

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: P907387

Luminaire Tested: DFN2DIP-TR4F0-070D060US835-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P907387
REPORT IS A COMBINATION OF REPORTS P901931 AND P898849
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-TR4F0-070D060US835-FLLONL
Description: 4 foot, Triangle Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

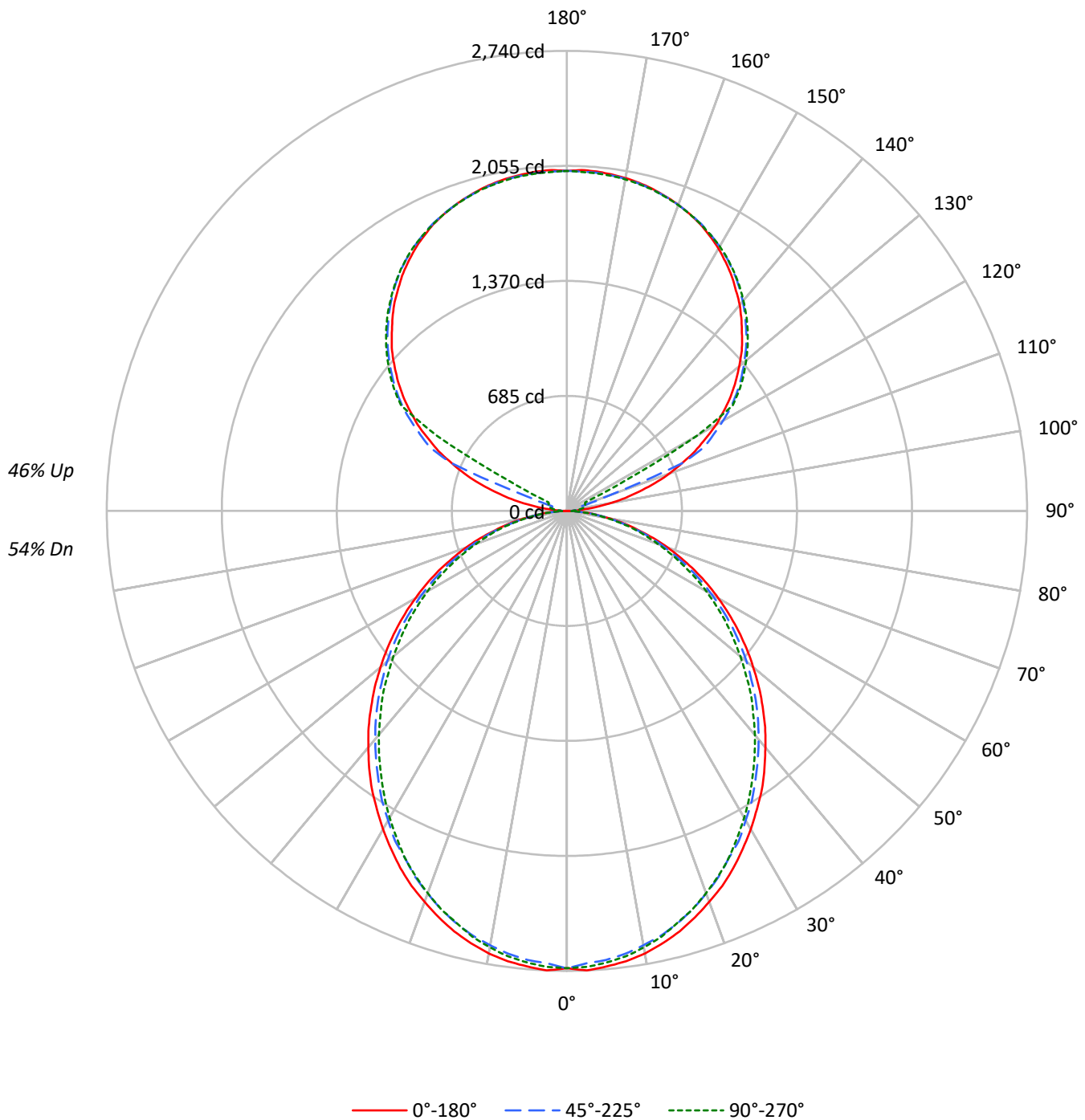
Lumens per Lamp: N/A
Luminaire Lumens: 12870.0 lumens
Efficiency: N/A
Efficacy: 116.7 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 3.43' x L: 3.96' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 110.3
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9977
Total Harmonic Distortion (THDi): 0.049
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P907387

