

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: P907469

Luminaire Tested: DFN2DIP-TR4F0-090D080US835-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P907469
REPORT IS A COMBINATION OF REPORTS P901972 AND P898849
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-TR4F0-090D080US835-RLLONL
Description: 4 foot, Triangle Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

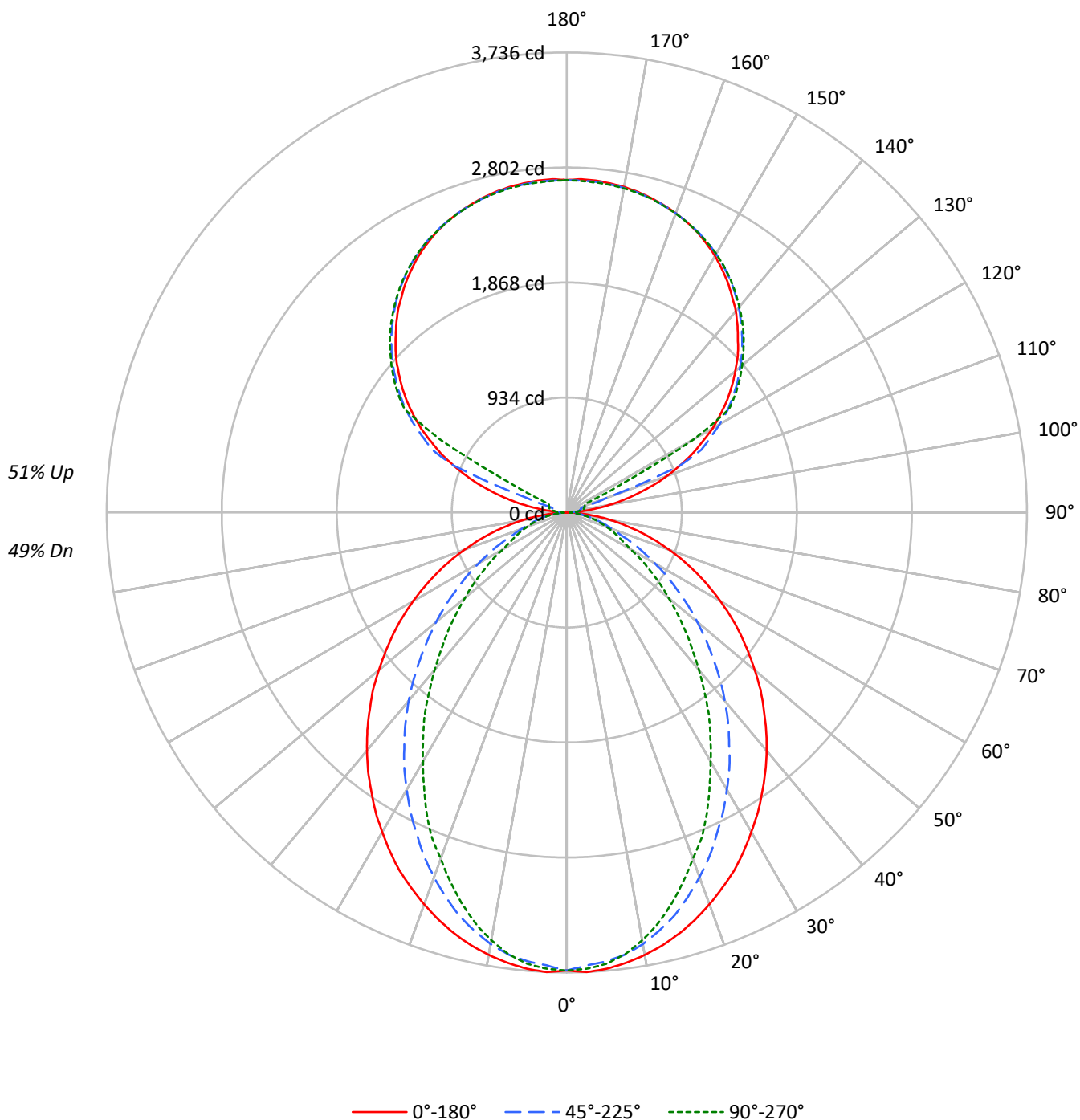
Lumens per Lamp: N/A
Luminaire Lumens: 15570.0 lumens
Efficiency: N/A
Efficacy: 106.2 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.43' x L: 3.96' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 146.6
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.099
Total Harmonic Distortion (THDi): 0.979
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	107	107	107	107	99	99	99	99	83	83	83	69	69	69	55	55	55
1	98	94	90	87	90	87	84	81	73	71	69	61	59	58	50	49	48
2	90	83	77	72	82	76	71	67	65	61	58	54	52	49	44	42	41
3	82	73	66	60	75	68	62	57	58	53	49	48	45	42	40	37	35
4	75	65	57	51	69	60	54	48	51	46	42	43	40	37	36	33	31
5	69	58	50	44	64	54	47	42	46	41	37	39	35	32	32	30	27
6	64	52	44	39	59	49	42	37	42	36	32	36	31	28	30	27	24
7	59	47	40	34	55	44	37	32	38	33	29	32	28	25	27	24	22
8	55	43	36	30	51	40	33	29	35	29	26	30	26	23	25	22	20
9	51	39	32	27	47	37	30	26	32	27	23	28	23	20	23	20	18
10	48	36	29	24	44	34	28	23	30	24	21	25	21	19	22	18	16

