

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: P912889

Luminaire Tested: DFN2DIP-TR4F0-080D080US850-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P912889
REPORT IS A COMBINATION OF REPORTS P901970 AND P898849
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-TR4F0-080D080US850-RLLONL
Description: 4 foot, Triangle Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

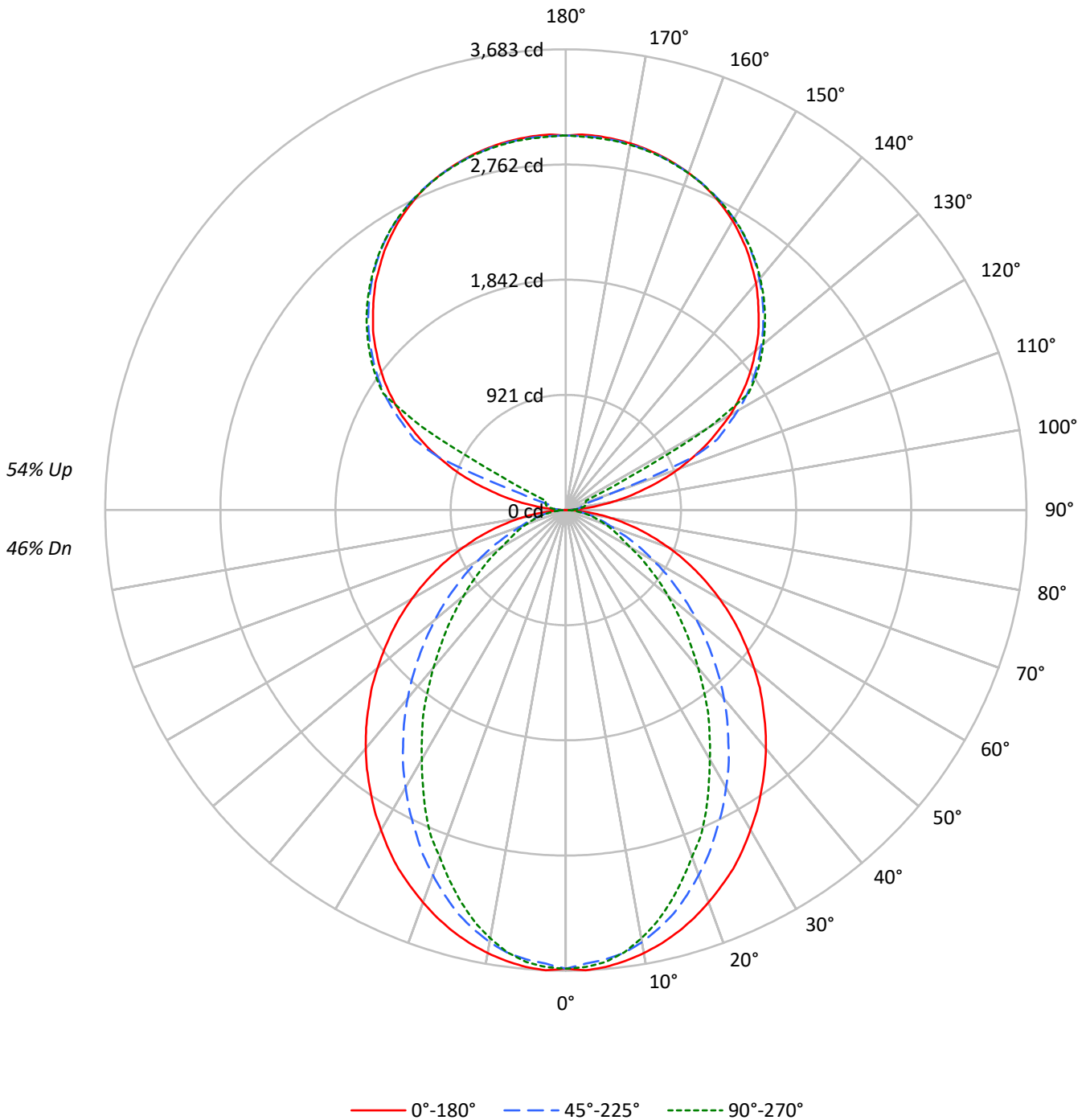
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 16324.5 lumens
Efficiency: N/A
Efficacy: 121.6 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): 134.2
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9957
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			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	106	106	106	106	98	98	98	98	81	81	81	66	66	66	53	53	53	46			46
1	97	93	90	86	89	86	83	80	72	70	68	59	58	56	47	46	45	40			40
2	89	82	76	71	82	76	70	66	63	60	57	52	50	48	42	40	39	34			34
3	81	72	65	60	75	67	61	56	56	52	48	47	43	41	38	35	34	29			29
4	75	64	57	51	68	60	53	48	50	45	41	42	38	35	34	31	29	26			26
5	69	58	50	44	63	53	46	41	45	40	36	38	34	31	31	28	26	23			23
6	63	52	44	38	58	48	41	36	41	36	32	34	30	27	28	25	23	20			20
7	59	47	39	34	54	44	37	32	37	32	28	31	27	24	26	23	21	18			18
8	55	43	35	30	50	40	33	28	34	29	25	29	25	22	24	21	19	16			16
9	51	39	32	27	47	36	30	25	31	26	22	27	23	20	22	19	17	15			15
10	48	36	29	24	44	33	27	23	29	24	20	25	21	18	20	18	15	13			13

