

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: P928216

Luminaire Tested: DFN2DIP-HX4F0-050D070US927-FLLONL

Issue Date: 12/12/2024

Test Information

Test Method: LM-79-2019
Report Number: P928216
REPORT IS A COMBINATION OF REPORTS P900875 AND P896187
Test Lab: INNOVATION CENTER
Issue Date: 12/12/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX4F0-050D070US927-FLLONL
Description: 4 foot, Hexagon Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

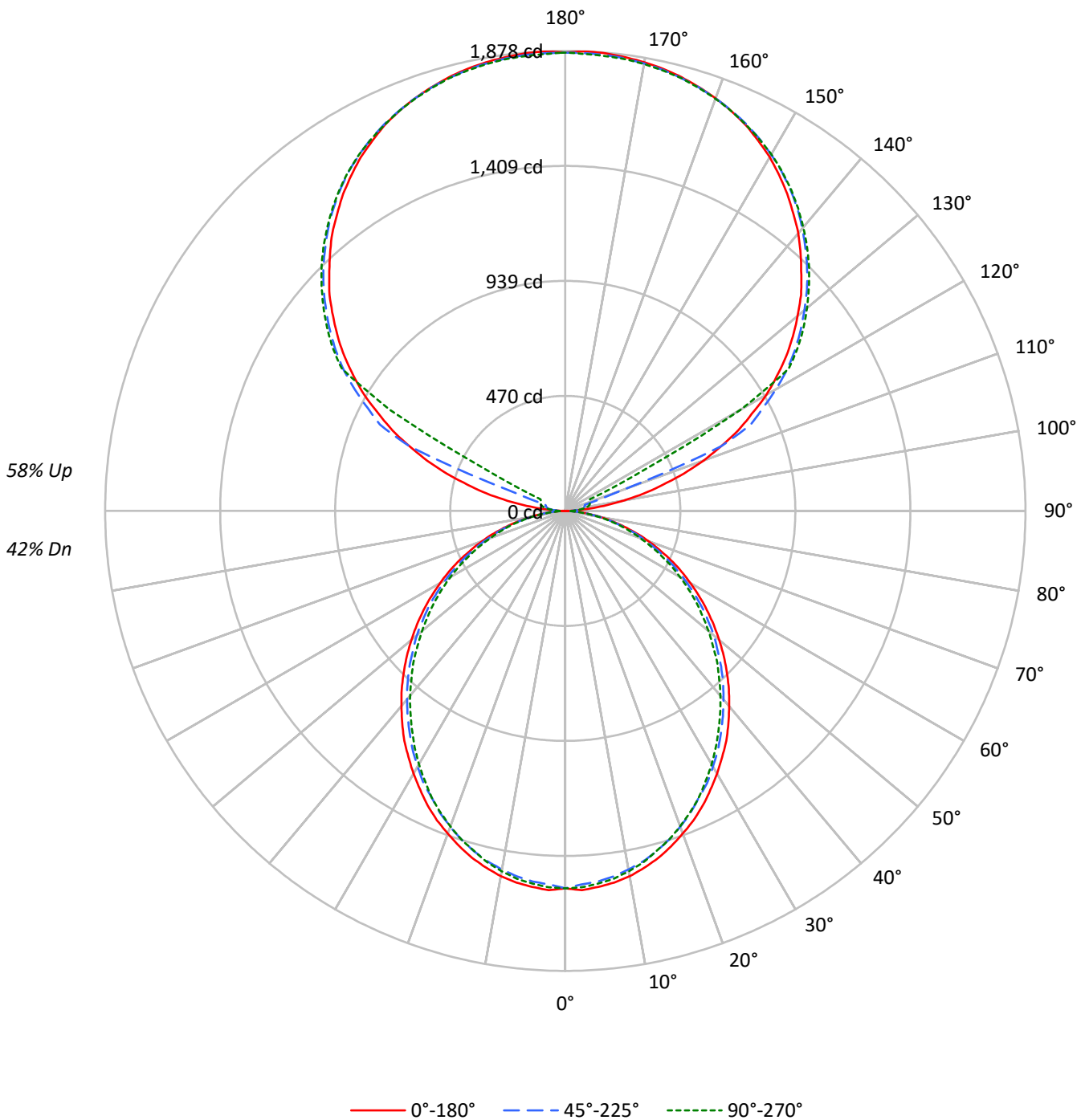
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 9408.9 lumens
Efficiency: N/A
Efficacy: 98.3 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): 95.7
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				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	0	
RCR																						
0	105	105	105	105	96	96	96	96	79	79	79	63	63	63	49	49	49	49	49	49	49	42
1	96	92	88	84	87	84	80	78	69	67	65	55	54	52	43	42	41	41	41	41	41	35
2	87	80	74	69	79	73	68	64	60	57	53	49	46	44	38	36	34	34	34	34	34	29
3	80	70	63	57	72	64	58	53	53	49	45	43	40	37	33	31	29	29	29	29	29	25
4	73	62	54	48	66	57	50	45	47	42	38	38	35	32	30	27	25	25	25	25	25	21
5	67	55	47	41	61	51	44	39	42	37	33	34	30	27	27	24	22	22	22	22	22	19
6	62	50	42	36	56	46	39	33	38	33	29	31	27	24	24	22	19	19	19	19	19	16
7	57	45	37	31	52	41	34	29	34	29	25	28	24	21	22	19	17	17	17	17	17	14
8	53	41	33	28	48	37	31	26	31	26	22	26	22	19	20	18	15	15	15	15	15	13
9	49	37	30	25	45	34	28	23	29	24	20	24	20	17	19	16	14	14	14	14	14	12
10	46	34	27	22	42	31	25	21	26	21	18	22	18	15	18	15	13	13	13	13	13	11

