

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: P907448

Luminaire Tested: DFN2DIP-TR4F0-080D120US835-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P907448
REPORT IS A COMBINATION OF REPORTS P900522 AND P897293
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-TR4F0-080D120US835-RLLFLL
Description: 4 foot, Triangle Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

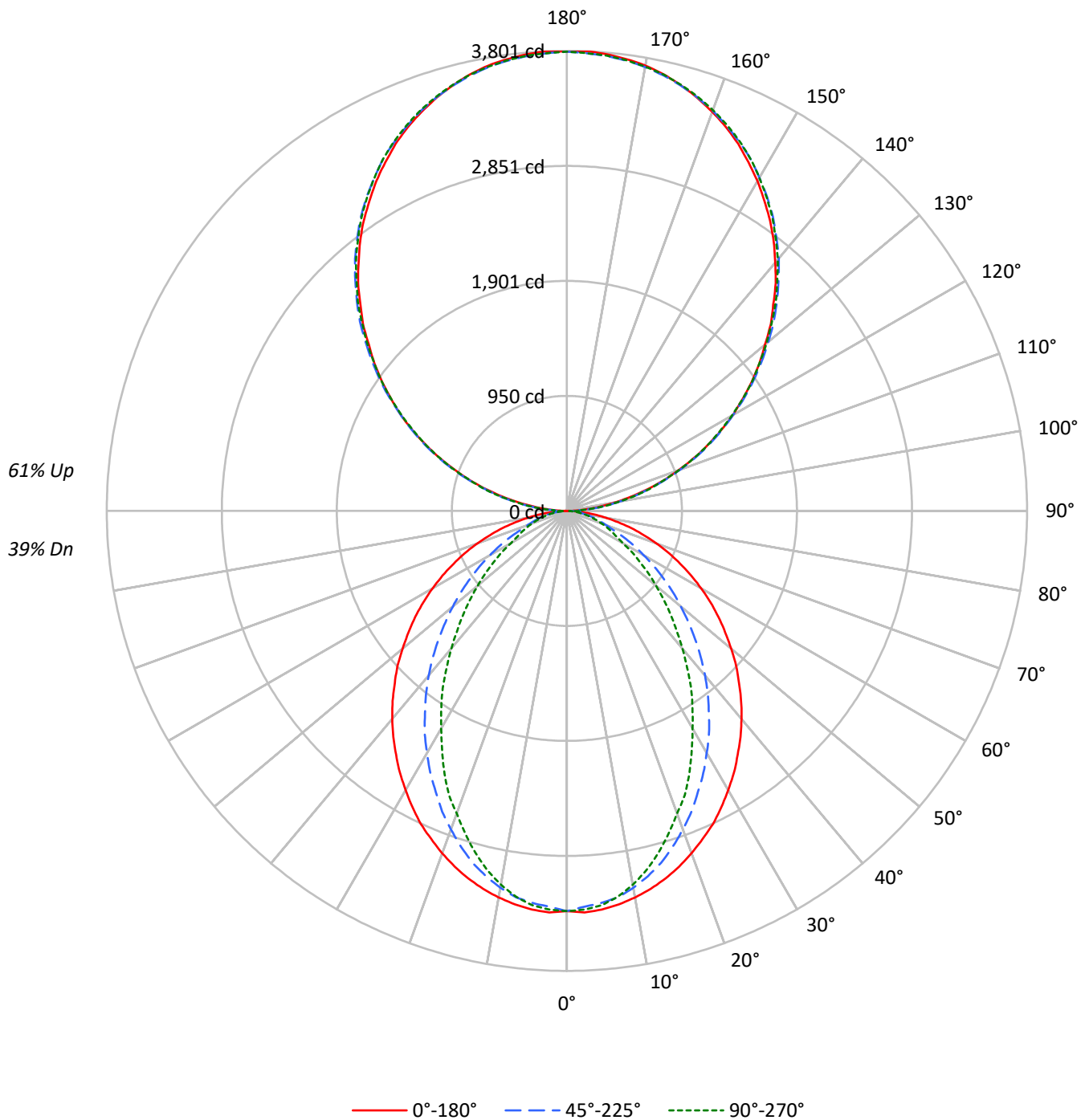
Lumens per Lamp: N/A
Luminaire Lumens: 17420.0 lumens
Efficiency: N/A
Efficacy: 104.7 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.43' x L: 3.96' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 166.4
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
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10
RCR																	
0	105	105	105	105	95	95	95	95	77	77	77	61	61	61	46	46	46
1	96	92	88	85	87	83	80	78	68	66	64	54	53	51	41	40	40
2	87	80	75	70	79	73	68	64	60	57	54	48	46	44	37	35	34
3	80	71	64	58	73	65	59	54	53	49	46	43	40	37	33	31	29
4	73	63	55	50	66	58	51	46	48	43	39	38	35	32	30	27	26
5	67	56	48	43	61	52	45	40	43	38	34	35	31	28	27	24	22
6	62	51	43	37	56	46	40	35	39	33	30	31	28	25	25	22	20
7	57	46	38	33	52	42	35	30	35	30	26	29	25	22	22	20	18
8	53	41	34	29	49	38	32	27	32	27	23	26	22	20	21	18	16
9	50	38	31	26	45	35	29	24	29	24	21	24	20	18	19	17	15
10	46	35	28	23	42	32	26	22	27	22	19	22	19	16	18	15	13

