

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: P912835

Luminaire Tested: DFN2DIP-TR4F0-070D040US850-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P912835
REPORT IS A COMBINATION OF REPORTS P901895 AND P898849
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-TR4F0-070D040US850-FLLONL
Description: 4 foot, Triangle Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

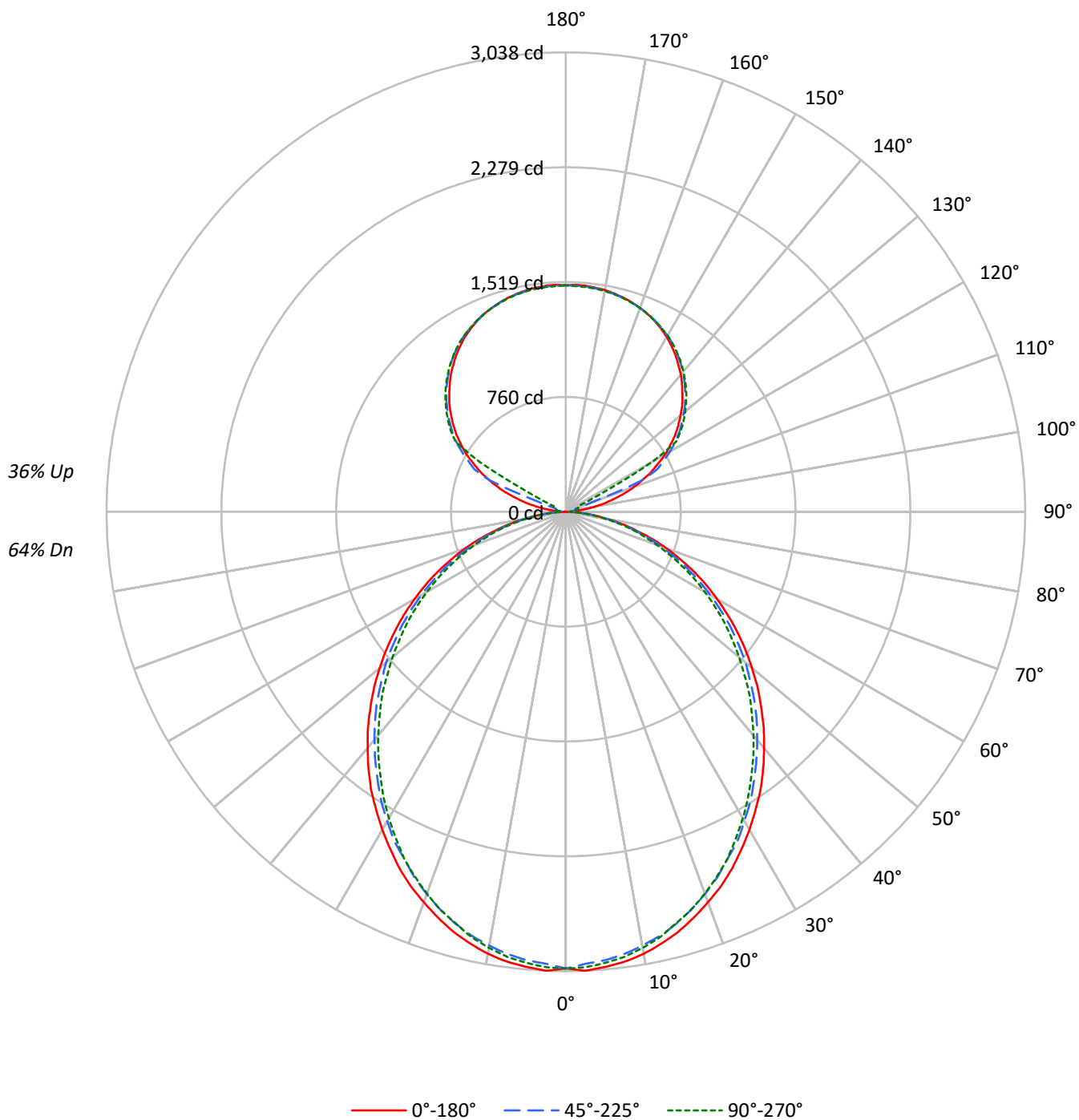
Lumens per Lamp: N/A
Luminaire Lumens: 12077.0 lumens
Efficiency: N/A
Efficacy: 125.9 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 3.43' x L: 3.96' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 95.9
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: P912835

