

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: P905377

Luminaire Tested: DFN2DIP-HX3F0-080D050US835-RLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P905377
REPORT IS A COMBINATION OF REPORTS P900760 AND P897645
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX3F0-080D050US835-RLONL
Description: 3 foot, Hexagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

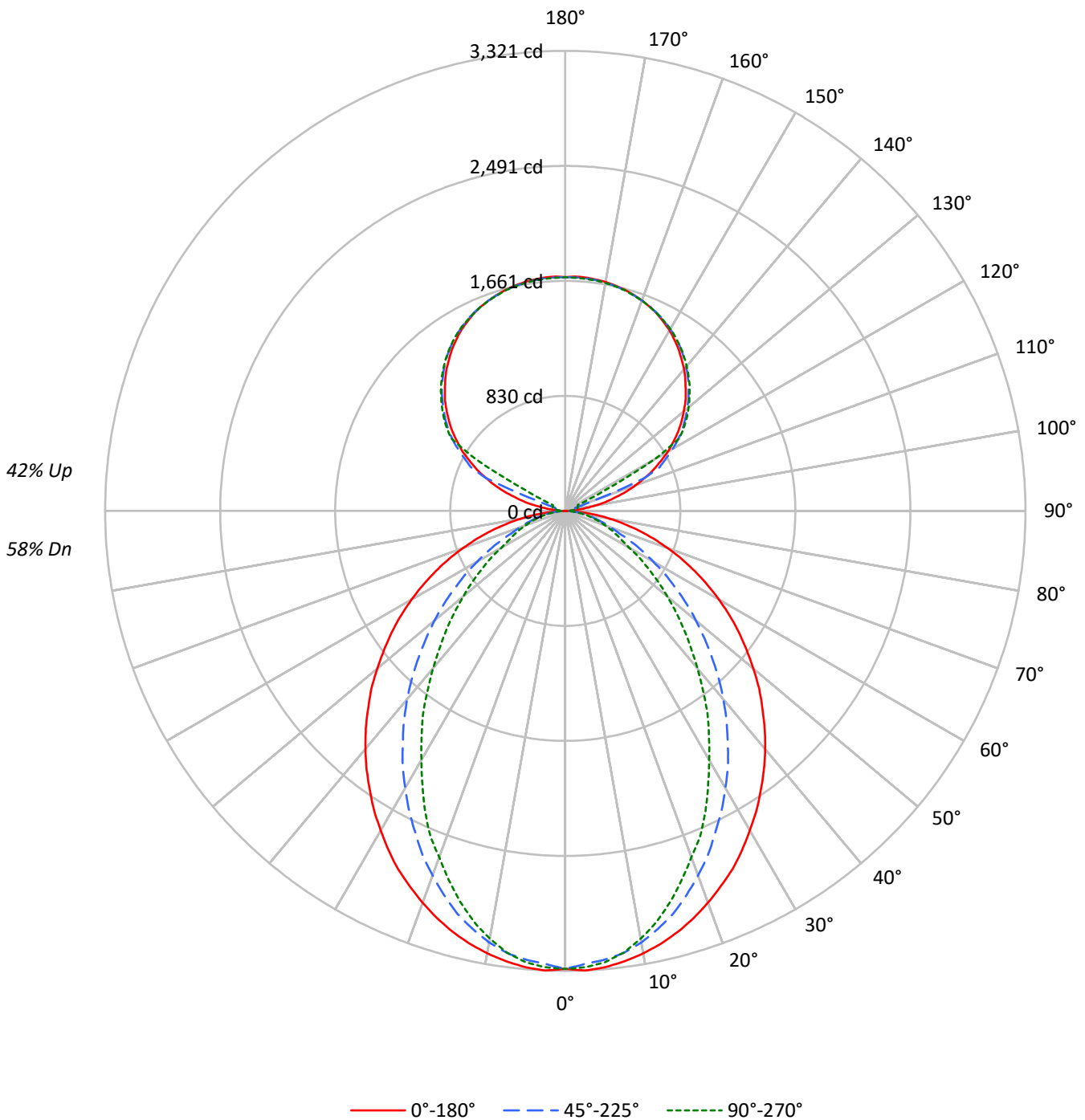
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 11750.0 lumens
Efficiency: N/A
Efficacy: 100.8 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 2.84' x L: 3.28' x H: 0.1')
CIE Type: General Diffuse

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

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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			0	
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0
RCR																					
0	109	109	109	109	102	102	102	102	88	88	88	75	75	75	63	63	63	58			58
1	100	96	92	89	93	90	86	83	78	75	73	67	65	64	57	56	55	50			50
2	92	84	79	74	85	79	74	69	69	65	62	59	57	54	51	49	47	43			43
3	84	75	68	62	78	70	64	59	61	56	52	53	49	46	45	43	41	37			37
4	77	67	59	53	72	62	56	50	55	49	45	48	44	40	41	38	35	32			32
5	71	60	52	46	66	56	49	44	49	44	39	43	39	35	37	34	31	28			28
6	66	54	46	40	61	51	43	38	45	39	35	39	35	31	34	31	28	25			25
7	61	49	41	35	57	46	39	34	41	35	31	36	31	28	31	28	25	22			22
8	57	44	37	32	53	42	35	30	37	32	28	33	28	25	29	25	23	20			20
9	53	41	33	28	49	39	32	27	34	29	25	30	26	23	27	23	20	18			18
10	49	38	30	26	46	36	29	25	32	26	23	28	24	21	25	21	19	17			17

