

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: P916270

Luminaire Tested: DFN2DIP-HX3F0-070D070US930-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P916270
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-HX3F0-070D070US930-FLLFLL
Description: 3 foot, Hexagon Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

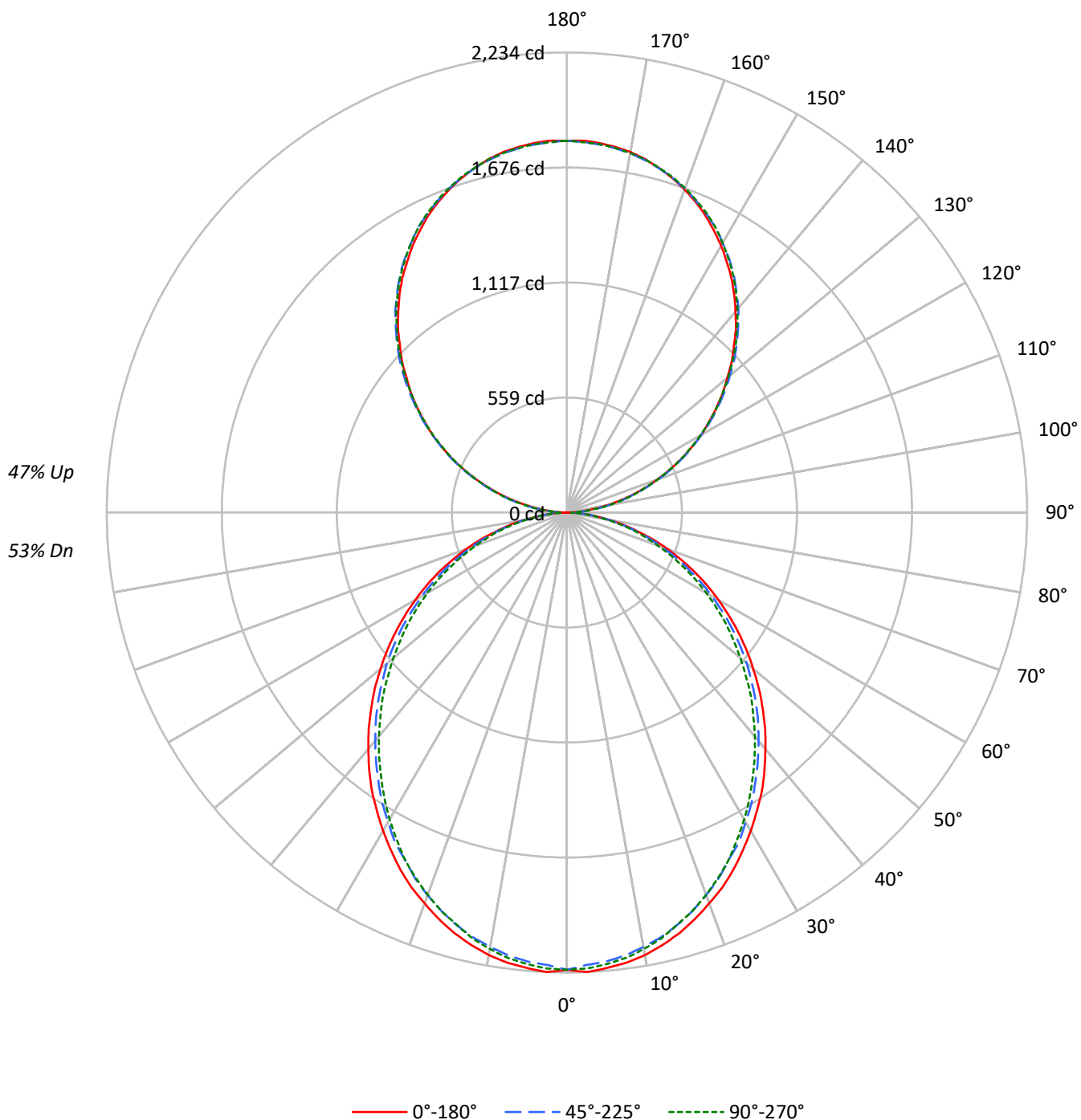
Lumens per Lamp: N/A
Luminaire Lumens: 10700.8 lumens
Efficiency: N/A
Efficacy: 87.3 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 2.84' x L: 3.28' x H: 0.1')
CIE Type: General Diffuse

