

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: P910727

Luminaire Tested: DFN2DIP-HX3F0-040D030US850-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P910727
REPORT IS A COMBINATION OF REPORTS P900723 AND P897645
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX3F0-040D030US850-FLONL
Description: 3 foot, Hexagon Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

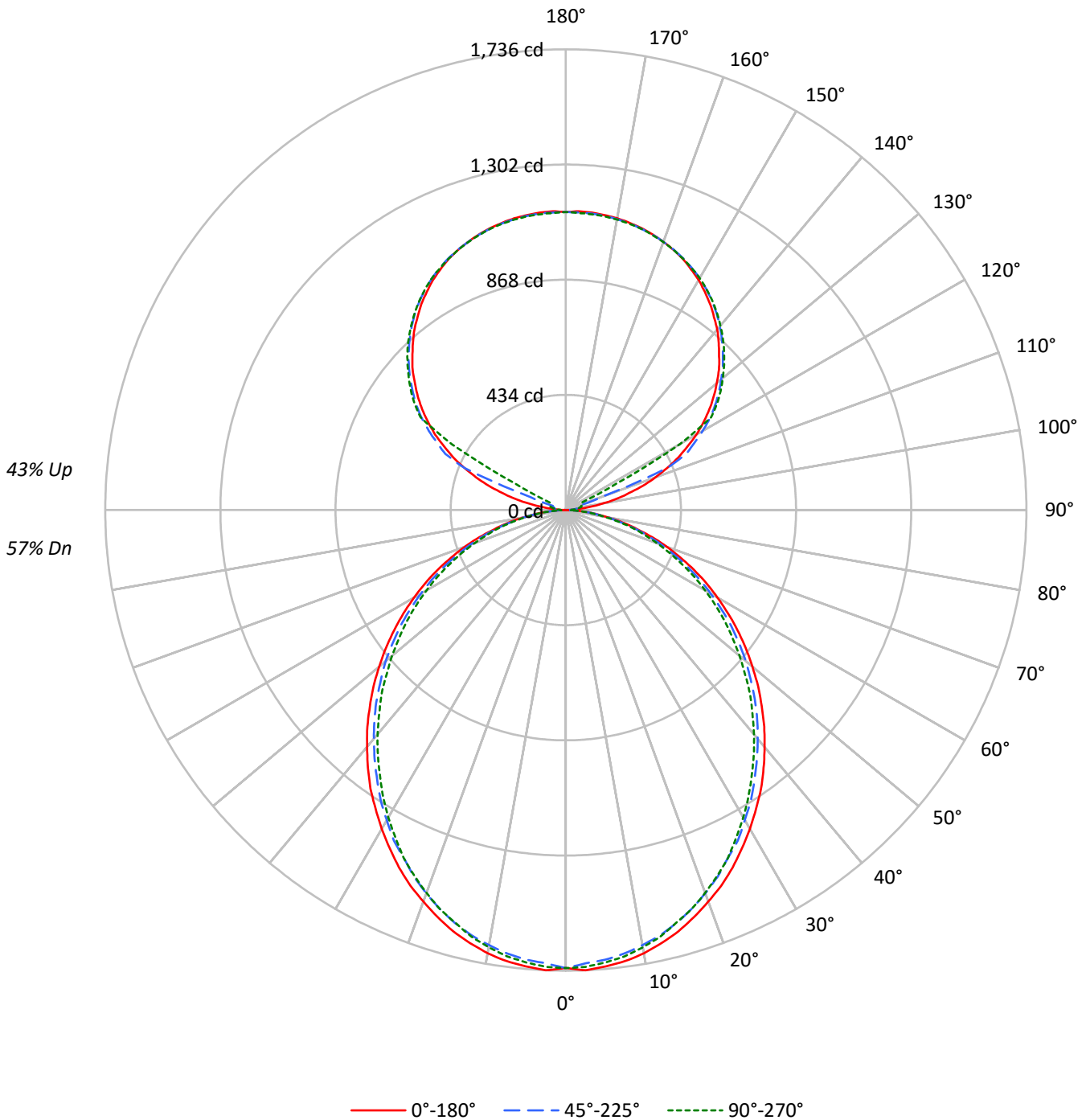
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 7685.4 lumens
Efficiency: N/A
Efficacy: 133.9 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 2.84' x L: 3.28' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 57.4
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9968
Total Harmonic Distortion (THDi): 0.064
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		0	
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10
RCR																				
0	109	109	109	109	101	101	101	101	87	87	87	74	74	74	63	63	63	57	57	57
1	99	95	91	88	92	89	85	82	77	74	72	66	64	62	55	54	53	48	48	48
2	91	83	77	72	84	77	72	67	67	63	59	58	55	52	49	47	45	40	40	40
3	83	73	66	60	77	68	62	56	59	54	50	51	47	44	43	40	38	34	34	34
4	76	65	57	50	70	61	53	48	53	47	43	45	41	38	39	35	33	29	29	29
5	69	58	49	43	64	54	47	41	47	41	37	41	36	33	35	31	29	26	26	26
6	64	52	44	38	59	49	41	36	43	37	32	37	32	29	32	28	25	22	22	22
7	59	47	39	33	55	44	37	31	39	33	28	34	29	25	29	25	22	20	20	20
8	55	43	35	29	51	40	33	28	35	29	25	31	26	23	27	23	20	18	18	18
9	51	39	31	26	48	37	30	25	32	27	23	28	24	20	25	21	18	16	16	16
10	48	36	28	24	45	34	27	22	30	24	20	26	22	18	23	19	17	15	15	15

