

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: P928986

Luminaire Tested: DFN2DIP-HX4F0-080D100US935-RLLONL

Issue Date: 12/12/2024

Test Information

Test Method: LM-79-2019
Report Number: P928986
REPORT IS A COMBINATION OF REPORTS P900936 AND P896187
Test Lab: INNOVATION CENTER
Issue Date: 12/12/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX4F0-080D100US935-RLLONL
Description: 4 foot, Hexagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

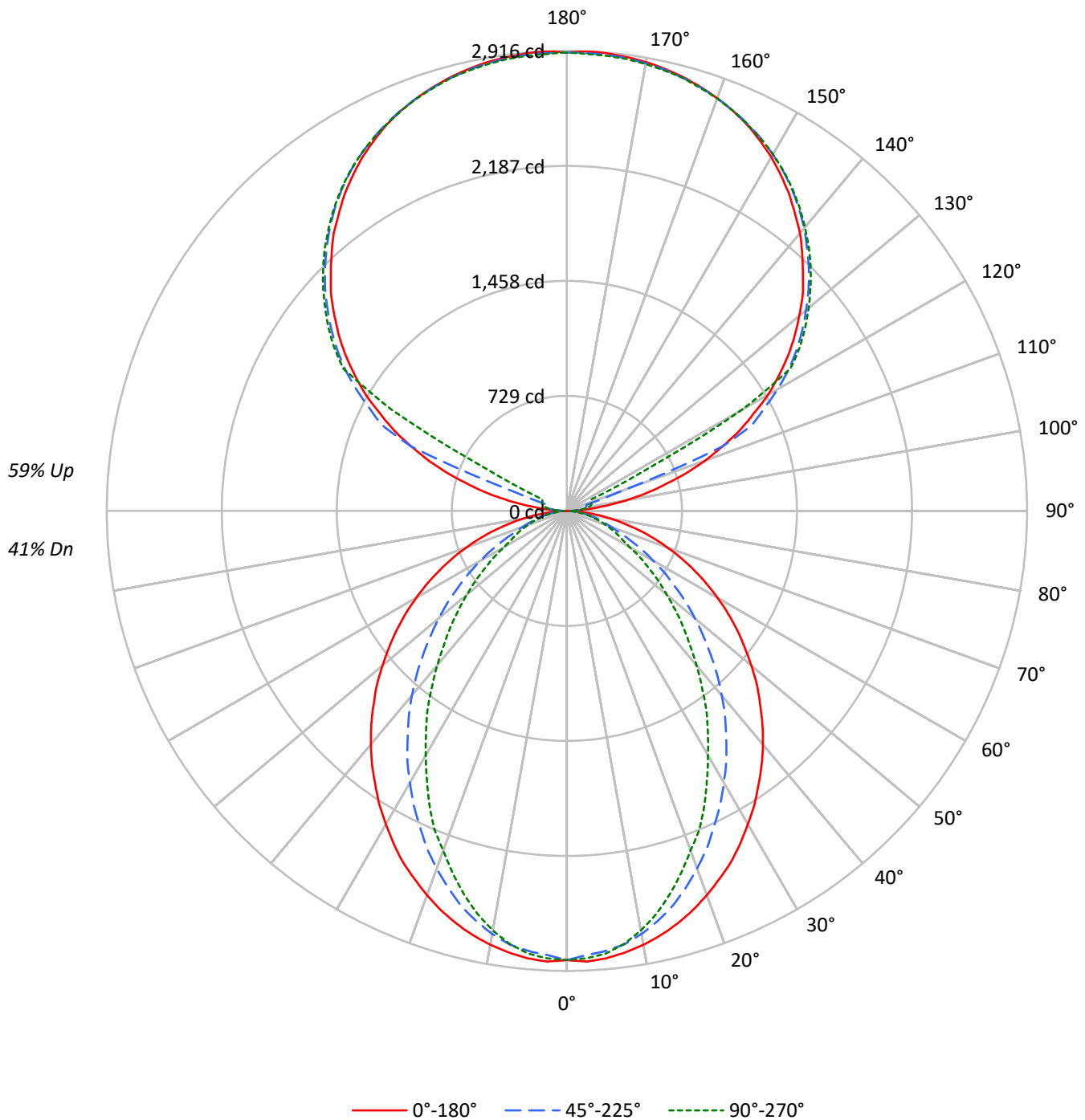
Lumens per Lamp: N/A
Luminaire Lumens: 14378.8 lumens
Efficiency: N/A
Efficacy: 94.1 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.54' x L: 4.09' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 152.8
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9613
Total Harmonic Distortion (THDi): 0.083
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P928986

