

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: P910829

Luminaire Tested: DFN2DIP-HX3F0-080D040US850-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P910829
REPORT IS A COMBINATION OF REPORTS P900746 AND P897645
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX3F0-080D040US850-RLLONL
Description: 3 foot, Hexagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

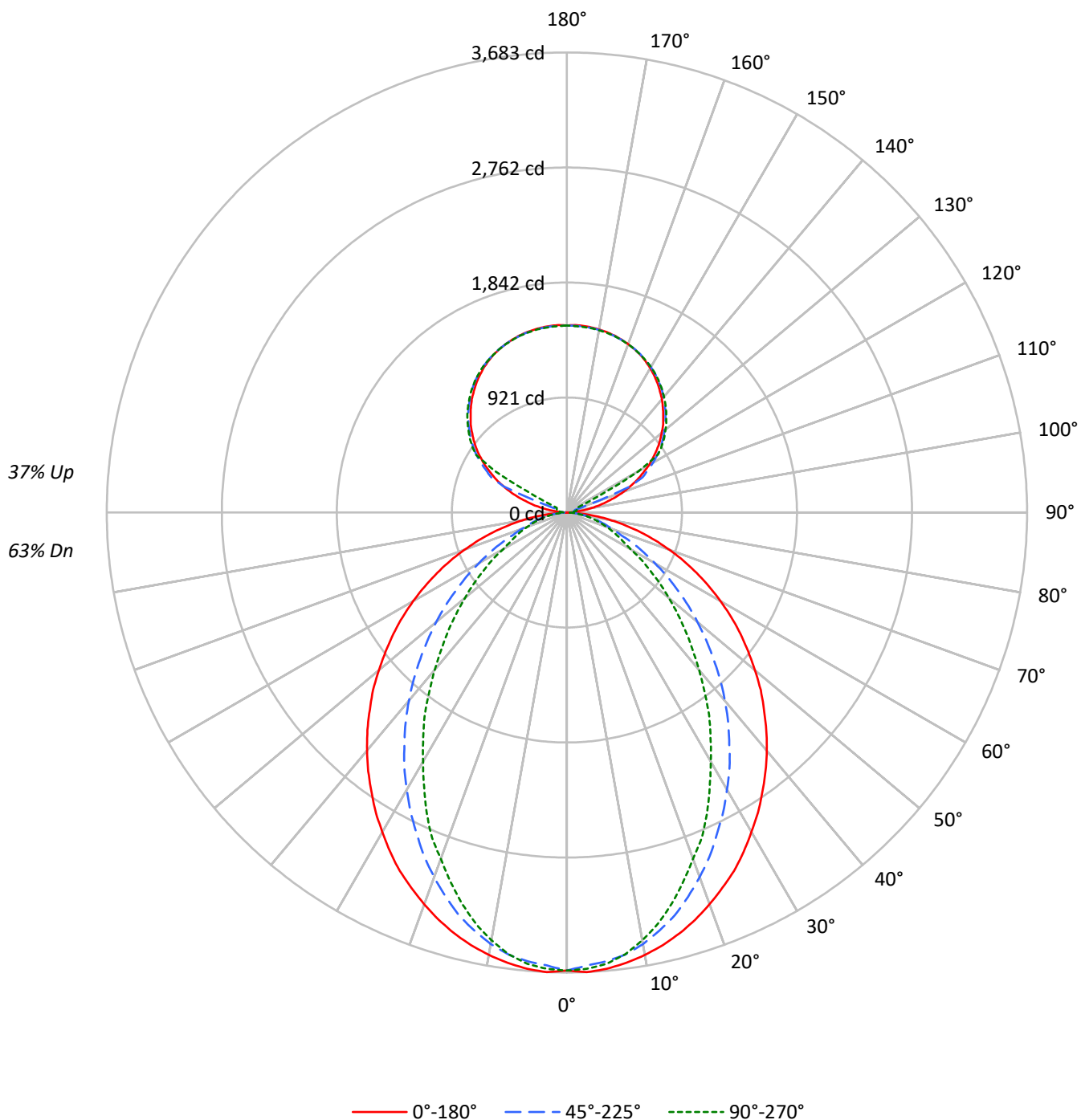
Lumens per Lamp: N/A
Luminaire Lumens: 11932.8 lumens
Efficiency: N/A
Efficacy: 108.8 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 2.84' x L: 3.28' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 109.7
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9971
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: P910829

