

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: P907423

Luminaire Tested: DFN2DIP-TR4F0-080D060US835-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P907423
REPORT IS A COMBINATION OF REPORTS P901933 AND P898849
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-TR4F0-080D060US835-FLLONL
Description: 4 foot, Triangle Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

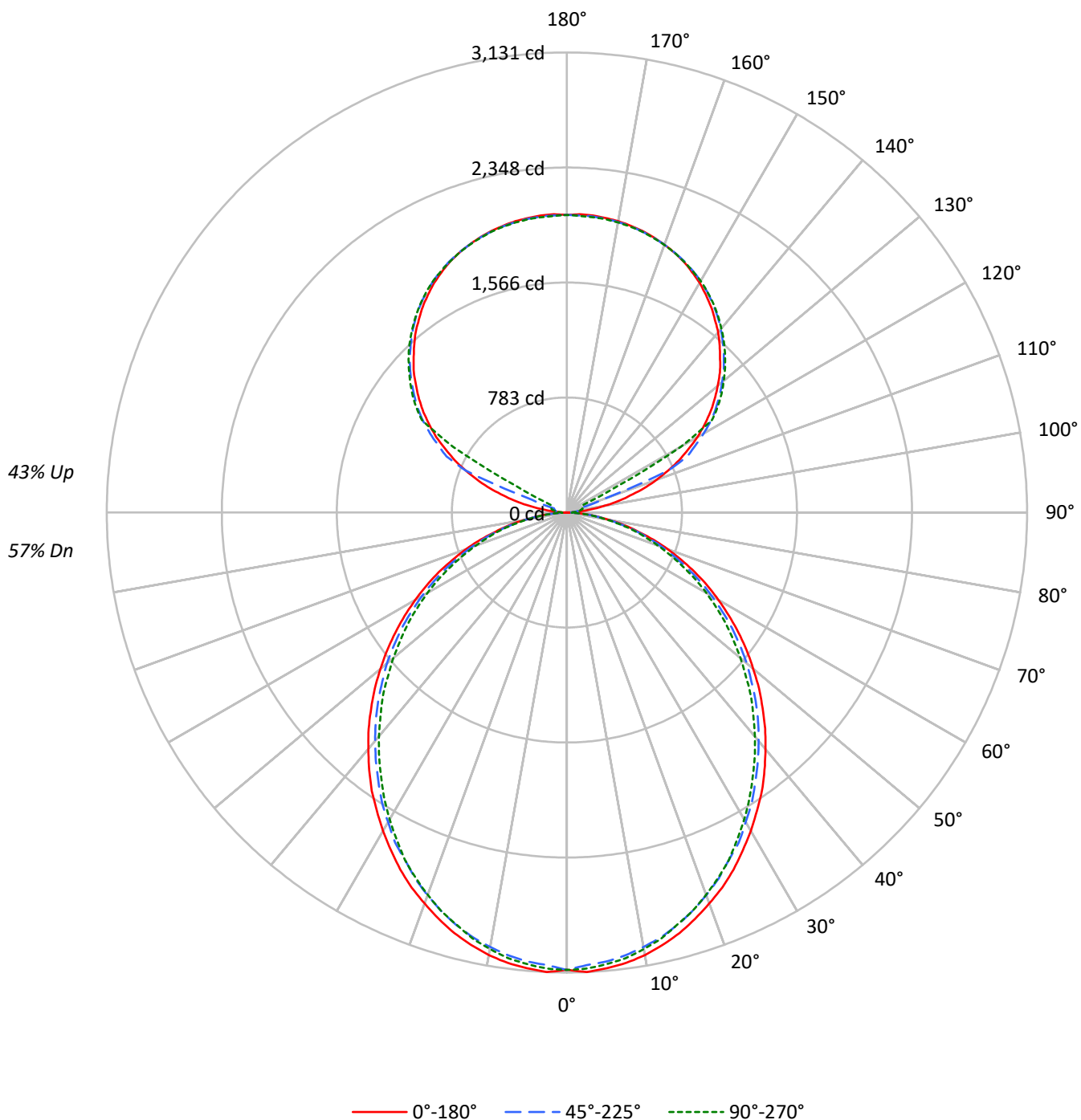
Lumens per Lamp: N/A
Luminaire Lumens: 13860.0 lumens
Efficiency: N/A
Efficacy: 115.7 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 3.43' x L: 3.96' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 119.8
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9957
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	109	109	109	109		101	101	101	101		87	87	87		74	74	74		63	63	63
1	99	95	91	88		92	89	85	82		77	74	72		66	64	62		55	54	53
2	91	83	77	72		84	77	72	67		67	63	59		58	55	52		49	47	45
3	83	73	66	60		77	68	62	56		59	54	50		51	47	44		43	40	38
4	76	65	57	50		70	61	53	48		53	47	43		45	41	38		39	35	33
5	69	58	49	43		64	54	47	41		47	41	37		41	36	33		35	31	29
6	64	52	44	38		59	49	41	36		43	37	32		37	32	29		32	28	25
7	59	47	39	33		55	44	37	31		39	33	28		34	29	25		29	25	22
8	55	43	35	29		51	40	33	28		35	29	25		31	26	23		27	23	20
9	51	39	31	26		48	37	30	25		32	27	23		28	24	20		25	21	18
10	48	36	28	24		45	34	27	22		30	24	20		26	22	18		23	19	17

