

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: P918315

Luminaire Tested: DFN2DIP-TR4F0-070D100US930-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P918315
REPORT IS A COMBINATION OF REPORTS P902003 AND P898849
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-TR4F0-070D100US930-FLLONL
Description: 4 foot, Triangle Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

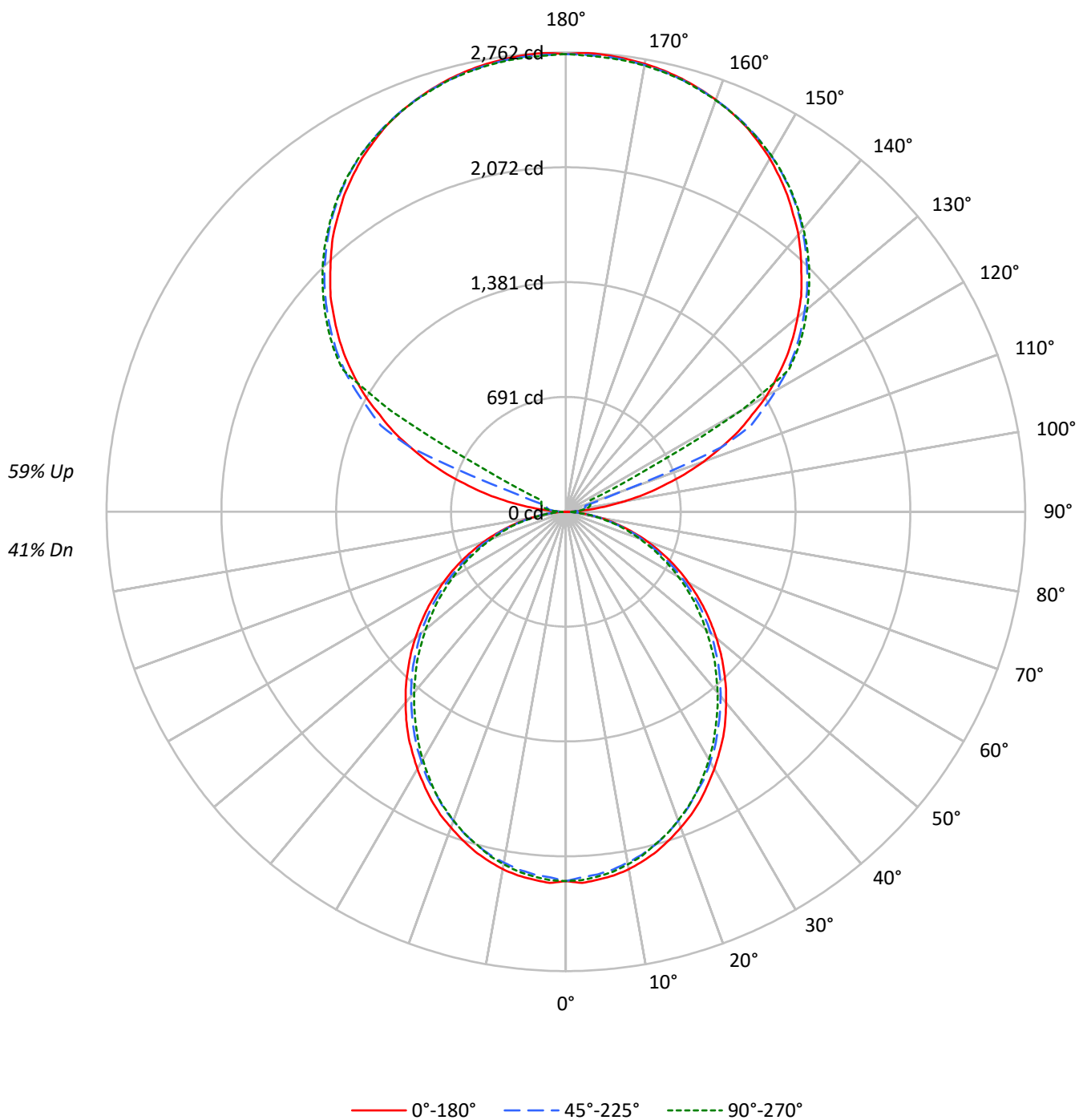
Lumens per Lamp: N/A
Luminaire Lumens: 13721.5 lumens
Efficiency: N/A
Efficacy: 96.7 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 3.43' x L: 3.96' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 141.9
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: P918315

