

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: P907951

Luminaire Tested: DFN2DIP-HX2F0-050D060US840-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P907951
REPORT IS A COMBINATION OF REPORTS P900717 AND P897595
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX2F0-050D060US840-FLLONL
Description: 2 foot, Hexagon Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

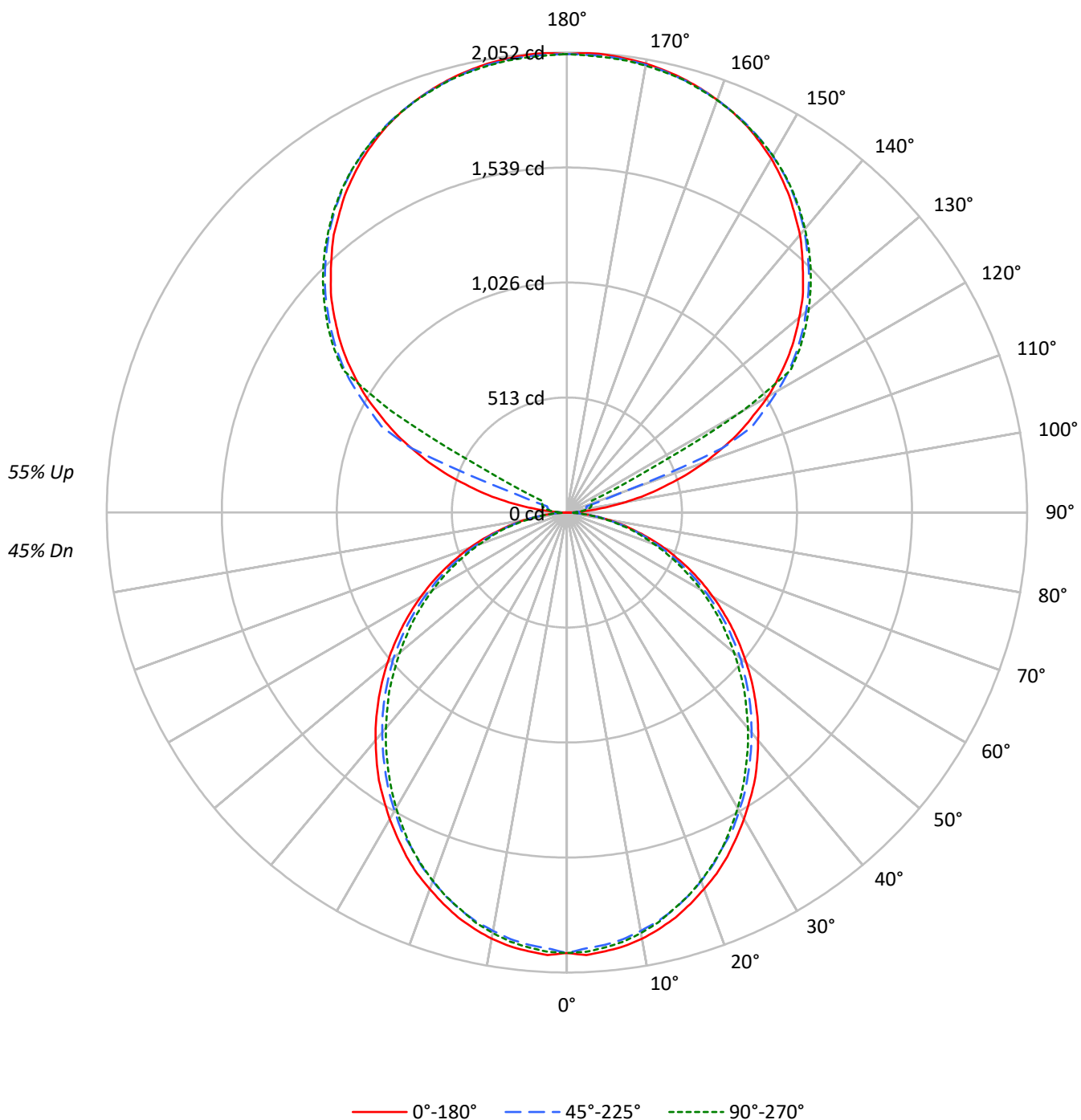
Lumens per Lamp: N/A
Luminaire Lumens: 10997.4 lumens
Efficiency: N/A
Efficacy: 114.7 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 1.99' x L: 2.3' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 95.9
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9789
Total Harmonic Distortion (THDi): 0.074
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P907951

