

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: P911309

Luminaire Tested: DFN2DIP-PN3F0-090D050US850-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P911309
REPORT IS A COMBINATION OF REPORTS P901071 AND P897955
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN3F0-090D050US850-FLLONL
Description: 3 foot, Pentagon Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

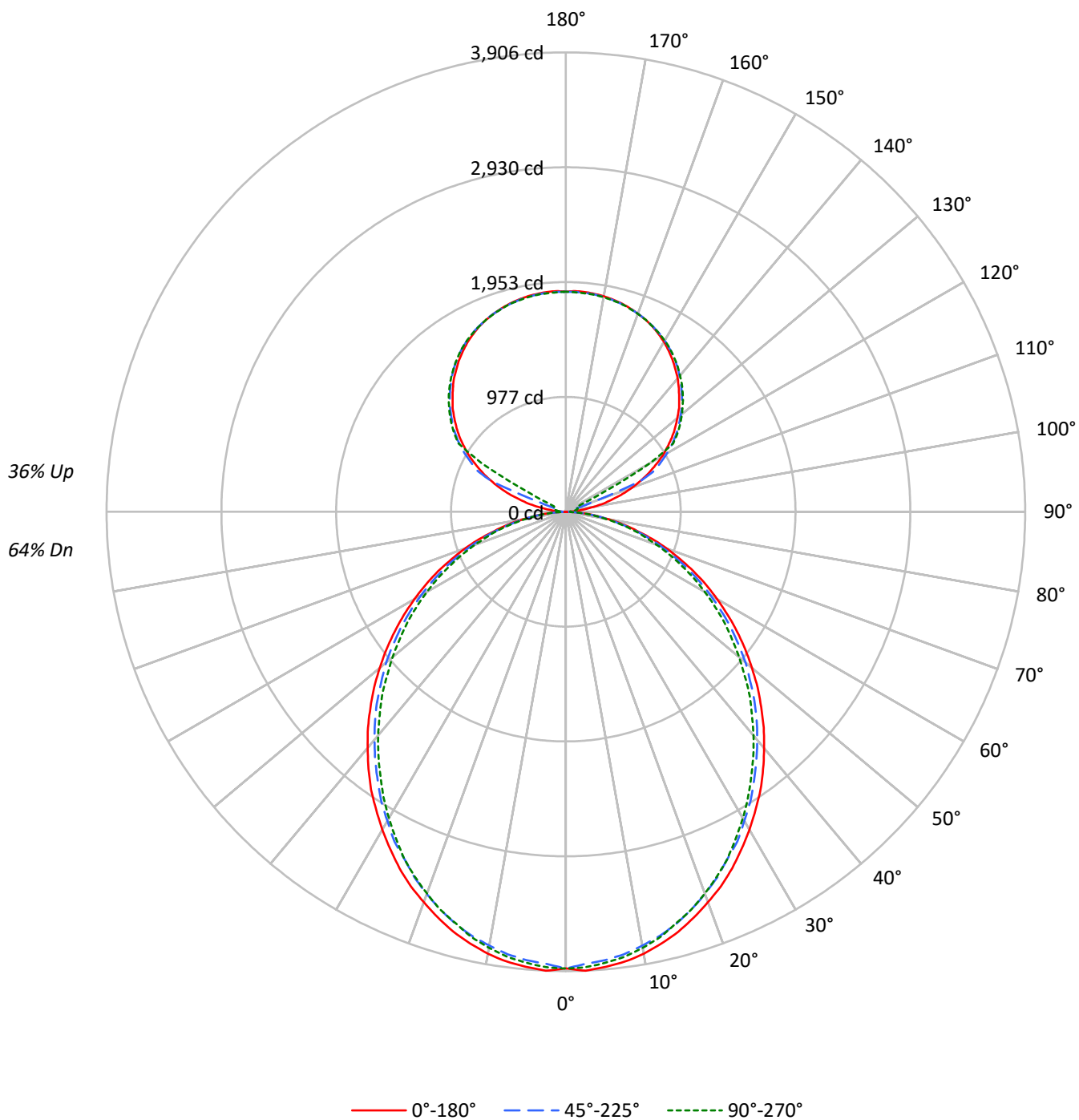
Lumens per Lamp: N/A
Luminaire Lumens: 15370.8 lumens
Efficiency: N/A
Efficacy: 117.6 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 2.96' x L: 3.11' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 130.7
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9954
Total Harmonic Distortion (THDi): 0.076
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	111	111	111	111	104	104	104	104	91	91	91		80	80	80		69
1	101	97	93	89	95	91	87	84	80	78	75		70	68	67		61
2	92	84	78	73	86	79	74	69	70	66	62		62	59	56		54
3	84	74	67	61	79	70	63	58	62	57	52		55	51	47		48
4	77	66	58	51	72	62	55	49	55	49	45		49	44	40		43
5	71	59	50	44	66	55	48	42	49	43	39		44	39	35		39
6	65	53	44	38	61	50	42	37	45	38	34		40	35	31		35
7	60	48	40	34	57	45	38	33	41	34	30		36	31	27		32
8	56	43	35	30	53	41	34	29	37	31	27		33	28	24		29
9	52	40	32	27	49	38	31	26	34	28	24		30	26	22		27
10	49	37	29	24	46	35	28	23	31	26	22		28	23	20		25

