

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: P907347

Luminaire Tested: DFN2DIP-TR4F0-060D050US835-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P907347
REPORT IS A COMBINATION OF REPORTS P901911 AND P898849
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-TR4F0-060D050US835-FLLONL
Description: 4 foot, Triangle Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

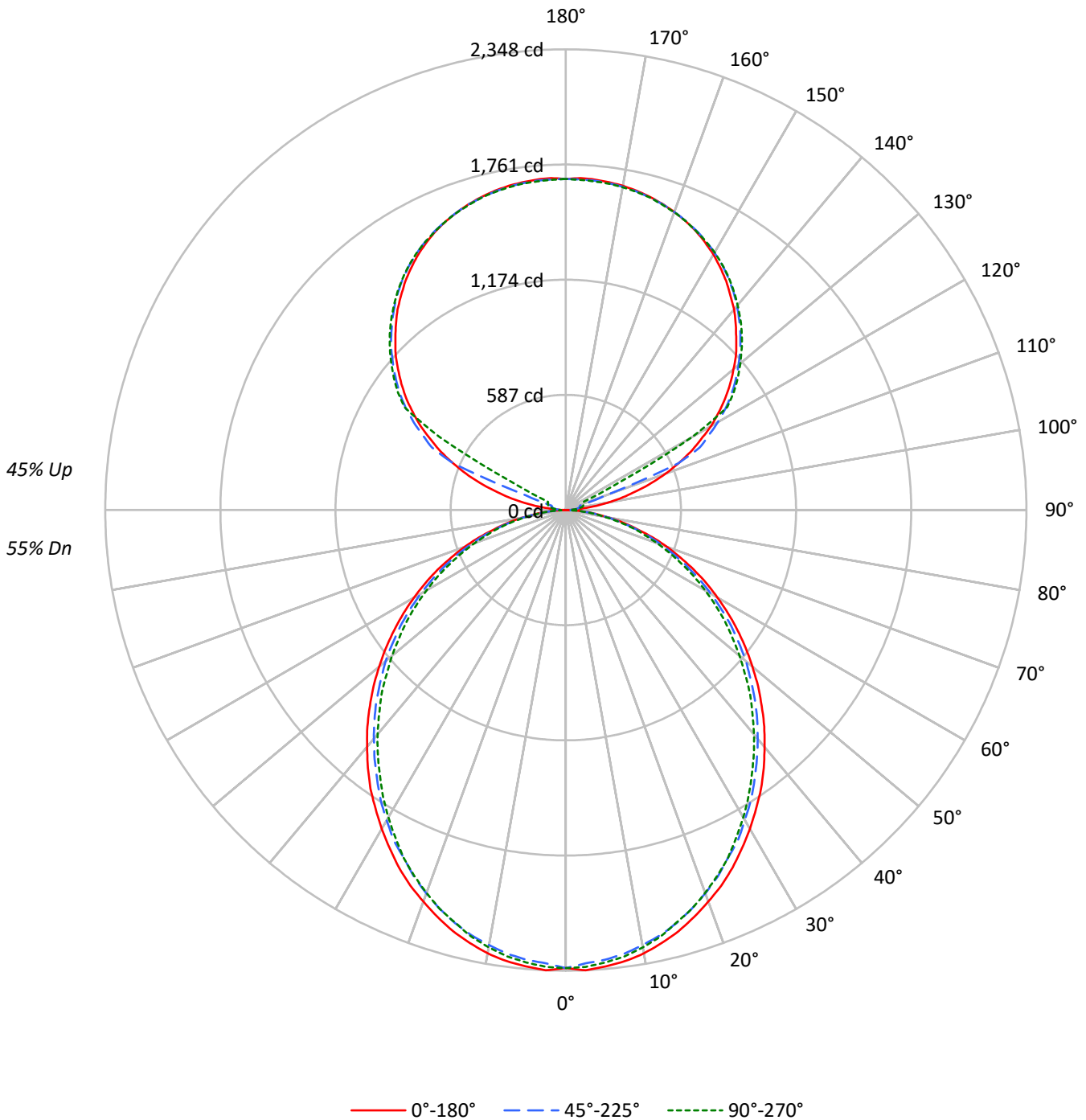
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 10890.0 lumens
Efficiency: N/A
Efficacy: 119.4 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): 91.2
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9781
Total Harmonic Distortion (THDi): 0.075
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P907347
CATALOG NUMBER: DFN2DIP-TR4F0-060D050US835-FLLONL

