

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: P928532

Luminaire Tested: DFN2DIP-HX4F0-050D050US930-FLLONL

Issue Date: 12/12/2024

Test Information

Test Method: LM-79-2019
Report Number: P928532
REPORT IS A COMBINATION OF REPORTS P900839 AND P896187
Test Lab: INNOVATION CENTER
Issue Date: 12/12/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX4F0-050D050US930-FLLONL
Description: 4 foot, Hexagon Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

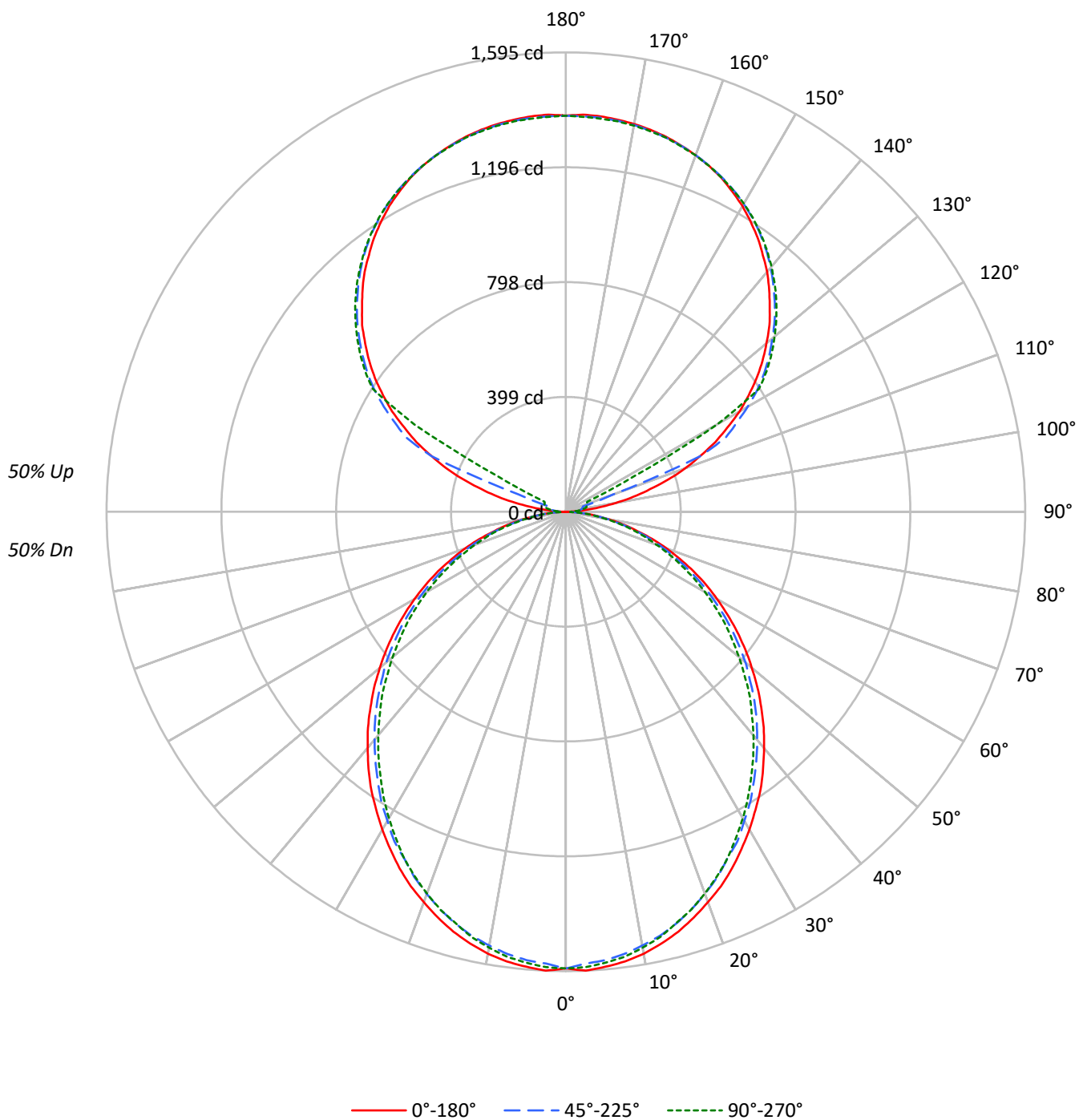
Lumens per Lamp: N/A
Luminaire Lumens: 8068.5 lumens
Efficiency: N/A
Efficacy: 99.2 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 3.54' x L: 4.09' x H: 0.1')
CIE Type: General Diffuse