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1146	1146	1146
5°	1148	1130	1137
10°	1138	1115	1122
15°	1122	1097	1098
20°	1099	1071	1073
25°	1077	1041	1045
30°	1049	1012	1009
35°	1022	979	971
40°	989	945	934
45°	957	912	897
50°	921	876	854
55°	884	835	814
60°	841	787	769
65°	795	736	715
70°	736	675	658
75°	655	602	605
80°	558	508	503
85°	405	346	335

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 961 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	145.0	1.5
10°-20°	408.0	4.3
20°-30°	599.7	6.4
30°-40°	696.5	7.4
40°-50°	695.6	7.4
50°-60°	606.6	6.4
60°-70°	448.4	4.8
70°-80°	253.7	2.7
80°-90°	70.2	0.7
90°-100°	61.7	0.7
100°-110°	230.0	2.4
110°-120°	610.0	6.5
120°-130°	1011.7	10.8
130°-140°	1074.6	11.4
140°-150°	998.8	10.6
150°-160°	803.0	8.5
160°-170°	517.4	5.5
170°-180°	178.1	1.9
0°-30°	1152.7	12.3
0°-40°	1849.2	19.7
0°-60°	3151.4	33.5
0°-90°	3923.7	41.7
90°-120°	901.6	9.6
90°-150°	3986.8	42.4
90°-180°	5485.0	58.3
0°-180°	9408.9	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1541	1541	1541	1541	1541	
5°	1541	1535	1519	1530	1528	146
15°	1467	1458	1439	1445	1437	413
25°	1328	1316	1291	1293	1291	611
35°	1145	1131	1107	1098	1090	715
45°	932	922	899	883	877	719
55°	705	696	679	661	654	631
65°	476	467	452	439	431	470
75°	249	246	238	230	233	266
85°	61	59	58	53	52	68
90°	1	16	27	34	36	9
95°	88	43	53	60	58	104
105°	412	452	83	97	103	440
115°	778	801	835	208	111	766
125°	1101	1118	1144	1154	1158	982
135°	1362	1384	1396	1409	1407	1052
145°	1580	1579	1602	1611	1604	988
155°	1740	1728	1744	1752	1741	802
165°	1833	1825	1829	1838	1829	518
175°	1875	1866	1868	1878	1864	178
180°	1871	1871	1871	1871	1871	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1540.8	1540.8	1540.8	1540.8	1540.8
2.5°	1549.8	1542.4	1526.1	1540.8	1538.1
5°	1540.8	1535.1	1518.7	1530.5	1527.7
7.5°	1530.5	1521.7	1505.4	1517.3	1514.3
10°	1514.3	1503.9	1486.2	1497.9	1493.6
12.5°	1492.0	1483.2	1465.4	1472.8	1469.8
15°	1466.8	1458.0	1438.7	1444.7	1437.2
17.5°	1435.7	1426.9	1407.5	1414.9	1407.5
20°	1401.6	1392.8	1372.1	1376.4	1370.6
22.5°	1367.6	1354.2	1334.9	1334.9	1331.9
25°	1327.6	1315.7	1290.6	1293.4	1290.6
27.5°	1283.0	1272.7	1253.5	1249.1	1241.7
30°	1238.7	1226.8	1204.6	1200.2	1194.3
32.5°	1191.2	1182.5	1158.7	1149.7	1143.8
35°	1145.3	1130.6	1106.8	1097.9	1090.5
37.5°	1093.4	1080.1	1056.4	1046.0	1038.6
40°	1040.2	1028.3	1004.5	991.3	985.3
42.5°	988.3	976.4	952.8	937.8	929.0
45°	932.0	921.7	899.3	883.2	877.1
47.5°	877.1	866.8	843.1	826.7	817.9
50°	819.3	812.0	791.2	770.5	763.0
52.5°	763.0	752.6	733.5	717.2	706.8
55°	705.4	696.4	678.6	660.8	653.5
57.5°	647.5	640.1	620.8	603.0	597.0
60°	589.6	583.9	563.1	546.7	542.4
62.5°	533.4	523.0	508.2	493.4	487.5
65°	475.7	466.7	451.9	438.6	431.2
67.5°	416.4	408.9	395.7	385.3	379.3
70°	361.5	355.6	342.2	331.8	326.1
72.5°	305.3	299.3	291.9	281.6	277.1
75°	248.8	246.0	238.5	229.7	232.7
77.5°	198.6	192.5	189.6	185.2	180.8
80°	148.3	146.7	143.7	139.3	136.3
82.5°	100.7	100.7	99.3	93.4	93.4
85°	60.7	59.2	57.8	53.3	51.9
87.5°	26.7	23.8	20.8	16.3	14.8
90°	1.3	16.2	27.0	33.9	36.5
92.5°	33.9	28.4	32.5	35.2	36.5
95°	87.9	43.2	52.7	59.6	58.2
97.5°	158.3	47.4	69.0	73.2	74.4
100°	239.7	54.2	77.1	87.9	90.7
102.5°	328.9	326.4	79.9	94.7	98.8
105°	411.6	452.2	82.6	97.4	102.9
107.5°	507.7	541.5	85.4	100.2	105.7
110°	599.9	628.1	237.0	101.6	106.9



