

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: P911848

Luminaire Tested: DFN2DIP-SQ3F0-050D080US850-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P911848
REPORT IS A COMBINATION OF REPORTS P899935 AND P896733
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ3F0-050D080US850-FLLFLL
Description: 3 foot, Square Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

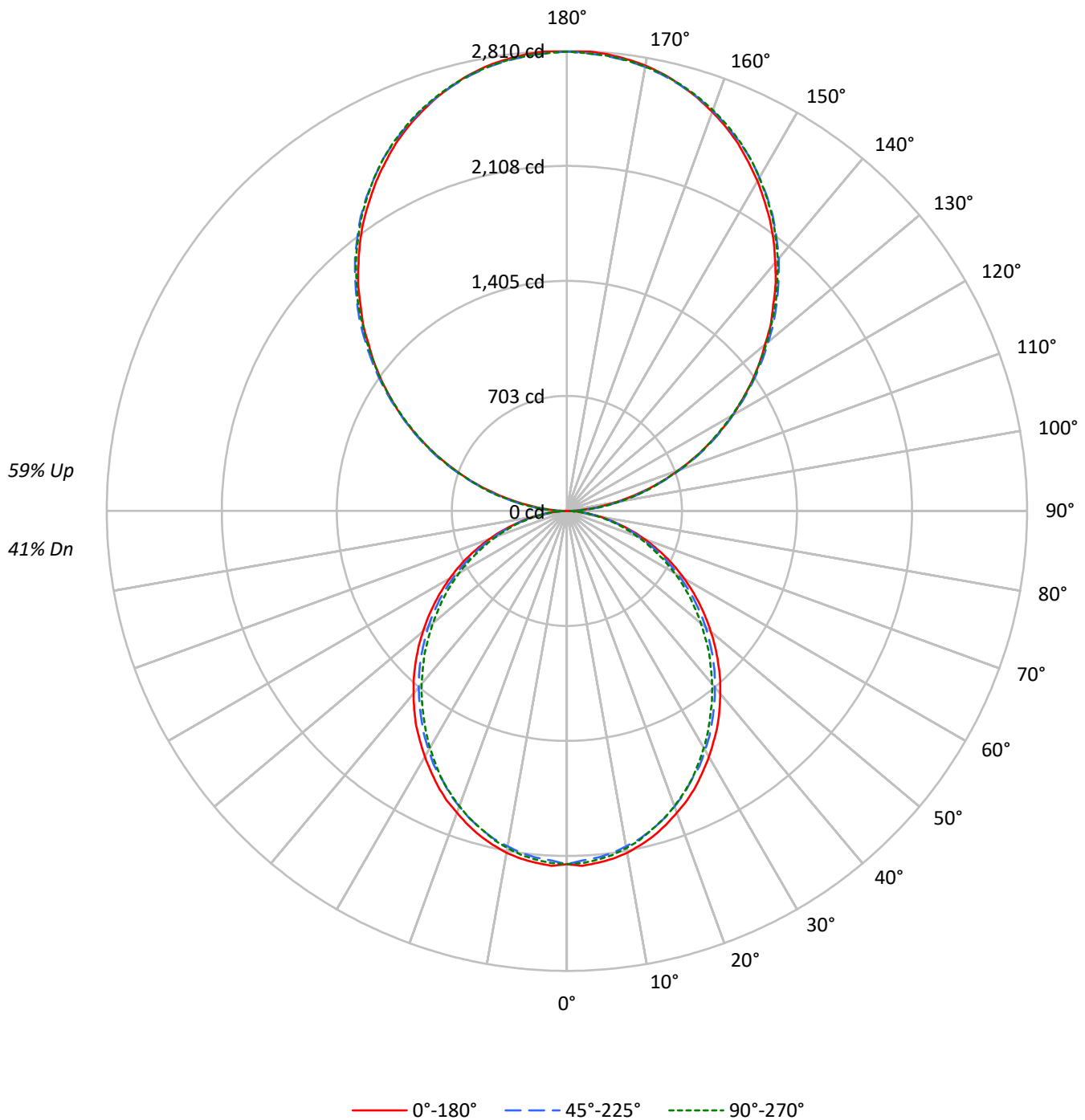
Lumens per Lamp: N/A
Luminaire Lumens: 13341.3 lumens
Efficiency: N/A
Efficacy: 130.0 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 3.06' x L: 3.06' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 102.6
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9789
Total Harmonic Distortion (THDi): 0.074
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P911848

