

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: P907943

Luminaire Tested: DFN2DIP-HX2F0-050D040US840-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P907943
REPORT IS A COMBINATION OF REPORTS P900697 AND P897595
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX2F0-050D040US840-FLONL
Description: 2 foot, Hexagon Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

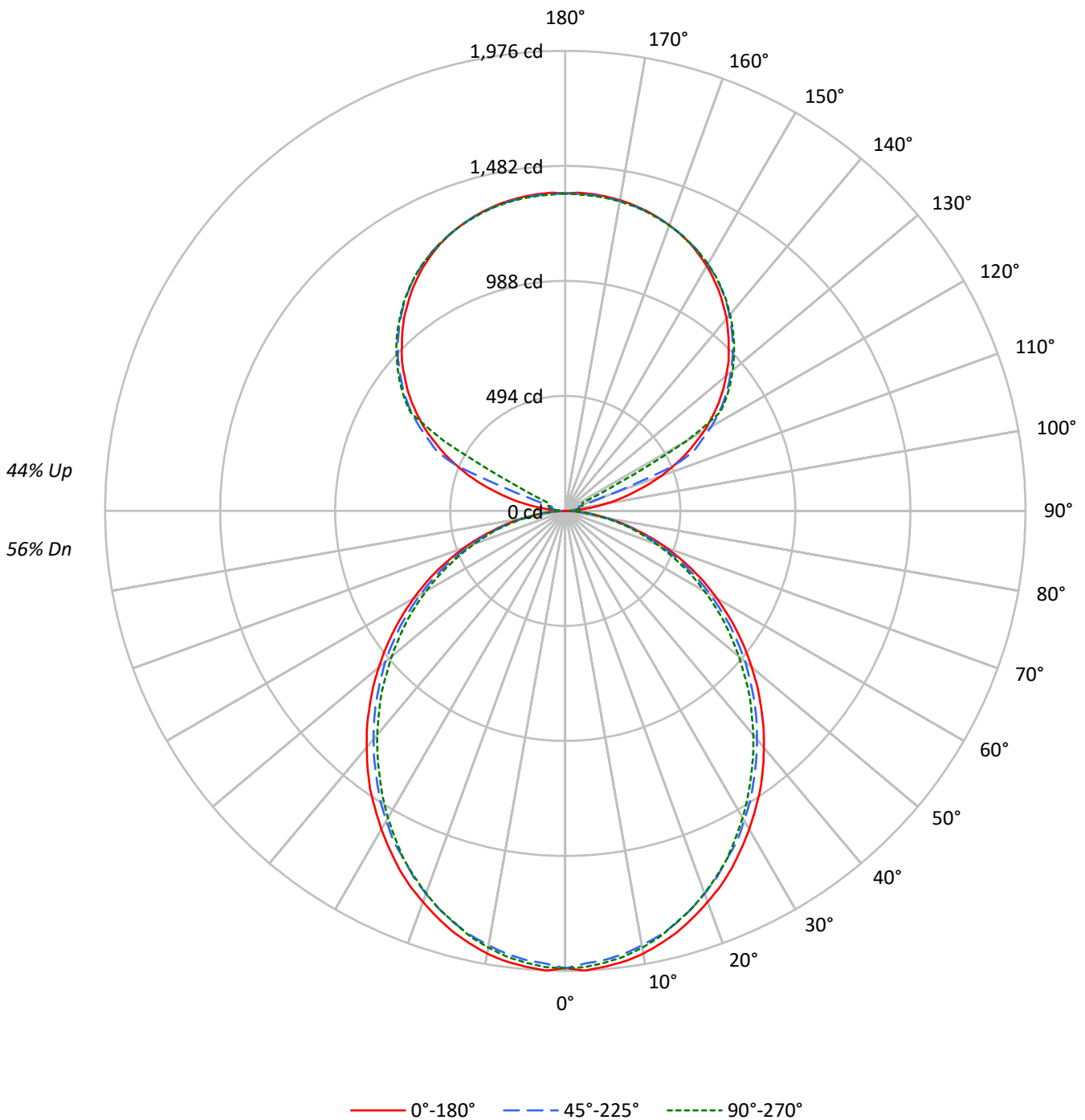
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 8997.9 lumens
Efficiency: N/A
Efficacy: 117.0 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
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): 120
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	101	101	101	101	86	86	86	73	73	73	61	61	61	56
1	99	95	91	87	92	88	85	82	76	73	71	65	63	61	54	53	52	47
2	90	83	76	71	84	77	72	67	66	62	59	57	54	51	48	46	44	39
3	82	73	65	59	76	68	61	56	59	54	50	50	46	43	42	39	37	33
4	75	64	56	50	70	60	53	48	52	47	42	45	40	37	38	35	32	29
5	69	57	49	43	64	54	46	41	47	41	36	40	36	32	34	31	28	25
6	64	52	43	37	59	48	41	36	42	36	32	36	32	28	31	27	25	22
7	59	47	39	33	55	44	36	31	38	32	28	33	28	25	28	25	22	19
8	55	42	34	29	51	40	33	28	35	29	25	30	26	22	26	22	20	17
9	51	39	31	26	47	36	29	25	32	26	22	28	23	20	24	20	18	16
10	48	35	28	23	44	33	27	22	29	24	20	26	21	18	22	19	16	14