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: P916270

CATALOG NUMBER: DFN2DIP-HX3F0-070D070US930-FLLFLL

Luminous Intensity Polar Plot



TEST NUMBER: P916270

CATALOG NUMBER: DFN2DIP-HX3F0-070D070US930-FLLFLL

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	108	108	108	108	100	100	100	100	85	85	85	71	71	71	59	59	59
1	98	94	90	87	91	87	84	81	74	72	70	63	61	59	52	51	50
2	90	82	76	71	83	76	71	66	65	61	58	55	52	50	46	44	42
3	82	72	65	59	75	67	61	55	58	53	49	49	45	42	41	38	36
4	75	64	56	50	69	60	52	47	51	46	41	43	39	36	36	33	31
5	69	57	49	43	63	53	46	40	46	40	36	39	35	31	33	29	27
6	63	51	43	37	58	48	40	35	41	36	31	35	31	27	30	26	24
7	59	46	38	33	54	43	36	31	37	32	28	32	28	24	27	24	21
8	54	42	34	29	50	39	32	27	34	29	24	29	25	22	25	21	19
9	51	38	31	26	47	36	29	24	31	26	22	27	23	19	23	20	17
10	47	35	28	23	44	33	26	22	29	23	20	25	21	18	21	18	15

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2572	2572	2572
5°	2575	2535	2552
10°	2553	2499	2516
15°	2515	2456	2461
20°	2463	2397	2404
25°	2411	2327	2339
30°	2347	2261	2256
35°	2285	2184	2169
40°	2210	2107	2086
45°	2135	2029	2000
50°	2053	1947	1902
55°	1967	1852	1811
60°	1870	1740	1707
65°	1764	1623	1583
70°	1628	1481	1451
75°	1441	1310	1326
80°	1215	1093	1092
85°	862	724	709

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2135 cd/sqm

TEST NUMBER: P916270

CATALOG NUMBER: DFN2DIP-HX3F0-070D070US930-FLLFLL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	209.0	2.0
10°-20°	588.1	5.5
20°-30°	864.2	8.1
30°-40°	1003.7	9.4
40°-50°	1002.5	9.4
50°-60°	874.2	8.2
60°-70°	646.2	6.0
70°-80°	365.6	3.4
80°-90°	101.6	0.9
90°-100°	111.7	1.0
100°-110°	354.9	3.3
110°-120°	607.3	5.7
120°-130°	798.7	7.5
130°-140°	896.5	8.4
140°-150°	879.1	8.2
150°-160°	737.5	6.9
160°-170°	489.1	4.6
170°-180°	170.9	1.6
0°-30°	1661.3	15.5
0°-40°	2665.1	24.9
0°-60°	4541.7	42.4
0°-90°	5655.2	52.8
90°-120°	1073.9	10.0
90°-150°	3648.2	34.1
90°-180°	5046.0	47.2
0°-180°	10700.8	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2221	2221	2221	2221	2221	
5°	2221	2212	2189	2206	2202	211
15°	2114	2101	2073	2082	2071	595
25°	1913	1896	1860	1864	1860	880
35°	1651	1629	1595	1582	1572	1031
45°	1343	1328	1296	1273	1264	1037
55°	1016	1004	978	952	942	909
65°	686	673	651	632	621	678
75°	359	355	344	331	335	383
85°	88	85	83	77	75	98
90°	2	20	53	50	52	10
95°	79	95	97	97	95	88
105°	328	332	335	338	338	346
115°	609	618	616	614	609	603
125°	886	900	896	891	889	792
135°	1147	1163	1167	1165	1161	886
145°	1392	1403	1412	1413	1407	870
155°	1592	1596	1601	1608	1604	733
165°	1731	1730	1730	1741	1733	488
175°	1802	1797	1794	1805	1796	171
180°	1805	1805	1805	1805	1805	