CATALOG NUMBER: DFN2DIP-HX3F0-080D040US850-RLLONL

Luminous Intensity Polar Plot



TEST NUMBER: P910829

CATALOG NUMBER: DFN2DIP-HX3F0-080D040US850-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
RCR																	
0	110	110	110	110	103	103	103	103	91	91	91	79	79	79	68	68	68
1	101	97	93	90	95	91	88	85	80	78	76	71	69	67	61	60	59
2	93	86	80	75	87	81	75	71	71	67	64	63	60	57	55	52	51
3	85	76	69	63	80	72	65	60	63	58	54	56	52	49	49	46	44
4	78	68	60	54	73	64	57	52	57	51	47	50	46	43	44	41	38
5	72	61	53	47	67	57	50	45	51	45	41	46	41	37	40	37	34
6	67	55	47	41	62	52	45	39	46	41	36	41	37	33	37	33	30
7	62	50	42	36	58	47	40	35	42	36	32	38	33	30	34	30	27
8	58	45	38	32	54	43	36	31	39	33	29	35	30	27	31	27	24
9	54	42	34	29	51	40	33	28	36	30	26	32	27	24	29	25	22
10	50	38	31	26	47	37	30	25	33	28	24	30	25	22	27	23	20

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	4247	4247	4247
5°	4252	4177	4204
10°	4208	4092	4065
15°	4148	3954	3852
20°	4070	3765	3590
25°	3989	3553	3338
30°	3882	3337	3019
35°	3777	3104	2738
40°	3669	2864	2417
45°	3545	2597	2127
50°	3416	2329	1842
55°	3281	2042	1570
60°	3125	1743	1290
65°	2945	1439	1158
70°	2727	1156	1045
75°	2453	1012	946
80°	2056	840	812
85°	1405	547	597

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 3545 cd/sqm

TEST NUMBER: P910829

CATALOG NUMBER: DFN2DIP-HX3F0-080D040US850-RLLONL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	343.7	2.9
10°-20°	943.4	7.9
20°-30°	1324.5	11.1
30°-40°	1443.8	12.1
40°-50°	1327.0	11.1
50°-60°	1042.1	8.7
60°-70°	678.3	5.7
70°-80°	349.2	2.9
80°-90°	91.8	0.8
90°-100°	49.4	0.4
100°-110°	184.0	1.5
110°-120°	488.1	4.1
120°-130°	809.5	6.8
130°-140°	859.9	7.2
140°-150°	799.2	6.7
150°-160°	642.5	5.4
160°-170°	414.0	3.5
170°-180°	142.5	1.2
0°-30°	2611.6	21.9
0°-40°	4055.4	34.0
0°-60°	6424.5	53.8
0°-90°	7543.8	63.2
90°-120°	721.5	6.0
90°-150°	3190.0	26.7
90°-180°	4389.0	36.8
0°-180°	11932.8	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3667	3667	3667	3667	3667	
5°	3667	3650	3607	3637	3627	348
15°	3488	3451	3338	3275	3242	983
25°	3166	3060	2840	2705	2655	1456
35°	2728	2558	2267	2058	1984	1707
45°	2230	2008	1659	1423	1344	1722
55°	1696	1437	1078	879	816	1515
65°	1145	876	577	465	454	1135
75°	610	378	266	242	239	646
85°	143	73	63	63	63	164
90°	1	13	22	27	29	11
95°	70	35	42	48	47	83
105°	329	362	66	78	82	352
115°	623	641	668	167	89	613
125°	881	895	915	923	926	785
135°	1090	1107	1117	1128	1126	842
145°	1264	1263	1281	1289	1284	791
155°	1392	1382	1395	1402	1393	641
165°	1467	1460	1464	1471	1464	414
175°	1500	1493	1495	1502	1492	143
180°	1497	1497	1497	1497	1497	

