

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: P921567

Luminaire Tested: DFN2DIP-HX2F0-040D050US940-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P921567
REPORT IS A COMBINATION OF REPORTS P900705 AND P897595
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX2F0-040D050US940-FLLONL
Description: 2 foot, Hexagon Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

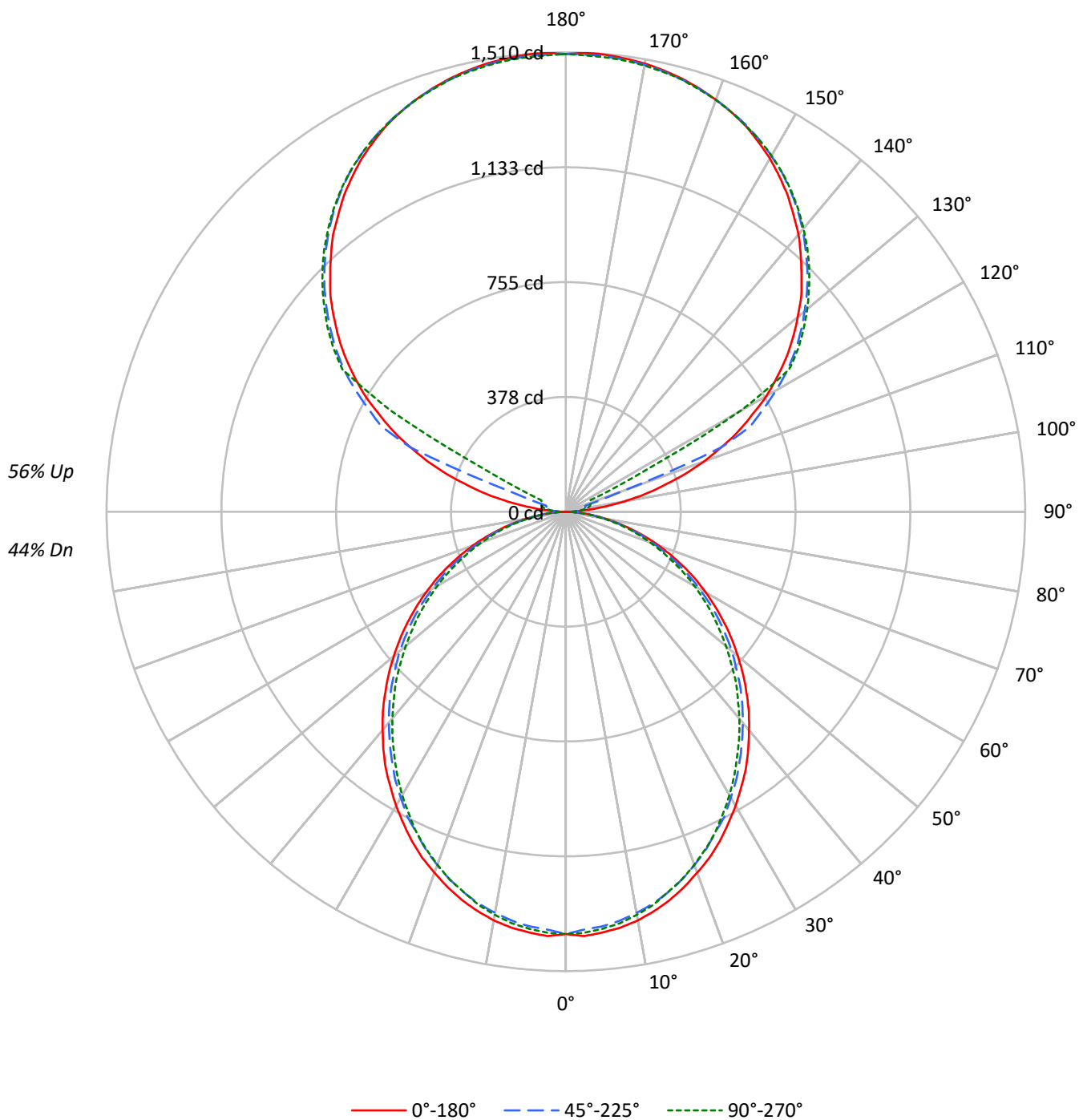
Lumens per Lamp: N/A
Luminaire Lumens: 7945.2 lumens
Efficiency: N/A
Efficacy: 106.6 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 1.99' x L: 2.3' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 74.5
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9933
Total Harmonic Distortion (THDi): 0.066
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P921567

