

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: P905340

Luminaire Tested: DFN2DIP-HX3F0-060D090US835-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P905340
REPORT IS A COMBINATION OF REPORTS P899291 AND P896089
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX3F0-060D090US835-FLLFLL
Description: 3 foot, Hexagon Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

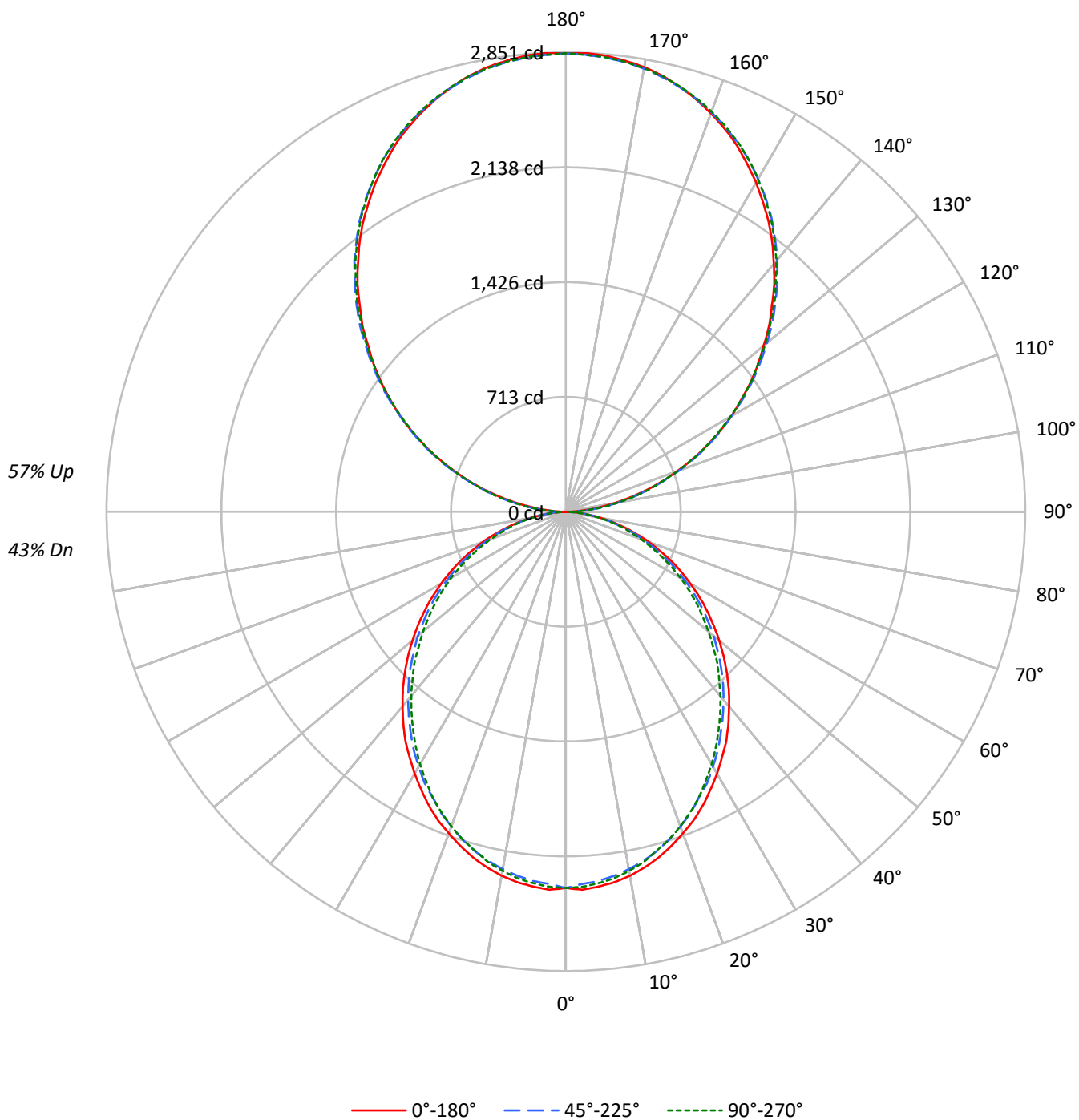
Lumens per Lamp: N/A
Luminaire Lumens: 13905.0 lumens
Efficiency: N/A
Efficacy: 108.8 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 2.84' x L: 3.28' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 127.8
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9933
Total Harmonic Distortion (THDi): 0.066
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P905340

