

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: P921677

Luminaire Tested: DFN2DIP-HX3F0-050D060US940-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P921677
REPORT IS A COMBINATION OF REPORTS P900768 AND P897645
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX3F0-050D060US940-RLLONL
Description: 3 foot, Hexagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

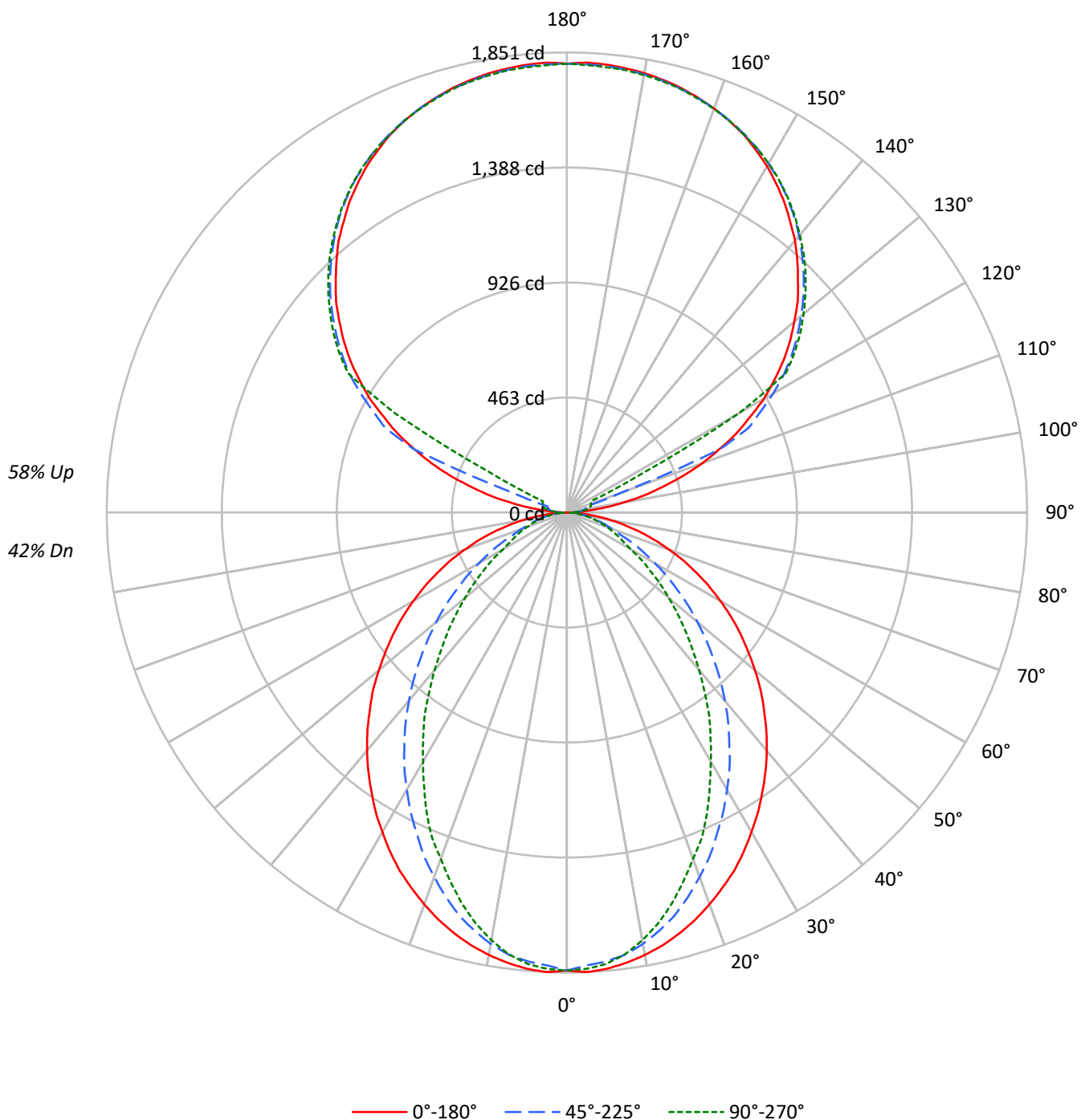
Lumens per Lamp: N/A
Luminaire Lumens: 9086.5 lumens
Efficiency: N/A
Efficacy: 100.8 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 2.84' x L: 3.28' x H: 0.1')
CIE Type: General Diffuse

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
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	79	79	79	63	63	63	49	49	49
1	96	92	89	85	88	84	81	78	70	67	65	56	55	53	43	43	42
2	88	81	75	70	80	74	69	65	61	58	55	50	47	45	39	37	36
3	81	72	65	59	73	66	60	55	55	50	46	44	41	39	35	33	31
4	74	64	56	50	67	58	52	47	49	44	40	40	36	33	31	29	27
5	68	57	49	43	62	52	45	40	44	39	35	36	32	29	28	26	24
6	63	51	43	38	57	47	40	35	39	34	30	32	29	26	26	23	21
7	58	46	38	33	53	43	36	31	36	31	27	30	26	23	24	21	19
8	54	42	34	29	49	39	32	27	33	28	24	27	23	20	22	19	17
9	50	38	31	26	46	35	29	25	30	25	22	25	21	18	20	17	15
10	47	35	28	23	43	33	26	22	28	23	19	23	19	17	19	16	14