CATALOG NUMBER: DFN2DIP-HX4F0-080D100US935-RLLONL

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	30	10
RCR																	
0	105	105	105	105	96	96	96	96	78	78	78	62	62	62	48	48	48
1	96	92	88	85	87	84	81	78	69	67	65	55	54	53	43	42	41
2	88	81	75	70	80	74	69	65	61	57	54	49	47	44	38	36	35
3	80	71	64	59	73	65	59	54	54	50	46	44	41	38	34	32	30
4	74	63	56	50	67	58	52	46	48	43	40	39	36	33	31	28	26
5	68	57	49	43	62	52	45	40	43	38	34	35	32	29	28	25	23
6	62	51	43	37	57	47	40	35	39	34	30	32	28	25	25	23	21
7	58	46	38	33	53	42	36	31	36	30	27	29	25	23	23	21	19
8	54	42	34	29	49	39	32	27	33	27	24	27	23	20	21	19	17
9	50	38	31	26	46	35	29	24	30	25	21	25	21	18	20	17	15
10	47	35	28	23	43	32	26	22	28	23	19	23	19	17	18	16	14

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2117	2117	2117
5°	2120	2083	2097
10°	2100	2043	2028
15°	2071	1975	1923
20°	2033	1883	1794
25°	1994	1778	1669
30°	1941	1672	1510
35°	1890	1557	1371
40°	1838	1438	1212
45°	1777	1306	1067
50°	1714	1173	926
55°	1649	1030	790
60°	1573	882	650
65°	1486	730	585
70°	1380	589	530
75°	1248	520	482
80°	1056	437	419
85°	738	293	315

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 1777 cd/sqm

TEST NUMBER: P928986

CATALOG NUMBER: DFN2DIP-HX4F0-080D100US935-RLLONL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	266.8	1.9
10°-20°	732.4	5.1
20°-30°	1028.3	7.2
30°-40°	1120.9	7.8
40°-50°	1030.3	7.2
50°-60°	809.1	5.6
60°-70°	526.6	3.7
70°-80°	271.1	1.9
80°-90°	74.3	0.5
90°-100°	95.8	0.7
100°-110°	357.2	2.5
110°-120°	947.3	6.6
120°-130°	1571.2	10.9
130°-140°	1669.0	11.6
140°-150°	1551.1	10.8
150°-160°	1247.1	8.7
160°-170°	803.6	5.6
170°-180°	276.6	1.9
0°-30°	2027.6	14.1
0°-40°	3148.5	21.9
0°-60°	4987.9	34.7
0°-90°	5859.9	40.8
90°-120°	1400.3	9.7
90°-150°	6191.6	43.1
90°-180°	8519.0	59.2
0°-180°	14378.8	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2847	2847	2847	2847	2847	
5°	2847	2834	2800	2824	2816	270
15°	2708	2679	2592	2543	2517	763
25°	2458	2375	2205	2100	2061	1130
35°	2118	1986	1760	1597	1540	1326
45°	1731	1559	1288	1105	1043	1337
55°	1316	1116	837	683	634	1176
65°	889	680	448	361	353	881
75°	474	294	206	188	186	501
85°	111	57	49	49	49	127
90°	2	25	42	53	57	13
95°	137	67	82	93	90	162
105°	639	702	128	151	160	683
115°	1209	1245	1297	324	172	1190
125°	1709	1737	1777	1792	1798	1525
135°	2115	2149	2168	2189	2185	1634
145°	2454	2452	2487	2502	2492	1535
155°	2702	2683	2708	2721	2704	1245
165°	2847	2834	2841	2855	2841	804
175°	2912	2897	2902	2916	2895	277
180°	2906	2906	2906	2906	2906	