TEST NUMBER: P910829

CATALOG NUMBER: DFN2DIP-HX3F0-080D040US850-RLLONL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	3666.8	3666.8	3666.8	3666.8	3666.8
2.5°	3683.3	3666.8	3630.2	3663.6	3656.9
5°	3666.8	3650.3	3606.9	3636.9	3627.0
7.5°	3636.9	3617.1	3570.6	3583.7	3567.1
10°	3597.0	3573.9	3507.7	3497.5	3477.7
12.5°	3547.5	3517.5	3427.7	3408.0	3371.4
15°	3487.6	3451.0	3338.3	3275.3	3242.2
17.5°	3417.8	3364.7	3225.3	3152.4	3099.2
20°	3338.3	3271.8	3106.0	3023.2	2949.9
22.5°	3252.0	3175.6	2983.1	2870.4	2820.7
25°	3165.8	3059.5	2840.5	2704.6	2654.6
27.5°	3062.9	2949.9	2707.7	2551.8	2475.4
30°	2953.5	2827.1	2561.7	2392.7	2302.8
32.5°	2847.1	2694.4	2422.6	2223.3	2140.3
35°	2727.8	2558.5	2266.6	2057.5	1984.2
37.5°	2611.6	2428.9	2120.5	1891.3	1808.6
40°	2488.8	2289.9	1967.7	1732.1	1645.9
42.5°	2362.7	2150.5	1815.2	1569.6	1486.7
45°	2230.0	2007.5	1659.3	1423.4	1343.9
47.5°	2104.0	1868.4	1510.0	1274.1	1201.3
50°	1964.5	1729.0	1364.0	1134.7	1065.3
52.5°	1828.3	1579.3	1224.4	1005.5	942.5
55°	1695.6	1436.8	1078.4	879.4	816.4
57.5°	1559.7	1294.2	949.2	763.3	710.1
60°	1420.2	1154.8	812.9	643.9	590.8
62.5°	1284.3	1018.8	696.8	537.6	511.2
65°	1144.9	875.9	577.3	464.8	454.5
67.5°	1012.2	743.3	464.8	408.0	398.2
70°	872.8	614.1	384.8	351.7	338.4
72.5°	740.0	494.3	321.8	295.4	288.7
75°	610.5	378.2	265.5	242.2	239.1
77.5°	481.3	268.6	209.2	195.7	189.1
80°	361.5	192.6	159.1	146.1	146.1
82.5°	252.1	129.5	109.5	102.8	102.8
85°	142.6	72.9	63.0	63.0	63.0
87.5°	53.1	26.4	26.4	23.3	23.3
90°	1.0	13.0	21.6	27.2	29.2
92.5°	27.2	22.7	26.0	28.2	29.2
95°	70.3	34.6	42.1	47.7	46.6
97.5°	126.8	37.9	55.2	58.6	59.6
100°	191.7	43.4	61.8	70.3	72.5
102.5°	263.2	261.2	63.9	75.7	79.1
105°	329.3	361.9	66.1	78.0	82.3
107.5°	406.2	433.3	68.3	80.2	84.5
110°	480.0	502.6	189.6	81.3	85.5

