

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: P908198

Luminaire Tested: DFN2DIP-HX4F0-070D050US840-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P908198
REPORT IS A COMBINATION OF REPORTS P899323 AND P896188
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX4F0-070D050US840-FLLFLL
Description: 4 foot, Hexagon Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

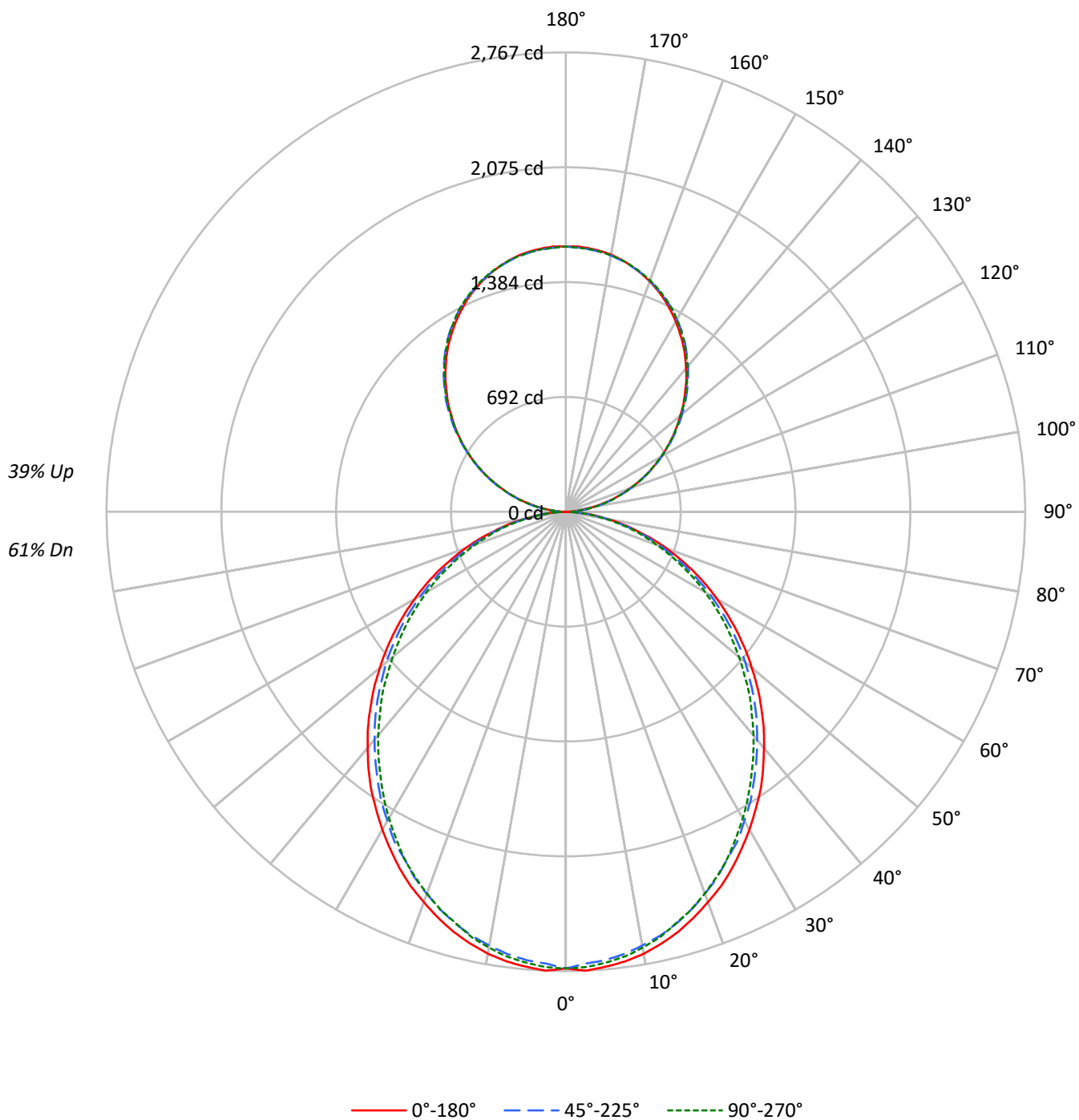
Lumens per Lamp: N/A
Luminaire Lumens: 11467.0 lumens
Efficiency: N/A
Efficacy: 120.8 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 3.54' x L: 4.09' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 94.9
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9972
Total Harmonic Distortion (THDi): 0.128
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P908198

