

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: P916229

Luminaire Tested: DFN2DIP-HX3F0-050D090US930-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P916229
REPORT IS A COMBINATION OF REPORTS P899290 AND P896089
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX3F0-050D090US930-RLLFLL
Description: 3 foot, Hexagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

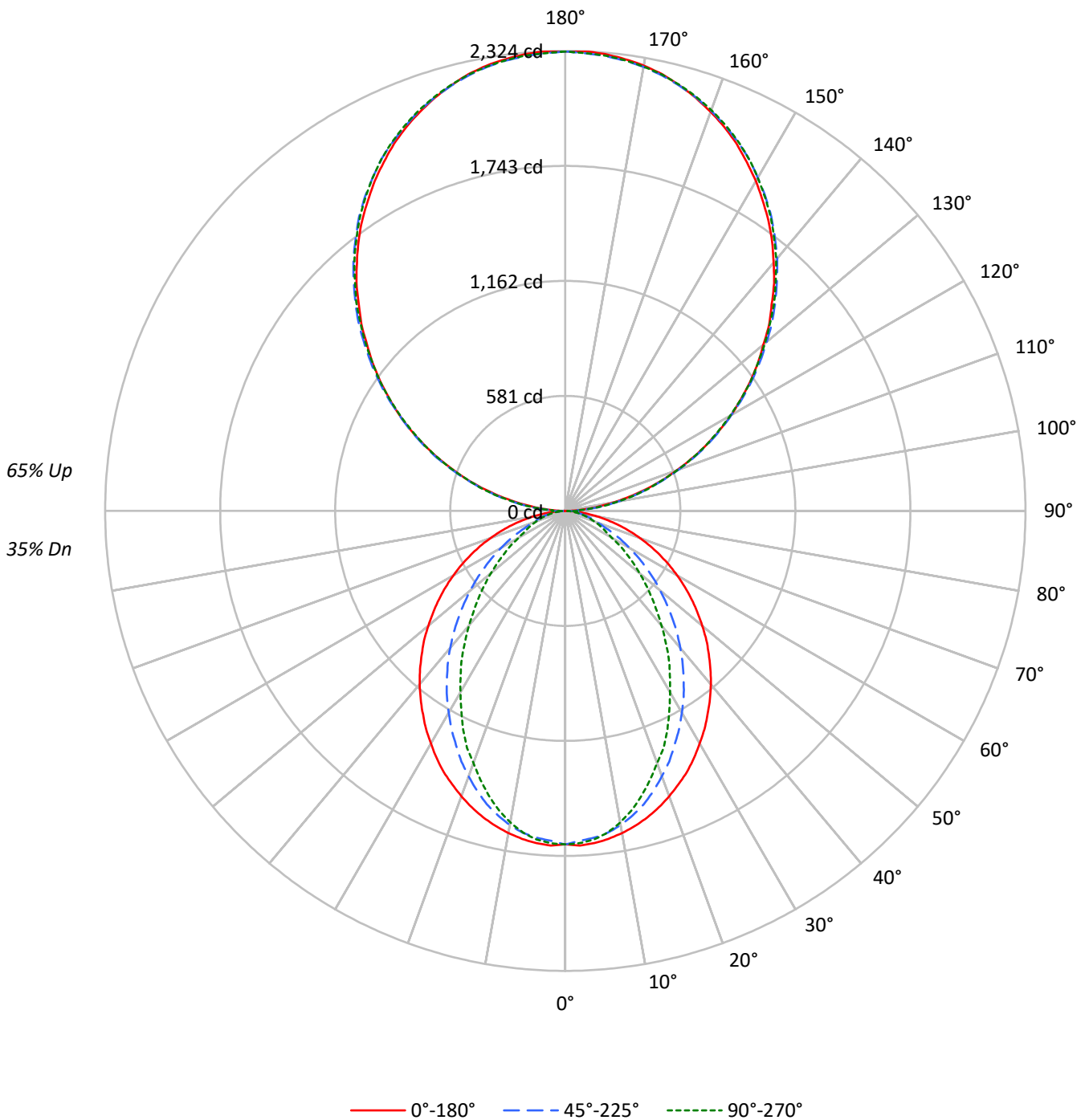
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 9958.8 lumens
Efficiency: N/A
Efficacy: 85.9 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: Semi-Indirect

Input Watts (W): 115.9
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

TEST NUMBER: P916229
CATALOG NUMBER: DFN2DIP-HX3F0-050D090US930-RLFL

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			0	
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0
RCR																					
0	104	104	104	104	94	94	94	94	75	75	75	58	58	58	42	42	42	35			35
1	95	91	87	84	85	82	79	76	66	64	62	51	50	49	38	37	36	30			30
2	86	79	74	69	78	72	67	63	58	55	52	45	43	41	34	32	31	26			26
3	79	70	63	58	71	64	58	53	52	47	44	40	38	35	30	28	27	22			22
4	72	62	55	49	65	57	50	45	46	41	38	36	33	30	27	25	23	19			19
5	67	55	48	42	60	51	44	39	41	36	33	33	29	26	25	22	21	17			17
6	61	50	42	37	55	45	39	34	37	32	29	30	26	23	22	20	18	15			15
7	57	45	37	32	51	41	34	30	34	29	25	27	23	21	21	18	16	14			14
8	53	41	33	28	48	37	31	26	31	26	22	25	21	19	19	16	15	12			12
9	49	37	30	25	44	34	28	23	28	23	20	23	19	17	17	15	13	11			11
10	46	34	27	23	41	31	25	21	26	21	18	21	18	15	16	14	12	10			10

