

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: P912653

Luminaire Tested: DFN2DIP-TR3F0-070D040US850-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P912653
REPORT IS A COMBINATION OF REPORTS P901813 AND P898751
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-TR3F0-070D040US850-FLLONL
Description: 3 foot, Triangle Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

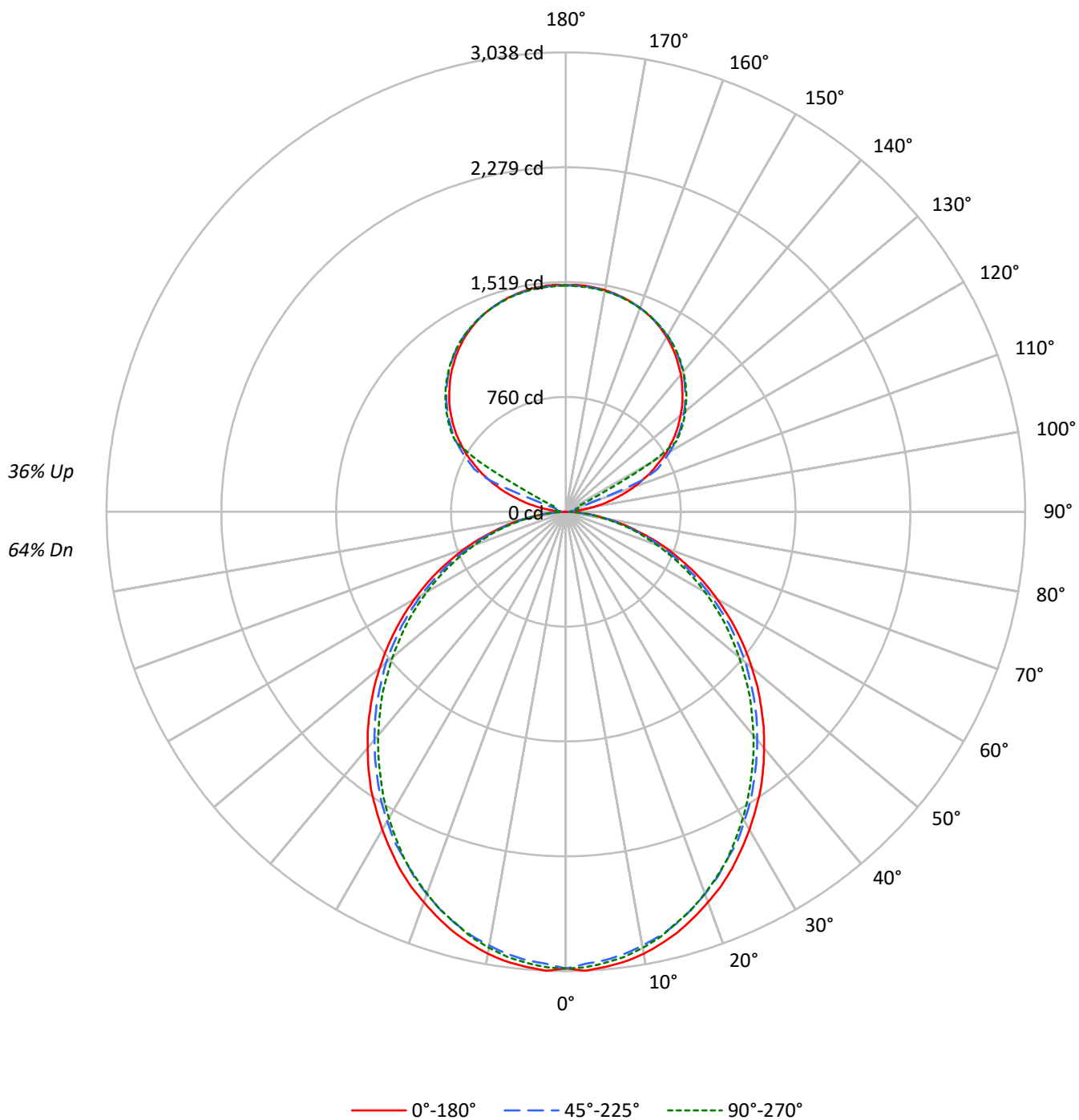
Lumens per Lamp: N/A
Luminaire Lumens: 12077.0 lumens
Efficiency: N/A
Efficacy: 121.1 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 2.74' x L: 3.16' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 99.7
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9971
Total Harmonic Distortion (THDi): 0.049
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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Luminous Intensity Polar Plot



