

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: P921368

Luminaire Tested: DFN2DIP-4P3F0-060D060US940-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P921368
REPORT IS A COMBINATION OF REPORTS P899078 AND P895917
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-4P3F0-060D060US940-RLLFLL
Description: 3 foot, 90deg - 4way Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

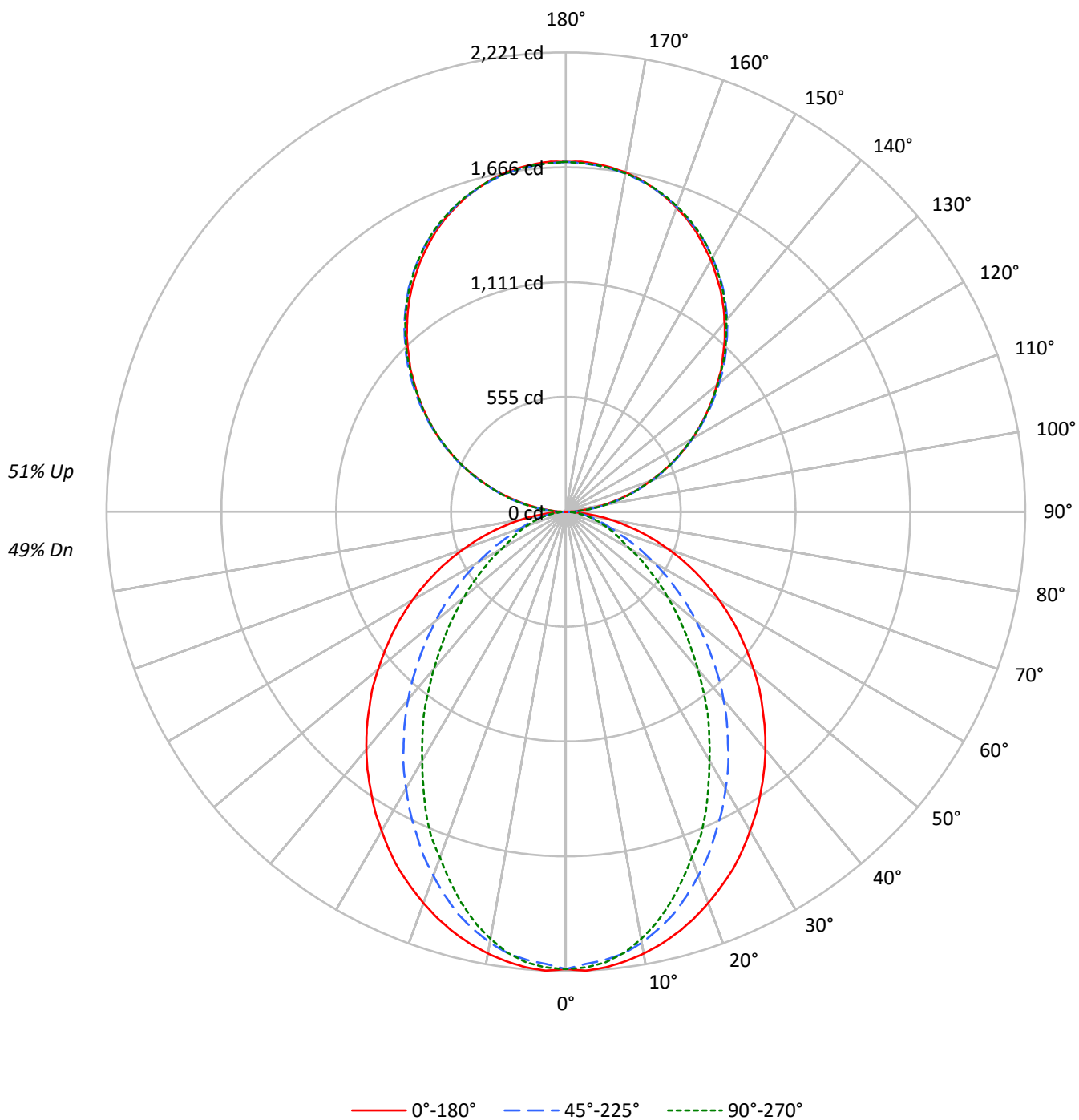
Lumens per Lamp: N/A
Luminaire Lumens: 9282.7 lumens
Efficiency: N/A
Efficacy: 85.0 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.07' x L: 3.07' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 109.2
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: P921368

