

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: P902489

Luminaire Tested: DFN2DIP-HX2F0-050D040US830-RLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P902489
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-HX2F0-050D040US830-RLONL
Description: 2 foot, Hexagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

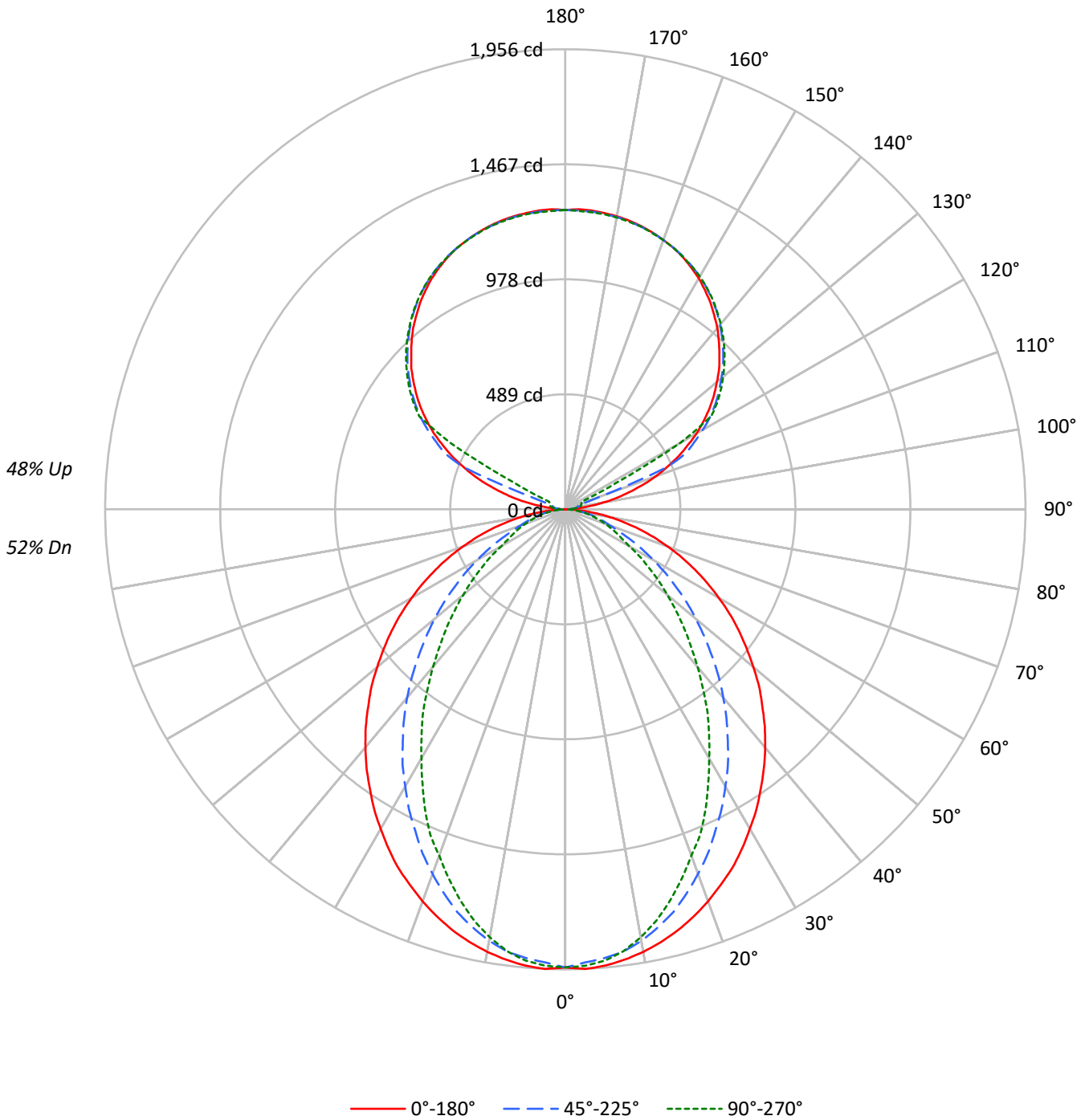
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 7738.3 lumens
Efficiency: N/A
Efficacy: 100.6 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	0
RCR																		
0	108	108	108	108	99	99	99	99	84	84	84	70	70	70	58	58	58	52
1	99	95	91	87	91	88	84	82	75	72	70	63	61	60	52	51	50	45
2	90	83	77	72	83	77	72	68	66	62	59	56	53	51	46	44	43	38
3	83	74	66	61	76	68	62	57	59	54	50	50	46	43	41	39	37	33
4	76	65	58	52	70	61	54	49	52	47	43	45	41	38	37	35	32	29
5	70	59	51	45	64	55	48	42	47	42	38	40	36	33	34	31	28	25
6	65	53	45	39	60	49	42	37	43	37	33	37	32	29	31	28	25	22
7	60	48	40	35	55	45	38	33	39	33	29	33	29	26	28	25	23	20
8	56	44	36	31	51	41	34	29	36	30	26	31	26	23	26	23	20	18
9	52	40	32	28	48	37	31	26	33	27	24	28	24	21	24	21	19	16
10	48	37	30	25	45	34	28	24	30	25	21	26	22	19	23	19	17	15

