

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: P911281

Luminaire Tested: DFN2DIP-PN3F0-080D050US850-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P911281
REPORT IS A COMBINATION OF REPORTS P901069 AND P897955
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN3F0-080D050US850-FLLONL
Description: 3 foot, Pentagon Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

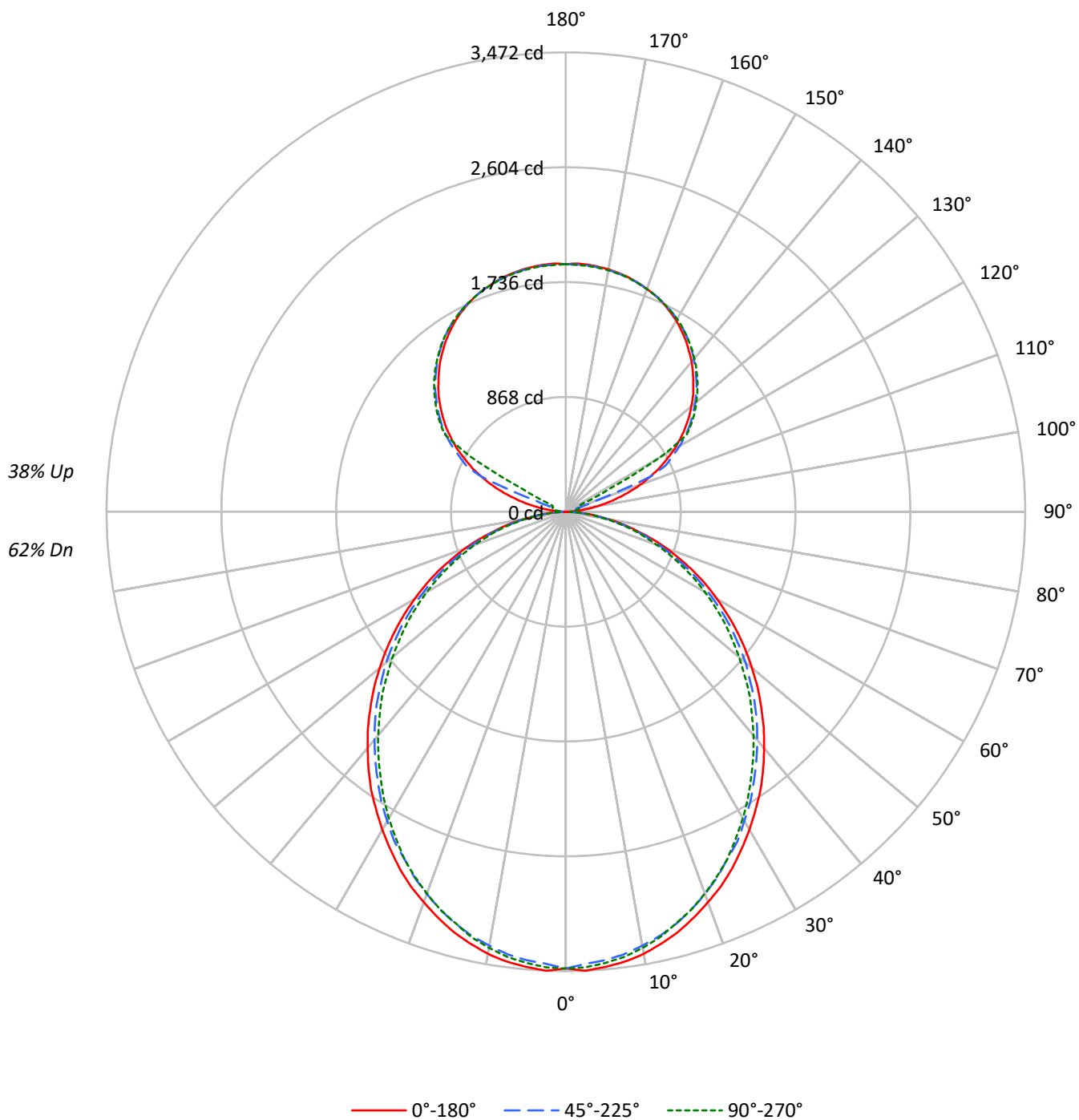
Lumens per Lamp: N/A
Luminaire Lumens: 14272.9 lumens
Efficiency: N/A
Efficacy: 121.4 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 2.96' x L: 3.11' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 117.6
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9967
Total Harmonic Distortion (THDi): 0.063
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
RCR																	
0	110	110	110	110	103	103	103	103	90	90	90		78	78	78		67
1	100	96	92	88	94	90	87	83	79	76	74		69	67	65		59
2	91	84	78	72	85	79	73	69	69	65	61		60	57	54		52
3	83	74	66	60	78	69	63	57	61	56	51		53	49	46		46
4	76	65	57	51	71	61	54	49	54	48	44		47	43	39		41
5	70	58	50	44	65	55	47	42	49	43	38		43	38	34		37
6	65	52	44	38	60	49	42	36	44	38	33		39	34	30		34
7	60	47	39	34	56	45	37	32	40	34	29		35	30	27		31
8	56	43	35	30	52	41	34	29	36	30	26		32	27	24		28
9	52	39	32	27	49	37	30	26	33	28	23		30	25	21		26
10	49	36	29	24	45	34	28	23	31	25	21		27	23	19		24

