

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: P907992

Luminaire Tested: DFN2DIP-HX3F0-030D070US840-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P907992
REPORT IS A COMBINATION OF REPORTS P899258 AND P896089
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX3F0-030D070US840-RLLFLL
Description: 3 foot, Hexagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

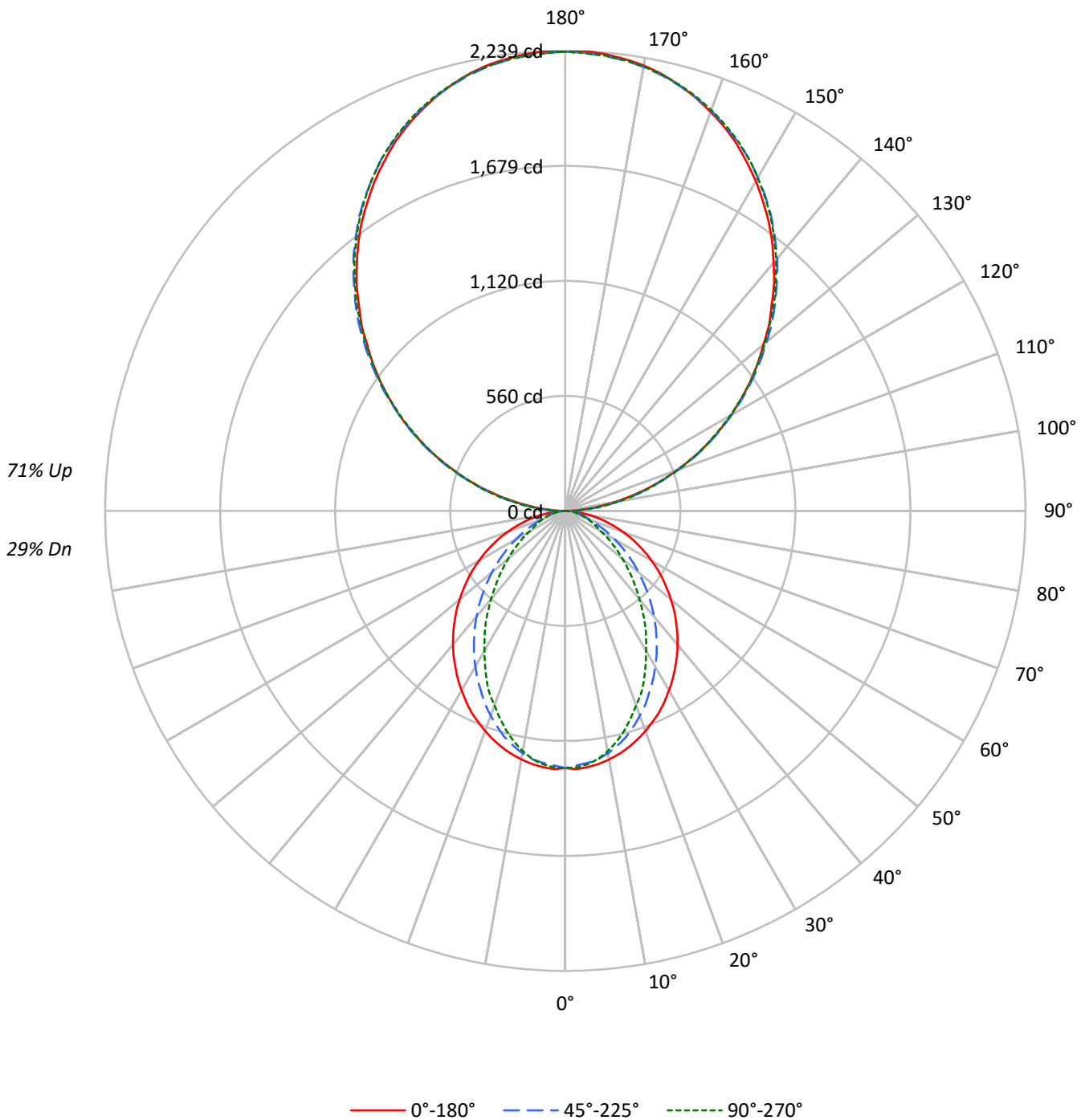
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 8831.2 lumens
Efficiency: N/A
Efficacy: 114.5 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): 77.1
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.983
Total Harmonic Distortion (THDi): 0.073
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P907992
CATALOG NUMBER: DFN2DIP-HX3F0-030D070US840-RLLFLL