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	4540	4540	4540
5°	4544	4473	4505
10°	4505	4410	4442
15°	4436	4334	4345
20°	4344	4230	4245
25°	4252	4106	4131
30°	4138	3991	3985
35°	4029	3855	3832
40°	3896	3718	3685
45°	3763	3580	3536
50°	3617	3436	3362
55°	3464	3268	3202
60°	3291	3070	3019
65°	3102	2864	2803
70°	2862	2614	2570
75°	2530	2313	2352
80°	2127	1928	1941
85°	1500	1276	1266

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 3763 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	365.5	2.4
10°-20°	1028.5	6.7
20°-30°	1511.4	9.8
30°-40°	1755.4	11.4
40°-50°	1753.3	11.4
50°-60°	1528.8	9.9
60°-70°	1130.1	7.4
70°-80°	639.4	4.2
80°-90°	172.1	1.1
90°-100°	61.7	0.4
100°-110°	230.0	1.5
110°-120°	610.1	4.0
120°-130°	1011.9	6.6
130°-140°	1074.8	7.0
140°-150°	999.0	6.5
150°-160°	803.1	5.2
160°-170°	517.5	3.4
170°-180°	178.1	1.2
0°-30°	2905.4	18.9
0°-40°	4660.9	30.3
0°-60°	7942.9	51.7
0°-90°	9884.5	64.3
90°-120°	901.9	5.9
90°-150°	3987.5	25.9
90°-180°	5486.0	35.7
0°-180°	15370.8	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3884	3884	3884	3884	3884	
5°	3884	3869	3828	3858	3850	369
15°	3697	3675	3626	3641	3622	1041
25°	3346	3316	3253	3260	3253	1540
35°	2887	2850	2790	2767	2748	1803
45°	2349	2323	2267	2226	2211	1813
55°	1778	1755	1710	1666	1647	1589
65°	1199	1176	1139	1106	1087	1185
75°	627	620	601	579	586	670
85°	153	149	146	134	131	171
90°	1	16	27	34	36	14
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°	3883.6	3883.6	3883.6	3883.6	3883.6
2.5°	3906.2	3887.6	3846.5	3883.6	3876.5
5°	3883.6	3869.0	3827.8	3857.5	3850.3
7.5°	3857.5	3835.4	3794.1	3824.3	3816.7
10°	3816.7	3790.6	3745.8	3775.5	3764.4
12.5°	3760.4	3738.2	3693.5	3712.0	3704.6
15°	3697.1	3674.9	3626.1	3641.2	3622.5
17.5°	3618.6	3596.4	3547.7	3566.3	3547.7
20°	3532.6	3510.4	3458.1	3469.2	3454.5
22.5°	3447.0	3413.4	3364.6	3364.6	3357.1
25°	3346.0	3316.2	3252.9	3260.0	3252.9
27.5°	3233.8	3207.7	3159.4	3148.3	3129.7
30°	3122.2	3092.0	3036.1	3025.0	3010.0
32.5°	3002.5	2980.3	2920.4	2897.9	2882.8
35°	2886.8	2849.6	2789.7	2767.2	2748.5
