

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: P924313

Luminaire Tested: DFN2DIP-HX2F0-050D040US950-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P924313
REPORT IS A COMBINATION OF REPORTS P900698 AND P897595
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX2F0-050D040US950-RLLONL
Description: 2 foot, Hexagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

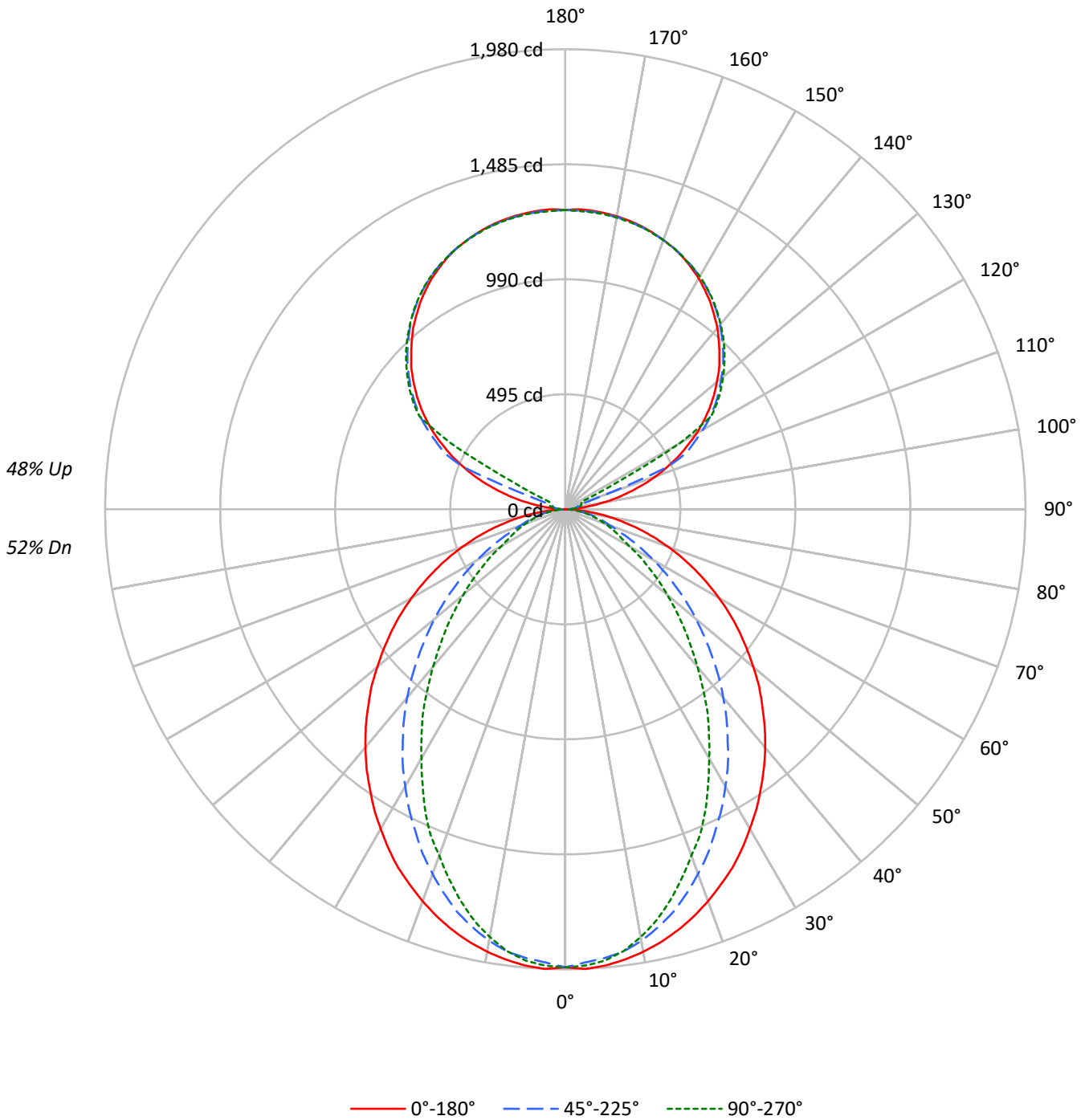
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 7832.4 lumens
Efficiency: N/A
Efficacy: 101.9 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 1.99' x L: 2.3' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 76.9
Input Voltage (V):
Input Current (A_{in}): 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: P924313
CATALOG NUMBER: DFN2DIP-HX2F0-050D040US950-RLLONL

