

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: P921802

Luminaire Tested: DFN2DIP-HX4F0-050D050US940-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P921802
REPORT IS A COMBINATION OF REPORTS P899319 AND P896188
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX4F0-050D050US940-FLLFLL
Description: 4 foot, Hexagon Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

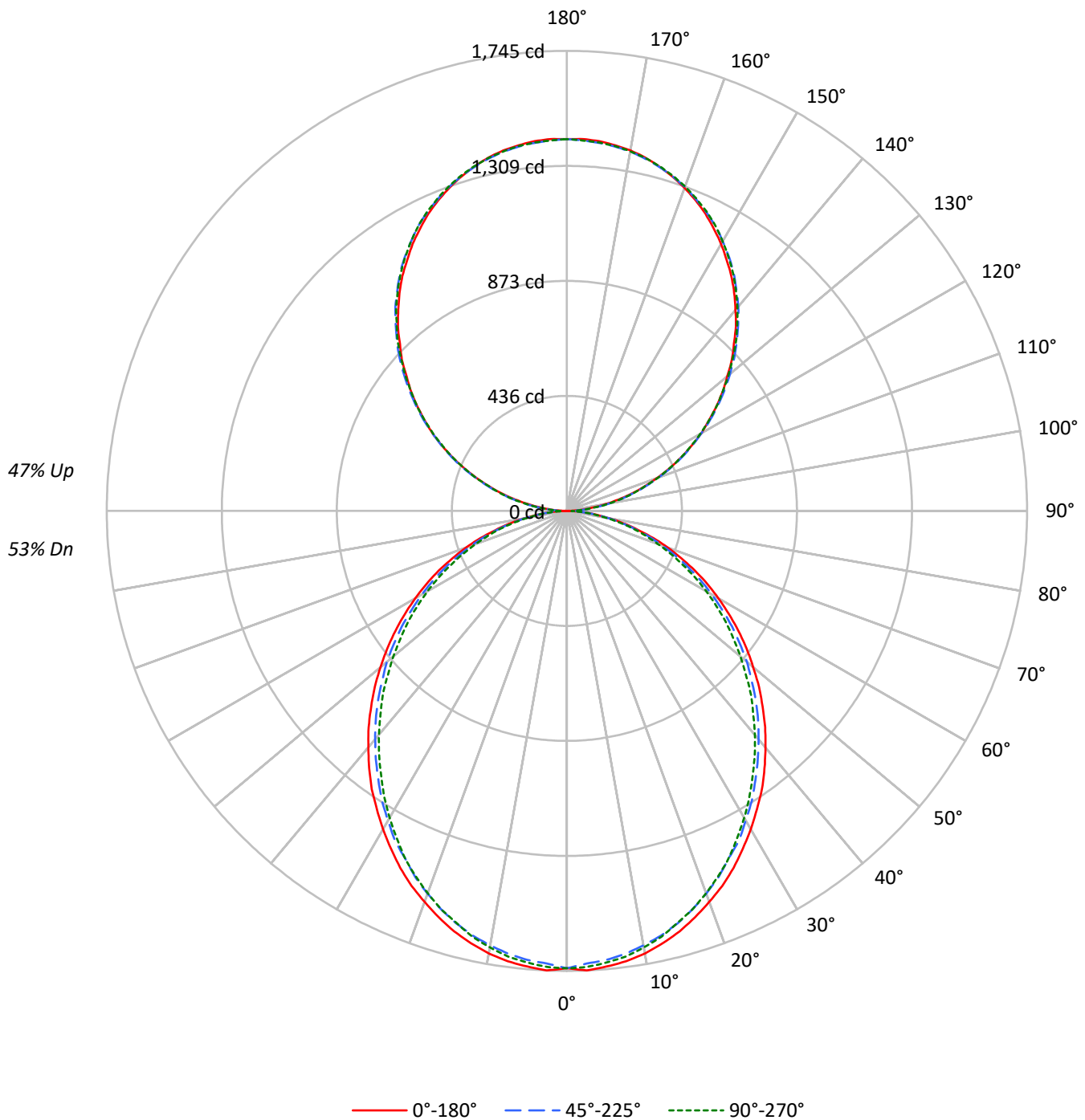
Lumens per Lamp: N/A
Luminaire Lumens: 8359.8 lumens
Efficiency: N/A
Efficacy: 115.6 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 3.54' x L: 4.09' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 72.3
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9957
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	108	108	108	108	100	100	100	100	85	85	85	71	71	71	59	59	59
1	98	94	90	87	91	87	84	81	74	72	70	63	61	59	52	51	50
2	90	82	76	71	83	76	71	66	65	61	58	55	52	50	46	44	42
3	82	72	65	59	75	67	61	55	58	53	49	49	45	42	41	38	36
4	75	64	56	50	69	60	52	47	51	46	41	43	39	36	36	33	31
5	69	57	49	43	63	53	46	40	46	40	36	39	35	31	33	29	27
6	63	51	43	37	58	48	40	35	41	36	31	35	31	27	30	26	24
7	59	46	38	33	54	43	36	31	37	32	28	32	28	24	27	24	21
8	54	42	34	29	50	39	32	27	34	29	24	29	25	22	25	21	19
9	51	38	31	26	47	36	29	24	31	26	22	27	23	19	23	20	17
10	47	35	28	23	44	33	26	22	29	23	20	25	21	18	21	18	15

