

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: P913634

Luminaire Tested: DFN2DIP-HX4F0-060D040US927-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P913634
REPORT IS A COMBINATION OF REPORTS P899303 AND P896188
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX4F0-060D040US927-FLLFLL
Description: 4 foot, Hexagon Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

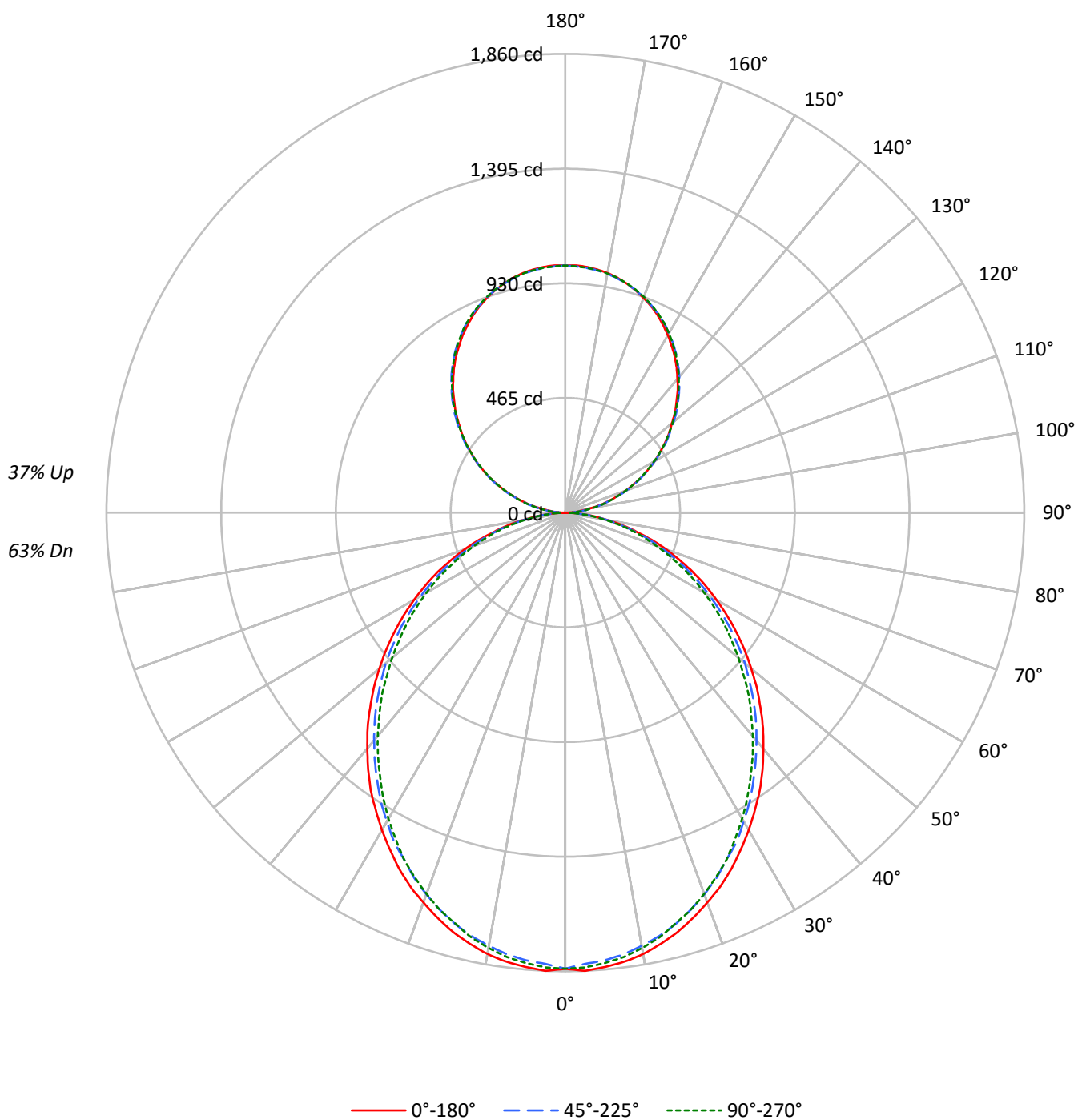
Lumens per Lamp: N/A
Luminaire Lumens: 7509.9 lumens
Efficiency: N/A
Efficacy: 96.4 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 3.54' x L: 4.09' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 77.9
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.099
Total Harmonic Distortion (THDi): 0.979
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P913634

CATALOG NUMBER: DFN2DIP-HX4F0-060D040US927-FLLFLL

Luminous Intensity Polar Plot



TEST NUMBER: P913634

CATALOG NUMBER: DFN2DIP-HX4F0-060D040US927-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	90	90	90	79	79	79	68	68	68
1	101	96	92	89	94	90	87	84	79	77	74	69	67	66	60	59	57
2	92	84	78	72	86	79	73	69	70	65	62	61	58	55	53	50	48
3	84	74	66	60	78	70	63	58	61	56	52	54	50	46	47	44	41
4	77	66	57	51	71	62	54	49	55	49	44	48	43	40	42	38	35
5	70	58	50	44	66	55	48	42	49	43	38	43	38	35	38	34	31
6	65	53	44	38	61	50	42	37	44	38	33	39	34	30	34	30	27
7	60	48	39	34	56	45	38	32	40	34	30	36	31	27	31	27	24
8	56	43	35	30	52	41	34	29	37	31	26	33	28	24	29	25	22
9	52	40	32	27	49	38	30	26	34	28	24	30	25	22	27	23	20
10	49	36	29	24	46	35	28	23	31	25	21	28	23	20	25	21	18

