

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: P902646

Luminaire Tested: DFN2DIP-HX3F0-080D050US830-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P902646
REPORT IS A COMBINATION OF REPORTS P899239 AND P896089
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX3F0-080D050US830-FLLFLL
Description: 3 foot, Hexagon Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

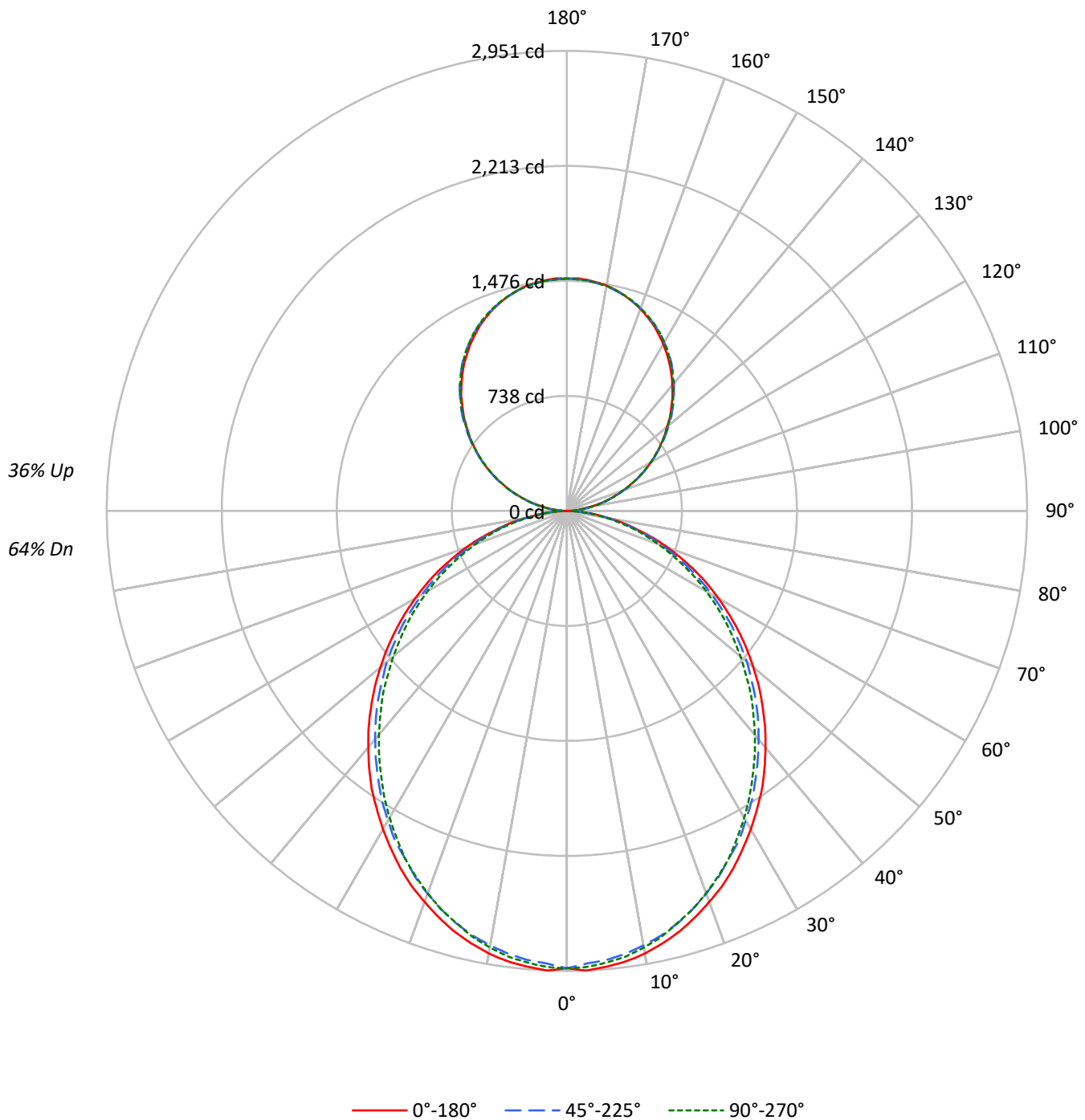
Lumens per Lamp: N/A
Luminaire Lumens: 11635.7 lumens
Efficiency: N/A
Efficacy: 99.8 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 2.84' x L: 3.28' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 116.6
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9971
Total Harmonic Distortion (THDi): 0.049
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P902646