CATALOG NUMBER: DFN2DIP-TR4F0-070D040US850-FLLONL

Luminous Intensity Polar Plot



TEST NUMBER: P912835

CATALOG NUMBER: DFN2DIP-TR4F0-070D040US850-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
RCR																	
0	110	110	110	110	104	104	104	104	91	91	91		79	79	79		69
1	101	96	92	89	94	91	87	84	80	77	75		70	68	66		61
2	92	84	78	73	86	79	74	69	70	66	62		61	58	55		53
3	84	74	67	61	78	70	63	58	62	57	52		54	50	47		47
4	77	66	58	51	72	62	55	49	55	49	45		48	44	40		42
5	71	59	50	44	66	55	48	42	49	43	39		44	39	35		38
6	65	53	44	38	61	50	42	37	44	38	34		39	34	31		35
7	60	48	39	34	56	45	38	32	40	34	30		36	31	27		32
8	56	43	35	30	52	41	34	29	37	31	27		33	28	24		29
9	52	40	32	27	49	38	31	26	34	28	24		30	25	22		27
10	49	36	29	24	46	35	28	23	31	26	22		28	23	20		25

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2400	2400	2400
5°	2404	2366	2382
10°	2384	2334	2350
15°	2349	2296	2299
20°	2302	2242	2248
25°	2255	2179	2188
30°	2196	2119	2112
35°	2140	2049	2032
40°	2071	1978	1955
45°	2002	1907	1877
50°	1927	1833	1787
55°	1848	1747	1703
60°	1760	1644	1608
65°	1663	1538	1495
70°	1539	1409	1374
75°	1368	1254	1262
80°	1163	1058	1049
85°	842	718	695

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2002 cd/sqm

TEST NUMBER: P912835

CATALOG NUMBER: DFN2DIP-TR4F0-070D040US850-FLLONL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	284.3	2.4
10°-20°	799.9	6.6
20°-30°	1175.6	9.7
30°-40°	1365.3	11.3
40°-50°	1363.6	11.3
50°-60°	1189.1	9.8
60°-70°	879.0	7.3
70°-80°	497.3	4.1
80°-90°	133.9	1.1
90°-100°	49.4	0.4
100°-110°	184.0	1.5
110°-120°	488.1	4.0
120°-130°	809.5	6.7
130°-140°	859.9	7.1
140°-150°	799.2	6.6
150°-160°	642.5	5.3
160°-170°	414.0	3.4
170°-180°	142.5	1.2
0°-30°	2259.8	18.7
0°-40°	3625.1	30.0
0°-60°	6177.8	51.2
0°-90°	7688.0	63.7
90°-120°	721.5	6.0
90°-150°	3190.0	26.4
90°-180°	4389.0	36.3
0°-180°	12077.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3021	3021	3021	3021	3021	
5°	3021	3009	2977	3000	2995	287
15°	2876	2858	2820	2832	2818	810
25°	2602	2579	2530	2536	2530	1198
35°	2245	2216	2170	2152	2138	1402
45°	1827	1807	1763	1731	1720	1410
55°	1383	1365	1330	1296	1281	1236
65°	933	915	886	860	845	922
75°	488	482	467	450	456	521
85°	119	116	114	104	102	133
90°	1	13	22	27	29	11
95°	70	35	42	48	47	83
105°	329	362	66	78	82	352
115°	623	641	668	167	89	613
125°	881	895	915	923	926	785
135°	1090	1107	1117	1128	1126	842
145°	1264	1263	1281	1289	1284	791
155°	1392	1382	1395	1402	1393	641
165°	1467	1460	1464	1471	1464	414
175°	1500	1493	1495	1502	1492	143
180°	1497	1497	1497	1497	1497	

