

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: P924454

Luminaire Tested: DFN2DIP-HX3F0-070D070US950-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P924454
REPORT IS A COMBINATION OF REPORTS P899265 AND P896089
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX3F0-070D070US950-FLLFLL
Description: 3 foot, Hexagon Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

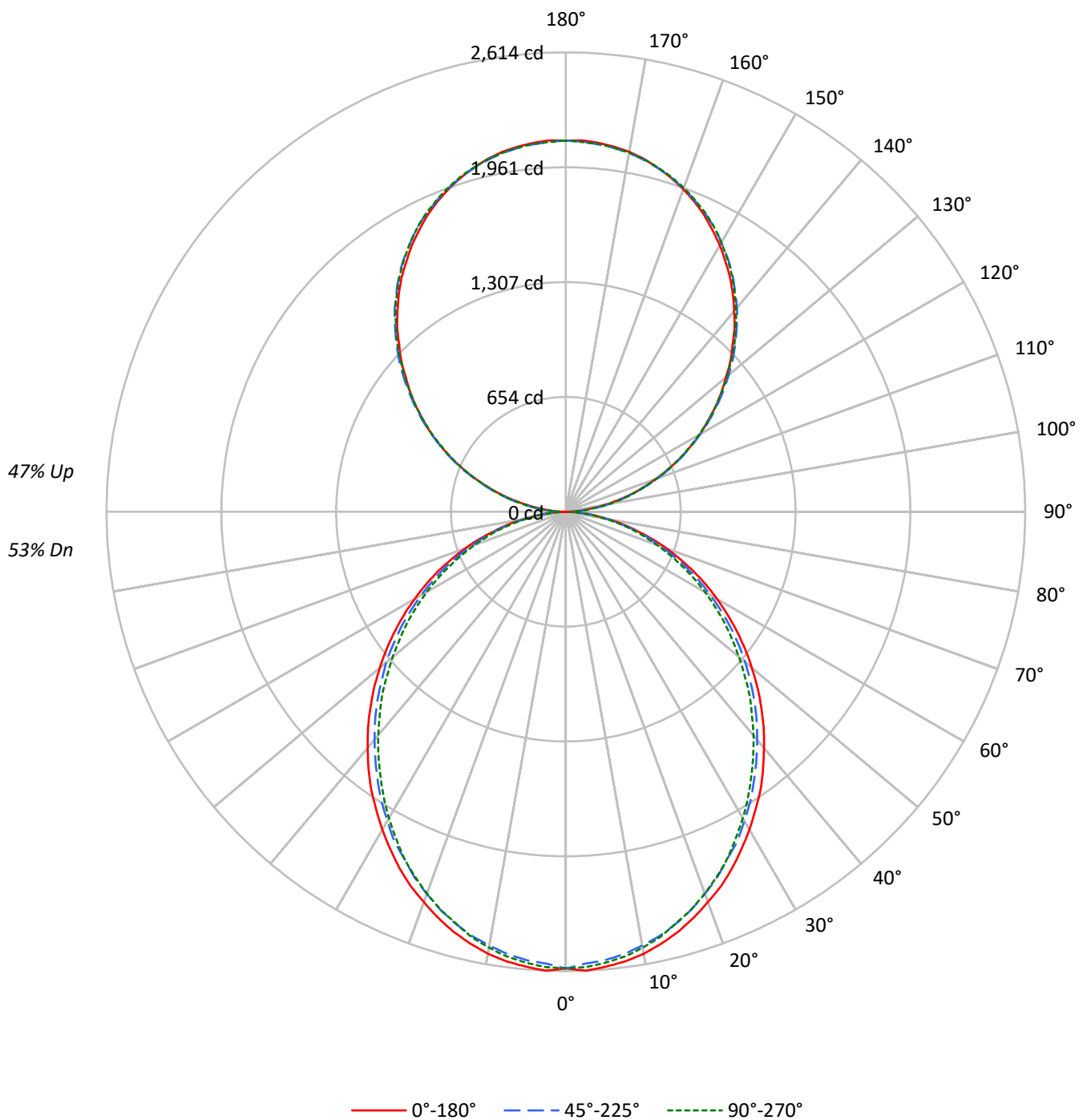
Lumens per Lamp: N/A
Luminaire Lumens: 12521.3 lumens
Efficiency: N/A
Efficacy: 102.1 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 2.84' x L: 3.28' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 122.6
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