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3830	3830	3830
5°	3834	3766	3791
10°	3795	3690	3666
15°	3741	3565	3473
20°	3670	3395	3237
25°	3597	3204	3010
30°	3500	3009	2722
35°	3405	2799	2469
40°	3309	2582	2180
45°	3196	2342	1918
50°	3080	2100	1661
55°	2959	1841	1416
60°	2818	1572	1163
65°	2656	1297	1044
70°	2459	1042	942
75°	2212	913	853
80°	1854	757	732
85°	1267	493	538

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 3196 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	309.9	2.6
10°-20°	850.7	7.2
20°-30°	1194.3	10.2
30°-40°	1301.9	11.1
40°-50°	1196.6	10.2
50°-60°	939.7	8.0
60°-70°	611.7	5.2
70°-80°	314.9	2.7
80°-90°	83.3	0.7
90°-100°	55.7	0.5
100°-110°	207.4	1.8
110°-120°	550.1	4.7
120°-130°	912.4	7.8
130°-140°	969.2	8.2
140°-150°	900.8	7.7
150°-160°	724.2	6.2
160°-170°	466.6	4.0
170°-180°	160.6	1.4
0°-30°	2354.9	20.0
0°-40°	3656.8	31.1
0°-60°	5793.1	49.3
0°-90°	6803.0	57.9
90°-120°	813.2	6.9
90°-150°	3595.6	30.6
90°-180°	4947.0	42.1
0°-180°	11750.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3306	3306	3306	3306	3306	
5°	3306	3292	3252	3279	3270	314
15°	3145	3112	3010	2953	2924	886
25°	2855	2759	2561	2439	2394	1313
35°	2460	2307	2044	1855	1789	1540
45°	2011	1810	1496	1284	1212	1553
55°	1529	1296	972	793	736	1366
65°	1032	790	521	419	410	1024
75°	550	341	239	218	216	582
85°	129	66	57	57	57	148
90°	1	15	24	31	33	11
95°	79	39	48	54	52	94
105°	371	408	74	88	93	397
115°	702	723	753	188	100	691
125°	993	1009	1032	1040	1044	885
135°	1228	1248	1259	1271	1269	949
145°	1425	1424	1444	1453	1447	891
155°	1569	1558	1573	1580	1570	723
165°	1653	1646	1650	1658	1650	467
175°	1691	1682	1685	1694	1681	161
180°	1687	1687	1687	1687	1687	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	3306.4	3306.4	3306.4	3306.4	3306.4
2.5°	3321.3	3306.4	3273.4	3303.5	3297.5
5°	3306.4	3291.5	3252.4	3279.4	3270.5
7.5°	3279.4	3261.6	3219.7	3231.5	3216.5
10°	3243.5	3222.6	3162.9	3153.7	3135.9
12.5°	3198.8	3171.8	3090.8	3073.0	3040.0
15°	3144.8	3111.8	3010.2	2953.4	2923.5
17.5°	3081.9	3034.0	2908.3	2842.6	2794.6
20°	3010.2	2950.2	2800.7	2726.1	2660.0
22.5°	2932.4	2863.5	2689.9	2588.3	2543.5
25°	2854.6	2758.8	2561.3	2438.8	2393.7
27.5°	2761.9	2660.0	2441.6	2301.0	2232.1
30°	2663.2	2549.2	2309.9	2157.5	2076.5
32.5°	2567.3	2429.6	2184.5	2004.8	1929.9
35°	2459.7	2307.0	2043.8	1855.3	1789.2
37.5°	2354.9	2190.2	1912.1	1705.4	1630.8
40°	2244.2	2064.8	1774.3	1561.9	1484.1
42.5°	2130.5	1939.1	1636.8	1415.3	1340.6
45°	2010.8	1810.2	1496.2	1283.5	1211.8
47.5°	1897.2	1684.8	1361.6	1148.9	1083.2
50°	1771.4	1559.1	1229.9	1023.2	960.6
52.5°	1648.6	1424.1	1104.1	906.7	849.9
55°	1528.9	1295.6	972.4	793.0	736.2
57.5°	1406.4	1167.0	855.9	688.3	640.3
60°	1280.6	1041.3	733.0	580.6	532.7
62.5°	1158.1	918.7	628.3	484.8	461.0
65°	1032.4	789.8	520.6	419.1	409.8
67.5°	912.7	670.2	419.1	367.9	359.1
70°	787.0	553.7	347.0	317.1	305.1
72.5°	667.3	445.7	290.2	266.4	260.3
75°	550.5	341.0	239.4	218.4	215.6
77.5°	434.0	242.2	188.6	176.5	170.5
80°	326.0	173.7	143.5	131.7	131.7
82.5°	227.3	116.8	98.7	92.7	92.7
85°	128.6	65.7	56.8	56.8	56.8
87.5°	47.9	23.8	23.8	21.0	21.0
90°	1.2	14.6	24.4	30.6	32.9
92.5°	30.6	25.7	29.3	31.8	32.9
95°	79.3	39.0	47.6	53.8	52.5
97.5°	142.8	42.8	62.2	66.0	67.1
100°	216.2	48.9	69.6	79.3	81.8
102.5°	296.7	294.3	72.1	85.4	89.2
105°	371.2	407.9	74.5	87.9	92.8
107.5°	457.9	488.3	77.0	90.3	95.3
110°	541.0	566.5	213.7	91.6	96.4



