

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: P927520

Luminaire Tested: DFN2DIP-HX4F0-040D040US840-FLLONL

Issue Date: 12/12/2024

Test Information

Test Method: LM-79-2019
Report Number: P927520
REPORT IS A COMBINATION OF REPORTS P900819 AND P896187
Test Lab: INNOVATION CENTER
Issue Date: 12/12/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX4F0-040D040US840-FLLONL
Description: 4 foot, Hexagon Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

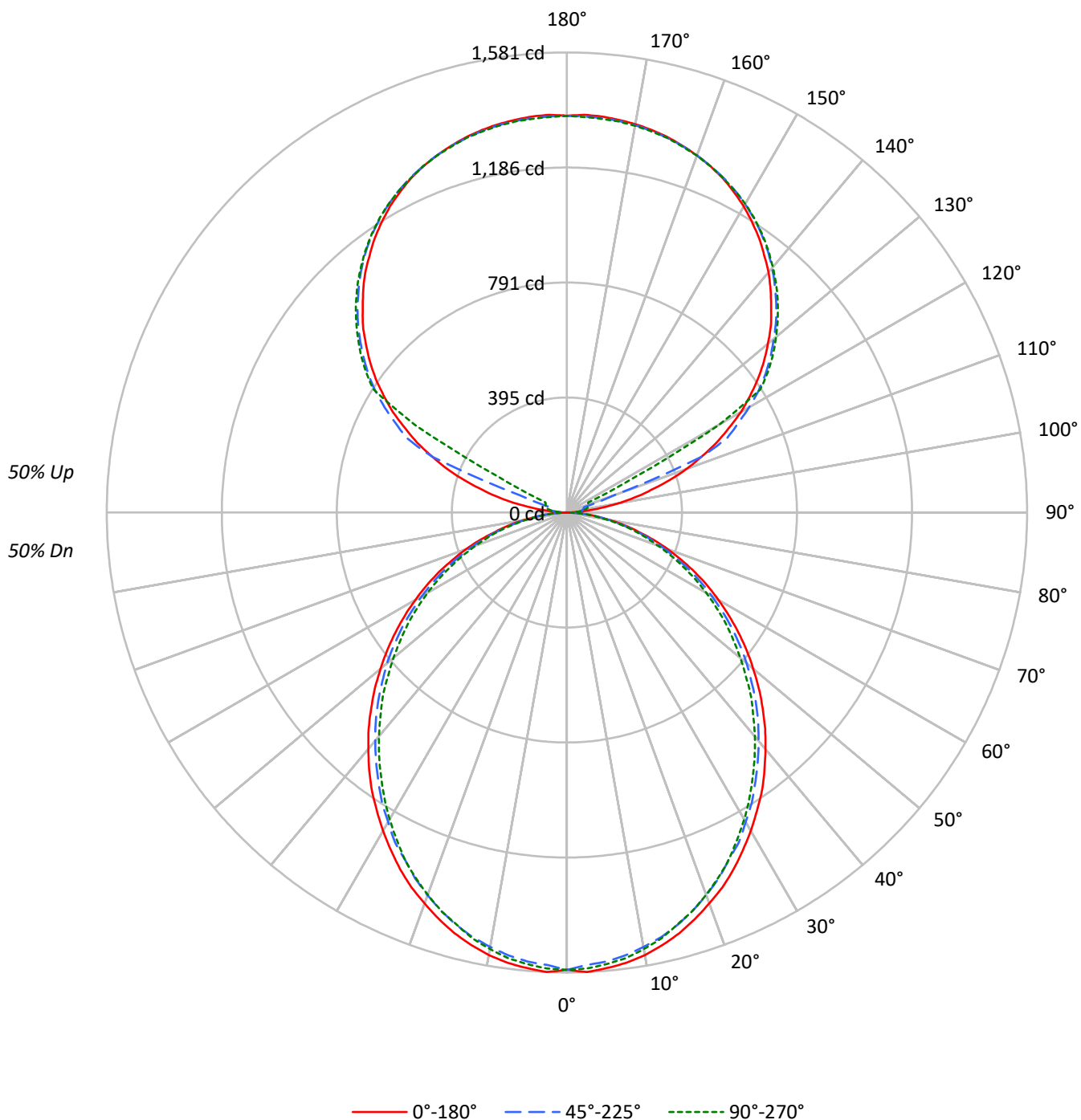
Lumens per Lamp: N/A
Luminaire Lumens: 7997.6 lumens
Efficiency: N/A
Efficacy: 126.1 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 3.54' x L: 4.09' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 63.4
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9977
Total Harmonic Distortion (THDi): 0.049
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
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10
RCR																	
0	107	107	107	107	99	99	99	99	83	83	83	69	69	69	56	56	56
1	98	93	90	86	90	86	83	80	73	71	68	61	59	58	50	48	47
2	89	82	75	70	82	76	70	66	64	60	57	53	51	48	44	42	40
3	81	72	64	59	75	66	60	55	56	52	48	47	44	41	39	36	34
4	74	64	56	50	68	59	52	47	50	45	41	42	38	35	35	32	29
5	68	57	48	42	63	53	45	40	45	39	35	38	34	30	31	28	26
6	63	51	43	37	58	47	40	35	40	35	31	34	30	27	28	25	23
7	58	46	38	32	53	43	36	30	37	31	27	31	27	23	26	23	20
8	54	42	34	29	50	39	32	27	33	28	24	28	24	21	24	20	18
9	50	38	30	25	46	35	29	24	31	25	21	26	22	19	22	19	16
10	47	35	28	23	43	33	26	22	28	23	19	24	20	17	20	17	15

