

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: P928534

Luminaire Tested: DFN2DIP-HX4F0-050D050US930-RLLONL

Issue Date: 12/12/2024

Test Information

Test Method: LM-79-2019
Report Number: P928534
REPORT IS A COMBINATION OF REPORTS P900840 AND P896187
Test Lab: INNOVATION CENTER
Issue Date: 12/12/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX4F0-050D050US930-RLLONL
Description: 4 foot, Hexagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

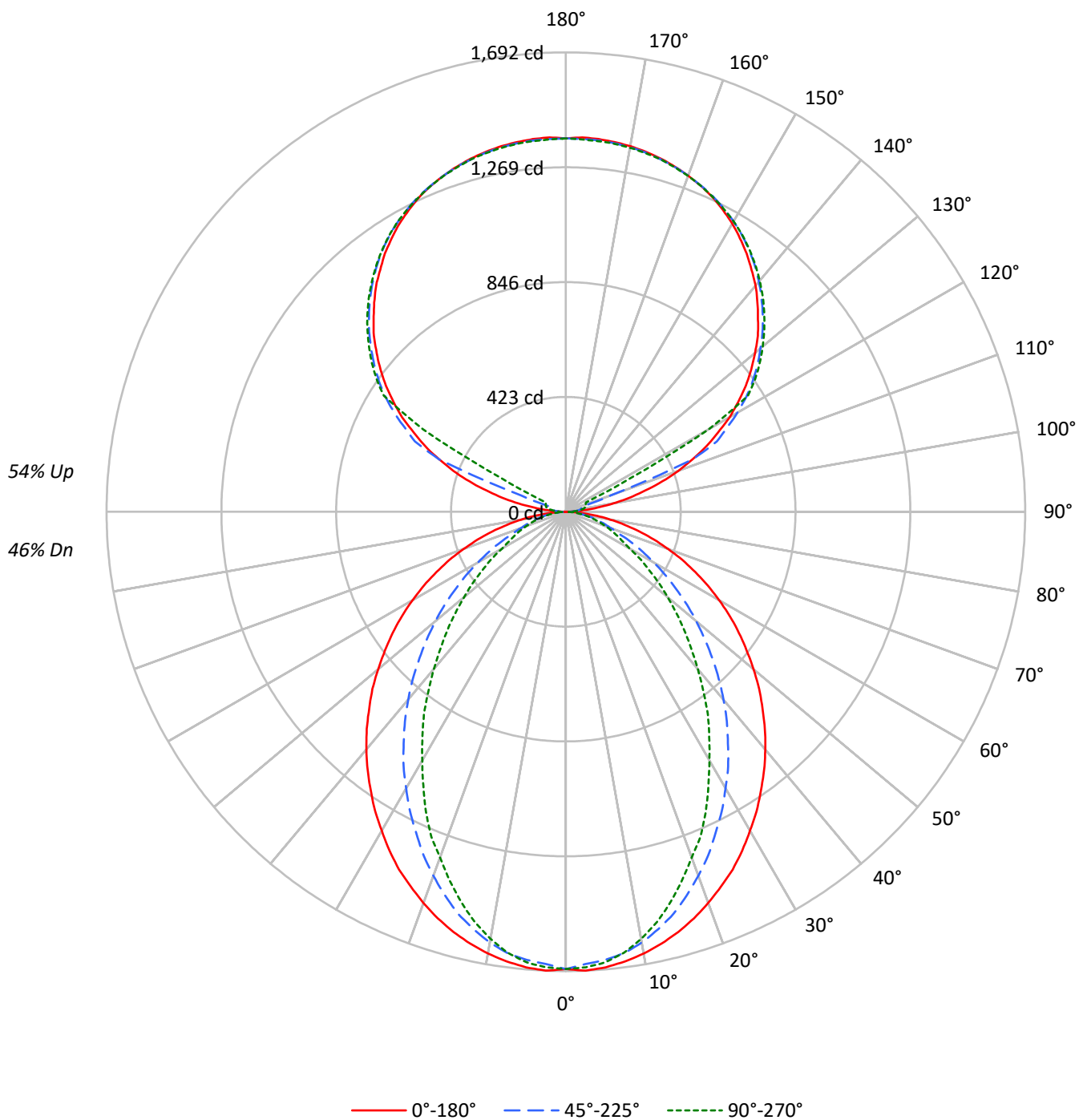
Lumens per Lamp: N/A
Luminaire Lumens: 7498.0 lumens
Efficiency: N/A
Efficacy: 92.2 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.54' x L: 4.09' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 81.3
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9957
Total Harmonic Distortion (THDi): 0.049
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P928534

