

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: P921639

Luminaire Tested: DFN2DIP-HX3F0-040D030US940-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P921639
REPORT IS A COMBINATION OF REPORTS P900723 AND P897645
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX3F0-040D030US940-FLLONL
Description: 3 foot, Hexagon Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

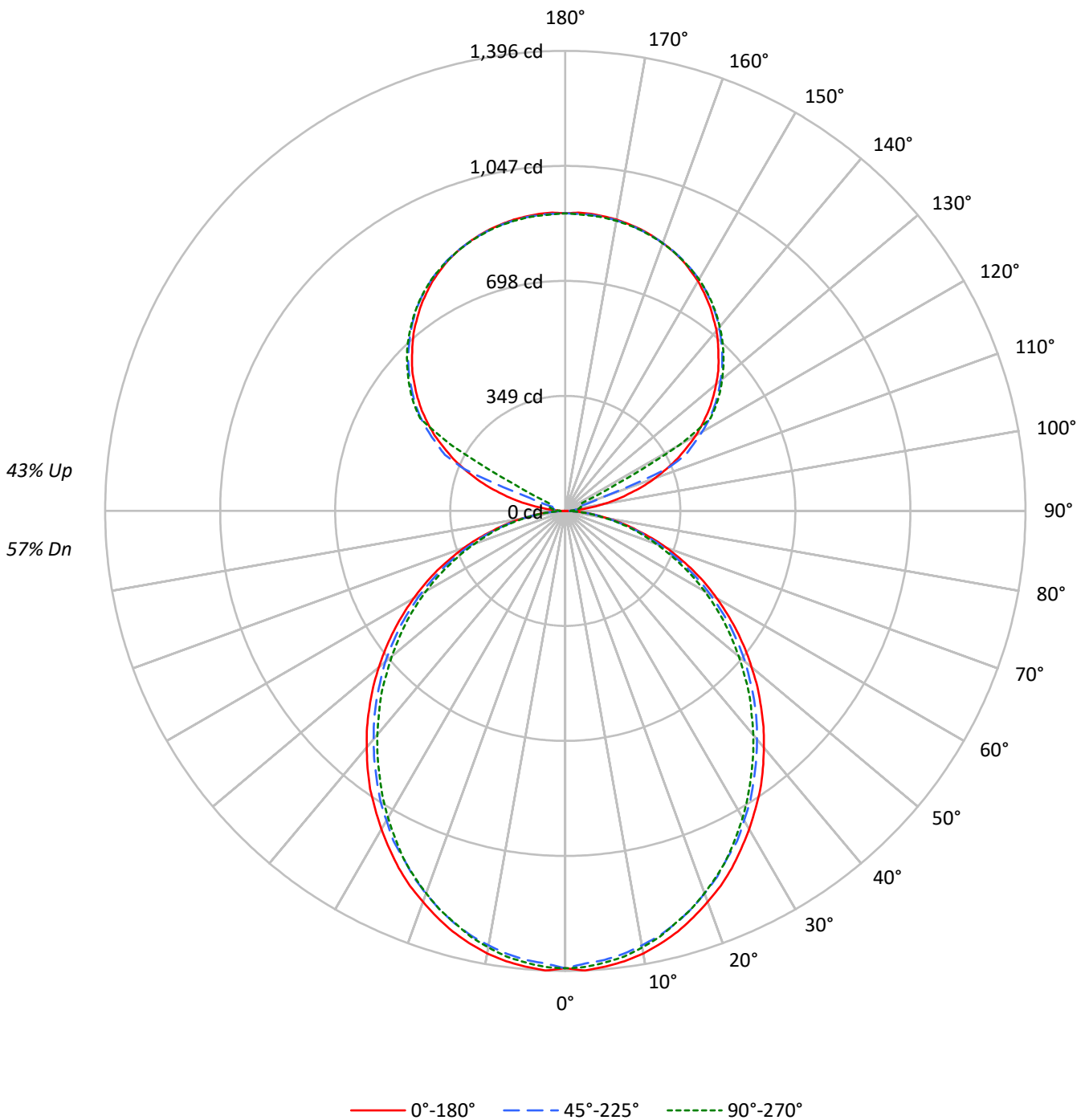
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 6179.6 lumens
Efficiency: N/A
Efficacy: 107.7 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 2.84' x L: 3.28' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 57.4
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9968
Total Harmonic Distortion (THDi): 0.064
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P921639
CATALOG NUMBER: DFN2DIP-HX3F0-040D030US940-FLLONL

