

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: P905388

Luminaire Tested: DFN2DIP-HX3F0-080D090US835-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P905388
REPORT IS A COMBINATION OF REPORTS P899295 AND P896089
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX3F0-080D090US835-FLLFLL
Description: 3 foot, Hexagon Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

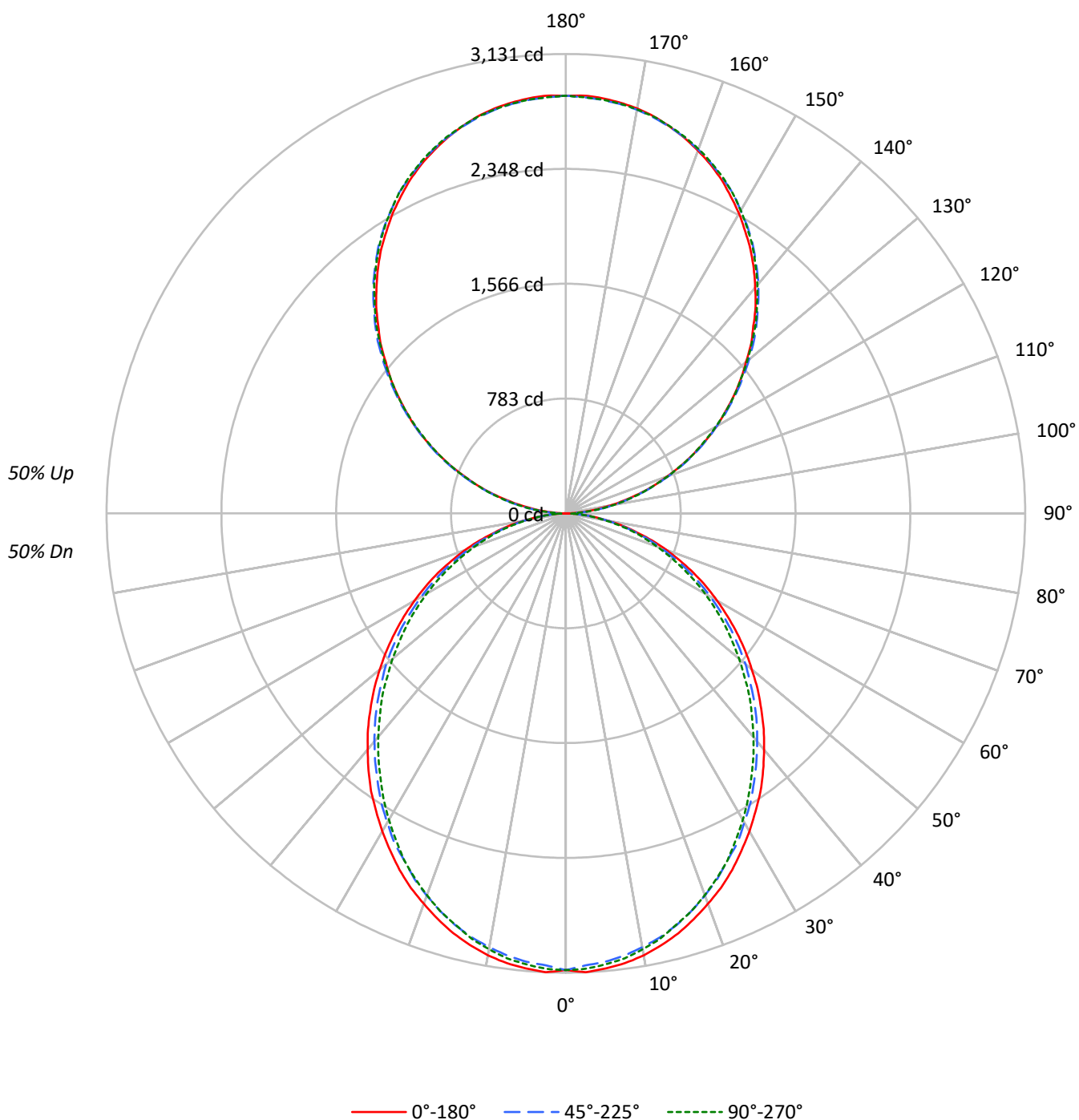
Lumens per Lamp: N/A
Luminaire Lumens: 15885.0 lumens
Efficiency: N/A
Efficacy: 105.1 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 2.84' x L: 3.28' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 151.1
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