CATALOG NUMBER: DFN2DIP-HX2F0-050D060US840-FLLONL

Luminous Intensity Polar Plot



TEST NUMBER: P907951

CATALOG NUMBER: DFN2DIP-HX2F0-050D060US840-FLLONL

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	81	81	81	66	66	66	52	52	52
1	97	92	89	85	89	85	82	79	71	68	66	58	56	55	46	45	44
2	88	81	75	70	81	74	69	65	62	58	55	51	48	46	40	39	37
3	80	71	64	58	73	65	59	54	55	50	46	45	42	39	36	33	31
4	74	63	55	49	67	58	51	46	49	43	39	40	36	33	32	29	27
5	67	56	48	42	62	52	45	39	43	38	34	36	32	29	29	26	24
6	62	50	42	36	57	46	39	34	39	34	30	32	28	25	26	23	21
7	57	45	37	32	53	42	35	30	35	30	26	30	25	22	24	21	18
8	53	41	33	28	49	38	31	26	32	27	23	27	23	20	22	19	17
9	50	37	30	25	45	35	28	24	30	24	21	25	21	18	20	17	15
10	46	34	27	22	42	32	25	21	27	22	19	23	19	16	19	16	14

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	4629	4629	4629
5°	4629	4553	4587
10°	4584	4481	4516
15°	4510	4396	4411
20°	4411	4283	4303
25°	4313	4150	4180
30°	4192	4025	4026
35°	4076	3879	3864
40°	3936	3732	3708
45°	3795	3583	3548
50°	3640	3427	3365
55°	3478	3247	3193
60°	3294	3035	2998
65°	3093	2812	2767
70°	2836	2543	2517
75°	2485	2219	2274
80°	2057	1806	1835
85°	1397	1133	1135

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 3795 cd/sqm

TEST NUMBER: P907951

CATALOG NUMBER: DFN2DIP-HX2F0-050D060US840-FLLONL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	184.9	1.7
10°-20°	520.3	4.7
20°-30°	764.6	7.0
30°-40°	888.1	8.1
40°-50°	887.0	8.1
50°-60°	773.4	7.0
60°-70°	571.7	5.2
70°-80°	323.5	2.9
80°-90°	89.0	0.8
90°-100°	67.4	0.6
100°-110°	251.4	2.3
110°-120°	666.7	6.1
120°-130°	1105.7	10.1
130°-140°	1174.5	10.7
140°-150°	1091.6	9.9
150°-160°	877.6	8.0
160°-170°	565.5	5.1
170°-180°	194.6	1.8
0°-30°	1469.8	13.4
0°-40°	2357.9	21.4
0°-60°	4018.3	36.5
0°-90°	5002.4	45.5
90°-120°	985.5	9.0
90°-150°	4357.2	39.6
90°-180°	5995.0	54.5
0°-180°	10997.4	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1965	1965	1965	1965	1965	
5°	1965	1957	1936	1952	1948	187
15°	1870	1859	1834	1842	1833	527
25°	1693	1678	1646	1649	1646	779
35°	1460	1442	1411	1400	1390	912
45°	1188	1175	1147	1126	1118	917
55°	899	888	865	843	833	804
65°	606	595	576	559	550	600
75°	317	314	304	293	297	339
85°	77	76	74	68	66	86
90°	1	18	30	37	40	10
95°	96	47	58	65	64	114
105°	450	494	90	106	112	481
115°	851	876	913	228	121	838
125°	1203	1222	1250	1261	1265	1073
135°	1489	1512	1526	1540	1537	1150
145°	1727	1725	1750	1761	1753	1080
155°	1901	1888	1906	1915	1903	876
165°	2004	1995	1999	2009	1999	566
175°	2049	2039	2042	2052	2038	195
180°	2045	2045	2045	2045	2045	

