

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: P912631

Luminaire Tested: DFN2DIP-TR3F0-060D050US850-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P912631
REPORT IS A COMBINATION OF REPORTS P901825 AND P898751
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-TR3F0-060D050US850-FLLONL
Description: 3 foot, Triangle Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

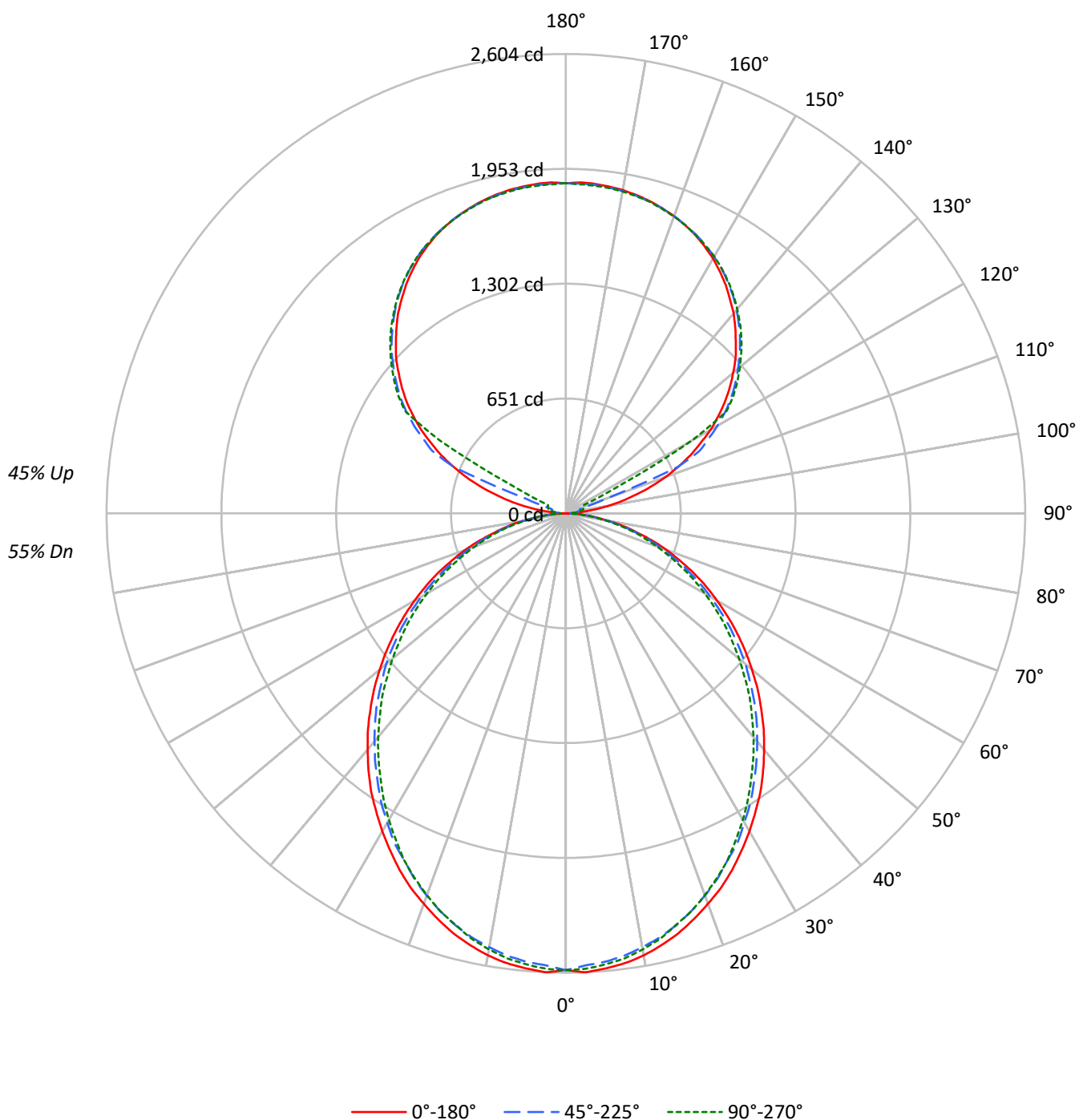
Lumens per Lamp: N/A
Luminaire Lumens: 12077.0 lumens
Efficiency: N/A
Efficacy: 127.8 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 2.74' x L: 3.16' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 94.5
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9789
Total Harmonic Distortion (THDi): 0.074
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	108	108	108	108		100	100	100	100		86	86	86		73	73	73		60	60	60
1	99	94	91	87		92	88	84	81		75	73	71		64	62	60		53	52	51
2	90	82	76	71		83	77	71	67		66	62	58		56	53	51		47	45	43
3	82	73	65	59		76	68	61	56		58	53	49		50	46	43		42	39	37
4	75	64	56	50		69	60	53	47		52	46	42		44	40	37		37	34	32
5	69	57	49	43		64	53	46	41		46	41	36		40	35	32		34	30	27
6	64	51	43	37		59	48	41	35		42	36	32		36	31	28		30	27	24
7	59	46	38	33		54	43	36	31		38	32	28		33	28	25		28	24	22
8	55	42	34	29		51	40	33	28		35	29	25		30	25	22		26	22	19
9	51	39	31	26		47	36	29	25		32	26	22		28	23	20		24	20	17
10	48	35	28	23		44	33	27	22		29	24	20		25	21	18		22	18	16