Luminous Intensity Polar Plot





TEST NUMBER: P907992

CATALOG NUMBER: DFN2DIP-HX3F0-030D070US840-RLLFLL

COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20				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	102	102	102	102	92	92	92	92	72	72	72	54	54	54	37	37	37	29				29
1	93	89	86	82	84	80	77	74	63	61	59	48	46	45	33	32	32	25				25
2	85	78	72	68	76	70	66	61	56	52	49	42	40	38	29	28	27	22				22
3	78	69	62	57	70	62	56	52	49	45	42	37	35	32	26	25	23	19				19
4	71	61	54	48	64	55	49	44	44	39	36	33	30	28	24	22	20	16				16
5	65	54	47	41	59	49	43	38	39	35	31	30	27	24	21	19	18	14				14
6	60	49	41	36	54	44	38	33	35	31	27	27	24	21	20	17	16	13				13
7	56	44	36	31	50	40	33	29	32	27	24	25	21	19	18	16	14	11				11
8	52	40	33	27	46	36	30	25	29	24	21	23	19	17	16	14	13	10				10
9	48	36	29	24	43	33	27	23	27	22	19	21	18	15	15	13	12	9				9
10	45	33	26	22	40	30	24	20	25	20	17	19	16	14	14	12	11	8				8

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1450	1450	1450
5°	1452	1426	1436
10°	1437	1397	1388
15°	1417	1350	1315
20°	1390	1286	1226
25°	1362	1213	1140
30°	1326	1139	1031
35°	1290	1060	935
40°	1253	978	826
45°	1211	887	726
50°	1167	795	629
55°	1120	697	536
60°	1067	595	441
65°	1006	491	395
70°	931	395	357
75°	837	346	323
80°	702	287	277
85°	480	187	204

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°
 Vertical Angle: 90°
 Luminance: 2103 cd/sqm



TEST NUMBER: P907992

CATALOG NUMBER: DFN2DIP-HX3F0-030D070US840-RLFL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	117.4	1.3
10°-20°	322.1	3.6
20°-30°	452.3	5.1
30°-40°	493.0	5.6
40°-50°	453.1	5.1
50°-60°	355.9	4.0
60°-70°	231.6	2.6
70°-80°	119.2	1.4
80°-90°	36.8	0.4
90°-100°	138.3	1.6
100°-110°	439.6	5.0
110°-120°	752.2	8.5
120°-130°	989.3	11.2
130°-140°	1110.5	12.6
140°-150°	1088.9	12.3
150°-160°	913.5	10.3
160°-170°	605.8	6.9
170°-180°	211.7	2.4
0°-30°	891.8	10.1
0°-40°	1384.8	15.7
0°-60°	2193.8	24.8
0°-90°	2581.5	29.2
90°-120°	1330.1	15.1
90°-150°	4518.8	51.2
90°-180°	6250.0	70.8
0°-180°	8831.2	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1252	1252	1252	1252	1252	
5°	1252	1246	1232	1242	1238	119
15°	1191	1178	1140	1118	1107	336
25°	1081	1045	970	924	906	497
35°	932	874	774	703	678	583
45°	762	686	567	486	459	588
55°	579	491	368	300	279	517
65°	391	299	197	159	155	388
75°	208	129	91	83	82	220
85°	49	25	22	22	22	56
90°	2	24	66	62	64	9
95°	98	117	121	121	117	109
105°	406	411	415	419	419	428
115°	755	766	762	760	755	747
125°	1098	1115	1109	1103	1101	981
135°	1420	1441	1445	1443	1438	1098
145°	1724	1738	1748	1750	1743	1077
155°	1972	1977	1983	1992	1986	907
165°	2145	2143	2143	2156	2147	605
175°	2232	2226	2222	2236	2224	212
180°	2236	2236	2236	2236	2236	



