

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: P910832

Luminaire Tested: DFN2DIP-HX3F0-080D050US850-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P910832
REPORT IS A COMBINATION OF REPORTS P899240 AND P896089
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX3F0-080D050US850-RLLFLL
Description: 3 foot, Hexagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

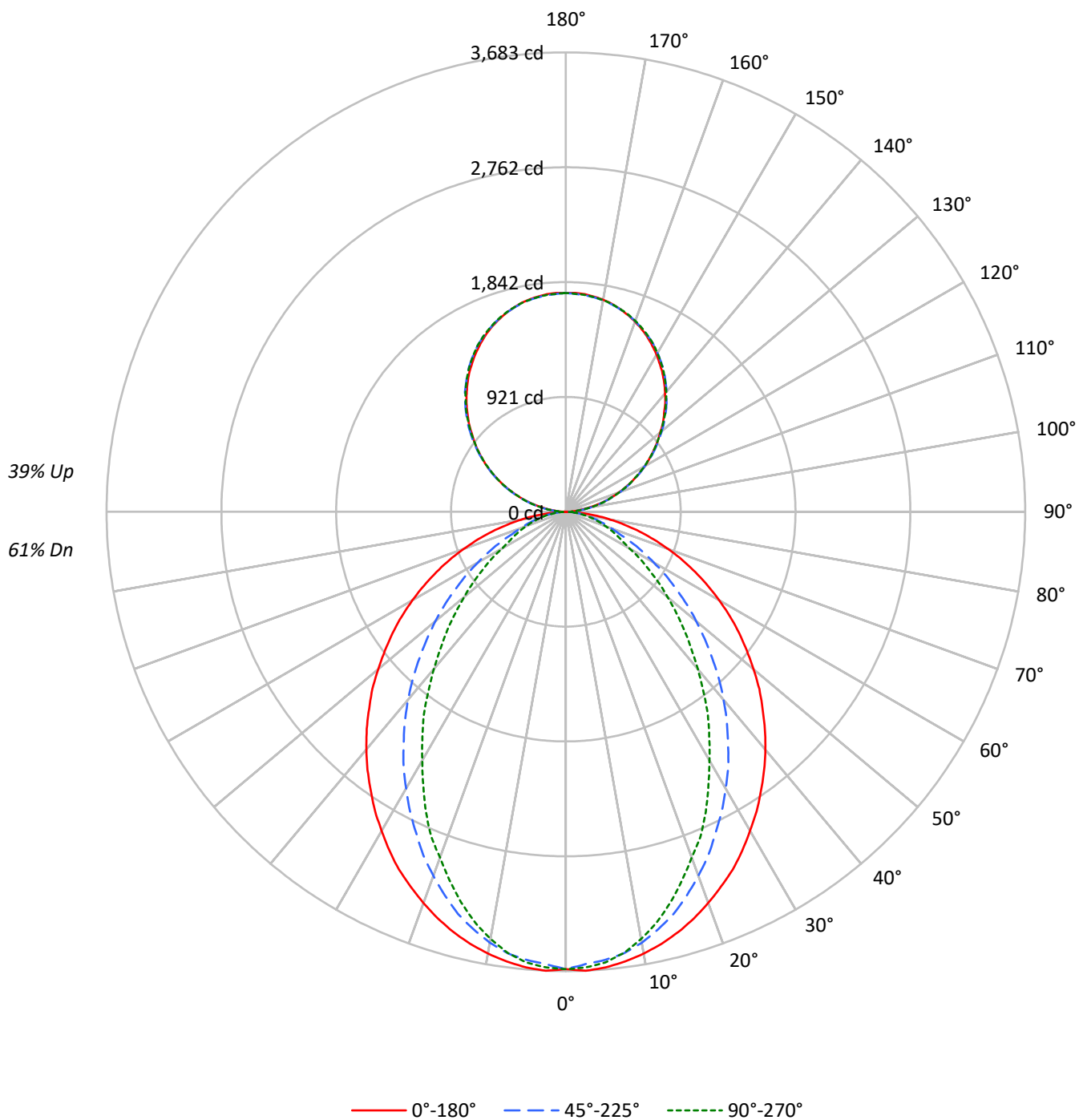
Lumens per Lamp: N/A
Luminaire Lumens: 12448.6 lumens
Efficiency: N/A
Efficacy: 106.8 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 2.84' x L: 3.28' x H: 0.1')
CIE Type: Semi-Direct