CATALOG NUMBER: DFN2DIP-HX4F0-050D050US930-RLLONL

Luminous Intensity Polar Plot



TEST NUMBER: P928534

CATALOG NUMBER: DFN2DIP-HX4F0-050D050US930-RLLONL

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	50	30	10
RCR																				
0	106	106	106	106	98	98	98	98	81	81	81	66	66	66	53	53	53			46
1	97	93	90	86	89	86	83	80	72	70	68	59	58	56	47	46	45			40
2	89	82	76	71	82	76	70	66	63	60	57	52	50	48	42	40	39			34
3	81	72	65	60	75	67	61	56	56	52	48	47	43	41	38	35	34			29
4	75	64	57	51	68	60	53	48	50	45	41	42	38	35	34	31	29			26
5	69	58	50	44	63	53	46	41	45	40	36	38	34	31	31	28	26			23
6	63	52	44	38	58	48	41	36	41	36	32	34	30	27	28	25	23			20
7	59	47	39	34	54	44	37	32	37	32	28	31	27	24	26	23	21			18
8	55	43	35	30	50	40	33	28	34	29	25	29	25	22	24	21	19			16
9	51	39	32	27	47	36	30	25	31	26	22	27	23	20	22	19	17			15
10	48	36	29	24	44	33	27	23	29	24	20	25	21	18	20	18	15			13

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1252	1252	1252
5°	1254	1233	1240
10°	1242	1208	1200
15°	1225	1169	1138
20°	1203	1114	1061
25°	1179	1052	987
30°	1149	989	894
35°	1118	921	811
40°	1087	851	717
45°	1051	773	631
50°	1014	694	548
55°	976	610	467
60°	931	522	385
65°	879	432	346
70°	817	349	314
75°	738	307	285
80°	625	258	248
85°	437	173	186

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 1051 cd/sqm

TEST NUMBER: P928534

CATALOG NUMBER: DFN2DIP-HX4F0-050D050US930-RLLONL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	157.8	2.1
10°-20°	433.3	5.8
20°-30°	608.4	8.1
30°-40°	663.2	8.8
40°-50°	609.5	8.1
50°-60°	478.7	6.4
60°-70°	311.6	4.2
70°-80°	160.4	2.1
80°-90°	43.4	0.6
90°-100°	45.4	0.6
100°-110°	169.1	2.3
110°-120°	448.4	6.0
120°-130°	743.6	9.9
130°-140°	789.9	10.5
140°-150°	734.1	9.8
150°-160°	590.2	7.9
160°-170°	380.3	5.1
170°-180°	130.9	1.7
0°-30°	1199.5	16.0
0°-40°	1862.7	24.8
0°-60°	2950.9	39.4
0°-90°	3466.2	46.2
90°-120°	662.8	8.8
90°-150°	2930.4	39.1
90°-180°	4032.0	53.8
0°-180°	7498.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1684	1684	1684	1684	1684	
5°	1684	1677	1657	1670	1666	160
15°	1602	1585	1533	1504	1489	451
25°	1454	1405	1305	1242	1219	669
35°	1253	1175	1041	945	911	784
45°	1024	922	762	654	617	791
55°	779	660	495	404	375	696
65°	526	402	265	213	209	521
75°	280	174	122	111	110	297
85°	66	34	29	29	29	75
90°	1	12	20	25	27	7
95°	65	32	39	44	43	77
105°	302	332	61	72	76	323
115°	572	589	614	153	82	563
125°	809	822	841	848	851	721
135°	1001	1017	1026	1036	1034	773
145°	1161	1160	1177	1184	1179	726
155°	1279	1270	1282	1288	1280	589
165°	1347	1342	1344	1351	1344	381
175°	1378	1371	1373	1380	1370	131
180°	1375	1375	1375	1375	1375	