CATALOG NUMBER: DFN2DIP-4P3F0-060D060US940-RLLFLL

Luminous Intensity Polar Plot



TEST NUMBER: P921368

CATALOG NUMBER: DFN2DIP-4P3F0-060D060US940-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	107	107	107	107	99	99	99	99	83	83	83	68	68	68	55	55	55
1	98	94	90	87	90	87	84	81	73	71	69	61	59	58	50	49	48
2	90	83	77	72	82	76	71	67	65	61	58	54	51	49	44	42	41
3	82	73	66	60	75	68	61	57	58	53	49	48	45	42	40	37	35
4	75	65	57	51	69	60	54	48	51	46	42	43	40	36	36	33	31
5	69	58	50	44	64	54	47	42	46	41	37	39	35	32	32	29	27
6	64	52	44	39	59	49	42	37	42	36	32	35	31	28	30	26	24
7	59	47	40	34	55	44	37	32	38	33	29	32	28	25	27	24	22
8	55	43	36	30	51	40	33	29	35	29	26	30	26	23	25	22	20
9	51	39	32	27	47	37	30	26	32	27	23	27	23	20	23	20	18
10	48	36	29	24	44	34	28	23	30	24	21	25	21	19	22	18	16

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2520	2520	2520
5°	2522	2478	2495
10°	2496	2428	2413
15°	2460	2346	2287
20°	2413	2234	2132
25°	2365	2109	1983
30°	2301	1980	1794
35°	2238	1842	1628
40°	2173	1700	1437
45°	2099	1542	1265
50°	2022	1382	1097
55°	1941	1212	935
60°	1848	1035	769
65°	1740	855	691
70°	1610	686	624
75°	1446	602	566
80°	1208	499	488
85°	820	326	362

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2099 cd/sqm

TEST NUMBER: P921368

CATALOG NUMBER: DFN2DIP-4P3F0-060D060US940-RLLFLL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	207.2	2.2
10°-20°	568.9	6.1
20°-30°	798.7	8.6
30°-40°	870.7	9.4
40°-50°	800.3	8.6
50°-60°	628.5	6.8
60°-70°	409.1	4.4
70°-80°	210.6	2.3
80°-90°	58.6	0.6
90°-100°	104.7	1.1
100°-110°	332.7	3.6
110°-120°	569.3	6.1
120°-130°	748.8	8.1
130°-140°	840.5	9.1
140°-150°	824.2	8.9
150°-160°	691.4	7.4
160°-170°	458.5	4.9
170°-180°	160.3	1.7
0°-30°	1574.9	17.0
0°-40°	2445.6	26.3
0°-60°	3874.3	41.7
0°-90°	4552.5	49.0
90°-120°	1006.7	10.8
90°-150°	3420.1	36.8
90°-180°	4730.0	51.0
0°-180°	9282.7	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2211	2211	2211	2211	2211	
5°	2211	2201	2175	2193	2187	210
15°	2103	2081	2013	1975	1955	593
25°	1909	1845	1713	1631	1601	878
35°	1645	1543	1367	1241	1197	1030
45°	1345	1211	1001	858	810	1039
55°	1022	866	650	530	492	914
65°	690	528	348	280	274	685
75°	368	228	160	146	144	389
85°	86	44	38	38	38	99
90°	2	18	50	47	48	9
95°	74	89	91	91	89	83
105°	307	311	314	317	317	324
115°	571	580	577	575	571	565
125°	831	844	840	835	834	743
135°	1075	1091	1094	1092	1088	831
145°	1305	1315	1323	1325	1319	815
155°	1492	1496	1501	1508	1503	687
165°	1623	1622	1622	1632	1625	458
175°	1689	1685	1682	1692	1683	160
180°	1692	1692	1692	1692	1692	

