

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: P906324

Luminaire Tested: DFN2DIP-SQ2F0-080D050US835-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P906324
REPORT IS A COMBINATION OF REPORTS P899805 AND P896659
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ2F0-080D050US835-FLLFLL
Description: 2 foot, Square Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

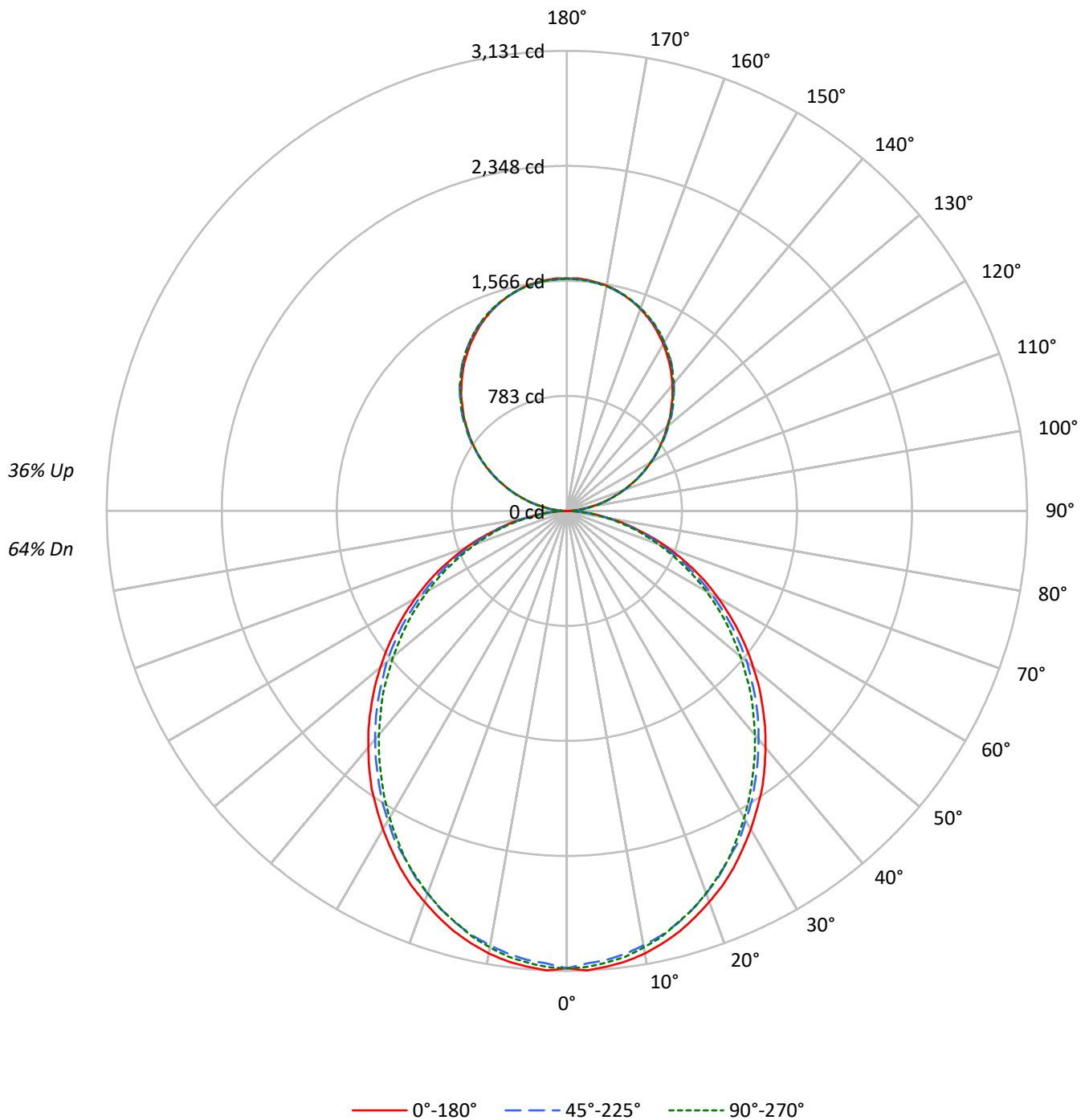
Lumens per Lamp: N/A
Luminaire Lumens: 12345.0 lumens
Efficiency: N/A
Efficacy: 106.1 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 2.21' x L: 2.21' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 116.4
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: P906324