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	4589	4589	4589
5°	4589	4505	4537
10°	4536	4406	4381
15°	4467	4250	4145
20°	4377	4039	3858
25°	4285	3805	3582
30°	4164	3565	3234
35°	4044	3309	2929
40°	3923	3045	2580
45°	3782	2754	2265
50°	3637	2461	1957
55°	3483	2149	1662
60°	3306	1825	1360
65°	3101	1497	1215
70°	2852	1191	1088
75°	2540	1029	973
80°	2090	833	819
85°	1368	515	575

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 3782 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	182.5	2.4
10°-20°	501.1	6.5
20°-30°	703.6	9.1
30°-40°	766.9	9.9
40°-50°	704.9	9.1
50°-60°	553.6	7.2
60°-70°	360.3	4.7
70°-80°	185.5	2.4
80°-90°	49.6	0.6
90°-100°	41.9	0.5
100°-110°	156.4	2.0
110°-120°	414.8	5.4
120°-130°	688.0	8.9
130°-140°	730.8	9.4
140°-150°	679.2	8.8
150°-160°	546.1	7.1
160°-170°	351.9	4.5
170°-180°	121.1	1.6
0°-30°	1387.2	17.9
0°-40°	2154.2	27.8
0°-60°	3412.7	44.1
0°-90°	4008.1	51.8
90°-120°	613.2	7.9
90°-150°	2711.2	35.0
90°-180°	3730.0	48.2
0°-180°	7738.3	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1948	1948	1948	1948	1948	
5°	1948	1939	1916	1932	1927	185
15°	1853	1833	1773	1740	1722	522
25°	1682	1625	1509	1437	1410	773
35°	1449	1359	1204	1093	1054	907
45°	1185	1066	881	756	714	915
55°	901	763	573	467	434	805
65°	608	465	307	247	242	603
75°	324	201	141	129	127	343
85°	76	39	34	34	34	87
90°	1	11	18	23	25	7
95°	60	29	36	40	40	71
105°	280	308	56	66	70	299
115°	529	545	568	142	76	521
125°	748	760	778	784	787	668
135°	926	941	949	958	957	715
145°	1074	1074	1089	1096	1091	672
155°	1183	1175	1186	1191	1184	545
165°	1247	1241	1244	1250	1244	352
175°	1275	1269	1270	1277	1268	121
180°	1272	1272	1272	1272	1272	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1947.8	1947.8	1947.8	1947.8	1947.8
2.5°	1956.5	1947.8	1928.3	1946.1	1942.5
5°	1947.8	1939.0	1916.0	1931.8	1926.7
7.5°	1931.8	1921.4	1896.7	1903.7	1894.8
10°	1910.7	1898.4	1863.2	1857.8	1847.3
12.5°	1884.3	1868.5	1820.8	1810.3	1790.8
15°	1852.6	1833.2	1773.3	1739.8	1722.2
17.5°	1815.5	1787.3	1713.3	1674.5	1646.2
20°	1773.3	1738.0	1649.8	1605.9	1567.0
22.5°	1727.5	1686.9	1584.6	1524.8	1498.4
25°	1681.6	1625.1	1508.8	1436.6	1410.0
27.5°	1627.0	1567.0	1438.3	1355.5	1314.9
30°	1568.9	1501.8	1360.7	1270.9	1223.2
32.5°	1512.4	1431.3	1286.9	1181.0	1136.9
35°	1449.0	1359.1	1204.0	1092.9	1054.0
37.5°	1387.2	1290.2	1126.4	1004.7	960.7
40°	1322.0	1216.4	1045.2	920.1	874.3
42.5°	1255.1	1142.3	964.2	833.7	789.8
45°	1184.6	1066.4	881.4	756.1	713.8
47.5°	1117.6	992.5	802.1	676.8	638.1
50°	1043.6	918.4	724.5	602.8	565.9
52.5°	971.2	839.0	650.4	534.1	500.7
55°	900.7	763.2	572.8	467.1	433.7
57.5°	828.5	687.5	504.2	405.5	377.2
60°	754.4	613.4	431.8	342.0	313.8
62.5°	682.2	541.2	370.1	285.6	271.5
65°	608.1	465.3	306.7	246.9	241.5
67.5°	537.6	394.8	246.9	216.8	211.5
70°	463.6	326.1	204.4	186.8	179.7
72.5°	393.1	262.6	171.0	156.9	153.4
75°	324.3	200.9	141.0	128.7	127.0
77.5°	255.6	142.7	111.1	104.0	100.4
80°	192.1	102.3	84.5	77.6	77.6
82.5°	133.9	68.8	58.2	54.6	54.6
85°	75.8	38.7	33.5	33.5	33.5
87.5°	28.3	14.0	14.0	12.3	12.3
90°	0.8	11.0	18.4	23.1	24.8
92.5°	23.1	19.3	22.1	23.9	24.8
95°	59.8	29.4	35.8	40.5	39.6
97.5°	107.7	32.2	46.9	49.8	50.6
100°	163.0	36.9	52.5	59.8	61.6
102.5°	223.7	222.0	54.3	64.4	67.2
105°	279.8	307.6	56.2	66.3	69.9
107.5°	345.3	368.3	58.1	68.1	71.8
110°	407.9	427.2	161.2	69.1	72.7