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1169	1169	1169
5°	1171	1152	1160
10°	1161	1137	1145
15°	1144	1118	1120
20°	1121	1093	1095
25°	1098	1062	1066
30°	1070	1033	1029
35°	1043	999	990
40°	1009	964	953
45°	976	930	915
50°	939	894	871
55°	901	852	831
60°	858	802	784
65°	811	751	730
70°	751	688	671
75°	668	614	617
80°	569	518	513
85°	413	353	341

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 976 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	147.9	1.8
10°-20°	416.2	5.2
20°-30°	611.7	7.6
30°-40°	710.4	8.9
40°-50°	709.5	8.9
50°-60°	618.7	7.7
60°-70°	457.3	5.7
70°-80°	258.8	3.2
80°-90°	70.7	0.9
90°-100°	44.9	0.6
100°-110°	167.6	2.1
110°-120°	444.4	5.6
120°-130°	737.1	9.2
130°-140°	783.0	9.8
140°-150°	727.7	9.1
150°-160°	585.0	7.3
160°-170°	377.0	4.7
170°-180°	129.8	1.6
0°-30°	1175.8	14.7
0°-40°	1886.2	23.6
0°-60°	3214.4	40.2
0°-90°	4001.2	50.0
90°-120°	656.9	8.2
90°-150°	2904.6	36.3
90°-180°	3996.0	50.0
0°-180°	7997.6	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1572	1572	1572	1572	1572	
5°	1572	1566	1549	1561	1558	149
15°	1496	1487	1467	1474	1466	421
25°	1354	1342	1316	1319	1316	623
35°	1168	1153	1129	1120	1112	730
45°	951	940	917	901	895	734
55°	720	710	692	674	667	643
65°	485	476	461	447	440	480
75°	254	251	243	234	237	271
85°	62	60	59	54	53	69
90°	1	12	20	25	27	7
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	1270	1276	1268	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°	1571.7	1571.7	1571.7	1571.7	1571.7
2.5°	1580.8	1573.3	1556.6	1571.7	1568.8
5°	1571.7	1565.7	1549.0	1561.0	1558.2
7.5°	1561.0	1552.1	1535.4	1547.6	1544.6
10°	1544.6	1534.0	1515.9	1527.9	1523.4
12.5°	1521.8	1512.8	1494.7	1502.3	1499.1
15°	1496.1	1487.1	1467.4	1473.5	1466.0
17.5°	1464.4	1455.4	1435.7	1443.2	1435.7
20°	1429.6	1420.6	1399.5	1403.9	1398.1
22.5°	1394.9	1381.3	1361.6	1361.6	1358.6
25°	1354.0	1342.0	1316.4	1319.3	1316.4
27.5°	1308.7	1298.1	1278.6	1274.1	1266.6
30°	1263.5	1251.3	1228.7	1224.2	1218.1
32.5°	1215.1	1206.1	1181.9	1172.8	1166.6
35°	1168.2	1153.2	1129.0	1119.9	1112.3
37.5°	1115.3	1101.7	1077.5	1067.0	1059.4
40°	1061.0	1048.8	1024.5	1011.1	1005.1
42.5°	1008.1	995.9	971.8	956.6	947.6
45°	950.6	940.1	917.3	900.8	894.7
47.5°	894.7	884.1	859.9	843.3	834.3
50°	835.7	828.1	807.0	785.8	778.3
52.5°	778.3	767.8	748.2	731.5	720.9
55°	719.5	710.3	692.2	674.0	666.6
57.5°	660.4	652.9	633.1	615.1	609.0
60°	601.4	595.5	574.4	557.7	553.2
62.5°	544.1	533.5	518.4	503.3	497.2
65°	485.2	476.0	461.0	447.3	439.9
67.5°	424.7	417.0	403.6	393.0	387.0
70°	368.8	362.7	349.1	338.5	332.5
72.5°	311.4	305.3	297.8	287.2	282.6
75°	253.9	250.9	243.3	234.3	237.3
77.5°	202.5	196.4	193.4	188.8	184.4
80°	151.2	149.6	146.5	142.1	139.0
82.5°	102.8	102.8	101.4	95.2	95.2
85°	61.9	60.5	59.0	54.3	52.9
87.5°	27.3	24.2	21.2	16.7	15.0
90°	0.9	11.8	19.7	24.7	26.6
92.5°	24.7	20.7	23.6	25.6	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	394.5	62.2	73.0	76.9
110°	437.0	457.6	172.7	74.0	77.9