TEST NUMBER: P924454

CATALOG NUMBER: DFN2DIP-HX3F0-070D070US950-FLLFLL

Luminous Intensity Polar Plot



TEST NUMBER: P924454

CATALOG NUMBER: DFN2DIP-HX3F0-070D070US950-FLLFL

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		71	71	71		59
1	98	94	90	87	91	87	84	81	74	72	70		63	61	59		52
2	90	82	76	71	83	76	71	66	65	61	58		55	52	50		46
3	82	72	65	59	75	67	61	55	58	53	49		49	45	42		41
4	75	64	56	50	69	60	52	47	51	46	41		43	39	36		36
5	69	57	49	43	63	53	46	40	46	40	36		39	35	31		33
6	63	51	43	37	58	48	40	35	41	36	31		35	31	27		30
7	59	46	38	33	54	43	36	31	37	32	28		32	28	24		27
8	54	42	34	29	50	39	32	27	34	29	24		29	25	22		25
9	51	38	31	26	47	36	29	24	31	26	22		27	23	19		23
10	47	35	28	23	44	33	26	22	29	23	20		25	21	18		21

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

TEST NUMBER: P924454

CATALOG NUMBER: DFN2DIP-HX3F0-070D070US950-FLLFLL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	244.6	2.0
10°-20°	688.1	5.5
20°-30°	1011.3	8.1
30°-40°	1174.5	9.4
40°-50°	1173.1	9.4
50°-60°	1022.9	8.2
60°-70°	756.1	6.0
70°-80°	427.8	3.4
80°-90°	118.9	0.9
90°-100°	130.7	1.0
100°-110°	415.3	3.3
110°-120°	710.6	5.7
120°-130°	934.6	7.5
130°-140°	1049.0	8.4
140°-150°	1028.7	8.2
150°-160°	862.9	6.9
160°-170°	572.3	4.6
170°-180°	200.0	1.6
0°-30°	1943.9	15.5
0°-40°	3118.5	24.9
0°-60°	5314.4	42.4
0°-90°	6617.3	52.8
90°-120°	1256.6	10.0
90°-150°	4268.9	34.1
90°-180°	5904.0	47.2
0°-180°	12521.3	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°	2	23	62	59	60	12
95°	93	111	114	114	111	103
105°	383	388	392	395	395	405
115°	713	723	720	718	713	705
125°	1037	1053	1048	1042	1040	927
135°	1342	1361	1365	1363	1358	1037
145°	1629	1642	1652	1654	1647	1018
155°	1862	1868	1873	1882	1876	857
165°	2026	2024	2024	2037	2028	572
175°	2108	2103	2099	2112	2101	200
180°	2112	2112	2112	2112	2112	

TEST NUMBER: P924454

CATALOG NUMBER: DFN2DIP-HX3F0-070D070US950-FLLFL

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°	1.9	22.9	62.4	58.6	60.5
92.5°	39.5	53.5	55.4	57.3	57.3
95°	92.9	110.8	114.0	114.0	110.8
97.5°	154.7	171.2	178.3	178.3	178.3
100°	226.0	240.7	245.8	245.8	243.8
102.5°	301.2	312.0	319.0	320.9	319.0
105°	383.3	388.4	392.2	395.4	395.4
107.5°	464.8	472.4	472.4	473.8	464.8
110°	543.8	554.0	554.0	554.0	548.8