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1952	1952	1952
5°	1954	1919	1932
10°	1934	1880	1868
15°	1906	1817	1770
20°	1870	1730	1650
25°	1833	1633	1534
30°	1784	1533	1387
35°	1735	1426	1258
40°	1686	1316	1111
45°	1629	1193	977
50°	1570	1070	847
55°	1508	938	721
60°	1436	801	593
65°	1353	661	532
70°	1253	531	480
75°	1127	465	434
80°	945	386	373
85°	645	251	274

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°
 Vertical Angle: 90°
 Luminance: 2182 cd/sqm



TEST NUMBER: P916229

CATALOG NUMBER: DFN2DIP-HX3F0-050D090US930-RLFL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	157.9	1.6
10°-20°	433.5	4.4
20°-30°	608.6	6.1
30°-40°	663.4	6.7
40°-50°	609.7	6.1
50°-60°	478.8	4.8
60°-70°	311.7	3.1
70°-80°	160.4	1.6
80°-90°	47.5	0.5
90°-100°	143.6	1.4
100°-110°	456.3	4.6
110°-120°	780.8	7.8
120°-130°	1026.9	10.3
130°-140°	1152.6	11.6
140°-150°	1130.3	11.3
150°-160°	948.2	9.5
160°-170°	628.8	6.3
170°-180°	219.8	2.2
0°-30°	1200.0	12.0
0°-40°	1863.4	18.7
0°-60°	2951.9	29.6
0°-90°	3471.6	34.9
90°-120°	1380.7	13.9
90°-150°	4690.5	47.1
90°-180°	6487.0	65.1
0°-180°	9958.8	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1685	1685	1685	1685	1685	
5°	1685	1677	1657	1671	1667	160
15°	1602	1586	1534	1505	1490	452
25°	1455	1406	1305	1243	1220	669
35°	1253	1176	1042	945	912	784
45°	1025	922	762	654	617	791
55°	779	660	496	404	375	696
65°	526	402	265	214	209	521
75°	280	174	122	111	110	297
85°	66	34	29	29	29	75
90°	2	25	69	64	66	10
95°	102	122	125	125	122	114
105°	421	427	431	434	434	444
115°	784	795	791	789	784	775
125°	1140	1157	1152	1145	1143	1018
135°	1474	1496	1500	1498	1492	1139
145°	1790	1804	1815	1817	1809	1118
155°	2046	2052	2058	2068	2062	942
165°	2226	2224	2224	2238	2228	628
175°	2316	2311	2307	2321	2309	220
180°	2321	2321	2321	2321	2321	



TEST NUMBER: P916229

CATALOG NUMBER: DFN2DIP-HX3F0-050D090US930-RLFL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1684.8	1684.8	1684.8	1684.8	1684.8
2.5°	1692.4	1684.8	1668.0	1683.3	1680.2
5°	1684.8	1677.2	1657.3	1671.0	1666.6
7.5°	1671.0	1662.0	1640.6	1646.7	1639.0
10°	1652.8	1642.1	1611.7	1607.0	1597.9
12.5°	1629.9	1616.2	1575.0	1565.9	1549.1
15°	1602.5	1585.7	1533.9	1505.0	1489.7
17.5°	1570.4	1546.1	1482.0	1448.5	1424.0
20°	1533.9	1503.3	1427.1	1389.1	1355.4
22.5°	1494.3	1459.1	1370.7	1318.9	1296.1
25°	1454.6	1405.7	1305.1	1242.7	1219.7
27.5°	1407.4	1355.4	1244.1	1172.5	1137.4
30°	1357.1	1299.0	1177.0	1099.3	1058.1
32.5°	1308.2	1238.0	1113.1	1021.6	983.4
35°	1253.4	1175.6	1041.5	945.3	911.7
37.5°	1200.0	1116.1	974.4	869.0	831.0
40°	1143.5	1052.1	904.1	795.9	756.3
42.5°	1085.7	988.1	834.1	721.1	683.1
45°	1024.7	922.4	762.4	654.0	617.4
47.5°	966.7	858.5	693.8	585.5	552.0
50°	902.7	794.4	626.7	521.4	489.5
52.5°	840.1	725.7	562.6	462.0	433.1
55°	779.1	660.1	495.5	404.1	375.1
57.5°	716.6	594.7	436.1	350.7	326.3
60°	652.6	530.6	373.5	295.9	271.4
62.5°	590.1	468.1	320.2	247.0	234.9
65°	526.0	402.5	265.3	213.5	208.9
67.5°	465.0	341.5	213.5	187.5	183.0
70°	401.0	282.1	176.8	161.6	155.5
72.5°	340.1	227.1	147.9	135.7	132.6
75°	280.5	173.7	122.0	111.3	109.8
77.5°	221.1	123.4	96.1	89.9	86.8
80°	166.2	88.5	73.1	67.1	67.1
82.5°	115.9	59.5	50.3	47.2	47.2
85°	65.5	33.5	28.9	28.9	28.9
87.5°	24.5	12.1	12.1	10.7	10.7
90°	2.1	25.2	68.6	64.3	66.4
92.5°	43.4	58.8	60.9	62.9	62.9
95°	102.2	121.7	125.2	125.2	121.7
97.5°	170.0	188.2	195.9	195.9	195.9
100°	248.3	264.5	270.0	270.0	268.0
102.5°	330.9	342.8	350.5	352.6	350.5
105°	421.2	426.7	431.0	434.5	434.5
107.5°	510.7	519.1	519.1	520.5	510.7
110°	597.5	608.7	608.7	608.7	603.1