CATALOG NUMBER: DFN2DIP-HX3F0-080D050US830-FLLFLL

Luminous Intensity Polar Plot



TEST NUMBER: P902646

CATALOG NUMBER: DFN2DIP-HX3F0-080D050US830-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	111	111	111	111	104	104	104	104	91	91	91	80	80	80	69	69	69
1	101	97	93	89	95	91	87	84	80	77	75	70	68	66	61	60	58
2	92	84	78	73	86	79	74	69	70	66	62	62	58	56	54	51	49
3	84	74	67	61	79	70	63	58	62	57	52	55	50	47	48	45	42
4	77	66	58	51	72	62	55	49	55	49	45	49	44	40	43	39	36
5	71	59	50	44	66	55	48	42	49	43	39	44	39	35	38	35	32
6	65	53	44	38	61	50	42	37	45	38	34	40	35	31	35	31	28
7	60	48	40	34	56	45	38	32	40	34	30	36	31	27	32	28	25
8	56	43	35	30	53	41	34	29	37	31	27	33	28	24	29	25	22
9	52	40	32	27	49	38	31	26	34	28	24	30	26	22	27	23	20
10	49	37	29	24	46	35	28	23	31	26	22	28	23	20	25	21	18

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3398	3398	3398
5°	3402	3349	3372
10°	3373	3301	3324
15°	3322	3245	3251
20°	3254	3167	3176
25°	3185	3074	3090
30°	3100	2988	2981
35°	3019	2886	2865
40°	2920	2784	2755
45°	2821	2680	2643
50°	2713	2572	2513
55°	2599	2447	2392
60°	2471	2299	2255
65°	2330	2145	2092
70°	2151	1957	1917
75°	1904	1732	1752
80°	1605	1444	1443
85°	1139	956	936

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2821 cd/sqm

TEST NUMBER: P902646

CATALOG NUMBER: DFN2DIP-HX3F0-080D050US830-FLLFLL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	276.1	2.4
10°-20°	777.0	6.7
20°-30°	1141.8	9.8
30°-40°	1326.2	11.4
40°-50°	1324.5	11.4
50°-60°	1155.0	9.9
60°-70°	853.8	7.3
70°-80°	483.0	4.2
80°-90°	131.7	1.1
90°-100°	92.2	0.8
100°-110°	293.0	2.5
110°-120°	501.5	4.3
120°-130°	659.5	5.7
130°-140°	740.3	6.4
140°-150°	725.9	6.2
150°-160°	609.0	5.2
160°-170°	403.9	3.5
170°-180°	141.2	1.2
0°-30°	2195.0	18.9
0°-40°	3521.1	30.3
0°-60°	6000.6	51.6
0°-90°	7469.2	64.2
90°-120°	886.7	7.6
90°-150°	3012.5	25.9
90°-180°	4167.0	35.8
0°-180°	11635.7	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2934	2934	2934	2934	2934	
5°	2934	2923	2892	2914	2909	279
15°	2793	2776	2739	2751	2737	787
25°	2528	2505	2458	2463	2458	1163
35°	2181	2153	2108	2090	2076	1362
45°	1775	1755	1712	1682	1670	1370
55°	1343	1326	1292	1258	1244	1201
65°	906	889	860	835	821	896
75°	474	468	454	437	443	506
85°	116	113	110	102	99	129
90°	1	16	44	41	43	11
95°	66	78	80	80	78	73
105°	270	274	277	279	279	285
115°	503	510	508	507	503	498
125°	732	743	740	736	734	654
135°	947	961	963	962	958	732
145°	1149	1158	1166	1167	1162	718
155°	1314	1318	1322	1328	1324	605
165°	1430	1428	1428	1438	1431	403
175°	1488	1484	1482	1490	1483	141
180°	1490	1490	1490	1490	1490	

