

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: P910830

Luminaire Tested: DFN2DIP-HX3F0-080D050US850-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P910830
REPORT IS A COMBINATION OF REPORTS P899239 AND P896089
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX3F0-080D050US850-FLLFLL
Description: 3 foot, Hexagon Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

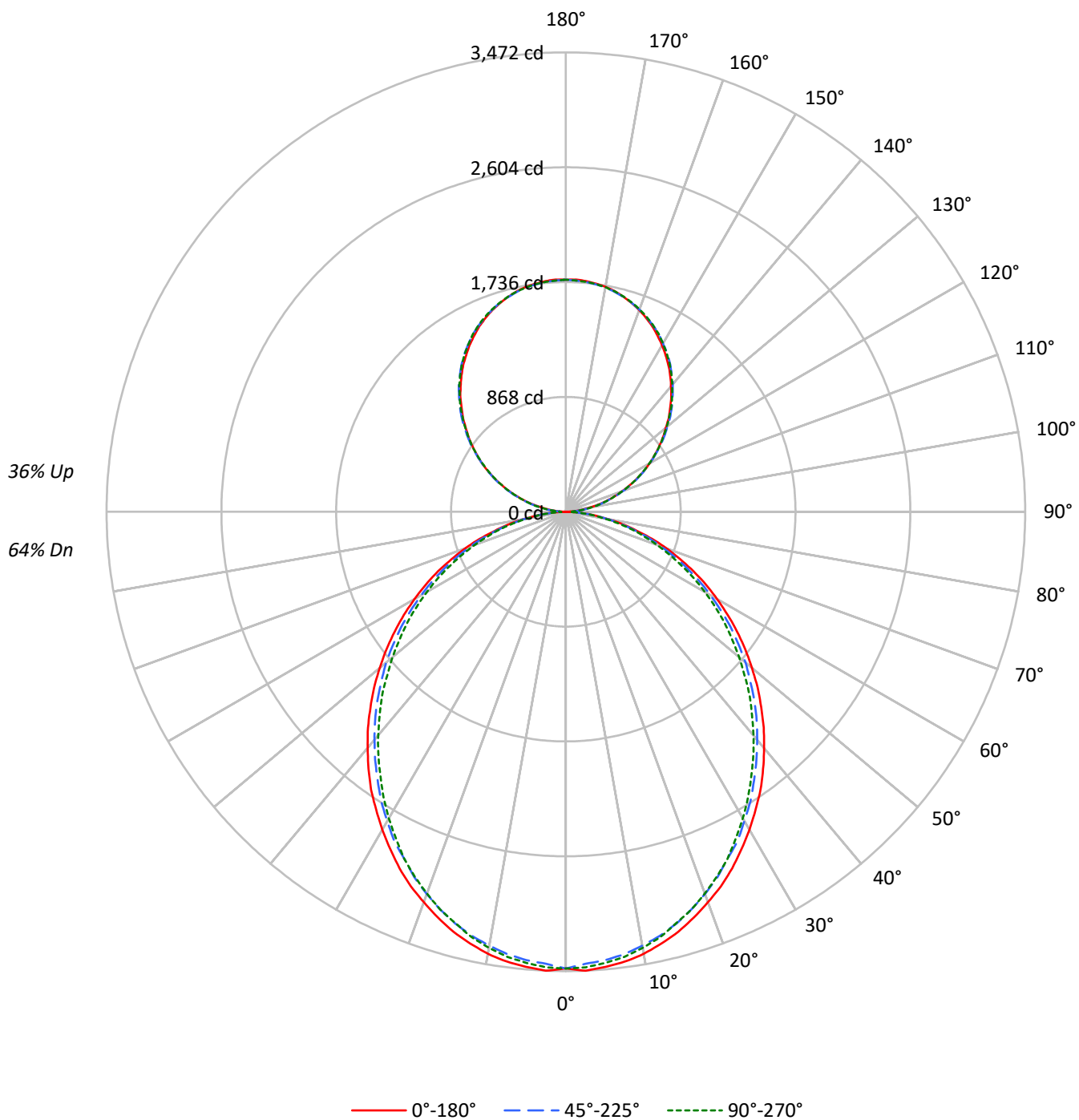
Lumens per Lamp: N/A
Luminaire Lumens: 13690.6 lumens
Efficiency: N/A
Efficacy: 117.4 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 2.84' x L: 3.28' x H: 0.1')
CIE Type: Semi-Direct

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
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10
RCR																	
0	111	111	111	111	104	104	104	104	91	91	91	80	80	80	69	69	69
1	101	97	93	89	95	91	87	84	80	77	75	70	68	66	61	60	58
2	92	84	78	73	86	79	74	69	70	66	62	62	58	56	54	51	49
3	84	74	67	61	79	70	63	58	62	57	52	55	50	47	48	45	42
4	77	66	58	51	72	62	55	49	55	49	45	49	44	40	43	39	36
5	71	59	50	44	66	55	48	42	49	43	39	44	39	35	38	35	32
6	65	53	44	38	61	50	42	37	45	38	34	40	35	31	35	31	28
7	60	48	40	34	56	45	38	32	40	34	30	36	31	27	32	28	25
8	56	43	35	30	53	41	34	29	37	31	27	33	28	24	29	25	22
9	52	40	32	27	49	38	31	26	34	28	24	30	26	22	27	23	20
10	49	37	29	24	46	35	28	23	31	26	22	28	23	20	25	21	18

