

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: P910448

Luminaire Tested: DFN2DIP-4P3F0-060D040US850-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P910448
REPORT IS A COMBINATION OF REPORTS P899058 AND P895917
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-4P3F0-060D040US850-RLLFLL
Description: 3 foot, 90deg - 4way Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

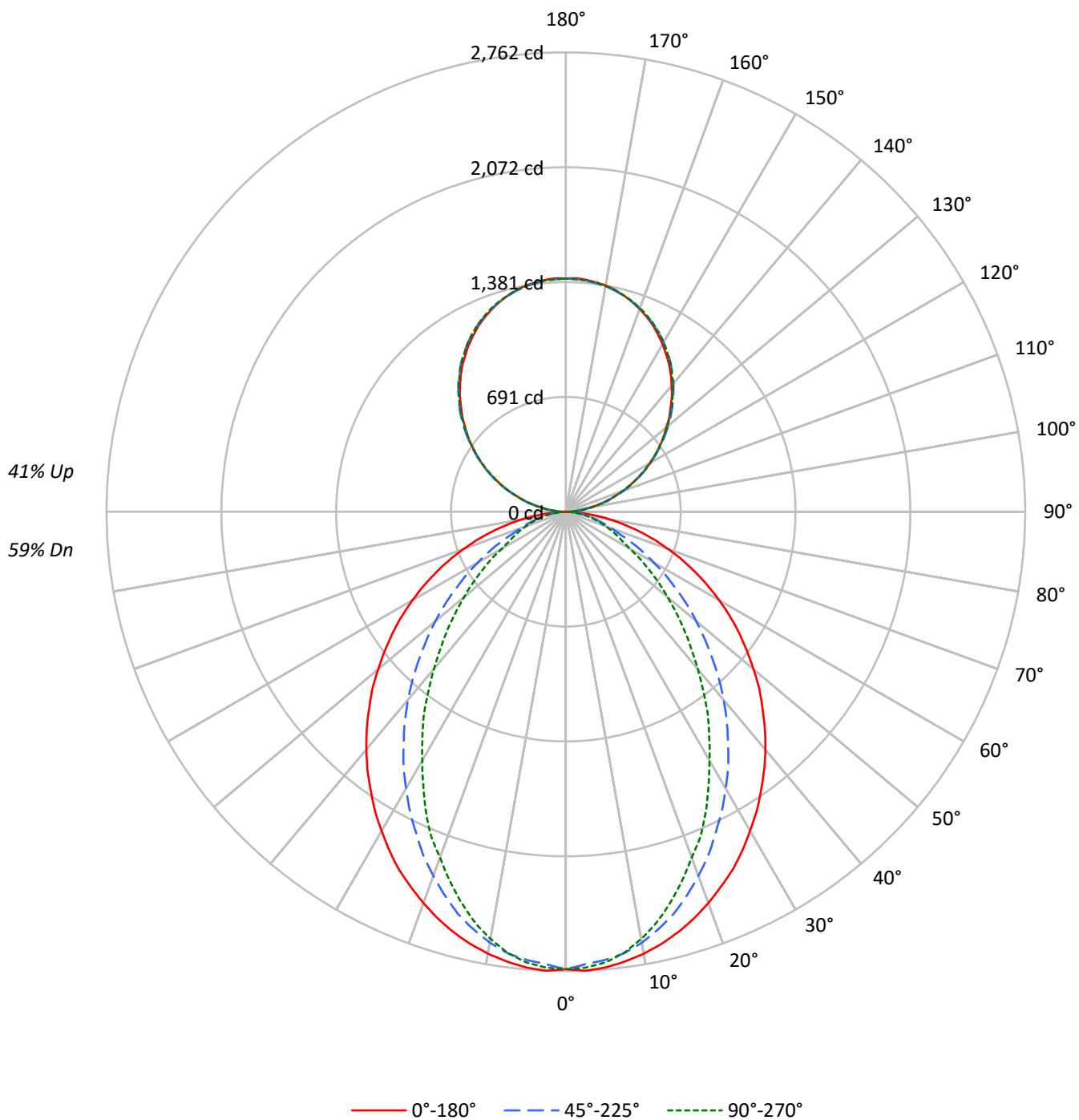
Lumens per Lamp: N/A
Luminaire Lumens: 9581.7 lumens
Efficiency: N/A
Efficacy: 104.4 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.07' x L: 3.07' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 91.8
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9963
Total Harmonic Distortion (THDi): 0.065
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P910448

