

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: P921684

Luminaire Tested: DFN2DIP-HX3F0-050D090US940-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P921684
REPORT IS A COMBINATION OF REPORTS P899289 AND P896089
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX3F0-050D090US940-FLLFLL
Description: 3 foot, Hexagon Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

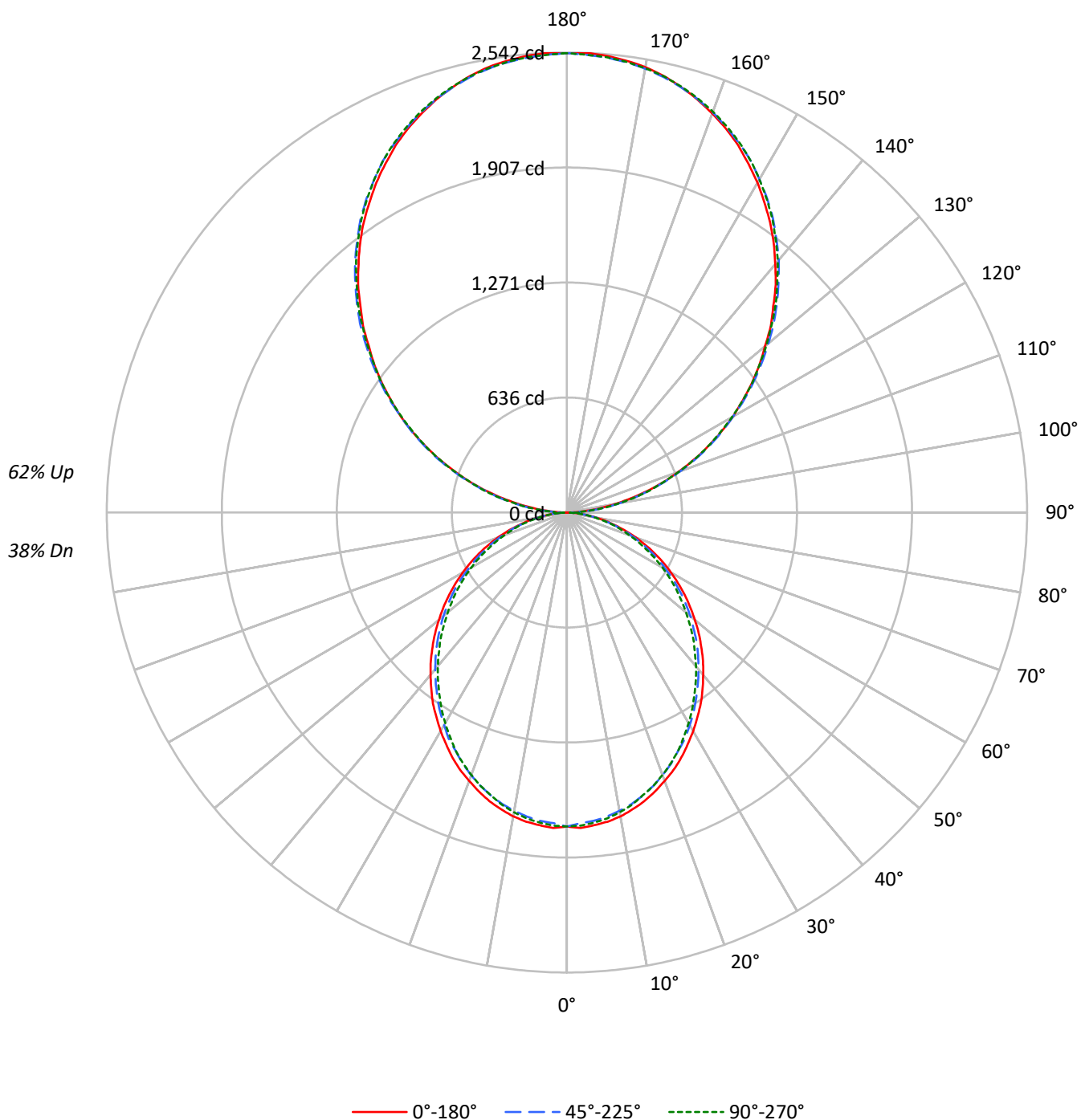
Lumens per Lamp: N/A
Luminaire Lumens: 11516.5 lumens
Efficiency: N/A
Efficacy: 99.4 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 2.84' x L: 3.28' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 115.9
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9951
Total Harmonic Distortion (THDi): 0.07
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P921684

