

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: P912776

Luminaire Tested: DFN2DIP-TR4F0-050D070US850-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P912776
REPORT IS A COMBINATION OF REPORTS P900426 AND P897293
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-TR4F0-050D070US850-RLLFLL
Description: 4 foot, Triangle Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

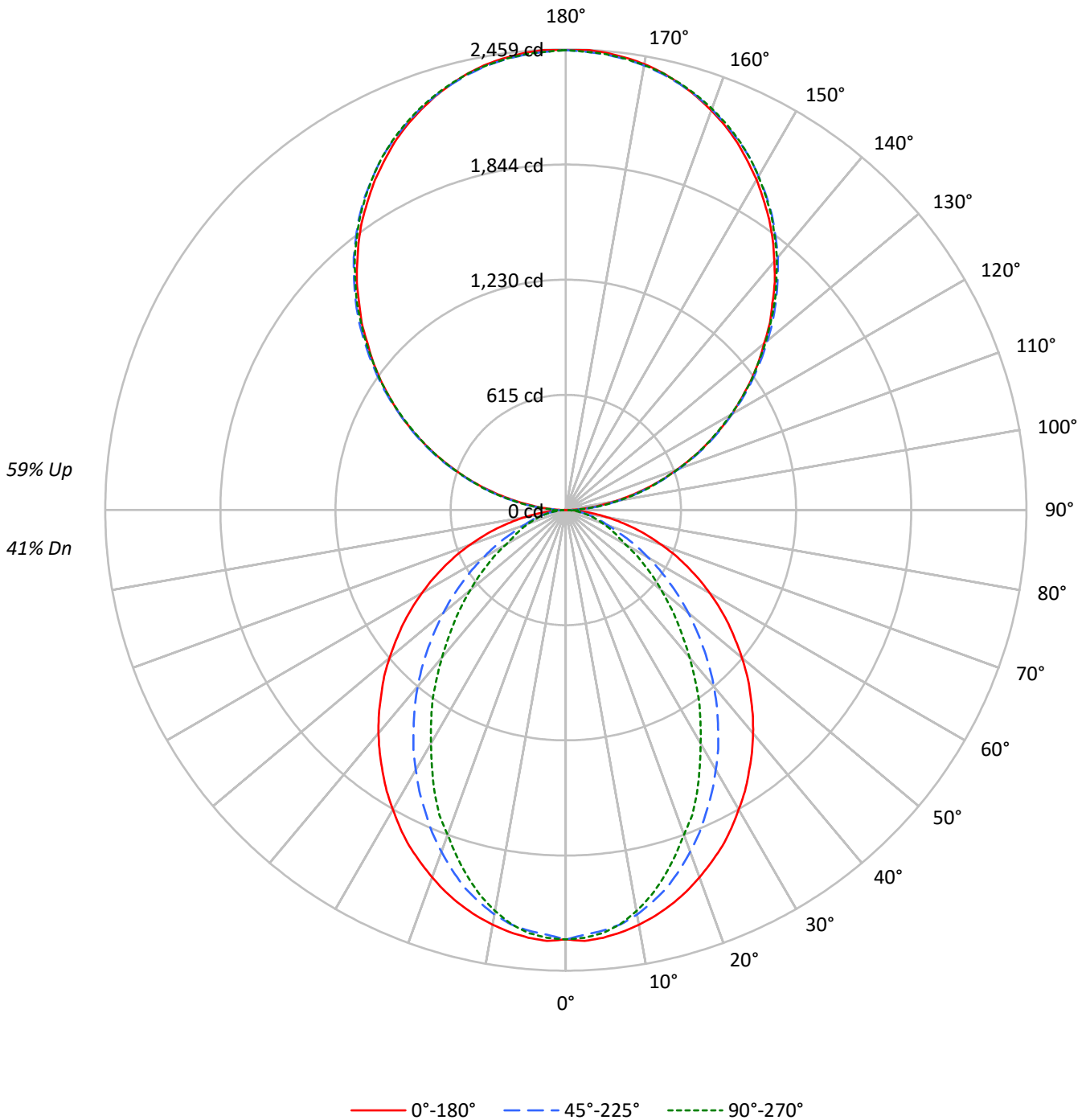
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 11583.6 lumens
Efficiency: N/A
Efficacy: 123.1 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.43' x L: 3.96' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 94.1
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.996
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				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	105	105	105	105	96	96	96	96	78	78	78	62	62	62	48	48	48	48	48	48	41
1	96	92	88	85	87	84	81	78	69	67	65	55	54	53	43	42	41	41	41	41	35
2	88	81	75	70	80	74	69	65	61	57	54	49	47	44	38	36	35	35	35	35	30
3	80	71	64	59	73	65	59	54	54	50	46	44	41	38	34	32	30	30	30	30	26
4	74	63	56	50	67	58	52	46	48	43	40	39	36	33	31	28	26	26	26	26	23
5	68	57	49	43	62	52	45	40	43	38	34	35	32	29	28	25	23	23	23	23	20
6	62	51	43	37	57	47	40	35	39	34	30	32	28	25	25	23	21	21	21	21	18
7	58	46	38	33	53	42	36	31	36	30	27	29	25	23	23	21	19	19	19	19	16
8	54	42	34	29	49	39	32	27	32	27	24	27	23	20	21	19	17	17	17	17	14
9	50	38	31	26	46	35	29	24	30	25	21	25	21	18	20	17	15	15	15	15	13
10	47	35	28	23	43	32	26	22	27	23	19	23	19	17	18	16	14	14	14	14	12