CATALOG NUMBER: DFN2DIP-4P3F0-060D040US850-RLLFLL

Luminous Intensity Polar Plot



TEST NUMBER: P910448

CATALOG NUMBER: DFN2DIP-4P3F0-060D040US850-RLLFLL

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	102	102	102	102	88	88	88	76	76	76	64	64	64
1	100	96	92	89	94	90	87	84	78	76	74	68	66	64	58	57	56
2	92	85	79	74	86	79	74	70	69	65	62	60	57	55	52	50	48
3	84	75	68	62	78	70	64	59	62	57	53	54	50	47	46	44	41
4	77	67	59	53	72	63	56	51	55	50	46	48	44	41	42	39	36
5	71	60	52	46	66	56	49	44	50	44	40	44	39	36	38	34	32
6	66	54	46	40	61	51	44	39	45	39	35	40	35	32	35	31	28
7	61	49	41	36	57	46	39	34	41	35	31	36	32	28	32	28	25
8	57	45	37	32	53	42	35	30	38	32	28	33	29	25	29	26	23
9	53	41	34	29	50	39	32	27	35	29	25	31	26	23	27	24	21
10	50	38	31	26	47	36	29	25	32	27	23	29	24	21	25	22	19

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3134	3134	3134
5°	3137	3082	3103
10°	3104	3020	3001
15°	3059	2918	2844
20°	3001	2779	2652
25°	2941	2623	2466
30°	2861	2463	2231
35°	2783	2291	2024
40°	2703	2114	1788
45°	2611	1917	1573
50°	2515	1719	1364
55°	2414	1508	1163
60°	2298	1287	956
65°	2164	1063	859
70°	2002	854	776
75°	1798	748	704
80°	1503	621	607
85°	1019	404	450

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2611 cd/sqm

TEST NUMBER: P910448

CATALOG NUMBER: DFN2DIP-4P3F0-060D040US850-RLLFLL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	257.7	2.7
10°-20°	707.6	7.4
20°-30°	993.4	10.4
30°-40°	1082.8	11.3
40°-50°	995.2	10.4
50°-60°	781.6	8.2
60°-70°	508.8	5.3
70°-80°	261.9	2.7
80°-90°	70.8	0.7
90°-100°	86.8	0.9
100°-110°	275.8	2.9
110°-120°	472.0	4.9
120°-130°	620.8	6.5
130°-140°	696.8	7.3
140°-150°	683.3	7.1
150°-160°	573.2	6.0
160°-170°	380.1	4.0
170°-180°	132.9	1.4
0°-30°	1958.7	20.4
0°-40°	3041.5	31.7
0°-60°	4818.4	50.3
0°-90°	5659.9	59.1
90°-120°	834.7	8.7
90°-150°	2835.6	29.6
90°-180°	3922.0	40.9
0°-180°	9581.7	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2750	2750	2750	2750	2750	
5°	2750	2738	2705	2728	2720	261
15°	2616	2588	2504	2456	2432	737
25°	2374	2295	2130	2028	1991	1092
35°	2046	1919	1700	1543	1488	1281
45°	1672	1506	1244	1068	1008	1292
55°	1272	1078	809	660	612	1136
65°	859	657	433	349	341	851
75°	458	284	199	182	179	484
85°	107	55	47	47	47	123
90°	1	15	42	39	40	9
95°	62	74	76	76	74	69
105°	255	258	260	263	263	269
115°	474	480	478	477	474	469
125°	689	700	696	692	691	616
135°	891	904	907	906	902	689
145°	1082	1090	1097	1098	1094	676
155°	1237	1240	1244	1250	1246	569
165°	1346	1345	1345	1353	1347	380
175°	1400	1397	1394	1403	1396	133
180°	1403	1403	1403	1403	1403	