TEST NUMBER: P912835

CATALOG NUMBER: DFN2DIP-TR4F0-070D040US850-FLLONL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	3020.6	3020.6	3020.6	3020.6	3020.6
2.5°	3038.2	3023.7	2991.6	3020.6	3015.0
5°	3020.6	3009.3	2977.2	3000.3	2994.7
7.5°	3000.3	2983.0	2950.9	2974.4	2968.6
10°	2968.6	2948.2	2913.3	2936.5	2927.9
12.5°	2924.8	2907.6	2872.8	2887.2	2881.3
15°	2875.5	2858.2	2820.3	2832.1	2817.5
17.5°	2814.4	2797.2	2759.3	2773.8	2759.3
20°	2747.5	2730.4	2689.7	2698.3	2686.9
22.5°	2681.0	2654.8	2616.9	2616.9	2611.0
25°	2602.5	2579.3	2530.1	2535.6	2530.1
27.5°	2515.2	2494.9	2457.3	2448.7	2434.1
30°	2428.4	2404.9	2361.5	2352.9	2341.1
32.5°	2335.2	2318.0	2271.5	2253.9	2242.2
35°	2245.3	2216.3	2169.8	2152.2	2137.7
37.5°	2143.6	2117.4	2070.8	2050.5	2036.0
40°	2039.1	2015.7	1969.1	1943.3	1931.5
42.5°	1937.4	1914.0	1867.8	1838.5	1821.2
45°	1827.1	1806.8	1763.0	1731.3	1719.5
47.5°	1719.5	1699.2	1652.6	1620.6	1603.4
50°	1606.2	1591.6	1550.9	1510.3	1495.8
52.5°	1495.8	1475.5	1437.9	1405.9	1385.5
55°	1382.7	1365.2	1330.4	1295.5	1281.0
57.5°	1269.4	1254.8	1216.9	1182.1	1170.4
60°	1155.9	1144.5	1103.9	1071.8	1063.2
62.5°	1045.6	1025.3	996.3	967.4	955.6
65°	932.6	914.9	886.0	859.8	845.3
67.5°	816.3	801.6	775.6	755.3	743.6
70°	708.8	697.1	670.8	650.5	639.1
72.5°	598.4	586.8	572.2	551.9	543.3
75°	487.8	482.3	467.4	450.3	456.1
77.5°	389.3	377.5	371.6	363.0	354.4
80°	290.6	287.6	281.7	273.0	267.2
82.5°	197.5	197.5	194.7	183.1	183.1
85°	119.0	116.2	113.5	104.5	101.7
87.5°	52.3	46.6	40.7	32.1	28.9
90°	1.0	13.0	21.6	27.2	29.2
92.5°	27.2	22.7	26.0	28.2	29.2
95°	70.3	34.6	42.1	47.7	46.6
97.5°	126.8	37.9	55.2	58.6	59.6
100°	191.7	43.4	61.8	70.3	72.5
102.5°	263.2	261.2	63.9	75.7	79.1
105°	329.3	361.9	66.1	78.0	82.3
107.5°	406.2	433.3	68.3	80.2	84.5
110°	480.0	502.6	189.6	81.3	85.5