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Luminous Intensity Polar Plot



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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
RCR																	
0	107	107	107	107	99	99	99	99	83	83	83		69	69	69		56
1	98	93	90	86	90	86	83	80	73	71	68		61	59	58		50
2	89	82	75	70	82	75	70	66	64	60	57		53	51	48		44
3	81	72	64	59	75	66	60	55	56	52	48		47	44	41		39
4	74	63	56	50	68	59	52	46	50	45	41		42	38	35		35
5	68	57	48	42	63	53	45	40	45	39	35		38	34	30		31
6	63	51	43	37	58	47	40	35	40	35	31		34	30	26		28
7	58	46	38	32	53	43	36	30	37	31	27		31	27	23		26
8	54	42	34	29	50	39	32	27	33	28	24		28	24	21		24
9	50	38	30	25	46	35	29	24	31	25	21		26	22	19		22
10	47	35	28	23	43	33	26	22	28	23	19		24	20	17		20

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3606	3606	3606
5°	3610	3553	3578
10°	3579	3503	3527
15°	3525	3442	3449
20°	3452	3360	3370
25°	3380	3262	3278
30°	3289	3170	3163
35°	3203	3062	3040
40°	3098	2953	2923
45°	2993	2844	2804
50°	2878	2729	2666
55°	2757	2596	2538
60°	2621	2439	2392
65°	2472	2275	2220
70°	2282	2076	2034
75°	2020	1837	1859
80°	1703	1532	1530
85°	1208	1014	993

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
Vertical Angle: 45°
Luminance: 2993 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	293.0	1.8
10°-20°	824.3	5.2
20°-30°	1211.5	7.6
30°-40°	1407.0	8.9
40°-50°	1405.3	8.8
50°-60°	1225.4	7.7
60°-70°	905.8	5.7
70°-80°	512.5	3.2
80°-90°	143.4	0.9
90°-100°	176.1	1.1
100°-110°	559.6	3.5
110°-120°	957.7	6.0
120°-130°	1259.5	7.9
130°-140°	1413.8	8.9
140°-150°	1386.4	8.7
150°-160°	1163.0	7.3
160°-170°	771.2	4.9
170°-180°	269.6	1.7
0°-30°	2328.8	14.7
0°-40°	3735.8	23.5
0°-60°	6366.4	40.1
0°-90°	7928.1	49.9
90°-120°	1693.5	10.7
90°-150°	5753.1	36.2
90°-180°	7957.0	50.1
0°-180°	15885.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3113	3113	3113	3113	3113	
5°	3113	3101	3068	3092	3086	295
15°	2963	2946	2906	2918	2904	835
25°	2682	2658	2607	2613	2607	1234
35°	2314	2284	2236	2218	2203	1445
45°	1883	1862	1817	1784	1772	1453
55°	1425	1407	1371	1335	1320	1274
65°	961	943	913	886	871	950
75°	503	497	482	464	470	537
85°	123	120	117	108	105	137
90°	3	31	84	79	82	15
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	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	3112.8	3112.8	3112.8	3112.8	3112.8
2.5°	3130.9	3116.0	3083.0	3112.8	3107.1
5°	3112.8	3101.1	3068.1	3091.9	3086.2
7.5°	3091.9	3074.1	3041.1	3065.2	3059.2
10°	3059.2	3038.2	3002.3	3026.1	3017.3
12.5°	3014.1	2996.3	2960.4	2975.3	2969.3
15°	2963.3	2945.5	2906.4	2918.5	2903.6
17.5°	2900.4	2882.6	2843.5	2858.5	2843.5
20°	2831.5	2813.7	2771.8	2780.7	2768.9
22.5°	2762.9	2735.9	2696.8	2696.8	2690.8
25°	2681.9	2658.1	2607.3	2613.0	2607.3
27.5°	2592.0	2571.1	2532.3	2523.4	2508.5
30°	2502.5	2478.3	2433.6	2424.7	2412.6
32.5°	2406.6	2388.8	2340.8	2322.7	2310.7
35°	2313.8	2284.0	2236.0	2217.9	2203.0
37.5°	2209.0	2182.0	2134.1	2113.1	2098.2
40°	2101.4	2077.2	2029.3	2002.6	1990.5
42.5°	1996.6	1972.4	1924.8	1894.6	1876.9
45°	1882.9	1861.9	1816.8	1784.1	1772.1
47.5°	1772.1	1751.1	1703.1	1670.1	1652.3
50°	1655.2	1640.3	1598.3	1556.4	1541.5
52.5°	1541.5	1520.5	1481.8	1448.8	1427.8
55°	1424.9	1406.8	1371.0	1335.1	1320.1
57.5°	1308.1	1293.2	1254.1	1218.2	1206.1
60°	1191.2	1179.5	1137.5	1104.5	1095.6
62.5°	1077.5	1056.6	1026.7	996.9	984.8
65°	961.0	942.9	913.0	886.0	871.1
67.5°	841.2	826.0	799.3	778.4	766.3
70°	730.4	718.3	691.4	670.4	658.6
72.5°	616.7	604.7	589.7	568.8	559.9
75°	502.7	497.0	481.8	464.0	470.0
77.5°	401.1	389.0	383.0	374.1	365.2
80°	299.5	296.3	290.3	281.4	275.3
82.5°	203.6	203.6	200.7	188.6	188.6
85°	122.6	119.7	116.9	107.7	104.8
87.5°	54.0	48.0	41.9	33.0	29.9
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