TEST NUMBER: P910448

CATALOG NUMBER: DFN2DIP-4P3F0-060D040US850-RLLFLL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2750.1	2750.1	2750.1	2750.1	2750.1
2.5°	2762.5	2750.1	2722.6	2747.7	2742.7
5°	2750.1	2737.7	2705.2	2727.7	2720.3
7.5°	2727.7	2712.8	2678.0	2687.8	2675.4
10°	2697.8	2680.3	2630.8	2623.1	2608.3
12.5°	2660.6	2638.1	2570.8	2556.0	2528.5
15°	2615.7	2588.2	2503.7	2456.4	2431.6
17.5°	2563.5	2523.5	2419.0	2364.3	2324.5
20°	2503.7	2453.8	2329.5	2267.4	2212.5
22.5°	2439.0	2381.7	2237.3	2152.8	2115.5
25°	2374.4	2294.6	2130.4	2028.5	1991.0
27.5°	2297.3	2212.5	2030.8	1913.8	1856.6
30°	2215.1	2120.3	1921.2	1794.5	1727.2
32.5°	2135.4	2020.8	1817.0	1667.5	1605.2
35°	2045.9	1918.9	1700.0	1543.1	1488.2
37.5°	1958.7	1821.6	1590.4	1418.5	1356.4
40°	1866.6	1717.4	1475.7	1299.1	1234.4
42.5°	1772.1	1612.8	1361.4	1177.1	1115.1
45°	1672.5	1505.6	1244.5	1067.5	1007.9
47.5°	1578.0	1401.3	1132.5	955.6	901.0
50°	1473.4	1296.8	1022.9	851.0	799.0
52.5°	1371.2	1184.5	918.4	754.1	706.9
55°	1271.7	1077.6	808.8	659.6	612.3
57.5°	1169.8	970.6	711.9	572.5	532.5
60°	1065.2	866.1	609.7	483.0	443.0
62.5°	963.3	764.2	522.6	403.2	383.4
65°	858.7	657.0	433.1	348.6	340.9
67.5°	759.1	557.4	348.6	306.1	298.7
70°	654.5	460.5	288.6	263.8	253.7
72.5°	555.1	370.7	241.3	221.6	216.5
75°	457.9	283.6	199.1	181.7	179.3
77.5°	361.0	201.5	156.8	146.8	141.8
80°	271.2	144.4	119.3	109.6	109.6
82.5°	189.1	97.1	82.1	77.1	77.1
85°	106.9	54.7	47.2	47.2	47.2
87.5°	39.9	19.9	19.9	17.4	17.4
90°	1.2	15.2	41.5	38.9	40.1
92.5°	26.2	35.5	36.8	38.0	38.0
95°	61.8	73.6	75.7	75.7	73.6
97.5°	102.8	113.8	118.4	118.4	118.4
100°	150.2	159.9	163.2	163.2	162.0
102.5°	200.1	207.3	211.9	213.1	211.9
105°	254.6	258.0	260.5	262.6	262.6
107.5°	308.7	313.8	313.8	314.6	308.7
110°	361.2	368.0	368.0	368.0	364.6



