

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: P928714

Luminaire Tested: DFN2DIP-HX4F0-100D050US930-RLLONL

Issue Date: 12/12/2024

Test Information

Test Method: LM-79-2019
Report Number: P928714
REPORT IS A COMBINATION OF REPORTS P900850 AND P896187
Test Lab: INNOVATION CENTER
Issue Date: 12/12/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX4F0-100D050US930-RLLONL
Description: 4 foot, Hexagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

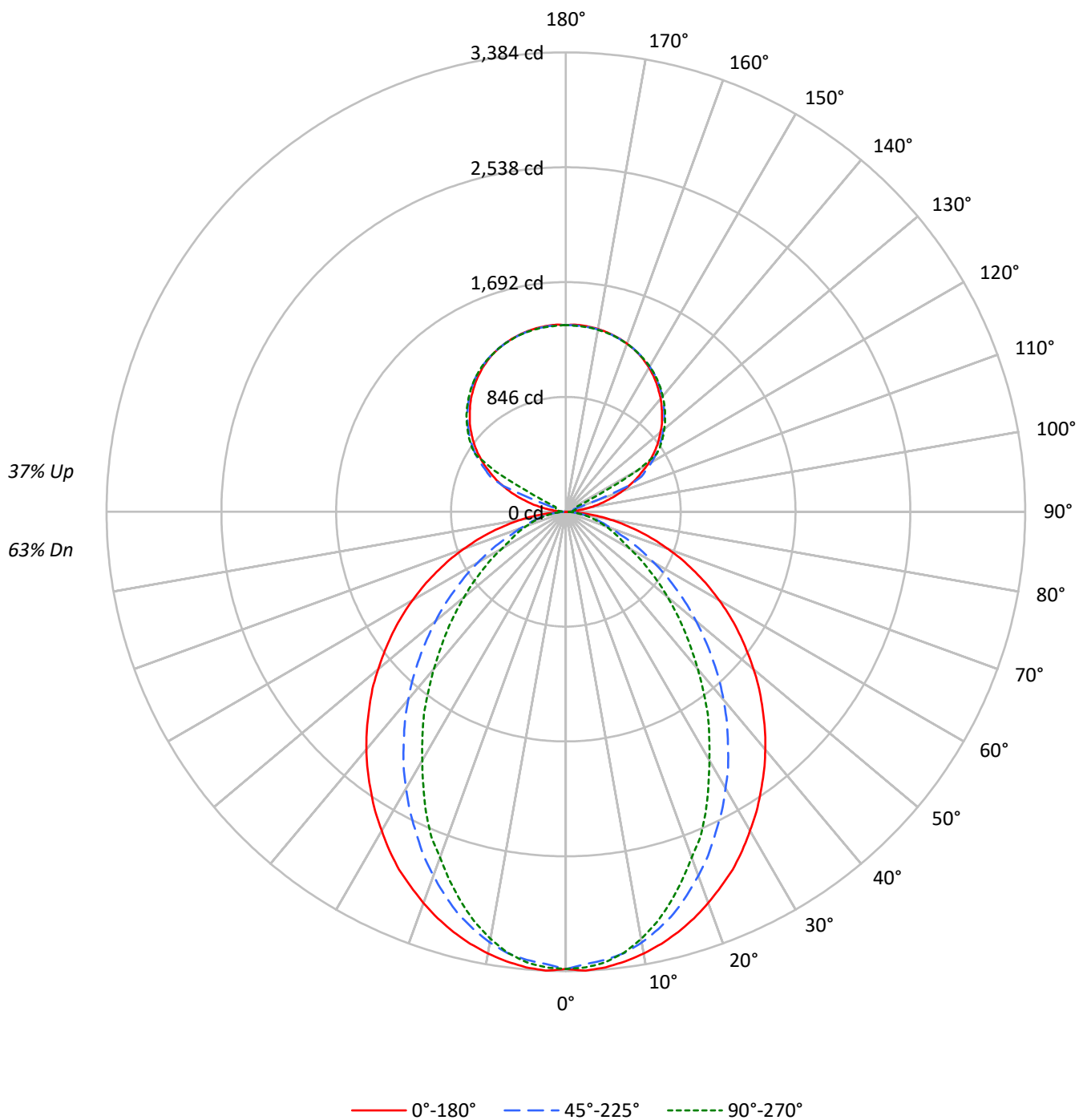
Lumens per Lamp: N/A
Luminaire Lumens: 10961.8 lumens
Efficiency: N/A
Efficacy: 80.0 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.54' x L: 4.09' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 137
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.946
Total Harmonic Distortion (THDi): 0.132
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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Luminous Intensity Polar Plot



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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°	2505	2505	2505
5°	2509	2465	2481
10°	2484	2417	2400
15°	2450	2337	2275
20°	2405	2227	2122
25°	2359	2104	1975
30°	2297	1978	1787
35°	2236	1842	1622
40°	2174	1701	1434
45°	2103	1545	1262
50°	2029	1388	1095
55°	1951	1219	935
60°	1861	1043	769
65°	1758	864	693
70°	1633	697	627
75°	1476	615	571
80°	1249	517	495
85°	873	346	373

