

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: P929144

Luminaire Tested: DFN2DIP-HX4F0-040D050US940-FLLONL

Issue Date: 12/12/2024

Test Information

Test Method: LM-79-2019
Report Number: P929144
REPORT IS A COMBINATION OF REPORTS P900837 AND P896187
Test Lab: INNOVATION CENTER
Issue Date: 12/12/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX4F0-040D050US940-FLLONL
Description: 4 foot, Hexagon Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

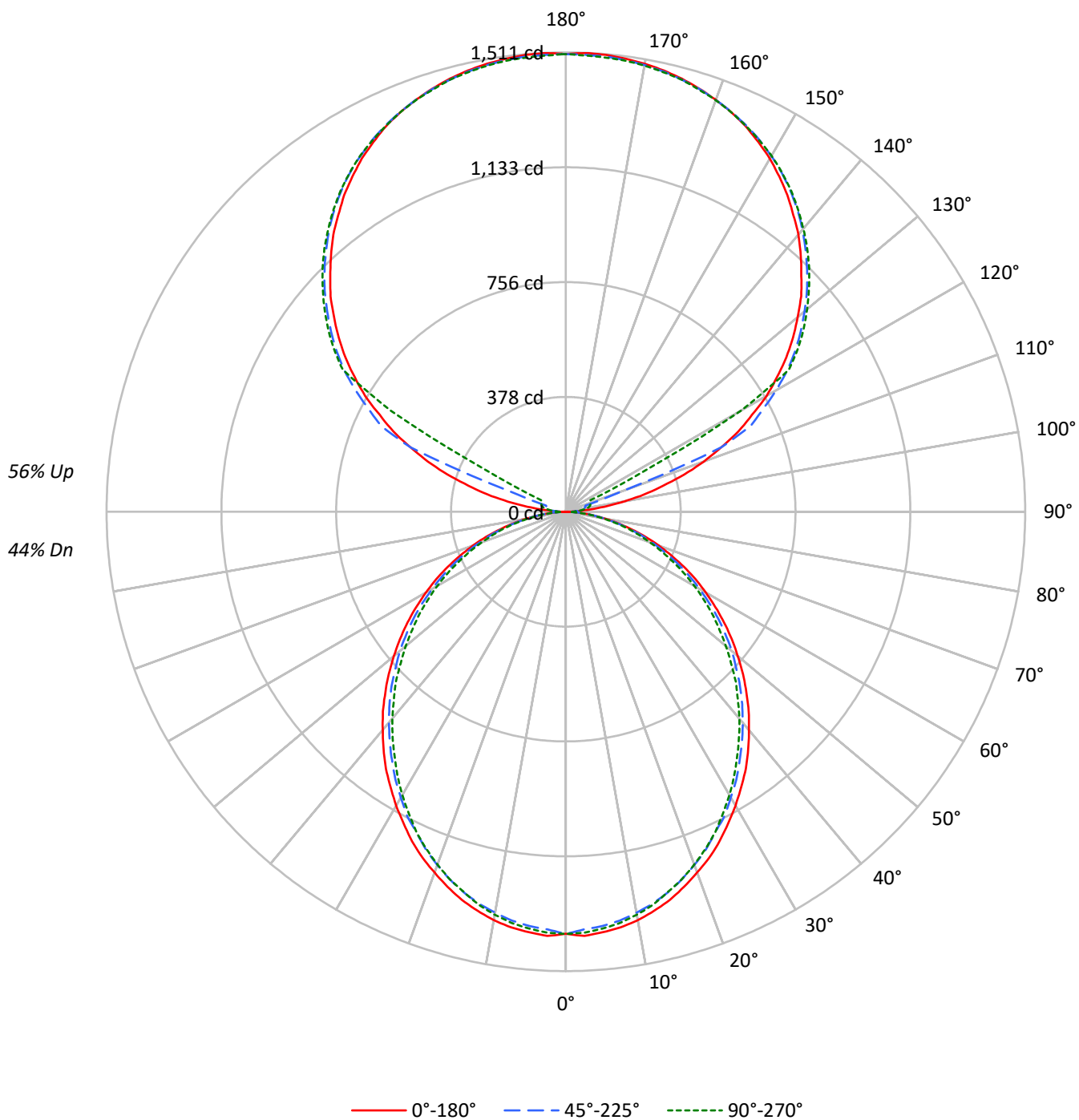
Lumens per Lamp: N/A
Luminaire Lumens: 7947.8 lumens
Efficiency: N/A
Efficacy: 112.1 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 3.54' x L: 4.09' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 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	106	106	106	106	97	97	97	97	80	80	80	65	65	65	51	51	51
1	97	92	88	85	88	85	81	78	70	68	66	57	56	54	45	44	43
2	88	81	74	69	80	74	69	64	62	58	55	50	48	45	40	38	36
3	80	71	64	58	73	65	59	54	54	50	46	44	41	38	35	33	31
4	73	63	55	49	67	58	51	46	48	43	39	40	36	33	31	29	27
5	67	56	48	42	61	51	44	39	43	38	34	35	31	28	28	25	23
6	62	50	42	36	57	46	39	34	39	33	29	32	28	25	26	23	20
7	57	45	37	32	52	42	35	30	35	30	26	29	25	22	23	20	18
8	53	41	33	28	49	38	31	26	32	27	23	27	23	20	22	19	16
9	49	37	30	25	45	35	28	23	29	24	20	25	20	18	20	17	15
10	46	34	27	22	42	32	25	21	27	22	18	23	19	16	18	15	13