CATALOG NUMBER: DFN2DIP-TR4F0-070D100US930-FLLONL

Luminous Intensity Polar Plot



TEST NUMBER: P918315

CATALOG NUMBER: DFN2DIP-TR4F0-070D100US930-FLONL

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	105	105	105	105	96	96	96	96	78	78	78	63	63	63	48	48	48
1	96	92	88	84	87	84	80	77	69	66	64	55	54	52	42	41	41
2	87	80	74	69	79	73	68	63	60	56	53	48	46	43	37	36	34
3	80	70	63	57	72	64	58	53	53	49	45	43	39	37	33	31	29
4	73	62	54	48	66	57	50	45	47	42	38	38	34	31	30	27	25
5	67	55	47	41	61	51	44	38	42	37	33	34	30	27	27	24	22
6	61	50	42	36	56	46	38	33	38	33	29	31	27	24	24	21	19
7	57	45	37	31	52	41	34	29	34	29	25	28	24	21	22	19	17
8	53	40	33	28	48	37	31	26	31	26	22	26	22	19	20	17	15
9	49	37	30	25	45	34	27	23	29	23	20	24	20	17	19	16	14
10	46	34	27	22	42	31	25	21	26	21	18	22	18	15	17	15	13

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1764	1764	1764
5°	1767	1740	1751
10°	1753	1716	1728
15°	1727	1688	1690
20°	1692	1649	1652
25°	1658	1602	1609
30°	1614	1558	1553
35°	1573	1506	1494
40°	1522	1454	1437
45°	1472	1402	1380
50°	1417	1347	1313
55°	1359	1284	1252
60°	1294	1209	1182
65°	1222	1131	1099
70°	1132	1036	1010
75°	1006	922	928
80°	855	778	771
85°	619	528	511

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 1472 cd/sqm

TEST NUMBER: P918315

CATALOG NUMBER: DFN2DIP-TR4F0-070D100US930-FLLONL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	209.0	1.5
10°-20°	588.1	4.3
20°-30°	864.2	6.3
30°-40°	1003.7	7.3
40°-50°	1002.5	7.3
50°-60°	874.2	6.4
60°-70°	646.2	4.7
70°-80°	365.6	2.7
80°-90°	101.3	0.7
90°-100°	90.7	0.7
100°-110°	338.2	2.5
110°-120°	897.0	6.5
120°-130°	1487.8	10.8
130°-140°	1580.4	11.5
140°-150°	1468.8	10.7
150°-160°	1180.9	8.6
160°-170°	760.9	5.5
170°-180°	261.9	1.9
0°-30°	1661.3	12.1
0°-40°	2665.1	19.4
0°-60°	4541.7	33.1
0°-90°	5654.9	41.2
90°-120°	1326.0	9.7
90°-150°	5862.9	42.7
90°-180°	8067.0	58.8
0°-180°	13721.5	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2221	2221	2221	2221	2221	
5°	2221	2212	2189	2206	2202	211
15°	2114	2101	2073	2082	2071	595
25°	1913	1896	1860	1864	1860	880
35°	1651	1629	1595	1582	1572	1031
45°	1343	1328	1296	1273	1264	1037
55°	1016	1004	978	952	942	909
65°	686	673	651	632	621	678
75°	359	355	344	331	335	383
85°	88	85	83	77	75	98
90°	2	24	40	50	54	13
95°	129	64	78	88	86	153
105°	605	665	122	143	151	647
115°	1145	1179	1228	307	163	1127
125°	1619	1645	1682	1696	1702	1444
135°	2003	2035	2053	2073	2069	1547
145°	2324	2322	2355	2369	2359	1453
155°	2558	2541	2564	2576	2560	1179
165°	2696	2684	2690	2704	2690	762
175°	2757	2744	2748	2762	2742	262
180°	2752	2752	2752	2752	2752	