TEST NUMBER: P912835

CATALOG NUMBER: DFN2DIP-TR4F0-070D040US850-FLLONL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	549.3	568.7	550.3	83.4	86.7
115°	622.8	641.2	668.4	166.8	88.9
117.5°	686.8	708.4	726.9	571.9	288.1
120°	758.3	774.5	794.0	807.1	660.9
122.5°	818.9	836.3	858.0	864.5	865.6
125°	880.7	894.9	915.4	923.0	926.2
127.5°	937.0	952.2	968.5	979.4	980.4
130°	990.1	1007.5	1019.3	1031.3	1030.3
132.5°	1044.2	1058.4	1070.3	1080.1	1079.1
135°	1089.8	1107.2	1116.9	1127.7	1125.6
137.5°	1137.4	1150.4	1161.3	1172.1	1168.9
140°	1184.0	1192.7	1204.6	1214.4	1208.9
142.5°	1223.1	1230.7	1244.7	1253.3	1248.0
145°	1264.3	1263.2	1281.4	1289.1	1283.7
147.5°	1299.9	1296.6	1315.1	1320.5	1316.3
150°	1334.6	1327.0	1344.4	1350.9	1345.4
152.5°	1363.8	1355.2	1371.4	1377.9	1370.4
155°	1392.0	1382.4	1395.3	1401.8	1393.1
157.5°	1414.8	1406.1	1416.0	1423.5	1414.8
160°	1434.3	1427.7	1434.3	1440.7	1433.2
162.5°	1451.6	1445.1	1450.6	1458.1	1448.4
165°	1466.8	1460.3	1463.5	1471.1	1463.5
167.5°	1478.7	1472.1	1475.5	1483.1	1473.3
170°	1488.5	1482.0	1484.1	1491.7	1482.0
172.5°	1494.9	1488.5	1490.7	1498.3	1488.5
175°	1500.3	1492.7	1494.9	1502.5	1491.7
177.5°	1502.5	1494.9	1496.0	1503.7	1493.9
180°	1497.2	1497.2	1497.2	1497.2	1497.2

TEST NUMBER: P912835

CATALOG NUMBER: DFN2DIP-TR4F0-070D040US850-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	11.48	12.48	12.31	13.33	14.39	11.05	12.05	11.88	12.90	13.96
	3H	13.15	14.05	13.99	14.91	16.00	12.68	13.58	13.52	14.44	15.53
	4H	13.74	14.59	14.60	15.46	16.56	13.27	14.12	14.13	14.99	16.09
	6H	14.15	14.93	15.02	15.81	16.92	13.68	14.46	14.55	15.33	16.45
	8H	14.26	15.01	15.14	15.90	17.01	13.79	14.53	14.67	15.43	16.54
	12H	14.31	15.02	15.20	15.91	17.05	13.83	14.54	14.72	15.43	16.57
4H	2H	11.96	12.81	12.82	13.68	14.78	11.61	12.46	12.48	13.33	14.43
	3H	13.84	14.54	14.71	15.45	16.56	13.44	14.15	14.32	15.05	16.17
	4H	14.56	15.20	15.44	16.10	17.24	14.15	14.80	15.04	15.69	16.84
	6H	15.08	15.64	15.98	16.56	17.70	14.67	15.23	15.57	16.15	17.29
	8H	15.23	15.75	16.14	16.67	17.83	14.82	15.34	15.73	16.26	17.42
	12H	15.31	15.78	16.24	16.72	17.88	14.89	15.36	15.82	16.30	17.46
8H	4H	14.76	15.29	15.67	16.20	17.36	14.40	14.93	15.31	15.84	17.00
	6H	15.40	15.83	16.33	16.79	17.95	15.04	15.47	15.97	16.43	17.59
	8H	15.62	16.01	16.57	16.96	18.13	15.26	15.64	16.20	16.59	17.76
	12H	15.76	16.10	16.71	17.04	18.26	15.38	15.71	16.32	16.66	17.88
12H	4H	14.76	15.23	15.68	16.16	17.32	14.41	14.87	15.33	15.81	16.97
	6H	15.43	15.82	16.38	16.77	17.94	15.08	15.46	16.02	16.41	17.59
	8H	15.68	16.02	16.63	16.96	18.18	15.32	15.66	16.27	16.60	17.83