TEST NUMBER: P928534

CATALOG NUMBER: DFN2DIP-HX4F0-050D050US930-RLLONL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1684.2	1684.2	1684.2	1684.2	1684.2
2.5°	1691.8	1684.2	1667.4	1682.7	1679.6
5°	1684.2	1676.6	1656.7	1670.4	1665.9
7.5°	1670.4	1661.4	1640.0	1646.1	1638.4
10°	1652.2	1641.5	1611.1	1606.4	1597.3
12.5°	1629.3	1615.7	1574.4	1565.4	1548.5
15°	1601.9	1585.1	1533.3	1504.4	1489.2
17.5°	1569.9	1545.5	1481.4	1447.9	1423.5
20°	1533.3	1502.8	1426.6	1388.6	1354.9
22.5°	1493.7	1458.6	1370.2	1318.4	1295.6
25°	1454.0	1405.2	1304.7	1242.2	1219.2
27.5°	1406.9	1354.9	1243.7	1172.1	1137.0
30°	1356.6	1298.5	1176.6	1098.9	1057.7
32.5°	1307.7	1237.6	1112.7	1021.2	983.1
35°	1252.9	1175.1	1041.1	945.0	911.4
37.5°	1199.5	1115.7	974.0	868.7	830.7
40°	1143.1	1051.8	903.8	795.6	756.0
42.5°	1085.3	987.7	833.7	720.9	682.9
45°	1024.3	922.1	762.1	653.8	617.2
47.5°	966.3	858.2	693.6	585.3	551.8
50°	902.4	794.1	626.5	521.2	489.3
52.5°	839.8	725.4	562.4	461.9	432.9
55°	778.8	659.9	495.3	403.9	375.0
57.5°	716.4	594.5	435.9	350.6	326.2
60°	652.3	530.4	373.4	295.8	271.3
62.5°	589.9	468.0	320.1	246.9	234.8
65°	525.8	402.4	265.2	213.4	208.8
67.5°	464.9	341.4	213.4	187.4	182.9
70°	400.9	282.0	176.8	161.5	155.4
72.5°	339.9	227.1	147.8	135.7	132.6
75°	280.4	173.7	121.9	111.2	109.8
77.5°	221.0	123.4	96.1	89.9	86.8
80°	166.1	88.4	73.1	67.1	67.1
82.5°	115.8	59.5	50.3	47.2	47.2
85°	65.5	33.5	28.9	28.9	28.9
87.5°	24.4	12.1	12.1	10.7	10.7
90°	1.0	11.9	19.9	24.9	26.8
92.5°	24.9	20.9	23.9	25.9	26.8
95°	64.6	31.8	38.8	43.8	42.8
97.5°	116.4	34.9	50.7	53.8	54.7
100°	176.2	39.9	56.7	64.6	66.7
102.5°	241.8	239.9	58.8	69.6	72.7
105°	302.5	332.4	60.7	71.6	75.6
107.5°	373.2	398.0	62.8	73.6	77.7
110°	440.9	461.7	174.2	74.7	78.6