CATALOG NUMBER: DFN2DIP-HX2F0-040D050US940-FLLONL

Luminous Intensity Polar Plot



TEST NUMBER: P921567

CATALOG NUMBER: DFN2DIP-HX2F0-040D050US940-FLLONL

COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20				20					20					20					20
RC	80				70					50					30					0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10
RCR																				
0	106	106	106	106	97	97	97	97	80	80	80	65	65	65	51	51	51			44
1	97	92	88	85	88	85	81	78	70	68	66	57	56	54	45	44	43			37
2	88	81	74	69	80	74	69	64	62	58	55	50	48	45	40	38	36			31
3	80	71	64	58	73	65	59	54	54	50	46	44	41	38	35	33	31			27
4	73	63	55	49	67	58	51	46	48	43	39	40	36	33	31	29	27			23
5	67	56	48	42	61	51	44	39	43	38	34	35	31	28	28	25	23			20
6	62	50	42	36	57	46	39	34	39	33	29	32	28	25	26	23	20			17
7	57	45	37	32	52	42	35	30	35	30	26	29	25	22	23	20	18			15
8	53	41	33	28	49	38	31	26	32	27	23	27	23	20	22	19	16			14
9	49	37	30	25	45	35	28	23	29	24	20	25	20	18	20	17	15			12
10	46	34	27	22	42	32	25	21	27	22	18	23	19	16	18	15	13			11

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3270	3270	3270
5°	3270	3217	3240
10°	3238	3166	3190
15°	3186	3106	3116
20°	3116	3026	3040
25°	3047	2931	2953
30°	2961	2843	2844
35°	2879	2740	2729
40°	2780	2636	2619
45°	2681	2531	2507
50°	2572	2421	2377
55°	2457	2294	2256
60°	2327	2144	2118
65°	2185	1987	1955
70°	2004	1796	1777
75°	1756	1567	1607
80°	1453	1276	1297
85°	987	801	802

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2681 cd/sqm

TEST NUMBER: P921567

CATALOG NUMBER: DFN2DIP-HX2F0-040D050US940-FLONL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	130.6	1.6
10°-20°	367.5	4.6
20°-30°	540.1	6.8
30°-40°	627.3	7.9
40°-50°	626.6	7.9
50°-60°	546.3	6.9
60°-70°	403.9	5.1
70°-80°	228.5	2.9
80°-90°	63.0	0.8
90°-100°	49.6	0.6
100°-110°	185.0	2.3
110°-120°	490.6	6.2
120°-130°	813.6	10.2
130°-140°	864.3	10.9
140°-150°	803.2	10.1
150°-160°	645.8	8.1
160°-170°	416.1	5.2
170°-180°	143.2	1.8
0°-30°	1038.3	13.1
0°-40°	1665.6	21.0
0°-60°	2838.5	35.7
0°-90°	3533.9	44.5
90°-120°	725.2	9.1
90°-150°	3206.2	40.4
90°-180°	4411.0	55.5
0°-180°	7945.2	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1388	1388	1388	1388	1388	
5°	1388	1383	1368	1378	1376	132
15°	1321	1313	1296	1301	1295	372
25°	1196	1185	1162	1165	1162	550
35°	1032	1018	997	989	982	644
45°	840	830	810	796	790	648
55°	635	627	611	595	589	568
65°	428	420	407	395	388	424
75°	224	222	215	207	210	239
85°	55	53	52	48	47	61
90°	1	13	22	27	29	7
95°	71	35	42	48	47	84
105°	331	364	66	78	83	354
115°	626	644	672	168	89	616
125°	885	899	920	928	931	789
135°	1095	1113	1122	1134	1131	846
145°	1271	1270	1288	1296	1290	795
155°	1399	1389	1402	1409	1400	645
165°	1474	1468	1471	1478	1471	416
175°	1508	1500	1502	1510	1499	144
180°	1505	1505	1505	1505	1505	