CATALOG NUMBER: DFN2DIP-HX3F0-050D090US940-FLLFLL

Luminous Intensity Polar Plot



TEST NUMBER: P921684

CATALOG NUMBER: DFN2DIP-HX3F0-050D090US940-FLLFL

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	104	104	104	104	95	95	95	95	77	77	77	61	61	61	45	45	45
1	95	91	87	84	86	83	79	77	67	65	63	53	52	50	40	39	38
2	87	79	73	68	78	72	67	63	59	55	52	47	44	42	35	34	32
3	79	70	63	57	71	64	57	52	52	47	44	41	38	35	31	29	27
4	72	62	54	48	65	56	50	44	46	41	37	37	33	30	28	26	24
5	66	55	47	41	60	50	43	38	41	36	32	33	29	26	25	23	21
6	61	49	41	35	55	45	38	33	37	32	28	30	26	23	23	20	18
7	56	44	36	31	51	41	34	29	34	28	25	27	23	20	21	18	16
8	52	40	33	27	47	37	30	25	31	25	22	25	21	18	19	16	14
9	49	37	29	24	44	34	27	23	28	23	19	23	19	16	18	15	13
10	45	33	26	22	41	31	24	20	26	21	17	21	17	15	16	14	12

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2010	2010	2010
5°	2012	1980	1994
10°	1995	1952	1966
15°	1964	1919	1922
20°	1924	1873	1878
25°	1884	1818	1827
30°	1833	1767	1763
35°	1785	1707	1694
40°	1727	1646	1629
45°	1668	1585	1563
50°	1604	1521	1486
55°	1537	1447	1415
60°	1461	1359	1333
65°	1378	1268	1237
70°	1272	1157	1134
75°	1126	1024	1036
80°	949	854	853
85°	673	565	553

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 2389 cd/sqm

TEST NUMBER: P921684

CATALOG NUMBER: DFN2DIP-HX3F0-050D090US940-FLLFLL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	163.3	1.4
10°-20°	459.4	4.0
20°-30°	675.2	5.9
30°-40°	784.2	6.8
40°-50°	783.2	6.8
50°-60°	682.9	5.9
60°-70°	504.8	4.4
70°-80°	285.6	2.5
80°-90°	82.6	0.7
90°-100°	157.1	1.4
100°-110°	499.0	4.3
110°-120°	854.0	7.4
120°-130°	1123.1	9.8
130°-140°	1260.7	10.9
140°-150°	1236.2	10.7
150°-160°	1037.0	9.0
160°-170°	687.7	6.0
170°-180°	240.4	2.1
0°-30°	1297.9	11.3
0°-40°	2082.0	18.1
0°-60°	3548.1	30.8
0°-90°	4421.2	38.4
90°-120°	1510.1	13.1
90°-150°	5130.1	44.5
90°-180°	7095.0	61.6
0°-180°	11516.5	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°	2	28	75	70	73	11
95°	112	133	137	137	133	124
105°	461	467	471	475	475	486
115°	857	869	865	863	857	848
125°	1246	1266	1260	1253	1250	1114
135°	1612	1636	1641	1638	1632	1246
145°	1957	1973	1985	1987	1979	1223
155°	2238	2244	2251	2262	2255	1030
165°	2435	2432	2432	2448	2437	687
175°	2534	2527	2523	2538	2525	241
180°	2538	2538	2538	2538	2538	

TEST NUMBER: P921684

CATALOG NUMBER: DFN2DIP-HX3F0-050D090US940-FLLFLL

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°	2.3	27.6	75.0	70.4	72.7
92.5°	47.4	64.3	66.6	68.8	68.8
95°	111.7	133.1	137.0	137.0	133.1
97.5°	185.9	205.8	214.3	214.3	214.3
100°	271.6	289.3	295.3	295.3	293.1
102.5°	361.9	375.0	383.3	385.7	383.3
105°	460.7	466.7	471.4	475.2	475.2
107.5°	558.6	567.8	567.8	569.3	558.6
110°	653.4	665.8	665.8	665.8	659.6