TEST NUMBER: P916270

CATALOG NUMBER: DFN2DIP-HX3F0-070D070US930-FLLFLL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2220.6	2220.6	2220.6	2220.6	2220.6
2.5°	2233.6	2222.9	2199.3	2220.6	2216.6
5°	2220.6	2212.3	2188.7	2205.7	2201.6
7.5°	2205.7	2193.0	2169.4	2186.7	2182.4
10°	2182.4	2167.4	2141.8	2158.8	2152.5
12.5°	2150.2	2137.5	2111.9	2122.5	2118.2
15°	2114.0	2101.3	2073.4	2082.0	2071.3
17.5°	2069.1	2056.4	2028.5	2039.2	2028.5
20°	2019.9	2007.3	1977.3	1983.7	1975.3
22.5°	1971.0	1951.7	1923.9	1923.9	1919.5
25°	1913.3	1896.2	1860.0	1864.1	1860.0
27.5°	1849.1	1834.2	1806.5	1800.2	1789.5
30°	1785.3	1768.0	1736.1	1729.7	1721.1
32.5°	1716.8	1704.1	1669.9	1657.0	1648.4
35°	1650.7	1629.4	1595.1	1582.2	1571.6
37.5°	1575.9	1556.6	1522.4	1507.5	1496.8
40°	1499.1	1481.9	1447.6	1428.6	1420.0
42.5°	1424.3	1407.1	1373.1	1351.6	1338.9
45°	1343.2	1328.3	1296.1	1272.8	1264.1
47.5°	1264.1	1249.2	1215.0	1191.4	1178.8
50°	1180.8	1170.1	1140.2	1110.4	1099.7
52.5°	1099.7	1084.8	1057.1	1033.6	1018.6
55°	1016.5	1003.6	978.0	952.4	941.8
57.5°	933.2	922.5	894.6	869.0	860.5
60°	849.8	841.4	811.5	788.0	781.6
62.5°	768.7	753.7	732.5	711.2	702.5
65°	685.6	672.6	651.3	632.1	621.4
67.5°	600.1	589.3	570.2	555.3	546.7
70°	521.1	512.5	493.2	478.3	469.9
72.5°	439.9	431.4	420.7	405.8	399.4
75°	358.6	354.6	343.6	331.0	335.3
77.5°	286.2	277.5	273.2	266.8	260.6
80°	213.6	211.4	207.1	200.7	196.4
82.5°	145.2	145.2	143.2	134.6	134.6
85°	87.5	85.4	83.4	76.8	74.8
87.5°	38.5	34.2	29.9	23.6	21.3
90°	1.6	19.6	53.3	50.1	51.7
92.5°	33.8	45.7	47.4	49.0	49.0
95°	79.4	94.7	97.4	97.4	94.7
97.5°	132.2	146.3	152.4	152.4	152.4
100°	193.1	205.7	210.0	210.0	208.4
102.5°	257.4	266.6	272.6	274.3	272.6
105°	327.6	331.9	335.2	337.9	337.9
107.5°	397.2	403.7	403.7	404.9	397.2
110°	464.7	473.4	473.4	473.4	469.0