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

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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	107	107	107	107	99	99	99	99	83	83	83	69	69	69	56	56	56
1	98	93	90	86	90	86	83	80	73	71	68	61	59	58	50	48	47
2	89	82	75	70	82	76	70	66	64	60	57	53	51	48	44	42	40
3	81	72	64	59	75	66	60	55	56	52	48	47	44	41	39	36	34
4	74	64	56	50	68	59	52	47	50	45	41	42	38	35	35	32	29
5	68	57	48	42	63	53	45	40	45	39	35	38	34	30	31	28	26
6	63	51	43	37	58	47	40	35	40	35	31	34	30	27	28	25	23
7	58	46	38	32	53	43	36	30	37	31	27	31	27	23	26	23	20
8	54	42	34	29	50	39	32	27	33	28	24	28	24	21	24	20	18
9	50	38	30	25	46	35	29	24	31	25	21	26	22	19	22	19	16
10	47	35	28	23	43	33	26	22	28	23	19	24	20	17	20	17	15

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1179	1179	1179
5°	1181	1163	1171
10°	1172	1147	1155
15°	1154	1128	1130
20°	1131	1102	1105
25°	1108	1071	1075
30°	1079	1042	1038
35°	1052	1008	999
40°	1018	973	961
45°	984	938	923
50°	948	902	879
55°	909	860	838
60°	866	810	791
65°	818	758	736
70°	758	695	677
75°	674	619	622
80°	574	522	518
85°	416	356	344

