

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: P928498

Luminaire Tested: DFN2DIP-HX4F0-040D050US930-RLLONL

Issue Date: 12/12/2024

Test Information

Test Method: LM-79-2019
Report Number: P928498
REPORT IS A COMBINATION OF REPORTS P900838 AND P896187
Test Lab: INNOVATION CENTER
Issue Date: 12/12/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX4F0-040D050US930-RLLONL
Description: 4 foot, Hexagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

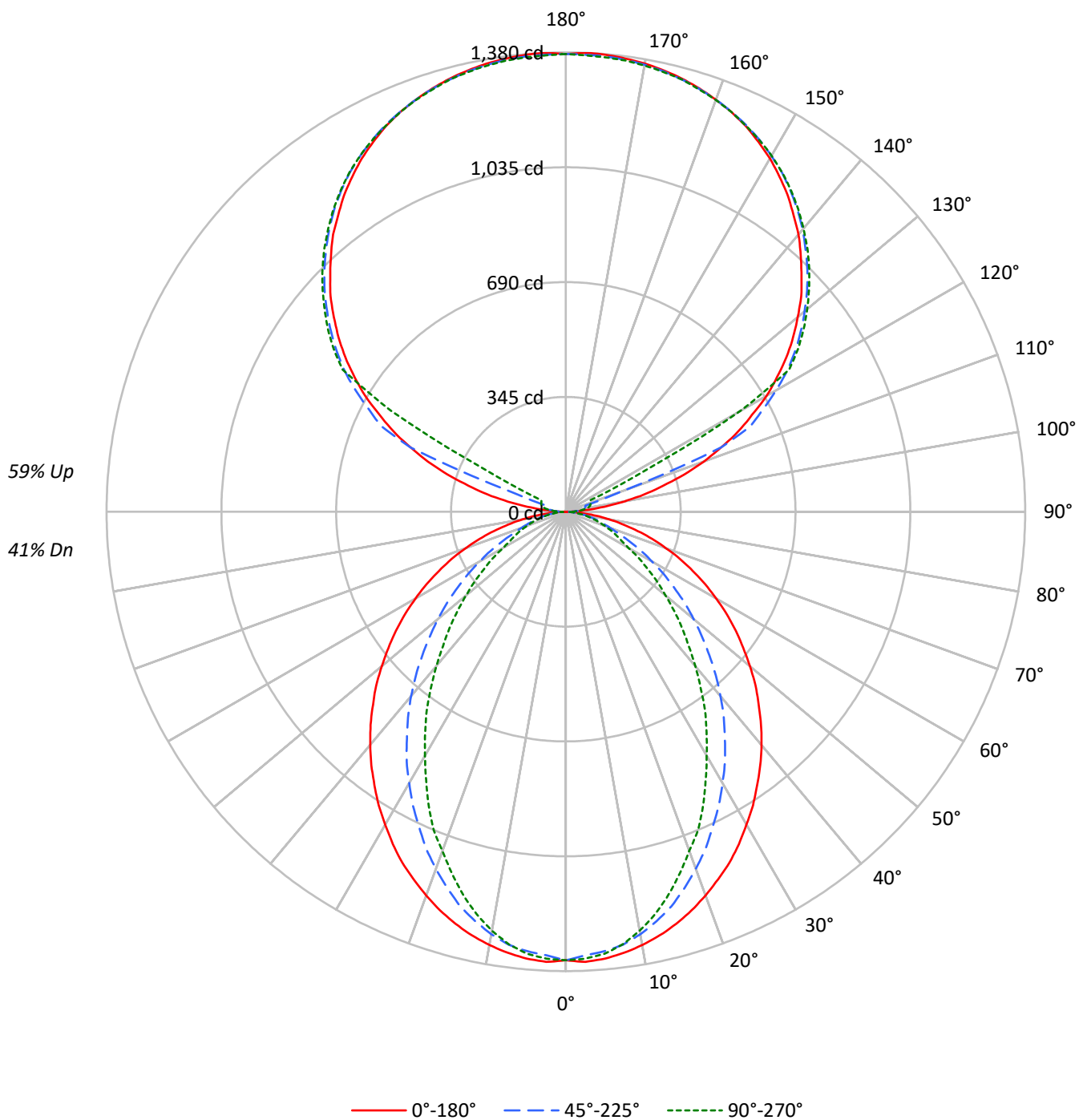
Lumens per Lamp: N/A
Luminaire Lumens: 6805.3 lumens
Efficiency: N/A
Efficacy: 96.0 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.54' x L: 4.09' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 70.9
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9977
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	105	105	105	105	96	96	96	96	78	78	78	62	62	62	48	48	48
1	96	92	88	85	87	84	81	78	69	67	65	55	54	53	43	42	41
2	88	81	75	70	80	74	69	65	61	57	54	49	47	44	38	36	35
3	80	71	64	59	73	65	59	54	54	50	46	44	41	38	34	32	30
4	74	63	56	50	67	58	52	46	48	43	40	39	36	33	31	28	26
5	68	57	49	43	62	52	45	40	43	38	34	35	32	29	28	25	23
6	62	51	43	37	57	47	40	35	39	34	30	32	28	25	25	23	21
7	58	46	38	33	53	42	36	31	36	30	27	29	25	23	23	21	19
8	54	42	34	29	49	39	32	27	33	27	24	27	23	20	21	19	17
9	50	38	31	26	46	35	29	24	30	25	21	25	21	18	20	17	15
10	47	35	28	23	43	32	26	22	28	23	19	23	19	17	18	16	14