CATALOG NUMBER: DFN2DIP-HX4F0-070D050US840-FLLFLL

Luminous Intensity Polar Plot



TEST NUMBER: P908198

CATALOG NUMBER: DFN2DIP-HX4F0-070D050US840-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	110	110	110	110		103	103	103	103		89	89	89		77	77	77		66	66	66
1	100	96	92	88		94	90	86	83		79	76	74		68	66	65		59	57	56
2	91	84	77	72		85	79	73	68		69	65	61		60	57	54		52	49	47
3	83	74	66	60		78	69	63	57		61	56	51		53	49	46		46	43	40
4	76	65	57	51		71	61	54	49		54	48	44		47	43	39		41	37	35
5	70	58	50	44		65	55	47	42		48	42	38		42	38	34		37	33	30
6	65	52	44	38		60	49	42	36		44	38	33		38	34	30		33	30	27
7	60	47	39	33		56	45	37	32		40	34	29		35	30	26		31	27	24
8	56	43	35	30		52	41	33	28		36	30	26		32	27	24		28	24	21
9	52	39	32	27		48	37	30	25		33	27	23		30	25	21		26	22	19
10	48	36	29	24		45	34	28	23		31	25	21		27	23	19		24	20	17

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2045	2045	2045
5°	2049	2017	2030
10°	2032	1990	2003
15°	2003	1957	1960
20°	1962	1912	1916
25°	1922	1858	1866
30°	1872	1807	1801
35°	1825	1748	1733
40°	1766	1688	1668
45°	1708	1628	1601
50°	1644	1564	1524
55°	1577	1491	1454
60°	1502	1404	1373
65°	1420	1314	1277
70°	1315	1205	1174
75°	1169	1074	1080
80°	995	907	898
85°	723	618	597

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 1708 cd/sqm

TEST NUMBER: P908198

CATALOG NUMBER: DFN2DIP-HX4F0-070D050US840-FLLFLL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	258.9	2.3
10°-20°	728.4	6.4
20°-30°	1070.5	9.3
30°-40°	1243.3	10.8
40°-50°	1241.7	10.8
50°-60°	1082.8	9.4
60°-70°	800.4	7.0
70°-80°	452.9	3.9
80°-90°	124.1	1.1
90°-100°	98.8	0.9
100°-110°	314.0	2.7
110°-120°	537.3	4.7
120°-130°	706.6	6.2
130°-140°	793.2	6.9
140°-150°	777.8	6.8
150°-160°	652.5	5.7
160°-170°	432.7	3.8
170°-180°	151.2	1.3
0°-30°	2057.8	17.9
0°-40°	3301.1	28.8
0°-60°	5625.6	49.1
0°-90°	7002.9	61.1
90°-120°	950.1	8.3
90°-150°	3227.7	28.1
90°-180°	4464.0	38.9
0°-180°	11467.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2751	2751	2751	2751	2751	
5°	2751	2740	2711	2732	2727	261
15°	2618	2603	2568	2579	2566	737
25°	2370	2349	2304	2309	2304	1090
35°	2045	2018	1976	1960	1947	1277
45°	1664	1645	1605	1576	1566	1284
55°	1259	1243	1211	1180	1166	1126
65°	849	833	807	783	770	840
75°	444	439	426	410	415	474
85°	108	106	103	95	93	121
90°	1	17	47	44	46	11
95°	70	84	86	86	84	78
105°	290	294	297	299	299	306
115°	539	547	544	543	539	533
125°	784	796	792	788	787	701
135°	1014	1029	1032	1031	1027	784
145°	1232	1241	1249	1250	1245	769
155°	1408	1412	1416	1423	1419	648
165°	1532	1530	1530	1540	1533	432
175°	1594	1590	1587	1597	1589	151
180°	1597	1597	1597	1597	1597	