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 984 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	149.2	1.8
10°-20°	419.9	5.2
20°-30°	617.1	7.6
30°-40°	716.7	8.9
40°-50°	715.8	8.9
50°-60°	624.2	7.7
60°-70°	461.4	5.7
70°-80°	261.0	3.2
80°-90°	71.3	0.9
90°-100°	45.4	0.6
100°-110°	169.1	2.1
110°-120°	448.4	5.6
120°-130°	743.6	9.2
130°-140°	789.9	9.8
140°-150°	734.1	9.1
150°-160°	590.2	7.3
160°-170°	380.3	4.7
170°-180°	130.9	1.6
0°-30°	1186.2	14.7
0°-40°	1902.9	23.6
0°-60°	3242.9	40.2
0°-90°	4036.7	50.0
90°-120°	662.8	8.2
90°-150°	2930.4	36.3
90°-180°	4032.0	50.0
0°-180°	8068.5	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1586	1586	1586	1586	1586	
5°	1586	1580	1563	1575	1572	151
15°	1509	1500	1480	1487	1479	425
25°	1366	1354	1328	1331	1328	629
35°	1179	1163	1139	1130	1122	736
45°	959	948	925	909	903	740
55°	726	717	698	680	672	649
65°	490	480	465	451	444	484
75°	256	253	245	236	239	273
85°	62	61	60	55	53	70
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	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1585.6	1585.6	1585.6	1585.6	1585.6
2.5°	1594.8	1587.2	1570.4	1585.6	1582.7
5°	1585.6	1579.6	1562.8	1574.9	1572.1
7.5°	1574.9	1565.9	1549.1	1561.4	1558.3
10°	1558.3	1547.6	1529.3	1541.4	1536.9
12.5°	1535.3	1526.3	1508.0	1515.6	1512.5
15°	1509.4	1500.3	1480.4	1486.6	1479.0
17.5°	1477.4	1468.3	1448.4	1456.0	1448.4
20°	1442.3	1433.3	1411.9	1416.4	1410.4
22.5°	1407.3	1393.6	1373.7	1373.7	1370.6
25°	1366.1	1354.0	1328.0	1331.0	1328.0
27.5°	1320.3	1309.6	1289.9	1285.3	1277.8
30°	1274.7	1262.4	1239.6	1235.1	1228.9
32.5°	1225.8	1216.8	1192.3	1183.1	1177.0
35°	1178.6	1163.4	1139.0	1129.8	1122.2
37.5°	1125.2	1111.5	1087.0	1076.4	1068.8
40°	1070.4	1058.1	1033.7	1020.1	1013.9
42.5°	1017.0	1004.7	980.4	965.0	956.0
45°	959.1	948.4	925.4	908.8	902.6
47.5°	902.6	891.9	867.6	850.7	841.7
50°	843.1	835.5	814.2	792.8	785.2
52.5°	785.2	774.5	754.8	738.0	727.3
55°	725.8	716.6	698.3	680.0	672.5
57.5°	666.3	658.7	638.8	620.5	614.3
60°	606.8	600.8	579.5	562.6	558.1
62.5°	548.9	538.2	523.0	507.7	501.6
65°	489.5	480.3	465.0	451.3	443.7
67.5°	428.5	420.8	407.2	396.5	390.3
70°	372.0	365.9	352.2	341.5	335.5
72.5°	314.2	308.0	300.4	289.7	285.2
75°	256.1	253.1	245.4	236.4	239.4
77.5°	204.3	198.1	195.1	190.5	186.1
80°	152.6	150.9	147.8	143.4	140.3
82.5°	103.7	103.7	102.2	96.1	96.1
85°	62.4	61.0	59.5	54.8	53.4
87.5°	27.5	24.4	21.4	16.8	15.2
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	7.85	8.71	8.80	9.68	10.95	7.42	8.28	8.37	9.25	10.52
	3H	9.51	10.28	10.48	11.26	12.56	9.04	9.81	10.00	10.79	12.08
	4H	10.10	10.83	11.08	11.81	13.12	9.62	10.36	10.61	11.34	12.64
	6H	10.50	11.17	11.49	12.16	13.48	10.02	10.70	11.01	11.69	13.00
	8H	10.60	11.24	11.60	12.25	13.56	10.13	10.77	11.13	11.78	13.09
	12H	10.65	11.26	11.66	12.26	13.60	10.17	10.78	11.17	11.78	13.12
4H	2H	8.31	9.04	9.30	10.03	11.33	7.96	8.70	8.95	9.68	10.98
	3H	10.18	10.79	11.17	11.80	13.12	9.78	10.39	10.78	11.41	12.72
	4H	10.89	11.45	11.90	12.46	13.80	10.49	11.04	11.49	12.05	13.39
	6H	11.41	11.89	12.43	12.92	14.26	11.00	11.48	12.02	12.51	13.85
	8H	11.56	12.01	12.58	13.03	14.38	11.15	11.60	12.16	12.62	13.97
	12H	11.63	12.04	12.67	13.08	14.43	11.21	11.62	12.25	12.66	14.01
8H	4H	11.09	11.54	12.11	12.56	13.91	10.73	11.18	11.75	12.20	13.55
	6H	11.72	12.09	12.76	13.16	14.51	11.36	11.73	12.40	12.80	14.15
	8H	11.94	12.27	12.99	13.32	14.69	11.57	11.90	12.63	12.95	14.32
	12H	12.08	12.36	13.13	13.41	14.82	11.69	11.98	12.75	13.03	14.44
12H	4H	11.08	11.48	12.11	12.52	13.88	10.72	11.13	11.76	12.17	13.52
	6H	11.75	12.08	12.80	13.13	14.50	11.40	11.73	12.45	12.78	14.15
	8H	12.00	12.28	13.05	13.33	14.74	11.64	11.93	12.69	12.97	14.38

END OF REPORT