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	110	110	110	110	103	103	103	103	89	89	89	77	77	77	66	66	66
1	101	97	93	89	94	91	87	84	79	77	75	69	67	65	59	58	57
2	92	85	79	74	86	80	75	70	70	66	63	61	58	56	53	51	49
3	85	75	68	62	79	71	64	59	62	57	53	55	51	48	47	45	42
4	78	67	59	53	72	63	56	51	56	50	46	49	45	41	43	39	37
5	72	60	52	46	67	57	50	44	50	45	40	44	40	36	39	35	32
6	66	54	46	41	62	51	44	39	46	40	35	40	36	32	35	32	29
7	61	49	41	36	57	47	39	34	42	36	32	37	32	29	32	29	26
8	57	45	37	32	53	43	36	31	38	32	28	34	29	26	30	26	23
9	53	41	34	29	50	39	32	28	35	29	26	31	27	23	28	24	21
10	50	38	31	26	47	36	29	25	32	27	23	29	25	21	26	22	20

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	4247	4247	4247
5°	4252	4177	4204
10°	4208	4092	4065
15°	4148	3954	3852
20°	4070	3765	3590
25°	3989	3553	3338
30°	3882	3337	3019
35°	3777	3104	2738
40°	3669	2864	2417
45°	3545	2597	2127
50°	3416	2329	1842
55°	3281	2042	1570
60°	3125	1743	1290
65°	2945	1439	1158
70°	2727	1156	1045
75°	2453	1012	946
80°	2056	840	812
85°	1405	547	597