CATALOG NUMBER: DFN2DIP-HX3F0-060D090US835-FLLFLL

Luminous Intensity Polar Plot



TEST NUMBER: P905340

CATALOG NUMBER: DFN2DIP-HX3F0-060D090US835-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	105	105	105	105	96	96	96	96	79	79	79	64	64	64	49	49	49
1	96	92	88	85	88	84	81	78	69	67	65	56	54	53	44	43	42
2	88	80	74	69	80	73	68	64	61	57	54	49	47	44	38	37	35
3	80	70	63	57	73	65	58	53	54	49	45	44	40	37	34	32	30
4	73	62	55	49	66	57	50	45	48	43	39	39	35	32	30	28	26
5	67	56	47	42	61	51	44	39	43	37	33	35	31	28	27	25	22
6	62	50	42	36	56	46	39	34	38	33	29	31	27	24	25	22	20
7	57	45	37	31	52	41	34	29	35	29	25	29	24	21	23	20	18
8	53	41	33	28	48	38	31	26	32	26	23	26	22	19	21	18	16
9	49	37	30	25	45	34	28	23	29	24	20	24	20	17	19	16	14
10	46	34	27	22	42	31	25	21	27	22	18	22	18	15	18	15	13

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2704	2704	2704
5°	2707	2665	2683
10°	2684	2627	2645
15°	2644	2582	2587
20°	2589	2520	2527
25°	2535	2446	2459
30°	2467	2377	2372
35°	2403	2297	2280
40°	2324	2215	2193
45°	2245	2133	2103
50°	2159	2047	1999
55°	2068	1947	1904
60°	1966	1829	1794
65°	1854	1707	1665
70°	1712	1557	1525
75°	1515	1378	1394
80°	1277	1149	1148
85°	905	760	745

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 2678 cd/sqm

TEST NUMBER: P905340

CATALOG NUMBER: DFN2DIP-HX3F0-060D090US835-FLLFLL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	219.7	1.6
10°-20°	618.3	4.4
20°-30°	908.6	6.5
30°-40°	1055.3	7.6
40°-50°	1054.0	7.6
50°-60°	919.0	6.6
60°-70°	679.4	4.9
70°-80°	384.4	2.8
80°-90°	109.5	0.8
90°-100°	176.1	1.3
100°-110°	559.6	4.0
110°-120°	957.7	6.9
120°-130°	1259.5	9.1
130°-140°	1413.8	10.2
140°-150°	1386.4	10.0
150°-160°	1163.0	8.4
160°-170°	771.2	5.5
170°-180°	269.6	1.9
0°-30°	1746.6	12.6
0°-40°	2801.8	20.1
0°-60°	4774.8	34.3
0°-90°	5948.1	42.8
90°-120°	1693.5	12.2
90°-150°	5753.1	41.4
90°-180°	7957.0	57.2
0°-180°	13905.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2335	2335	2335	2335	2335	
5°	2335	2326	2301	2319	2315	222
15°	2222	2209	2180	2189	2178	626
25°	2011	1994	1955	1960	1955	926
35°	1735	1713	1677	1663	1652	1084
45°	1412	1396	1363	1338	1329	1090
55°	1069	1055	1028	1001	990	955
65°	721	707	685	664	653	713
75°	377	373	361	348	352	402
85°	92	90	88	81	79	103
90°	3	31	84	79	82	14
95°	125	149	154	154	149	139
105°	517	523	529	533	533	545
115°	961	975	970	968	961	951
125°	1398	1419	1412	1405	1402	1249
135°	1808	1835	1840	1837	1830	1398
145°	2195	2212	2226	2228	2219	1372
155°	2510	2517	2525	2537	2529	1155
165°	2730	2728	2728	2745	2733	770
175°	2841	2834	2829	2846	2832	270
180°	2846	2846	2846	2846	2846	