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2955	2955	2955
5°	2960	2908	2927
10°	2931	2851	2831
15°	2890	2757	2684
20°	2837	2627	2503
25°	2782	2481	2329
30°	2709	2332	2107
35°	2637	2171	1913
40°	2564	2005	1690
45°	2479	1821	1488
50°	2391	1635	1291
55°	2299	1436	1101
60°	2193	1228	906
65°	2071	1017	816
70°	1923	820	738
75°	1737	723	671
80°	1468	606	582
85°	1023	404	437

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
Vertical Angle: 45°
Luminance: 2479 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	348.6	2.2
10°-20°	957.0	6.1
20°-30°	1343.6	8.6
30°-40°	1464.6	9.4
40°-50°	1346.2	8.6
50°-60°	1057.2	6.8
60°-70°	688.1	4.4
70°-80°	354.2	2.3
80°-90°	95.2	0.6
90°-100°	89.0	0.6
100°-110°	331.9	2.1
110°-120°	880.2	5.7
120°-130°	1459.9	9.4
130°-140°	1550.7	10.0
140°-150°	1441.2	9.3
150°-160°	1158.7	7.4
160°-170°	746.6	4.8
170°-180°	257.0	1.7
0°-30°	2649.2	17.0
0°-40°	4113.9	26.4
0°-60°	6517.2	41.9
0°-90°	7654.8	49.2
90°-120°	1301.1	8.4
90°-150°	5752.9	36.9
90°-180°	7915.0	50.8
0°-180°	15570.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3720	3720	3720	3720	3720	
5°	3720	3703	3659	3689	3679	353
15°	3538	3501	3386	3322	3289	997
25°	3212	3104	2882	2744	2693	1477
35°	2767	2595	2299	2087	2013	1732
45°	2262	2036	1683	1444	1363	1747
55°	1720	1458	1094	892	828	1537
65°	1161	889	586	471	461	1151
75°	619	384	269	246	242	655
85°	145	74	64	64	64	166
90°	2	23	39	49	53	15
95°	127	62	76	86	84	150
105°	594	653	119	141	148	635
115°	1123	1156	1205	301	160	1106
125°	1588	1614	1651	1664	1670	1416
135°	1965	1997	2014	2034	2030	1518
145°	2280	2278	2311	2325	2315	1426
155°	2510	2493	2516	2528	2512	1157
165°	2645	2634	2639	2653	2639	747
175°	2706	2692	2696	2710	2690	258
180°	2700	2700	2700	2700	2700	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	3719.7	3719.7	3719.7	3719.7	3719.7
2.5°	3736.5	3719.7	3682.5	3716.5	3709.7
5°	3719.7	3702.9	3659.0	3689.3	3679.3
7.5°	3689.3	3669.3	3622.2	3635.4	3618.6
10°	3649.0	3625.4	3558.3	3547.9	3527.9
12.5°	3598.6	3568.3	3477.2	3457.2	3420.0
15°	3537.9	3500.8	3386.5	3322.5	3289.0
17.5°	3467.2	3413.3	3271.8	3197.9	3144.0
20°	3386.5	3319.0	3150.7	3066.8	2992.5
22.5°	3299.0	3221.5	3026.1	2911.8	2861.5
25°	3211.5	3103.6	2881.5	2743.6	2692.9
27.5°	3107.2	2992.5	2746.8	2588.6	2511.1
30°	2996.1	2867.9	2598.6	2427.2	2336.1
32.5°	2888.2	2733.2	2457.5	2255.4	2171.1
35°	2767.2	2595.4	2299.3	2087.2	2012.9
37.5°	2649.3	2464.0	2151.1	1918.6	1834.7
40°	2524.7	2322.9	1996.1	1757.2	1669.7
42.5°	2396.8	2181.5	1841.4	1592.2	1508.2
45°	2262.2	2036.5	1683.2	1443.9	1363.2
47.5°	2134.3	1895.4	1531.8	1292.5	1218.6
50°	1992.9	1753.9	1383.6	1151.1	1080.7
52.5°	1854.7	1602.2	1242.2	1020.0	956.1
55°	1720.0	1457.5	1093.9	892.2	828.2
57.5°	1582.2	1312.9	962.9	774.3	720.4
60°	1440.7	1171.4	824.7	653.2	599.3
62.5°	1302.9	1033.6	706.8	545.4	518.6
65°	1161.4	888.6	585.7	471.4	461.1
67.5°	1026.8	753.9	471.4	413.9	403.9
70°	885.4	622.9	390.4	356.8	343.2
72.5°	750.7	501.4	326.4	299.6	292.9
75°	619.3	383.6	269.3	245.7	242.5
77.5°	488.2	272.5	212.1	198.6	191.8
80°	366.8	195.4	161.4	148.2	148.2
82.5°	255.7	131.4	111.1	104.3	104.3
85°	144.6	73.9	63.9	63.9	63.9
87.5°	53.9	26.8	26.8	23.6	23.6
90°	1.9	23.4	39.0	48.9	52.7
92.5°	48.9	41.1	46.9	50.8	52.7
95°	126.9	62.4	76.1	86.1	84.0
97.5°	228.5	68.4	99.5	105.6	107.4
100°	345.9	78.2	111.4	126.9	130.8
102.5°	474.7	470.9	115.3	136.6	142.7
105°	593.9	652.6	119.2	140.6	148.5
107.5°	732.6	781.3	123.2	144.5	152.4
110°	865.6	906.4	342.0	146.6	154.3



