

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: P910011

Luminaire Tested: DFN2DIP-TR4F0-040D070US840-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P910011
REPORT IS A COMBINATION OF REPORTS P901943 AND P898849
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-TR4F0-040D070US840-FLLONL
Description: 4 foot, Triangle Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

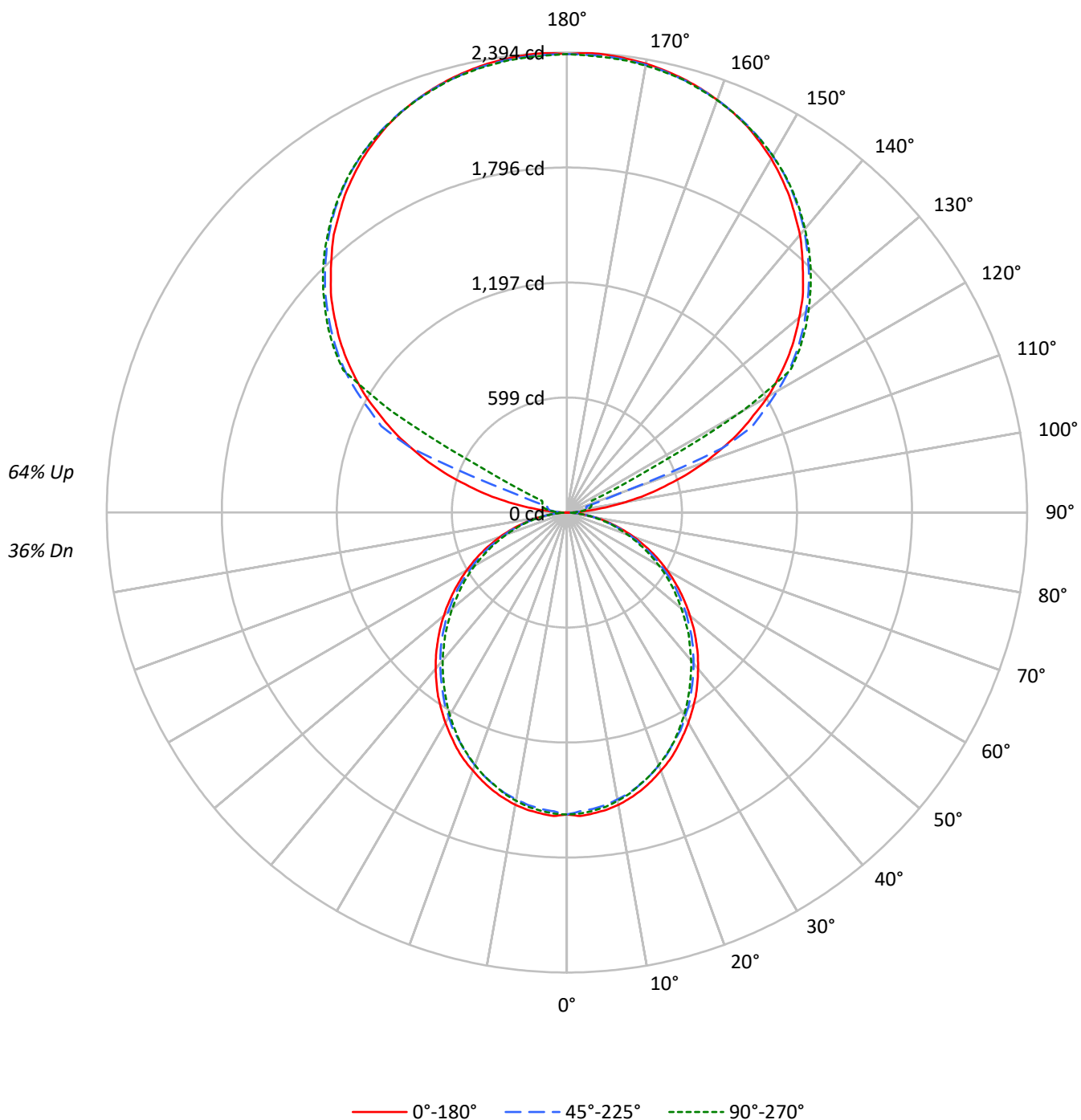
Lumens per Lamp: N/A
Luminaire Lumens: 10997.4 lumens
Efficiency: N/A
Efficacy: 130.8 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 3.43' x L: 3.96' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 84.1
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9952
Total Harmonic Distortion (THDi): 0.069
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P910011