Luminous Intensity Polar Plot





TEST NUMBER: P921639

CATALOG NUMBER: DFN2DIP-HX3F0-040D030US940-FLONL

COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20				20				20				20				20	
RC	80				70				50				30				10	0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	0
RCR																		
0	109	109	109	109	101	101	101	101	87	87	87	74	74	74	63	63	63	57
1	99	95	91	88	92	89	85	82	77	74	72	66	64	62	55	54	53	48
2	91	83	77	72	84	77	72	67	67	63	59	58	55	52	49	47	45	40
3	83	73	66	60	77	68	62	56	59	54	50	51	47	44	43	40	38	34
4	76	65	57	50	70	61	53	48	53	47	43	45	41	38	39	35	33	29
5	69	58	49	43	64	54	47	41	47	41	37	41	36	33	35	31	29	26
6	64	52	44	38	59	49	41	36	43	37	32	37	32	29	32	28	25	22
7	59	47	39	33	55	44	37	31	39	33	28	34	29	25	29	25	22	20
8	55	43	35	29	51	40	33	28	35	29	25	31	26	23	27	23	20	18
9	51	39	31	26	48	37	30	25	32	27	23	28	24	20	25	21	18	16
10	48	36	28	24	45	34	27	22	30	24	20	26	22	18	23	19	17	15

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1608	1608	1608
5°	1610	1584	1595
10°	1596	1562	1572
15°	1572	1535	1538
20°	1539	1498	1503
25°	1507	1454	1462
30°	1466	1413	1410
35°	1428	1365	1355
40°	1381	1317	1303
45°	1334	1268	1250
50°	1283	1217	1188
55°	1229	1158	1132
60°	1169	1087	1067
65°	1102	1015	990
70°	1018	926	907
75°	901	819	829
80°	759	683	683
85°	539	452	442

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 1334 cd/sqm



TEST NUMBER: P921639

CATALOG NUMBER: DFN2DIP-HX3F0-040D030US940-FLONL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	130.6	2.1
10°-20°	367.5	5.9
20°-30°	540.1	8.7
30°-40°	627.3	10.2
40°-50°	626.6	10.1
50°-60°	546.3	8.8
60°-70°	403.9	6.5
70°-80°	228.5	3.7
80°-90°	61.9	1.0
90°-100°	29.8	0.5
100°-110°	111.0	1.8
110°-120°	294.3	4.8
120°-130°	488.2	7.9
130°-140°	518.5	8.4
140°-150°	481.9	7.8
150°-160°	387.5	6.3
160°-170°	249.7	4.0
170°-180°	85.9	1.4
0°-30°	1038.3	16.8
0°-40°	1665.6	27.0
0°-60°	2838.5	45.9
0°-90°	3532.8	57.2
90°-120°	435.1	7.0
90°-150°	1923.7	31.1
90°-180°	2647.0	42.8
0°-180°	6179.6	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°	1	8	13	16	18	6
95°	42	21	25	29	28	50
105°	199	218	40	47	50	212
115°	376	387	403	101	54	370
125°	531	540	552	557	559	474
135°	657	668	674	680	679	508
145°	762	762	773	777	774	477
155°	840	834	841	845	840	387
165°	884	881	883	887	883	250
175°	905	900	902	906	900	86
180°	903	903	903	903	903	



TEST NUMBER: P921639

CATALOG NUMBER: DFN2DIP-HX3F0-040D030US940-FLLONL

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°	0.6	7.8	13.0	16.4	17.6
92.5°	16.4	13.7	15.7	17.0	17.6
95°	42.4	20.9	25.4	28.8	28.1
97.5°	76.4	22.9	33.3	35.3	35.9
100°	115.7	26.1	37.3	42.4	43.8
102.5°	158.7	157.5	38.5	45.7	47.7
105°	198.6	218.2	39.9	47.0	49.7
107.5°	245.0	261.3	41.2	48.3	51.0
110°	289.4	303.1	114.3	49.0	51.6