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	4035	4035	4035
5°	4039	3976	4004
10°	4004	3920	3948
15°	3943	3853	3862
20°	3861	3760	3774
25°	3780	3650	3672
30°	3678	3548	3542
35°	3581	3427	3406
40°	3463	3305	3276
45°	3345	3182	3143
50°	3215	3054	2989
55°	3079	2905	2846
60°	2926	2729	2684
65°	2758	2546	2491
70°	2544	2323	2284
75°	2248	2056	2090
80°	1891	1714	1725
85°	1334	1134	1124

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 3345 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	324.9	2.3
10°-20°	914.2	6.4
20°-30°	1343.5	9.4
30°-40°	1560.4	10.9
40°-50°	1558.4	10.9
50°-60°	1358.9	9.5
60°-70°	1004.5	7.0
70°-80°	568.4	4.0
80°-90°	153.3	1.1
90°-100°	61.7	0.4
100°-110°	230.0	1.6
110°-120°	610.1	4.3
120°-130°	1011.9	7.1
130°-140°	1074.8	7.5
140°-150°	999.0	7.0
150°-160°	803.1	5.6
160°-170°	517.5	3.6
170°-180°	178.1	1.2
0°-30°	2582.6	18.1
0°-40°	4143.0	29.0
0°-60°	7060.4	49.5
0°-90°	8786.6	61.6
90°-120°	901.9	6.3
90°-150°	3987.5	27.9
90°-180°	5486.0	38.4
0°-180°	14272.9	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°	1	16	27	34	36	13
95°	88	43	53	60	58	104
105°	412	452	83	98	103	440
115°	779	802	836	209	111	767
125°	1101	1118	1144	1154	1158	982
135°	1362	1384	1396	1410	1407	1052
145°	1580	1579	1602	1611	1605	988
155°	1740	1728	1744	1752	1742	802
165°	1833	1825	1829	1839	1829	518
175°	1875	1866	1869	1878	1865	178
180°	1871	1871	1871	1871	1871	

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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°	1.3	16.2	27.1	33.9	36.5
92.5°	33.9	28.5	32.5	35.3	36.5
95°	87.9	43.3	52.8	59.7	58.2
97.5°	158.4	47.5	69.0	73.2	74.4
100°	239.8	54.2	77.2	87.9	90.7
102.5°	329.0	326.4	80.0	94.7	98.9
105°	411.7	452.4	82.6	97.5	102.9
107.5°	507.8	541.5	85.4	100.1	105.7
110°	600.0	628.2	237.0	101.6	106.9