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	108	108	108	108	99	99	99	99	84	84	84	70	70	70	58	58	58	58	58	58	52
1	99	95	91	87	91	88	84	82	75	72	70	63	61	60	52	51	50	50	50	50	45
2	90	83	77	72	83	77	72	68	66	62	59	56	53	51	46	44	43	43	43	43	38
3	83	74	66	61	76	68	62	57	59	54	50	50	46	43	41	39	37	37	37	37	33
4	76	65	58	52	70	61	54	49	52	47	43	45	41	38	37	35	32	32	32	32	29
5	70	59	51	45	64	55	48	42	47	42	38	40	36	33	34	31	28	28	28	28	25
6	65	53	45	39	60	49	42	37	43	37	33	37	32	29	31	28	25	25	25	25	22
7	60	48	40	35	55	45	38	33	39	33	29	33	29	26	28	25	23	23	23	23	20
8	56	44	36	31	51	41	34	29	36	30	26	31	26	23	26	23	20	20	20	20	18
9	52	40	32	28	48	37	31	26	33	27	24	28	24	21	24	21	19	19	19	19	16
10	48	37	30	25	45	34	28	24	30	25	21	26	22	19	23	19	17	17	17	17	15

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	4645	4645	4645
5°	4645	4560	4592
10°	4592	4460	4434
15°	4521	4302	4195
20°	4430	4088	3905
25°	4337	3851	3625
30°	4214	3609	3273
35°	4094	3349	2964
40°	3971	3082	2612
45°	3828	2788	2292
50°	3681	2491	1981
55°	3525	2175	1682
60°	3346	1847	1377
65°	3138	1515	1230
70°	2888	1206	1101
75°	2571	1041	985
80°	2115	844	829
85°	1384	521	582

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 3828 cd/sqm



TEST NUMBER: P924313

CATALOG NUMBER: DFN2DIP-HX2F0-050D040US950-RLONL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	184.8	2.4
10°-20°	507.2	6.5
20°-30°	712.1	9.1
30°-40°	776.3	9.9
40°-50°	713.5	9.1
50°-60°	560.3	7.2
60°-70°	364.7	4.7
70°-80°	187.7	2.4
80°-90°	50.2	0.6
90°-100°	42.5	0.5
100°-110°	158.3	2.0
110°-120°	419.9	5.4
120°-130°	696.4	8.9
130°-140°	739.7	9.4
140°-150°	687.5	8.8
150°-160°	552.7	7.1
160°-170°	356.1	4.5
170°-180°	122.6	1.6
0°-30°	1404.1	17.9
0°-40°	2180.4	27.8
0°-60°	3454.1	44.1
0°-90°	4056.8	51.8
90°-120°	620.6	7.9
90°-150°	2744.1	35.0
90°-180°	3776.0	48.2
0°-180°	7832.4	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1971	1971	1971	1971	1971	
5°	1971	1963	1939	1955	1950	187
15°	1875	1855	1795	1761	1743	528
25°	1702	1645	1527	1454	1427	783
35°	1467	1376	1219	1106	1067	918
45°	1199	1079	892	765	722	926
55°	912	772	580	473	439	815
65°	616	471	310	250	244	610
75°	328	203	143	130	128	347
85°	77	39	34	34	34	88
90°	1	11	19	23	25	7
95°	60	30	36	41	40	72
105°	283	311	57	67	71	303
115°	536	552	575	144	76	527
125°	758	770	787	794	797	676
135°	938	952	961	970	968	724
145°	1088	1087	1102	1109	1104	680
155°	1198	1189	1200	1206	1198	552
165°	1262	1256	1259	1266	1259	356
175°	1291	1284	1286	1292	1283	123
180°	1288	1288	1288	1288	1288	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1971.4	1971.4	1971.4	1971.4	1971.4
2.5°	1980.3	1971.4	1951.8	1969.7	1966.1
5°	1971.4	1962.6	1939.3	1955.3	1950.1
7.5°	1955.3	1944.7	1919.7	1926.8	1917.8
10°	1933.9	1921.5	1885.9	1880.4	1869.7
12.5°	1907.2	1891.2	1842.9	1832.3	1812.6
15°	1875.1	1855.4	1794.9	1761.0	1743.1
17.5°	1837.6	1809.1	1734.1	1694.9	1666.3
20°	1794.9	1759.1	1669.9	1625.4	1586.0
22.5°	1748.5	1707.4	1603.9	1543.3	1516.6
25°	1702.0	1644.9	1527.2	1454.1	1427.2
27.5°	1646.8	1586.0	1455.8	1371.9	1330.9
30°	1587.9	1520.0	1377.3	1286.4	1238.1
32.5°	1530.8	1448.6	1302.5	1195.4	1150.7
35°	1466.6	1375.6	1218.6	1106.2	1066.9
37.5°	1404.1	1305.9	1140.1	1016.9	972.4
40°	1338.1	1231.1	1057.9	931.3	884.9
42.5°	1270.3	1156.2	975.9	843.8	799.4
45°	1199.0	1079.4	892.1	765.3	722.5
47.5°	1131.2	1004.6	811.9	685.1	645.9
50°	1056.3	929.6	733.3	610.1	572.8
52.5°	983.0	849.2	658.4	540.6	506.8
55°	911.6	772.5	579.7	472.8	438.9
57.5°	838.6	695.8	510.3	410.4	381.8
60°	763.6	620.9	437.0	346.2	317.6
62.5°	690.5	547.8	374.6	289.1	274.8
65°	615.5	471.0	310.4	249.9	244.4
67.5°	544.2	399.6	249.9	219.4	214.1
70°	469.3	330.1	206.9	189.1	181.9
72.5°	397.9	265.8	173.1	158.8	155.2
75°	328.3	203.3	142.7	130.2	128.5
77.5°	258.7	144.4	112.5	105.2	101.6
80°	194.4	103.5	85.6	78.5	78.5
82.5°	135.6	69.6	58.9	55.2	55.2
85°	76.7	39.2	33.9	33.9	33.9
87.5°	28.6	14.2	14.2	12.5	12.5
90°	0.9	11.2	18.6	23.4	25.1
92.5°	23.4	19.6	22.3	24.2	25.1
95°	60.5	29.8	36.3	41.0	40.1
97.5°	109.0	32.6	47.5	50.4	51.2
100°	164.9	37.3	53.1	60.5	62.4
102.5°	226.4	224.7	55.0	65.2	68.0
105°	283.2	311.3	56.9	67.1	70.8
107.5°	349.5	372.7	58.8	69.0	72.7
110°	412.9	432.4	163.1	69.9	73.6