CATALOG NUMBER: DFN2DIP-TR4F0-040D070US840-FLLONL

Luminous Intensity Polar Plot



TEST NUMBER: P910011

CATALOG NUMBER: DFN2DIP-TR4F0-040D070US840-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	104	104	104	104	94	94	94	94	76	76	76	59	59	59	44	44	44
1	95	90	87	83	86	82	79	76	66	64	62	52	50	49	39	38	37
2	86	79	73	68	78	72	67	62	58	54	51	46	43	41	34	32	31
3	79	69	62	57	71	63	57	52	51	47	43	40	37	35	30	28	26
4	72	61	54	48	65	56	49	44	45	41	37	36	32	30	27	25	23
5	66	55	47	41	59	50	43	38	41	35	32	32	28	26	24	22	20
6	61	49	41	35	55	45	38	33	37	31	27	29	25	22	22	19	17
7	56	44	36	31	51	40	33	29	33	28	24	26	23	20	20	17	15
8	52	40	32	27	47	37	30	25	30	25	21	24	20	18	18	16	14
9	48	36	29	24	44	33	27	22	28	23	19	22	18	16	17	14	12
10	45	33	26	21	41	31	24	20	25	20	17	20	17	14	16	13	11

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1249	1249	1249
5°	1251	1231	1240
10°	1241	1215	1223
15°	1222	1195	1196
20°	1198	1167	1170
25°	1173	1134	1138
30°	1142	1103	1099
35°	1113	1066	1057
40°	1078	1029	1017
45°	1042	992	977
50°	1003	954	930
55°	962	909	886
60°	916	856	837
65°	865	800	778
70°	801	733	715
75°	712	653	657
80°	605	550	546
85°	438	373	362

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 1268 cd/sqm

TEST NUMBER: P910011

CATALOG NUMBER: DFN2DIP-TR4F0-040D070US840-FLLONL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	147.9	1.3
10°-20°	416.2	3.8
20°-30°	611.7	5.6
30°-40°	710.5	6.5
40°-50°	709.6	6.5
50°-60°	618.7	5.6
60°-70°	457.4	4.2
70°-80°	258.8	2.4
80°-90°	72.5	0.7
90°-100°	78.7	0.7
100°-110°	293.3	2.7
110°-120°	777.8	7.1
120°-130°	1290.0	11.7
130°-140°	1370.3	12.5
140°-150°	1273.5	11.6
150°-160°	1023.9	9.3
160°-170°	659.7	6.0
170°-180°	227.1	2.1
0°-30°	1175.9	10.7
0°-40°	1886.3	17.2
0°-60°	3214.6	29.2
0°-90°	4003.2	36.4
90°-120°	1149.7	10.5
90°-150°	5083.5	46.2
90°-180°	6994.0	63.6
0°-180°	10997.4	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1572	1572	1572	1572	1572	
5°	1572	1566	1549	1561	1558	149
15°	1496	1487	1468	1474	1466	421
25°	1354	1342	1316	1319	1316	623
35°	1168	1153	1129	1120	1112	730
45°	951	940	917	901	895	734
55°	720	710	692	674	667	643
65°	485	476	461	447	440	480
75°	254	251	243	234	237	271
85°	62	60	59	54	53	69
90°	2	21	34	43	47	10
95°	112	55	67	76	74	133
105°	525	577	105	124	131	561
115°	993	1022	1065	266	142	977
125°	1403	1426	1459	1471	1476	1252
135°	1737	1764	1780	1797	1794	1342
145°	2015	2013	2042	2054	2046	1260
155°	2218	2203	2224	2234	2220	1022
165°	2337	2327	2332	2344	2332	660
175°	2391	2379	2382	2394	2377	228
180°	2386	2386	2386	2386	2386	