CATALOG NUMBER: DFN2DIP-SQ2F0-080D050US835-FLLFLL

Luminous Intensity Polar Plot



TEST NUMBER: P906324

CATALOG NUMBER: DFN2DIP-SQ2F0-080D050US835-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	111	111	111	111	104	104	104	104	91	91	91	80	80	80	69	69	69
1	101	97	93	89	95	91	87	84	80	77	75	70	68	66	61	60	58
2	92	84	78	73	86	79	74	69	70	66	62	62	58	56	54	51	49
3	84	74	67	61	79	70	63	58	62	57	52	55	50	47	48	45	42
4	77	66	58	51	72	62	55	49	55	49	45	49	44	40	43	39	36
5	71	59	50	44	66	55	48	42	49	43	39	44	39	35	38	35	32
6	65	53	44	38	61	50	42	37	45	38	34	40	35	31	35	31	28
7	60	48	40	34	56	45	38	32	40	34	30	36	31	27	32	28	25
8	56	43	35	30	53	41	34	29	37	31	27	33	28	24	29	25	22
9	52	40	32	27	49	38	31	26	34	28	24	30	26	22	27	23	20
10	49	37	29	24	46	35	28	23	31	26	22	28	23	20	25	21	18

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: P906324

CATALOG NUMBER: DFN2DIP-SQ2F0-080D050US835-FLLFLL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	293.0	2.4
10°-20°	824.3	6.7
20°-30°	1211.5	9.8
30°-40°	1407.0	11.4
40°-50°	1405.3	11.4
50°-60°	1225.4	9.9
60°-70°	905.8	7.3
70°-80°	512.5	4.2
80°-90°	139.8	1.1
90°-100°	97.8	0.8
100°-110°	310.9	2.5
110°-120°	532.1	4.3
120°-130°	699.7	5.7
130°-140°	785.4	6.4
140°-150°	770.2	6.2
150°-160°	646.1	5.2
160°-170°	428.5	3.5
170°-180°	149.8	1.2
0°-30°	2328.8	18.9
0°-40°	3735.8	30.3
0°-60°	6366.4	51.6
0°-90°	7924.5	64.2
90°-120°	940.8	7.6
90°-150°	3196.2	25.9
90°-180°	4421.0	35.8
0°-180°	12345.0	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	17	47	44	45	12
95°	70	83	85	85	83	77
105°	287	291	294	296	296	303
115°	534	542	539	538	534	528
125°	777	788	785	780	779	694
135°	1004	1019	1022	1021	1017	776
145°	1220	1229	1237	1238	1233	762
155°	1394	1398	1402	1409	1405	642
165°	1517	1516	1516	1525	1518	428
175°	1578	1575	1572	1581	1573	150
180°	1581	1581	1581	1581	1581	

TEST NUMBER: P906324

CATALOG NUMBER: DFN2DIP-SQ2F0-080D050US835-FLLFLL

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°	1.4	17.2	46.7	43.9	45.3
92.5°	29.6	40.0	41.5	42.9	42.9
95°	69.6	83.0	85.3	85.3	83.0
97.5°	115.8	128.2	133.5	133.5	133.5
100°	169.2	180.2	184.0	184.0	182.6
102.5°	225.5	233.6	238.8	240.3	238.8
105°	287.0	290.8	293.7	296.0	296.0
107.5°	348.0	353.7	353.7	354.7	348.0
110°	407.1	414.8	414.8	414.8	410.9