TEST NUMBER: P924313

CATALOG NUMBER: DFN2DIP-HX2F0-050D040US950-RLONL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	472.5	489.2	473.4	71.7	74.6
115°	535.8	551.6	575.0	143.5	76.5
117.5°	590.8	609.4	625.3	492.0	247.8
120°	652.3	666.3	683.1	694.3	568.5
122.5°	704.4	719.4	738.1	743.6	744.6
125°	757.6	769.8	787.4	794.0	796.8
127.5°	806.0	819.1	833.1	842.5	843.3
130°	851.7	866.7	876.8	887.1	886.3
132.5°	898.3	910.5	920.7	929.1	928.2
135°	937.5	952.5	960.8	970.1	968.3
137.5°	978.4	989.6	999.0	1008.3	1005.5
140°	1018.5	1026.0	1036.2	1044.6	1040.0
142.5°	1052.2	1058.7	1070.8	1078.1	1073.5
145°	1087.6	1086.6	1102.3	1108.9	1104.3
147.5°	1118.2	1115.4	1131.3	1135.9	1132.3
150°	1148.0	1141.6	1156.5	1162.1	1157.4
152.5°	1173.2	1165.8	1179.7	1185.3	1178.9
155°	1197.5	1189.2	1200.3	1205.9	1198.4
157.5°	1217.0	1209.6	1218.1	1224.6	1217.0
160°	1233.8	1228.2	1233.8	1239.3	1232.9
162.5°	1248.7	1243.2	1247.8	1254.3	1245.9
165°	1261.8	1256.2	1259.0	1265.5	1259.0
167.5°	1272.1	1266.3	1269.3	1275.8	1267.4
170°	1280.5	1274.8	1276.6	1283.2	1274.8
172.5°	1286.0	1280.5	1282.4	1288.9	1280.5
175°	1290.6	1284.1	1286.0	1292.5	1283.2
177.5°	1292.5	1286.0	1286.9	1293.5	1285.1
180°	1287.9	1287.9	1287.9	1287.9	1287.9



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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	12.51	13.36	13.46	14.32	15.57	8.50	9.34	9.44	10.30	11.55
	3H	14.17	14.92	15.13	15.89	17.16	9.67	10.42	10.63	11.39	12.66
	4H	14.76	15.47	15.73	16.45	17.73	10.11	10.82	11.08	11.79	13.07
	6H	15.16	15.82	16.14	16.80	18.09	10.41	11.07	11.40	12.05	13.34
	8H	15.28	15.90	16.27	16.90	18.19	10.50	11.12	11.49	12.12	13.41
	12H	15.33	15.92	16.32	16.91	18.22	10.53	11.13	11.53	12.12	13.43
4H	2H	12.53	13.24	13.51	14.22	15.50	9.08	9.79	10.06	10.77	12.05
	3H	14.33	14.92	15.32	15.93	17.22	10.41	11.00	11.40	12.01	13.30
	4H	15.00	15.55	16.00	16.54	17.86	10.94	11.49	11.94	12.48	13.80
	6H	15.50	15.96	16.50	16.98	18.30	11.35	11.81	12.35	12.83	14.15
	8H	15.66	16.09	16.67	17.10	18.43	11.46	11.90	12.47	12.91	14.24
	12H	15.74	16.13	16.77	17.16	18.49	11.52	11.91	12.55	12.94	14.28
8H	4H	14.97	15.40	15.98	16.42	17.75	11.21	11.65	12.22	12.66	13.99
	6H	15.51	15.87	16.54	16.92	18.25	11.71	12.06	12.74	13.12	14.45
	8H	15.71	16.02	16.75	17.06	18.41	11.88	12.20	12.93	13.24	14.59
	12H	15.83	16.11	16.88	17.14	18.53	11.99	12.27	13.03	13.30	14.69
12H	4H	14.92	15.31	15.95	16.34	17.68	11.21	11.60	12.24	12.63	13.97
	6H	15.48	15.80	16.52	16.84	18.18	11.75	12.06	12.79	13.11	14.45
	8H	15.69	15.96	16.73	17.00	18.39	11.94	12.22	12.99	13.26	14.65