

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: P902579

Luminaire Tested: DFN2DIP-HX3F0-050D060US830-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P902579
REPORT IS A COMBINATION OF REPORTS P900767 AND P897645
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX3F0-050D060US830-FLONL
Description: 3 foot, Hexagon Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

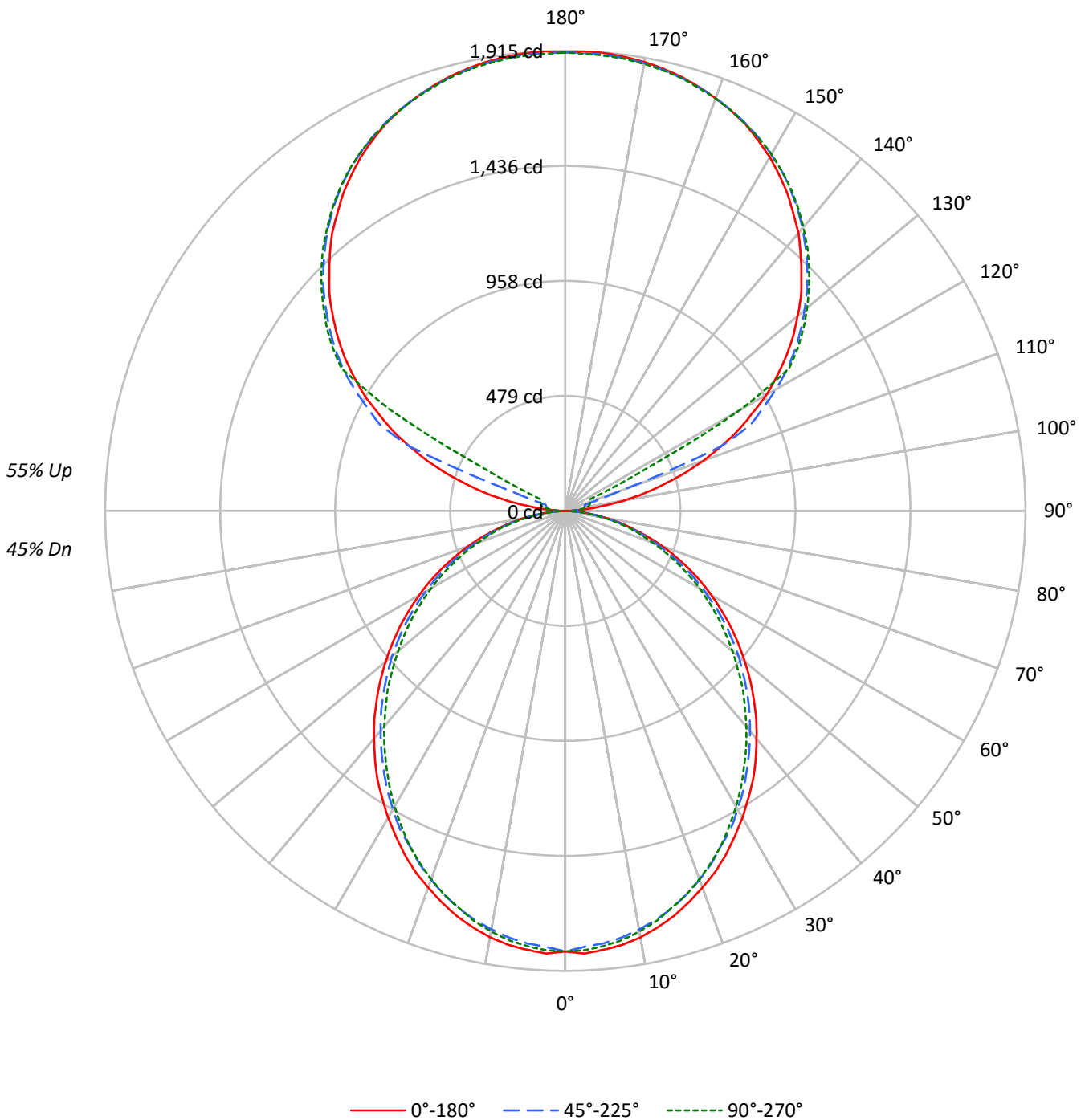
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 10264.3 lumens
Efficiency: N/A
Efficacy: 113.9 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): 90.1
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9951
Total Harmonic Distortion (THDi): 0.07
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	0
RCR																					
0	106	106	106	106	97	97	97	97	81	81	81	66	66	66	52	52	52	45	45	45	45
1	97	92	89	85	89	85	82	79	71	68	66	58	56	55	46	45	44	38	38	38	38
2	88	81	75	70	81	74	69	65	62	58	55	51	48	46	40	39	37	32	32	32	32
3	80	71	64	58	73	65	59	54	55	50	46	45	42	39	36	33	31	27	27	27	27
4	74	63	55	49	67	58	51	46	49	43	39	40	36	33	32	29	27	23	23	23	23
5	67	56	48	42	62	52	45	39	43	38	34	36	32	29	29	26	24	20	20	20	20
6	62	50	42	36	57	46	39	34	39	34	30	32	28	25	26	23	21	18	18	18	18
7	57	45	37	32	53	42	35	30	35	30	26	30	25	22	24	21	18	16	16	16	16
8	53	41	33	28	49	38	31	26	32	27	23	27	23	20	22	19	17	14	14	14	14
9	50	37	30	25	45	35	28	24	30	24	21	25	21	18	20	17	15	13	13	13	13
10	46	34	27	22	42	32	25	21	27	22	19	23	19	16	19	16	14	12	12	12	12