TEST NUMBER: P924454

CATALOG NUMBER: DFN2DIP-HX3F0-070D070US950-FLLFLL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	629.1	639.9	638.0	632.9	629.1
115°	713.1	723.3	720.2	718.3	713.1
117.5°	796.5	810.5	801.6	796.5	791.4
120°	880.5	894.6	880.5	880.5	874.8
122.5°	957.0	974.8	965.9	960.8	957.0
125°	1037.2	1053.1	1048.1	1042.3	1040.4
127.5°	1115.5	1135.3	1128.3	1120.7	1115.5
130°	1188.8	1211.7	1208.5	1204.7	1197.7
132.5°	1270.9	1288.8	1290.0	1281.1	1276.0
135°	1341.6	1361.3	1365.2	1363.2	1358.1
137.5°	1420.5	1436.4	1439.6	1438.3	1430.7
140°	1490.0	1505.9	1514.8	1514.8	1507.8
142.5°	1561.2	1577.2	1582.2	1584.1	1577.2
145°	1628.8	1641.5	1651.7	1653.6	1646.6
147.5°	1689.2	1705.2	1712.8	1716.0	1709.0
150°	1751.6	1762.4	1769.5	1775.2	1769.5
152.5°	1807.0	1817.8	1826.7	1833.8	1826.7
155°	1862.4	1867.5	1873.3	1882.1	1876.4
157.5°	1910.2	1914.0	1917.2	1929.9	1921.0
160°	1952.8	1956.7	1958.6	1969.3	1961.7
162.5°	1992.3	1992.3	1994.2	2006.3	1997.4
165°	2026.0	2024.1	2024.1	2036.9	2027.9
167.5°	2056.6	2050.9	2050.9	2063.6	2054.7
170°	2079.5	2074.5	2072.6	2085.3	2074.5
172.5°	2095.5	2090.3	2088.4	2101.2	2090.3
175°	2108.1	2103.1	2099.3	2112.0	2101.2
177.5°	2115.2	2110.1	2106.2	2117.1	2106.2
180°	2112.0	2112.0	2112.0	2112.0	2112.0

TEST NUMBER: P924454

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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	11.32	12.20	12.25	13.15	14.38	10.89	11.77	11.82	12.72	13.95
	3H	12.97	13.77	13.91	14.73	15.98	12.50	13.30	13.44	14.26	15.51
	4H	13.55	14.31	14.51	15.27	16.53	13.08	13.84	14.04	14.80	16.06
	6H	13.95	14.64	14.92	15.61	16.89	13.48	14.17	14.45	15.14	16.42
	8H	14.05	14.71	15.03	15.70	16.97	13.58	14.24	14.56	15.23	16.50
	12H	14.10	14.73	15.08	15.71	17.00	13.62	14.25	14.60	15.23	16.53
4H	2H	11.78	12.53	12.74	13.49	14.76	11.43	12.19	12.40	13.15	14.41
	3H	13.64	14.27	14.61	15.26	16.54	13.25	13.88	14.22	14.87	16.15
	4H	14.35	14.92	15.33	15.91	17.21	13.94	14.52	14.93	15.51	16.81
	6H	14.86	15.35	15.85	16.36	17.66	14.45	14.95	15.44	15.96	17.25
	8H	15.00	15.46	16.00	16.47	17.78	14.59	15.06	15.59	16.06	17.37
	12H	15.07	15.49	16.09	16.51	17.83	14.66	15.07	15.67	16.09	17.41
8H	4H	14.54	15.00	15.54	16.01	17.32	14.18	14.65	15.18	15.65	16.96
	6H	15.16	15.55	16.19	16.59	17.90	14.81	15.19	15.83	16.23	17.54
	8H	15.38	15.72	16.41	16.75	18.08	15.02	15.35	16.05	16.39	17.71
	12H	15.51	15.81	16.54	16.83	18.21	15.13	15.43	16.16	16.45	17.83
12H	4H	14.53	14.95	15.54	15.97	17.28	14.18	14.60	15.19	15.62	16.93
	6H	15.19	15.53	16.22	16.56	17.89	14.84	15.18	15.87	16.21	17.54
	8H	15.43	15.73	16.46	16.75	18.13	15.08	15.37	16.11	16.40	17.77