

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: P922092

Luminaire Tested: DFN2DIP-PN3F0-040D080US940-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P922092
REPORT IS A COMBINATION OF REPORTS P899583 AND P896399
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN3F0-040D080US940-FLLFLL
Description: 3 foot, Pentagon Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

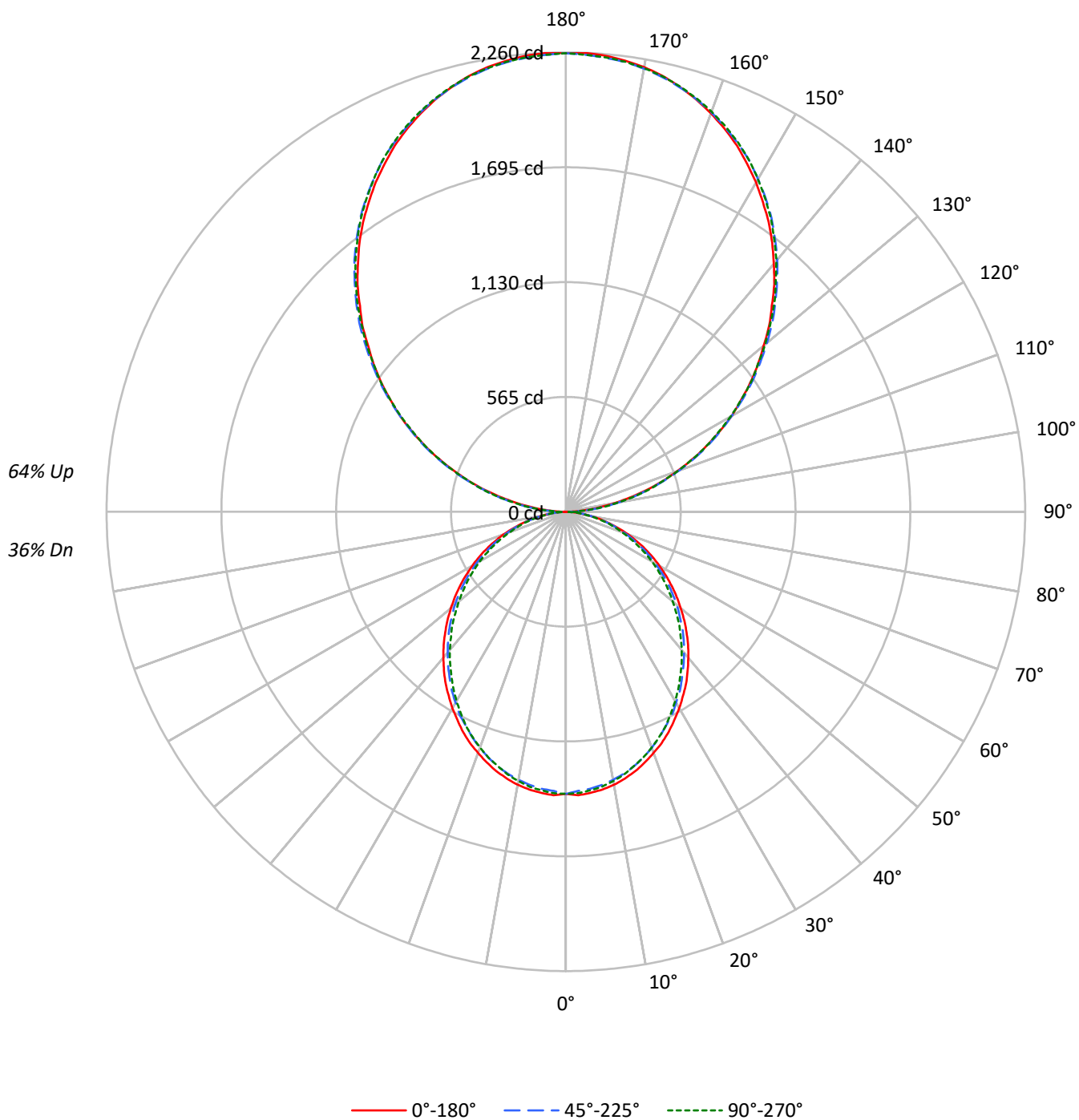
Lumens per Lamp: N/A
Luminaire Lumens: 9844.5 lumens
Efficiency: N/A
Efficacy: 102.4 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 2.96' x L: 3.11' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 96.1
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9972
Total Harmonic Distortion (THDi): 0.128
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P922092

