

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: P924451

Luminaire Tested: DFN2DIP-HX3F0-070D060US950-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P924451
REPORT IS A COMBINATION OF REPORTS P900771 AND P897645
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX3F0-070D060US950-FLLONL
Description: 3 foot, Hexagon Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

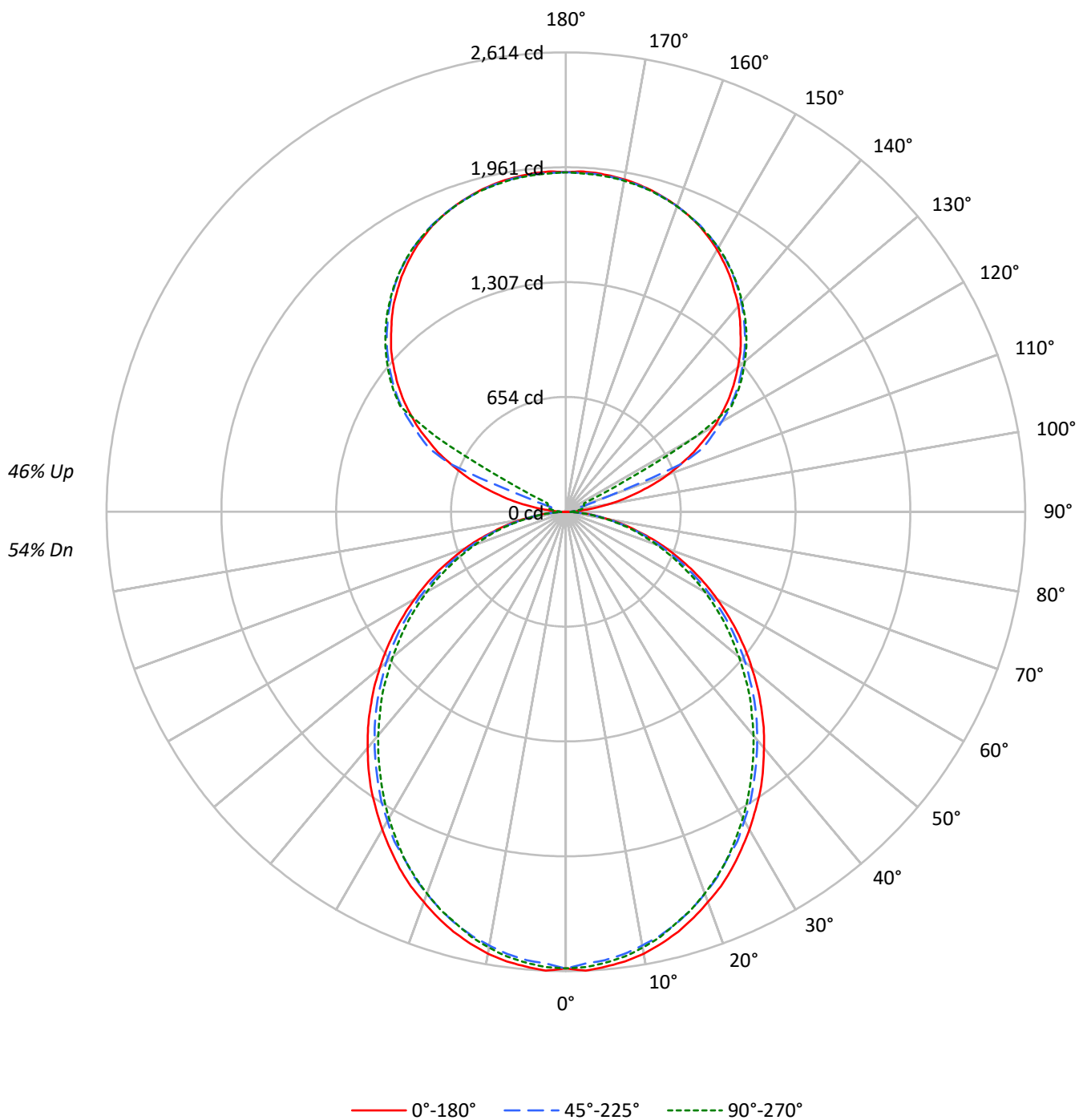
Lumens per Lamp: N/A
Luminaire Lumens: 12278.0 lumens
Efficiency: N/A
Efficacy: 107.2 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 2.84' x L: 3.28' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 114.5
Input Voltage (V):
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

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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
RCR																	
0	108	108	108	108	100	100	100	100	85	85	85		72	72	72		60
1	99	94	90	87	91	88	84	81	75	73	70		63	62	60		53
2	90	82	76	71	83	77	71	67	66	62	58		56	53	50		46
3	82	72	65	59	76	67	61	56	58	53	49		49	46	42		41
4	75	64	56	50	69	60	53	47	52	46	42		44	40	36		37
5	69	57	49	43	64	53	46	41	46	40	36		39	35	32		33
6	63	51	43	37	59	48	41	35	42	36	31		36	31	28		30
7	59	46	38	33	54	43	36	31	38	32	28		32	28	24		27
8	54	42	34	29	50	39	32	28	34	29	25		30	25	22		25
9	51	38	31	26	47	36	29	25	32	26	22		27	23	20		23
10	47	35	28	23	44	33	27	22	29	24	20		25	21	18		22