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1821	1821	1821
5°	1824	1792	1803
10°	1806	1757	1744
15°	1781	1699	1654
20°	1748	1618	1542
25°	1714	1529	1435
30°	1669	1437	1298
35°	1625	1338	1179
40°	1580	1235	1041
45°	1527	1122	917
50°	1473	1007	795
55°	1417	885	679
60°	1351	757	558
65°	1276	627	503
70°	1185	505	455
75°	1070	445	414
80°	904	374	358
85°	631	249	269

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°
 Vertical Angle: 90°
 Luminance: 1913 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	214.8	1.9
10°-20°	589.6	5.1
20°-30°	827.8	7.1
30°-40°	902.4	7.8
40°-50°	829.4	7.2
50°-60°	651.3	5.6
60°-70°	424.0	3.7
70°-80°	218.2	1.9
80°-90°	62.7	0.5
90°-100°	151.9	1.3
100°-110°	482.7	4.2
110°-120°	826.1	7.1
120°-130°	1086.4	9.4
130°-140°	1219.5	10.5
140°-150°	1195.8	10.3
150°-160°	1003.1	8.7
160°-170°	665.3	5.7
170°-180°	232.5	2.0
0°-30°	1632.2	14.1
0°-40°	2534.6	21.9
0°-60°	4015.3	34.7
0°-90°	4720.2	40.7
90°-120°	1460.7	12.6
90°-150°	4962.4	42.8
90°-180°	6863.0	59.2
0°-180°	11583.6	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2292	2292	2292	2292	2292	
5°	2292	2281	2254	2273	2267	217
15°	2180	2157	2086	2047	2026	614
25°	1979	1912	1775	1690	1659	910
35°	1705	1599	1417	1286	1240	1067
45°	1394	1255	1037	890	840	1076
55°	1060	898	674	550	510	947
65°	716	548	361	290	284	709
75°	382	236	166	151	149	404
85°	89	46	39	39	39	102
90°	2	27	72	68	70	11
95°	108	129	132	132	129	120
105°	446	452	456	460	460	470
115°	829	841	837	835	829	820
125°	1206	1224	1218	1212	1210	1077
135°	1560	1582	1587	1585	1579	1205
145°	1893	1908	1920	1922	1914	1183
155°	2165	2171	2178	2188	2181	997
165°	2355	2353	2353	2368	2357	664
175°	2451	2445	2440	2455	2443	233
180°	2455	2455	2455	2455	2455	



TEST NUMBER: P912776

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2291.7	2291.7	2291.7	2291.7	2291.7
2.5°	2302.1	2291.7	2268.9	2289.8	2285.5
5°	2291.7	2281.4	2254.4	2273.0	2266.9
7.5°	2273.0	2260.7	2231.6	2239.8	2229.4
10°	2248.2	2233.6	2192.3	2185.9	2173.5
12.5°	2217.1	2198.5	2142.4	2130.1	2107.1
15°	2179.7	2156.9	2086.5	2047.1	2026.4
17.5°	2136.2	2103.0	2015.8	1970.2	1937.0
20°	2086.5	2044.9	1941.2	1889.5	1843.7
22.5°	2032.6	1984.8	1864.5	1794.0	1763.0
25°	1978.6	1912.1	1775.3	1690.3	1659.1
27.5°	1914.4	1843.7	1692.3	1594.9	1547.2
30°	1845.9	1767.0	1601.1	1495.4	1439.3
32.5°	1779.5	1684.0	1514.1	1389.6	1337.7
35°	1704.9	1599.1	1416.6	1285.9	1240.2
37.5°	1632.2	1518.1	1325.4	1182.1	1130.4
40°	1555.5	1431.2	1229.8	1082.6	1028.7
42.5°	1476.7	1344.0	1134.5	980.9	929.2
45°	1393.8	1254.7	1037.0	889.6	839.8
47.5°	1314.9	1167.8	943.8	796.4	750.8
50°	1227.9	1080.6	852.5	709.2	665.8
52.5°	1142.7	987.1	765.3	628.5	589.1
55°	1059.8	898.0	673.9	549.6	510.3
57.5°	974.8	808.9	593.2	477.1	443.8
60°	887.6	721.7	508.0	402.5	369.2
62.5°	802.7	636.8	435.5	336.0	319.5
65°	715.5	547.5	360.9	290.4	284.1
67.5°	632.6	464.6	290.4	255.1	248.9
70°	545.5	383.7	240.5	219.8	211.5
72.5°	462.6	309.0	201.2	184.6	180.4
75°	381.6	236.3	165.9	151.4	149.4
77.5°	300.8	167.9	130.8	122.3	118.1
80°	226.0	120.3	99.5	91.3	91.3
82.5°	157.6	81.0	68.4	64.2	64.2
85°	89.2	45.6	39.4	39.4	39.4
87.5°	33.3	16.5	16.5	14.5	14.5
90°	2.2	26.6	72.5	68.1	70.3
92.5°	45.9	62.2	64.4	66.7	66.7
95°	108.0	128.8	132.5	132.5	128.8
97.5°	179.9	199.1	207.3	207.3	207.3
100°	262.7	279.8	285.7	285.7	283.5
102.5°	350.1	362.6	370.8	373.1	370.8
105°	445.6	451.5	455.9	459.7	459.7
107.5°	540.3	549.2	549.2	550.7	540.3
110°	632.1	644.0	644.0	644.0	638.0