TEST NUMBER: P907992

CATALOG NUMBER: DFN2DIP-HX3F0-030D070US840-RLFL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1252.1	1252.1	1252.1	1252.1	1252.1
2.5°	1257.8	1252.1	1239.6	1251.0	1248.8
5°	1252.1	1246.5	1231.7	1241.9	1238.5
7.5°	1241.9	1235.2	1219.3	1223.8	1218.1
10°	1228.3	1220.4	1197.8	1194.3	1187.6
12.5°	1211.3	1201.1	1170.5	1163.8	1151.2
15°	1190.9	1178.4	1139.9	1118.4	1107.1
17.5°	1167.1	1149.0	1101.4	1076.5	1058.3
20°	1139.9	1117.2	1060.6	1032.4	1007.3
22.5°	1110.5	1084.4	1018.7	980.2	963.2
25°	1081.1	1044.7	970.0	923.5	906.5
27.5°	1045.9	1007.3	924.6	871.4	845.3
30°	1008.6	965.4	874.7	817.1	786.4
32.5°	972.2	920.1	827.3	759.2	730.8
35°	931.5	873.6	774.0	702.6	677.6
37.5°	891.8	829.4	724.1	645.8	617.6
40°	849.9	781.9	672.0	591.5	562.1
42.5°	806.8	734.4	619.9	535.9	507.7
45°	761.5	685.5	566.6	486.0	458.9
47.5°	718.4	638.0	515.6	435.1	410.2
50°	670.9	590.4	465.7	387.5	363.8
52.5°	624.3	539.4	418.2	343.4	321.8
55°	579.0	490.6	368.2	300.3	278.8
57.5°	532.6	441.9	324.2	260.6	242.5
60°	484.9	394.4	277.6	219.8	201.8
62.5°	438.6	347.9	237.9	183.6	174.6
65°	390.9	299.1	197.1	158.6	155.2
67.5°	345.7	253.8	158.6	139.4	135.9
70°	298.0	209.6	131.4	120.1	115.5
72.5°	252.7	168.7	109.9	100.9	98.6
75°	208.4	129.2	90.7	82.7	81.6
77.5°	164.3	91.7	71.4	66.9	64.5
80°	123.5	65.7	54.3	49.9	49.9
82.5°	86.0	44.2	37.4	35.1	35.1
85°	48.7	24.8	21.5	21.5	21.5
87.5°	18.2	9.0	9.0	8.0	8.0
90°	2.0	24.2	66.0	62.0	64.0
92.5°	41.8	56.7	58.7	60.7	60.7
95°	98.4	117.2	120.7	120.7	117.2
97.5°	163.8	181.3	188.7	188.7	188.7
100°	239.2	254.8	260.1	260.1	258.1
102.5°	318.8	330.2	337.7	339.7	337.7
105°	405.8	411.1	415.2	418.6	418.6
107.5°	492.0	500.1	500.1	501.5	492.0
110°	575.6	586.4	586.4	586.4	581.0