TEST NUMBER: P921368

CATALOG NUMBER: DFN2DIP-4P3F0-060D060US940-RLLFLL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2211.3	2211.3	2211.3	2211.3	2211.3
2.5°	2221.3	2211.3	2189.1	2209.3	2205.3
5°	2211.3	2201.3	2175.1	2193.3	2187.3
7.5°	2193.3	2181.3	2153.3	2161.1	2151.2
10°	2169.2	2155.2	2115.3	2109.2	2097.2
12.5°	2139.3	2121.2	2067.1	2055.2	2033.1
15°	2103.2	2081.1	2013.1	1975.1	1955.2
17.5°	2061.2	2029.1	1945.0	1901.0	1869.0
20°	2013.1	1973.0	1873.0	1823.1	1779.0
22.5°	1961.1	1915.0	1798.9	1731.0	1701.0
25°	1909.2	1845.0	1713.0	1631.0	1600.9
27.5°	1847.2	1779.0	1632.9	1538.8	1492.8
30°	1781.1	1704.9	1544.8	1442.9	1388.7
32.5°	1717.0	1624.9	1461.0	1340.8	1290.7
35°	1645.0	1542.9	1366.9	1240.7	1196.6
37.5°	1574.9	1464.7	1278.8	1140.6	1090.7
40°	1500.8	1380.9	1186.6	1044.5	992.6
42.5°	1424.9	1296.8	1094.7	946.5	896.6
45°	1344.8	1210.6	1000.7	858.4	810.4
47.5°	1268.8	1126.8	910.6	768.4	724.4
50°	1184.7	1042.7	822.5	684.3	642.5
52.5°	1102.5	952.4	738.4	606.4	568.4
55°	1022.5	866.5	650.3	530.4	492.3
57.5°	940.6	780.4	572.4	460.3	428.2
60°	856.5	696.4	490.3	388.3	356.2
62.5°	774.5	614.5	420.2	324.2	308.3
65°	690.5	528.2	348.2	280.3	274.1
67.5°	610.4	448.2	280.3	246.1	240.1
70°	526.3	370.2	232.0	212.1	204.0
72.5°	446.3	298.1	194.0	178.2	174.1
75°	368.2	228.0	160.1	146.1	144.2
77.5°	290.3	162.0	126.1	118.1	114.0
80°	218.0	116.1	95.9	88.1	88.1
82.5°	152.0	78.1	66.0	62.0	62.0
85°	86.0	44.0	38.0	38.0	38.0
87.5°	32.1	16.0	16.0	14.0	14.0
90°	1.5	18.4	50.0	46.9	48.4
92.5°	31.7	42.9	44.4	45.9	45.9
95°	74.5	88.7	91.3	91.3	88.7
97.5°	123.9	137.2	142.9	142.9	142.9
100°	181.1	192.8	196.9	196.9	195.4
102.5°	241.3	249.9	255.6	257.1	255.6
105°	307.1	311.2	314.2	316.8	316.8
107.5°	372.4	378.5	378.5	379.5	372.4
110°	435.7	443.8	443.8	443.8	439.7