37.5°	2756.1	2722.4	2662.5	2636.4	2617.8
40°	2621.7	2591.6	2531.7	2498.5	2483.5
42.5°	2490.9	2460.9	2401.4	2363.8	2341.7
45°	2349.1	2323.0	2266.7	2225.9	2210.9
47.5°	2210.9	2184.7	2124.8	2083.7	2061.5
50°	2065.1	2046.4	1994.1	1941.9	1923.2
52.5°	1923.2	1897.1	1848.7	1807.6	1781.4
55°	1777.8	1755.2	1710.4	1665.7	1647.1
57.5°	1632.0	1613.4	1564.7	1519.9	1504.8
60°	1486.2	1471.5	1419.2	1378.0	1367.0
62.5°	1344.3	1318.2	1280.9	1243.7	1228.7
65°	1198.9	1176.3	1139.1	1105.5	1086.8
67.5°	1049.6	1030.6	997.2	971.2	956.1
70°	911.3	896.2	862.6	836.4	821.8
72.5°	769.4	754.3	735.7	709.6	698.6
75°	627.3	620.0	601.1	578.9	586.4
77.5°	500.4	485.4	477.9	466.8	455.7
80°	373.6	369.6	362.1	351.0	343.6
82.5°	254.0	254.0	250.4	235.3	235.3
85°	152.9	149.4	145.8	134.3	130.8
87.5°	67.3	59.8	52.3	41.3	37.3
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	13.71	14.72	14.54	15.57	16.62	13.28	14.28	14.10	15.13	16.18
	3H	15.38	16.28	16.22	17.14	18.22	14.90	15.80	15.73	16.66	17.74
	4H	15.97	16.82	16.82	17.69	18.78	15.48	16.34	16.34	17.20	18.29
	6H	16.37	17.16	17.24	18.03	19.13	15.88	16.67	16.75	17.54	18.64
	8H	16.48	17.23	17.35	18.12	19.22	15.99	16.74	16.86	17.63	18.73
	12H	16.53	17.24	17.41	18.13	19.26	16.03	16.75	16.91	17.63	18.76
4H	2H	14.19	15.04	15.05	15.91	17.00	13.84	14.69	14.70	15.56	16.64
	3H	16.06	16.77	16.93	17.67	18.77	15.66	16.37	16.53	17.27	18.37
	4H	16.78	17.43	17.66	18.32	19.45	16.36	17.01	17.24	17.90	19.03
	6H	17.29	17.86	18.19	18.77	19.91	16.87	17.43	17.77	18.35	19.48
	8H	17.44	17.97	18.34	18.88	20.03	17.02	17.54	17.92	18.45	19.60
	12H	17.52	17.99	18.44	18.92	20.08	17.08	17.56	18.00	18.49	19.64
8H	4H	16.98	17.51	17.88	18.42	19.56	16.61	17.14	17.51	18.05	19.19
	6H	17.61	18.05	18.54	19.00	20.14	17.24	17.67	18.16	18.62	19.77
	8H	17.83	18.21	18.76	19.16	20.32	17.45	17.83	18.38	18.77	19.94
	12H	17.96	18.30	18.90	19.24	20.45	17.56	17.90	18.50	18.84	20.05
12H	4H	16.97	17.45	17.89	18.38	19.53	16.61	17.08	17.53	18.01	19.17
	6H	17.64	18.03	18.58	18.97	20.13	17.28	17.66	18.21	18.61	19.77
	8H	17.88	18.22	18.82	19.16	20.37	17.51	17.85	18.45	18.79	20.00