

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: P906321

Luminaire Tested: DFN2DIP-SQ2F0-080D040US835-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P906321
REPORT IS A COMBINATION OF REPORTS P901313 AND P898215
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ2F0-080D040US835-FLLONL
Description: 2 foot, Square Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

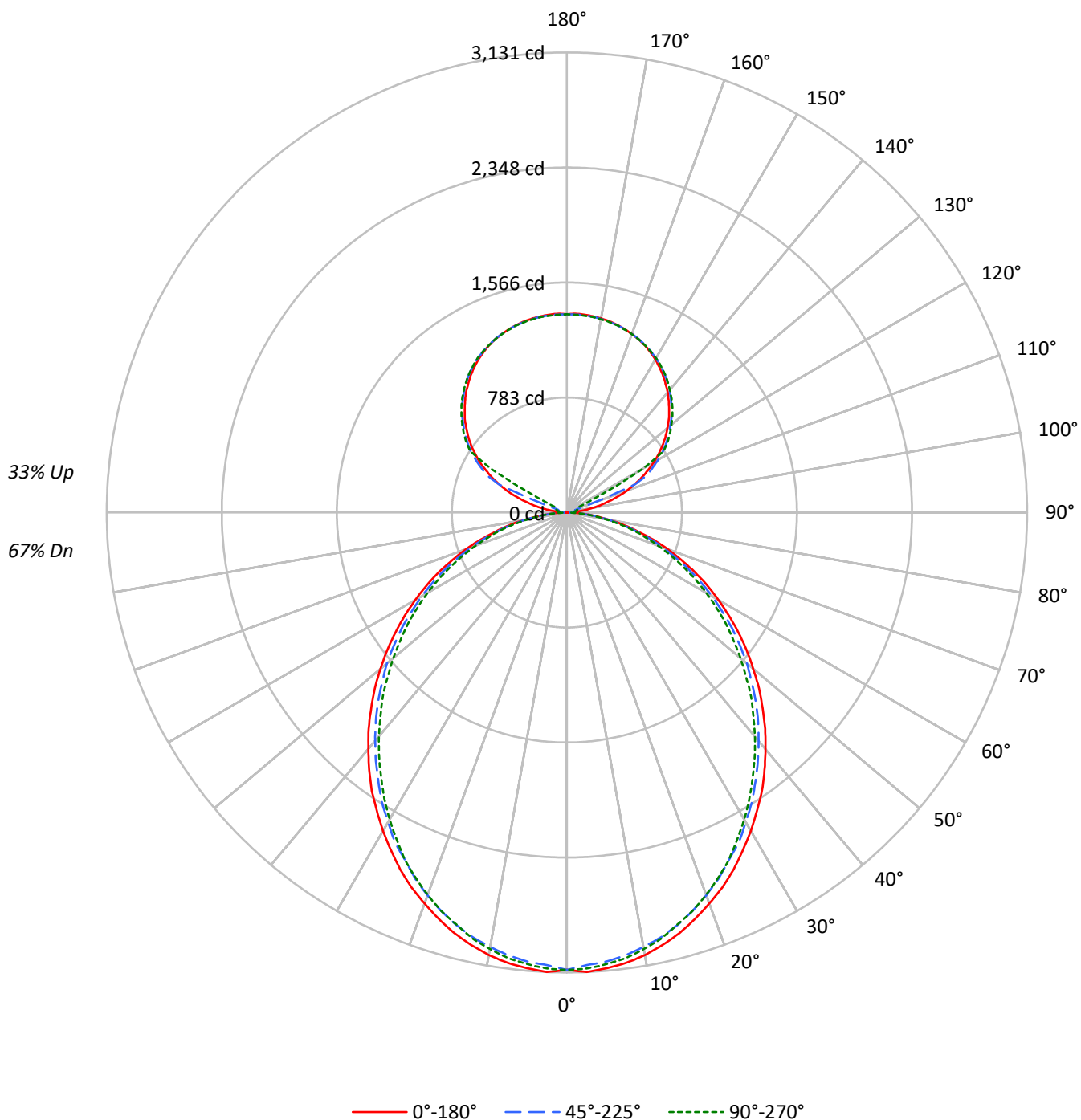
Lumens per Lamp: N/A
Luminaire Lumens: 11880.0 lumens
Efficiency: N/A
Efficacy: 109.6 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 2.21' x L: 2.21' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 108.4
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: P906321