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3010	3010	3010
5°	3013	2966	2986
10°	2988	2924	2944
15°	2942	2874	2879
20°	2881	2805	2813
25°	2821	2723	2737
30°	2746	2646	2640
35°	2674	2556	2538
40°	2586	2465	2440
45°	2498	2374	2341
50°	2403	2278	2225
55°	2302	2167	2119
60°	2188	2036	1997
65°	2064	1900	1853
70°	1905	1733	1698
75°	1686	1533	1552
80°	1421	1279	1278
85°	1009	847	829

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
Vertical Angle: 45°
Luminance: 2498 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	244.6	2.0
10°-20°	688.1	5.6
20°-30°	1011.3	8.2
30°-40°	1174.5	9.6
40°-50°	1173.1	9.6
50°-60°	1022.9	8.3
60°-70°	756.1	6.2
70°-80°	427.8	3.5
80°-90°	116.3	0.9
90°-100°	63.7	0.5
100°-110°	237.5	1.9
110°-120°	629.8	5.1
120°-130°	1044.5	8.5
130°-140°	1109.5	9.0
140°-150°	1031.2	8.4
150°-160°	829.1	6.8
160°-170°	534.2	4.4
170°-180°	183.9	1.5
0°-30°	1943.9	15.8
0°-40°	3118.5	25.4
0°-60°	5314.4	43.3
0°-90°	6614.7	53.9
90°-120°	930.9	7.6
90°-150°	4116.2	33.5
90°-180°	5663.0	46.1
0°-180°	12278.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2598	2598	2598	2598	2598	
5°	2598	2589	2561	2581	2576	247
15°	2474	2459	2426	2436	2424	697
25°	2239	2219	2176	2181	2176	1030
35°	1932	1907	1866	1851	1839	1206
45°	1572	1554	1517	1489	1479	1213
55°	1189	1174	1144	1114	1102	1063
65°	802	787	762	740	727	793
75°	420	415	402	387	392	448
85°	102	100	98	90	88	114
90°	1	17	28	35	38	11
95°	91	45	54	62	60	108
105°	425	467	85	101	106	454
115°	804	828	862	215	115	791
125°	1136	1155	1181	1191	1195	1014
135°	1406	1429	1441	1455	1452	1086
145°	1631	1630	1654	1663	1656	1020
155°	1796	1784	1800	1809	1798	828
165°	1893	1884	1888	1898	1888	535
175°	1936	1926	1929	1939	1925	184
180°	1932	1932	1932	1932	1932	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2598.4	2598.4	2598.4	2598.4	2598.4
2.5°	2613.6	2601.1	2573.5	2598.4	2593.6
5°	2598.4	2588.7	2561.1	2581.0	2576.2
7.5°	2581.0	2566.1	2538.5	2558.7	2553.7
10°	2553.7	2536.1	2506.2	2526.1	2518.7
12.5°	2516.0	2501.2	2471.2	2483.6	2478.6
15°	2473.6	2458.7	2426.1	2436.2	2423.7
17.5°	2421.1	2406.3	2373.6	2386.1	2373.6
20°	2363.5	2348.7	2313.7	2321.2	2311.4
22.5°	2306.3	2283.8	2251.2	2251.2	2246.1
25°	2238.8	2218.8	2176.5	2181.2	2176.5
27.5°	2163.7	2146.2	2113.9	2106.4	2093.9
30°	2089.0	2068.7	2031.4	2024.0	2013.9
32.5°	2008.8	1994.1	1954.0	1938.9	1928.8
35°	1931.5	1906.6	1866.5	1851.4	1838.9
37.5°	1844.0	1821.5	1781.4	1763.9	1751.4
40°	1754.1	1734.0	1693.9	1671.7	1661.6
42.5°	1666.6	1646.5	1606.7	1581.5	1566.7
45°	1571.7	1554.3	1516.6	1489.3	1479.2
47.5°	1479.2	1461.7	1421.7	1394.1	1379.3
50°	1381.7	1369.2	1334.2	1299.3	1286.8
52.5°	1286.8	1269.3	1237.0	1209.4	1191.8
55°	1189.4	1174.4	1144.4	1114.5	1102.0
57.5°	1091.9	1079.5	1046.8	1016.9	1006.9
60°	994.4	984.5	949.6	922.0	914.6
62.5°	899.4	882.0	857.1	832.2	822.1
65°	802.2	787.0	762.2	739.6	727.1
67.5°	702.2	689.6	667.2	649.8	639.7
70°	609.7	599.7	577.1	559.6	549.8
72.5°	514.8	504.8	492.3	474.8	467.4
75°	419.7	414.9	402.1	387.3	392.4
77.5°	334.9	324.7	319.7	312.2	304.9
80°	249.9	247.4	242.3	234.9	229.8
82.5°	169.9	169.9	167.5	157.5	157.5
85°	102.4	100.0	97.6	89.9	87.5
87.5°	45.0	40.1	35.0	27.6	24.9
90°	1.3	16.8	27.9	35.0	37.7
92.5°	35.0	29.4	33.5	36.3	37.7
95°	90.8	44.6	54.5	61.6	60.1
97.5°	163.5	48.9	71.2	75.6	76.9
100°	247.5	55.9	79.7	90.8	93.6
102.5°	339.6	337.0	82.5	97.8	102.1
105°	424.9	466.9	85.3	100.6	106.3
107.5°	524.2	559.0	88.1	103.4	109.0
110°	619.3	648.5	244.7	104.9	110.4