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1375	1375	1375
5°	1377	1356	1365
10°	1366	1338	1347
15°	1346	1316	1318
20°	1319	1286	1288
25°	1293	1249	1254
30°	1259	1215	1211
35°	1227	1175	1165
40°	1187	1135	1121
45°	1148	1094	1077
50°	1105	1052	1025
55°	1060	1003	977
60°	1010	944	923
65°	954	884	859
70°	884	810	789
75°	786	722	726
80°	669	610	604
85°	485	415	402

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 1148 cd/sqm

TEST NUMBER: P913634

CATALOG NUMBER: DFN2DIP-HX4F0-060D040US927-FLLFLL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	174.1	2.3
10°-20°	489.8	6.5
20°-30°	719.8	9.6
30°-40°	836.0	11.1
40°-50°	834.9	11.1
50°-60°	728.0	9.7
60°-70°	538.2	7.2
70°-80°	304.5	4.1
80°-90°	83.2	1.1
90°-100°	62.0	0.8
100°-110°	197.0	2.6
110°-120°	337.2	4.5
120°-130°	443.5	5.9
130°-140°	497.8	6.6
140°-150°	488.1	6.5
150°-160°	409.5	5.5
160°-170°	271.5	3.6
170°-180°	94.9	1.3
0°-30°	1383.6	18.4
0°-40°	2219.6	29.6
0°-60°	3782.5	50.4
0°-90°	4708.4	62.7
90°-120°	596.2	7.9
90°-150°	2025.6	27.0
90°-180°	2801.0	37.3
0°-180°	7509.9	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1849	1849	1849	1849	1849	
5°	1849	1842	1823	1837	1834	176
15°	1760	1750	1727	1734	1725	496
25°	1593	1579	1549	1552	1549	733
35°	1375	1357	1328	1318	1309	858
45°	1119	1106	1079	1060	1053	863
55°	847	836	814	793	784	757
65°	571	560	542	526	518	564
75°	299	295	286	276	279	319
85°	73	71	69	64	62	81
90°	1	11	30	28	29	7
95°	44	53	54	54	53	49
105°	182	184	186	188	188	192
115°	338	343	342	341	338	335
125°	492	500	497	495	494	440
135°	637	646	648	647	644	492
145°	773	779	784	785	781	483
155°	884	886	889	893	890	407
165°	961	960	960	966	962	271
175°	1000	998	996	1002	997	95
180°	1002	1002	1002	1002	1002	

TEST NUMBER: P913634

CATALOG NUMBER: DFN2DIP-HX4F0-060D040US927-FLLFLL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1849.4	1849.4	1849.4	1849.4	1849.4
2.5°	1860.2	1851.3	1831.7	1849.4	1846.0
5°	1849.4	1842.5	1822.8	1837.0	1833.6
7.5°	1837.0	1826.5	1806.8	1821.1	1817.6
10°	1817.6	1805.1	1783.8	1797.9	1792.6
12.5°	1790.8	1780.2	1758.9	1767.8	1764.2
15°	1760.5	1750.0	1726.8	1734.0	1725.1
17.5°	1723.2	1712.7	1689.5	1698.3	1689.5
20°	1682.3	1671.7	1646.8	1652.1	1645.1
22.5°	1641.6	1625.5	1602.3	1602.3	1598.7
25°	1593.4	1579.3	1549.0	1552.4	1549.0
27.5°	1540.0	1527.6	1504.5	1499.3	1490.4
30°	1486.8	1472.4	1445.9	1440.6	1433.4
32.5°	1429.8	1419.3	1390.8	1380.0	1372.8
35°	1374.8	1357.0	1328.5	1317.7	1308.8
37.5°	1312.5	1296.4	1268.0	1255.4	1246.6
40°	1248.5	1234.1	1205.7	1189.9	1182.6
42.5°	1186.2	1171.9	1143.6	1125.7	1115.1
45°	1118.7	1106.2	1079.4	1060.0	1052.8
47.5°	1052.8	1040.4	1011.9	992.3	981.7
50°	983.4	974.5	949.7	924.7	915.8
52.5°	915.8	903.4	880.4	860.8	848.3
55°	846.6	835.8	814.5	793.2	784.3
57.5°	777.2	768.3	745.1	723.8	716.6
60°	707.7	700.8	675.9	656.2	650.9
62.5°	640.2	627.7	610.0	592.2	585.1
65°	570.9	560.2	542.5	526.4	517.5
67.5°	499.8	490.8	474.9	462.5	455.3
70°	434.0	426.8	410.7	398.3	391.3
72.5°	366.4	359.3	350.4	337.9	332.6
75°	298.7	295.3	286.2	275.7	279.2
77.5°	238.3	231.2	227.5	222.3	217.0
80°	177.9	176.0	172.5	167.2	163.6
82.5°	121.0	121.0	119.2	112.1	112.1
85°	72.8	71.1	69.4	63.9	62.3
87.5°	32.1	28.5	24.9	19.6	17.7
90°	0.9	10.9	29.6	27.8	28.7
92.5°	18.7	25.3	26.3	27.2	27.2
95°	44.1	52.6	54.1	54.1	52.6
97.5°	73.4	81.3	84.6	84.6	84.6
100°	107.3	114.2	116.6	116.6	115.7
102.5°	142.9	148.1	151.4	152.3	151.4
105°	181.9	184.3	186.1	187.6	187.6
107.5°	220.5	224.2	224.2	224.7	220.5
110°	258.0	262.8	262.8	262.8	260.5