CATALOG NUMBER: DFN2DIP-SQ2F0-080D040US835-FLLONL

Luminous Intensity Polar Plot



TEST NUMBER: P906321

CATALOG NUMBER: DFN2DIP-SQ2F0-080D040US835-FLLONL

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	111	111	111	111	105	105	105	105	93	93	93	82	82	82	71	71	71
1	102	97	93	90	95	92	88	85	81	79	76	72	70	68	63	62	60
2	92	85	79	73	87	80	75	70	71	67	63	63	60	57	56	53	51
3	84	75	67	61	79	71	64	58	63	58	53	56	52	48	49	46	43
4	77	66	58	52	72	63	55	50	56	50	45	50	45	41	44	40	37
5	71	59	51	44	67	56	48	43	50	44	39	45	40	36	40	36	33
6	66	53	45	39	62	50	43	37	45	39	34	41	35	32	36	32	29
7	61	48	40	34	57	46	38	33	41	35	30	37	32	28	33	29	26
8	56	44	36	30	53	42	34	29	38	31	27	34	29	25	30	26	23
9	53	40	32	27	50	38	31	26	35	29	24	31	26	23	28	24	21
10	49	37	29	24	46	35	28	24	32	26	22	29	24	20	26	22	19

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	6845	6845	6845
5°	6844	6735	6785
10°	6777	6629	6684
15°	6665	6505	6531
20°	6519	6339	6374
25°	6373	6143	6195
30°	6192	5959	5970
35°	6021	5745	5732
40°	5812	5528	5505
45°	5602	5310	5272
50°	5373	5081	5004
55°	5131	4816	4754
60°	4858	4504	4468
65°	4558	4178	4132
70°	4177	3781	3767
75°	3654	3305	3417
80°	3019	2698	2775
85°	2039	1704	1743

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 5602 cd/sqm

TEST NUMBER: P906321

CATALOG NUMBER: DFN2DIP-SQ2F0-080D040US835-FLLONL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	293.0	2.5
10°-20°	824.3	6.9
20°-30°	1211.5	10.2
30°-40°	1407.0	11.8
40°-50°	1405.3	11.8
50°-60°	1225.4	10.3
60°-70°	905.8	7.6
70°-80°	512.5	4.3
80°-90°	137.6	1.2
90°-100°	44.5	0.4
100°-110°	165.9	1.4
110°-120°	440.1	3.7
120°-130°	729.9	6.1
130°-140°	775.4	6.5
140°-150°	720.6	6.1
150°-160°	579.4	4.9
160°-170°	373.3	3.1
170°-180°	128.5	1.1
0°-30°	2328.8	19.6
0°-40°	3735.8	31.4
0°-60°	6366.4	53.6
0°-90°	7922.4	66.7
90°-120°	650.5	5.5
90°-150°	2876.4	24.2
90°-180°	3958.0	33.3
0°-180°	11880.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3113	3113	3113	3113	3113	
5°	3113	3101	3068	3092	3086	295
15°	2963	2946	2906	2918	2904	835
25°	2682	2658	2607	2613	2607	1234
35°	2314	2284	2236	2218	2203	1445
45°	1883	1862	1817	1784	1772	1453
55°	1425	1407	1371	1335	1320	1274
65°	961	943	913	886	871	950
75°	503	497	482	464	470	537
85°	123	120	117	108	105	137
90°	1	12	20	24	26	11
95°	63	31	38	43	42	75
105°	297	326	60	70	74	317
115°	562	578	603	150	80	553
125°	794	807	825	832	835	708
135°	983	998	1007	1017	1015	759
145°	1140	1139	1156	1162	1158	713
155°	1255	1246	1258	1264	1256	578
165°	1323	1317	1320	1326	1320	374
175°	1353	1346	1348	1355	1345	129
180°	1350	1350	1350	1350	1350	