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2913	2913	2913
5°	2918	2867	2885
10°	2889	2811	2791
15°	2849	2718	2646
20°	2797	2590	2468
25°	2743	2446	2296
30°	2670	2299	2077
35°	2599	2140	1886
40°	2527	1977	1666
45°	2444	1795	1467
50°	2357	1612	1272
55°	2267	1416	1086
60°	2162	1211	894
65°	2041	1002	804
70°	1896	808	728
75°	1712	713	662
80°	1446	597	573
85°	1008	399	431

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 2444 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	343.7	2.1
10°-20°	943.4	5.8
20°-30°	1324.5	8.1
30°-40°	1443.8	8.8
40°-50°	1327.0	8.1
50°-60°	1042.1	6.4
60°-70°	678.3	4.2
70°-80°	349.2	2.1
80°-90°	94.4	0.6
90°-100°	98.7	0.6
100°-110°	368.1	2.3
110°-120°	976.2	6.0
120°-130°	1619.0	9.9
130°-140°	1719.8	10.5
140°-150°	1598.3	9.8
150°-160°	1285.0	7.9
160°-170°	828.0	5.1
170°-180°	285.0	1.7
0°-30°	2611.6	16.0
0°-40°	4055.4	24.8
0°-60°	6424.5	39.4
0°-90°	7546.5	46.2
90°-120°	1442.9	8.8
90°-150°	6380.0	39.1
90°-180°	8778.0	53.8
0°-180°	16324.5	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°	2	26	43	54	58	15
95°	141	69	84	96	93	167
105°	659	724	132	156	165	704
115°	1246	1283	1337	334	178	1226
125°	1761	1790	1831	1846	1852	1571
135°	2180	2214	2234	2256	2251	1684
145°	2528	2526	2563	2578	2567	1581
155°	2784	2765	2791	2804	2786	1283
165°	2934	2921	2927	2942	2927	829
175°	3001	2985	2990	3005	2983	286
180°	2994	2994	2994	2994	2994	



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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°	2.1	26.0	43.3	54.2	58.4
92.5°	54.2	45.6	52.0	56.3	58.4
95°	140.7	69.2	84.4	95.5	93.2
97.5°	253.4	75.9	110.3	117.1	119.1
100°	383.6	86.7	123.5	140.7	145.1
102.5°	526.4	522.2	127.9	151.5	158.3
105°	658.6	723.7	132.2	155.9	164.7
107.5°	812.5	866.5	136.6	160.3	169.0
110°	960.0	1005.2	379.3	162.6	171.1