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1002	1002	1002
5°	1004	986	992
10°	994	967	960
15°	980	935	910
20°	962	891	849
25°	944	842	790
30°	919	791	715
35°	895	737	649
40°	870	681	573
45°	841	618	505
50°	811	555	438
55°	781	488	374
60°	744	417	308
65°	703	346	277
70°	653	279	251
75°	590	246	228
80°	499	206	198
85°	349	138	149

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 841 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	126.3	1.9
10°-20°	346.7	5.1
20°-30°	486.7	7.2
30°-40°	530.5	7.8
40°-50°	487.6	7.2
50°-60°	382.9	5.6
60°-70°	249.3	3.7
70°-80°	128.3	1.9
80°-90°	35.2	0.5
90°-100°	45.4	0.7
100°-110°	169.1	2.5
110°-120°	448.4	6.6
120°-130°	743.6	10.9
130°-140°	789.9	11.6
140°-150°	734.1	10.8
150°-160°	590.2	8.7
160°-170°	380.3	5.6
170°-180°	130.9	1.9
0°-30°	959.6	14.1
0°-40°	1490.1	21.9
0°-60°	2360.7	34.7
0°-90°	2773.4	40.8
90°-120°	662.8	9.7
90°-150°	2930.4	43.1
90°-180°	4032.0	59.2
0°-180°	6805.3	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1347	1347	1347	1347	1347	
5°	1347	1341	1325	1336	1333	128
15°	1282	1268	1227	1204	1191	361
25°	1163	1124	1044	994	975	535
35°	1002	940	833	756	729	627
45°	819	738	610	523	494	633
55°	623	528	396	323	300	557
65°	421	322	212	171	167	417
75°	224	139	98	89	88	237
85°	52	27	23	23	23	60
90°	1	12	20	25	27	6
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°	1347.4	1347.4	1347.4	1347.4	1347.4
2.5°	1353.5	1347.4	1333.9	1346.2	1343.7
5°	1347.4	1341.2	1325.4	1336.4	1332.8
7.5°	1336.4	1329.1	1312.1	1316.8	1310.8
10°	1321.8	1313.2	1288.8	1285.1	1277.9
12.5°	1303.5	1292.5	1259.5	1252.2	1238.8
15°	1281.5	1268.1	1226.7	1203.5	1191.4
17.5°	1255.9	1236.4	1185.1	1158.4	1138.8
20°	1226.7	1202.2	1141.2	1110.8	1083.9
22.5°	1195.0	1166.9	1096.1	1054.7	1036.5
25°	1163.2	1124.2	1043.7	993.8	975.4
27.5°	1125.5	1083.9	995.0	937.7	909.5
30°	1085.3	1038.8	941.2	879.1	846.2
32.5°	1046.2	990.1	890.1	817.0	786.4