TEST NUMBER: P902646

CATALOG NUMBER: DFN2DIP-HX3F0-080D050US830-FLLFLL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2933.9	2933.9	2933.9	2933.9	2933.9
2.5°	2951.0	2937.0	2905.9	2933.9	2928.6
5°	2933.9	2922.9	2891.8	2914.2	2908.9
7.5°	2914.2	2897.5	2866.4	2889.1	2883.4
10°	2883.4	2863.6	2829.8	2852.2	2843.9
12.5°	2840.9	2824.1	2790.3	2804.3	2798.7
15°	2793.0	2776.3	2739.4	2750.8	2736.8
17.5°	2733.7	2717.0	2680.1	2694.3	2680.1
20°	2668.8	2652.0	2612.5	2620.9	2609.8
22.5°	2604.2	2578.7	2541.8	2541.8	2536.2
25°	2527.8	2505.4	2457.5	2462.9	2457.5
27.5°	2443.1	2423.4	2386.8	2378.4	2364.4
30°	2358.7	2335.9	2293.8	2285.4	2274.0
32.5°	2268.3	2251.5	2206.3	2189.2	2177.9
35°	2180.9	2152.8	2107.5	2090.5	2076.4
37.5°	2082.1	2056.6	2011.5	1991.7	1977.6
40°	1980.7	1957.8	1912.7	1887.5	1876.1
42.5°	1881.9	1859.1	1814.2	1785.7	1769.1
45°	1774.7	1754.9	1712.4	1681.6	1670.3
47.5°	1670.3	1650.5	1605.2	1574.1	1557.4
50°	1560.1	1546.1	1506.5	1467.0	1452.9
52.5°	1452.9	1433.1	1396.7	1365.6	1345.8
55°	1343.0	1326.0	1292.2	1258.4	1244.3
57.5°	1232.9	1218.9	1182.0	1148.2	1136.8
60°	1122.8	1111.7	1072.1	1041.0	1032.6
62.5°	1015.6	995.9	967.7	939.6	928.2
65°	905.8	888.7	860.5	835.1	821.0
67.5°	792.9	778.5	753.4	733.7	722.3
70°	688.4	677.0	651.7	631.9	620.8
72.5°	581.3	570.0	555.8	536.1	527.7
75°	473.8	468.4	454.1	437.3	443.0
77.5°	378.1	366.6	361.0	352.6	344.2
80°	282.3	279.3	273.6	265.2	259.5
82.5°	191.9	191.9	189.2	177.8	177.8
85°	115.6	112.8	110.2	101.5	98.8
87.5°	50.9	45.2	39.5	31.1	28.2
90°	1.3	16.2	44.0	41.4	42.7
92.5°	27.9	37.7	39.1	40.4	40.4
95°	65.6	78.2	80.4	80.4	78.2
97.5°	109.1	120.8	125.8	125.8	125.8
100°	159.5	169.8	173.4	173.4	172.1
102.5°	212.5	220.2	225.1	226.5	225.1
105°	270.5	274.1	276.8	279.0	279.0
107.5°	328.0	333.4	333.4	334.3	328.0
110°	383.7	391.0	391.0	391.0	387.3