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1032	1032	1032
5°	1034	1018	1025
10°	1026	1004	1011
15°	1011	988	989
20°	990	965	967
25°	970	938	942
30°	945	912	909
35°	921	882	875
40°	891	852	842
45°	862	821	808
50°	830	790	769
55°	796	753	734
60°	758	709	693
65°	717	663	645
70°	664	608	593
75°	590	542	545
80°	502	457	453
85°	365	312	301

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 862 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	130.7	1.6
10°-20°	367.6	4.6
20°-30°	540.3	6.8
30°-40°	627.5	7.9
40°-50°	626.8	7.9
50°-60°	546.5	6.9
60°-70°	404.0	5.1
70°-80°	228.6	2.9
80°-90°	63.0	0.8
90°-100°	49.7	0.6
100°-110°	185.0	2.3
110°-120°	490.7	6.2
120°-130°	813.9	10.2
130°-140°	864.5	10.9
140°-150°	803.5	10.1
150°-160°	646.0	8.1
160°-170°	416.2	5.2
170°-180°	143.3	1.8
0°-30°	1038.6	13.1
0°-40°	1666.2	21.0
0°-60°	2839.4	35.7
0°-90°	3535.0	44.5
90°-120°	725.4	9.1
90°-150°	3207.3	40.4
90°-180°	4413.0	55.5
0°-180°	7947.8	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1388	1388	1388	1388	1388	
5°	1388	1383	1368	1379	1376	132
15°	1322	1314	1296	1302	1295	372
25°	1196	1186	1163	1165	1163	550
35°	1032	1019	997	989	982	644
45°	840	830	810	796	790	648
55°	636	627	612	595	589	568
65°	429	420	407	395	389	424
75°	224	222	215	207	210	239
85°	55	53	52	48	47	61
90°	1	13	22	27	29	7
95°	71	35	42	48	47	84
105°	331	364	66	78	83	354
115°	626	645	672	168	89	617
125°	885	900	920	928	931	790
135°	1096	1113	1123	1134	1132	846
145°	1271	1270	1288	1296	1291	795
155°	1400	1390	1403	1409	1401	645
165°	1475	1468	1471	1479	1471	417
175°	1508	1501	1503	1511	1500	144
180°	1505	1505	1505	1505	1505	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1388.3	1388.3	1388.3	1388.3	1388.3
2.5°	1396.4	1389.7	1375.0	1388.3	1385.8
5°	1388.3	1383.0	1368.3	1378.9	1376.4
7.5°	1378.9	1371.0	1356.3	1367.1	1364.4
10°	1364.4	1355.0	1339.1	1349.7	1345.7
12.5°	1344.2	1336.3	1320.3	1327.0	1324.3
15°	1321.6	1313.6	1296.3	1301.6	1295.0
17.5°	1293.6	1285.6	1268.2	1274.8	1268.2
20°	1262.8	1254.9	1236.2	1240.1	1235.0
22.5°	1232.2	1220.2	1202.8	1202.8	1200.1
25°	1196.1	1185.5	1162.8	1165.4	1162.8
27.5°	1156.0	1146.7	1129.5	1125.4	1118.8
30°	1116.1	1105.4	1085.4	1081.4	1076.0
32.5°	1073.3	1065.4	1044.0	1036.0	1030.5
35°	1032.0	1018.7	997.3	989.2	982.5
37.5°	985.2	973.2	951.8	942.5	935.8
40°	937.2	926.4	905.0	893.2	887.8
42.5°	890.5	879.7	858.5	845.0	837.1
45°	839.7	830.5	810.3	795.8	790.3
47.5°	790.3	780.9	759.6	744.9	737.0
50°	738.2	731.5	712.9	694.2	687.5
52.5°	687.5	678.2	660.9	646.2	636.8
55°	635.6	627.4	611.5	595.4	588.8
57.5°	583.4	576.8	559.3	543.3	538.0
60°	531.3	526.0	507.4	492.7	488.6
62.5°	480.6	471.2	458.0	444.6	439.2
65°	428.6	420.5	407.2	395.2	388.6
67.5°	375.2	368.4	356.5	347.2	341.8
70°	325.8	320.4	308.4	299.0	293.7
72.5°	275.1	269.7	263.1	253.7	249.7
75°	224.2	221.7	214.9	206.9	209.6
77.5°	178.8	173.5	170.8	166.8	162.9
80°	133.5	132.1	129.4	125.5	122.8
82.5°	90.8	90.8	89.6	84.1	84.1
85°	54.7	53.4	52.1	48.0	46.7
87.5°	24.1	21.4	18.7	14.7	13.3
90°	1.1	13.0	21.8	27.3	29.3
92.5°	27.3	22.9	26.1	28.4	29.3
95°	70.7	34.8	42.5	48.0	46.8
97.5°	127.4	38.2	55.5	58.9	59.9
100°	192.9	43.6	62.1	70.7	73.0
102.5°	264.7	262.5	64.3	76.2	79.6
105°	331.1	363.8	66.5	78.4	82.8
107.5°	408.4	435.6	68.7	80.5	85.0
110°	482.6	505.3	190.6	81.7	86.0