TEST NUMBER: P928986

CATALOG NUMBER: DFN2DIP-HX4F0-080D100US935-RLLONL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2846.8	2846.8	2846.8	2846.8	2846.8
2.5°	2859.6	2846.8	2818.4	2844.3	2839.1
5°	2846.8	2834.0	2800.3	2823.6	2815.9
7.5°	2823.6	2808.2	2772.2	2782.3	2769.4
10°	2792.7	2774.7	2723.3	2715.3	2700.0
12.5°	2754.2	2730.9	2661.2	2645.9	2617.4
15°	2707.7	2679.3	2591.8	2542.9	2517.1
17.5°	2653.5	2612.3	2504.0	2447.5	2406.2
20°	2591.8	2540.1	2411.4	2347.2	2290.3
22.5°	2524.8	2465.5	2316.0	2228.5	2190.0
25°	2457.8	2375.3	2205.3	2099.8	2061.0
27.5°	2378.0	2290.3	2102.2	1981.2	1921.8
30°	2293.0	2194.9	1988.8	1857.6	1787.9
32.5°	2210.4	2091.9	1880.9	1726.1	1661.6
35°	2117.8	1986.3	1759.7	1597.4	1540.5
37.5°	2027.6	1885.8	1646.3	1468.3	1404.1
40°	1932.3	1777.8	1527.7	1344.8	1277.8
42.5°	1834.4	1669.6	1409.3	1218.6	1154.3
45°	1731.3	1558.6	1288.2	1105.1	1043.4
47.5°	1633.5	1450.6	1172.3	989.2	932.6
50°	1525.2	1342.4	1058.9	881.0	827.1
52.5°	1419.4	1226.2	950.6	780.7	731.8
55°	1316.4	1115.5	837.2	682.8	633.9
57.5°	1210.9	1004.8	736.9	592.6	551.3
60°	1102.6	896.6	631.1	499.9	458.7
62.5°	997.1	791.0	541.0	417.4	396.9
65°	888.9	680.0	448.2	360.8	352.8
67.5°	785.8	577.0	360.8	316.8	309.2
70°	677.6	476.7	298.8	273.0	262.7
72.5°	574.5	383.7	249.9	229.4	224.1
75°	474.0	293.6	206.1	188.0	185.6
77.5°	373.7	208.5	162.4	152.0	146.8
80°	280.7	149.6	123.6	113.4	113.4
82.5°	195.7	100.6	85.0	79.8	79.8
85°	110.7	56.6	48.9	48.9	48.9
87.5°	41.2	20.5	20.5	18.1	18.1
90°	2.0	25.2	41.9	52.7	56.7
92.5°	52.7	44.2	50.5	54.7	56.7
95°	136.6	67.2	81.9	92.6	90.4
97.5°	245.9	73.6	107.1	113.6	115.6
100°	372.3	84.1	119.9	136.6	140.9
102.5°	510.8	506.9	124.1	147.1	153.5
105°	639.2	702.3	128.4	151.3	159.8
107.5°	788.5	840.9	132.6	155.6	164.0
110°	931.5	975.5	368.0	157.8	166.0