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	4629	4629	4629
5°	4629	4553	4587
10°	4584	4481	4516
15°	4510	4396	4411
20°	4411	4283	4303
25°	4313	4150	4180
30°	4192	4025	4026
35°	4076	3879	3864
40°	3936	3732	3708
45°	3795	3583	3548
50°	3640	3427	3365
55°	3478	3247	3193
60°	3294	3035	2998
65°	3093	2812	2767
70°	2836	2543	2517
75°	2485	2219	2274
80°	2057	1806	1835
85°	1397	1133	1135

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 3795 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	184.9	2.1
10°-20°	520.3	5.8
20°-30°	764.6	8.5
30°-40°	888.1	9.9
40°-50°	887.0	9.9
50°-60°	773.4	8.6
60°-70°	571.7	6.4
70°-80°	323.5	3.6
80°-90°	87.8	1.0
90°-100°	44.9	0.5
100°-110°	167.6	1.9
110°-120°	444.4	4.9
120°-130°	737.1	8.2
130°-140°	783.0	8.7
140°-150°	727.7	8.1
150°-160°	585.1	6.5
160°-170°	377.0	4.2
170°-180°	129.8	1.4
0°-30°	1469.8	16.3
0°-40°	2357.9	26.2
0°-60°	4018.3	44.7
0°-90°	5001.2	55.6
90°-120°	656.9	7.3
90°-150°	2904.8	32.3
90°-180°	3997.0	44.4
0°-180°	8997.9	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1965	1965	1965	1965	1965	
5°	1965	1957	1936	1952	1948	187
15°	1870	1859	1834	1842	1833	527
25°	1693	1678	1646	1649	1646	779
35°	1460	1442	1411	1400	1390	912
45°	1188	1175	1147	1126	1118	917
55°	899	888	865	843	833	804
65°	606	595	576	559	550	600
75°	317	314	304	293	297	339
85°	77	76	74	68	66	86
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°	1964.7	1964.7	1964.7	1964.7	1964.7
2.5°	1976.1	1966.7	1945.9	1964.7	1961.2
5°	1964.7	1957.3	1936.4	1951.5	1947.9
7.5°	1951.5	1940.3	1919.5	1934.7	1930.9
10°	1930.9	1917.6	1895.0	1910.0	1904.4
12.5°	1902.4	1891.2	1868.6	1877.9	1874.1
15°	1870.3	1859.1	1834.4	1842.1	1832.6
17.5°	1830.6	1819.4	1794.7	1804.1	1794.7
20°	1787.2	1775.9	1749.5	1755.0	1747.7
22.5°	1743.8	1726.8	1702.1	1702.1	1698.3
25°	1692.7	1677.7	1645.6	1649.2	1645.6
27.5°	1636.0	1622.8	1598.3	1592.7	1583.3
30°	1579.4	1564.3	1536.0	1530.4	1522.8
32.5°	1518.9	1507.7	1477.4	1466.0	1458.4
35°	1460.4	1441.6	1411.3	1399.9	1390.5
37.5°	1394.2	1377.3	1347.0	1333.7	1324.3