TEST NUMBER: P916270

CATALOG NUMBER: DFN2DIP-HX3F0-070D070US930-FLLFL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	537.6	546.9	545.3	540.9	537.6
115°	609.4	618.2	615.5	613.8	609.4
117.5°	680.7	692.7	685.1	680.7	676.4
120°	752.5	764.5	752.5	752.5	747.6
122.5°	817.8	833.1	825.5	821.1	817.8
125°	886.4	900.0	895.7	890.8	889.2
127.5°	953.3	970.2	964.3	957.7	953.3
130°	1015.9	1035.5	1032.8	1029.6	1023.5
132.5°	1086.1	1101.4	1102.4	1094.9	1090.5
135°	1146.6	1163.3	1166.7	1165.0	1160.7
137.5°	1214.0	1227.6	1230.3	1229.2	1222.7
140°	1273.3	1286.9	1294.5	1294.5	1288.6
142.5°	1334.2	1347.9	1352.2	1353.8	1347.9
145°	1392.0	1402.8	1411.5	1413.2	1407.2
147.5°	1443.6	1457.3	1463.8	1466.5	1460.5
150°	1497.0	1506.2	1512.2	1517.1	1512.2
152.5°	1544.3	1553.6	1561.1	1567.2	1561.1
155°	1591.6	1595.9	1600.9	1608.5	1603.6
157.5°	1632.5	1635.7	1638.4	1649.3	1641.7
160°	1668.9	1672.2	1673.8	1683.0	1676.5
162.5°	1702.7	1702.7	1704.3	1714.6	1707.0
165°	1731.4	1729.8	1729.8	1740.7	1733.1
167.5°	1757.6	1752.7	1752.7	1763.6	1756.0
170°	1777.2	1772.9	1771.2	1782.1	1772.9
172.5°	1790.8	1786.4	1784.8	1795.7	1786.4
175°	1801.6	1797.3	1794.1	1804.9	1795.7
177.5°	1807.7	1803.3	1800.0	1809.3	1800.0
180°	1804.9	1804.9	1804.9	1804.9	1804.9

TEST NUMBER: P916270

CATALOG NUMBER: DFN2DIP-HX3F0-070D070US930-FLLFLL

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	10.77	11.66	11.70	12.61	13.84	10.34	11.23	11.27	12.18	13.41
	3H	12.42	13.22	13.37	14.18	15.43	11.95	12.75	12.90	13.71	14.96
	4H	13.01	13.76	13.97	14.72	15.99	12.54	13.29	13.50	14.26	15.52
	6H	13.40	14.10	14.37	15.07	16.34	12.93	13.63	13.90	14.60	15.87
	8H	13.51	14.17	14.48	15.15	16.42	13.04	13.70	14.01	14.68	15.96
	12H	13.55	14.18	14.53	15.16	16.46	13.08	13.71	14.06	14.69	15.98
4H	2H	11.23	11.98	12.19	12.95	14.21	10.89	11.64	11.85	12.61	13.87
	3H	13.09	13.72	14.06	14.71	15.99	12.70	13.33	13.67	14.32	15.60
	4H	13.80	14.37	14.78	15.36	16.66	13.40	13.97	14.38	14.96	16.26
	6H	14.31	14.80	15.30	15.81	17.11	13.90	14.40	14.90	15.41	16.71
	8H	14.46	14.92	15.45	15.92	17.24	14.05	14.51	15.04	15.51	16.83
	12H	14.53	14.94	15.54	15.96	17.28	14.11	14.53	15.13	15.55	16.87
8H	4H	14.00	14.46	14.99	15.46	16.77	13.64	14.10	14.63	15.10	16.42
	6H	14.62	15.00	15.64	16.05	17.36	14.26	14.64	15.28	15.69	17.00
	8H	14.83	15.17	15.86	16.20	17.53	14.47	14.81	15.50	15.84	17.17
	12H	14.96	15.26	16.00	16.29	17.66	14.58	14.88	15.62	15.91	17.28
12H	4H	13.98	14.40	15.00	15.42	16.74	13.63	14.05	14.65	15.07	16.39
	6H	14.65	14.99	15.68	16.02	17.35	14.30	14.64	15.33	15.67	17.00
	8H	14.88	15.18	15.92	16.21	17.58	14.53	14.83	15.56	15.85	17.23