

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: P912681

Luminaire Tested: DFN2DIP-TR3F0-080D040US850-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P912681
REPORT IS A COMBINATION OF REPORTS P901816 AND P898751
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-TR3F0-080D040US850-RLLONL
Description: 3 foot, Triangle Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

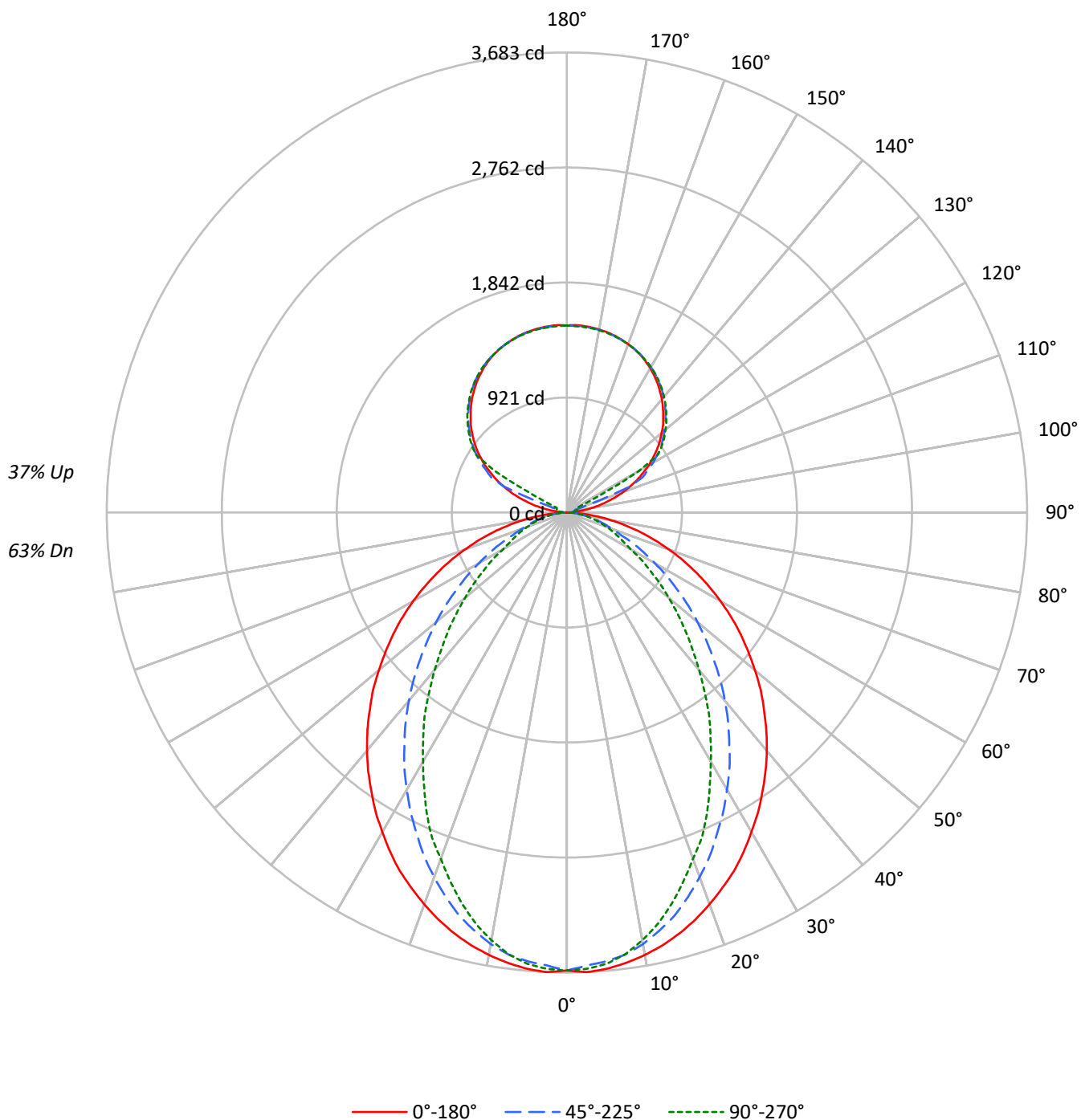
Lumens per Lamp: N/A
Luminaire Lumens: 11932.8 lumens
Efficiency: N/A
Efficacy: 108.1 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 2.74' x L: 3.16' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 110.4
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9968
Total Harmonic Distortion (THDi): 0.064
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	103	103	103	103	91	91	91	79	79	79	68	68	68
1	101	97	93	90	95	91	88	85	80	78	76	71	69	67	61	60	59
2	93	86	80	75	87	81	75	71	71	67	64	63	60	57	55	52	51
3	85	76	69	63	80	72	65	60	63	58	54	56	52	49	49	46	44
4	78	68	60	54	73	64	57	52	57	51	47	50	46	43	44	41	38
5	72	61	53	47	67	57	50	45	51	45	41	46	41	37	40	37	34
6	67	55	47	41	62	52	45	39	46	41	36	41	37	33	37	33	30
7	62	50	42	36	58	47	40	35	42	36	32	38	33	30	34	30	27
8	58	45	38	32	54	43	36	31	39	33	29	35	30	27	31	27	24
9	54	42	34	29	51	40	33	28	36	30	26	32	27	24	29	25	22
10	50	38	31	26	47	37	30	25	33	28	24	30	25	22	27	23	20

