

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: P922000

Luminaire Tested: DFN2DIP-PN2F0-040D060US940-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P922000
REPORT IS A COMBINATION OF REPORTS P899505 AND P896349
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN2F0-040D060US940-FLLFLL
Description: 2 foot, Pentagon Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

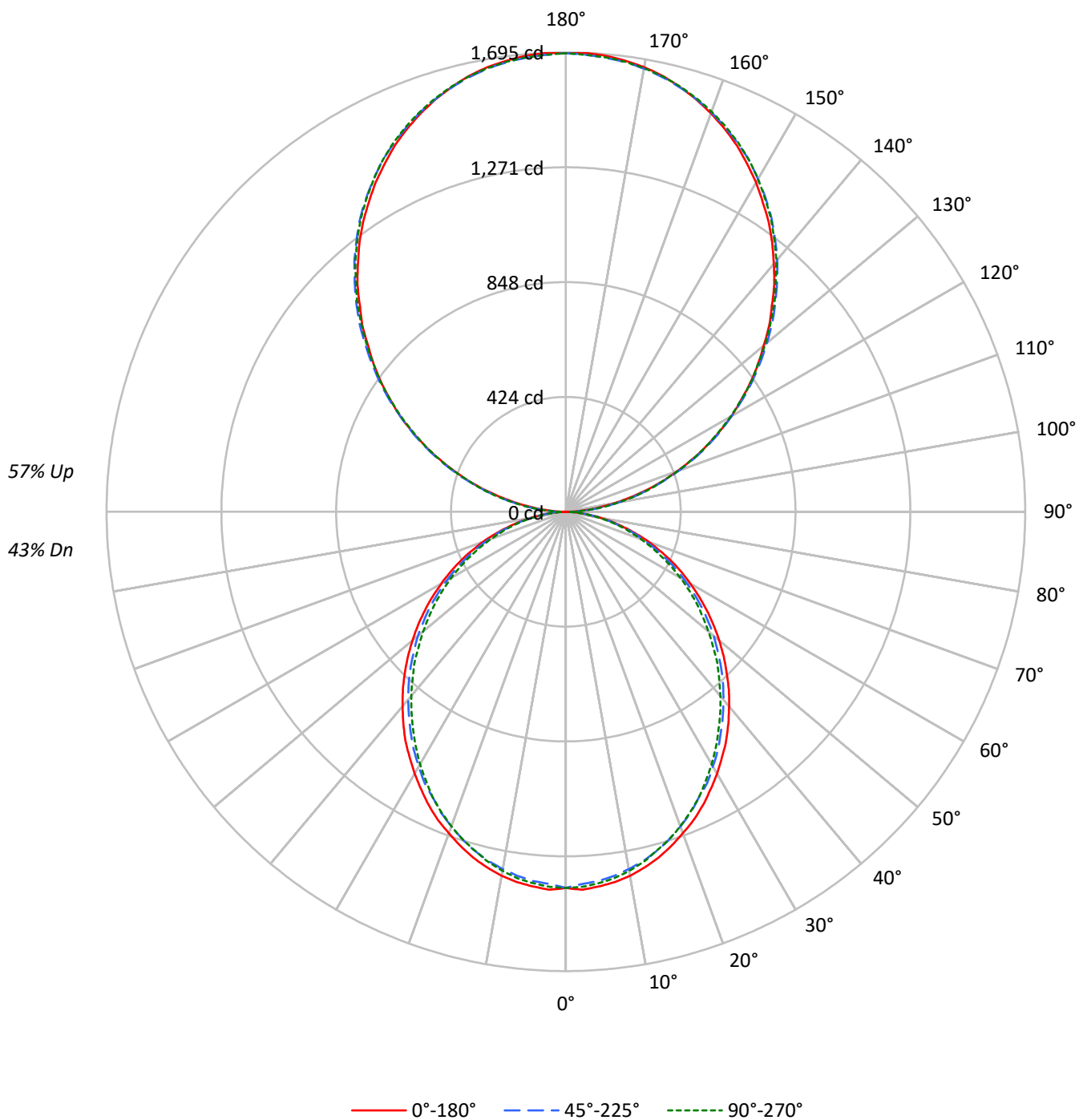
Lumens per Lamp: N/A
Luminaire Lumens: 8266.2 lumens
Efficiency: N/A
Efficacy: 89.9 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 2.17' x L: 2.29' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 91.9
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9613
Total Harmonic Distortion (THDi): 0.083
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P922000

