

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: P924506

Luminaire Tested: DFN2DIP-HX3F0-090D080US950-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P924506
REPORT IS A COMBINATION OF REPORTS P899283 AND P896089
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX3F0-090D080US950-FLLFLL
Description: 3 foot, Hexagon Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

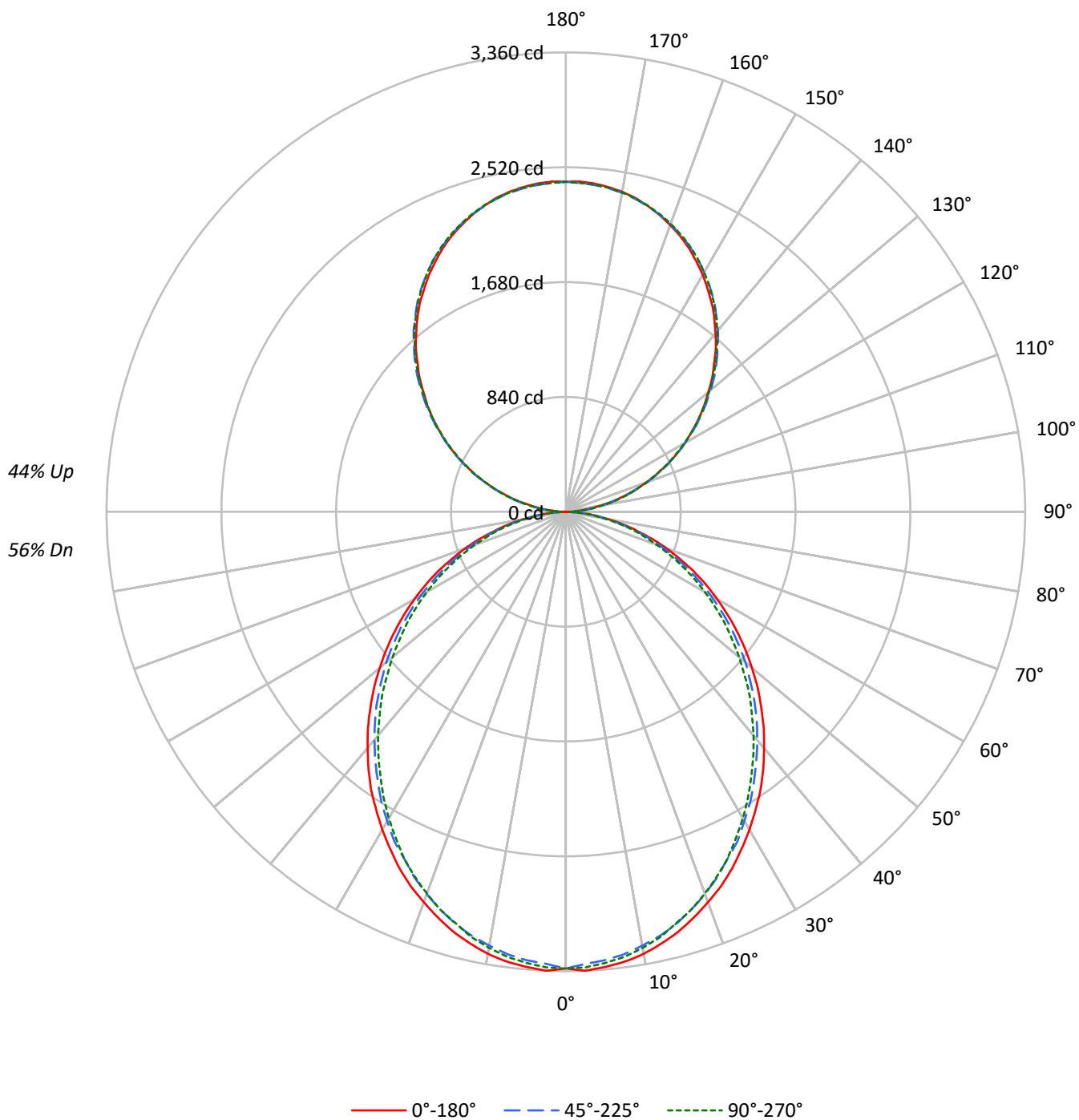
Lumens per Lamp: N/A
Luminaire Lumens: 15254.5 lumens
Efficiency: N/A
Efficacy: 99.1 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 2.84' x L: 3.28' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 154
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9968
Total Harmonic Distortion (THDi): 0.064
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P924506