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2134	2134	2134
5°	2137	2099	2113
10°	2115	2056	2043
15°	2085	1987	1936
20°	2045	1892	1804
25°	2005	1786	1677
30°	1951	1677	1517
35°	1898	1560	1376
40°	1844	1439	1215
45°	1781	1305	1069
50°	1717	1170	926
55°	1649	1026	789
60°	1570	876	648
65°	1480	723	582
70°	1371	581	525
75°	1233	509	475
80°	1033	422	408
85°	706	275	300

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 1781 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	172.7	1.9
10°-20°	474.1	5.2
20°-30°	665.6	7.3
30°-40°	725.6	8.0
40°-50°	666.9	7.3
50°-60°	523.7	5.8
60°-70°	340.9	3.8
70°-80°	175.5	1.9
80°-90°	48.0	0.5
90°-100°	59.5	0.7
100°-110°	222.0	2.4
110°-120°	588.7	6.5
120°-130°	976.3	10.7
130°-140°	1037.1	11.4
140°-150°	963.9	10.6
150°-160°	774.9	8.5
160°-170°	499.3	5.5
170°-180°	171.9	1.9
0°-30°	1312.4	14.4
0°-40°	2038.0	22.4
0°-60°	3228.6	35.5
0°-90°	3793.0	41.7
90°-120°	870.2	9.6
90°-150°	3847.4	42.3
90°-180°	5294.0	58.3
0°-180°	9086.5	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1843	1843	1843	1843	1843	
5°	1843	1834	1813	1828	1823	175
15°	1753	1734	1678	1646	1629	494
25°	1591	1538	1427	1359	1334	732
35°	1371	1286	1139	1034	997	858
45°	1121	1009	834	715	675	865
55°	852	722	542	442	410	761
65°	575	440	290	234	228	570
75°	307	190	133	122	120	324
85°	72	37	32	32	32	82
90°	1	16	26	33	35	8
95°	85	42	51	58	56	101
105°	397	436	80	94	99	424
115°	751	774	806	201	107	740
125°	1062	1079	1104	1113	1117	947
135°	1314	1335	1347	1360	1358	1015
145°	1525	1523	1546	1555	1548	954
155°	1679	1667	1683	1691	1680	774
165°	1769	1761	1765	1774	1765	500
175°	1810	1800	1803	1812	1799	172
180°	1806	1806	1806	1806	1806	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1842.7	1842.7	1842.7	1842.7	1842.7
2.5°	1851.0	1842.7	1824.4	1841.1	1837.7
5°	1842.7	1834.4	1812.7	1827.6	1822.7
7.5°	1827.6	1817.8	1794.4	1801.0	1792.6
10°	1807.7	1796.0	1762.7	1757.7	1747.7
12.5°	1782.7	1767.7	1722.6	1712.7	1694.2
15°	1752.7	1734.3	1677.7	1646.0	1629.3
17.5°	1717.6	1691.0	1620.9	1584.2	1557.5
20°	1677.7	1644.2	1560.8	1519.3	1482.5
22.5°	1634.3	1595.9	1499.1	1442.5	1417.6
25°	1590.9	1537.5	1427.4	1359.1	1334.0
27.5°	1539.3	1482.5	1360.8	1282.4	1244.0
30°	1484.3	1420.8	1287.4	1202.4	1157.3
32.5°	1430.8	1354.1	1217.5	1117.3	1075.6
35°	1370.8	1285.8	1139.1	1033.9	997.2
37.5°	1312.4	1220.7	1065.7	950.5	908.9
40°	1250.7	1150.8	988.8	870.5	827.2
42.5°	1187.4	1080.7	912.2	788.7	747.2
45°	1120.7	1008.9	833.8	715.3	675.3
47.5°	1057.3	939.0	758.8	640.3	603.7
50°	987.3	868.9	685.5	570.2	535.4
52.5°	918.8	793.7	615.4	505.3	473.7
55°	852.1	722.0	541.9	441.9	410.3
57.5°	783.8	650.4	477.0	383.6	356.9
60°	713.7	580.3	408.5	323.6	296.9
62.5°	645.4	512.0	350.2	270.2	256.9
65°	575.3	440.2	290.2	233.5	228.5
67.5°	508.6	373.5	233.5	205.1	200.1
70°	438.6	308.5	193.4	176.7	170.0
72.5°	371.9	248.4	161.8	148.5	145.1
75°	306.8	190.0	133.4	121.7	120.1
77.5°	241.8	135.0	105.1	98.4	95.0
80°	181.7	96.8	80.0	73.4	73.4
82.5°	126.7	65.1	55.0	51.6	51.6
85°	71.7	36.6	31.7	31.7	31.7
87.5°	26.8	13.3	13.3	11.7	11.7
90°	1.2	15.7	26.0	32.7	35.2
92.5°	32.7	27.5	31.3	34.0	35.2
95°	84.9	41.7	50.9	57.6	56.2
97.5°	152.8	45.7	66.5	70.6	71.9
100°	231.3	52.3	74.5	84.9	87.5
102.5°	317.4	315.0	77.1	91.4	95.4
105°	397.2	436.4	79.7	94.0	99.3
107.5°	490.0	522.5	82.4	96.7	101.9
110°	578.9	606.2	228.7	98.1	103.2