TEST NUMBER: P916229

CATALOG NUMBER: DFN2DIP-HX3F0-050D090US930-RLFL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	691.2	703.1	701.0	695.4	691.2
115°	783.6	794.8	791.2	789.2	783.6
117.5°	875.2	890.6	880.8	875.2	869.6
120°	967.6	982.9	967.6	967.6	961.2
122.5°	1051.5	1071.1	1061.4	1055.7	1051.5
125°	1139.7	1157.2	1151.6	1145.2	1143.2
127.5°	1225.7	1247.4	1239.7	1231.3	1225.7
130°	1306.2	1331.4	1327.9	1323.6	1316.0
132.5°	1396.4	1416.0	1417.4	1407.6	1402.1
135°	1474.1	1495.7	1500.0	1497.9	1492.3
137.5°	1560.8	1578.3	1581.8	1580.5	1572.1
140°	1637.1	1654.6	1664.3	1664.3	1656.7
142.5°	1715.5	1732.9	1738.5	1740.7	1732.9
145°	1789.7	1803.6	1814.8	1816.9	1809.2
147.5°	1856.1	1873.6	1882.0	1885.5	1877.8
150°	1924.7	1936.6	1944.2	1950.5	1944.2
152.5°	1985.5	1997.4	2007.2	2014.9	2007.2
155°	2046.4	2051.9	2058.3	2068.1	2061.8
157.5°	2098.8	2103.1	2106.6	2120.5	2110.7
160°	2145.7	2149.9	2152.1	2163.9	2155.5
162.5°	2189.1	2189.1	2191.2	2204.5	2194.7
165°	2226.2	2224.1	2224.1	2238.1	2228.3
167.5°	2259.8	2253.5	2253.5	2267.4	2257.6
170°	2285.0	2279.3	2277.3	2291.2	2279.3
172.5°	2302.4	2296.9	2294.7	2308.8	2296.9
175°	2316.4	2310.8	2306.6	2320.7	2308.8
177.5°	2324.1	2318.5	2314.3	2326.2	2314.3
180°	2320.7	2320.7	2320.7	2320.7	2320.7



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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	7.82	8.54	8.90	9.62	11.09	3.80	4.52	4.88	5.59	7.07
	3H	9.48	10.12	10.57	11.21	12.70	4.97	5.62	6.06	6.70	8.20
	4H	10.08	10.69	11.18	11.78	13.28	5.41	6.02	6.52	7.11	8.61
	6H	10.49	11.05	11.60	12.14	13.65	5.72	6.29	6.84	7.38	8.89
	8H	10.61	11.14	11.72	12.25	13.75	5.81	6.34	6.92	7.45	8.95
	12H	10.66	11.17	11.78	12.27	13.80	5.85	6.35	6.97	7.46	8.98
4H	2H	7.82	8.43	8.93	9.52	11.02	4.37	4.98	5.48	6.07	7.57
	3H	9.63	10.14	10.75	11.26	12.77	5.71	6.22	6.82	7.33	8.84
	4H	10.32	10.78	11.43	11.89	13.42	6.25	6.71	7.37	7.82	9.35
	6H	10.82	11.22	11.94	12.34	13.87	6.66	7.05	7.78	8.18	9.71
	8H	10.99	11.36	12.11	12.48	14.02	6.78	7.15	7.91	8.27	9.81
	12H	11.07	11.41	12.21	12.54	14.08	6.84	7.17	7.98	8.31	9.85
8H	4H	10.27	10.65	11.40	11.77	13.31	6.52	6.89	7.64	8.01	9.55
	6H	10.83	11.13	11.97	12.30	13.83	7.02	7.33	8.17	8.49	10.03
	8H	11.04	11.31	12.19	12.45	14.01	7.21	7.48	8.36	8.62	10.18
	12H	11.17	11.40	12.32	12.54	14.13	7.32	7.56	8.48	8.69	10.29
12H	4H	10.22	10.56	11.36	11.69	13.23	6.51	6.85	7.66	7.98	9.53
	6H	10.80	11.07	11.95	12.21	13.77	7.07	7.34	8.22	8.48	10.04
	8H	11.01	11.25	12.17	12.39	13.98	7.27	7.51	8.43	8.65	10.24