CATALOG NUMBER: DFN2DIP-HX3F0-090D080US950-FLLFLL

Luminous Intensity Polar Plot



TEST NUMBER: P924506

CATALOG NUMBER: DFN2DIP-HX3F0-090D080US950-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	109	109	109	109	101	101	101	101	87	87	87	73	73	73	61	61	61
1	99	95	91	87	92	88	85	82	76	73	71	65	63	61	54	53	52
2	90	83	77	71	84	77	72	67	67	62	59	57	54	51	48	46	44
3	82	73	65	59	76	68	61	56	59	54	50	50	46	43	42	40	37
4	75	64	56	50	70	60	53	48	52	47	42	45	41	37	38	35	32
5	69	57	49	43	64	54	46	41	47	41	36	40	36	32	34	31	28
6	64	52	43	37	59	48	41	36	42	36	32	36	32	28	31	27	25
7	59	47	39	33	55	44	36	31	38	32	28	33	28	25	28	25	22
8	55	42	35	29	51	40	33	28	35	29	25	30	26	22	26	22	20
9	51	39	31	26	47	36	30	25	32	26	22	28	23	20	24	20	18
10	48	36	28	23	44	33	27	22	30	24	20	26	21	18	22	19	16

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3870	3870	3870
5°	3874	3813	3840
10°	3841	3759	3785
15°	3783	3695	3702
20°	3705	3606	3617
25°	3627	3501	3519
30°	3530	3402	3394
35°	3438	3286	3263
40°	3325	3170	3138
45°	3212	3052	3010
50°	3089	2929	2861
55°	2960	2786	2724
60°	2813	2617	2567
65°	2653	2442	2382
70°	2449	2228	2183
75°	2168	1972	1995
80°	1828	1644	1643
85°	1297	1089	1066

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 3212 cd/sqm

TEST NUMBER: P924506

CATALOG NUMBER: DFN2DIP-HX3F0-090D080US950-FLLFLL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	314.4	2.1
10°-20°	884.7	5.8
20°-30°	1300.2	8.5
30°-40°	1510.1	9.9
40°-50°	1508.2	9.9
50°-60°	1315.1	8.6
60°-70°	972.2	6.4
70°-80°	550.0	3.6
80°-90°	152.0	1.0
90°-100°	149.4	1.0
100°-110°	474.6	3.1
110°-120°	812.1	5.3
120°-130°	1068.1	7.0
130°-140°	1198.9	7.9
140°-150°	1175.6	7.7
150°-160°	986.2	6.5
160°-170°	654.0	4.3
170°-180°	228.6	1.5
0°-30°	2499.3	16.4
0°-40°	4009.4	26.3
0°-60°	6832.8	44.8
0°-90°	8507.0	55.8
90°-120°	1436.1	9.4
90°-150°	4878.6	32.0
90°-180°	6747.0	44.2
0°-180°	15254.5	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3341	3341	3341	3341	3341	
5°	3341	3328	3293	3318	3312	317
15°	3180	3161	3119	3132	3116	896
25°	2878	2853	2798	2804	2798	1324
35°	2483	2451	2400	2380	2364	1551
45°	2021	1998	1950	1915	1902	1560
55°	1529	1510	1471	1433	1417	1367
65°	1031	1012	980	951	935	1020
75°	540	533	517	498	504	576
85°	132	128	126	116	112	147
90°	2	26	71	67	69	15
95°	106	127	130	130	127	118
105°	438	444	448	452	452	462
115°	815	827	823	821	815	806
125°	1185	1204	1198	1191	1189	1059
135°	1533	1556	1560	1558	1552	1185
145°	1861	1876	1888	1890	1882	1163
155°	2128	2134	2141	2151	2144	980
165°	2316	2313	2313	2328	2318	653
175°	2409	2404	2399	2414	2401	229
180°	2414	2414	2414	2414	2414	