TEST NUMBER: P902646

CATALOG NUMBER: DFN2DIP-HX3F0-080D050US830-FLLFLL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	443.9	451.6	450.3	446.7	443.9
115°	503.2	510.5	508.2	506.9	503.2
117.5°	562.1	572.0	565.7	562.1	558.6
120°	621.4	631.3	621.4	621.4	617.4
122.5°	675.3	688.0	681.6	678.1	675.3
125°	732.0	743.2	739.6	735.6	734.2
127.5°	787.2	801.2	796.3	790.8	787.2
130°	839.0	855.1	852.8	850.2	845.2
132.5°	896.9	909.5	910.4	904.1	900.5
135°	946.8	960.6	963.4	962.1	958.5
137.5°	1002.5	1013.7	1016.0	1015.0	1009.7
140°	1051.4	1062.7	1068.9	1068.9	1064.0
142.5°	1101.7	1113.0	1116.6	1117.9	1113.0
145°	1149.4	1158.4	1165.5	1167.0	1162.0
147.5°	1192.1	1203.3	1208.7	1211.0	1206.0
150°	1236.1	1243.8	1248.7	1252.7	1248.7
152.5°	1275.3	1282.9	1289.1	1294.1	1289.1
155°	1314.3	1317.9	1321.9	1328.2	1324.2
157.5°	1348.0	1350.7	1352.9	1362.0	1355.7
160°	1378.1	1380.8	1382.1	1389.8	1384.4
162.5°	1406.0	1406.0	1407.3	1415.9	1409.6
165°	1429.8	1428.4	1428.4	1437.5	1431.2
167.5°	1451.3	1447.3	1447.3	1456.3	1450.0
170°	1467.5	1464.0	1462.6	1471.6	1464.0
172.5°	1478.8	1475.2	1473.9	1482.8	1475.2
175°	1487.8	1484.1	1481.5	1490.4	1482.8
177.5°	1492.7	1489.1	1486.4	1494.0	1486.4
180°	1490.4	1490.4	1490.4	1490.4	1490.4

TEST NUMBER: P902646

CATALOG NUMBER: DFN2DIP-HX3F0-080D050US830-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	12.69	13.70	13.52	14.55	15.60	12.26	13.27	13.09	14.12	15.17
	3H	14.36	15.26	15.19	16.12	17.20	13.89	14.79	14.73	15.65	16.73
	4H	14.95	15.80	15.80	16.66	17.75	14.48	15.33	15.33	16.19	17.29
	6H	15.35	16.13	16.21	17.01	18.11	14.88	15.66	15.74	16.53	17.64
	8H	15.45	16.20	16.33	17.09	18.20	14.98	15.73	15.86	16.62	17.73
	12H	15.50	16.22	16.38	17.10	18.23	15.03	15.74	15.91	16.63	17.76
4H	2H	13.17	14.02	14.03	14.89	15.98	12.83	13.68	13.69	14.54	15.63
	3H	15.04	15.75	15.91	16.65	17.75	14.65	15.36	15.52	16.26	17.36
	4H	15.75	16.40	16.64	17.30	18.43	15.35	16.00	16.23	16.89	18.03
	6H	16.27	16.83	17.17	17.75	18.88	15.86	16.43	16.76	17.34	18.48
	8H	16.42	16.94	17.32	17.85	19.00	16.01	16.54	16.91	17.45	18.60
	12H	16.50	16.97	17.42	17.90	19.05	16.08	16.55	17.00	17.48	18.64
8H	4H	15.96	16.48	16.86	17.39	18.54	15.60	16.13	16.50	17.04	18.19
	6H	16.59	17.02	17.51	17.97	19.12	16.23	16.66	17.16	17.62	18.76
	8H	16.80	17.19	17.74	18.13	19.30	16.44	16.82	17.38	17.77	18.93
	12H	16.94	17.28	17.88	18.21	19.43	16.56	16.90	17.50	17.83	19.05
12H	4H	15.95	16.42	16.87	17.35	18.51	15.60	16.07	16.52	17.00	18.16
	6H	16.62	17.00	17.55	17.95	19.11	16.27	16.65	17.21	17.60	18.76
	8H	16.86	17.20	17.80	18.14	19.35	16.51	16.84	17.45	17.78	19.00