

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: P907945

Luminaire Tested: DFN2DIP-HX2F0-050D040US840-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P907945
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-HX2F0-050D040US840-RLONL
Description: 2 foot, Hexagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

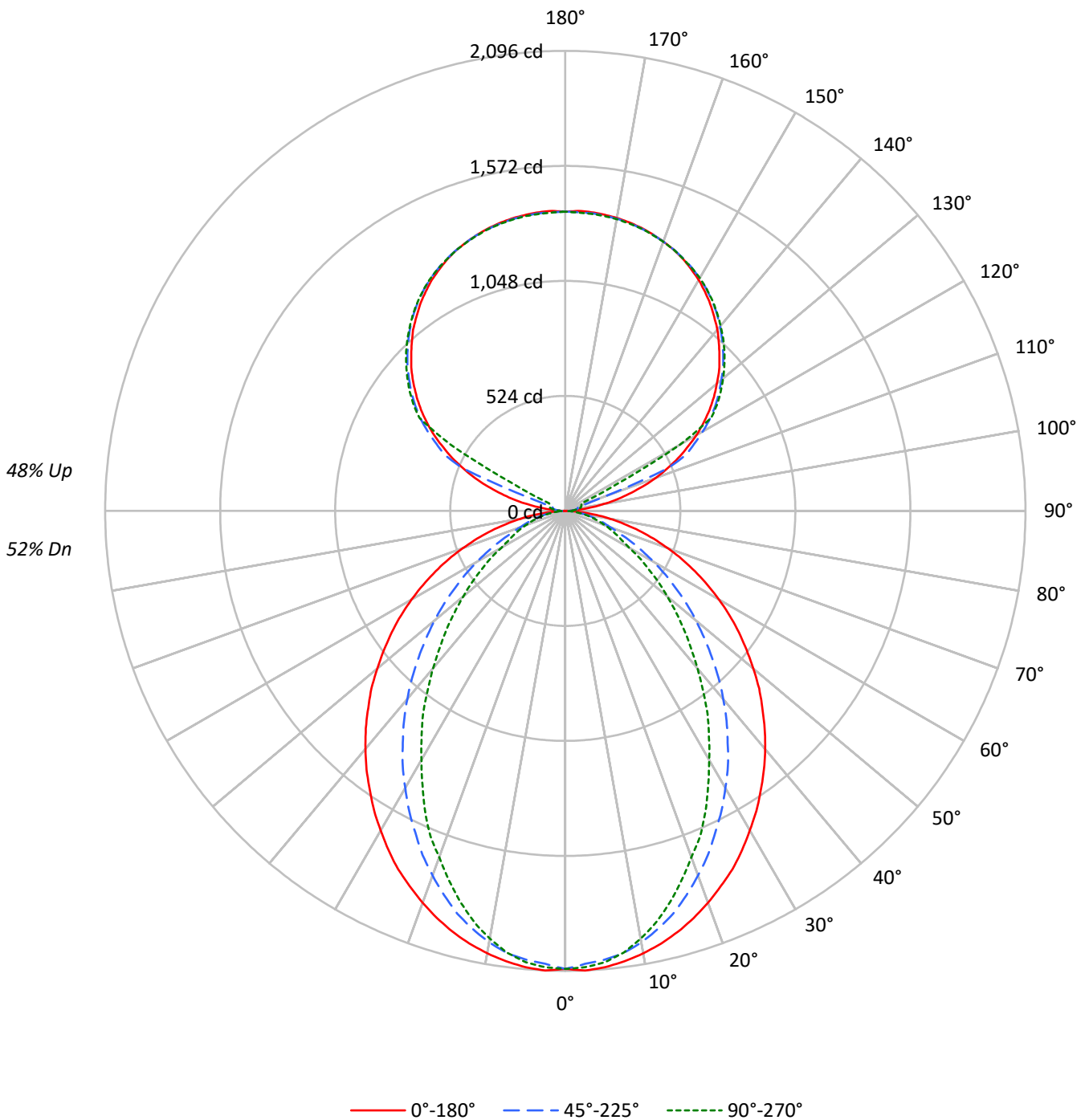
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 8291.0 lumens
Efficiency: N/A
Efficacy: 107.8 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 (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

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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°	4917	4917	4917
5°	4917	4827	4861
10°	4861	4721	4694
15°	4786	4554	4441
20°	4690	4328	4134
25°	4591	4077	3838
30°	4461	3820	3465
35°	4333	3546	3138
40°	4203	3263	2765
45°	4053	2951	2426
50°	3896	2637	2097
55°	3732	2303	1781
60°	3542	1955	1457
65°	3322	1604	1302
70°	3057	1276	1166
75°	2721	1103	1042
80°	2239	893	877
85°	1466	552	616