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	731.3	743.9	741.7	735.7	731.3
115°	829.0	840.8	837.2	835.0	829.0
117.5°	925.9	942.2	931.9	925.9	920.0
120°	1023.6	1039.9	1023.6	1023.6	1017.0
122.5°	1112.4	1133.2	1122.9	1116.9	1112.4
125°	1205.7	1224.2	1218.3	1211.7	1209.5
127.5°	1296.8	1319.7	1311.6	1302.7	1296.8
130°	1381.9	1408.5	1404.9	1400.4	1392.2
132.5°	1477.4	1498.1	1499.6	1489.3	1483.3
135°	1559.6	1582.4	1587.0	1584.7	1578.8
137.5°	1651.3	1669.8	1673.5	1672.0	1663.2
140°	1732.0	1750.6	1760.9	1760.9	1752.8
142.5°	1814.9	1833.4	1839.3	1841.5	1833.4
145°	1893.4	1908.1	1920.0	1922.2	1914.1
147.5°	1963.7	1982.2	1991.1	1994.8	1986.7
150°	2036.2	2048.8	2057.0	2063.6	2057.0
152.5°	2100.6	2113.2	2123.5	2131.7	2123.5
155°	2165.0	2170.9	2177.6	2187.9	2181.3
157.5°	2220.6	2225.0	2228.6	2243.5	2233.1
160°	2270.1	2274.6	2276.8	2289.3	2280.4
162.5°	2316.0	2316.0	2318.3	2332.2	2321.9
165°	2355.2	2353.0	2353.0	2367.8	2357.4
167.5°	2390.8	2384.1	2384.1	2398.9	2388.6
170°	2417.4	2411.5	2409.3	2424.1	2411.5
172.5°	2435.9	2429.9	2427.7	2442.6	2429.9
175°	2450.7	2444.8	2440.4	2455.1	2442.6
177.5°	2458.9	2452.9	2448.5	2461.1	2448.5
180°	2455.1	2455.1	2455.1	2455.1	2455.1



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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	8.29	9.05	9.33	10.09	11.49	4.27	5.03	5.30	6.07	7.47
	3H	9.96	10.64	11.01	11.69	13.11	5.45	6.13	6.50	7.18	8.60
	4H	10.57	11.21	11.63	12.26	13.69	5.90	6.54	6.96	7.59	9.02
	6H	10.99	11.58	12.06	12.63	14.07	6.22	6.81	7.29	7.86	9.30
	8H	11.11	11.67	12.19	12.75	14.18	6.31	6.87	7.38	7.94	9.37
	12H	11.17	11.71	12.25	12.77	14.23	6.35	6.88	7.43	7.95	9.40
4H	2H	8.30	8.95	9.37	10.00	11.42	4.85	5.50	5.92	6.55	7.97
	3H	10.12	10.66	11.20	11.74	13.18	6.20	6.73	7.27	7.81	9.25
	4H	10.81	11.30	11.89	12.37	13.84	6.74	7.23	7.82	8.30	9.76
	6H	11.33	11.75	12.41	12.84	14.29	7.16	7.58	8.25	8.67	10.13
	8H	11.50	11.89	12.59	12.98	14.45	7.29	7.68	8.38	8.77	10.24
	12H	11.59	11.95	12.70	13.04	14.52	7.35	7.70	8.46	8.80	10.28
8H	4H	10.78	11.17	11.87	12.25	13.73	7.02	7.41	8.11	8.50	9.97
	6H	11.34	11.66	12.45	12.79	14.26	7.53	7.86	8.65	8.99	10.45
	8H	11.56	11.84	12.67	12.95	14.44	7.73	8.01	8.84	9.12	10.61
	12H	11.69	11.94	12.81	13.05	14.57	7.84	8.09	8.96	9.20	10.72
12H	4H	10.73	11.08	11.83	12.18	13.65	7.02	7.37	8.13	8.47	9.95
	6H	11.32	11.60	12.43	12.71	14.20	7.58	7.87	8.70	8.98	10.46
	8H	11.53	11.78	12.65	12.89	14.41	7.79	8.04	8.91	9.15	10.67