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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	110	110	110	110		104	104	104	104		91	91	91		79	79	79		69	69	69
1	101	96	92	89		94	91	87	84		80	77	75		70	68	66		61	59	58
2	92	84	78	73		86	79	74	69		70	66	62		61	58	55		53	51	49
3	84	74	67	61		78	70	63	58		62	57	52		54	50	47		47	44	42
4	77	66	58	51		72	62	55	49		55	49	45		48	44	40		42	39	36
5	71	59	50	44		66	55	48	42		49	43	39		44	39	35		38	34	31
6	65	53	44	38		61	50	42	37		44	38	34		39	34	31		35	31	28
7	60	48	39	34		56	45	38	32		40	34	30		36	31	27		32	28	25
8	56	43	35	30		52	41	34	29		37	31	27		33	28	24		29	25	22
9	52	40	32	27		49	38	31	26		34	28	24		30	25	22		27	23	20
10	49	36	29	24		46	35	28	23		31	26	22		28	23	20		25	21	18

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3764	3764	3764
5°	3768	3708	3734
10°	3735	3655	3681
15°	3678	3592	3599
20°	3602	3505	3516
25°	3526	3402	3420
30°	3431	3306	3299
35°	3342	3193	3171
40°	3231	3078	3048
45°	3121	2964	2923
50°	3001	2843	2779
55°	2874	2704	2645
60°	2731	2539	2492
65°	2575	2367	2311
70°	2376	2158	2116
75°	2100	1907	1932
80°	1768	1587	1588
85°	1249	1046	1025

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 3121 cd/sqm

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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	

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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

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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

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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	13.00	14.00	13.83	14.85	15.91	12.57	13.57	13.40	14.42	15.48
	3H	14.66	15.56	15.50	16.42	17.51	14.19	15.09	15.03	15.95	17.04
	4H	15.25	16.09	16.11	16.96	18.06	14.78	15.63	15.64	16.50	17.60
	6H	15.65	16.43	16.52	17.31	18.42	15.18	15.96	16.05	16.84	17.95
	8H	15.75	16.50	16.63	17.39	18.50	15.28	16.03	16.16	16.92	18.04
	12H	15.80	16.51	16.69	17.40	18.54	15.33	16.04	16.21	16.93	18.06
4H	2H	13.47	14.32	14.34	15.19	16.29	13.13	13.98	13.99	14.85	15.95
	3H	15.34	16.05	16.22	16.95	18.06	14.95	15.66	15.83	16.56	17.68
	4H	16.05	16.70	16.94	17.60	18.74	15.65	16.30	16.54	17.20	18.34
	6H	16.57	17.12	17.47	18.05	19.19	16.16	16.72	17.07	17.64	18.79
	8H	16.72	17.24	17.62	18.15	19.31	16.31	16.83	17.21	17.75	18.90
	12H	16.79	17.26	17.72	18.20	19.36	16.38	16.85	17.30	17.78	18.94
8H	4H	16.26	16.78	17.16	17.69	18.85	15.90	16.42	16.81	17.34	18.49
	6H	16.88	17.31	17.82	18.27	19.43	16.52	16.96	17.46	17.91	19.07
	8H	17.10	17.48	18.04	18.43	19.60	16.73	17.12	17.68	18.07	19.24
	12H	17.23	17.57	18.18	18.51	19.73	16.85	17.19	17.80	18.13	19.35
12H	4H	16.25	16.72	17.17	17.65	18.82	15.90	16.37	16.82	17.30	18.47
	6H	16.91	17.29	17.85	18.24	19.42	16.56	16.95	17.51	17.90	19.07
	8H	17.15	17.49	18.10	18.43	19.66	16.80	17.14	17.75	18.08	19.30