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3226	3226	3226
5°	3230	3179	3201
10°	3202	3133	3155
15°	3153	3079	3085
20°	3087	3004	3014
25°	3022	2916	2932
30°	2941	2834	2828
35°	2864	2737	2718
40°	2770	2639	2613
45°	2675	2540	2506
50°	2572	2437	2382
55°	2463	2318	2267
60°	2341	2176	2136
65°	2207	2029	1981
70°	2036	1850	1814
75°	1800	1635	1656
80°	1515	1360	1361
85°	1070	895	879

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2675 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	243.7	2.0
10°-20°	685.6	5.7
20°-30°	1007.6	8.3
30°-40°	1170.3	9.7
40°-50°	1168.8	9.7
50°-60°	1019.2	8.4
60°-70°	753.4	6.2
70°-80°	426.3	3.5
80°-90°	115.8	1.0
90°-100°	61.7	0.5
100°-110°	230.0	1.9
110°-120°	610.1	5.1
120°-130°	1011.9	8.4
130°-140°	1074.8	8.9
140°-150°	999.0	8.3
150°-160°	803.1	6.7
160°-170°	517.5	4.3
170°-180°	178.1	1.5
0°-30°	1937.0	16.0
0°-40°	3107.2	25.7
0°-60°	5295.3	43.8
0°-90°	6590.7	54.6
90°-120°	901.9	7.5
90°-150°	3987.5	33.0
90°-180°	5486.0	45.4
0°-180°	12077.0	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	16	27	34	36	11
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°	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°	1.3	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	11.70	12.61	12.62	13.54	14.75	11.27	12.18	12.19	13.11	14.32
	3H	13.36	14.17	14.29	15.11	16.34	12.89	13.70	13.82	14.64	15.87
	4H	13.94	14.71	14.88	15.66	16.89	13.47	14.24	14.42	15.19	16.43
	6H	14.33	15.04	15.29	16.00	17.25	13.87	14.57	14.82	15.53	16.78
	8H	14.44	15.11	15.40	16.08	17.33	13.97	14.64	14.93	15.61	16.86
	12H	14.48	15.12	15.45	16.09	17.36	14.01	14.65	14.98	15.62	16.89
4H	2H	12.17	12.93	13.11	13.88	15.12	11.82	12.59	12.77	13.54	14.78
	3H	14.02	14.67	14.98	15.64	16.90	13.64	14.28	14.59	15.26	16.51
	4H	14.73	15.32	15.70	16.29	17.57	14.33	14.92	15.30	15.89	17.17
	6H	15.24	15.75	16.22	16.74	18.02	14.84	15.34	15.82	16.34	17.61
	8H	15.39	15.86	16.37	16.85	18.14	14.98	15.45	15.96	16.44	17.73
	12H	15.46	15.88	16.46	16.89	18.19	15.04	15.47	16.05	16.48	17.77
8H	4H	14.93	15.40	15.91	16.39	17.68	14.57	15.04	15.56	16.03	17.32
	6H	15.55	15.94	16.56	16.97	18.26	15.19	15.58	16.20	16.62	17.90
	8H	15.77	16.11	16.78	17.13	18.44	15.40	15.75	16.42	16.77	18.07
	12H	15.89	16.20	16.91	17.21	18.56	15.52	15.82	16.54	16.83	18.18
12H	4H	14.92	15.34	15.92	16.35	17.64	14.57	14.99	15.57	16.00	17.29
	6H	15.58	15.92	16.60	16.94	18.25	15.23	15.58	16.25	16.60	17.90
	8H	15.82	16.12	16.84	17.13	18.48	15.46	15.77	16.48	16.78	18.13