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	4569	4569	4569
5°	4574	4493	4522
10°	4526	4401	4372
15°	4461	4252	4142
20°	4376	4048	3860
25°	4289	3820	3589
30°	4173	3586	3245
35°	4060	3335	2943
40°	3944	3076	2598
45°	3809	2790	2285
50°	3670	2500	1979
55°	3524	2192	1686
60°	3355	1870	1385
65°	3161	1543	1243
70°	2925	1238	1120
75°	2629	1083	1013
80°	2199	896	868
85°	1497	581	635

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
Vertical Angle: 45°
Luminance: 3809 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	343.7	2.9
10°-20°	943.4	7.9
20°-30°	1324.5	11.1
30°-40°	1443.8	12.1
40°-50°	1327.0	11.1
50°-60°	1042.1	8.7
60°-70°	678.3	5.7
70°-80°	349.2	2.9
80°-90°	91.8	0.8
90°-100°	49.4	0.4
100°-110°	184.0	1.5
110°-120°	488.1	4.1
120°-130°	809.5	6.8
130°-140°	859.9	7.2
140°-150°	799.2	6.7
150°-160°	642.5	5.4
160°-170°	414.0	3.5
170°-180°	142.5	1.2
0°-30°	2611.6	21.9
0°-40°	4055.4	34.0
0°-60°	6424.5	53.8
0°-90°	7543.8	63.2
90°-120°	721.5	6.0
90°-150°	3190.0	26.7
90°-180°	4389.0	36.8
0°-180°	11932.8	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3667	3667	3667	3667	3667	
5°	3667	3650	3607	3637	3627	348
15°	3488	3451	3338	3275	3242	983
25°	3166	3060	2840	2705	2655	1456
35°	2728	2558	2267	2058	1984	1707
45°	2230	2008	1659	1423	1344	1722
55°	1696	1437	1078	879	816	1515
65°	1145	876	577	465	454	1135
75°	610	378	266	242	239	646
85°	143	73	63	63	63	164
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°	3666.8	3666.8	3666.8	3666.8	3666.8
2.5°	3683.3	3666.8	3630.2	3663.6	3656.9
5°	3666.8	3650.3	3606.9	3636.9	3627.0
7.5°	3636.9	3617.1	3570.6	3583.7	3567.1
10°	3597.0	3573.9	3507.7	3497.5	3477.7
12.5°	3547.5	3517.5	3427.7	3408.0	3371.4
15°	3487.6	3451.0	3338.3	3275.3	3242.2
17.5°	3417.8	3364.7	3225.3	3152.4	3099.2
20°	3338.3	3271.8	3106.0	3023.2	2949.9
22.5°	3252.0	3175.6	2983.1	2870.4	2820.7
25°	3165.8	3059.5	2840.5	2704.6	2654.6
27.5°	3062.9	2949.9	2707.7	2551.8	2475.4
30°	2953.5	2827.1	2561.7	2392.7	2302.8
32.5°	2847.1	2694.4	2422.6	2223.3	2140.3
35°	2727.8	2558.5	2266.6	2057.5	1984.2