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	552.2	571.8	553.3	83.8	87.1
115°	626.3	644.7	672.0	167.8	89.4
117.5°	690.5	712.3	730.9	575.0	289.7
120°	762.4	778.7	798.3	811.5	664.4
122.5°	823.3	840.8	862.7	869.2	870.3
125°	885.4	899.7	920.4	927.9	931.2
127.5°	942.0	957.3	973.8	984.6	985.7
130°	995.5	1013.0	1024.8	1036.9	1035.9
132.5°	1050.0	1064.2	1076.0	1085.9	1084.9
135°	1095.7	1113.2	1122.8	1133.9	1131.7
137.5°	1143.5	1156.7	1167.6	1178.5	1175.3
140°	1190.4	1199.2	1211.1	1220.9	1215.5
142.5°	1229.7	1237.4	1251.5	1260.1	1254.7
145°	1271.1	1269.9	1288.4	1296.1	1290.6
147.5°	1307.0	1303.7	1322.2	1327.7	1323.4
150°	1341.8	1334.3	1351.6	1358.2	1352.7
152.5°	1371.2	1362.5	1378.9	1385.5	1377.8
155°	1399.5	1389.8	1402.8	1409.4	1400.7
157.5°	1422.4	1413.7	1423.5	1431.2	1422.4
160°	1442.1	1435.5	1442.1	1448.5	1440.9
162.5°	1459.4	1453.0	1458.3	1466.0	1456.2
165°	1474.7	1468.2	1471.4	1479.0	1471.4
167.5°	1486.7	1480.1	1483.5	1491.1	1481.3
170°	1496.5	1489.9	1492.1	1499.7	1489.9
172.5°	1503.0	1496.5	1498.7	1506.3	1496.5
175°	1508.5	1500.8	1503.0	1510.6	1499.7
177.5°	1510.6	1503.0	1504.2	1511.8	1501.9
180°	1505.2	1505.2	1505.2	1505.2	1505.2

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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	6.85	7.66	7.85	8.68	10.03	6.42	7.23	7.42	8.25	9.59
	3H	8.51	9.24	9.52	10.26	11.63	8.04	8.76	9.05	9.79	11.16
	4H	9.09	9.79	10.12	10.81	12.19	8.62	9.31	9.65	10.34	11.71
	6H	9.49	10.13	10.53	11.16	12.55	9.02	9.65	10.05	10.68	12.07
	8H	9.60	10.20	10.64	11.25	12.63	9.12	9.73	10.16	10.77	12.16
	12H	9.64	10.22	10.69	11.26	12.67	9.16	9.74	10.21	10.78	12.19
4H	2H	7.31	8.00	8.34	9.02	10.40	6.96	7.65	7.99	8.68	10.05
	3H	9.17	9.75	10.21	10.80	12.19	8.78	9.35	9.82	10.41	11.80
	4H	9.88	10.41	10.93	11.46	12.87	9.48	10.01	10.52	11.05	12.46
	6H	10.40	10.85	11.45	11.92	13.33	9.99	10.44	11.04	11.51	12.92
	8H	10.55	10.97	11.60	12.03	13.45	10.13	10.56	11.19	11.62	13.04
	12H	10.62	11.00	11.69	12.08	13.50	10.19	10.58	11.27	11.65	13.08
8H	4H	10.08	10.50	11.13	11.56	12.98	9.72	10.14	10.77	11.20	12.62
	6H	10.71	11.06	11.79	12.16	13.58	10.34	10.69	11.43	11.80	13.22
	8H	10.93	11.24	12.02	12.32	13.76	10.56	10.87	11.65	11.95	13.39
	12H	11.06	11.33	12.15	12.41	13.89	10.67	10.94	11.77	12.03	13.50
12H	4H	10.06	10.44	11.14	11.52	12.95	9.71	10.09	10.78	11.17	12.59
	6H	10.74	11.05	11.83	12.13	13.57	10.38	10.69	11.47	11.78	13.22
	8H	10.98	11.25	12.07	12.33	13.81	10.62	10.89	11.71	11.97	13.45

END OF REPORT