TEST NUMBER: P921639

CATALOG NUMBER: DFN2DIP-HX3F0-040D030US940-FLLONL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	331.3	343.0	331.9	50.3	52.3
115°	375.6	386.7	403.1	100.6	53.6
117.5°	414.2	427.2	438.4	344.9	173.8
120°	457.3	467.1	478.8	486.7	398.5
122.5°	493.8	504.4	517.5	521.3	522.0
125°	531.1	539.6	552.1	556.6	558.6
127.5°	565.1	574.2	584.1	590.6	591.2
130°	597.1	607.6	614.7	621.9	621.3
132.5°	629.7	638.3	645.4	651.3	650.7
135°	657.2	667.7	673.5	680.1	678.8
137.5°	685.9	693.8	700.3	706.9	704.9
140°	714.0	719.3	726.4	732.3	729.1
142.5°	737.6	742.2	750.6	755.8	752.6
145°	762.4	761.7	772.8	777.4	774.1
147.5°	783.9	781.9	793.1	796.3	793.7
150°	804.9	800.3	810.7	814.6	811.4
152.5°	822.4	817.3	827.1	831.0	826.4
155°	839.5	833.7	841.4	845.3	840.2
157.5°	853.2	848.0	853.9	858.4	853.2
160°	865.0	861.0	865.0	868.9	864.2
162.5°	875.4	871.5	874.8	879.3	873.4
165°	884.5	880.7	882.6	887.2	882.6
167.5°	891.7	887.8	889.7	894.4	888.5
170°	897.6	893.7	895.0	899.6	893.7
172.5°	901.5	897.6	898.9	903.5	897.6
175°	904.7	900.2	901.5	906.1	899.6
177.5°	906.1	901.5	902.2	906.8	900.9
180°	902.9	902.9	902.9	902.9	902.9



TEST NUMBER: P921639
 CATALOG NUMBER: DFN2DIP-HX3F0-040D030US940-FLLONL

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	9.52	10.44	10.41	11.36	12.52	9.09	10.01	9.98	10.93	12.09
	3H	11.17	12.01	12.08	12.93	14.12	10.70	11.54	11.61	12.46	13.65
	4H	11.76	12.55	12.68	13.48	14.67	11.29	12.08	12.21	13.01	14.21
	6H	12.16	12.88	13.09	13.82	15.03	11.69	12.41	12.62	13.35	14.56
	8H	12.26	12.95	13.20	13.90	15.11	11.79	12.48	12.73	13.43	14.64
	12H	12.31	12.97	13.25	13.91	15.15	11.83	12.49	12.78	13.44	14.67
4H	2H	9.98	10.77	10.91	11.70	12.90	9.64	10.43	10.56	11.36	12.56
	3H	11.85	12.50	12.78	13.46	14.68	11.46	12.11	12.39	13.07	14.29
	4H	12.56	13.16	13.50	14.11	15.35	12.15	12.76	13.10	13.71	14.95
	6H	13.07	13.59	14.03	14.56	15.80	12.66	13.18	13.62	14.16	15.40
	8H	13.22	13.70	14.18	14.67	15.92	12.81	13.29	13.77	14.26	15.52
	12H	13.29	13.73	14.27	14.71	15.97	12.87	13.31	13.85	14.30	15.55
8H	4H	12.76	13.24	13.72	14.21	15.46	12.40	12.88	13.36	13.85	15.11
	6H	13.38	13.78	14.37	14.79	16.04	13.02	13.42	14.01	14.43	15.69
	8H	13.60	13.95	14.59	14.95	16.22	13.23	13.59	14.23	14.59	15.86
	12H	13.73	14.04	14.73	15.03	16.35	13.35	13.66	14.35	14.65	15.97
12H	4H	12.74	13.18	13.72	14.17	15.43	12.39	12.83	13.37	13.82	15.08
	6H	13.41	13.76	14.41	14.76	16.03	13.06	13.42	14.06	14.42	15.69
	8H	13.65	13.96	14.65	14.96	16.27	13.30	13.61	14.29	14.60	15.92