TEST NUMBER: P924506

CATALOG NUMBER: DFN2DIP-HX3F0-090D080US950-FLLFLL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	3340.8	3340.8	3340.8	3340.8	3340.8
2.5°	3360.3	3344.2	3308.9	3340.8	3334.7
5°	3340.8	3328.2	3292.8	3318.4	3312.2
7.5°	3318.4	3299.3	3263.8	3289.8	3283.3
10°	3283.3	3260.8	3222.2	3247.8	3238.3
12.5°	3234.8	3215.7	3177.3	3193.2	3186.8
15°	3180.3	3161.3	3119.3	3132.3	3116.2
17.5°	3112.8	3093.7	3051.8	3067.9	3051.8
20°	3038.9	3019.8	2974.8	2984.3	2971.7
22.5°	2965.2	2936.3	2894.3	2894.3	2887.9
25°	2878.3	2852.7	2798.3	2804.4	2798.3
27.5°	2781.9	2759.3	2717.9	2708.3	2692.3
30°	2685.8	2659.8	2611.8	2602.2	2589.3
32.5°	2582.9	2563.8	2512.3	2492.9	2479.9
35°	2483.4	2451.3	2399.8	2380.4	2364.4
37.5°	2370.9	2341.9	2290.4	2267.9	2251.9
40°	2255.3	2229.4	2177.9	2149.3	2136.4
42.5°	2142.8	2116.9	2065.8	2033.5	2014.4
45°	2020.8	1998.3	1949.9	1914.8	1901.9
47.5°	1901.9	1879.4	1827.9	1792.5	1773.4
50°	1776.4	1760.4	1715.4	1670.5	1654.4
52.5°	1654.4	1631.9	1590.3	1554.9	1532.4
55°	1529.4	1509.9	1471.4	1432.9	1416.9
57.5°	1403.9	1387.9	1346.0	1307.5	1294.5
60°	1278.5	1265.9	1220.8	1185.4	1175.9
62.5°	1156.4	1133.9	1101.9	1069.9	1056.9
65°	1031.4	1011.9	979.9	950.9	934.9
67.5°	902.9	886.6	857.8	835.4	822.4
70°	783.9	770.9	742.0	719.5	706.9
72.5°	661.9	648.9	632.9	610.5	600.9
75°	539.6	533.4	517.1	498.0	504.5
77.5°	430.4	417.6	411.1	401.5	392.0
80°	321.4	318.0	311.5	301.9	295.5
82.5°	218.5	218.5	215.4	202.4	202.4
85°	131.6	128.5	125.5	115.5	112.5
87.5°	57.9	51.4	45.0	35.5	32.1
90°	2.2	26.2	71.4	67.0	69.2
92.5°	45.1	61.2	63.3	65.4	65.4
95°	106.3	126.6	130.2	130.2	126.6
97.5°	176.9	195.8	203.8	203.8	203.8
100°	258.3	275.0	280.9	280.9	278.7
102.5°	344.2	356.6	364.5	366.7	364.5
105°	438.1	443.9	448.3	451.9	451.9
107.5°	531.2	540.0	540.0	541.4	531.2
110°	621.4	633.1	633.1	633.1	627.3