37.5°	2611.6	2428.9	2120.5	1891.3	1808.6
40°	2488.8	2289.9	1967.7	1732.1	1645.9
42.5°	2362.7	2150.5	1815.2	1569.6	1486.7
45°	2230.0	2007.5	1659.3	1423.4	1343.9
47.5°	2104.0	1868.4	1510.0	1274.1	1201.3
50°	1964.5	1729.0	1364.0	1134.7	1065.3
52.5°	1828.3	1579.3	1224.4	1005.5	942.5
55°	1695.6	1436.8	1078.4	879.4	816.4
57.5°	1559.7	1294.2	949.2	763.3	710.1
60°	1420.2	1154.8	812.9	643.9	590.8
62.5°	1284.3	1018.8	696.8	537.6	511.2
65°	1144.9	875.9	577.3	464.8	454.5
67.5°	1012.2	743.3	464.8	408.0	398.2
70°	872.8	614.1	384.8	351.7	338.4
72.5°	740.0	494.3	321.8	295.4	288.7
75°	610.5	378.2	265.5	242.2	239.1
77.5°	481.3	268.6	209.2	195.7	189.1
80°	361.5	192.6	159.1	146.1	146.1
82.5°	252.1	129.5	109.5	102.8	102.8
85°	142.6	72.9	63.0	63.0	63.0
87.5°	53.1	26.4	26.4	23.3	23.3
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	13.53	14.48	14.37	15.34	16.41	9.50	10.45	10.35	11.31	12.39
	3H	15.20	16.05	16.06	16.92	18.02	10.70	11.55	11.55	12.41	13.51
	4H	15.81	16.61	16.68	17.49	18.60	11.15	11.95	12.02	12.83	13.94
	6H	16.23	16.97	17.11	17.85	18.98	11.47	12.21	12.35	13.09	14.21
	8H	16.36	17.06	17.25	17.96	19.08	11.56	12.26	12.45	13.16	14.29
	12H	16.42	17.09	17.32	17.98	19.13	11.61	12.28	12.50	13.17	14.32
4H	2H	13.56	14.36	14.43	15.24	16.35	10.11	10.91	10.98	11.79	12.90
	3H	15.39	16.05	16.27	16.96	18.09	11.46	12.13	12.35	13.04	14.16
	4H	16.08	16.68	16.98	17.59	18.74	12.01	12.62	12.91	13.52	14.67
	6H	16.59	17.11	17.50	18.04	19.19	12.43	12.95	13.34	13.88	15.03
	8H	16.76	17.25	17.68	18.17	19.34	12.56	13.05	13.47	13.97	15.13
	12H	16.86	17.30	17.79	18.24	19.41	12.63	13.06	13.56	14.00	15.18
8H	4H	16.05	16.54	16.97	17.46	18.63	12.29	12.78	13.21	13.70	14.87
	6H	16.61	17.02	17.55	17.98	19.15	12.81	13.21	13.75	14.18	15.34
	8H	16.82	17.18	17.78	18.14	19.32	13.00	13.35	13.95	14.31	15.49
	12H	16.96	17.27	17.91	18.22	19.46	13.12	13.43	14.07	14.38	15.61
12H	4H	16.01	16.45	16.94	17.39	18.56	12.30	12.74	13.24	13.68	14.85
	6H	16.59	16.95	17.54	17.90	19.08	12.86	13.21	13.81	14.17	15.35
	8H	16.81	17.12	17.76	18.07	19.30	13.07	13.38	14.02	14.33	15.56