

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: P911221

Luminaire Tested: DFN2DIP-PN3F0-060D040US850-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P911221
REPORT IS A COMBINATION OF REPORTS P901051 AND P897955
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN3F0-060D040US850-FLLONL
Description: 3 foot, Pentagon Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

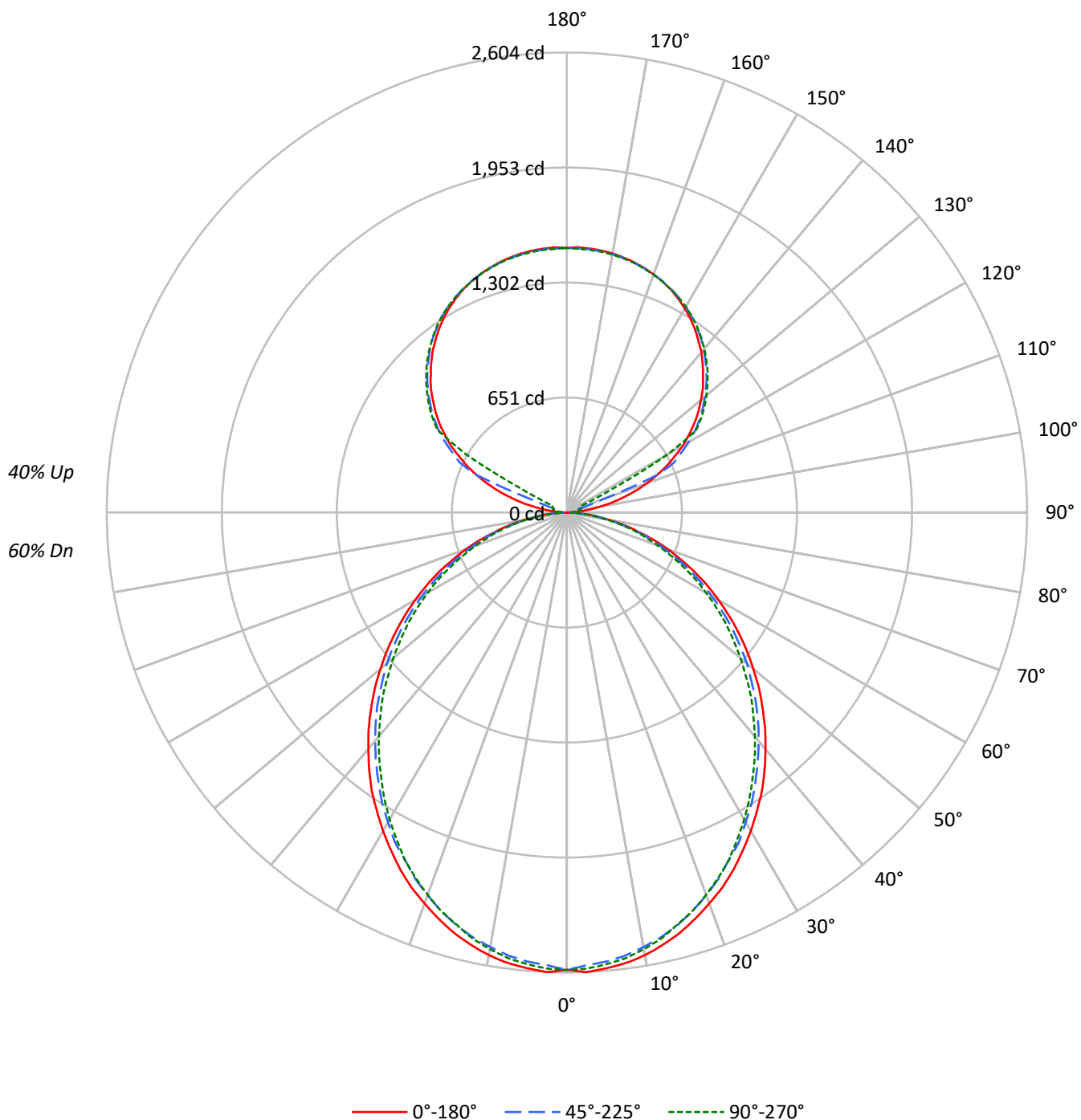
Lumens per Lamp: N/A
Luminaire Lumens: 10979.0 lumens
Efficiency: N/A
Efficacy: 126.2 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 2.96' x L: 3.11' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 87
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9821
Total Harmonic Distortion (THDi): 0.08
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					0	
RW	70	50	30	10		70	50	30	10		50	30	10		50	30	10		0			
RCR																						
0	110	110	110	110		102	102	102	102		89	89	89		77	77	77		65	65	65	60
1	100	96	92	88		93	90	86	83		78	75	73		67	66	64		58	56	55	51
2	91	84	77	72		85	78	73	68		68	64	61		59	56	53		51	49	47	42
3	83	73	66	60		77	69	62	57		60	55	51		52	48	45		45	42	40	36
4	76	65	57	51		71	61	54	48		54	48	44		47	42	39		40	37	34	31
5	70	58	50	44		65	55	47	42		48	42	38		42	37	34		36	33	30	27
6	64	52	44	38		60	49	42	36		43	37	33		38	33	30		33	29	26	24
7	60	47	39	33		56	44	37	32		39	33	29		35	30	26		30	26	23	21
8	55	43	35	30		52	40	33	28		36	30	26		32	27	23		28	24	21	19
9	52	39	32	26		48	37	30	25		33	27	23		29	24	21		26	22	19	17
10	48	36	29	24		45	34	27	23		30	25	21		27	22	19		24	20	17	15