CATALOG NUMBER: DFN2DIP-PN3F0-040D080US940-FLLFLL

Luminous Intensity Polar Plot



TEST NUMBER: P922092

CATALOG NUMBER: DFN2DIP-PN3F0-040D080US940-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	104	104	104	104	94	94	94	94	76	76	76	59	59	59	43	43	43
1	95	90	87	83	85	82	79	76	66	64	62	52	50	49	38	37	36
2	86	79	73	68	78	72	66	62	58	54	51	45	43	41	34	32	31
3	79	69	62	56	71	63	57	52	51	47	43	40	37	34	30	28	26
4	72	61	54	48	65	56	49	44	45	40	37	36	32	29	27	24	22
5	66	54	47	41	59	50	43	38	40	35	31	32	28	25	24	22	20
6	61	49	41	35	55	45	38	33	36	31	27	29	25	22	22	19	17
7	56	44	36	31	50	40	33	28	33	28	24	26	22	20	20	17	15
8	52	40	32	27	47	36	30	25	30	25	21	24	20	17	18	16	14
9	48	36	29	24	44	33	27	22	27	22	19	22	18	16	17	14	12
10	45	33	26	21	41	30	24	20	25	20	17	20	17	14	16	13	11

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1622	1622	1622
5°	1624	1599	1610
10°	1610	1576	1587
15°	1585	1549	1553
20°	1552	1512	1517
25°	1519	1467	1476
30°	1479	1426	1424
35°	1440	1378	1369
40°	1392	1329	1317
45°	1345	1279	1263
50°	1293	1228	1201
55°	1238	1168	1144
60°	1176	1097	1079
65°	1109	1024	1002
70°	1023	934	918
75°	904	826	841
80°	760	689	694
85°	537	456	452

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 2235 cd/sqm

TEST NUMBER: P922092

CATALOG NUMBER: DFN2DIP-PN3F0-040D080US940-FLLFLL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	130.6	1.3
10°-20°	367.5	3.7
20°-30°	540.1	5.5
30°-40°	627.3	6.4
40°-50°	626.6	6.4
50°-60°	546.3	5.5
60°-70°	403.9	4.1
70°-80°	228.5	2.3
80°-90°	66.7	0.7
90°-100°	139.6	1.4
100°-110°	443.6	4.5
110°-120°	759.1	7.7
120°-130°	998.3	10.1
130°-140°	1120.6	11.4
140°-150°	1098.9	11.2
150°-160°	921.8	9.4
160°-170°	611.3	6.2
170°-180°	213.7	2.2
0°-30°	1038.3	10.5
0°-40°	1665.6	16.9
0°-60°	2838.5	28.8
0°-90°	3537.6	35.9
90°-120°	1342.3	13.6
90°-150°	4560.1	46.3
90°-180°	6307.0	64.1
0°-180°	9844.5	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	24	67	63	65	10
95°	99	118	122	122	118	111
105°	410	415	419	422	422	432
115°	762	773	769	767	762	753
125°	1108	1125	1120	1113	1111	990
135°	1433	1454	1458	1456	1451	1108
145°	1740	1754	1764	1766	1759	1087
155°	1990	1995	2001	2010	2004	916
165°	2164	2162	2162	2176	2166	611
175°	2252	2247	2242	2256	2244	214
180°	2256	2256	2256	2256	2256	

TEST NUMBER: P922092

CATALOG NUMBER: DFN2DIP-PN3F0-040D080US940-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°	2.1	24.5	66.7	62.6	64.6
92.5°	42.2	57.2	59.2	61.2	61.2
95°	99.3	118.3	121.7	121.7	118.3
97.5°	165.3	183.0	190.5	190.5	190.5
100°	241.5	257.1	262.5	262.5	260.5
102.5°	321.7	333.3	340.7	342.8	340.7
105°	409.5	414.9	419.0	422.4	422.4
107.5°	496.5	504.7	504.7	506.0	496.5
110°	580.9	591.7	591.7	591.7	586.3