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1999	1999	1999
5°	2002	1970	1984
10°	1985	1942	1956
15°	1954	1909	1913
20°	1914	1863	1869
25°	1874	1809	1818
30°	1824	1758	1754
35°	1776	1698	1686
40°	1718	1638	1621
45°	1660	1577	1555
50°	1596	1513	1478
55°	1529	1440	1408
60°	1453	1352	1326
65°	1371	1262	1231
70°	1266	1151	1128
75°	1120	1019	1031
80°	944	849	849
85°	670	562	550

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 1660 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	162.5	2.1
10°-20°	457.1	5.9
20°-30°	671.7	8.7
30°-40°	780.2	10.2
40°-50°	779.2	10.1
50°-60°	679.5	8.8
60°-70°	502.3	6.5
70°-80°	284.2	3.7
80°-90°	77.0	1.0
90°-100°	37.0	0.5
100°-110°	138.0	1.8
110°-120°	366.1	4.8
120°-130°	607.1	7.9
130°-140°	644.9	8.4
140°-150°	599.4	7.8
150°-160°	481.9	6.3
160°-170°	310.5	4.0
170°-180°	106.9	1.4
0°-30°	1291.3	16.8
0°-40°	2071.5	27.0
0°-60°	3530.2	45.9
0°-90°	4393.6	57.2
90°-120°	541.1	7.0
90°-150°	2392.5	31.1
90°-180°	3292.0	42.8
0°-180°	7685.4	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1726	1726	1726	1726	1726	
5°	1726	1720	1701	1714	1711	164
15°	1643	1633	1612	1618	1610	463
25°	1487	1474	1446	1449	1446	684
35°	1283	1266	1240	1230	1222	801
45°	1044	1032	1007	989	983	806
55°	790	780	760	740	732	706
65°	533	523	506	491	483	527
75°	279	276	267	257	261	298
85°	68	66	65	60	58	76
90°	1	10	16	20	22	7
95°	53	26	32	36	35	63
105°	247	271	50	58	62	264
115°	467	481	501	125	67	460
125°	660	671	687	692	695	589
135°	817	830	838	846	844	631
145°	948	947	961	967	963	593
155°	1044	1037	1046	1051	1045	481
165°	1100	1095	1098	1103	1098	311
175°	1125	1120	1121	1127	1119	107
180°	1123	1123	1123	1123	1123	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1726.0	1726.0	1726.0	1726.0	1726.0
2.5°	1736.1	1727.8	1709.5	1726.0	1722.9
5°	1726.0	1719.5	1701.2	1714.4	1711.3
7.5°	1714.4	1704.5	1686.2	1699.7	1696.3
10°	1696.3	1684.7	1664.8	1678.0	1673.0
12.5°	1671.3	1661.4	1641.5	1649.9	1646.4
15°	1643.1	1633.2	1611.6	1618.3	1610.0
17.5°	1608.3	1598.4	1576.8	1585.0	1576.8
20°	1570.0	1560.1	1537.0	1541.8	1535.4
22.5°	1532.0	1517.0	1495.4	1495.4	1492.0
25°	1487.1	1473.9	1445.7	1448.9	1445.7
27.5°	1437.3	1425.6	1404.2	1399.2	1391.0
30°	1387.6	1374.3	1349.4	1344.4	1337.8
32.5°	1334.5	1324.6	1298.0	1288.0	1281.2
35°	1283.0	1266.5	1239.9	1229.9	1221.6
37.5°	1224.9	1209.9	1183.3	1171.8	1163.5
40°	1165.2	1151.8	1125.2	1110.4	1103.8
42.5°	1107.1	1093.7	1067.3	1050.6	1040.7
45°	1044.0	1032.5	1007.4	989.3	982.6
47.5°	982.6	970.9	944.4	926.1	916.3
50°	917.8	909.5	886.3	863.0	854.7
52.5°	854.7	843.2	821.7	803.4	791.7
55°	790.2	780.1	760.2	740.3	732.1
57.5°	725.3	717.1	695.3	675.5	668.8
60°	660.5	654.0	630.8	612.5	607.5
62.5°	597.5	585.9	569.4	552.7	546.1
65°	532.9	522.8	506.3	491.3	483.1
67.5°	466.4	458.0	443.3	431.6	425.0
70°	405.0	398.4	383.4	371.7	365.2
72.5°	342.0	335.3	327.0	315.4	310.4
75°	278.8	275.6	267.2	257.3	260.6
77.5°	222.4	215.7	212.4	207.4	202.5
80°	166.0	164.2	160.9	156.0	152.7
82.5°	112.9	112.9	111.3	104.6	104.6
85°	68.0	66.4	64.8	59.7	58.1
87.5°	29.9	26.6	23.3	18.3	16.5
90°	0.8	9.8	16.2	20.4	21.8
92.5°	20.4	17.1	19.5	21.2	21.8
95°	52.8	26.0	31.6	35.8	34.9
97.5°	95.0	28.5	41.4	43.9	44.7
100°	143.8	32.5	46.4	52.8	54.5
102.5°	197.4	195.8	47.9	56.8	59.3
105°	247.0	271.4	49.6	58.4	61.8
107.5°	304.6	324.9	51.2	60.1	63.4
110°	360.0	376.9	142.2	61.0	64.2