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1290	1290	1290
5°	1292	1272	1281
10°	1282	1255	1263
15°	1263	1235	1236
20°	1238	1206	1209
25°	1212	1172	1177
30°	1181	1140	1136
35°	1151	1102	1093
40°	1114	1065	1052
45°	1077	1026	1010
50°	1037	987	961
55°	995	940	917
60°	947	886	866
65°	895	829	805
70°	829	760	741
75°	738	677	681
80°	628	572	567
85°	455	389	377

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
Vertical Angle: 45°
Luminance: 1077 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	163.3	2.0
10°-20°	459.4	5.5
20°-30°	675.2	8.1
30°-40°	784.2	9.4
40°-50°	783.2	9.4
50°-60°	682.9	8.2
60°-70°	504.8	6.0
70°-80°	285.6	3.4
80°-90°	79.4	0.9
90°-100°	87.3	1.0
100°-110°	277.2	3.3
110°-120°	474.5	5.7
120°-130°	624.0	7.5
130°-140°	700.4	8.4
140°-150°	686.8	8.2
150°-160°	576.1	6.9
160°-170°	382.1	4.6
170°-180°	133.5	1.6
0°-30°	1297.9	15.5
0°-40°	2082.0	24.9
0°-60°	3548.1	42.4
0°-90°	4418.0	52.8
90°-120°	838.9	10.0
90°-150°	2850.1	34.1
90°-180°	3942.0	47.2
0°-180°	8359.8	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1735	1735	1735	1735	1735	
5°	1735	1728	1710	1723	1720	165
15°	1651	1642	1620	1627	1618	465
25°	1495	1481	1453	1456	1453	688
35°	1290	1273	1246	1236	1228	805
45°	1049	1038	1012	994	988	810
55°	794	784	764	744	736	710
65°	536	526	509	494	485	530
75°	280	277	268	259	262	299
85°	68	67	65	60	58	76
90°	1	15	42	39	40	8
95°	62	74	76	76	74	69
105°	256	259	262	264	264	270
115°	476	483	481	480	476	471
125°	692	703	700	696	695	619
135°	896	909	911	910	907	692
145°	1087	1096	1103	1104	1099	679
155°	1243	1247	1251	1257	1253	572
165°	1353	1351	1351	1360	1354	382
175°	1408	1404	1402	1410	1403	134
180°	1410	1410	1410	1410	1410	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1734.8	1734.8	1734.8	1734.8	1734.8
2.5°	1744.9	1736.6	1718.2	1734.8	1731.7
5°	1734.8	1728.3	1709.9	1723.1	1720.0
7.5°	1723.1	1713.2	1694.9	1708.3	1705.0
10°	1705.0	1693.3	1673.3	1686.5	1681.6
12.5°	1679.8	1669.9	1649.9	1658.2	1654.8
15°	1651.4	1641.5	1619.8	1626.6	1618.2
17.5°	1616.4	1606.5	1584.7	1593.0	1584.7
20°	1578.1	1568.2	1544.8	1549.7	1543.2
22.5°	1539.8	1524.7	1503.0	1503.0	1499.6
25°	1494.7	1481.4	1453.0	1456.3	1453.0
27.5°	1444.6	1432.9	1411.3	1406.3	1398.0
30°	1394.6	1381.3	1356.3	1351.3	1344.6
32.5°	1341.2	1331.3	1304.6	1294.5	1287.8
35°	1289.5	1272.9	1246.2	1236.1	1227.8
37.5°	1231.1	1216.1	1189.4	1177.7	1169.4
40°	1171.2	1157.7	1131.0	1116.1	1109.4
42.5°	1112.8	1099.3	1072.7	1055.9	1046.0
45°	1049.4	1037.7	1012.5	994.3	987.6
47.5°	987.6	975.9	949.2	930.8	920.9
50°	922.5	914.2	890.8	867.5	859.1
52.5°	859.1	847.4	825.8	807.4	795.8
55°	794.2	784.1	764.0	744.0	735.8
57.5°	729.0	720.7	698.9	678.9	672.2
60°	663.9	657.4	634.0	615.5	610.6
62.5°	600.6	588.9	572.2	555.5	548.8
65°	535.6	525.5	508.8	493.8	485.4
67.5°	468.9	460.4	445.5	433.8	427.0
70°	407.1	400.4	385.3	373.6	367.1
72.5°	343.8	337.0	328.7	317.0	312.0
75°	280.2	277.0	268.5	258.6	262.0
77.5°	223.6	216.8	213.5	208.5	203.6
80°	166.9	165.1	161.8	156.9	153.5
82.5°	113.4	113.4	111.8	105.1	105.1
85°	68.3	66.7	65.1	60.0	58.4
87.5°	30.1	26.8	23.4	18.4	16.7
90°	1.2	15.3	41.6	39.1	40.4
92.5°	26.4	35.7	37.0	38.3	38.3
95°	62.1	74.0	76.1	76.1	74.0
97.5°	103.3	114.3	119.0	119.0	119.0
100°	150.9	160.7	164.1	164.1	162.8
102.5°	201.1	208.3	212.9	214.3	212.9
105°	255.9	259.3	261.9	263.9	263.9
107.5°	310.3	315.4	315.4	316.3	310.3
110°	363.0	369.9	369.9	369.9	366.4