40°	1326.4	1311.1	1280.8	1263.9	1256.4
42.5°	1260.2	1245.0	1214.9	1195.8	1184.6
45°	1188.4	1175.2	1146.7	1126.1	1118.4
47.5°	1118.4	1105.2	1075.0	1054.1	1042.9
50°	1044.7	1035.3	1008.9	982.4	972.9
52.5°	972.9	959.7	935.2	914.4	901.2
55°	899.4	888.0	865.3	842.6	833.2
57.5°	825.6	816.2	791.5	768.9	761.2
60°	751.8	744.5	718.0	697.1	691.6
62.5°	680.1	666.9	648.0	629.1	621.6
65°	606.5	595.1	576.2	559.3	549.8
67.5°	531.0	521.4	504.5	491.3	483.6
70°	461.0	453.4	436.4	423.1	415.8
72.5°	389.3	381.6	372.2	359.0	353.4
75°	317.3	313.7	304.1	292.9	296.7
77.5°	253.2	245.5	241.8	236.1	230.6
80°	189.0	187.0	183.2	177.6	173.8
82.5°	128.5	128.5	126.6	119.1	119.1
85°	77.4	75.5	73.7	68.0	66.1
87.5°	34.0	30.3	26.5	20.8	18.9
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	12.96	13.87	13.87	14.80	15.99	12.54	13.45	13.44	14.38	15.57
	3H	14.60	15.42	15.52	16.36	17.57	14.14	14.96	15.06	15.89	17.11
	4H	15.17	15.95	16.11	16.89	18.11	14.71	15.49	15.65	16.43	17.65
	6H	15.56	16.27	16.50	17.22	18.45	15.10	15.81	16.04	16.76	17.99
	8H	15.65	16.33	16.60	17.30	18.53	15.19	15.88	16.15	16.84	18.07
	12H	15.69	16.34	16.65	17.30	18.56	15.23	15.88	16.19	16.84	18.10
4H	2H	13.42	14.19	14.36	15.13	16.36	13.08	13.85	14.02	14.80	16.02
	3H	15.26	15.91	16.21	16.88	18.12	14.88	15.52	15.83	16.49	17.73
	4H	15.96	16.55	16.92	17.51	18.77	15.56	16.15	16.52	17.12	18.38
	6H	16.45	16.96	17.42	17.95	19.21	16.06	16.57	17.03	17.55	18.82
	8H	16.59	17.07	17.56	18.05	19.32	16.19	16.67	17.17	17.65	18.93
	12H	16.65	17.08	17.65	18.08	19.36	16.25	16.68	17.24	17.68	18.96
8H	4H	16.15	16.62	17.12	17.61	18.88	15.79	16.27	16.77	17.25	18.53
	6H	16.75	17.14	17.75	18.17	19.44	16.40	16.79	17.40	17.82	19.09
	8H	16.95	17.30	17.96	18.31	19.61	16.60	16.95	17.61	17.96	19.25
	12H	17.07	17.38	18.08	18.38	19.72	16.70	17.01	17.72	18.02	19.35
12H	4H	16.13	16.56	17.13	17.56	18.84	15.79	16.22	16.78	17.22	18.50
	6H	16.78	17.12	17.78	18.14	19.43	16.43	16.78	17.44	17.79	19.09
	8H	17.00	17.31	18.01	18.31	19.65	16.66	16.96	17.67	17.97	19.31