TEST NUMBER: P924506

CATALOG NUMBER: DFN2DIP-HX3F0-090D080US950-FLLFLL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	718.9	731.3	729.1	723.3	718.9
115°	815.0	826.6	823.0	820.8	815.0
117.5°	910.3	926.3	916.1	910.3	904.5
120°	1006.4	1022.4	1006.4	1006.4	999.8
122.5°	1093.7	1114.1	1103.9	1098.1	1093.7
125°	1185.3	1203.6	1197.7	1191.2	1189.1
127.5°	1274.9	1297.4	1289.4	1280.7	1274.9
130°	1358.6	1384.7	1381.1	1376.8	1368.8
132.5°	1452.5	1472.8	1474.3	1464.1	1458.3
135°	1533.2	1555.8	1560.2	1558.0	1552.2
137.5°	1623.4	1641.6	1645.3	1643.8	1635.1
140°	1702.8	1720.9	1731.1	1731.1	1723.1
142.5°	1784.3	1802.5	1808.3	1810.5	1802.5
145°	1861.4	1875.9	1887.6	1889.8	1881.8
147.5°	1930.5	1948.7	1957.4	1961.1	1953.1
150°	2001.9	2014.2	2022.2	2028.8	2022.2
152.5°	2065.1	2077.5	2087.7	2095.7	2087.7
155°	2128.5	2134.3	2140.9	2151.0	2144.5
157.5°	2183.0	2187.4	2191.1	2205.6	2195.4
160°	2231.8	2236.2	2238.4	2250.7	2242.0
162.5°	2276.9	2276.9	2279.1	2292.9	2282.7
165°	2315.5	2313.3	2313.3	2327.9	2317.6
167.5°	2350.4	2343.9	2343.9	2358.4	2348.2
170°	2376.6	2370.8	2368.6	2383.2	2370.8
172.5°	2394.8	2389.0	2386.8	2401.3	2389.0
175°	2409.3	2403.5	2399.1	2413.7	2401.3
177.5°	2417.3	2411.5	2407.1	2419.5	2407.1
180°	2413.7	2413.7	2413.7	2413.7	2413.7

TEST NUMBER: P924506

CATALOG NUMBER: DFN2DIP-HX3F0-090D080US950-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	12.45	13.36	13.35	14.29	15.47	12.02	12.93	12.92	13.86	15.04
	3H	14.10	14.92	15.02	15.86	17.07	13.63	14.45	14.55	15.39	16.60
	4H	14.69	15.46	15.62	16.40	17.62	14.22	15.00	15.15	15.94	17.16
	6H	15.08	15.80	16.03	16.75	17.98	14.61	15.33	15.56	16.28	17.51
	8H	15.19	15.87	16.14	16.83	18.06	14.72	15.40	15.67	16.36	17.59
	12H	15.23	15.88	16.19	16.84	18.10	14.76	15.41	15.72	16.37	17.62
4H	2H	12.91	13.69	13.85	14.63	15.85	12.57	13.35	13.51	14.28	15.50
	3H	14.77	15.42	15.72	16.39	17.63	14.38	15.03	15.33	16.00	17.24
	4H	15.48	16.08	16.44	17.04	18.30	15.08	15.67	16.04	16.64	17.90
	6H	15.99	16.51	16.96	17.49	18.75	15.59	16.10	16.56	17.09	18.35
	8H	16.14	16.62	17.11	17.60	18.87	15.73	16.21	16.71	17.19	18.47
	12H	16.21	16.64	17.21	17.64	18.92	15.80	16.23	16.79	17.23	18.50
8H	4H	15.68	16.16	16.65	17.14	18.41	15.32	15.80	16.30	16.78	18.06
	6H	16.31	16.70	17.30	17.72	18.99	15.95	16.34	16.94	17.36	18.64
	8H	16.52	16.87	17.53	17.88	19.17	16.16	16.51	17.16	17.52	18.81
	12H	16.65	16.96	17.66	17.96	19.30	16.27	16.58	17.28	17.58	18.92
12H	4H	15.67	16.10	16.66	17.10	18.38	15.32	15.75	16.31	16.75	18.03
	6H	16.33	16.68	17.34	17.69	18.98	15.99	16.34	16.99	17.35	18.64
	8H	16.57	16.88	17.58	17.88	19.22	16.22	16.53	17.23	17.53	18.87