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1098.6	1137.4	1100.7	166.7	173.4
115°	1245.7	1282.6	1336.8	333.7	177.8
117.5°	1373.6	1416.9	1453.9	1143.8	576.3
120°	1516.7	1549.1	1588.2	1614.1	1321.6
122.5°	1637.8	1672.6	1716.1	1728.9	1731.3
125°	1761.3	1789.6	1830.7	1845.9	1852.4
127.5°	1874.0	1904.4	1937.1	1958.6	1960.7
130°	1980.2	2014.9	2038.7	2062.6	2060.5
132.5°	2088.6	2116.9	2140.6	2160.1	2158.0
135°	2179.6	2214.3	2233.6	2255.6	2251.2
137.5°	2274.9	2300.8	2322.7	2344.3	2337.9
140°	2367.9	2385.5	2409.2	2428.7	2417.8
142.5°	2446.2	2461.3	2489.4	2506.7	2495.8
145°	2528.5	2526.2	2563.0	2578.2	2567.3
147.5°	2599.8	2593.4	2630.1	2641.0	2632.4
150°	2669.3	2654.1	2688.8	2701.6	2690.9
152.5°	2727.7	2710.4	2742.8	2756.0	2740.8
155°	2784.0	2764.7	2790.7	2803.6	2786.4
157.5°	2829.5	2812.3	2831.8	2847.0	2829.5
160°	2868.7	2855.6	2868.7	2881.5	2866.3
162.5°	2903.1	2890.3	2901.0	2916.2	2896.7
165°	2933.5	2920.7	2927.1	2942.2	2927.1
167.5°	2957.4	2944.3	2950.9	2966.1	2946.6
170°	2977.0	2963.8	2968.2	2983.4	2963.8
172.5°	2989.9	2977.0	2981.3	2996.5	2977.0
175°	3000.6	2985.4	2989.9	3004.9	2983.4
177.5°	3004.9	2989.9	2992.1	3007.3	2987.8
180°	2994.2	2994.2	2994.2	2994.2	2994.2



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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	10.49	11.29	11.49	12.30	13.62	6.47	7.27	7.46	8.27	9.60
	3H	12.17	12.88	13.17	13.90	15.24	7.65	8.37	8.66	9.38	10.73
	4H	12.78	13.45	13.79	14.47	15.82	8.10	8.78	9.12	9.80	11.15
	6H	13.20	13.82	14.22	14.84	16.21	8.42	9.05	9.45	10.07	11.43
	8H	13.32	13.91	14.36	14.95	16.31	8.51	9.11	9.55	10.14	11.51
	12H	13.38	13.94	14.42	14.97	16.36	8.56	9.12	9.60	10.15	11.54
4H	2H	10.51	11.19	11.53	12.20	13.56	7.06	7.74	8.08	8.75	10.11
	3H	12.33	12.90	13.37	13.94	15.31	8.41	8.97	9.44	10.01	11.38
	4H	13.03	13.54	14.07	14.58	15.97	8.95	9.47	9.99	10.50	11.90
	6H	13.54	13.98	14.59	15.04	16.43	9.37	9.81	10.42	10.87	12.26
	8H	13.71	14.13	14.76	15.18	16.58	9.50	9.91	10.55	10.97	12.37
	12H	13.81	14.18	14.88	15.24	16.65	9.57	9.94	10.63	11.00	12.41
8H	4H	12.99	13.40	14.04	14.45	15.86	9.23	9.64	10.28	10.70	12.10
	6H	13.56	13.90	14.63	14.99	16.39	9.75	10.09	10.82	11.18	12.58
	8H	13.77	14.07	14.85	15.15	16.57	9.94	10.24	11.02	11.32	12.74
	12H	13.91	14.17	14.99	15.24	16.70	10.06	10.32	11.15	11.40	12.86
12H	4H	12.94	13.31	14.01	14.38	15.79	9.24	9.61	10.30	10.67	12.08
	6H	13.53	13.83	14.61	14.91	16.33	9.80	10.10	10.88	11.18	12.59
	8H	13.75	14.01	14.84	15.09	16.55	10.01	10.27	11.09	11.34	12.80