TEST NUMBER: P908198

CATALOG NUMBER: DFN2DIP-HX4F0-070D050US840-FLLFLL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2750.6	2750.6	2750.6	2750.6	2750.6
2.5°	2766.6	2753.4	2724.2	2750.6	2745.5
5°	2750.6	2740.3	2711.1	2732.1	2727.0
7.5°	2732.1	2716.3	2687.2	2708.6	2703.2
10°	2703.2	2684.6	2652.9	2674.0	2666.1
12.5°	2663.3	2647.7	2616.0	2629.1	2623.7
15°	2618.5	2602.7	2568.2	2578.9	2565.7
17.5°	2562.8	2547.2	2512.6	2525.9	2512.6
20°	2501.9	2486.3	2449.2	2457.1	2446.7
22.5°	2441.3	2417.5	2383.0	2383.0	2377.6
25°	2369.9	2348.7	2303.9	2309.0	2303.9
27.5°	2290.4	2271.9	2237.7	2229.8	2216.6
30°	2211.3	2189.9	2150.4	2142.5	2131.8
32.5°	2126.5	2110.8	2068.4	2052.5	2041.7
35°	2044.6	2018.2	1975.8	1959.8	1946.6
37.5°	1952.0	1928.1	1885.7	1867.2	1854.0
40°	1856.8	1835.5	1793.1	1769.6	1758.9
42.5°	1764.2	1742.9	1700.8	1674.2	1658.4
45°	1663.8	1645.3	1605.4	1576.5	1565.8
47.5°	1565.8	1547.3	1504.9	1475.7	1460.1
50°	1462.6	1449.4	1412.3	1375.3	1362.1
52.5°	1362.1	1343.6	1309.4	1280.2	1261.6
55°	1259.1	1243.1	1211.4	1179.7	1166.5
57.5°	1155.9	1142.7	1108.1	1076.4	1065.8
60°	1052.6	1042.2	1005.2	976.0	968.2
62.5°	952.1	933.6	907.3	880.9	870.2
65°	849.2	833.1	806.8	782.9	769.7
67.5°	743.4	729.9	706.3	687.8	677.1
70°	645.4	634.8	610.9	592.4	582.0
72.5°	544.9	534.3	521.1	502.6	494.7
75°	444.2	439.2	425.7	410.0	415.4
77.5°	354.5	343.8	338.4	330.5	322.8
80°	264.6	261.9	256.5	248.6	243.3
82.5°	179.9	179.9	177.3	166.7	166.7
85°	108.4	105.8	103.3	95.1	92.6
87.5°	47.7	42.4	37.1	29.2	26.4
90°	1.4	17.4	47.2	44.3	45.7
92.5°	29.9	40.4	41.9	43.3	43.3
95°	70.3	83.8	86.1	86.1	83.8
97.5°	116.9	129.5	134.8	134.8	134.8
100°	170.9	182.0	185.8	185.8	184.4
102.5°	227.7	235.9	241.2	242.7	241.2
105°	289.8	293.7	296.6	298.9	298.9
107.5°	351.4	357.2	357.2	358.2	351.4
110°	411.1	418.9	418.9	418.9	415.0