TEST NUMBER: P910448

CATALOG NUMBER: DFN2DIP-4P3F0-060D040US850-RLLFLL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	417.9	425.1	423.7	420.4	417.9
115°	473.7	480.5	478.3	477.1	473.7
117.5°	529.1	538.4	532.5	529.1	525.8
120°	585.0	594.2	585.0	585.0	581.1
122.5°	635.7	647.5	641.7	638.2	635.7
125°	689.0	699.6	696.2	692.3	691.1
127.5°	741.0	754.1	749.5	744.4	741.0
130°	789.6	804.9	802.8	800.3	795.6
132.5°	844.2	856.0	856.9	850.9	847.6
135°	891.2	904.3	906.8	905.5	902.2
137.5°	943.6	954.2	956.3	955.4	950.4
140°	989.7	1000.3	1006.2	1006.2	1001.5
142.5°	1037.1	1047.7	1051.0	1052.3	1047.7
145°	1081.9	1090.4	1097.1	1098.5	1093.8
147.5°	1122.1	1132.6	1137.7	1139.8	1135.2
150°	1163.6	1170.8	1175.4	1179.2	1175.4
152.5°	1200.4	1207.5	1213.5	1218.1	1213.5
155°	1237.1	1240.5	1244.3	1250.3	1246.4
157.5°	1268.9	1271.4	1273.5	1282.0	1276.0
160°	1297.2	1299.7	1301.0	1308.2	1303.1
162.5°	1323.4	1323.4	1324.7	1332.7	1326.8
165°	1345.9	1344.6	1344.6	1353.0	1347.1
167.5°	1366.2	1362.3	1362.3	1370.8	1364.8
170°	1381.4	1377.9	1376.7	1385.1	1377.9
172.5°	1391.9	1388.6	1387.2	1395.8	1388.6
175°	1400.4	1397.0	1394.5	1402.9	1395.8
177.5°	1405.1	1401.7	1399.1	1406.3	1399.1
180°	1402.9	1402.9	1402.9	1402.9	1402.9

TEST NUMBER: P910448

CATALOG NUMBER: DFN2DIP-4P3F0-060D040US850-RLLFLL

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	11.89	12.80	12.77	13.70	14.83	7.85	8.76	8.73	9.66	10.80
	3H	13.57	14.38	14.46	15.29	16.45	9.04	9.85	9.93	10.76	11.92
	4H	14.18	14.95	15.09	15.86	17.03	9.49	10.26	10.40	11.17	12.34
	6H	14.60	15.31	15.52	16.23	17.41	9.81	10.51	10.73	11.43	12.62
	8H	14.73	15.40	15.66	16.34	17.52	9.90	10.57	10.83	11.51	12.69
	12H	14.79	15.43	15.72	16.36	17.57	9.94	10.58	10.87	11.51	12.72
4H	2H	11.91	12.68	12.83	13.60	14.77	8.45	9.22	9.37	10.13	11.31
	3H	13.75	14.38	14.67	15.33	16.52	9.80	10.44	10.73	11.39	12.57
	4H	14.44	15.02	15.37	15.96	17.17	10.35	10.93	11.28	11.87	13.08
	6H	14.95	15.45	15.90	16.42	17.63	10.77	11.27	11.71	12.23	13.44
	8H	15.13	15.59	16.08	16.55	17.78	10.89	11.36	11.84	12.32	13.54
	12H	15.22	15.64	16.19	16.62	17.85	10.96	11.38	11.93	12.35	13.58
8H	4H	14.41	14.88	15.36	15.83	17.06	10.63	11.10	11.58	12.06	13.28
	6H	14.97	15.36	15.95	16.36	17.58	11.14	11.53	12.12	12.53	13.76
	8H	15.19	15.53	16.17	16.52	17.76	11.33	11.67	12.32	12.66	13.90
	12H	15.33	15.63	16.31	16.61	17.90	11.45	11.75	12.44	12.73	14.02
12H	4H	14.36	14.79	15.33	15.76	16.99	10.64	11.06	11.61	12.03	13.27
	6H	14.95	15.29	15.93	16.28	17.52	11.19	11.53	12.18	12.52	13.77
	8H	15.17	15.47	16.16	16.45	17.74	11.40	11.70	12.39	12.68	13.97