TEST NUMBER: P921368

CATALOG NUMBER: DFN2DIP-4P3F0-060D060US940-RLLFLL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	504.0	512.6	511.1	507.0	504.0
115°	571.3	579.5	576.9	575.4	571.3
117.5°	638.2	649.4	642.2	638.2	634.1
120°	705.5	716.8	705.5	705.5	700.9
122.5°	766.7	781.0	773.8	769.8	766.7
125°	831.0	843.7	839.6	835.1	833.6
127.5°	893.8	909.5	903.9	897.9	893.8
130°	952.4	970.8	968.2	965.2	959.6
132.5°	1018.2	1032.5	1033.5	1026.4	1022.3
135°	1074.9	1090.7	1093.7	1092.2	1088.1
137.5°	1138.1	1150.8	1153.4	1152.4	1146.3
140°	1193.7	1206.5	1213.6	1213.6	1208.0
142.5°	1250.8	1263.6	1267.7	1269.2	1263.6
145°	1304.9	1315.1	1323.3	1324.8	1319.2
147.5°	1353.3	1366.1	1372.3	1374.7	1369.1
150°	1403.4	1412.0	1417.6	1422.2	1417.6
152.5°	1447.7	1456.4	1463.6	1469.2	1463.6
155°	1492.1	1496.2	1500.7	1508.0	1503.3
157.5°	1530.4	1533.5	1536.0	1546.2	1539.1
160°	1564.6	1567.6	1569.1	1577.8	1571.7
162.5°	1596.2	1596.2	1597.7	1607.4	1600.3
165°	1623.2	1621.7	1621.7	1631.9	1624.8
167.5°	1647.7	1643.2	1643.2	1653.3	1646.2
170°	1666.1	1662.0	1660.5	1670.6	1662.0
172.5°	1678.8	1674.7	1673.2	1683.4	1674.7
175°	1689.0	1685.0	1681.9	1692.1	1683.4
177.5°	1694.6	1690.6	1687.5	1696.1	1687.5
180°	1692.1	1692.1	1692.1	1692.1	1692.1

TEST NUMBER: P921368

CATALOG NUMBER: DFN2DIP-4P3F0-060D060US940-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	10.23	11.06	11.20	12.04	13.32	6.19	7.02	7.17	8.00	9.28
	3H	11.90	12.64	12.89	13.63	14.94	7.37	8.11	8.36	9.10	10.41
	4H	12.51	13.21	13.51	14.20	15.52	7.82	8.52	8.82	9.51	10.83
	6H	12.93	13.57	13.93	14.57	15.90	8.14	8.78	9.14	9.77	11.10
	8H	13.05	13.66	14.07	14.68	16.00	8.22	8.83	9.24	9.85	11.17
	12H	13.11	13.69	14.13	14.70	16.05	8.26	8.84	9.28	9.85	11.20
4H	2H	10.25	10.94	11.25	11.94	13.26	6.79	7.48	7.79	8.48	9.79
	3H	12.07	12.65	13.08	13.67	15.00	8.13	8.71	9.14	9.73	11.06
	4H	12.76	13.29	13.78	14.30	15.66	8.67	9.20	9.69	10.21	11.57
	6H	13.27	13.72	14.30	14.76	16.11	9.08	9.54	10.11	10.58	11.93
	8H	13.44	13.87	14.47	14.90	16.26	9.21	9.63	10.24	10.66	12.03
	12H	13.53	13.92	14.58	14.96	16.33	9.27	9.65	10.32	10.70	12.07
8H	4H	12.73	13.15	13.76	14.18	15.55	8.95	9.37	9.98	10.40	11.77
	6H	13.29	13.64	14.34	14.71	16.07	9.46	9.81	10.51	10.88	12.24
	8H	13.50	13.81	14.56	14.87	16.25	9.64	9.95	10.70	11.01	12.39
	12H	13.63	13.90	14.70	14.96	16.38	9.76	10.03	10.82	11.08	12.51
12H	4H	12.68	13.06	13.72	14.11	15.48	8.95	9.33	10.00	10.38	11.75
	6H	13.26	13.57	14.32	14.63	16.01	9.50	9.81	10.57	10.87	12.25
	8H	13.48	13.75	14.54	14.80	16.23	9.71	9.98	10.77	11.03	12.46

END OF REPORT