143.0	2130.7	2107.9	2124.6	2120.4
10°	2120.4	2105.9	2081.0	2097.5	2091.4
12.5°	2089.1	2076.8	2052.0	2062.3	2058.1
15°	2053.9	2041.6	2014.5	2022.9	2012.5
17.5°	2010.3	1998.0	1970.9	1981.2	1970.9
20°	1962.6	1950.3	1921.2	1927.3	1919.2
22.5°	1915.0	1896.3	1869.2	1869.2	1865.0
25°	1858.9	1842.4	1807.1	1811.1	1807.1
27.5°	1796.6	1782.1	1755.2	1749.0	1738.7
30°	1734.5	1717.8	1686.8	1680.6	1672.3
32.5°	1668.0	1655.7	1622.5	1609.9	1601.6
35°	1603.7	1583.1	1549.8	1537.3	1527.0
37.5°	1531.1	1512.5	1479.2	1464.7	1454.3
40°	1456.6	1439.8	1406.5	1388.0	1379.7
42.5°	1383.9	1367.2	1334.1	1313.2	1300.9
45°	1305.1	1290.5	1259.3	1236.6	1228.2
47.5°	1228.2	1213.7	1180.5	1157.6	1145.3
50°	1147.3	1136.9	1107.9	1078.8	1068.4
52.5°	1068.4	1053.9	1027.0	1004.2	989.7
55°	987.7	975.1	950.2	925.3	915.0
57.5°	906.6	896.3	869.2	844.4	836.0
60°	825.7	817.6	788.5	765.5	759.4
62.5°	746.9	732.4	711.6	690.9	682.6
65°	666.1	653.5	632.8	614.2	603.7
67.5°	583.1	572.6	554.1	539.5	531.1
70°	506.3	497.9	479.2	464.7	456.6
72.5°	427.5	419.1	408.8	394.2	388.0
75°	348.4	344.5	333.9	321.6	325.8
77.5°	278.0	269.6	265.5	259.3	253.2
80°	207.6	205.4	201.2	195.1	190.9
82.5°	141.1	141.1	139.1	130.8	130.8
85°	84.9	83.0	81.0	74.6	72.6
87.5°	37.4	33.3	29.1	22.8	20.7
90°	2.6	30.5	83.0	77.9	80.4
92.5°	52.5	71.1	73.6	76.1	76.1
95°	123.5	147.2	151.4	151.4	147.2
97.5°	205.6	227.6	236.9	236.9	236.9
100°	300.3	319.7	326.5	326.5	323.9
102.5°	400.1	414.5	423.7	426.3	423.7
105°	509.3	516.0	521.1	525.3	525.3
107.5°	617.5	627.7	627.7	629.4	617.5
110°	722.4	735.9	735.9	735.9	729.2

TEST NUMBER: P911720

CATALOG NUMBER: DFN2DIP-SQ2F0-050D080US850-FLLFLL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	835.7	850.2	847.6	840.8	835.7
115°	947.4	960.9	956.7	954.2	947.4
117.5°	1058.2	1076.8	1065.0	1058.2	1051.4
120°	1169.9	1188.5	1169.9	1169.9	1162.2
122.5°	1271.4	1295.1	1283.2	1276.5	1271.4
125°	1377.9	1399.1	1392.3	1384.7	1382.3
127.5°	1482.1	1508.2	1498.9	1488.8	1482.1
130°	1579.3	1609.7	1605.5	1600.5	1591.2
132.5°	1688.5	1712.1	1713.8	1702.0	1695.2
135°	1782.3	1808.6	1813.7	1811.1	1804.3
137.5°	1887.2	1908.4	1912.6	1910.9	1900.7
140°	1979.5	2000.5	2012.4	2012.4	2003.1
142.5°	2074.2	2095.3	2102.1	2104.7	2095.3
145°	2163.9	2180.7	2194.3	2196.8	2187.5
147.5°	2244.2	2265.4	2275.4	2279.8	2270.5
150°	2327.1	2341.4	2350.7	2358.4	2350.7
152.5°	2400.7	2415.1	2426.9	2436.3	2426.9
155°	2474.3	2481.1	2488.7	2500.5	2492.9
157.5°	2537.7	2542.8	2547.0	2563.9	2552.1
160°	2594.4	2599.5	2602.0	2616.4	2606.3
162.5°	2646.9	2646.9	2649.4	2665.5	2653.6
165°	2691.7	2689.1	2689.1	2706.1	2694.2
167.5°	2732.2	2724.7	2724.7	2741.6	2729.7
170°	2762.7	2756.0	2753.4	2770.4	2756.0
172.5°	2783.9	2777.2	2774.6	2791.5	2777.2
175°	2800.8	2794.0	2788.9	2805.9	2791.5
177.5°	2810.1	2803.3	2798.2	2812.6	2798.2
180°	2805.9	2805.9	2805.9	2805.9	2805.9

TEST NUMBER: P911720

CATALOG NUMBER: DFN2DIP-SQ2F0-050D080US850-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	11.69	12.48	12.72	13.52	14.91	11.25	12.04	12.28	13.07	14.46
	3H	13.33	14.03	14.37	15.08	16.49	12.84	13.54	13.88	14.59	16.00
	4H	13.90	14.57	14.95	15.62	17.03	13.41	14.07	14.46	15.12	16.54
	6H	14.28	14.90	15.34	15.95	17.38	13.78	14.40	14.84	15.45	16.88
	8H	14.38	14.96	15.44	16.03	17.46	13.87	14.46	14.94	15.53	16.95
	12H	14.41	14.97	15.48	16.03	17.48	13.91	14.46	14.98	15.53	16.97
4H	2H	12.13	12.80	13.19	13.85	15.27	11.78	12.45	12.84	13.50	14.91
	3H	13.97	14.53	15.04	15.60	17.04	13.56	14.12	14.63	15.20	16.63
	4H	14.67	15.18	15.74	16.24	17.70	14.24	14.75	15.31	15.82	17.27
	6H	15.16	15.60	16.24	16.69	18.13	14.73	15.17	15.81	16.26	17.70
	8H	15.30	15.71	16.38	16.79	18.25	14.86	15.27	15.94	16.35	17.82
	12H	15.36	15.73	16.46	16.82	18.29	14.91	15.28	16.01	16.38	17.84
8H	4H	14.84	15.26	15.93	16.34	17.80	14.47	14.88	15.55	15.96	17.42
	6H	15.45	15.79	16.55	16.91	18.37	15.06	15.40	16.17	16.53	17.99
	8H	15.66	15.95	16.77	17.06	18.54	15.26	15.56	16.37	16.67	18.15
	12H	15.77	16.03	16.88	17.13	18.65	15.36	15.62	16.48	16.72	18.24
12H	4H	14.82	15.20	15.92	16.29	17.76	14.45	14.83	15.55	15.92	17.39
	6H	15.47	15.77	16.58	16.88	18.36	15.10	15.40	16.21	16.50	17.98
	8H	15.70	15.96	16.81	17.06	18.58	15.32	15.58	16.43	16.68	18.20