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 4053 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	195.6	2.4
10°-20°	536.9	6.5
20°-30°	753.8	9.1
30°-40°	821.7	9.9
40°-50°	755.2	9.1
50°-60°	593.1	7.2
60°-70°	386.1	4.7
70°-80°	198.7	2.4
80°-90°	53.1	0.6
90°-100°	44.9	0.5
100°-110°	167.6	2.0
110°-120°	444.4	5.4
120°-130°	737.1	8.9
130°-140°	783.0	9.4
140°-150°	727.7	8.8
150°-160°	585.1	7.1
160°-170°	377.0	4.5
170°-180°	129.8	1.6
0°-30°	1486.3	17.9
0°-40°	2308.0	27.8
0°-60°	3656.4	44.1
0°-90°	4294.3	51.8
90°-120°	656.9	7.9
90°-150°	2904.8	35.0
90°-180°	3997.0	48.2
0°-180°	8291.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2087	2087	2087	2087	2087	
5°	2087	2078	2053	2070	2064	198
15°	1985	1964	1900	1864	1845	559
25°	1802	1741	1617	1539	1511	829
35°	1552	1456	1290	1171	1129	972
45°	1269	1143	944	810	765	980
55°	965	818	614	500	465	862
65°	652	499	329	264	259	646
75°	348	215	151	138	136	368
85°	81	42	36	36	36	93
90°	1	12	20	25	27	8
95°	64	32	38	43	42	76
105°	300	330	60	71	75	320
115°	567	584	609	152	81	558
125°	802	815	834	840	843	715
135°	992	1008	1017	1027	1025	767
145°	1151	1150	1167	1174	1169	720
155°	1268	1259	1271	1276	1269	584
165°	1336	1330	1333	1340	1333	377
175°	1366	1359	1361	1368	1358	130
180°	1363	1363	1363	1363	1363	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2086.9	2086.9	2086.9	2086.9	2086.9
2.5°	2096.3	2086.9	2066.1	2085.1	2081.2
5°	2086.9	2077.5	2052.9	2069.8	2064.3
7.5°	2069.8	2058.6	2032.2	2039.6	2030.1
10°	2047.2	2034.0	1996.3	1990.5	1979.2
12.5°	2018.9	2002.0	1950.9	1939.6	1918.7
15°	1984.9	1964.1	1900.0	1864.1	1845.2
17.5°	1945.2	1915.0	1835.6	1794.1	1763.8
20°	1900.0	1862.1	1767.7	1720.6	1678.9
22.5°	1850.9	1807.4	1697.8	1633.7	1605.4
25°	1801.7	1741.2	1616.6	1539.2	1510.8
27.5°	1743.2	1678.9	1541.1	1452.3	1408.9
30°	1680.9	1609.0	1457.9	1361.7	1310.6
32.5°	1620.4	1533.5	1378.8	1265.4	1218.1
35°	1552.5	1456.1	1290.0	1170.9	1129.3
37.5°	1486.3	1382.4	1206.9	1076.4	1029.4
40°	1416.4	1303.2	1119.8	985.8	936.8
42.5°	1344.7	1223.9	1033.1	893.2	846.2
45°	1269.2	1142.6	944.3	810.1	764.8
47.5°	1197.4	1063.4	859.4	725.2	683.7
50°	1118.1	984.0	776.3	645.8	606.3
52.5°	1040.6	898.9	696.9	572.3	536.4
55°	965.0	817.7	613.7	500.5	464.6
57.5°	887.7	736.6	540.2	434.4	404.1
60°	808.3	657.2	462.6	366.5	336.2
62.5°	730.9	579.9	396.6	306.0	290.9
65°	651.6	498.6	328.6	264.5	258.7
67.5°	576.0	423.0	264.5	232.3	226.6
70°	496.8	349.4	219.0	200.2	192.6
72.5°	421.2	281.3	183.2	168.1	164.3
75°	347.5	215.2	151.1	137.8	136.0
77.5°	273.9	152.9	119.1	111.4	107.6
80°	205.8	109.6	90.6	83.1	83.1
82.5°	143.5	73.7	62.3	58.5	58.5
85°	81.2	41.5	35.9	35.9	35.9
87.5°	30.3	15.0	15.0	13.2	13.2
90°	0.9	11.8	19.7	24.7	26.6
92.5°	24.7	20.7	23.6	25.7	26.6
95°	64.0	31.5	38.4	43.4	42.4
97.5°	115.4	34.5	50.3	53.3	54.2
100°	174.6	39.5	56.2	64.0	66.0
102.5°	239.6	237.8	58.2	69.0	72.0
105°	299.8	329.5	60.2	71.0	74.9
107.5°	369.9	394.6	62.2	73.0	77.0
110°	437.1	457.7	172.7	74.0	77.9