CATALOG NUMBER: DFN2DIP-SQ3F0-050D080US850-FLLFLL

Luminous Intensity Polar Plot



TEST NUMBER: P911848

CATALOG NUMBER: DFN2DIP-SQ3F0-050D080US850-FLLFL

COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20				20					20					20					20
RC	80				70					50					30					0
RW	70	50	30	10	70	50	30	10	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	41	41	41
1	96	92	88	84	87	84	80	77	69	66	64	55	53	52	42	41	41	35	35	35
2	87	80	74	69	79	73	68	63	60	56	53	48	46	43	37	36	34	29	29	29
3	80	70	63	57	72	64	58	53	53	48	45	43	39	37	33	31	29	25	25	25
4	73	62	54	48	66	57	50	45	47	42	38	38	34	31	30	27	25	21	21	21
5	67	55	47	41	61	51	44	38	42	37	33	34	30	27	27	24	22	18	18	18
6	61	50	42	36	56	46	38	33	38	33	29	31	27	24	24	21	19	16	16	16
7	57	45	37	31	52	41	34	29	34	29	25	28	24	21	22	19	17	14	14	14
8	53	40	33	28	48	37	31	26	31	26	22	26	22	19	20	17	15	13	13	13
9	49	37	30	25	45	34	27	23	29	23	20	24	20	17	19	16	14	12	12	12
10	46	34	27	22	42	31	25	21	26	21	18	22	18	15	17	15	13	10	10	10

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2472	2472	2472
5°	2475	2436	2453
10°	2453	2402	2419
15°	2415	2360	2367
20°	2365	2304	2313
25°	2315	2237	2250
30°	2252	2174	2172
35°	2193	2100	2088
40°	2121	2025	2009
45°	2048	1951	1927
50°	1969	1872	1833
55°	1885	1781	1746
60°	1791	1673	1647
65°	1688	1561	1530
70°	1557	1425	1404
75°	1375	1261	1286
80°	1156	1052	1063
85°	813	697	695

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 2824 cd/sqm

TEST NUMBER: P911848

CATALOG NUMBER: DFN2DIP-SQ3F0-050D080US850-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: P911848

CATALOG NUMBER: DFN2DIP-SQ3F0-050D080US850-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: P911848

CATALOG NUMBER: DFN2DIP-SQ3F0-050D080US850-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

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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	9.51	10.30	10.54	11.33	12.72	9.06	9.85	10.09	10.89	12.28
	3H	11.16	11.87	12.20	12.91	14.32	10.67	11.38	11.71	12.42	13.83
	4H	11.74	12.41	12.79	13.46	14.88	11.25	11.92	12.30	12.96	14.38
	6H	12.13	12.75	13.19	13.80	15.23	11.63	12.25	12.69	13.30	14.73
	8H	12.23	12.82	13.30	13.89	15.31	11.73	12.32	12.80	13.39	14.81
	12H	12.28	12.84	13.35	13.90	15.35	11.77	12.33	12.84	13.39	14.84
4H	2H	9.96	10.63	11.01	11.67	13.09	9.60	10.27	10.66	11.32	12.74
	3H	11.81	12.37	12.88	13.44	14.88	11.40	11.96	12.47	13.04	14.47
	4H	12.52	13.03	13.59	14.10	15.55	12.09	12.61	13.17	13.67	15.13
	6H	13.02	13.46	14.11	14.55	16.00	12.59	13.03	13.67	14.12	15.57
	8H	13.17	13.58	14.25	14.66	16.13	12.73	13.14	13.81	14.23	15.69
	12H	13.24	13.61	14.34	14.70	16.17	12.79	13.16	13.89	14.26	15.72
8H	4H	12.70	13.12	13.79	14.20	15.66	12.33	12.74	13.41	13.82	15.28
	6H	13.33	13.67	14.43	14.79	16.25	12.94	13.28	14.05	14.41	15.87
	8H	13.54	13.84	14.65	14.95	16.43	13.15	13.45	14.26	14.55	16.03
	12H	13.67	13.93	14.78	15.03	16.55	13.26	13.52	14.37	14.62	16.14
12H	4H	12.69	13.06	13.78	14.15	15.62	12.32	12.69	13.42	13.78	15.25
	6H	13.35	13.65	14.46	14.76	16.24	12.98	13.28	14.09	14.39	15.87
	8H	13.59	13.85	14.70	14.95	16.47	13.21	13.47	14.32	14.57	16.09