TEST NUMBER: P910011

CATALOG NUMBER: DFN2DIP-TR4F0-040D070US840-FLLONL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1571.8	1571.8	1571.8	1571.8	1571.8
2.5°	1580.9	1573.4	1556.7	1571.8	1568.9
5°	1571.8	1565.8	1549.1	1561.2	1558.3
7.5°	1561.2	1552.2	1535.5	1547.7	1544.7
10°	1544.7	1534.1	1516.0	1528.0	1523.5
12.5°	1521.9	1512.9	1494.8	1502.4	1499.2
15°	1496.2	1487.2	1467.5	1473.6	1466.1
17.5°	1464.5	1455.5	1435.8	1443.3	1435.8
20°	1429.7	1420.7	1399.6	1404.0	1398.2
22.5°	1395.0	1381.4	1361.7	1361.7	1358.7
25°	1354.1	1342.1	1316.5	1319.4	1316.5
27.5°	1308.8	1298.2	1278.7	1274.1	1266.7
30°	1263.5	1251.4	1228.8	1224.3	1218.2
32.5°	1215.2	1206.2	1181.9	1172.9	1166.7
35°	1168.3	1153.3	1129.0	1119.9	1112.4
37.5°	1115.4	1101.8	1077.5	1067.0	1059.4
40°	1061.1	1048.8	1024.6	1011.2	1005.1
42.5°	1008.1	995.9	971.9	956.6	947.7
45°	950.7	940.2	917.4	900.9	894.7
47.5°	894.7	884.1	860.0	843.3	834.4
50°	835.8	828.2	807.1	785.9	778.3
52.5°	778.3	767.8	748.2	731.5	720.9
55°	719.5	710.3	692.3	674.1	666.6
57.5°	660.5	653.0	633.2	615.1	609.0
60°	601.5	595.5	574.4	557.7	553.2
62.5°	544.1	533.5	518.5	503.3	497.3
65°	485.2	476.1	461.0	447.4	439.9
67.5°	424.7	417.1	403.6	393.0	387.0
70°	368.8	362.7	349.1	338.5	332.5
72.5°	311.4	305.3	297.8	287.2	282.7
75°	253.9	251.0	243.3	234.3	237.3
77.5°	202.5	196.4	193.4	188.8	184.4
80°	151.2	149.6	146.5	142.1	139.1
82.5°	102.8	102.8	101.4	95.2	95.2
85°	61.9	60.5	59.0	54.3	52.9
87.5°	27.3	24.2	21.2	16.7	15.0
90°	1.6	20.7	34.4	43.2	46.6
92.5°	43.2	36.3	41.4	44.9	46.6
95°	112.1	55.1	67.3	76.0	74.2
97.5°	201.9	60.5	88.0	93.3	94.9
100°	305.7	69.1	98.4	112.1	115.6
102.5°	419.4	416.2	101.9	120.8	126.0
105°	524.8	576.6	105.3	124.2	131.2
107.5°	647.3	690.4	108.9	127.7	134.7
110°	764.9	800.9	302.2	129.6	136.3