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2473	2473	2473
5°	2477	2438	2455
10°	2457	2406	2422
15°	2421	2366	2370
20°	2372	2311	2316
25°	2323	2245	2255
30°	2263	2184	2176
35°	2205	2112	2094
40°	2134	2039	2015
45°	2063	1965	1934
50°	1986	1889	1841
55°	1905	1800	1755
60°	1813	1694	1657
65°	1714	1585	1541
70°	1586	1452	1416
75°	1410	1293	1301
80°	1198	1090	1081
85°	867	740	716

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2063 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	293.0	2.1
10°-20°	824.3	5.9
20°-30°	1211.5	8.7
30°-40°	1407.0	10.2
40°-50°	1405.3	10.1
50°-60°	1225.4	8.8
60°-70°	905.8	6.5
70°-80°	512.5	3.7
80°-90°	138.8	1.0
90°-100°	66.8	0.5
100°-110°	248.9	1.8
110°-120°	660.2	4.8
120°-130°	1094.9	7.9
130°-140°	1163.0	8.4
140°-150°	1080.9	7.8
150°-160°	869.0	6.3
160°-170°	560.0	4.0
170°-180°	192.7	1.4
0°-30°	2328.8	16.8
0°-40°	3735.8	27.0
0°-60°	6366.4	45.9
0°-90°	7923.6	57.2
90°-120°	975.8	7.0
90°-150°	4314.7	31.1
90°-180°	5936.0	42.8
0°-180°	13860.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3113	3113	3113	3113	3113	
5°	3113	3101	3068	3092	3086	295
15°	2963	2946	2906	2918	2904	835
25°	2682	2658	2607	2613	2607	1234
35°	2314	2284	2236	2218	2203	1445
45°	1883	1862	1817	1784	1772	1453
55°	1425	1407	1371	1335	1320	1274
65°	961	943	913	886	871	950
75°	503	497	482	464	470	537
85°	123	120	117	108	105	137
90°	1	18	29	37	40	13
95°	95	47	57	65	63	113
105°	445	489	89	105	111	476
115°	842	867	904	226	120	829
125°	1191	1210	1238	1248	1253	1062
135°	1474	1498	1511	1525	1522	1139
145°	1710	1708	1733	1744	1736	1069
155°	1883	1870	1887	1896	1884	868
165°	1984	1975	1980	1990	1980	560
175°	2029	2019	2022	2032	2018	193
180°	2025	2025	2025	2025	2025	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	3112.8	3112.8	3112.8	3112.8	3112.8
2.5°	3130.9	3116.0	3083.0	3112.8	3107.1
5°	3112.8	3101.1	3068.1	3091.9	3086.2
7.5°	3091.9	3074.1	3041.1	3065.2	3059.2
10°	3059.2	3038.2	3002.3	3026.1	3017.3
12.5°	3014.1	2996.3	2960.4	2975.3	2969.3
15°	2963.3	2945.5	2906.4	2918.5	2903.6
17.5°	2900.4	2882.6	2843.5	2858.5	2843.5
20°	2831.5	2813.7	2771.8	2780.7	2768.9
22.5°	2762.9	2735.9	2696.8	2696.8	2690.8
25°	2681.9	2658.1	2607.3	2613.0	2607.3
27.5°	2592.0	2571.1	2532.3	2523.4	2508.5
30°	2502.5	2478.3	2433.6	2424.7	2412.6
32.5°	2406.6	2388.8	2340.8	2322.7	2310.7
35°	2313.8	2284.0	2236.0	2217.9	2203.0
37.5°	2209.0	2182.0	2134.1	2113.1	2098.2
40°	2101.4	2077.2	2029.3	2002.6	1990.5
42.5°	1996.6	1972.4	1924.8	1894.6	1876.9
45°	1882.9	1861.9	1816.8	1784.1	1772.1
47.5°	1772.1	1751.1	1703.1	1670.1	1652.3
50°	1655.2	1640.3	1598.3	1556.4	1541.5
52.5°	1541.5	1520.5	1481.8	1448.8	1427.8
55°	1424.9	1406.8	1371.0	1335.1	1320.1
57.5°	1308.1	1293.2	1254.1	1218.2	1206.1
60°	1191.2	1179.5	1137.5	1104.5	1095.6
62.5°	1077.5	1056.6	1026.7	996.9	984.8
65°	961.0	942.9	913.0	886.0	871.1
67.5°	841.2	826.0	799.3	778.4	766.3
70°	730.4	718.3	691.4	670.4	658.6
72.5°	616.7	604.7	589.7	568.8	559.9
75°	502.7	497.0	481.8	464.0	470.0
77.5°	401.1	389.0	383.0	374.1	365.2
80°	299.5	296.3	290.3	281.4	275.3
82.5°	203.6	203.6	200.7	188.6	188.6
85°	122.6	119.7	116.9	107.7	104.8
87.5°	54.0	48.0	41.9	33.0	29.9
90°	1.4	17.6	29.2	36.7	39.5
92.5°	36.7	30.8	35.1	38.1	39.5
95°	95.2	46.8	57.1	64.6	63.0
97.5°	171.4	51.3	74.6	79.2	80.6
100°	259.4	58.6	83.5	95.2	98.1
102.5°	356.0	353.2	86.5	102.5	107.0
105°	445.4	489.4	89.4	105.4	111.4
107.5°	549.5	586.0	92.4	108.4	114.3
110°	649.2	679.8	256.5	110.0	115.7