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
Vertical Angle: 45°
Luminance: 2103 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	315.7	2.9
10°-20°	866.6	7.9
20°-30°	1216.7	11.1
30°-40°	1326.3	12.1
40°-50°	1219.0	11.1
50°-60°	957.3	8.7
60°-70°	623.1	5.7
70°-80°	320.8	2.9
80°-90°	84.3	0.8
90°-100°	45.4	0.4
100°-110°	169.1	1.5
110°-120°	448.4	4.1
120°-130°	743.6	6.8
130°-140°	789.9	7.2
140°-150°	734.1	6.7
150°-160°	590.2	5.4
160°-170°	380.3	3.5
170°-180°	130.9	1.2
0°-30°	2399.0	21.9
0°-40°	3725.3	34.0
0°-60°	5901.7	53.8
0°-90°	6929.9	63.2
90°-120°	662.8	6.0
90°-150°	2930.4	26.7
90°-180°	4032.0	36.8
0°-180°	10961.8	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3368	3368	3368	3368	3368	
5°	3368	3353	3313	3341	3332	319
15°	3204	3170	3067	3009	2978	903
25°	2908	2810	2609	2484	2439	1337
35°	2506	2350	2082	1890	1823	1568
45°	2048	1844	1524	1308	1234	1582
55°	1558	1320	991	808	750	1392
65°	1052	805	530	427	418	1043
75°	561	347	244	222	220	593
85°	131	67	58	58	58	150
90°	1	12	20	25	27	10
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	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	3368.4	3368.4	3368.4	3368.4	3368.4
2.5°	3383.6	3368.4	3334.7	3365.5	3359.3
5°	3368.4	3353.2	3313.4	3340.9	3331.8
7.5°	3340.9	3322.8	3280.0	3292.0	3276.9
10°	3304.3	3283.0	3222.2	3212.8	3194.7
12.5°	3258.8	3231.2	3148.8	3130.7	3097.0
15°	3203.8	3170.1	3066.6	3008.7	2978.3
17.5°	3139.7	3090.9	2962.9	2895.9	2847.0
20°	3066.6	3005.5	2853.2	2777.2	2709.9
22.5°	2987.4	2917.2	2740.3	2636.9	2591.2
25°	2908.2	2810.5	2609.3	2484.4	2438.6
27.5°	2813.7	2709.9	2487.4	2344.1	2273.9
30°	2713.1	2597.0	2353.1	2198.0	2115.5
32.5°	2615.5	2475.1	2225.4	2042.4	1966.0
35°	2505.8	2350.3	2082.2	1890.1	1822.7
37.5°	2399.1	2231.2	1947.9	1737.4	1661.4
40°	2286.2	2103.5	1807.6	1591.2	1512.0
42.5°	2170.4	1975.4	1667.6	1441.8	1365.8
45°	2048.5	1844.1	1524.3	1307.6	1234.5
47.5°	1932.8	1716.4	1387.1	1170.4	1103.5
50°	1804.7	1588.3	1252.9	1042.4	978.7
52.5°	1679.5	1450.9	1124.9	923.6	865.8
55°	1557.5	1319.9	990.6	807.9	750.0
57.5°	1432.8	1188.8	872.0	701.1	652.3
60°	1304.7	1060.8	746.8	591.5	542.7
62.5°	1179.8	935.9	640.0	493.9	469.6
65°	1051.8	804.6	530.4	426.9	417.5
67.5°	929.8	682.7	426.9	374.8	365.8
70°	801.7	564.1	353.5	323.1	310.8
72.5°	679.8	454.0	295.6	271.3	265.2
75°	560.8	347.4	243.8	222.5	219.6
77.5°	442.1	246.8	192.1	179.8	173.7
80°	332.1	176.9	146.2	134.2	134.2
82.5°	231.5	119.0	100.6	94.5	94.5
85°	131.0	66.9	57.9	57.9	57.9
87.5°	48.8	24.3	24.3	21.4	21.4
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

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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

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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	11.49	12.44	12.33	13.30	14.37	7.46	8.41	8.30	9.27	10.34
	3H	13.18	14.03	14.03	14.90	16.00	8.66	9.51	9.52	10.38	11.48
	4H	13.79	14.59	14.66	15.47	16.58	9.12	9.92	9.99	10.80	11.91
	6H	14.22	14.96	15.10	15.84	16.96	9.45	10.19	10.33	11.07	12.19
	8H	14.35	15.05	15.24	15.95	17.08	9.54	10.25	10.44	11.15	12.27
	12H	14.42	15.09	15.31	15.98	17.13	9.59	10.26	10.49	11.15	12.30
4H	2H	11.52	12.33	12.40	13.20	14.31	8.07	8.88	8.95	9.75	10.86
	3H	13.36	14.03	14.25	14.94	16.06	9.44	10.10	10.32	11.01	12.14
	4H	14.06	14.67	14.96	15.57	16.72	9.99	10.60	10.89	11.50	12.65
	6H	14.59	15.11	15.50	16.04	17.19	10.42	10.94	11.33	11.87	13.02
	8H	14.76	15.25	15.68	16.17	17.34	10.55	11.04	11.47	11.96	13.13
	12H	14.86	15.30	15.80	16.24	17.41	10.62	11.06	11.56	12.00	13.17
8H	4H	14.04	14.53	14.96	15.45	16.62	10.28	10.77	11.20	11.69	12.86
	6H	14.61	15.01	15.55	15.98	17.14	10.81	11.21	11.75	12.17	13.34
	8H	14.83	15.19	15.78	16.14	17.32	11.00	11.36	11.95	12.31	13.49
	12H	14.97	15.29	15.93	16.23	17.47	11.12	11.44	12.08	12.39	13.62
12H	4H	14.00	14.44	14.93	15.38	16.55	10.29	10.73	11.23	11.67	12.84
	6H	14.59	14.94	15.54	15.90	17.08	10.86	11.21	11.81	12.17	13.35
	8H	14.81	15.13	15.77	16.08	17.31	11.07	11.39	12.03	12.33	13.57