TEST NUMBER: P906324

CATALOG NUMBER: DFN2DIP-SQ2F0-080D050US835-FLLFL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	471.0	479.1	477.7	473.9	471.0
115°	533.9	541.6	539.2	537.8	533.9
117.5°	596.4	606.9	600.2	596.4	592.6
120°	659.3	669.8	659.3	659.3	655.0
122.5°	716.5	729.9	723.2	719.4	716.5
125°	776.6	788.5	784.7	780.4	779.0
127.5°	835.2	850.0	844.8	839.0	835.2
130°	890.1	907.2	904.8	902.0	896.7
132.5°	951.6	964.9	965.9	959.2	955.4
135°	1004.5	1019.2	1022.1	1020.7	1016.9
137.5°	1063.6	1075.5	1077.9	1076.9	1071.2
140°	1115.5	1127.5	1134.1	1134.1	1128.9
142.5°	1168.9	1180.9	1184.7	1186.1	1180.9
145°	1219.5	1229.0	1236.6	1238.1	1232.8
147.5°	1264.8	1276.7	1282.4	1284.8	1279.5
150°	1311.5	1319.6	1324.8	1329.1	1324.8
152.5°	1353.0	1361.1	1367.7	1373.0	1367.7
155°	1394.4	1398.2	1402.5	1409.2	1404.9
157.5°	1430.2	1433.0	1435.4	1445.0	1438.3
160°	1462.1	1465.0	1466.4	1474.5	1468.8
162.5°	1491.7	1491.7	1493.1	1502.2	1495.5
165°	1517.0	1515.5	1515.5	1525.1	1518.4
167.5°	1539.8	1535.5	1535.5	1545.1	1538.4
170°	1557.0	1553.2	1551.8	1561.3	1553.2
172.5°	1568.9	1565.1	1563.7	1573.2	1565.1
175°	1578.5	1574.6	1571.8	1581.3	1573.2
177.5°	1583.7	1579.9	1577.0	1585.1	1577.0
180°	1581.3	1581.3	1581.3	1581.3	1581.3

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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	15.05	16.06	15.88	16.91	17.96	14.61	15.61	15.43	16.46	17.52
	3H	16.71	17.61	17.54	18.47	19.55	16.22	17.12	17.05	17.98	19.06
	4H	17.29	18.14	18.14	19.00	20.10	16.79	17.65	17.65	18.51	19.60
	6H	17.68	18.47	18.55	19.34	20.44	17.18	17.97	18.05	18.84	19.94
	8H	17.78	18.53	18.66	19.42	20.52	17.28	18.03	18.15	18.92	20.02
	12H	17.83	18.54	18.71	19.42	20.56	17.32	18.03	18.20	18.92	20.05
4H	2H	15.52	16.38	16.38	17.24	18.33	15.17	16.02	16.02	16.88	17.97
	3H	17.38	18.09	18.25	18.99	20.09	16.97	17.68	17.84	18.58	19.68
	4H	18.08	18.73	18.96	19.62	20.76	17.66	18.31	18.54	19.20	20.33
	6H	18.59	19.15	19.48	20.07	21.20	18.16	18.72	19.05	19.63	20.77
	8H	18.73	19.25	19.63	20.17	21.32	18.29	18.82	19.19	19.73	20.88
	12H	18.80	19.27	19.72	20.20	21.36	18.35	18.83	19.27	19.76	20.91
8H	4H	18.28	18.80	19.18	19.71	20.86	17.90	18.43	18.80	19.34	20.49
	6H	18.89	19.33	19.82	20.28	21.43	18.51	18.94	19.44	19.90	21.04
	8H	19.10	19.49	20.04	20.43	21.60	18.71	19.09	19.65	20.04	21.20
	12H	19.23	19.57	20.17	20.50	21.72	18.82	19.15	19.76	20.09	21.31
12H	4H	18.27	18.74	19.19	19.67	20.83	17.90	18.37	18.82	19.30	20.46
	6H	18.92	19.30	19.86	20.25	21.41	18.54	18.93	19.48	19.88	21.04
	8H	19.15	19.49	20.09	20.43	21.64	18.77	19.11	19.71	20.05	21.26

END OF REPORT