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	990.6	1025.6	992.5	150.3	156.4
115°	1123.3	1156.5	1205.4	300.9	160.3
117.5°	1238.6	1277.6	1311.0	1031.4	519.7
120°	1367.6	1396.8	1432.1	1455.5	1191.7
122.5°	1476.8	1508.2	1547.4	1559.0	1561.1
125°	1588.2	1613.7	1650.8	1664.5	1670.3
127.5°	1689.8	1717.2	1746.7	1766.1	1768.0
130°	1785.6	1816.9	1838.3	1859.9	1858.0
132.5°	1883.3	1908.8	1930.2	1947.8	1945.9
135°	1965.4	1996.7	2014.1	2033.9	2029.9
137.5°	2051.3	2074.7	2094.4	2113.9	2108.1
140°	2135.2	2151.0	2172.4	2190.0	2180.2
142.5°	2205.8	2219.4	2244.7	2260.3	2250.5
145°	2280.0	2277.9	2311.1	2324.8	2315.0
147.5°	2344.3	2338.5	2371.6	2381.4	2373.7
150°	2406.9	2393.2	2424.5	2436.1	2426.4
152.5°	2459.6	2444.0	2473.2	2485.1	2471.4
155°	2510.4	2493.0	2516.4	2528.0	2512.5
157.5°	2551.4	2535.9	2553.5	2567.2	2551.4
160°	2586.7	2574.9	2586.7	2598.3	2584.6
162.5°	2617.8	2606.2	2615.9	2629.6	2612.0
165°	2645.2	2633.6	2639.4	2653.0	2639.4
167.5°	2666.7	2654.9	2660.9	2674.6	2657.0
170°	2684.4	2672.5	2676.5	2690.2	2672.5
172.5°	2696.0	2684.4	2688.3	2702.0	2684.4
175°	2705.7	2692.0	2696.0	2709.6	2690.2
177.5°	2709.6	2696.0	2698.0	2711.7	2694.1
180°	2699.9	2699.9	2699.9	2699.9	2699.9

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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	10.83	11.65	11.80	12.63	13.92	6.80	7.62	7.77	8.60	9.89
	3H	12.50	13.24	13.49	14.23	15.54	7.99	8.73	8.97	9.72	11.02
	4H	13.11	13.81	14.11	14.80	16.12	8.44	9.14	9.44	10.13	11.45
	6H	13.53	14.17	14.54	15.17	16.50	8.76	9.40	9.77	10.40	11.73
	8H	13.66	14.27	14.67	15.28	16.61	8.85	9.46	9.87	10.48	11.80
	12H	13.72	14.30	14.74	15.31	16.66	8.90	9.48	9.91	10.48	11.83
4H	2H	10.85	11.54	11.85	12.53	13.85	7.40	8.09	8.40	9.08	10.40
	3H	12.67	13.25	13.68	14.27	15.60	8.75	9.32	9.76	10.35	11.68
	4H	13.37	13.89	14.38	14.91	16.26	9.29	9.82	10.31	10.84	12.19
	6H	13.88	14.33	14.91	15.37	16.72	9.71	10.17	10.74	11.21	12.56
	8H	14.06	14.48	15.08	15.51	16.87	9.84	10.27	10.87	11.30	12.66
	12H	14.15	14.53	15.20	15.58	16.95	9.91	10.29	10.96	11.34	12.71
8H	4H	13.33	13.76	14.36	14.79	16.15	9.57	10.00	10.60	11.03	12.39
	6H	13.90	14.25	14.95	15.32	16.68	10.09	10.44	11.15	11.52	12.88
	8H	14.12	14.42	15.18	15.48	16.86	10.29	10.59	11.35	11.65	13.03
	12H	14.25	14.52	15.32	15.58	17.00	10.40	10.68	11.47	11.73	13.15
12H	4H	13.28	13.67	14.33	14.71	16.08	9.58	9.96	10.63	11.01	12.38
	6H	13.87	14.18	14.94	15.24	16.62	10.14	10.45	11.20	11.51	12.89
	8H	14.09	14.37	15.16	15.42	16.84	10.35	10.62	11.42	11.68	13.10

END OF REPORT