TEST NUMBER: P906321

CATALOG NUMBER: DFN2DIP-SQ2F0-080D040US835-FLLONL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	3112.8	3112.8	3112.8	3112.8	3112.8
2.5°	3130.9	3116.0	3083.0	3112.8	3107.1
5°	3112.8	3101.1	3068.1	3091.9	3086.2
7.5°	3091.9	3074.1	3041.1	3065.2	3059.2
10°	3059.2	3038.2	3002.3	3026.1	3017.3
12.5°	3014.1	2996.3	2960.4	2975.3	2969.3
15°	2963.3	2945.5	2906.4	2918.5	2903.6
17.5°	2900.4	2882.6	2843.5	2858.5	2843.5
20°	2831.5	2813.7	2771.8	2780.7	2768.9
22.5°	2762.9	2735.9	2696.8	2696.8	2690.8
25°	2681.9	2658.1	2607.3	2613.0	2607.3
27.5°	2592.0	2571.1	2532.3	2523.4	2508.5
30°	2502.5	2478.3	2433.6	2424.7	2412.6
32.5°	2406.6	2388.8	2340.8	2322.7	2310.7
35°	2313.8	2284.0	2236.0	2217.9	2203.0
37.5°	2209.0	2182.0	2134.1	2113.1	2098.2
40°	2101.4	2077.2	2029.3	2002.6	1990.5
42.5°	1996.6	1972.4	1924.8	1894.6	1876.9
45°	1882.9	1861.9	1816.8	1784.1	1772.1
47.5°	1772.1	1751.1	1703.1	1670.1	1652.3
50°	1655.2	1640.3	1598.3	1556.4	1541.5
52.5°	1541.5	1520.5	1481.8	1448.8	1427.8
55°	1424.9	1406.8	1371.0	1335.1	1320.1
57.5°	1308.1	1293.2	1254.1	1218.2	1206.1
60°	1191.2	1179.5	1137.5	1104.5	1095.6
62.5°	1077.5	1056.6	1026.7	996.9	984.8
65°	961.0	942.9	913.0	886.0	871.1
67.5°	841.2	826.0	799.3	778.4	766.3
70°	730.4	718.3	691.4	670.4	658.6
72.5°	616.7	604.7	589.7	568.8	559.9
75°	502.7	497.0	481.8	464.0	470.0
77.5°	401.1	389.0	383.0	374.1	365.2
80°	299.5	296.3	290.3	281.4	275.3
82.5°	203.6	203.6	200.7	188.6	188.6
85°	122.6	119.7	116.9	107.7	104.8
87.5°	54.0	48.0	41.9	33.0	29.9
90°	0.9	11.7	19.5	24.5	26.3
92.5°	24.5	20.5	23.4	25.4	26.3
95°	63.4	31.2	38.0	43.0	42.0
97.5°	114.3	34.2	49.8	52.8	53.7
100°	172.9	39.1	55.7	63.4	65.4
102.5°	237.3	235.5	57.6	68.3	71.3
105°	296.9	326.3	59.6	70.3	74.2
107.5°	366.3	390.7	61.6	72.3	76.2
110°	432.8	453.2	171.0	73.3	77.1