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	662.5	685.9	663.7	100.5	104.6
115°	751.3	773.5	806.2	201.3	107.2
117.5°	828.3	854.4	876.7	689.8	347.5
120°	914.6	934.2	957.8	973.4	797.0
122.5°	987.7	1008.6	1034.8	1042.6	1044.0
125°	1062.2	1079.2	1104.0	1113.2	1117.0
127.5°	1130.2	1148.4	1168.1	1181.2	1182.4
130°	1194.2	1215.1	1229.4	1243.8	1242.6
132.5°	1259.5	1276.6	1290.8	1302.6	1301.4
135°	1314.5	1335.4	1347.0	1360.2	1357.5
137.5°	1371.8	1387.5	1400.7	1413.7	1409.9
140°	1428.0	1438.6	1452.9	1464.6	1458.1
142.5°	1475.2	1484.3	1501.3	1511.6	1505.1
145°	1524.8	1523.4	1545.6	1554.8	1548.3
147.5°	1567.8	1563.9	1586.1	1592.6	1587.5
150°	1609.7	1600.5	1621.5	1629.2	1622.7
152.5°	1644.9	1634.5	1654.0	1662.0	1652.8
155°	1678.9	1667.2	1682.9	1690.7	1680.2
157.5°	1706.4	1695.9	1707.7	1716.9	1706.4
160°	1729.9	1722.0	1729.9	1737.7	1728.6
162.5°	1750.7	1742.9	1749.4	1758.6	1746.9
165°	1769.1	1761.3	1765.1	1774.3	1765.1
167.5°	1783.4	1775.6	1779.6	1788.8	1776.9
170°	1795.3	1787.3	1790.0	1799.1	1787.3
172.5°	1803.0	1795.3	1797.9	1807.1	1795.3
175°	1809.5	1800.4	1803.0	1812.1	1799.1
177.5°	1812.1	1803.0	1804.4	1813.6	1801.8
180°	1805.6	1805.6	1805.6	1805.6	1805.6

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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	8.92	9.68	9.95	10.72	12.10	4.89	5.66	5.92	6.69	8.08
	3H	10.58	11.27	11.62	12.31	13.72	6.07	6.76	7.11	7.80	9.21
	4H	11.18	11.83	12.23	12.87	14.29	6.52	7.16	7.57	8.21	9.62
	6H	11.59	12.19	12.65	13.24	14.66	6.83	7.43	7.89	8.48	9.90
	8H	11.71	12.28	12.78	13.35	14.77	6.92	7.48	7.98	8.55	9.97
	12H	11.77	12.31	12.84	13.37	14.81	6.96	7.49	8.03	8.55	10.00
4H	2H	8.92	9.57	9.98	10.62	12.03	5.48	6.12	6.54	7.17	8.58
	3H	10.74	11.28	11.81	12.35	13.78	6.81	7.35	7.88	8.43	9.85
	4H	11.42	11.92	12.50	12.98	14.43	7.36	7.85	8.43	8.91	10.36
	6H	11.93	12.35	13.01	13.44	14.88	7.77	8.19	8.85	9.28	10.72
	8H	12.10	12.49	13.18	13.57	15.03	7.89	8.29	8.97	9.37	10.82
	12H	12.18	12.54	13.28	13.64	15.10	7.95	8.31	9.05	9.40	10.86
8H	4H	11.38	11.78	12.47	12.86	14.32	7.63	8.02	8.71	9.10	10.56
	6H	11.94	12.27	13.04	13.39	14.84	8.14	8.46	9.24	9.58	11.04
	8H	12.15	12.44	13.26	13.54	15.02	8.32	8.61	9.43	9.71	11.19
	12H	12.28	12.53	13.40	13.63	15.15	8.44	8.69	9.55	9.79	11.30
12H	4H	11.33	11.69	12.43	12.78	14.25	7.63	7.99	8.73	9.08	10.54
	6H	11.91	12.20	13.03	13.31	14.78	8.18	8.47	9.29	9.57	11.05
	8H	12.13	12.38	13.24	13.48	14.99	8.39	8.64	9.50	9.74	11.25