TEST NUMBER: P907951

CATALOG NUMBER: DFN2DIP-HX2F0-050D060US840-FLLONL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1964.7	1964.7	1964.7	1964.7	1964.7
2.5°	1976.1	1966.7	1945.9	1964.7	1961.2
5°	1964.7	1957.3	1936.4	1951.5	1947.9
7.5°	1951.5	1940.3	1919.5	1934.7	1930.9
10°	1930.9	1917.6	1895.0	1910.0	1904.4
12.5°	1902.4	1891.2	1868.6	1877.9	1874.1
15°	1870.3	1859.1	1834.4	1842.1	1832.6
17.5°	1830.6	1819.4	1794.7	1804.1	1794.7
20°	1787.2	1775.9	1749.5	1755.0	1747.7
22.5°	1743.8	1726.8	1702.1	1702.1	1698.3
25°	1692.7	1677.7	1645.6	1649.2	1645.6
27.5°	1636.0	1622.8	1598.3	1592.7	1583.3
30°	1579.4	1564.3	1536.0	1530.4	1522.8
32.5°	1518.9	1507.7	1477.4	1466.0	1458.4
35°	1460.4	1441.6	1411.3	1399.9	1390.5
37.5°	1394.2	1377.3	1347.0	1333.7	1324.3
40°	1326.4	1311.1	1280.8	1263.9	1256.4
42.5°	1260.2	1245.0	1214.9	1195.8	1184.6
45°	1188.4	1175.2	1146.7	1126.1	1118.4
47.5°	1118.4	1105.2	1075.0	1054.1	1042.9
50°	1044.7	1035.3	1008.9	982.4	972.9
52.5°	972.9	959.7	935.2	914.4	901.2
55°	899.4	888.0	865.3	842.6	833.2
57.5°	825.6	816.2	791.5	768.9	761.2
60°	751.8	744.5	718.0	697.1	691.6
62.5°	680.1	666.9	648.0	629.1	621.6
65°	606.5	595.1	576.2	559.3	549.8
67.5°	531.0	521.4	504.5	491.3	483.6
70°	461.0	453.4	436.4	423.1	415.8
72.5°	389.3	381.6	372.2	359.0	353.4
75°	317.3	313.7	304.1	292.9	296.7
77.5°	253.2	245.5	241.8	236.1	230.6
80°	189.0	187.0	183.2	177.6	173.8
82.5°	128.5	128.5	126.6	119.1	119.1
85°	77.4	75.5	73.7	68.0	66.1
87.5°	34.0	30.3	26.5	20.8	18.9
90°	1.4	17.8	29.5	37.1	39.9
92.5°	37.1	31.1	35.4	38.5	39.9
95°	96.1	47.3	57.7	65.2	63.6
97.5°	173.1	51.8	75.3	80.0	81.4
100°	262.0	59.2	84.3	96.1	99.1
102.5°	359.5	356.7	87.4	103.5	108.1
105°	449.8	494.2	90.3	106.4	112.5
107.5°	554.9	591.8	93.3	109.5	115.4
110°	655.6	686.5	259.0	111.1	116.8