TEST NUMBER: P918315

CATALOG NUMBER: DFN2DIP-TR4F0-070D100US930-FLLONL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2220.6	2220.6	2220.6	2220.6	2220.6
2.5°	2233.6	2222.9	2199.3	2220.6	2216.6
5°	2220.6	2212.3	2188.7	2205.7	2201.6
7.5°	2205.7	2193.0	2169.4	2186.7	2182.4
10°	2182.4	2167.4	2141.8	2158.8	2152.5
12.5°	2150.2	2137.5	2111.9	2122.5	2118.2
15°	2114.0	2101.3	2073.4	2082.0	2071.3
17.5°	2069.1	2056.4	2028.5	2039.2	2028.5
20°	2019.9	2007.3	1977.3	1983.7	1975.3
22.5°	1971.0	1951.7	1923.9	1923.9	1919.5
25°	1913.3	1896.2	1860.0	1864.1	1860.0
27.5°	1849.1	1834.2	1806.5	1800.2	1789.5
30°	1785.3	1768.0	1736.1	1729.7	1721.1
32.5°	1716.8	1704.1	1669.9	1657.0	1648.4
35°	1650.7	1629.4	1595.1	1582.2	1571.6
37.5°	1575.9	1556.6	1522.4	1507.5	1496.8
40°	1499.1	1481.9	1447.6	1428.6	1420.0
42.5°	1424.3	1407.1	1373.1	1351.6	1338.9
45°	1343.2	1328.3	1296.1	1272.8	1264.1
47.5°	1264.1	1249.2	1215.0	1191.4	1178.8
50°	1180.8	1170.1	1140.2	1110.4	1099.7
52.5°	1099.7	1084.8	1057.1	1033.6	1018.6
55°	1016.5	1003.6	978.0	952.4	941.8
57.5°	933.2	922.5	894.6	869.0	860.5
60°	849.8	841.4	811.5	788.0	781.6
62.5°	768.7	753.7	732.5	711.2	702.5
65°	685.6	672.6	651.3	632.1	621.4
67.5°	600.1	589.3	570.2	555.3	546.7
70°	521.1	512.5	493.2	478.3	469.9
72.5°	439.9	431.4	420.7	405.8	399.4
75°	358.6	354.6	343.6	331.0	335.3
77.5°	286.2	277.5	273.2	266.8	260.6
80°	213.6	211.4	207.1	200.7	196.4
82.5°	145.2	145.2	143.2	134.6	134.6
85°	87.5	85.4	83.4	76.8	74.8
87.5°	38.5	34.2	29.9	23.6	21.3
90°	1.9	23.9	39.7	49.9	53.6
92.5°	49.9	41.8	47.8	51.8	53.6
95°	129.3	63.6	77.5	87.7	85.6
97.5°	232.8	69.7	101.4	107.5	109.5
100°	352.5	79.7	113.5	129.3	133.4
102.5°	483.7	480.0	117.5	139.3	145.4
105°	605.3	665.0	121.6	143.2	151.3
107.5°	746.7	796.3	125.6	147.3	155.3
110°	882.1	923.7	348.5	149.4	157.2