35°	1002.4	940.1	832.8	756.0	729.1
37.5°	959.7	892.5	779.1	695.0	664.6
40°	914.5	841.4	723.1	636.5	604.8
42.5°	868.1	790.1	667.0	576.7	546.3
45°	819.4	737.7	609.7	523.1	493.8
47.5°	773.1	686.6	554.9	468.2	441.4
50°	721.8	635.3	501.1	417.0	391.4
52.5°	671.8	580.4	450.0	369.4	346.3
55°	623.1	528.0	396.3	323.1	300.0
57.5°	573.1	475.6	348.7	280.4	261.0
60°	521.8	424.3	298.7	236.6	217.1
62.5°	472.0	374.4	256.0	197.6	187.9
65°	420.7	321.8	212.1	170.7	167.0
67.5°	372.0	273.1	170.7	150.0	146.3
70°	320.7	225.6	141.4	129.3	124.3
72.5°	272.0	181.7	118.3	108.6	106.1
75°	224.3	139.0	97.6	89.0	87.9
77.5°	176.9	98.7	76.9	72.0	69.4
80°	132.8	70.7	58.4	53.7	53.7
82.5°	92.7	47.6	40.3	37.7	37.7
85°	52.4	26.8	23.1	23.1	23.1
87.5°	19.6	9.7	9.7	8.6	8.6
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	6.23	6.99	7.26	8.03	9.43	2.20	2.96	3.24	4.00	5.40
	3H	7.90	8.58	8.95	9.63	11.05	3.38	4.06	4.43	5.11	6.53
	4H	8.51	9.15	9.57	10.20	11.63	3.83	4.48	4.89	5.53	6.95
	6H	8.92	9.52	9.99	10.57	12.01	4.15	4.74	5.22	5.80	7.24
	8H	9.05	9.61	10.12	10.68	12.12	4.24	4.80	5.31	5.87	7.31
	12H	9.11	9.64	10.19	10.71	12.16	4.28	4.82	5.36	5.88	7.34
4H	2H	6.24	6.88	7.30	7.93	9.36	2.78	3.43	3.85	4.48	5.91
	3H	8.06	8.60	9.13	9.67	11.11	4.13	4.67	5.21	5.75	7.19
	4H	8.75	9.24	9.83	10.31	11.77	4.68	5.17	5.76	6.24	7.70
	6H	9.26	9.68	10.35	10.78	12.23	5.10	5.52	6.18	6.61	8.06
	8H	9.44	9.83	10.53	10.91	12.39	5.22	5.62	6.31	6.70	8.17
	12H	9.53	9.88	10.63	10.98	12.46	5.29	5.64	6.39	6.74	8.22
8H	4H	8.71	9.11	9.80	10.19	11.66	4.95	5.35	6.04	6.43	7.90
	6H	9.28	9.60	10.39	10.73	12.20	5.47	5.80	6.58	6.92	8.39
	8H	9.50	9.78	10.61	10.89	12.38	5.66	5.95	6.78	7.06	8.54
	12H	9.63	9.88	10.75	10.99	12.51	5.78	6.03	6.90	7.14	8.66
12H	4H	8.66	9.02	9.77	10.12	11.59	4.96	5.31	6.06	6.41	7.88
	6H	9.25	9.54	10.37	10.65	12.13	5.52	5.81	6.64	6.92	8.40
	8H	9.47	9.72	10.59	10.83	12.35	5.73	5.98	6.85	7.09	8.61