TEST NUMBER: P908198

CATALOG NUMBER: DFN2DIP-HX4F0-070D050US840-FLLFLL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	475.6	483.8	482.4	478.6	475.6
115°	539.2	546.9	544.5	543.1	539.2
117.5°	602.3	612.9	606.1	602.3	598.4
120°	665.8	676.4	665.8	665.8	661.5
122.5°	723.6	737.1	730.3	726.5	723.6
125°	784.3	796.3	792.4	788.1	786.7
127.5°	843.4	858.4	853.1	847.3	843.4
130°	898.9	916.2	913.7	910.9	905.5
132.5°	961.0	974.4	975.4	968.7	964.8
135°	1014.4	1029.3	1032.2	1030.8	1026.9
137.5°	1074.1	1086.1	1088.5	1087.5	1081.8
140°	1126.5	1138.6	1145.3	1145.3	1140.0
142.5°	1180.4	1192.6	1196.4	1197.8	1192.6
145°	1231.5	1241.1	1248.8	1250.3	1245.0
147.5°	1277.3	1289.3	1295.1	1297.5	1292.1
150°	1324.4	1332.6	1337.9	1342.2	1337.9
152.5°	1366.3	1374.5	1381.2	1386.5	1381.2
155°	1408.2	1412.0	1416.3	1423.1	1418.8
157.5°	1444.3	1447.1	1449.6	1459.3	1452.5
160°	1476.5	1479.5	1480.9	1489.0	1483.3
162.5°	1506.4	1506.4	1507.8	1517.0	1510.3
165°	1532.0	1530.5	1530.5	1540.1	1533.4
167.5°	1555.0	1550.6	1550.6	1560.3	1553.6
170°	1572.4	1568.5	1567.1	1576.7	1568.5
172.5°	1584.4	1580.5	1579.1	1588.7	1580.5
175°	1594.1	1590.1	1587.3	1596.9	1588.7
177.5°	1599.3	1595.5	1592.6	1600.7	1592.6
180°	1596.9	1596.9	1596.9	1596.9	1596.9

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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	10.72	11.69	11.58	12.57	13.67	10.29	11.26	11.14	12.14	13.24
	3H	12.39	13.26	13.26	14.15	15.28	11.92	12.79	12.79	13.68	14.81
	4H	12.98	13.81	13.87	14.70	15.84	12.51	13.33	13.39	14.23	15.37
	6H	13.39	14.15	14.29	15.05	16.20	12.91	13.67	13.81	14.57	15.73
	8H	13.50	14.22	14.40	15.14	16.29	13.02	13.75	13.93	14.66	15.82
	12H	13.55	14.24	14.46	15.15	16.33	13.07	13.76	13.98	14.67	15.85
4H	2H	11.20	12.02	12.09	12.91	14.05	10.85	11.67	11.74	12.57	13.71
	3H	13.07	13.76	13.97	14.69	15.84	12.68	13.37	13.58	14.29	15.45
	4H	13.79	14.42	14.70	15.34	16.52	13.39	14.01	14.30	14.93	16.12
	6H	14.32	14.86	15.24	15.80	16.98	13.91	14.45	14.83	15.39	16.57
	8H	14.47	14.97	15.40	15.91	17.11	14.06	14.56	14.98	15.50	16.70
	12H	14.55	15.00	15.49	15.96	17.16	14.12	14.58	15.07	15.54	16.74
8H	4H	14.00	14.50	14.93	15.44	16.64	13.64	14.14	14.57	15.08	16.28
	6H	14.64	15.06	15.59	16.04	17.23	14.27	14.69	15.23	15.67	16.87
	8H	14.86	15.23	15.82	16.20	17.41	14.49	14.86	15.45	15.83	17.04
	12H	15.00	15.32	15.96	16.29	17.55	14.61	14.94	15.58	15.90	17.16
12H	4H	13.99	14.45	14.94	15.40	16.60	13.64	14.09	14.59	15.05	16.25
	6H	14.67	15.04	15.63	16.01	17.22	14.31	14.69	15.28	15.66	16.87
	8H	14.92	15.24	15.88	16.21	17.47	14.56	14.88	15.53	15.85	17.11

END OF REPORT