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	412.0	426.5	412.8	62.5	65.0
115°	467.1	481.0	501.3	125.1	66.7
117.5°	515.1	531.3	545.2	429.0	216.1
120°	568.7	580.9	595.5	605.3	495.6
122.5°	614.2	627.3	643.6	648.3	649.2
125°	660.5	671.1	686.6	692.2	694.7
127.5°	702.8	714.1	726.4	734.5	735.3
130°	742.6	755.7	764.5	773.4	772.8
132.5°	783.2	793.8	802.7	810.0	809.2
135°	817.3	830.4	837.6	845.8	844.2
137.5°	853.0	862.8	871.0	879.1	876.7
140°	888.0	894.5	903.4	910.7	906.7
142.5°	917.4	923.0	933.6	940.0	936.0
145°	948.2	947.3	961.2	966.8	962.7
147.5°	974.9	972.5	986.3	990.3	987.1
150°	1001.0	995.3	1008.3	1013.1	1009.1
152.5°	1022.8	1016.4	1028.6	1033.5	1027.8
155°	1044.0	1036.8	1046.5	1051.3	1044.9
157.5°	1061.1	1054.7	1062.0	1067.6	1061.1
160°	1075.7	1070.9	1075.7	1080.6	1074.8
162.5°	1088.7	1083.8	1087.9	1093.6	1086.3
165°	1100.0	1095.2	1097.7	1103.3	1097.7
167.5°	1109.0	1104.1	1106.6	1112.3	1105.0
170°	1116.3	1111.4	1113.1	1118.8	1111.4
172.5°	1121.2	1116.3	1118.0	1123.6	1116.3
175°	1125.2	1119.5	1121.2	1126.9	1118.8
177.5°	1126.9	1121.2	1122.1	1127.7	1120.4
180°	1122.9	1122.9	1122.9	1122.9	1122.9



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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	10.27	11.20	11.17	12.12	13.28	9.84	10.77	10.74	11.69	12.85
	3H	11.93	12.76	12.84	13.69	14.88	11.46	12.30	12.37	13.22	14.41
	4H	12.52	13.30	13.44	14.23	15.43	12.05	12.84	12.97	13.76	14.96
	6H	12.91	13.64	13.85	14.57	15.79	12.44	13.17	13.37	14.10	15.32
	8H	13.02	13.71	13.96	14.66	15.87	12.55	13.24	13.49	14.19	15.40
	12H	13.06	13.72	14.01	14.67	15.91	12.59	13.25	13.53	14.19	15.43
4H	2H	10.74	11.53	11.67	12.46	13.66	10.40	11.19	11.32	12.11	13.31
	3H	12.60	13.26	13.54	14.22	15.43	12.21	12.87	13.15	13.83	15.04
	4H	13.31	13.92	14.26	14.87	16.11	12.91	13.51	13.86	14.47	15.71
	6H	13.83	14.34	14.78	15.32	16.56	13.42	13.94	14.38	14.92	16.15
	8H	13.97	14.46	14.93	15.43	16.68	13.57	14.05	14.53	15.02	16.27
	12H	14.05	14.48	15.03	15.47	16.73	13.63	14.07	14.61	15.05	16.31
8H	4H	13.51	14.00	14.47	14.97	16.22	13.16	13.64	14.12	14.61	15.86
	6H	14.14	14.54	15.12	15.55	16.80	13.78	14.18	14.77	15.19	16.44
	8H	14.35	14.71	15.35	15.71	16.98	13.99	14.34	14.99	15.34	16.61
	12H	14.48	14.80	15.48	15.79	17.11	14.10	14.42	15.10	15.41	16.73
12H	4H	13.50	13.94	14.48	14.93	16.18	13.15	13.59	14.13	14.58	15.83
	6H	14.17	14.52	15.16	15.52	16.79	13.82	14.17	14.81	15.17	16.44
	8H	14.41	14.72	15.41	15.71	17.03	14.05	14.36	15.05	15.36	16.68