CATALOG NUMBER: DFN2DIP-PN2F0-040D060US940-FLLFLL

Luminous Intensity Polar Plot



TEST NUMBER: P922000

CATALOG NUMBER: DFN2DIP-PN2F0-040D060US940-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	105	105	105	105	96	96	96	96	79	79	79	64	64	64	49	49	49
1	96	92	88	85	88	84	81	78	69	67	65	56	54	53	44	43	42
2	88	80	74	69	80	73	68	64	61	57	54	49	47	44	38	37	35
3	80	70	63	57	73	65	58	53	54	49	45	44	40	37	34	32	30
4	73	62	55	49	66	57	50	45	48	43	39	39	35	32	30	28	26
5	67	56	47	42	61	51	44	39	43	37	33	35	31	28	27	25	22
6	62	50	42	36	56	46	39	34	38	33	29	31	27	24	25	22	20
7	57	45	37	31	52	41	34	29	35	29	25	29	24	21	23	20	18
8	53	41	33	28	48	38	31	26	32	26	23	26	22	19	21	18	16
9	49	37	30	25	45	34	28	23	29	24	20	24	20	17	19	16	14
10	46	34	27	22	42	31	25	21	27	22	18	22	18	15	18	15	13

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3006	3006	3006
5°	3006	2958	2980
10°	2977	2911	2935
15°	2928	2857	2868
20°	2864	2784	2799
25°	2800	2698	2720
30°	2722	2618	2621
35°	2647	2524	2516
40°	2555	2429	2416
45°	2464	2333	2314
50°	2363	2233	2195
55°	2258	2117	2086
60°	2139	1979	1960
65°	2008	1836	1812
70°	1841	1662	1651
75°	1613	1453	1497
80°	1334	1187	1215
85°	906	750	761

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2464 cd/sqm

TEST NUMBER: P922000

CATALOG NUMBER: DFN2DIP-PN2F0-040D060US940-FLLFLL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	130.6	1.6
10°-20°	367.5	4.4
20°-30°	540.1	6.5
30°-40°	627.3	7.6
40°-50°	626.6	7.6
50°-60°	546.3	6.6
60°-70°	403.9	4.9
70°-80°	228.5	2.8
80°-90°	65.1	0.8
90°-100°	104.7	1.3
100°-110°	332.7	4.0
110°-120°	569.3	6.9
120°-130°	748.8	9.1
130°-140°	840.5	10.2
140°-150°	824.2	10.0
150°-160°	691.4	8.4
160°-170°	458.5	5.5
170°-180°	160.3	1.9
0°-30°	1038.3	12.6
0°-40°	1665.6	20.1
0°-60°	2838.5	34.3
0°-90°	3536.0	42.8
90°-120°	1006.7	12.2
90°-150°	3420.1	41.4
90°-180°	4730.0	57.2
0°-180°	8266.2	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1388	1388	1388	1388	1388	
5°	1388	1383	1368	1378	1376	132
15°	1321	1313	1296	1301	1295	372
25°	1196	1185	1162	1165	1162	550
35°	1032	1018	997	989	982	644
45°	840	830	810	796	790	648
55°	635	627	611	595	589	568
65°	428	420	407	395	388	424
75°	224	222	215	207	210	239
85°	55	53	52	48	47	61
90°	2	18	50	47	48	8
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: P922000