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	420.0	427.2	426.0	422.6	420.0
115°	476.1	483.0	480.8	479.6	476.1
117.5°	531.8	541.2	535.2	531.8	528.4
120°	587.9	597.3	587.9	587.9	584.1
122.5°	638.9	650.9	644.9	641.5	638.9
125°	692.5	703.1	699.7	695.9	694.6
127.5°	744.8	758.0	753.3	748.1	744.8
130°	793.7	809.0	806.8	804.3	799.6
132.5°	848.6	860.4	861.3	855.3	851.9
135°	895.7	908.8	911.4	910.2	906.8
137.5°	948.4	959.0	961.2	960.3	955.2
140°	994.7	1005.4	1011.3	1011.3	1006.7
142.5°	1042.3	1053.0	1056.4	1057.7	1053.0
145°	1087.4	1095.9	1102.7	1104.0	1099.3
147.5°	1127.8	1138.4	1143.5	1145.7	1140.9
150°	1169.5	1176.7	1181.3	1185.2	1181.3
152.5°	1206.5	1213.7	1219.6	1224.3	1219.6
155°	1243.4	1246.8	1250.6	1256.6	1252.8
157.5°	1275.3	1277.8	1280.0	1288.5	1282.5
160°	1303.8	1306.4	1307.6	1314.8	1309.7
162.5°	1330.2	1330.2	1331.4	1339.5	1333.6
165°	1352.7	1351.4	1351.4	1359.9	1354.0
167.5°	1373.1	1369.2	1369.2	1377.8	1371.8
170°	1388.4	1385.0	1383.8	1392.2	1385.0
172.5°	1399.0	1395.6	1394.4	1402.8	1395.6
175°	1407.6	1404.1	1401.6	1410.1	1402.8
177.5°	1412.2	1408.8	1406.2	1413.5	1406.2
180°	1410.1	1410.1	1410.1	1410.1	1410.1

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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	8.42	9.30	9.35	10.25	11.48	7.98	8.87	8.92	9.82	11.05
	3H	10.08	10.88	11.02	11.83	13.09	9.61	10.40	10.55	11.36	12.61
	4H	10.67	11.42	11.63	12.39	13.65	10.19	10.95	11.15	11.91	13.17
	6H	11.07	11.77	12.04	12.73	14.01	10.59	11.29	11.56	12.26	13.53
	8H	11.18	11.84	12.15	12.82	14.10	10.70	11.36	11.68	12.35	13.62
	12H	11.23	11.86	12.21	12.83	14.13	10.74	11.37	11.73	12.35	13.65
4H	2H	8.88	9.63	9.84	10.60	11.86	8.54	9.29	9.50	10.25	11.51
	3H	10.75	11.38	11.72	12.37	13.65	10.36	10.99	11.33	11.98	13.26
	4H	11.47	12.04	12.45	13.03	14.33	11.06	11.64	12.04	12.62	13.92
	6H	11.98	12.48	12.98	13.49	14.79	11.57	12.07	12.57	13.08	14.38
	8H	12.14	12.60	13.13	13.60	14.91	11.72	12.19	12.72	13.19	14.50
	12H	12.21	12.63	13.23	13.65	14.97	11.79	12.21	12.80	13.23	14.54
8H	4H	11.67	12.13	12.66	13.13	14.45	11.31	11.77	12.30	12.77	14.08
	6H	12.30	12.68	13.32	13.73	15.04	11.94	12.32	12.96	13.37	14.68
	8H	12.52	12.86	13.55	13.89	15.22	12.15	12.49	13.18	13.52	14.85
	12H	12.66	12.95	13.69	13.98	15.35	12.27	12.57	13.30	13.59	14.97
12H	4H	11.65	12.07	12.67	13.09	14.41	11.30	11.72	12.32	12.74	14.06
	6H	12.33	12.67	13.36	13.70	15.03	11.98	12.32	13.01	13.35	14.68
	8H	12.57	12.87	13.61	13.90	15.27	12.22	12.51	13.25	13.54	14.91

END OF REPORT