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	619.1	641.0	620.3	94.0	97.7
115°	702.1	722.8	753.4	188.1	100.2
117.5°	774.1	798.5	819.4	644.6	324.8
120°	854.7	873.0	895.0	909.7	744.8
122.5°	923.0	942.6	967.1	974.4	975.7
125°	992.6	1008.6	1031.8	1040.3	1044.0
127.5°	1056.1	1073.2	1091.7	1103.8	1105.0
130°	1116.0	1135.6	1148.9	1162.4	1161.3
132.5°	1177.1	1193.0	1206.3	1217.4	1216.2
135°	1228.4	1248.0	1258.8	1271.2	1268.7
137.5°	1282.0	1296.7	1309.0	1321.2	1317.6
140°	1334.5	1344.4	1357.7	1368.7	1362.7
142.5°	1378.6	1387.2	1403.0	1412.7	1406.6
145°	1425.0	1423.7	1444.4	1453.0	1446.9
147.5°	1465.2	1461.5	1482.3	1488.4	1483.6
150°	1504.3	1495.8	1515.3	1522.6	1516.5
152.5°	1537.2	1527.5	1545.8	1553.2	1544.6
155°	1569.0	1558.1	1572.7	1580.0	1570.3
157.5°	1594.6	1584.9	1595.9	1604.5	1594.6
160°	1616.7	1609.3	1616.7	1623.9	1615.4
162.5°	1636.1	1628.9	1634.9	1643.5	1632.5
165°	1653.2	1646.0	1649.6	1658.1	1649.6
167.5°	1666.7	1659.3	1663.1	1671.6	1660.6
170°	1677.7	1670.3	1672.8	1681.3	1670.3
172.5°	1685.0	1677.7	1680.2	1688.7	1677.7
175°	1691.1	1682.5	1685.0	1693.5	1681.3
177.5°	1693.5	1685.0	1686.3	1694.8	1683.8
180°	1687.4	1687.4	1687.4	1687.4	1687.4



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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	12.48	13.38	13.37	14.28	15.44	8.45	9.35	9.35	10.26	11.42
	3H	14.15	14.96	15.06	15.87	17.06	9.64	10.45	10.55	11.36	12.55
	4H	14.76	15.52	15.68	16.44	17.63	10.09	10.85	11.01	11.78	12.97
	6H	15.18	15.88	16.11	16.81	18.01	10.41	11.11	11.35	12.04	13.25
	8H	15.30	15.97	16.24	16.91	18.12	10.50	11.17	11.44	12.12	13.32
	12H	15.36	15.99	16.31	16.93	18.16	10.55	11.18	11.49	12.12	13.35
4H	2H	12.50	13.26	13.43	14.18	15.38	9.05	9.81	9.98	10.73	11.93
	3H	14.33	14.96	15.27	15.91	17.12	10.40	11.03	11.34	11.99	13.19
	4H	15.02	15.59	15.96	16.54	17.77	10.95	11.52	11.90	12.47	13.71
	6H	15.53	16.02	16.49	17.00	18.23	11.37	11.86	12.33	12.84	14.07
	8H	15.70	16.16	16.66	17.13	18.37	11.50	11.96	12.46	12.92	14.17
	12H	15.79	16.21	16.77	17.19	18.44	11.56	11.98	12.54	12.96	14.21
8H	4H	14.99	15.45	15.95	16.42	17.66	11.23	11.69	12.19	12.66	13.90
	6H	15.55	15.93	16.54	16.94	18.18	11.75	12.13	12.73	13.13	14.38
	8H	15.76	16.10	16.76	17.09	18.36	11.93	12.27	12.93	13.27	14.53
	12H	15.90	16.19	16.90	17.18	18.49	12.05	12.35	13.05	13.34	14.65
12H	4H	14.94	15.36	15.92	16.34	17.59	11.24	11.65	12.22	12.64	13.89
	6H	15.52	15.86	16.52	16.86	18.12	11.79	12.13	12.79	13.13	14.39
	8H	15.74	16.04	16.74	17.03	18.34	12.00	12.30	13.00	13.29	14.60