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3999	3999	3999
5°	4003	3940	3967
10°	3969	3884	3912
15°	3909	3818	3825
20°	3828	3726	3737
25°	3748	3617	3636
30°	3648	3516	3507
35°	3553	3396	3372
40°	3436	3275	3242
45°	3319	3154	3110
50°	3192	3026	2956
55°	3058	2879	2815
60°	2907	2705	2653
65°	2741	2523	2462
70°	2531	2303	2255
75°	2240	2038	2061
80°	1888	1699	1697
85°	1340	1125	1101

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 3319 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	324.9	2.4
10°-20°	914.2	6.7
20°-30°	1343.5	9.8
30°-40°	1560.4	11.4
40°-50°	1558.4	11.4
50°-60°	1358.9	9.9
60°-70°	1004.5	7.3
70°-80°	568.4	4.2
80°-90°	155.0	1.1
90°-100°	108.5	0.8
100°-110°	344.8	2.5
110°-120°	590.1	4.3
120°-130°	776.0	5.7
130°-140°	871.0	6.4
140°-150°	854.2	6.2
150°-160°	716.5	5.2
160°-170°	475.2	3.5
170°-180°	166.1	1.2
0°-30°	2582.6	18.9
0°-40°	4143.0	30.3
0°-60°	7060.4	51.6
0°-90°	8788.3	64.2
90°-120°	1043.4	7.6
90°-150°	3544.6	25.9
90°-180°	4902.0	35.8
0°-180°	13690.6	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3452	3452	3452	3452	3452	
5°	3452	3439	3402	3429	3423	328
15°	3286	3267	3223	3237	3220	926
25°	2974	2948	2892	2898	2892	1369
35°	2566	2533	2480	2460	2443	1602
45°	2088	2065	2015	1979	1965	1612
55°	1580	1560	1520	1481	1464	1413
65°	1066	1046	1012	983	966	1054
75°	558	551	534	515	521	595
85°	136	133	130	119	116	152
90°	2	19	52	49	50	13
95°	77	92	95	95	92	86
105°	318	322	326	328	328	336
115°	592	601	598	596	592	586
125°	861	874	870	866	864	770
135°	1114	1130	1134	1132	1128	861
145°	1352	1363	1371	1373	1367	845
155°	1546	1551	1555	1563	1558	712
165°	1682	1681	1681	1691	1684	475
175°	1751	1746	1743	1754	1745	166
180°	1754	1754	1754	1754	1754	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	3452.1	3452.1	3452.1	3452.1	3452.1
2.5°	3472.2	3455.6	3419.0	3452.1	3445.8
5°	3452.1	3439.1	3402.5	3428.9	3422.6
7.5°	3428.9	3409.2	3372.6	3399.3	3392.7
10°	3392.7	3369.4	3329.6	3355.9	3346.2
12.5°	3342.6	3322.9	3283.1	3299.6	3293.0
15°	3286.3	3266.6	3223.2	3236.6	3220.1
17.5°	3216.5	3196.8	3153.4	3170.1	3153.4
20°	3140.1	3120.4	3073.9	3083.8	3070.7
22.5°	3064.1	3034.1	2990.8	2990.8	2984.1
25°	2974.2	2947.8	2891.5	2897.8	2891.5
27.5°	2874.5	2851.3	2808.3	2798.5	2781.9
30°	2775.3	2748.4	2698.9	2689.0	2675.6
32.5°	2668.9	2649.2	2595.9	2575.9	2562.6
35°	2566.0	2533.0	2479.7	2459.7	2443.1
37.5°	2449.8	2419.8	2366.7	2343.4	2326.9
40°	2330.5	2303.6	2250.5	2220.9	2207.5
42.5°	2214.2	2187.4	2134.6	2101.1	2081.5
45°	2088.1	2064.8	2014.8	1978.6	1965.3
47.5°	1965.3	1942.0	1888.7	1852.1	1832.4
50°	1835.6	1819.1	1772.5	1726.0	1709.5
52.5°	1709.5	1686.2	1643.3	1606.7	1583.4
55°	1580.2	1560.1	1520.4	1480.6	1464.0
57.5°	1450.7	1434.2	1390.8	1351.0	1337.6
60°	1321.0	1308.1	1261.5	1224.9	1215.0
62.5°	1194.9	1171.8	1138.6	1105.6	1092.1
65°	1065.7	1045.7	1012.5	982.6	966.0
67.5°	932.9	916.0	886.4	863.2	849.8
70°	810.0	796.6	766.8	743.5	730.4
72.5°	683.9	670.6	654.0	630.8	620.9
75°	557.5	551.2	534.3	514.6	521.2
77.5°	444.8	431.4	424.7	414.9	405.0
80°	332.1	328.6	321.9	312.1	305.3
82.5°	225.8	225.8	222.6	209.2	209.2
85°	136.0	132.7	129.6	119.4	116.2
87.5°	59.9	53.2	46.5	36.6	33.2
90°	1.6	19.1	51.8	48.7	50.2
92.5°	32.8	44.4	46.0	47.6	47.6
95°	77.2	92.0	94.6	94.6	92.0
97.5°	128.4	142.2	148.1	148.1	148.1
100°	187.6	199.8	204.1	204.1	202.5
102.5°	250.1	259.1	264.8	266.5	264.8
105°	318.3	322.5	325.7	328.3	328.3
107.5°	385.9	392.3	392.3	393.4	385.9
110°	451.5	460.0	460.0	460.0	455.7