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3027	3027	3027
5°	3030	2982	3003
10°	3003	2940	2961
15°	2957	2889	2897
20°	2896	2820	2830
25°	2835	2737	2754
30°	2758	2661	2657
35°	2686	2570	2554
40°	2597	2479	2457
45°	2508	2387	2357
50°	2411	2291	2241
55°	2310	2179	2135
60°	2194	2047	2013
65°	2068	1910	1869
70°	1908	1742	1713
75°	1686	1542	1568
80°	1418	1285	1294
85°	1000	850	844

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2508 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	243.7	2.2
10°-20°	685.6	6.2
20°-30°	1007.6	9.2
30°-40°	1170.3	10.7
40°-50°	1168.8	10.6
50°-60°	1019.2	9.3
60°-70°	753.4	6.9
70°-80°	426.3	3.9
80°-90°	115.1	1.0
90°-100°	49.4	0.4
100°-110°	184.0	1.7
110°-120°	488.1	4.4
120°-130°	809.5	7.4
130°-140°	859.9	7.8
140°-150°	799.2	7.3
150°-160°	642.5	5.9
160°-170°	414.0	3.8
170°-180°	142.5	1.3
0°-30°	1937.0	17.6
0°-40°	3107.2	28.3
0°-60°	5295.3	48.2
0°-90°	6590.0	60.0
90°-120°	721.5	6.6
90°-150°	3190.0	29.1
90°-180°	4389.0	40.0
0°-180°	10979.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2589	2589	2589	2589	2589	
5°	2589	2579	2552	2572	2567	246
15°	2465	2450	2417	2428	2415	694
25°	2231	2211	2168	2173	2168	1026
35°	1925	1900	1860	1845	1832	1202
45°	1566	1549	1511	1484	1474	1209
55°	1185	1170	1140	1110	1098	1060
65°	799	784	759	737	724	790
75°	418	413	401	386	391	446
85°	102	100	97	90	87	114
90°	1	13	22	27	29	10
95°	70	35	42	48	47	83
105°	329	362	66	78	82	352
115°	623	641	668	167	89	613
125°	881	895	915	923	926	785
135°	1090	1107	1117	1128	1126	842
145°	1264	1263	1281	1289	1284	791
155°	1392	1382	1395	1402	1393	641
165°	1467	1460	1464	1471	1464	414
175°	1500	1493	1495	1502	1492	143
180°	1497	1497	1497	1497	1497	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2589.1	2589.1	2589.1	2589.1	2589.1
2.5°	2604.2	2591.7	2564.2	2589.1	2584.3
5°	2589.1	2579.3	2551.8	2571.7	2566.9
7.5°	2571.7	2556.9	2529.4	2549.5	2544.5
10°	2544.5	2527.1	2497.1	2517.0	2509.6
12.5°	2507.0	2492.1	2462.3	2474.7	2469.7
15°	2464.6	2449.9	2417.4	2427.5	2415.1
17.5°	2412.4	2397.7	2365.2	2377.5	2365.2
20°	2355.1	2340.3	2305.4	2312.8	2303.1
22.5°	2298.1	2275.6	2243.1	2243.1	2238.1
25°	2230.6	2210.9	2168.5	2173.3	2168.5
27.5°	2155.9	2138.5	2106.2	2098.9	2086.5
30°	2081.5	2061.3	2024.1	2016.7	2006.6
32.5°	2001.6	1986.9	1947.0	1931.9	1921.9
35°	1924.6	1899.7	1859.8	1844.7	1832.3
37.5°	1837.4	1814.9	1775.1	1757.5	1745.1
40°	1747.8	1727.7	1687.9	1665.7	1655.6
42.5°	1660.6	1640.5	1601.0	1575.9	1561.0
45°	1566.1	1548.6	1511.1	1484.0	1473.9
47.5°	1473.9	1456.4	1416.6	1389.1	1374.3
50°	1376.7	1364.3	1329.5	1294.5	1282.1
52.5°	1282.1	1264.7	1232.4	1205.0	1187.6
55°	1185.2	1170.1	1140.3	1110.4	1098.0
57.5°	1088.0	1075.6	1043.1	1013.3	1003.2
60°	990.8	981.0	946.2	918.7	911.3
62.5°	896.2	878.8	853.9	829.1	819.1
65°	799.3	784.3	759.4	736.9	724.5
67.5°	699.7	687.0	664.8	647.4	637.3
70°	607.5	597.5	575.0	557.6	547.8
72.5°	512.9	502.9	490.5	473.1	465.7
75°	418.1	413.4	400.7	385.9	390.9
77.5°	333.6	323.6	318.5	311.2	303.8
80°	249.1	246.4	241.4	234.0	229.0
82.5°	169.3	169.3	166.9	156.9	156.9
85°	101.9	99.6	97.1	89.5	87.2
87.5°	44.9	39.9	34.8	27.5	24.8
90°	1.0	13.0	21.6	27.2	29.2
92.5°	27.2	22.7	26.0	28.2	29.2
95°	70.3	34.6	42.1	47.7	46.6
97.5°	126.8	37.9	55.2	58.6	59.6
100°	191.7	43.4	61.8	70.3	72.5
102.5°	263.2	261.2	63.9	75.7	79.1
105°	329.3	361.9	66.1	78.0	82.3
107.5°	406.2	433.3	68.3	80.2	84.5
110°	480.0	502.6	189.6	81.3	85.5