TEST NUMBER: P928986

CATALOG NUMBER: DFN2DIP-HX4F0-080D100US935-RLLONL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1066.1	1103.8	1068.2	161.8	168.3
115°	1208.9	1244.7	1297.4	323.8	172.5
117.5°	1333.0	1375.0	1410.9	1110.1	559.3
120°	1471.9	1503.3	1541.3	1566.5	1282.6
122.5°	1589.5	1623.2	1665.3	1677.8	1680.1
125°	1709.3	1736.8	1776.8	1791.5	1797.7
127.5°	1818.7	1848.1	1879.8	1900.8	1902.8
130°	1921.8	1955.5	1978.5	2001.7	1999.7
132.5°	2026.9	2054.3	2077.3	2096.3	2094.3
135°	2115.3	2149.0	2167.7	2188.9	2184.7
137.5°	2207.7	2232.9	2254.1	2275.1	2268.8
140°	2298.0	2315.1	2338.0	2357.0	2346.5
142.5°	2373.9	2388.7	2415.9	2432.6	2422.2
145°	2453.8	2451.6	2487.3	2502.1	2491.6
147.5°	2523.0	2516.8	2552.4	2562.9	2554.8
150°	2590.4	2575.7	2609.4	2621.9	2611.4
152.5°	2647.1	2630.4	2661.9	2674.5	2659.8
155°	2701.8	2683.0	2708.3	2720.8	2704.1
157.5°	2746.0	2729.3	2748.2	2762.9	2746.0
160°	2784.0	2771.2	2784.0	2796.4	2781.7
162.5°	2817.4	2804.9	2815.4	2830.1	2811.2
165°	2846.8	2834.3	2840.6	2855.3	2840.6
167.5°	2870.1	2857.3	2863.9	2878.6	2859.6
170°	2889.0	2876.3	2880.6	2895.3	2876.3
172.5°	2901.5	2889.0	2893.3	2908.0	2889.0
175°	2912.0	2897.3	2901.5	2916.3	2895.3
177.5°	2916.3	2901.5	2903.8	2918.5	2899.5
180°	2905.8	2905.8	2905.8	2905.8	2905.8

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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	8.82	9.58	9.86	10.63	12.03	4.80	5.56	5.84	6.60	8.00
	3H	10.50	11.18	11.55	12.23	13.65	5.98	6.66	7.03	7.71	9.13
	4H	11.10	11.75	12.16	12.80	14.23	6.43	7.07	7.49	8.13	9.55
	6H	11.52	12.11	12.59	13.17	14.61	6.75	7.34	7.82	8.40	9.84
	8H	11.65	12.21	12.72	13.28	14.71	6.84	7.40	7.91	8.47	9.91
	12H	11.71	12.24	12.79	13.31	14.76	6.88	7.42	7.96	8.48	9.94
4H	2H	8.83	9.48	9.90	10.53	11.96	5.38	6.03	6.45	7.08	8.51
	3H	10.66	11.19	11.73	12.27	13.71	6.73	7.27	7.80	8.35	9.78
	4H	11.35	11.84	12.43	12.91	14.37	7.28	7.77	8.36	8.84	10.30
	6H	11.86	12.28	12.95	13.37	14.83	7.69	8.11	8.78	9.21	10.66
	8H	12.04	12.43	13.12	13.51	14.98	7.82	8.22	8.91	9.30	10.77
	12H	12.13	12.48	13.23	13.58	15.06	7.89	8.24	8.99	9.34	10.81
8H	4H	11.31	11.70	12.40	12.79	14.26	7.55	7.95	8.64	9.03	10.50
	6H	11.88	12.20	12.99	13.33	14.80	8.07	8.39	9.18	9.52	10.99
	8H	12.09	12.38	13.21	13.49	14.97	8.26	8.55	9.38	9.66	11.14
	12H	12.23	12.48	13.35	13.58	15.11	8.38	8.63	9.50	9.74	11.26
12H	4H	11.26	11.62	12.37	12.71	14.19	7.55	7.91	8.66	9.01	10.48
	6H	11.85	12.14	12.97	13.25	14.73	8.12	8.40	9.24	9.51	11.00
	8H	12.07	12.32	13.19	13.43	14.95	8.33	8.58	9.45	9.68	11.21