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	708.7	733.8	710.1	107.5	111.9
115°	803.7	827.5	862.5	215.3	114.7
117.5°	886.2	914.1	938.0	738.0	371.8
120°	978.5	999.4	1024.7	1041.4	852.7
122.5°	1056.7	1079.1	1107.1	1115.4	1116.9
125°	1136.4	1154.6	1181.1	1191.0	1195.1
127.5°	1209.1	1228.7	1249.7	1263.7	1265.0
130°	1277.6	1300.0	1315.3	1330.7	1329.4
132.5°	1347.5	1365.7	1381.0	1393.6	1392.3
135°	1406.3	1428.7	1441.1	1455.2	1452.4
137.5°	1467.6	1484.4	1498.5	1512.5	1508.4
140°	1527.7	1539.1	1554.4	1566.9	1560.0
142.5°	1578.2	1588.0	1606.2	1617.2	1610.3
145°	1631.3	1629.8	1653.6	1663.4	1656.4
147.5°	1677.3	1673.1	1696.9	1703.8	1698.4
150°	1722.2	1712.3	1734.8	1743.1	1736.1
152.5°	1759.8	1748.7	1769.6	1778.1	1768.2
155°	1796.2	1783.7	1800.5	1808.8	1797.6
157.5°	1825.6	1814.4	1827.0	1836.8	1825.6
160°	1850.8	1842.3	1850.8	1859.1	1849.3
162.5°	1873.0	1864.7	1871.7	1881.5	1868.9
165°	1892.6	1884.3	1888.4	1898.3	1888.4
167.5°	1908.0	1899.6	1903.9	1913.7	1901.0
170°	1920.7	1912.2	1915.1	1924.8	1912.2
172.5°	1929.0	1920.7	1923.5	1933.3	1920.7
175°	1936.0	1926.1	1929.0	1938.7	1924.8
177.5°	1938.7	1929.0	1930.4	1940.2	1927.7
180°	1931.8	1931.8	1931.8	1931.8	1931.8

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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	11.41	12.31	12.33	13.25	14.46	10.98	11.88	11.90	12.82	14.03
	3H	13.06	13.87	14.00	14.82	16.06	12.59	13.40	13.53	14.35	15.59
	4H	13.65	14.41	14.60	15.36	16.61	13.18	13.94	14.13	14.90	16.14
	6H	14.04	14.75	15.00	15.71	16.97	13.57	14.27	14.53	15.24	16.50
	8H	14.15	14.81	15.11	15.79	17.05	13.68	14.34	14.64	15.32	16.58
	12H	14.19	14.83	15.17	15.80	17.08	13.72	14.35	14.69	15.33	16.61
4H	2H	11.87	12.63	12.83	13.59	14.84	11.53	12.29	12.48	13.25	14.49
	3H	13.73	14.37	14.70	15.35	16.61	13.34	13.98	14.31	14.96	16.22
	4H	14.44	15.02	15.42	16.00	17.29	14.04	14.62	15.01	15.60	16.88
	6H	14.95	15.45	15.94	16.45	17.74	14.55	15.05	15.53	16.05	17.33
	8H	15.10	15.57	16.09	16.56	17.86	14.69	15.16	15.68	16.15	17.45
	12H	15.17	15.59	16.18	16.60	17.91	14.75	15.17	15.76	16.19	17.49
8H	4H	14.64	15.11	15.63	16.10	17.40	14.28	14.75	15.27	15.74	17.04
	6H	15.26	15.65	16.27	16.69	17.98	14.90	15.29	15.92	16.33	17.62
	8H	15.48	15.82	16.50	16.84	18.16	15.11	15.45	16.13	16.48	17.79
	12H	15.61	15.91	16.63	16.92	18.28	15.23	15.53	16.25	16.54	17.91
12H	4H	14.62	15.05	15.63	16.06	17.36	14.27	14.70	15.28	15.71	17.01
	6H	15.29	15.63	16.31	16.66	17.97	14.94	15.28	15.96	16.31	17.62
	8H	15.53	15.83	16.55	16.85	18.21	15.17	15.47	16.20	16.49	17.85