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	522.3	531.3	529.8	525.6	522.3
115°	592.1	600.6	598.0	596.4	592.1
117.5°	661.4	673.1	665.6	661.4	657.2
120°	731.2	742.8	731.2	731.2	726.4
122.5°	794.6	809.5	802.0	797.8	794.6
125°	861.2	874.4	870.2	865.5	863.9
127.5°	926.2	942.6	936.9	930.5	926.2
130°	987.1	1006.1	1003.4	1000.3	994.4
132.5°	1055.3	1070.1	1071.2	1063.8	1059.5
135°	1114.0	1130.3	1133.5	1132.0	1127.7
137.5°	1179.5	1192.7	1195.4	1194.3	1188.0
140°	1237.1	1250.4	1257.7	1257.7	1252.0
142.5°	1296.3	1309.6	1313.8	1315.4	1309.6
145°	1352.4	1363.0	1371.4	1373.1	1367.2
147.5°	1402.7	1415.9	1422.2	1424.8	1419.0
150°	1454.5	1463.4	1469.2	1474.0	1469.2
152.5°	1500.5	1509.5	1516.8	1522.7	1516.8
155°	1546.4	1550.6	1555.4	1562.8	1558.0
157.5°	1586.1	1589.2	1591.9	1602.5	1595.1
160°	1621.5	1624.7	1626.2	1635.2	1628.9
162.5°	1654.3	1654.3	1655.8	1665.9	1658.5
165°	1682.4	1680.7	1680.7	1691.3	1683.9
167.5°	1707.6	1702.9	1702.9	1713.5	1706.1
170°	1726.7	1722.5	1720.9	1731.5	1722.5
172.5°	1739.9	1735.7	1734.1	1744.7	1735.7
175°	1750.6	1746.2	1743.1	1753.7	1744.7
177.5°	1756.3	1752.1	1748.9	1757.9	1748.9
180°	1753.7	1753.7	1753.7	1753.7	1753.7

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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	13.26	14.26	14.08	15.11	16.16	12.83	13.83	13.65	14.68	15.74
	3H	14.92	15.82	15.76	16.68	17.76	14.45	15.36	15.29	16.21	17.29
	4H	15.51	16.36	16.37	17.23	18.32	15.04	15.89	15.90	16.76	17.85
	6H	15.91	16.70	16.78	17.57	18.67	15.44	16.23	16.31	17.10	18.20
	8H	16.02	16.77	16.89	17.66	18.76	15.55	16.30	16.42	17.19	18.29
	12H	16.07	16.78	16.95	17.67	18.80	15.59	16.31	16.47	17.19	18.32
4H	2H	13.73	14.59	14.59	15.45	16.54	13.39	14.24	14.25	15.11	16.20
	3H	15.60	16.32	16.47	17.21	18.32	15.21	15.93	16.08	16.82	17.93
	4H	16.32	16.97	17.20	17.86	18.99	15.92	16.57	16.80	17.46	18.59
	6H	16.83	17.40	17.73	18.31	19.45	16.43	16.99	17.33	17.91	19.04
	8H	16.98	17.51	17.88	18.42	19.57	16.58	17.10	17.48	18.01	19.16
	12H	17.06	17.53	17.98	18.46	19.62	16.64	17.12	17.56	18.05	19.20
8H	4H	16.52	17.05	17.42	17.96	19.11	16.17	16.69	17.07	17.60	18.75
	6H	17.15	17.59	18.08	18.54	19.69	16.79	17.23	17.72	18.18	19.33
	8H	17.37	17.75	18.31	18.70	19.86	17.00	17.39	17.94	18.33	19.50
	12H	17.50	17.84	18.44	18.78	19.99	17.12	17.46	18.06	18.40	19.62
12H	4H	16.52	16.99	17.44	17.92	19.07	16.17	16.64	17.09	17.57	18.72
	6H	17.18	17.57	18.12	18.51	19.68	16.83	17.22	17.77	18.16	19.33
	8H	17.42	17.76	18.37	18.70	19.92	17.07	17.41	18.01	18.35	19.56