TEST NUMBER: P910011

CATALOG NUMBER: DFN2DIP-TR4F0-040D070US840-FLLONL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	875.4	906.3	877.0	132.8	138.1
115°	992.6	1021.9	1065.1	265.9	141.7
117.5°	1094.5	1128.9	1158.4	911.4	459.2
120°	1208.4	1234.3	1265.5	1286.2	1053.1
122.5°	1304.9	1332.6	1367.4	1377.6	1379.4
125°	1403.4	1425.9	1458.8	1470.9	1475.9
127.5°	1493.2	1517.3	1543.4	1560.6	1562.3
130°	1577.8	1605.5	1624.4	1643.5	1641.8
132.5°	1664.2	1686.7	1705.6	1721.1	1719.5
135°	1736.7	1764.3	1779.8	1797.2	1793.7
137.5°	1812.5	1833.3	1850.7	1867.9	1862.8
140°	1886.7	1900.7	1919.6	1935.1	1926.5
142.5°	1949.0	1961.2	1983.5	1997.2	1988.6
145°	2014.7	2012.9	2042.2	2054.3	2045.7
147.5°	2071.4	2066.4	2095.7	2104.3	2097.5
150°	2126.8	2114.8	2142.4	2152.6	2144.0
152.5°	2173.3	2159.6	2185.5	2195.9	2183.8
155°	2218.3	2202.8	2223.5	2233.8	2220.1
157.5°	2254.5	2240.8	2256.3	2268.5	2254.5
160°	2285.7	2275.2	2285.7	2295.9	2283.8
162.5°	2313.2	2302.9	2311.5	2323.6	2308.0
165°	2337.3	2327.1	2332.2	2344.3	2332.2
167.5°	2356.4	2345.9	2351.3	2363.4	2347.8
170°	2372.0	2361.6	2365.0	2377.1	2361.6
172.5°	2382.3	2372.0	2375.5	2387.5	2372.0
175°	2390.9	2378.7	2382.3	2394.3	2377.1
177.5°	2394.3	2382.3	2384.1	2396.2	2380.6
180°	2385.7	2385.7	2385.7	2385.7	2385.7

TEST NUMBER: P910011

CATALOG NUMBER: DFN2DIP-TR4F0-040D070US840-FLONL

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	6.63	7.38	7.70	8.45	9.90	6.20	6.95	7.27	8.02	9.47
	3H	8.28	8.96	9.36	10.03	11.50	7.81	8.48	8.89	9.56	11.03
	4H	8.87	9.50	9.95	10.58	12.06	8.39	9.03	9.48	10.11	11.59
	6H	9.26	9.85	10.36	10.93	12.42	8.78	9.37	9.88	10.45	11.94
	8H	9.36	9.92	10.46	11.02	12.50	8.89	9.45	9.99	10.54	12.03
	12H	9.41	9.94	10.51	11.03	12.54	8.92	9.46	10.03	10.55	12.05
4H	2H	7.08	7.72	8.17	8.80	10.27	6.74	7.37	7.83	8.45	9.93
	3H	8.94	9.47	10.04	10.57	12.06	8.54	9.08	9.64	10.18	11.67
	4H	9.65	10.13	10.75	11.23	12.74	9.24	9.73	10.34	10.82	12.34
	6H	10.15	10.57	11.27	11.69	13.20	9.74	10.16	10.86	11.28	12.79
	8H	10.30	10.69	11.41	11.80	13.32	9.89	10.28	11.00	11.39	12.91
	12H	10.37	10.72	11.50	11.85	13.37	9.95	10.30	11.08	11.42	12.95
8H	4H	9.83	10.22	10.95	11.34	12.86	9.47	9.86	10.59	10.97	12.50
	6H	10.46	10.78	11.59	11.94	13.45	10.10	10.42	11.23	11.57	13.09
	8H	10.68	10.96	11.82	12.10	13.63	10.31	10.59	11.45	11.73	13.26
	12H	10.81	11.05	11.95	12.18	13.76	10.42	10.67	11.56	11.80	13.37
12H	4H	9.81	10.17	10.94	11.29	12.82	9.46	9.82	10.59	10.94	12.46
	6H	10.49	10.77	11.63	11.91	13.44	10.14	10.42	11.28	11.55	13.09
	8H	10.73	10.97	11.87	12.10	13.68	10.37	10.62	11.51	11.75	13.32

END OF REPORT