TEST NUMBER: P905340

CATALOG NUMBER: DFN2DIP-HX3F0-060D090US835-FLLFLL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2334.6	2334.6	2334.6	2334.6	2334.6
2.5°	2348.2	2337.0	2312.2	2334.6	2330.3
5°	2334.6	2325.8	2301.0	2318.9	2314.6
7.5°	2318.9	2305.6	2280.8	2298.9	2294.4
10°	2294.4	2278.7	2251.7	2269.6	2262.9
12.5°	2260.6	2247.2	2220.3	2231.5	2227.0
15°	2222.4	2209.1	2179.8	2188.9	2177.7
17.5°	2175.3	2162.0	2132.7	2143.8	2132.7
20°	2123.6	2110.3	2078.8	2085.5	2076.7
22.5°	2072.2	2051.9	2022.6	2022.6	2018.1
25°	2011.4	1993.6	1955.4	1959.7	1955.4
27.5°	1944.0	1928.3	1899.2	1892.6	1881.4
30°	1876.9	1858.7	1825.2	1818.5	1809.4
32.5°	1804.9	1791.6	1755.6	1742.0	1733.0
35°	1735.4	1713.0	1677.0	1663.4	1652.2
37.5°	1656.8	1636.5	1600.6	1584.8	1573.6
40°	1576.0	1557.9	1522.0	1502.0	1492.9
42.5°	1497.4	1479.3	1443.6	1421.0	1407.6
45°	1412.2	1396.4	1362.6	1338.1	1329.0
47.5°	1329.0	1313.3	1277.4	1252.6	1239.2
50°	1241.4	1230.2	1198.8	1167.3	1156.1
52.5°	1156.1	1140.4	1111.3	1086.6	1070.9
55°	1068.7	1055.1	1028.2	1001.3	990.1
57.5°	981.1	969.9	940.6	913.7	904.6
60°	893.4	884.6	853.2	828.4	821.7
62.5°	808.1	792.4	770.0	747.6	738.6
65°	720.7	707.2	684.8	664.5	653.3
67.5°	630.9	619.5	599.5	583.8	574.7
70°	547.8	538.8	518.5	502.8	494.0
72.5°	462.5	453.5	442.3	426.6	419.9
75°	377.0	372.8	361.3	348.0	352.5
77.5°	300.8	291.8	287.2	280.6	273.9
80°	224.6	222.2	217.7	211.0	206.5
82.5°	152.7	152.7	150.5	141.5	141.5
85°	91.9	89.8	87.6	80.7	78.6
87.5°	40.5	36.0	31.4	24.8	22.4
90°	2.6	30.9	84.1	78.9	81.5
92.5°	53.2	72.1	74.7	77.2	77.2
95°	125.3	149.3	153.6	153.6	149.3
97.5°	208.5	230.8	240.3	240.3	240.3
100°	304.6	324.4	331.2	331.2	328.7
102.5°	405.9	420.5	429.9	432.5	429.9
105°	516.6	523.4	528.6	532.9	532.9
107.5°	626.4	636.7	636.7	638.4	626.4
110°	732.8	746.6	746.6	746.6	739.7