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	466.8	483.3	467.7	70.9	73.7
115°	529.3	545.0	568.1	141.8	75.6
117.5°	583.7	602.1	617.8	486.1	244.9
120°	644.5	658.3	674.9	686.0	561.7
122.5°	696.0	710.8	729.2	734.7	735.7
125°	748.5	760.5	778.0	784.5	787.2
127.5°	796.4	809.3	823.1	832.4	833.2
130°	841.5	856.3	866.3	876.5	875.6
132.5°	887.5	899.6	909.6	917.9	917.1
135°	926.2	941.0	949.2	958.5	956.7
137.5°	966.7	977.7	987.0	996.2	993.4
140°	1006.3	1013.7	1023.8	1032.1	1027.5
142.5°	1039.5	1045.9	1057.9	1065.2	1060.6
145°	1074.5	1073.6	1089.1	1095.6	1091.0
147.5°	1104.8	1102.0	1117.7	1122.3	1118.7
150°	1134.3	1127.8	1142.6	1148.1	1143.5
152.5°	1159.1	1151.8	1165.5	1171.1	1164.7
155°	1183.1	1174.9	1185.9	1191.4	1184.0
157.5°	1202.4	1195.0	1203.4	1209.8	1202.4
160°	1219.0	1213.4	1219.0	1224.5	1218.0
162.5°	1233.7	1228.2	1232.8	1239.3	1231.0
165°	1246.6	1241.1	1243.9	1250.3	1243.9
167.5°	1256.8	1251.1	1254.1	1260.5	1252.2
170°	1265.1	1259.5	1261.3	1267.8	1259.5
172.5°	1270.5	1265.1	1267.0	1273.4	1265.1
175°	1275.1	1268.7	1270.5	1277.0	1267.8
177.5°	1277.0	1270.5	1271.5	1278.0	1269.7
180°	1272.4	1272.4	1272.4	1272.4	1272.4



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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	12.47	13.32	13.42	14.28	15.52	8.45	9.30	9.40	10.26	11.51
	3H	14.12	14.88	15.08	15.85	17.12	9.63	10.38	10.59	11.35	12.62
	4H	14.72	15.43	15.69	16.40	17.68	10.07	10.78	11.04	11.75	13.03
	6H	15.12	15.78	16.10	16.75	18.05	10.37	11.03	11.36	12.01	13.30
	8H	15.23	15.86	16.23	16.85	18.14	10.46	11.08	11.45	12.08	13.37
	12H	15.29	15.88	16.28	16.87	18.18	10.49	11.09	11.49	12.08	13.39
4H	2H	12.49	13.20	13.47	14.17	15.45	9.04	9.75	10.02	10.72	12.00
	3H	14.29	14.88	15.28	15.88	17.18	10.37	10.96	11.36	11.96	13.26
	4H	14.96	15.50	15.96	16.50	17.82	10.90	11.44	11.90	12.44	13.76
	6H	15.45	15.92	16.46	16.94	18.25	11.30	11.77	12.31	12.79	14.10
	8H	15.62	16.05	16.63	17.06	18.39	11.42	11.86	12.43	12.87	14.20
	12H	15.70	16.09	16.73	17.12	18.45	11.48	11.87	12.51	12.90	14.23
8H	4H	14.93	15.36	15.94	16.37	17.70	11.17	11.60	12.18	12.62	13.95
	6H	15.47	15.83	16.50	16.88	18.21	11.66	12.02	12.70	13.08	14.40
	8H	15.67	15.98	16.71	17.02	18.37	11.84	12.16	12.88	13.20	14.54
	12H	15.79	16.07	16.83	17.10	18.49	11.95	12.23	12.99	13.26	14.65
12H	4H	14.88	15.27	15.91	16.30	17.63	11.17	11.56	12.20	12.59	13.93
	6H	15.44	15.76	16.48	16.80	18.14	11.71	12.02	12.75	13.06	14.41
	8H	15.64	15.92	16.69	16.96	18.35	11.90	12.18	12.95	13.22	14.61