TEST NUMBER: P910829

CATALOG NUMBER: DFN2DIP-HX3F0-080D040US850-RLLONL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	549.3	568.7	550.3	83.4	86.7
115°	622.8	641.2	668.4	166.8	88.9
117.5°	686.8	708.4	726.9	571.9	288.1
120°	758.3	774.5	794.0	807.1	660.9
122.5°	818.9	836.3	858.0	864.5	865.6
125°	880.7	894.9	915.4	923.0	926.2
127.5°	937.0	952.2	968.5	979.4	980.4
130°	990.1	1007.5	1019.3	1031.3	1030.3
132.5°	1044.2	1058.4	1070.3	1080.1	1079.1
135°	1089.8	1107.2	1116.9	1127.7	1125.6
137.5°	1137.4	1150.4	1161.3	1172.1	1168.9
140°	1184.0	1192.7	1204.6	1214.4	1208.9
142.5°	1223.1	1230.7	1244.7	1253.3	1248.0
145°	1264.3	1263.2	1281.4	1289.1	1283.7
147.5°	1299.9	1296.6	1315.1	1320.5	1316.3
150°	1334.6	1327.0	1344.4	1350.9	1345.4
152.5°	1363.8	1355.2	1371.4	1377.9	1370.4
155°	1392.0	1382.4	1395.3	1401.8	1393.1
157.5°	1414.8	1406.1	1416.0	1423.5	1414.8
160°	1434.3	1427.7	1434.3	1440.7	1433.2
162.5°	1451.6	1445.1	1450.6	1458.1	1448.4
165°	1466.8	1460.3	1463.5	1471.1	1463.5
167.5°	1478.7	1472.1	1475.5	1483.1	1473.3
170°	1488.5	1482.0	1484.1	1491.7	1482.0
172.5°	1494.9	1488.5	1490.7	1498.3	1488.5
175°	1500.3	1492.7	1494.9	1502.5	1491.7
177.5°	1502.5	1494.9	1496.0	1503.7	1493.9
180°	1497.2	1497.2	1497.2	1497.2	1497.2

TEST NUMBER: P910829

CATALOG NUMBER: DFN2DIP-HX3F0-080D040US850-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	13.28	14.23	14.12	15.09	16.16	9.26	10.21	10.10	11.07	12.14
	3H	14.96	15.81	15.82	16.68	17.78	10.45	11.30	11.31	12.17	13.27
	4H	15.57	16.37	16.44	17.25	18.36	10.90	11.71	11.78	12.58	13.69
	6H	15.99	16.73	16.87	17.61	18.73	11.23	11.97	12.11	12.85	13.97
	8H	16.12	16.82	17.01	17.72	18.84	11.32	12.02	12.21	12.92	14.04
	12H	16.18	16.85	17.08	17.74	18.89	11.36	12.03	12.26	12.93	14.07
4H	2H	13.31	14.12	14.19	14.99	16.10	9.86	10.67	10.74	11.54	12.65
	3H	15.14	15.81	16.03	16.72	17.84	11.22	11.89	12.11	12.79	13.92
	4H	15.84	16.44	16.73	17.35	18.50	11.77	12.37	12.67	13.28	14.43
	6H	16.35	16.87	17.26	17.80	18.95	12.19	12.71	13.10	13.64	14.79
	8H	16.52	17.01	17.44	17.93	19.10	12.32	12.81	13.23	13.73	14.89
	12H	16.62	17.06	17.55	18.00	19.17	12.39	12.82	13.32	13.76	14.94
8H	4H	15.81	16.30	16.73	17.22	18.39	12.05	12.54	12.97	13.46	14.63
	6H	16.37	16.78	17.31	17.74	18.91	12.57	12.97	13.51	13.94	15.10
	8H	16.58	16.94	17.54	17.90	19.08	12.76	13.11	13.71	14.07	15.25
	12H	16.72	17.04	17.68	17.98	19.22	12.88	13.19	13.83	14.14	15.37
12H	4H	15.77	16.21	16.70	17.15	18.32	12.06	12.50	13.00	13.44	14.61
	6H	16.35	16.70	17.30	17.66	18.84	12.62	12.97	13.57	13.93	15.11
	8H	16.57	16.88	17.52	17.83	19.06	12.83	13.14	13.78	14.09	15.32