TEST NUMBER: P905340

CATALOG NUMBER: DFN2DIP-HX3F0-060D090US835-FLLFLL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	847.8	862.4	859.8	853.0	847.8
115°	961.1	974.8	970.5	968.0	961.1
117.5°	1073.5	1092.4	1080.4	1073.5	1066.6
120°	1186.8	1205.6	1186.8	1186.8	1179.0
122.5°	1289.7	1313.8	1301.8	1294.9	1289.7
125°	1397.9	1419.3	1412.5	1404.7	1402.2
127.5°	1503.4	1530.0	1520.6	1510.3	1503.4
130°	1602.1	1633.0	1628.7	1623.5	1614.1
132.5°	1712.8	1736.8	1738.5	1726.5	1719.7
135°	1808.0	1834.6	1839.8	1837.2	1830.4
137.5°	1914.4	1935.9	1940.2	1938.5	1928.2
140°	2008.0	2029.4	2041.4	2041.4	2032.0
142.5°	2104.1	2125.5	2132.4	2135.0	2125.5
145°	2195.1	2212.2	2225.9	2228.5	2219.1
147.5°	2276.6	2298.0	2308.3	2312.6	2303.2
150°	2360.7	2375.3	2384.7	2392.4	2384.7
152.5°	2435.3	2449.9	2461.9	2471.4	2461.9
155°	2510.0	2516.8	2524.6	2536.6	2528.9
157.5°	2574.3	2579.5	2583.8	2600.9	2588.9
160°	2631.8	2637.0	2639.6	2654.1	2643.8
162.5°	2685.0	2685.0	2687.6	2703.9	2691.9
165°	2730.5	2727.9	2727.9	2745.1	2733.1
167.5°	2771.7	2764.0	2764.0	2781.1	2769.1
170°	2802.6	2795.7	2793.2	2810.3	2795.7
172.5°	2824.0	2817.2	2814.6	2831.8	2817.2
175°	2841.2	2834.3	2829.2	2846.4	2831.8
177.5°	2850.6	2843.8	2838.6	2853.2	2838.6
180°	2846.4	2846.4	2846.4	2846.4	2846.4

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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	9.98	10.78	10.99	11.80	13.17	9.55	10.35	10.56	11.37	12.74
	3H	11.62	12.34	12.65	13.38	14.77	11.16	11.87	12.18	12.91	14.30
	4H	12.20	12.88	13.24	13.92	15.32	11.74	12.41	12.77	13.45	14.85
	6H	12.59	13.22	13.64	14.26	15.67	12.12	12.75	13.17	13.79	15.20
	8H	12.69	13.29	13.75	14.35	15.75	12.22	12.82	13.28	13.88	15.28
	12H	12.74	13.30	13.80	14.36	15.79	12.26	12.83	13.32	13.88	15.31
4H	2H	10.43	11.11	11.47	12.14	13.54	10.08	10.76	11.13	11.80	13.20
	3H	12.28	12.85	13.33	13.91	15.32	11.89	12.46	12.94	13.52	14.93
	4H	12.98	13.50	14.04	14.56	15.99	12.58	13.10	13.64	14.16	15.59
	6H	13.49	13.94	14.56	15.02	16.44	13.08	13.53	14.15	14.61	16.04
	8H	13.63	14.05	14.70	15.12	16.57	13.23	13.64	14.30	14.72	16.16
	12H	13.70	14.08	14.79	15.16	16.61	13.28	13.66	14.37	14.75	16.20
8H	4H	13.17	13.59	14.24	14.66	16.11	12.82	13.23	13.89	14.31	15.75
	6H	13.79	14.14	14.89	15.25	16.69	13.43	13.78	14.53	14.89	16.33
	8H	14.01	14.31	15.11	15.41	16.87	13.64	13.95	14.74	15.04	16.50
	12H	14.13	14.40	15.23	15.49	16.99	13.75	14.02	14.86	15.11	16.61
12H	4H	13.16	13.53	14.24	14.62	16.07	12.81	13.18	13.89	14.27	15.72
	6H	13.82	14.12	14.92	15.22	16.68	13.47	13.78	14.57	14.87	16.33
	8H	14.05	14.32	15.16	15.41	16.91	13.70	13.97	14.80	15.06	16.56