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2124	2124	2124
5°	2127	2093	2108
10°	2108	2063	2078
15°	2076	2028	2032
20°	2034	1979	1985
25°	1991	1921	1931
30°	1938	1867	1863
35°	1887	1804	1791
40°	1825	1740	1722
45°	1763	1675	1652
50°	1696	1608	1570
55°	1624	1529	1495
60°	1544	1437	1409
65°	1456	1340	1308
70°	1345	1223	1198
75°	1190	1082	1095
80°	1003	903	902
85°	711	597	585

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 1763 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	172.6	1.7
10°-20°	485.6	4.7
20°-30°	713.7	7.0
30°-40°	828.9	8.1
40°-50°	827.8	8.1
50°-60°	721.8	7.0
60°-70°	533.6	5.2
70°-80°	301.9	2.9
80°-90°	83.0	0.8
90°-100°	62.9	0.6
100°-110°	234.6	2.3
110°-120°	622.2	6.1
120°-130°	1032.0	10.1
130°-140°	1096.2	10.7
140°-150°	1018.8	9.9
150°-160°	819.1	8.0
160°-170°	527.8	5.1
170°-180°	181.7	1.8
0°-30°	1371.9	13.4
0°-40°	2200.7	21.4
0°-60°	3750.4	36.5
0°-90°	4668.9	45.5
90°-120°	919.8	9.0
90°-150°	4066.8	39.6
90°-180°	5595.0	54.5
0°-180°	10264.3	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1834	1834	1834	1834	1834	
5°	1834	1827	1807	1821	1818	174
15°	1746	1735	1712	1719	1710	492
25°	1580	1566	1536	1539	1536	727
35°	1363	1346	1317	1307	1298	851
45°	1109	1097	1070	1051	1044	856
55°	839	829	808	786	778	750
65°	566	555	538	522	513	560
75°	296	293	284	273	277	316
85°	72	70	69	63	62	81
90°	1	17	28	35	37	9
95°	90	44	54	61	59	106
105°	420	461	84	99	105	449
115°	794	818	852	213	113	782
125°	1123	1141	1167	1177	1181	1001
135°	1389	1412	1424	1438	1435	1073
145°	1612	1610	1634	1643	1636	1008
155°	1775	1762	1779	1787	1776	818
165°	1870	1862	1866	1876	1866	528
175°	1913	1903	1906	1915	1902	182
180°	1909	1909	1909	1909	1909	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1833.7	1833.7	1833.7	1833.7	1833.7
2.5°	1844.4	1835.6	1816.2	1833.7	1830.4
5°	1833.7	1826.8	1807.3	1821.4	1818.1
7.5°	1821.4	1810.9	1791.5	1805.7	1802.1
10°	1802.1	1789.8	1768.7	1782.6	1777.4
12.5°	1775.6	1765.1	1744.0	1752.8	1749.2
15°	1745.6	1735.1	1712.1	1719.3	1710.4
17.5°	1708.5	1698.1	1675.1	1683.9	1675.1
20°	1668.0	1657.6	1632.9	1638.0	1631.2
22.5°	1627.6	1611.7	1588.7	1588.7	1585.1
25°	1579.9	1565.8	1535.9	1539.3	1535.9
27.5°	1526.9	1514.6	1491.8	1486.5	1477.7
30°	1474.1	1460.0	1433.6	1428.3	1421.3
32.5°	1417.7	1407.2	1378.9	1368.3	1361.2
35°	1363.0	1345.5	1317.2	1306.6	1297.8
37.5°	1301.3	1285.4	1257.2	1244.8	1236.0
40°	1237.9	1223.7	1195.4	1179.7	1172.6
42.5°	1176.2	1162.0	1133.9	1116.1	1105.6
45°	1109.2	1096.8	1070.3	1051.0	1043.9
47.5°	1043.9	1031.5	1003.3	983.8	973.4
50°	975.1	966.3	941.6	916.9	908.0
52.5°	908.0	895.7	872.9	853.5	841.1
55°	839.4	828.8	807.6	786.5	777.7
57.5°	770.5	761.8	738.8	717.7	710.5
60°	701.7	694.8	670.1	650.6	645.5
62.5°	634.8	622.5	604.8	587.2	580.1
65°	566.1	555.4	537.8	522.0	513.1
67.5°	495.6	486.6	470.9	458.5	451.4
70°	430.3	423.2	407.3	394.9	388.0
72.5°	363.4	356.2	347.4	335.1	329.8
75°	296.1	292.8	283.8	273.3	276.9
77.5°	236.3	229.1	225.6	220.4	215.2
80°	176.4	174.6	171.0	165.8	162.2
82.5°	119.9	119.9	118.2	111.1	111.1
85°	72.2	70.5	68.8	63.4	61.7
87.5°	31.8	28.3	24.7	19.4	17.6
90°	1.3	16.6	27.5	34.6	37.2
92.5°	34.6	29.0	33.1	35.9	37.2
95°	89.7	44.1	53.8	60.9	59.4
97.5°	161.6	48.4	70.3	74.6	76.0
100°	244.5	55.2	78.7	89.7	92.5
102.5°	335.5	332.9	81.5	96.6	100.9
105°	419.8	461.3	84.3	99.3	105.0
107.5°	517.9	552.3	87.1	102.2	107.7
110°	611.9	640.7	241.8	103.7	109.1