TEST NUMBER: P928534

CATALOG NUMBER: DFN2DIP-HX4F0-050D050US930-RLLONL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	504.6	522.4	505.5	76.6	79.6
115°	572.2	589.1	614.0	153.3	81.7
117.5°	630.9	650.8	667.8	525.3	264.7
120°	696.6	711.5	729.4	741.4	607.0
122.5°	752.2	768.2	788.2	794.1	795.2
125°	809.0	822.0	840.9	847.8	850.9
127.5°	860.7	874.7	889.7	899.6	900.6
130°	909.5	925.5	936.4	947.4	946.5
132.5°	959.3	972.3	983.1	992.2	991.2
135°	1001.1	1017.1	1025.9	1036.0	1034.0
137.5°	1044.8	1056.8	1066.8	1076.8	1073.8
140°	1087.6	1095.7	1106.5	1115.5	1110.6
142.5°	1123.6	1130.6	1143.4	1151.4	1146.4
145°	1161.4	1160.3	1177.2	1184.2	1179.2
147.5°	1194.1	1191.1	1208.1	1213.0	1209.1
150°	1226.0	1219.1	1235.0	1240.9	1235.9
152.5°	1252.8	1244.9	1259.8	1265.9	1258.8
155°	1278.7	1269.9	1281.8	1287.7	1279.8
157.5°	1299.6	1291.7	1300.7	1307.7	1299.6
160°	1317.6	1311.6	1317.6	1323.5	1316.6
162.5°	1333.4	1327.6	1332.4	1339.5	1330.5
165°	1347.4	1341.5	1344.4	1351.4	1344.4
167.5°	1358.4	1352.3	1355.4	1362.4	1353.4
170°	1367.3	1361.3	1363.3	1370.3	1361.3
172.5°	1373.3	1367.3	1369.4	1376.3	1367.3
175°	1378.2	1371.2	1373.3	1380.2	1370.3
177.5°	1380.2	1373.3	1374.3	1381.3	1372.3
180°	1375.2	1375.2	1375.2	1375.2	1375.2

TEST NUMBER: P928534

CATALOG NUMBER: DFN2DIP-HX4F0-050D050US930-RLONL

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	7.57	8.37	8.56	9.37	10.70	3.54	4.34	4.54	5.34	6.67
	3H	9.24	9.96	10.25	10.97	12.32	4.73	5.44	5.73	6.45	7.80
	4H	9.85	10.53	10.87	11.54	12.90	5.18	5.85	6.20	6.87	8.23
	6H	10.27	10.89	11.30	11.91	13.28	5.50	6.12	6.53	7.14	8.51
	8H	10.40	10.99	11.43	12.03	13.39	5.59	6.18	6.62	7.22	8.58
	12H	10.46	11.02	11.50	12.05	13.44	5.63	6.20	6.67	7.22	8.61
4H	2H	7.58	8.26	8.61	9.27	10.63	4.13	4.81	5.16	5.82	7.18
	3H	9.41	9.97	10.44	11.02	12.38	5.48	6.04	6.51	7.09	8.46
	4H	10.10	10.62	11.14	11.65	13.04	6.03	6.54	7.07	7.58	8.97
	6H	10.62	11.06	11.67	12.12	13.50	6.45	6.89	7.50	7.95	9.34
	8H	10.79	11.20	11.84	12.25	13.66	6.58	6.99	7.63	8.04	9.44
	12H	10.89	11.26	11.95	12.32	13.73	6.64	7.02	7.71	8.08	9.49
8H	4H	10.07	10.48	11.12	11.53	12.93	6.31	6.72	7.36	7.77	9.17
	6H	10.63	10.97	11.71	12.07	13.47	6.83	7.17	7.90	8.26	9.66
	8H	10.85	11.15	11.93	12.23	13.65	7.02	7.32	8.10	8.40	9.81
	12H	10.99	11.25	12.07	12.32	13.78	7.14	7.40	8.22	8.47	9.93
12H	4H	10.02	10.39	11.09	11.46	12.86	6.31	6.68	7.38	7.75	9.16
	6H	10.61	10.91	11.69	11.98	13.40	6.88	7.18	7.96	8.25	9.67
	8H	10.83	11.09	11.91	12.16	13.62	7.09	7.35	8.17	8.42	9.88