CATALOG NUMBER: DFN2DIP-TR4F0-070D060US835-FLLONL

Luminous Intensity Polar Plot



TEST NUMBER: P907387

CATALOG NUMBER: DFN2DIP-TR4F0-070D060US835-FLLONL

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	85	85	85	72	72	72	60	60	60
1	99	94	90	87	91	88	84	81	75	73	70	63	62	60	53	52	50
2	90	82	76	71	83	77	71	67	66	62	58	56	53	50	46	44	42
3	82	72	65	59	76	67	61	56	58	53	49	49	46	42	41	38	36
4	75	64	56	50	69	60	53	47	52	46	42	44	40	36	37	34	31
5	69	57	49	43	64	53	46	41	46	40	36	39	35	32	33	30	27
6	63	51	43	37	59	48	41	35	42	36	31	36	31	28	30	27	24
7	59	46	38	33	54	43	36	31	38	32	28	32	28	24	27	24	21
8	54	42	34	29	50	39	32	28	34	29	25	30	25	22	25	22	19
9	51	38	31	26	47	36	29	25	32	26	22	27	23	20	23	20	17
10	47	35	28	23	44	33	27	22	29	24	20	25	21	18	22	18	16

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2164	2164	2164
5°	2167	2134	2148
10°	2150	2105	2119
15°	2118	2070	2073
20°	2075	2022	2027
25°	2033	1964	1973
30°	1980	1911	1904
35°	1929	1848	1832
40°	1867	1784	1763
45°	1805	1720	1693
50°	1738	1653	1611
55°	1667	1575	1536
60°	1587	1483	1450
65°	1499	1387	1348
70°	1388	1271	1239
75°	1234	1131	1138
80°	1048	954	946
85°	759	647	627

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
Vertical Angle: 45°
Luminance: 1805 cd/sqm

TEST NUMBER: P907387

CATALOG NUMBER: DFN2DIP-TR4F0-070D060US835-FLLONL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	256.4	2.0
10°-20°	721.3	5.6
20°-30°	1060.0	8.2
30°-40°	1231.1	9.6
40°-50°	1229.6	9.6
50°-60°	1072.2	8.3
60°-70°	792.6	6.2
70°-80°	448.4	3.5
80°-90°	121.9	0.9
90°-100°	66.8	0.5
100°-110°	248.9	1.9
110°-120°	660.2	5.1
120°-130°	1094.9	8.5
130°-140°	1163.0	9.0
140°-150°	1080.9	8.4
150°-160°	869.0	6.8
160°-170°	560.0	4.4
170°-180°	192.7	1.5
0°-30°	2037.7	15.8
0°-40°	3268.8	25.4
0°-60°	5570.6	43.3
0°-90°	6933.6	53.9
90°-120°	975.8	7.6
90°-150°	4314.7	33.5
90°-180°	5936.0	46.1
0°-180°	12870.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2724	2724	2724	2724	2724	
5°	2724	2714	2685	2705	2700	259
15°	2593	2577	2543	2554	2541	730
25°	2347	2326	2281	2286	2281	1080
35°	2025	1998	1956	1941	1928	1264
45°	1648	1629	1590	1561	1550	1271
55°	1247	1231	1200	1168	1155	1115
65°	841	825	799	775	762	831
75°	440	435	422	406	411	470
85°	107	105	102	94	92	120
90°	1	18	29	37	40	12
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	