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	742.9	769.2	744.3	112.7	117.3
115°	842.5	867.4	904.1	225.7	120.2
117.5°	928.9	958.2	983.2	773.6	389.7
120°	1025.7	1047.6	1074.1	1091.6	893.8
122.5°	1107.6	1131.1	1160.5	1169.2	1170.8
125°	1191.2	1210.3	1238.1	1248.4	1252.7
127.5°	1267.4	1287.9	1310.0	1324.6	1326.0
130°	1339.2	1362.7	1378.7	1394.9	1393.5
132.5°	1412.5	1431.6	1447.6	1460.8	1459.4
135°	1474.1	1497.6	1510.6	1525.4	1522.4
137.5°	1538.4	1556.0	1570.8	1585.4	1581.1
140°	1601.4	1613.3	1629.3	1642.5	1635.2
142.5°	1654.3	1664.6	1683.6	1695.2	1687.9
145°	1710.0	1708.4	1733.3	1743.6	1736.3
147.5°	1758.2	1753.8	1778.7	1786.0	1780.3
150°	1805.2	1794.9	1818.4	1827.1	1819.8
152.5°	1844.7	1833.0	1854.9	1863.8	1853.5
155°	1882.8	1869.7	1887.3	1896.0	1884.3
157.5°	1913.6	1901.9	1915.1	1925.4	1913.6
160°	1940.0	1931.1	1940.0	1948.7	1938.5
162.5°	1963.3	1954.6	1961.9	1972.2	1959.0
165°	1983.9	1975.2	1979.5	1989.8	1979.5
167.5°	2000.0	1991.2	1995.7	2006.0	1992.7
170°	2013.3	2004.4	2007.4	2017.6	2004.4
172.5°	2022.0	2013.3	2016.2	2026.5	2013.3
175°	2029.3	2019.0	2022.0	2032.2	2017.6
177.5°	2032.2	2022.0	2023.5	2033.8	2020.6
180°	2024.9	2024.9	2024.9	2024.9	2024.9

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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	11.05	11.98	11.94	12.89	14.06	10.62	11.55	11.51	12.46	13.63
	3H	12.71	13.55	13.62	14.47	15.66	12.24	13.08	13.15	14.00	15.19
	4H	13.31	14.09	14.23	15.02	16.22	12.83	13.62	13.75	14.55	15.75
	6H	13.71	14.44	14.64	15.37	16.58	13.23	13.96	14.16	14.89	16.11
	8H	13.81	14.51	14.75	15.46	16.67	13.34	14.03	14.28	14.98	16.20
	12H	13.87	14.52	14.81	15.47	16.71	13.38	14.04	14.33	14.99	16.23
4H	2H	11.52	12.31	12.44	13.24	14.44	11.17	11.96	12.10	12.89	14.09
	3H	13.39	14.05	14.33	15.01	16.22	13.00	13.66	13.93	14.62	15.83
	4H	14.11	14.71	15.05	15.66	16.90	13.70	14.30	14.65	15.26	16.50
	6H	14.63	15.15	15.59	16.12	17.36	14.22	14.74	15.18	15.71	16.95
	8H	14.78	15.26	15.74	16.23	17.49	14.37	14.85	15.33	15.82	17.07
	12H	14.85	15.29	15.84	16.28	17.54	14.43	14.87	15.41	15.86	17.12
8H	4H	14.31	14.80	15.27	15.77	17.02	13.95	14.44	14.91	15.41	16.66
	6H	14.94	15.35	15.93	16.36	17.61	14.58	14.98	15.57	16.00	17.25
	8H	15.17	15.52	16.16	16.52	17.79	14.80	15.15	15.79	16.15	17.42
	12H	15.30	15.61	16.30	16.61	17.92	14.92	15.23	15.92	16.22	17.54
12H	4H	14.30	14.74	15.28	15.72	16.98	13.95	14.38	14.93	15.37	16.63
	6H	14.98	15.33	15.97	16.33	17.60	14.62	14.98	15.62	15.98	17.25
	8H	15.22	15.53	16.22	16.53	17.84	14.86	15.18	15.86	16.17	17.49