TEST NUMBER: P907992

CATALOG NUMBER: DFN2DIP-HX3F0-030D070US840-RLFL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	665.9	677.4	675.4	669.9	665.9
115°	754.9	765.7	762.3	760.3	754.9
117.5°	843.1	858.0	848.6	843.1	837.8
120°	932.1	947.0	932.1	932.1	926.0
122.5°	1013.0	1031.9	1022.5	1017.0	1013.0
125°	1097.9	1114.8	1109.4	1103.4	1101.4
127.5°	1180.8	1201.7	1194.4	1186.3	1180.8
130°	1258.4	1282.6	1279.3	1275.3	1267.8
132.5°	1345.3	1364.2	1365.5	1356.1	1350.7
135°	1420.2	1441.0	1445.1	1443.0	1437.6
137.5°	1503.7	1520.6	1523.9	1522.6	1514.5
140°	1577.2	1594.1	1603.5	1603.5	1596.1
142.5°	1652.6	1669.5	1674.9	1676.9	1669.5
145°	1724.1	1737.6	1748.4	1750.4	1743.0
147.5°	1788.2	1805.0	1813.1	1816.4	1809.1
150°	1854.2	1865.6	1873.1	1879.2	1873.1
152.5°	1912.8	1924.3	1933.7	1941.2	1933.7
155°	1971.5	1976.8	1983.0	1992.4	1986.3
157.5°	2022.1	2026.1	2029.4	2043.0	2033.5
160°	2067.2	2071.2	2073.3	2084.7	2076.6
162.5°	2109.0	2109.0	2111.0	2123.7	2114.4
165°	2144.7	2142.6	2142.6	2156.2	2146.7
167.5°	2177.1	2171.0	2171.0	2184.4	2175.0
170°	2201.3	2196.0	2193.9	2207.4	2196.0
172.5°	2218.2	2212.7	2210.7	2224.2	2212.7
175°	2231.6	2226.2	2222.2	2235.6	2224.2
177.5°	2239.1	2233.6	2229.6	2241.1	2229.6
180°	2235.6	2235.6	2235.6	2235.6	2235.6



TEST NUMBER: P907992
 CATALOG NUMBER: DFN2DIP-HX3F0-030D070US840-RLLFLL

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	6.05	6.74	7.17	7.85	9.39	2.03	2.71	3.15	3.83	5.37
	3H	7.71	8.32	8.84	9.44	11.00	3.20	3.81	4.33	4.93	6.49
	4H	8.31	8.89	9.45	10.01	11.57	3.64	4.22	4.78	5.34	6.91
	6H	8.72	9.25	9.86	10.37	11.95	3.95	4.49	5.10	5.61	7.18
	8H	8.83	9.34	9.98	10.48	12.05	4.04	4.54	5.19	5.68	7.25
	12H	8.89	9.37	10.04	10.50	12.09	4.07	4.56	5.23	5.69	7.28
4H	2H	6.05	6.63	7.20	7.75	9.32	2.60	3.18	3.75	4.30	5.87
	3H	7.86	8.34	9.01	9.49	11.07	3.93	4.42	5.09	5.56	7.14
	4H	8.54	8.98	9.69	10.12	11.72	4.47	4.92	5.63	6.05	7.65
	6H	9.04	9.42	10.20	10.58	12.16	4.88	5.26	6.04	6.42	8.00
	8H	9.21	9.56	10.37	10.71	12.31	5.00	5.36	6.16	6.51	8.11
	12H	9.29	9.61	10.47	10.77	12.38	5.06	5.38	6.23	6.54	8.15
8H	4H	8.50	8.85	9.65	10.00	11.60	4.74	5.09	5.90	6.24	7.84
	6H	9.05	9.34	10.23	10.53	12.13	5.24	5.54	6.42	6.73	8.33
	8H	9.26	9.51	10.44	10.68	12.30	5.43	5.69	6.61	6.86	8.48
	12H	9.38	9.61	10.57	10.78	12.43	5.54	5.76	6.73	6.93	8.58
12H	4H	8.44	8.76	9.62	9.92	11.53	4.73	5.06	5.91	6.22	7.82
	6H	9.02	9.28	10.21	10.45	12.07	5.29	5.55	6.47	6.72	8.34
	8H	9.23	9.45	10.42	10.62	12.27	5.49	5.71	6.68	6.88	8.53