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	700.2	725.0	701.5	106.2	110.6
115°	794.1	817.6	852.2	212.7	113.3
117.5°	875.5	903.1	926.7	729.2	367.3
120°	966.8	987.4	1012.4	1028.9	842.4
122.5°	1044.0	1066.1	1093.8	1102.0	1103.5
125°	1122.8	1140.8	1167.0	1176.7	1180.7
127.5°	1194.6	1213.9	1234.7	1248.5	1249.8
130°	1262.3	1284.4	1299.5	1314.8	1313.4
132.5°	1331.3	1349.3	1364.4	1376.9	1375.5
135°	1389.4	1411.6	1423.8	1437.8	1434.9
137.5°	1450.0	1466.6	1480.5	1494.3	1490.3
140°	1509.4	1520.6	1535.7	1548.1	1541.2
142.5°	1559.2	1569.0	1586.9	1597.8	1590.9
145°	1611.7	1610.2	1633.7	1643.4	1636.5
147.5°	1657.2	1653.0	1676.5	1683.4	1678.0
150°	1701.5	1691.8	1713.9	1722.1	1715.2
152.5°	1738.7	1727.7	1748.3	1756.7	1747.0
155°	1774.6	1762.3	1778.9	1787.1	1776.0
157.5°	1803.6	1792.6	1805.1	1814.8	1803.6
160°	1828.5	1820.1	1828.5	1836.7	1827.1
162.5°	1850.5	1842.3	1849.2	1858.9	1846.4
165°	1869.9	1861.7	1865.8	1875.5	1865.8
167.5°	1885.1	1876.8	1881.0	1890.7	1878.2
170°	1897.6	1889.2	1892.1	1901.7	1889.2
172.5°	1905.8	1897.6	1900.4	1910.1	1897.6
175°	1912.7	1903.0	1905.8	1915.4	1901.7
177.5°	1915.4	1905.8	1907.2	1916.9	1904.5
180°	1908.6	1908.6	1908.6	1908.6	1908.6



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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	9.41	10.24	10.41	11.24	12.58	8.99	9.81	9.98	10.81	12.15
	3H	11.06	11.80	12.07	12.82	14.17	10.59	11.33	11.60	12.35	13.70
	4H	11.64	12.34	12.66	13.36	14.72	11.18	11.87	12.19	12.89	14.25
	6H	12.04	12.68	13.06	13.70	15.08	11.57	12.21	12.59	13.23	14.61
	8H	12.14	12.75	13.17	13.79	15.16	11.67	12.28	12.70	13.32	14.69
	12H	12.18	12.76	13.22	13.80	15.19	11.71	12.29	12.74	13.32	14.72
4H	2H	9.87	10.57	10.89	11.58	12.95	9.53	10.22	10.55	11.24	12.60
	3H	11.72	12.30	12.75	13.35	14.73	11.33	11.91	12.36	12.96	14.34
	4H	12.43	12.96	13.47	14.00	15.40	12.03	12.56	13.07	13.60	15.00
	6H	12.93	13.39	13.98	14.45	15.85	12.53	12.99	13.58	14.05	15.44
	8H	13.08	13.51	14.13	14.56	15.97	12.67	13.10	13.72	14.15	15.56
	12H	13.15	13.53	14.22	14.60	16.02	12.73	13.12	13.80	14.19	15.60
8H	4H	12.62	13.05	13.67	14.10	15.51	12.26	12.69	13.31	13.74	15.15
	6H	13.24	13.59	14.31	14.69	16.10	12.88	13.23	13.95	14.33	15.74
	8H	13.45	13.77	14.54	14.85	16.27	13.09	13.40	14.17	14.48	15.91
	12H	13.58	13.85	14.66	14.93	16.39	13.20	13.47	14.28	14.55	16.02
12H	4H	12.60	12.99	13.67	14.06	15.47	12.25	12.64	13.32	13.71	15.12
	6H	13.27	13.58	14.35	14.66	16.09	12.92	13.23	14.00	14.31	15.74
	8H	13.50	13.77	14.59	14.85	16.32	13.15	13.42	14.23	14.50	15.96