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	686.6	710.9	687.9	104.2	108.3
115°	778.6	801.6	835.5	208.6	111.1
117.5°	858.5	885.5	908.7	714.9	360.2
120°	947.9	968.2	992.6	1008.9	826.0
122.5°	1023.6	1045.3	1072.5	1080.6	1082.1
125°	1100.8	1118.5	1144.3	1153.7	1157.8
127.5°	1171.2	1190.2	1210.7	1224.1	1225.4
130°	1237.6	1259.4	1274.1	1289.1	1287.9
132.5°	1305.4	1323.0	1337.8	1350.1	1348.8
135°	1362.3	1384.0	1396.0	1409.8	1407.0
137.5°	1421.7	1438.0	1451.7	1465.2	1461.2
140°	1480.0	1490.9	1505.7	1517.9	1511.2
142.5°	1528.9	1538.4	1555.9	1566.7	1559.9
145°	1580.3	1578.9	1601.8	1611.4	1604.6
147.5°	1624.9	1620.8	1643.9	1650.6	1645.3
150°	1668.3	1658.8	1680.5	1688.6	1681.8
152.5°	1704.8	1694.0	1714.3	1722.5	1713.0
155°	1740.0	1727.9	1744.1	1752.2	1741.5
157.5°	1768.4	1757.7	1769.9	1779.4	1768.4
160°	1792.9	1784.7	1792.9	1800.9	1791.5
162.5°	1814.4	1806.5	1813.1	1822.6	1810.4
165°	1833.4	1825.4	1829.4	1838.8	1829.4
167.5°	1848.4	1840.2	1844.4	1853.8	1841.6
170°	1860.6	1852.4	1855.1	1864.6	1852.4
172.5°	1868.7	1860.6	1863.3	1872.8	1860.6
175°	1875.4	1865.9	1868.7	1878.1	1864.6
177.5°	1878.1	1868.7	1870.1	1879.5	1867.3
180°	1871.3	1871.3	1871.3	1871.3	1871.3

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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	13.08	14.06	13.93	14.93	16.03	12.64	13.62	13.50	14.49	15.59
	3H	14.75	15.62	15.61	16.50	17.63	14.26	15.14	15.13	16.02	17.14
	4H	15.34	16.16	16.21	17.05	18.18	14.85	15.68	15.73	16.57	17.70
	6H	15.74	16.50	16.63	17.40	18.54	15.25	16.01	16.14	16.91	18.05
	8H	15.84	16.57	16.74	17.48	18.63	15.35	16.08	16.25	16.99	18.14
	12H	15.89	16.58	16.80	17.49	18.66	15.39	16.09	16.30	16.99	18.17
4H	2H	13.56	14.38	14.44	15.27	16.40	13.20	14.03	14.09	14.92	16.05
	3H	15.42	16.12	16.32	17.04	18.18	15.02	15.71	15.92	16.63	17.78
	4H	16.14	16.77	17.05	17.69	18.86	15.72	16.35	16.63	17.27	18.44
	6H	16.65	17.20	17.58	18.14	19.31	16.23	16.78	17.15	17.72	18.89
	8H	16.80	17.31	17.73	18.25	19.44	16.38	16.89	17.30	17.82	19.01
	12H	16.88	17.34	17.82	18.29	19.48	16.44	16.90	17.39	17.85	19.05
8H	4H	16.34	16.85	17.26	17.78	18.97	15.97	16.48	16.89	17.41	18.60
	6H	16.97	17.39	17.92	18.37	19.55	16.59	17.01	17.54	17.99	19.18
	8H	17.19	17.56	18.15	18.53	19.73	16.80	17.18	17.76	18.14	19.35
	12H	17.32	17.65	18.28	18.61	19.86	16.92	17.25	17.88	18.21	19.46
12H	4H	16.33	16.79	17.27	17.74	18.94	15.97	16.43	16.91	17.38	18.57
	6H	17.00	17.37	17.96	18.34	19.54	16.63	17.01	17.59	17.97	19.18
	8H	17.24	17.57	18.20	18.53	19.78	16.87	17.20	17.83	18.16	19.41

END OF REPORT