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	500.2	517.8	501.1	75.9	79.0
115°	567.1	583.9	608.6	151.9	81.0
117.5°	625.4	645.1	661.9	520.8	262.3
120°	690.5	705.2	723.0	734.9	601.7
122.5°	745.6	761.5	781.3	787.1	788.1
125°	801.9	814.8	833.5	840.5	843.4
127.5°	853.2	867.0	881.9	891.8	892.7
130°	901.5	917.4	928.1	939.0	938.1
132.5°	950.8	963.8	974.6	983.4	982.5
135°	992.3	1008.2	1017.0	1026.9	1024.9
137.5°	1035.7	1047.5	1057.5	1067.3	1064.3
140°	1078.1	1086.0	1096.8	1105.7	1100.8
142.5°	1113.7	1120.6	1133.4	1141.2	1136.3
145°	1151.2	1150.2	1166.8	1173.8	1168.8
147.5°	1183.6	1180.7	1197.4	1202.4	1198.5
150°	1215.2	1208.3	1224.2	1230.0	1225.1
152.5°	1241.9	1234.0	1248.7	1254.7	1247.8
155°	1267.5	1258.7	1270.5	1276.4	1268.5
157.5°	1288.2	1280.3	1289.3	1296.2	1288.2
160°	1306.0	1300.0	1306.0	1311.8	1305.0
162.5°	1321.7	1315.9	1320.8	1327.7	1318.8
165°	1335.6	1329.7	1332.6	1339.5	1332.6
167.5°	1346.5	1340.4	1343.5	1350.4	1341.5
170°	1355.4	1349.4	1351.3	1358.3	1349.4
172.5°	1361.2	1355.4	1357.4	1364.2	1355.4
175°	1366.1	1359.2	1361.2	1368.1	1358.3
177.5°	1368.1	1361.2	1362.2	1369.2	1360.3
180°	1363.2	1363.2	1363.2	1363.2	1363.2

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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	7.82	8.68	8.77	9.65	10.92	7.39	8.25	8.34	9.22	10.49
	3H	9.48	10.25	10.45	11.23	12.53	9.01	9.78	9.97	10.76	12.05
	4H	10.07	10.80	11.05	11.78	13.08	9.59	10.32	10.58	11.31	12.61
	6H	10.47	11.14	11.46	12.13	13.45	9.99	10.67	10.98	11.66	12.97
	8H	10.57	11.21	11.57	12.22	13.53	10.10	10.74	11.10	11.75	13.06
	12H	10.62	11.23	11.63	12.23	13.57	10.14	10.75	11.14	11.75	13.09
4H	2H	8.28	9.01	9.27	10.00	11.30	7.94	8.67	8.92	9.65	10.95
	3H	10.15	10.76	11.14	11.77	13.09	9.75	10.36	10.75	11.38	12.69
	4H	10.86	11.42	11.87	12.43	13.77	10.46	11.01	11.46	12.02	13.36
	6H	11.38	11.86	12.39	12.89	14.23	10.97	11.45	11.98	12.48	13.82
	8H	11.53	11.98	12.55	13.00	14.35	11.12	11.56	12.13	12.59	13.94
	12H	11.60	12.01	12.64	13.05	14.40	11.18	11.59	12.22	12.62	13.98
8H	4H	11.06	11.51	12.08	12.53	13.88	10.70	11.15	11.72	12.17	13.52
	6H	11.69	12.06	12.73	13.13	14.48	11.33	11.70	12.37	12.77	14.11
	8H	11.91	12.24	12.96	13.29	14.66	11.54	11.87	12.59	12.92	14.29
	12H	12.05	12.33	13.10	13.38	14.79	11.66	11.95	12.71	12.99	14.40
12H	4H	11.05	11.45	12.08	12.49	13.85	10.69	11.10	11.73	12.14	13.49
	6H	11.72	12.05	12.77	13.10	14.47	11.37	11.70	12.42	12.75	14.12
	8H	11.97	12.25	13.02	13.30	14.71	11.61	11.90	12.66	12.94	14.35