Luminous Intensity Polar Plot





TEST NUMBER: P907347

CATALOG NUMBER: DFN2DIP-TR4F0-060D050US835-FLLONL

COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20				20				20				20				20				20
RC	80				70				50				30				10				0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0
RCR																					
0	108	108	108	108	100	100	100	100	86	86	86	73	73	73	60	60	60	55			
1	99	94	91	87	92	88	84	81	75	73	71	64	62	60	53	52	51	46			
2	90	82	76	71	83	77	71	67	66	62	58	56	53	51	47	45	43	39			
3	82	73	65	59	76	68	61	56	58	53	49	50	46	43	42	39	37	33			
4	75	64	56	50	69	60	53	47	52	46	42	44	40	37	37	34	32	28			
5	69	57	49	43	64	53	46	41	46	41	36	40	35	32	34	30	27	24			
6	64	51	43	37	59	48	41	35	42	36	32	36	31	28	30	27	24	21			
7	59	46	38	33	54	43	36	31	38	32	28	33	28	25	28	24	22	19			
8	55	42	34	29	51	40	33	28	35	29	25	30	25	22	26	22	19	17			
9	51	39	31	26	47	36	29	25	32	26	22	28	23	20	24	20	17	15			
10	48	35	28	23	44	33	27	22	29	24	20	25	21	18	22	18	16	14			

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1855	1855	1855
5°	1858	1829	1841
10°	1843	1804	1816
15°	1816	1774	1777
20°	1779	1733	1737
25°	1743	1684	1691
30°	1697	1638	1632
35°	1654	1584	1570
40°	1600	1529	1511
45°	1547	1474	1451
50°	1489	1417	1381
55°	1429	1350	1316
60°	1360	1271	1243
65°	1285	1189	1156
70°	1190	1089	1062
75°	1057	970	976
80°	899	817	811
85°	650	554	537

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 1547 cd/sqm



TEST NUMBER: P907347

CATALOG NUMBER: DFN2DIP-TR4F0-060D050US835-FLLONL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	219.7	2.0
10°-20°	618.3	5.7
20°-30°	908.6	8.3
30°-40°	1055.3	9.7
40°-50°	1054.0	9.7
50°-60°	919.0	8.4
60°-70°	679.4	6.2
70°-80°	384.4	3.5
80°-90°	104.4	1.0
90°-100°	55.7	0.5
100°-110°	207.4	1.9
110°-120°	550.1	5.1
120°-130°	912.4	8.4
130°-140°	969.2	8.9
140°-150°	900.8	8.3
150°-160°	724.2	6.7
160°-170°	466.6	4.3
170°-180°	160.6	1.5
0°-30°	1746.6	16.0
0°-40°	2801.8	25.7
0°-60°	4774.8	43.8
0°-90°	5943.0	54.6
90°-120°	813.2	7.5
90°-150°	3595.6	33.0
90°-180°	4947.0	45.4
0°-180°	10890.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2335	2335	2335	2335	2335	
5°	2335	2326	2301	2319	2315	222
15°	2222	2209	2180	2189	2178	626
25°	2011	1994	1955	1960	1955	926
35°	1735	1713	1677	1663	1652	1084
45°	1412	1396	1363	1338	1329	1090
55°	1069	1055	1028	1001	990	955
65°	721	707	685	664	653	713
75°	377	373	361	348	352	402
85°	92	90	88	81	79	103
90°	1	15	24	31	33	10
95°	79	39	48	54	52	94
105°	371	408	74	88	93	397
115°	702	723	753	188	100	691
125°	993	1009	1032	1040	1044	885
135°	1228	1248	1259	1271	1269	949
145°	1425	1424	1444	1453	1447	891
155°	1569	1558	1573	1580	1570	723
165°	1653	1646	1650	1658	1650	467
175°	1691	1682	1685	1694	1681	161
180°	1687	1687	1687	1687	1687	