CATALOG NUMBER: DFN2DIP-PN2F0-040D060US940-FLLFLL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1387.9	1387.9	1387.9	1387.9	1387.9
2.5°	1396.0	1389.3	1374.6	1387.9	1385.4
5°	1387.9	1382.6	1367.9	1378.5	1376.0
7.5°	1378.5	1370.6	1355.8	1366.6	1364.0
10°	1364.0	1354.6	1338.6	1349.2	1345.2
12.5°	1343.8	1335.9	1319.9	1326.6	1323.8
15°	1321.2	1313.2	1295.8	1301.2	1294.6
17.5°	1293.2	1285.2	1267.8	1274.4	1267.8
20°	1262.4	1254.5	1235.8	1239.7	1234.6
22.5°	1231.8	1219.8	1202.4	1202.4	1199.7
25°	1195.7	1185.1	1162.4	1165.0	1162.4
27.5°	1155.7	1146.3	1129.1	1125.1	1118.5
30°	1115.7	1105.0	1085.0	1081.0	1075.7
32.5°	1073.0	1065.1	1043.7	1035.6	1030.2
35°	1031.6	1018.3	996.9	988.9	982.2
37.5°	984.9	972.9	951.5	942.2	935.5
40°	936.9	926.1	904.7	892.9	887.5
42.5°	890.2	879.4	858.2	844.7	836.8
45°	839.5	830.2	810.0	795.5	790.1
47.5°	790.1	780.7	759.4	744.7	736.7
50°	738.0	731.3	712.7	693.9	687.2
52.5°	687.2	678.0	660.7	646.0	636.6
55°	635.3	627.2	611.3	595.2	588.6
57.5°	583.2	576.6	559.1	543.1	537.8
60°	531.1	525.8	507.2	492.5	488.5
62.5°	480.5	471.1	457.8	444.4	439.1
65°	428.5	420.4	407.1	395.0	388.4
67.5°	375.1	368.3	356.4	347.1	341.7
70°	325.7	320.3	308.3	298.9	293.6
72.5°	275.0	269.6	263.0	253.6	249.6
75°	224.2	221.6	214.8	206.9	209.6
77.5°	178.8	173.4	170.8	166.7	162.8
80°	133.5	132.1	129.4	125.5	122.8
82.5°	90.8	90.8	89.5	84.1	84.1
85°	54.7	53.4	52.1	48.0	46.7
87.5°	24.1	21.4	18.7	14.7	13.3
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: P922000

CATALOG NUMBER: DFN2DIP-PN2F0-040D060US940-FLLFLL

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: P922000

CATALOG NUMBER: DFN2DIP-PN2F0-040D060US940-FLLFLL

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	10.27	11.07	11.29	12.10	13.47	9.83	10.63	10.85	11.66	13.03
	3H	11.91	12.62	12.93	13.66	15.05	11.43	12.14	12.45	13.18	14.57
	4H	12.48	13.16	13.52	14.19	15.59	12.00	12.67	13.03	13.71	15.11
	6H	12.86	13.48	13.91	14.53	15.94	12.37	13.00	13.42	14.04	15.45
	8H	12.95	13.55	14.01	14.61	16.01	12.47	13.06	13.52	14.12	15.53
	12H	12.99	13.56	14.05	14.61	16.04	12.50	13.07	13.56	14.12	15.55
4H	2H	10.71	11.39	11.76	12.43	13.83	10.36	11.04	11.41	12.08	13.48
	3H	12.55	13.12	13.60	14.18	15.59	12.15	12.72	13.20	13.78	15.19
	4H	13.25	13.77	14.31	14.82	16.26	12.83	13.35	13.89	14.41	15.84
	6H	13.74	14.19	14.81	15.27	16.69	13.32	13.77	14.39	14.85	16.27
	8H	13.88	14.29	14.95	15.37	16.81	13.45	13.87	14.52	14.94	16.39
	12H	13.94	14.32	15.03	15.40	16.85	13.50	13.88	14.59	14.97	16.42
8H	4H	13.43	13.84	14.50	14.92	16.36	13.06	13.48	14.13	14.55	15.99
	6H	14.03	14.38	15.12	15.49	16.93	13.66	14.00	14.75	15.12	16.56
	8H	14.24	14.54	15.34	15.64	17.10	13.86	14.16	14.96	15.26	16.72
	12H	14.35	14.62	15.46	15.71	17.21	13.96	14.22	15.06	15.32	16.81
12H	4H	13.41	13.79	14.50	14.87	16.32	13.05	13.42	14.13	14.51	15.96
	6H	14.06	14.36	15.16	15.46	16.92	13.69	14.00	14.79	15.09	16.55
	8H	14.28	14.55	15.38	15.64	17.14	13.91	14.18	15.01	15.27	16.77