TEST NUMBER: P907951

CATALOG NUMBER: DFN2DIP-HX2F0-050D060US840-FLLONL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	750.2	776.8	751.6	113.8	118.5
115°	850.8	876.0	913.0	227.9	121.4
117.5°	938.1	967.7	992.9	781.2	393.5
120°	1035.8	1057.9	1084.7	1102.4	902.6
122.5°	1118.5	1142.3	1171.9	1180.7	1182.4
125°	1203.0	1222.2	1250.3	1260.7	1265.1
127.5°	1279.9	1300.6	1322.9	1337.7	1339.1
130°	1352.4	1376.1	1392.3	1408.7	1407.2
132.5°	1426.4	1445.7	1461.9	1475.2	1473.8
135°	1488.6	1512.4	1525.5	1540.4	1537.4
137.5°	1553.6	1571.4	1586.3	1601.0	1596.7
140°	1617.2	1629.2	1645.4	1658.7	1651.3
142.5°	1670.6	1681.0	1700.2	1711.9	1704.6
145°	1726.9	1725.3	1750.4	1760.8	1753.4
147.5°	1775.5	1771.1	1796.2	1803.6	1797.9
150°	1823.0	1812.6	1836.3	1845.1	1837.8
152.5°	1862.9	1851.1	1873.2	1882.2	1871.8
155°	1901.4	1888.1	1905.9	1914.7	1902.9
157.5°	1932.5	1920.7	1934.0	1944.4	1932.5
160°	1959.1	1950.2	1959.1	1967.9	1957.6
162.5°	1982.7	1973.9	1981.3	1991.7	1978.3
165°	2003.5	1994.7	1999.0	2009.4	1999.0
167.5°	2019.7	2010.8	2015.4	2025.8	2012.4
170°	2033.2	2024.2	2027.2	2037.5	2024.2
172.5°	2041.9	2033.2	2036.1	2046.5	2033.2
175°	2049.3	2038.9	2041.9	2052.2	2037.5
177.5°	2052.2	2041.9	2043.5	2053.9	2040.5
180°	2044.9	2044.9	2044.9	2044.9	2044.9

TEST NUMBER: P907951

CATALOG NUMBER: DFN2DIP-HX2F0-050D060US840-FLONL

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	12.03	12.85	13.02	13.86	15.19	11.60	12.43	12.60	13.43	14.77
	3H	13.66	14.40	14.66	15.41	16.77	13.20	13.94	14.20	14.95	16.31
	4H	14.23	14.93	15.25	15.95	17.31	13.77	14.47	14.79	15.49	16.85
	6H	14.61	15.25	15.64	16.27	17.65	14.15	14.79	15.18	15.81	17.19
	8H	14.70	15.31	15.73	16.35	17.72	14.24	14.86	15.28	15.89	17.27
	12H	14.74	15.32	15.78	16.35	17.75	14.28	14.86	15.32	15.89	17.29
4H	2H	12.47	13.17	13.50	14.19	15.55	12.13	12.83	13.16	13.85	15.21
	3H	14.31	14.89	15.34	15.94	17.31	13.92	14.51	14.96	15.55	16.93
	4H	15.00	15.53	16.04	16.57	17.97	14.61	15.14	15.65	16.18	17.58
	6H	15.49	15.95	16.54	17.01	18.40	15.09	15.55	16.14	16.62	18.01
	8H	15.63	16.05	16.68	17.11	18.52	15.23	15.66	16.28	16.71	18.12
	12H	15.69	16.07	16.75	17.14	18.56	15.28	15.67	16.35	16.74	18.15
8H	4H	15.18	15.61	16.23	16.67	18.08	14.83	15.26	15.88	16.31	17.72
	6H	15.78	16.14	16.86	17.23	18.64	15.43	15.79	16.51	16.88	18.29
	8H	15.99	16.30	17.07	17.38	18.80	15.63	15.94	16.71	17.02	18.45
	12H	16.10	16.37	17.19	17.45	18.92	15.73	16.01	16.82	17.08	18.55
12H	4H	15.16	15.55	16.23	16.62	18.04	14.82	15.21	15.89	16.28	17.69
	6H	15.81	16.12	16.89	17.20	18.63	15.47	15.78	16.55	16.86	18.28
	8H	16.03	16.30	17.11	17.38	18.85	15.68	15.96	16.77	17.03	18.50