TEST NUMBER: P907347

CATALOG NUMBER: DFN2DIP-TR4F0-060D050US835-FLLONL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2334.6	2334.6	2334.6	2334.6	2334.6
2.5°	2348.2	2337.0	2312.2	2334.6	2330.3
5°	2334.6	2325.8	2301.0	2318.9	2314.6
7.5°	2318.9	2305.6	2280.8	2298.9	2294.4
10°	2294.4	2278.7	2251.7	2269.6	2262.9
12.5°	2260.6	2247.2	2220.3	2231.5	2227.0
15°	2222.4	2209.1	2179.8	2188.9	2177.7
17.5°	2175.3	2162.0	2132.7	2143.8	2132.7
20°	2123.6	2110.3	2078.8	2085.5	2076.7
22.5°	2072.2	2051.9	2022.6	2022.6	2018.1
25°	2011.4	1993.6	1955.4	1959.7	1955.4
27.5°	1944.0	1928.3	1899.2	1892.6	1881.4
30°	1876.9	1858.7	1825.2	1818.5	1809.4
32.5°	1804.9	1791.6	1755.6	1742.0	1733.0
35°	1735.4	1713.0	1677.0	1663.4	1652.2
37.5°	1656.8	1636.5	1600.6	1584.8	1573.6
40°	1576.0	1557.9	1522.0	1502.0	1492.9
42.5°	1497.4	1479.3	1443.6	1421.0	1407.6
45°	1412.2	1396.4	1362.6	1338.1	1329.0
47.5°	1329.0	1313.3	1277.4	1252.6	1239.2
50°	1241.4	1230.2	1198.8	1167.3	1156.1
52.5°	1156.1	1140.4	1111.3	1086.6	1070.9
55°	1068.7	1055.1	1028.2	1001.3	990.1
57.5°	981.1	969.9	940.6	913.7	904.6
60°	893.4	884.6	853.2	828.4	821.7
62.5°	808.1	792.4	770.0	747.6	738.6
65°	720.7	707.2	684.8	664.5	653.3
67.5°	630.9	619.5	599.5	583.8	574.7
70°	547.8	538.8	518.5	502.8	494.0
72.5°	462.5	453.5	442.3	426.6	419.9
75°	377.0	372.8	361.3	348.0	352.5
77.5°	300.8	291.8	287.2	280.6	273.9
80°	224.6	222.2	217.7	211.0	206.5
82.5°	152.7	152.7	150.5	141.5	141.5
85°	91.9	89.8	87.6	80.7	78.6
87.5°	40.5	36.0	31.4	24.8	22.4
90°	1.2	14.6	24.4	30.6	32.9
92.5°	30.6	25.7	29.3	31.8	32.9
95°	79.3	39.0	47.6	53.8	52.5
97.5°	142.8	42.8	62.2	66.0	67.1
100°	216.2	48.9	69.6	79.3	81.8
102.5°	296.7	294.3	72.1	85.4	89.2
105°	371.2	407.9	74.5	87.9	92.8
107.5°	457.9	488.3	77.0	90.3	95.3
110°	541.0	566.5	213.7	91.6	96.4