TEST NUMBER: P921684

CATALOG NUMBER: DFN2DIP-HX3F0-050D090US940-FLLFLL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	756.0	769.0	766.7	760.6	756.0
115°	857.0	869.2	865.4	863.2	857.0
117.5°	957.3	974.1	963.4	957.3	951.1
120°	1058.3	1075.0	1058.3	1058.3	1051.3
122.5°	1150.0	1171.5	1160.8	1154.7	1150.0
125°	1246.5	1265.6	1259.5	1252.6	1250.4
127.5°	1340.6	1364.3	1355.9	1346.8	1340.6
130°	1428.6	1456.2	1452.3	1447.7	1439.3
132.5°	1527.3	1548.7	1550.2	1539.5	1533.5
135°	1612.2	1635.9	1640.6	1638.3	1632.2
137.5°	1707.1	1726.3	1730.1	1728.6	1719.4
140°	1790.6	1809.6	1820.3	1820.3	1812.0
142.5°	1876.2	1895.3	1901.5	1903.8	1895.3
145°	1957.4	1972.6	1984.9	1987.2	1978.8
147.5°	2030.1	2049.2	2058.3	2062.2	2053.8
150°	2105.1	2118.1	2126.5	2133.3	2126.5
152.5°	2171.6	2184.6	2195.3	2203.8	2195.3
155°	2238.2	2244.3	2251.2	2261.9	2255.0
157.5°	2295.5	2300.2	2304.0	2319.2	2308.5
160°	2346.8	2351.4	2353.8	2366.7	2357.5
162.5°	2394.2	2394.2	2396.6	2411.1	2400.4
165°	2434.8	2432.5	2432.5	2447.8	2437.1
167.5°	2471.6	2464.7	2464.7	2479.9	2469.2
170°	2499.1	2493.0	2490.7	2506.0	2493.0
172.5°	2518.2	2512.1	2509.8	2525.1	2512.1
175°	2533.5	2527.4	2522.8	2538.2	2525.1
177.5°	2541.9	2535.8	2531.2	2544.2	2531.2
180°	2538.2	2538.2	2538.2	2538.2	2538.2

TEST NUMBER: P921684

CATALOG NUMBER: DFN2DIP-HX3F0-050D090US940-FLLFLL

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	8.47	9.24	9.52	10.29	11.72	8.04	8.81	9.09	9.86	11.29
	3H	10.12	10.80	11.18	11.87	13.31	9.65	10.33	10.71	11.40	12.84
	4H	10.70	11.35	11.77	12.41	13.87	10.23	10.88	11.30	11.94	13.40
	6H	11.08	11.68	12.17	12.75	14.22	10.61	11.21	11.70	12.28	13.75
	8H	11.18	11.75	12.27	12.84	14.30	10.71	11.28	11.80	12.37	13.83
	12H	11.23	11.77	12.32	12.85	14.33	10.75	11.29	11.84	12.37	13.85
4H	2H	8.92	9.57	10.00	10.64	12.09	8.58	9.23	9.65	10.29	11.75
	3H	10.77	11.31	11.85	12.40	13.87	10.38	10.92	11.46	12.01	13.48
	4H	11.47	11.97	12.56	13.05	14.54	11.07	11.57	12.16	12.65	14.14
	6H	11.97	12.40	13.07	13.51	14.99	11.57	12.00	12.67	13.10	14.58
	8H	12.12	12.52	13.22	13.62	15.11	11.71	12.11	12.81	13.21	14.71
	12H	12.18	12.54	13.30	13.66	15.16	11.77	12.13	12.88	13.24	14.74
8H	4H	11.66	12.06	12.76	13.16	14.65	11.30	11.70	12.40	12.80	14.29
	6H	12.28	12.61	13.40	13.75	15.24	11.92	12.25	13.04	13.39	14.88
	8H	12.49	12.78	13.62	13.90	15.41	12.13	12.41	13.25	13.54	15.05
	12H	12.61	12.87	13.74	13.98	15.53	12.23	12.49	13.36	13.61	15.16
12H	4H	11.64	12.00	12.75	13.11	14.61	11.29	11.65	12.40	12.76	14.26
	6H	12.30	12.59	13.43	13.71	15.23	11.95	12.24	13.08	13.37	14.88
	8H	12.53	12.79	13.67	13.91	15.46	12.18	12.44	13.31	13.55	15.10