TEST NUMBER: P913634

CATALOG NUMBER: DFN2DIP-HX4F0-060D040US927-FLLFLL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	298.5	303.6	302.7	300.3	298.5
115°	338.3	343.3	341.7	340.8	338.3
117.5°	377.9	384.6	380.4	377.9	375.6
120°	417.9	424.5	417.9	417.9	415.1
122.5°	454.1	462.6	458.4	455.9	454.1
125°	492.2	499.7	497.3	494.6	493.7
127.5°	529.3	538.7	535.4	531.7	529.3
130°	564.0	575.0	573.5	571.6	568.3
132.5°	603.0	611.5	612.1	607.8	605.5
135°	636.6	645.9	647.8	646.8	644.4
137.5°	674.1	681.6	683.1	682.5	678.9
140°	706.9	714.5	718.7	718.7	715.4
142.5°	740.8	748.4	750.8	751.7	748.4
145°	772.9	778.9	783.7	784.7	781.3
147.5°	801.5	809.1	812.7	814.2	810.9
150°	831.2	836.3	839.6	842.3	839.6
152.5°	857.5	862.5	866.8	870.1	866.8
155°	883.7	886.1	888.8	893.1	890.3
157.5°	906.4	908.2	909.7	915.8	911.5
160°	926.6	928.4	929.3	934.5	930.8
162.5°	945.3	945.3	946.3	952.0	947.8
165°	961.4	960.4	960.4	966.5	962.3
167.5°	975.9	973.1	973.1	979.2	974.9
170°	986.7	984.3	983.4	989.4	984.3
172.5°	994.3	991.9	990.9	997.0	991.9
175°	1000.4	997.9	996.1	1002.1	997.0
177.5°	1003.7	1001.2	999.4	1004.6	999.4
180°	1002.1	1002.1	1002.1	1002.1	1002.1

TEST NUMBER: P913634

CATALOG NUMBER: DFN2DIP-HX4F0-060D040US927-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	9.47	10.46	10.31	11.32	12.40	9.04	10.03	9.88	10.89	11.97
	3H	11.14	12.03	12.00	12.90	14.01	10.67	11.56	11.52	12.43	13.54
	4H	11.74	12.58	12.61	13.46	14.57	11.27	12.10	12.13	12.98	14.10
	6H	12.15	12.92	13.03	13.80	14.93	11.67	12.44	12.55	13.33	14.46
	8H	12.25	12.99	13.14	13.90	15.02	11.78	12.52	12.67	13.42	14.55
	12H	12.31	13.01	13.20	13.91	15.06	11.83	12.53	12.72	13.43	14.58
4H	2H	9.95	10.79	10.83	11.67	12.78	9.61	10.45	10.48	11.32	12.44
	3H	11.83	12.53	12.72	13.44	14.57	11.44	12.14	12.32	13.05	14.18
	4H	12.55	13.19	13.45	14.10	15.25	12.14	12.78	13.04	13.69	14.85
	6H	13.07	13.63	13.99	14.56	15.71	12.66	13.22	13.58	14.15	15.30
	8H	13.23	13.74	14.14	14.67	15.84	12.81	13.33	13.73	14.26	15.43
	12H	13.31	13.77	14.24	14.71	15.89	12.88	13.35	13.82	14.29	15.47
8H	4H	12.76	13.27	13.67	14.20	15.37	12.40	12.91	13.31	13.84	15.01
	6H	13.40	13.82	14.34	14.79	15.96	13.03	13.46	13.97	14.43	15.60
	8H	13.62	14.00	14.57	14.95	16.14	13.25	13.63	14.20	14.58	15.77
	12H	13.76	14.09	14.71	15.04	16.28	13.37	13.71	14.33	14.66	15.89
12H	4H	12.75	13.21	13.68	14.16	15.34	12.40	12.86	13.33	13.81	14.98
	6H	13.43	13.81	14.38	14.76	15.95	13.08	13.45	14.03	14.41	15.60
	8H	13.68	14.01	14.63	14.96	16.20	13.32	13.65	14.27	14.60	15.84

END OF REPORT