TEST NUMBER: P906321

CATALOG NUMBER: DFN2DIP-SQ2F0-080D040US835-FLLONL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	495.3	512.8	496.2	75.2	78.2
115°	561.6	578.2	602.7	150.4	80.2
117.5°	619.3	638.8	655.5	515.7	259.8
120°	683.8	698.4	716.0	727.8	595.9
122.5°	738.4	754.1	773.7	779.5	780.5
125°	794.1	806.9	825.4	832.3	835.2
127.5°	844.9	858.6	873.3	883.1	884.0
130°	892.8	908.5	919.1	929.9	929.0
132.5°	941.6	954.4	965.1	973.9	973.0
135°	982.7	998.4	1007.1	1016.9	1015.0
137.5°	1025.6	1037.3	1047.2	1056.9	1054.0
140°	1067.6	1075.5	1086.2	1095.0	1090.1
142.5°	1102.9	1109.7	1122.4	1130.1	1125.3
145°	1140.0	1139.0	1155.5	1162.4	1157.5
147.5°	1172.1	1169.2	1185.8	1190.7	1186.9
150°	1203.4	1196.6	1212.3	1218.1	1213.2
152.5°	1229.8	1222.0	1236.6	1242.5	1235.7
155°	1255.2	1246.5	1258.2	1264.0	1256.2
157.5°	1275.7	1267.9	1276.8	1283.6	1275.7
160°	1293.3	1287.4	1293.3	1299.1	1292.3
162.5°	1308.9	1303.1	1308.0	1314.8	1306.0
165°	1322.6	1316.8	1319.7	1326.5	1319.7
167.5°	1333.4	1327.4	1330.5	1337.3	1328.5
170°	1342.2	1336.3	1338.2	1345.1	1336.3
172.5°	1348.0	1342.2	1344.2	1351.0	1342.2
175°	1352.8	1346.0	1348.0	1354.8	1345.1
177.5°	1354.8	1348.0	1349.0	1355.9	1347.1
180°	1350.0	1350.0	1350.0	1350.0	1350.0



TEST NUMBER: P906321

CATALOG NUMBER: DFN2DIP-SQ2F0-080D040US835-FLLONL

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	15.25	16.29	16.05	17.11	18.12	14.81	15.84	15.61	16.66	17.68
	3H	16.91	17.84	17.72	18.67	19.71	16.42	17.35	17.23	18.18	19.22
	4H	17.49	18.37	18.32	19.21	20.26	17.00	17.87	17.82	18.71	19.76
	6H	17.88	18.69	18.72	19.54	20.60	17.38	18.19	18.22	19.04	20.10
	8H	17.98	18.76	18.84	19.62	20.69	17.48	18.25	18.33	19.12	20.19
	12H	18.03	18.77	18.89	19.63	20.72	17.52	18.26	18.38	19.12	20.21
4H	2H	15.72	16.60	16.56	17.44	18.49	15.37	16.25	16.20	17.08	18.14
	3H	17.58	18.31	18.43	19.19	20.25	17.17	17.91	18.02	18.78	19.85
	4H	18.29	18.96	19.15	19.83	20.92	17.86	18.53	18.72	19.40	20.49
	6H	18.79	19.37	19.67	20.27	21.36	18.36	18.94	19.24	19.83	20.93
	8H	18.94	19.48	19.82	20.37	21.48	18.50	19.04	19.38	19.93	21.04
	12H	19.01	19.50	19.91	20.41	21.52	18.56	19.05	19.46	19.96	21.07
8H	4H	18.49	19.03	19.36	19.92	21.03	18.11	18.65	18.99	19.54	20.65
	6H	19.10	19.55	20.01	20.48	21.59	18.72	19.16	19.62	20.09	21.20
	8H	19.31	19.71	20.23	20.63	21.76	18.92	19.31	19.83	20.24	21.36
	12H	19.44	19.79	20.36	20.70	21.88	19.03	19.38	19.94	20.29	21.47
12H	4H	18.48	18.96	19.38	19.87	20.99	18.11	18.59	19.01	19.50	20.62
	6H	19.13	19.52	20.04	20.45	21.58	18.75	19.15	19.67	20.07	21.20
	8H	19.36	19.71	20.28	20.63	21.81	18.98	19.33	19.90	20.25	21.42