TEST NUMBER: P907387

CATALOG NUMBER: DFN2DIP-TR4F0-070D060US835-FLLONL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2723.7	2723.7	2723.7	2723.7	2723.7
2.5°	2739.6	2726.5	2697.6	2723.7	2718.7
5°	2723.7	2713.5	2684.6	2705.4	2700.4
7.5°	2705.4	2689.8	2660.9	2682.1	2676.8
10°	2676.8	2658.4	2627.0	2647.9	2640.1
12.5°	2637.3	2621.8	2590.4	2603.4	2598.1
15°	2592.9	2577.3	2543.1	2553.7	2540.6
17.5°	2537.8	2522.3	2488.1	2501.2	2488.1
20°	2477.5	2462.0	2425.3	2433.1	2422.8
22.5°	2417.5	2393.9	2359.7	2359.7	2354.4
25°	2346.7	2325.8	2281.4	2286.4	2281.4
27.5°	2268.0	2249.7	2215.8	2208.0	2194.9
30°	2189.7	2168.5	2129.4	2121.6	2111.0
32.5°	2105.7	2090.2	2048.2	2032.4	2021.8
35°	2024.6	1998.5	1956.5	1940.7	1927.6
37.5°	1932.9	1909.3	1867.3	1849.0	1835.9
40°	1838.7	1817.6	1775.6	1752.3	1741.7
42.5°	1747.0	1725.9	1684.2	1657.8	1642.2
45°	1647.5	1629.2	1589.7	1561.1	1550.5
47.5°	1550.5	1532.2	1490.2	1461.3	1445.8
50°	1448.3	1435.2	1398.5	1361.9	1348.8
52.5°	1348.8	1330.5	1296.6	1267.7	1249.3
55°	1246.8	1231.0	1199.6	1168.2	1155.1
57.5°	1144.6	1131.5	1097.3	1065.9	1055.4
60°	1042.3	1032.0	995.4	966.5	958.7
62.5°	942.8	924.5	898.4	872.3	861.7
65°	840.9	825.0	798.9	775.3	762.2
67.5°	736.1	722.8	699.4	681.1	670.5
70°	639.1	628.6	604.9	586.6	576.3
72.5°	539.6	529.1	516.0	497.7	489.9
75°	439.9	434.9	421.5	406.0	411.3
77.5°	351.0	340.4	335.1	327.3	319.6
80°	262.0	259.3	254.0	246.2	240.9
82.5°	178.1	178.1	175.6	165.1	165.1
85°	107.3	104.8	102.3	94.2	91.7
87.5°	47.2	42.0	36.7	28.9	26.1
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

TEST NUMBER: P907387

CATALOG NUMBER: DFN2DIP-TR4F0-070D060US835-FLLONL

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

TEST NUMBER: P907387

CATALOG NUMBER: DFN2DIP-TR4F0-070D060US835-FLLONL

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	10.30	11.20	11.22	12.14	13.35	9.87	10.76	10.79	11.71	12.92
	3H	11.96	12.77	12.90	13.72	14.96	11.49	12.29	12.42	13.25	14.48
	4H	12.55	13.31	13.50	14.27	15.52	12.08	12.84	13.03	13.80	15.04
	6H	12.95	13.65	13.91	14.62	15.88	12.48	13.18	13.44	14.14	15.40
	8H	13.06	13.73	14.03	14.71	15.96	12.58	13.25	13.55	14.23	15.49
	12H	13.11	13.74	14.08	14.72	16.00	12.63	13.26	13.60	14.24	15.52
4H	2H	10.77	11.53	11.72	12.48	13.73	10.42	11.18	11.38	12.14	13.39
	3H	12.63	13.27	13.60	14.26	15.52	12.24	12.88	13.21	13.86	15.12
	4H	13.35	13.93	14.32	14.91	16.20	12.94	13.53	13.92	14.50	15.79
	6H	13.87	14.37	14.85	15.37	16.66	13.46	13.96	14.44	14.96	16.25
	8H	14.02	14.49	15.01	15.48	16.78	13.61	14.07	14.59	15.07	16.37
	12H	14.09	14.51	15.10	15.53	16.83	13.67	14.09	14.68	15.11	16.41
8H	4H	13.55	14.02	14.54	15.01	16.31	13.19	13.66	14.18	14.65	15.95
	6H	14.18	14.57	15.20	15.61	16.90	13.82	14.21	14.83	15.24	16.54
	8H	14.40	14.75	15.43	15.77	17.09	14.03	14.38	15.06	15.40	16.72
	12H	14.54	14.84	15.56	15.86	17.22	14.15	14.45	15.18	15.47	16.83
12H	4H	13.54	13.96	14.54	14.97	16.28	13.19	13.61	14.19	14.62	15.92
	6H	14.21	14.55	15.23	15.58	16.90	13.86	14.20	14.88	15.23	16.54
	8H	14.46	14.76	15.48	15.78	17.14	14.10	14.40	15.13	15.42	16.78