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 3545 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	343.7	2.8
10°-20°	943.4	7.6
20°-30°	1324.5	10.6
30°-40°	1443.8	11.6
40°-50°	1327.0	10.7
50°-60°	1042.1	8.4
60°-70°	678.3	5.4
70°-80°	349.2	2.8
80°-90°	94.1	0.8
90°-100°	108.5	0.9
100°-110°	344.8	2.8
110°-120°	590.1	4.7
120°-130°	776.0	6.2
130°-140°	871.0	7.0
140°-150°	854.2	6.9
150°-160°	716.5	5.8
160°-170°	475.2	3.8
170°-180°	166.1	1.3
0°-30°	2611.6	21.0
0°-40°	4055.4	32.6
0°-60°	6424.5	51.6
0°-90°	7546.2	60.6
90°-120°	1043.4	8.4
90°-150°	3544.6	28.5
90°-180°	4902.0	39.4
0°-180°	12448.6	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3667	3667	3667	3667	3667	
5°	3667	3650	3607	3637	3627	348
15°	3488	3451	3338	3275	3242	983
25°	3166	3060	2840	2705	2655	1456
35°	2728	2558	2267	2058	1984	1707
45°	2230	2008	1659	1423	1344	1722
55°	1696	1437	1078	879	816	1515
65°	1145	876	577	465	454	1135
75°	610	378	266	242	239	646
85°	143	73	63	63	63	164
90°	2	19	52	49	50	12
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°	3666.8	3666.8	3666.8	3666.8	3666.8
2.5°	3683.3	3666.8	3630.2	3663.6	3656.9
5°	3666.8	3650.3	3606.9	3636.9	3627.0
7.5°	3636.9	3617.1	3570.6	3583.7	3567.1
10°	3597.0	3573.9	3507.7	3497.5	3477.7
12.5°	3547.5	3517.5	3427.7	3408.0	3371.4
15°	3487.6	3451.0	3338.3	3275.3	3242.2
17.5°	3417.8	3364.7	3225.3	3152.4	3099.2
20°	3338.3	3271.8	3106.0	3023.2	2949.9
22.5°	3252.0	3175.6	2983.1	2870.4	2820.7
25°	3165.8	3059.5	2840.5	2704.6	2654.6
27.5°	3062.9	2949.9	2707.7	2551.8	2475.4
30°	2953.5	2827.1	2561.7	2392.7	2302.8
32.5°	2847.1	2694.4	2422.6	2223.3	2140.3
35°	2727.8	2558.5	2266.6	2057.5	1984.2
37.5°	2611.6	2428.9	2120.5	1891.3	1808.6
40°	2488.8	2289.9	1967.7	1732.1	1645.9
42.5°	2362.7	2150.5	1815.2	1569.6	1486.7
45°	2230.0	2007.5	1659.3	1423.4	1343.9
47.5°	2104.0	1868.4	1510.0	1274.1	1201.3
50°	1964.5	1729.0	1364.0	1134.7	1065.3
52.5°	1828.3	1579.3	1224.4	1005.5	942.5
55°	1695.6	1436.8	1078.4	879.4	816.4
57.5°	1559.7	1294.2	949.2	763.3	710.1
60°	1420.2	1154.8	812.9	643.9	590.8
62.5°	1284.3	1018.8	696.8	537.6	511.2
65°	1144.9	875.9	577.3	464.8	454.5
67.5°	1012.2	743.3	464.8	408.0	398.2
70°	872.8	614.1	384.8	351.7	338.4
72.5°	740.0	494.3	321.8	295.4	288.7
75°	610.5	378.2	265.5	242.2	239.1
77.5°	481.3	268.6	209.2	195.7	189.1
80°	361.5	192.6	159.1	146.1	146.1
82.5°	252.1	129.5	109.5	102.8	102.8
85°	142.6	72.9	63.0	63.0	63.0
87.5°	53.1	26.4	26.4	23.3	23.3
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	13.06	13.99	13.93	14.87	15.99	9.04	9.97	9.91	10.85	11.96
	3H	14.74	15.57	15.62	16.46	17.60	10.23	11.06	11.11	11.95	13.09
	4H	15.35	16.13	16.25	17.03	18.18	10.68	11.47	11.58	12.36	13.52
	6H	15.77	16.49	16.68	17.39	18.56	11.01	11.73	11.91	12.63	13.79
	8H	15.90	16.58	16.81	17.50	18.66	11.10	11.78	12.01	12.70	13.87
	12H	15.96	16.61	16.88	17.52	18.71	11.14	11.79	12.06	12.71	13.90
4H	2H	13.09	13.87	13.99	14.77	15.92	9.64	10.42	10.54	11.32	12.47
	3H	14.92	15.57	15.83	16.50	17.67	11.00	11.65	11.91	12.58	13.74
	4H	15.61	16.20	16.54	17.13	18.32	11.55	12.14	12.47	13.06	14.25
	6H	16.13	16.63	17.06	17.58	18.78	11.96	12.47	12.90	13.42	14.62
	8H	16.30	16.77	17.24	17.72	18.92	12.09	12.57	13.03	13.51	14.72
	12H	16.39	16.82	17.35	17.78	18.99	12.16	12.59	13.12	13.55	14.76
8H	4H	15.59	16.06	16.52	17.01	18.21	11.83	12.30	12.77	13.25	14.45
	6H	16.15	16.54	17.11	17.53	18.73	12.34	12.74	13.31	13.72	14.93
	8H	16.36	16.71	17.33	17.68	18.90	12.53	12.88	13.50	13.85	15.08
	12H	16.50	16.80	17.47	17.77	19.04	12.65	12.96	13.63	13.92	15.19
12H	4H	15.54	15.97	16.50	16.93	18.14	11.84	12.26	12.79	13.23	14.44
	6H	16.12	16.47	17.10	17.45	18.67	12.39	12.74	13.36	13.71	14.94
	8H	16.34	16.65	17.32	17.62	18.89	12.60	12.91	13.58	13.87	15.15