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	549.3	568.7	550.3	83.4	86.7
115°	622.8	641.2	668.4	166.8	88.9
117.5°	686.8	708.4	726.9	571.9	288.1
120°	758.3	774.5	794.0	807.1	660.9
122.5°	818.9	836.3	858.0	864.5	865.6
125°	880.7	894.9	915.4	923.0	926.2
127.5°	937.0	952.2	968.5	979.4	980.4
130°	990.1	1007.5	1019.3	1031.3	1030.3
132.5°	1044.2	1058.4	1070.3	1080.1	1079.1
135°	1089.8	1107.2	1116.9	1127.7	1125.6
137.5°	1137.4	1150.4	1161.3	1172.1	1168.9
140°	1184.0	1192.7	1204.6	1214.4	1208.9
142.5°	1223.1	1230.7	1244.7	1253.3	1248.0
145°	1264.3	1263.2	1281.4	1289.1	1283.7
147.5°	1299.9	1296.6	1315.1	1320.5	1316.3
150°	1334.6	1327.0	1344.4	1350.9	1345.4
152.5°	1363.8	1355.2	1371.4	1377.9	1370.4
155°	1392.0	1382.4	1395.3	1401.8	1393.1
157.5°	1414.8	1406.1	1416.0	1423.5	1414.8
160°	1434.3	1427.7	1434.3	1440.7	1433.2
162.5°	1451.6	1445.1	1450.6	1458.1	1448.4
165°	1466.8	1460.3	1463.5	1471.1	1463.5
167.5°	1478.7	1472.1	1475.5	1483.1	1473.3
170°	1488.5	1482.0	1484.1	1491.7	1482.0
172.5°	1494.9	1488.5	1490.7	1498.3	1488.5
175°	1500.3	1492.7	1494.9	1502.5	1491.7
177.5°	1502.5	1494.9	1496.0	1503.7	1493.9
180°	1497.2	1497.2	1497.2	1497.2	1497.2

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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	11.96	12.92	12.82	13.80	14.92	11.52	12.48	12.38	13.37	14.49
	3H	13.62	14.48	14.50	15.38	16.52	13.14	14.00	14.01	14.89	16.04
	4H	14.21	15.02	15.10	15.92	17.08	13.72	14.54	14.62	15.44	16.60
	6H	14.61	15.36	15.51	16.27	17.44	14.12	14.87	15.02	15.78	16.95
	8H	14.71	15.43	15.63	16.35	17.52	14.22	14.94	15.14	15.86	17.03
	12H	14.76	15.44	15.68	16.36	17.56	14.27	14.95	15.18	15.87	17.06
4H	2H	12.43	13.24	13.33	14.14	15.30	12.08	12.89	12.98	13.79	14.95
	3H	14.29	14.97	15.20	15.91	17.08	13.89	14.57	14.80	15.51	16.68
	4H	15.01	15.63	15.93	16.56	17.75	14.59	15.21	15.51	16.14	17.34
	6H	15.52	16.06	16.46	17.01	18.21	15.10	15.64	16.04	16.59	17.79
	8H	15.67	16.17	16.61	17.12	18.33	15.25	15.75	16.18	16.69	17.90
	12H	15.75	16.20	16.70	17.16	18.38	15.31	15.76	16.27	16.73	17.94
8H	4H	15.21	15.71	16.15	16.66	17.87	14.84	15.34	15.78	16.29	17.50
	6H	15.84	16.25	16.80	17.24	18.45	15.46	15.88	16.42	16.86	18.07
	8H	16.05	16.42	17.03	17.40	18.63	15.67	16.04	16.64	17.02	18.24
	12H	16.19	16.51	17.16	17.48	18.76	15.79	16.11	16.76	17.08	18.36
12H	4H	15.20	15.65	16.15	16.61	17.83	14.84	15.29	15.79	16.25	17.47
	6H	15.87	16.23	16.84	17.21	18.44	15.50	15.87	16.47	16.85	18.07
	8H	16.11	16.43	17.08	17.40	18.68	15.74	16.06	16.71	17.03	18.31

END OF REPORT