TEST NUMBER: P922092

CATALOG NUMBER: DFN2DIP-PN3F0-040D080US940-FLLFLL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	672.0	683.6	681.5	676.1	672.0
115°	761.8	772.7	769.3	767.2	761.8
117.5°	850.9	865.9	856.3	850.9	845.4
120°	940.7	955.6	940.7	940.7	934.5
122.5°	1022.3	1041.3	1031.8	1026.4	1022.3
125°	1108.0	1125.0	1119.5	1113.4	1111.4
127.5°	1191.7	1212.7	1205.2	1197.1	1191.7
130°	1269.9	1294.3	1290.9	1286.9	1279.4
132.5°	1357.6	1376.6	1378.0	1368.5	1363.1
135°	1433.1	1454.2	1458.3	1456.3	1450.8
137.5°	1517.4	1534.5	1537.8	1536.5	1528.3
140°	1591.6	1608.6	1618.1	1618.1	1610.6
142.5°	1667.8	1684.8	1690.2	1692.3	1684.8
145°	1739.9	1753.5	1764.3	1766.4	1758.9
147.5°	1804.5	1821.5	1829.6	1833.1	1825.6
150°	1871.2	1882.7	1890.2	1896.3	1890.2
152.5°	1930.3	1941.9	1951.4	1958.9	1951.4
155°	1989.5	1994.9	2001.1	2010.5	2004.5
157.5°	2040.5	2044.6	2048.0	2061.5	2052.1
160°	2086.1	2090.2	2092.2	2103.7	2095.6
162.5°	2128.2	2128.2	2130.3	2143.2	2133.7
165°	2164.3	2162.2	2162.2	2175.9	2166.3
167.5°	2196.9	2190.8	2190.8	2204.4	2194.9
170°	2221.4	2216.0	2213.9	2227.6	2216.0
172.5°	2238.5	2233.0	2231.0	2244.5	2233.0
175°	2252.0	2246.6	2242.5	2256.1	2244.5
177.5°	2259.5	2254.1	2250.0	2261.6	2250.0
180°	2256.1	2256.1	2256.1	2256.1	2256.1

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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	7.45	8.20	8.52	9.27	10.73	7.01	7.76	8.08	8.83	10.29
	3H	9.10	9.77	10.17	10.85	12.32	8.61	9.28	9.69	10.36	11.84
	4H	9.67	10.31	10.76	11.39	12.87	9.19	9.82	10.28	10.91	12.39
	6H	10.06	10.65	11.16	11.73	13.23	9.57	10.16	10.67	11.24	12.74
	8H	10.16	10.72	11.27	11.82	13.31	9.67	10.23	10.77	11.33	12.82
	12H	10.21	10.73	11.31	11.83	13.34	9.71	10.24	10.81	11.33	12.84
4H	2H	7.89	8.53	8.99	9.61	11.09	7.54	8.18	8.64	9.26	10.74
	3H	9.74	10.27	10.85	11.38	12.88	9.34	9.87	10.44	10.98	12.47
	4H	10.45	10.93	11.56	12.03	13.55	10.03	10.52	11.14	11.62	13.13
	6H	10.95	11.37	12.07	12.49	14.00	10.53	10.95	11.64	12.07	13.58
	8H	11.09	11.48	12.21	12.60	14.12	10.67	11.06	11.78	12.17	13.70
	12H	11.16	11.51	12.29	12.64	14.17	10.72	11.07	11.85	12.20	13.73
8H	4H	10.63	11.02	11.75	12.13	13.66	10.26	10.65	11.38	11.76	13.29
	6H	11.25	11.57	12.39	12.73	14.25	10.87	11.20	12.01	12.35	13.87
	8H	11.46	11.75	12.61	12.88	14.42	11.08	11.36	12.22	12.50	14.04
	12H	11.59	11.83	12.73	12.97	14.55	11.19	11.43	12.33	12.57	14.15
12H	4H	10.61	10.96	11.74	12.09	13.62	10.25	10.60	11.38	11.73	13.26
	6H	11.28	11.56	12.42	12.69	14.24	10.91	11.19	12.06	12.33	13.87
	8H	11.51	11.76	12.66	12.89	14.47	11.14	11.38	12.28	12.52	14.10