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	686.5	710.7	687.8	104.1	108.3
115°	778.5	801.4	835.3	208.5	111.1
117.5°	858.4	885.4	908.5	714.8	360.1
120°	947.7	968.0	992.5	1008.7	825.9
122.5°	1023.4	1045.1	1072.4	1080.4	1081.8
125°	1100.6	1118.3	1144.0	1153.5	1157.5
127.5°	1171.1	1190.0	1210.4	1224.0	1225.2
130°	1237.4	1259.1	1273.9	1288.9	1287.6
132.5°	1305.1	1322.8	1337.6	1349.8	1348.5
135°	1362.0	1383.7	1395.8	1409.4	1406.8
137.5°	1421.5	1437.8	1451.4	1465.0	1460.9
140°	1479.7	1490.6	1505.4	1517.6	1510.9
142.5°	1528.6	1538.1	1555.6	1566.3	1559.6
145°	1580.0	1578.6	1601.6	1611.1	1604.4
147.5°	1624.6	1620.6	1643.6	1650.3	1645.0
150°	1668.0	1658.5	1680.2	1688.2	1681.5
152.5°	1704.5	1693.7	1714.0	1722.1	1712.7
155°	1739.7	1727.6	1743.8	1751.9	1741.1
157.5°	1768.1	1757.4	1769.6	1779.1	1768.1
160°	1792.6	1784.4	1792.6	1800.6	1791.1
162.5°	1814.2	1806.1	1812.8	1822.3	1810.1
165°	1833.1	1825.1	1829.0	1838.5	1829.0
167.5°	1848.1	1839.8	1844.0	1853.5	1841.3
170°	1860.2	1852.1	1854.8	1864.3	1852.1
172.5°	1868.3	1860.2	1863.0	1872.4	1860.2
175°	1875.1	1865.6	1868.3	1877.8	1864.3
177.5°	1877.8	1868.3	1869.8	1879.3	1867.0
180°	1871.0	1871.0	1871.0	1871.0	1871.0



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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	6.93	7.72	7.95	8.75	10.14	6.49	7.29	7.52	8.32	9.70
	3H	8.58	9.29	9.62	10.33	11.74	8.11	8.82	9.14	9.86	11.27
	4H	9.17	9.84	10.21	10.88	12.30	8.69	9.37	9.74	10.41	11.82
	6H	9.56	10.18	10.62	11.23	12.66	9.09	9.71	10.15	10.76	12.18
	8H	9.67	10.26	10.73	11.32	12.74	9.19	9.78	10.25	10.85	12.27
	12H	9.71	10.27	10.78	11.33	12.78	9.23	9.79	10.30	10.85	12.29
4H	2H	7.38	8.05	8.43	9.10	10.51	7.04	7.71	8.09	8.75	10.16
	3H	9.24	9.80	10.30	10.87	12.30	8.85	9.41	9.91	10.48	11.91
	4H	9.95	10.47	11.02	11.53	12.98	9.55	10.06	10.62	11.12	12.57
	6H	10.47	10.91	11.54	11.99	13.43	10.06	10.50	11.13	11.58	13.03
	8H	10.61	11.03	11.69	12.11	13.56	10.20	10.61	11.28	11.69	13.15
	12H	10.68	11.06	11.78	12.15	13.61	10.26	10.64	11.36	11.73	13.19
8H	4H	10.14	10.56	11.22	11.64	13.09	9.78	10.20	10.86	11.28	12.73
	6H	10.77	11.12	11.87	12.24	13.69	10.41	10.75	11.51	11.87	13.33
	8H	11.00	11.29	12.10	12.40	13.87	10.63	10.93	11.73	12.03	13.50
	12H	11.12	11.39	12.24	12.49	14.00	10.74	11.00	11.85	12.10	13.61
12H	4H	10.13	10.50	11.22	11.59	13.06	9.78	10.15	10.87	11.24	12.70
	6H	10.80	11.10	11.91	12.21	13.68	10.45	10.75	11.56	11.85	13.33
	8H	11.04	11.31	12.15	12.41	13.92	10.69	10.95	11.80	12.05	13.56