TEST NUMBER: P921567

CATALOG NUMBER: DFN2DIP-HX2F0-040D050US940-FLLONL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1387.9	1387.9	1387.9	1387.9	1387.9
2.5°	1396.0	1389.3	1374.6	1387.9	1385.4
5°	1387.9	1382.6	1367.9	1378.5	1376.0
7.5°	1378.5	1370.6	1355.8	1366.6	1364.0
10°	1364.0	1354.6	1338.6	1349.2	1345.2
12.5°	1343.8	1335.9	1319.9	1326.6	1323.8
15°	1321.2	1313.2	1295.8	1301.2	1294.6
17.5°	1293.2	1285.2	1267.8	1274.4	1267.8
20°	1262.4	1254.5	1235.8	1239.7	1234.6
22.5°	1231.8	1219.8	1202.4	1202.4	1199.7
25°	1195.7	1185.1	1162.4	1165.0	1162.4
27.5°	1155.7	1146.3	1129.1	1125.1	1118.5
30°	1115.7	1105.0	1085.0	1081.0	1075.7
32.5°	1073.0	1065.1	1043.7	1035.6	1030.2
35°	1031.6	1018.3	996.9	988.9	982.2
37.5°	984.9	972.9	951.5	942.2	935.5
40°	936.9	926.1	904.7	892.9	887.5
42.5°	890.2	879.4	858.2	844.7	836.8
45°	839.5	830.2	810.0	795.5	790.1
47.5°	790.1	780.7	759.4	744.7	736.7
50°	738.0	731.3	712.7	693.9	687.2
52.5°	687.2	678.0	660.7	646.0	636.6
55°	635.3	627.2	611.3	595.2	588.6
57.5°	583.2	576.6	559.1	543.1	537.8
60°	531.1	525.8	507.2	492.5	488.5
62.5°	480.5	471.1	457.8	444.4	439.1
65°	428.5	420.4	407.1	395.0	388.4
67.5°	375.1	368.3	356.4	347.1	341.7
70°	325.7	320.3	308.3	298.9	293.6
72.5°	275.0	269.6	263.0	253.6	249.6
75°	224.2	221.6	214.8	206.9	209.6
77.5°	178.8	173.4	170.8	166.7	162.8
80°	133.5	132.1	129.4	125.5	122.8
82.5°	90.8	90.8	89.5	84.1	84.1
85°	54.7	53.4	52.1	48.0	46.7
87.5°	24.1	21.4	18.7	14.7	13.3
90°	1.1	13.0	21.8	27.3	29.3
92.5°	27.3	22.9	26.1	28.4	29.3
95°	70.7	34.8	42.4	48.0	46.8
97.5°	127.3	38.2	55.5	58.9	59.8
100°	192.8	43.6	62.1	70.7	72.9
102.5°	264.6	262.4	64.3	76.2	79.5
105°	331.0	363.7	66.4	78.4	82.8
107.5°	408.3	435.4	68.7	80.5	85.0
110°	482.4	505.2	190.6	81.7	86.0