TEST NUMBER: P918315

CATALOG NUMBER: DFN2DIP-TR4F0-070D100US930-FLLONL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1009.5	1045.2	1011.5	153.2	159.4
115°	1144.8	1178.6	1228.5	306.6	163.4
117.5°	1262.2	1302.0	1336.0	1051.2	529.6
120°	1393.8	1423.5	1459.5	1483.4	1214.5
122.5°	1505.1	1537.0	1576.9	1588.8	1590.9
125°	1618.6	1644.6	1682.4	1696.4	1702.3
127.5°	1722.2	1750.0	1780.0	1799.9	1801.8
130°	1819.7	1851.7	1873.5	1895.4	1893.5
132.5°	1919.3	1945.3	1967.1	1985.0	1983.1
135°	2003.0	2034.9	2052.7	2072.7	2068.7
137.5°	2090.5	2114.4	2134.5	2154.3	2148.4
140°	2176.0	2192.2	2213.9	2231.9	2221.9
142.5°	2247.9	2261.9	2287.6	2303.5	2293.6
145°	2323.6	2321.5	2355.3	2369.3	2359.3
147.5°	2389.1	2383.2	2417.0	2426.9	2419.2
150°	2452.9	2439.0	2470.9	2482.7	2472.8
152.5°	2506.6	2490.7	2520.6	2532.6	2518.6
155°	2558.4	2540.6	2564.5	2576.3	2560.5
157.5°	2600.2	2584.4	2602.4	2616.3	2600.2
160°	2636.2	2624.1	2636.2	2648.0	2634.1
162.5°	2667.8	2656.0	2665.9	2679.9	2661.9
165°	2695.7	2683.9	2689.8	2703.8	2689.8
167.5°	2717.7	2705.6	2711.8	2725.8	2707.8
170°	2735.7	2723.7	2727.7	2741.6	2723.7
172.5°	2747.5	2735.7	2739.7	2753.7	2735.7
175°	2757.4	2743.5	2747.5	2761.5	2741.6
177.5°	2761.5	2747.5	2749.7	2763.6	2745.6
180°	2751.6	2751.6	2751.6	2751.6	2751.6

TEST NUMBER: P918315

CATALOG NUMBER: DFN2DIP-TR4F0-070D100US930-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	8.37	9.16	9.40	10.19	11.58	7.94	8.72	8.97	9.76	11.15
	3H	10.02	10.73	11.06	11.77	13.18	9.55	10.26	10.59	11.30	12.71
	4H	10.61	11.28	11.66	12.32	13.74	10.13	10.80	11.18	11.85	13.27
	6H	11.00	11.62	12.06	12.67	14.10	10.53	11.14	11.59	12.20	13.63
	8H	11.11	11.69	12.17	12.76	14.18	10.63	11.22	11.70	12.28	13.71
	12H	11.15	11.71	12.22	12.77	14.22	10.67	11.23	11.74	12.29	13.74
4H	2H	8.82	9.49	9.88	10.54	11.96	8.48	9.15	9.53	10.19	11.61
	3H	10.68	11.24	11.75	12.31	13.74	10.29	10.85	11.35	11.92	13.35
	4H	11.39	11.90	12.46	12.97	14.42	10.99	11.50	12.06	12.56	14.02
	6H	11.90	12.34	12.98	13.43	14.88	11.49	11.93	12.57	13.02	14.47
	8H	12.05	12.46	13.13	13.54	15.01	11.64	12.05	12.72	13.13	14.59
	12H	12.12	12.49	13.22	13.59	15.05	11.70	12.07	12.80	13.16	14.63
8H	4H	11.58	11.99	12.66	13.07	14.54	11.22	11.63	12.30	12.71	14.18
	6H	12.21	12.55	13.31	13.67	15.13	11.85	12.19	12.95	13.31	14.77
	8H	12.43	12.73	13.54	13.83	15.31	12.06	12.36	13.17	13.46	14.94
	12H	12.56	12.82	13.67	13.92	15.44	12.17	12.44	13.29	13.54	15.06
12H	4H	11.56	11.94	12.66	13.03	14.50	11.21	11.58	12.31	12.68	14.15
	6H	12.24	12.54	13.35	13.64	15.12	11.89	12.19	13.00	13.29	14.77
	8H	12.48	12.74	13.59	13.84	15.36	12.12	12.38	13.23	13.48	15.00