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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	11.67	12.54	12.63	13.51	14.78	11.25	12.11	12.20	13.08	14.35
	3H	13.33	14.10	14.30	15.08	16.38	12.86	13.63	13.83	14.61	15.91
	4H	13.91	14.64	14.89	15.63	16.93	13.44	14.17	14.42	15.16	16.46
	6H	14.30	14.98	15.30	15.97	17.28	13.83	14.51	14.83	15.50	16.81
	8H	14.40	15.05	15.40	16.05	17.37	13.94	14.58	14.94	15.58	16.90
	12H	14.45	15.06	15.46	16.06	17.40	13.98	14.59	14.98	15.59	16.92
4H	2H	12.13	12.86	13.12	13.85	15.15	11.79	12.52	12.78	13.51	14.81
	3H	13.99	14.60	14.99	15.62	16.93	13.60	14.21	14.60	15.23	16.54
	4H	14.70	15.26	15.70	16.26	17.60	14.30	14.85	15.30	15.86	17.20
	6H	15.21	15.69	16.22	16.72	18.06	14.80	15.28	15.82	16.31	17.65
	8H	15.35	15.80	16.37	16.83	18.18	14.94	15.39	15.96	16.42	17.77
	12H	15.42	15.83	16.46	16.87	18.22	15.00	15.41	16.04	16.45	17.81
8H	4H	14.89	15.34	15.91	16.37	17.72	14.53	14.98	15.55	16.01	17.36
	6H	15.51	15.89	16.56	16.95	18.30	15.15	15.53	16.20	16.59	17.94
	8H	15.73	16.06	16.78	17.11	18.48	15.36	15.69	16.42	16.74	18.11
	12H	15.86	16.14	16.91	17.19	18.60	15.48	15.76	16.53	16.81	18.22
12H	4H	14.88	15.28	15.91	16.32	17.68	14.53	14.93	15.56	15.97	17.33
	6H	15.54	15.87	16.59	16.92	18.29	15.19	15.52	16.24	16.57	17.94
	8H	15.78	16.07	16.83	17.11	18.52	15.42	15.71	16.48	16.76	18.17