TEST NUMBER: P907347

CATALOG NUMBER: DFN2DIP-TR4F0-060D050US835-FLLONL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	619.1	641.0	620.3	94.0	97.7
115°	702.1	722.8	753.4	188.1	100.2
117.5°	774.1	798.5	819.4	644.6	324.8
120°	854.7	873.0	895.0	909.7	744.8
122.5°	923.0	942.6	967.1	974.4	975.7
125°	992.6	1008.6	1031.8	1040.3	1044.0
127.5°	1056.1	1073.2	1091.7	1103.8	1105.0
130°	1116.0	1135.6	1148.9	1162.4	1161.3
132.5°	1177.1	1193.0	1206.3	1217.4	1216.2
135°	1228.4	1248.0	1258.8	1271.2	1268.7
137.5°	1282.0	1296.7	1309.0	1321.2	1317.6
140°	1334.5	1344.4	1357.7	1368.7	1362.7
142.5°	1378.6	1387.2	1403.0	1412.7	1406.6
145°	1425.0	1423.7	1444.4	1453.0	1446.9
147.5°	1465.2	1461.5	1482.3	1488.4	1483.6
150°	1504.3	1495.8	1515.3	1522.6	1516.5
152.5°	1537.2	1527.5	1545.8	1553.2	1544.6
155°	1569.0	1558.1	1572.7	1580.0	1570.3
157.5°	1594.6	1584.9	1595.9	1604.5	1594.6
160°	1616.7	1609.3	1616.7	1623.9	1615.4
162.5°	1636.1	1628.9	1634.9	1643.5	1632.5
165°	1653.2	1646.0	1649.6	1658.1	1649.6
167.5°	1666.7	1659.3	1663.1	1671.6	1660.6
170°	1677.7	1670.3	1672.8	1681.3	1670.3
172.5°	1685.0	1677.7	1680.2	1688.7	1677.7
175°	1691.1	1682.5	1685.0	1693.5	1681.3
177.5°	1693.5	1685.0	1686.3	1694.8	1683.8
180°	1687.4	1687.4	1687.4	1687.4	1687.4



TEST NUMBER: P907347
 CATALOG NUMBER: DFN2DIP-TR4F0-060D050US835-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	9.83	10.73	10.74	11.67	12.87	9.39	10.30	10.31	11.23	12.44
	3H	11.49	12.30	12.42	13.24	14.47	11.02	11.83	11.94	12.77	14.00
	4H	12.08	12.85	13.02	13.79	15.03	11.61	12.37	12.55	13.32	14.56
	6H	12.48	13.19	13.43	14.14	15.39	12.00	12.71	12.96	13.67	14.92
	8H	12.59	13.26	13.55	14.23	15.48	12.11	12.78	13.07	13.76	15.01
	12H	12.64	13.28	13.60	14.24	15.52	12.16	12.80	13.12	13.76	15.04
4H	2H	10.29	11.06	11.24	12.01	13.25	9.95	10.72	10.90	11.66	12.90
	3H	12.16	12.80	13.12	13.78	15.03	11.77	12.41	12.73	13.39	14.64
	4H	12.88	13.46	13.85	14.44	15.71	12.47	13.06	13.44	14.03	15.31
	6H	13.40	13.90	14.38	14.90	16.17	12.99	13.49	13.97	14.49	15.76
	8H	13.55	14.02	14.53	15.01	16.30	13.13	13.61	14.12	14.60	15.89
	12H	13.62	14.05	14.62	15.05	16.35	13.20	13.62	14.20	14.63	15.93
8H	4H	13.08	13.55	14.06	14.54	15.83	12.72	13.19	13.70	14.18	15.47
	6H	13.71	14.10	14.72	15.13	16.42	13.35	13.74	14.36	14.77	16.06
	8H	13.93	14.28	14.95	15.30	16.60	13.56	13.91	14.58	14.93	16.23
	12H	14.07	14.37	15.09	15.38	16.73	13.68	13.98	14.70	15.00	16.35
12H	4H	13.07	13.49	14.07	14.50	15.79	12.71	13.14	13.72	14.15	15.44
	6H	13.74	14.09	14.76	15.11	16.41	13.39	13.73	14.41	14.75	16.06
	8H	13.99	14.29	15.01	15.30	16.65	13.63	13.93	14.65	14.95	16.30