

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: P911476

Luminaire Tested: DFN2DIP-PN4F0-080D050US850-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P911476
REPORT IS A COMBINATION OF REPORTS P899635 AND P896497
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN4F0-080D050US850-FLLFLL
Description: 4 foot, Pentagon Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

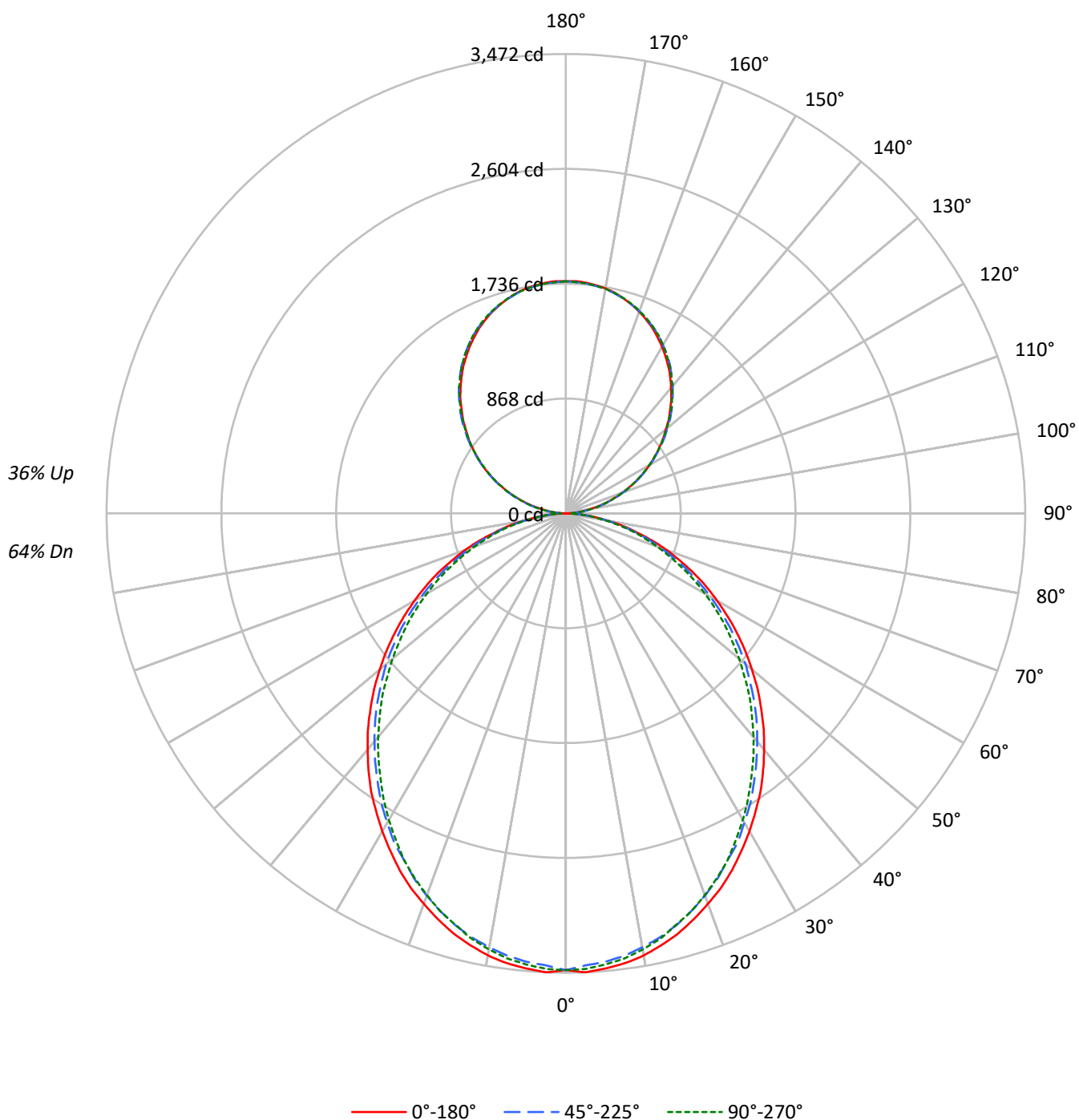
Lumens per Lamp: N/A
Luminaire Lumens: 13690.6 lumens
Efficiency: N/A
Efficacy: 119.3 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 3.74' x L: 3.94' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 114.8
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°	2520	2520	2520
5°	2524	2485	2502
10°	2504	2452	2469
15°	2467	2412	2416
20°	2417	2356	2362
25°	2367	2290	2300
30°	2305	2227	2221
35°	2247	2154	2137
40°	2174	2080	2057
45°	2102	2006	1976
50°	2023	1928	1881
55°	1941	1838	1795
60°	1847	1731	1695
65°	1746	1621	1578
70°	1616	1486	1452
75°	1436	1325	1337
80°	1220	1119	1115
85°	883	764	746

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2102 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	11.71	12.71	12.53	13.56	14.61	11.26	12.27	12.09	13.12	14.17
	3H	13.38	14.28	14.22	15.14	16.22	12.89	13.80	13.73	14.65	15.73
	4H	13.97	14.83	14.83	15.69	16.78	13.49	14.34	14.34	15.20	16.30
	6H	14.38	15.17	15.25	16.04	17.15	13.89	14.68	14.76	15.55	16.65
	8H	14.49	15.24	15.37	16.13	17.24	14.00	14.75	14.88	15.64	16.74
	12H	14.55	15.26	15.43	16.15	17.28	14.05	14.76	14.93	15.65	16.78
4H	2H	12.18	13.04	13.04	13.90	14.99	11.83	12.68	12.69	13.55	14.64
	3H	14.07	14.78	14.94	15.67	16.78	13.66	14.37	14.53	15.27	16.38
	4H	14.79	15.44	15.67	16.33	17.46	14.37	15.02	15.25	15.91	17.05
	6H	15.31	15.88	16.21	16.79	17.93	14.89	15.45	15.79	16.37	17.50
	8H	15.47	15.99	16.37	16.90	18.05	15.04	15.56	15.94	16.48	17.62
	12H	15.55	16.02	16.47	16.95	18.11	15.11	15.58	16.03	16.51	17.67
8H	4H	15.00	15.52	15.90	16.43	17.58	14.63	15.15	15.53	16.06	17.21
	6H	15.64	16.07	16.56	17.02	18.17	15.26	15.69	16.19	16.65	17.80
	8H	15.86	16.25	16.80	17.19	18.36	15.48	15.86	16.41	16.81	17.97
	12H	16.00	16.34	16.94	17.28	18.49	15.60	15.94	16.54	16.88	18.09
12H	4H	14.99	15.46	15.91	16.39	17.55	14.63	15.10	15.55	16.03	17.18
	6H	15.67	16.05	16.61	17.00	18.16	15.30	15.69	16.24	16.63	17.80
	8H	15.92	16.26	16.86	17.20	18.41	15.55	15.89	16.49	16.82	18.04