TEST NUMBER: P921567

CATALOG NUMBER: DFN2DIP-HX2F0-040D050US940-FLLONL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	552.1	571.6	553.1	83.8	87.1
115°	626.1	644.5	671.8	167.7	89.3
117.5°	690.3	712.0	730.7	574.8	289.6
120°	762.1	778.5	798.1	811.2	664.1
122.5°	823.0	840.5	862.4	868.9	870.0
125°	885.1	899.4	920.1	927.6	930.9
127.5°	941.7	957.0	973.5	984.3	985.3
130°	995.1	1012.6	1024.5	1036.5	1035.5
132.5°	1049.6	1063.8	1075.7	1085.6	1084.5
135°	1095.4	1112.9	1122.5	1133.5	1131.3
137.5°	1143.2	1156.3	1167.2	1178.1	1174.9
140°	1190.0	1198.8	1210.7	1220.5	1215.1
142.5°	1229.3	1237.0	1251.1	1259.7	1254.3
145°	1270.7	1269.5	1288.0	1295.7	1290.2
147.5°	1306.5	1303.2	1321.8	1327.2	1322.9
150°	1341.4	1333.8	1351.2	1357.7	1352.3
152.5°	1370.7	1362.1	1378.4	1385.0	1377.3
155°	1399.1	1389.4	1402.4	1408.9	1400.3
157.5°	1421.9	1413.3	1423.1	1430.7	1421.9
160°	1441.6	1435.0	1441.6	1448.0	1440.5
162.5°	1458.9	1452.5	1457.9	1465.5	1455.7
165°	1474.2	1467.8	1471.0	1478.5	1471.0
167.5°	1486.2	1479.6	1483.0	1490.6	1480.8
170°	1496.0	1489.4	1491.7	1499.2	1489.4
172.5°	1502.5	1496.0	1498.3	1505.8	1496.0
175°	1508.0	1500.3	1502.5	1510.1	1499.2
177.5°	1510.1	1502.5	1503.7	1511.3	1501.5
180°	1504.7	1504.7	1504.7	1504.7	1504.7

TEST NUMBER: P921567

CATALOG NUMBER: DFN2DIP-HX2F0-040D050US940-FLLONL

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	10.72	11.53	11.72	12.55	13.89	10.30	11.11	11.30	12.12	13.47
	3H	12.35	13.08	13.36	14.10	15.47	11.89	12.62	12.90	13.64	15.01
	4H	12.92	13.61	13.95	14.64	16.01	12.46	13.15	13.49	14.18	15.55
	6H	13.30	13.93	14.33	14.96	16.35	12.84	13.47	13.87	14.50	15.89
	8H	13.39	14.00	14.43	15.04	16.43	12.93	13.54	13.97	14.59	15.97
	12H	13.43	14.00	14.48	15.04	16.45	12.97	13.54	14.01	14.58	15.99
4H	2H	11.16	11.86	12.20	12.88	14.26	10.83	11.52	11.86	12.54	13.92
	3H	13.00	13.57	14.04	14.63	16.02	12.61	13.19	13.65	14.24	15.63
	4H	13.69	14.22	14.74	15.26	16.68	13.30	13.82	14.34	14.87	16.28
	6H	14.18	14.63	15.24	15.70	17.11	13.78	14.24	14.84	15.31	16.71
	8H	14.31	14.74	15.37	15.80	17.22	13.92	14.34	14.98	15.40	16.83
	12H	14.37	14.76	15.45	15.83	17.26	13.97	14.35	15.05	15.43	16.86
8H	4H	13.87	14.30	14.93	15.36	16.78	13.52	13.94	14.58	15.01	16.43
	6H	14.47	14.82	15.55	15.93	17.34	14.12	14.47	15.20	15.57	16.99
	8H	14.68	14.98	15.76	16.07	17.51	14.32	14.63	15.41	15.71	17.15
	12H	14.79	15.06	15.88	16.14	17.62	14.42	14.69	15.51	15.77	17.25
12H	4H	13.85	14.24	14.93	15.31	16.74	13.51	13.89	14.58	14.97	16.40
	6H	14.50	14.80	15.58	15.89	17.33	14.15	14.46	15.24	15.55	16.99
	8H	14.72	14.99	15.81	16.07	17.55	14.37	14.64	15.46	15.72	17.20