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	500.2	517.9	501.1	75.9	79.0
115°	567.1	583.9	608.6	151.9	81.0
117.5°	625.4	645.1	662.0	520.8	262.4
120°	690.5	705.3	723.1	735.0	601.8
122.5°	745.7	761.5	781.3	787.2	788.2
125°	801.9	814.9	833.5	840.5	843.4
127.5°	853.2	867.1	881.9	891.8	892.7
130°	901.6	917.5	928.2	939.1	938.2
132.5°	950.9	963.8	974.6	983.5	982.6
135°	992.4	1008.2	1017.0	1026.9	1025.0
137.5°	1035.7	1047.5	1057.5	1067.3	1064.4
140°	1078.1	1086.1	1096.9	1105.8	1100.9
142.5°	1113.8	1120.6	1133.5	1141.2	1136.4
145°	1151.2	1150.2	1166.9	1173.9	1168.9
147.5°	1183.7	1180.7	1197.5	1202.4	1198.6
150°	1215.3	1208.4	1224.3	1230.1	1225.2
152.5°	1241.9	1234.1	1248.8	1254.8	1247.9
155°	1267.6	1258.8	1270.6	1276.5	1268.6
157.5°	1288.3	1280.4	1289.4	1296.3	1288.3
160°	1306.1	1300.1	1306.1	1311.9	1305.0
162.5°	1321.8	1316.0	1320.9	1327.8	1318.9
165°	1335.6	1329.8	1332.7	1339.6	1332.7
167.5°	1346.6	1340.5	1343.6	1350.5	1341.6
170°	1355.4	1349.5	1351.4	1358.4	1349.5
172.5°	1361.3	1355.4	1357.5	1364.3	1355.4
175°	1366.1	1359.3	1361.3	1368.2	1358.4
177.5°	1368.2	1361.3	1362.3	1369.3	1360.4
180°	1363.3	1363.3	1363.3	1363.3	1363.3



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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	12.71	13.56	13.66	14.52	15.76	8.69	9.54	9.64	10.50	11.75
	3H	14.36	15.12	15.32	16.09	17.36	9.87	10.62	10.83	11.59	12.86
	4H	14.96	15.67	15.93	16.64	17.92	10.30	11.02	11.28	11.99	13.27
	6H	15.36	16.02	16.34	16.99	18.29	10.61	11.27	11.60	12.25	13.54
	8H	15.47	16.10	16.47	17.09	18.38	10.70	11.32	11.69	12.32	13.60
	12H	15.53	16.12	16.52	17.11	18.42	10.73	11.33	11.73	12.31	13.63
4H	2H	12.73	13.44	13.71	14.41	15.69	9.28	9.99	10.26	10.96	12.24
	3H	14.53	15.12	15.52	16.12	17.42	10.61	11.20	11.60	12.20	13.50
	4H	15.20	15.74	16.20	16.74	18.06	11.14	11.68	12.14	12.68	14.00
	6H	15.69	16.16	16.70	17.18	18.49	11.54	12.01	12.55	13.03	14.34
	8H	15.86	16.29	16.87	17.30	18.63	11.66	12.10	12.67	13.11	14.44
	12H	15.94	16.33	16.97	17.36	18.69	11.72	12.11	12.75	13.14	14.47
8H	4H	15.17	15.60	16.18	16.61	17.94	11.41	11.84	12.42	12.86	14.18
	6H	15.71	16.06	16.74	17.12	18.45	11.90	12.26	12.94	13.32	14.64
	8H	15.91	16.22	16.95	17.26	18.61	12.08	12.40	13.12	13.44	14.78
	12H	16.03	16.31	17.07	17.34	18.73	12.19	12.47	13.23	13.50	14.89
12H	4H	15.12	15.51	16.15	16.54	17.87	11.41	11.80	12.44	12.83	14.16
	6H	15.68	16.00	16.72	17.04	18.38	11.95	12.26	12.99	13.30	14.65
	8H	15.88	16.16	16.93	17.20	18.59	12.14	12.42	13.19	13.45	14.84