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2627	2627	2627
5°	2631	2585	2601
10°	2605	2534	2517
15°	2569	2450	2386
20°	2522	2335	2225
25°	2473	2206	2070
30°	2408	2073	1873
35°	2344	1930	1700
40°	2279	1782	1502
45°	2203	1619	1323
50°	2125	1453	1147
55°	2044	1277	979
60°	1949	1092	806
65°	1841	904	725
70°	1709	729	656
75°	1544	642	597
80°	1304	539	517
85°	909	359	388

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 2958 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	309.9	1.8
10°-20°	850.7	4.9
20°-30°	1194.3	6.9
30°-40°	1301.9	7.5
40°-50°	1196.6	6.9
50°-60°	939.7	5.4
60°-70°	611.7	3.5
70°-80°	314.9	1.8
80°-90°	91.2	0.5
90°-100°	234.8	1.3
100°-110°	746.2	4.3
110°-120°	1276.9	7.3
120°-130°	1679.4	9.6
130°-140°	1885.0	10.8
140°-150°	1848.5	10.6
150°-160°	1550.6	8.9
160°-170°	1028.3	5.9
170°-180°	359.4	2.1
0°-30°	2354.9	13.5
0°-40°	3656.8	21.0
0°-60°	5793.1	33.3
0°-90°	6810.8	39.1
90°-120°	2257.9	13.0
90°-150°	7670.8	44.0
90°-180°	10609.0	60.9
0°-180°	17420.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3306	3306	3306	3306	3306	
5°	3306	3292	3252	3279	3270	314
15°	3145	3112	3010	2953	2924	886
25°	2855	2759	2561	2439	2394	1313
35°	2460	2307	2044	1855	1789	1540
45°	2011	1810	1496	1284	1212	1553
55°	1529	1296	972	793	736	1366
65°	1032	790	521	419	410	1024
75°	550	341	239	218	216	582
85°	129	66	57	57	57	148
90°	3	41	112	105	109	17
95°	167	199	205	205	199	186
105°	689	698	705	710	710	727
115°	1281	1300	1294	1291	1281	1267
125°	1864	1892	1883	1873	1870	1666
135°	2411	2446	2453	2450	2440	1863
145°	2927	2950	2968	2971	2959	1829
155°	3347	3356	3366	3382	3372	1540
165°	3641	3637	3637	3660	3644	1027
175°	3788	3779	3772	3795	3776	360
180°	3795	3795	3795	3795	3795	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	3306.4	3306.4	3306.4	3306.4	3306.4
2.5°	3321.3	3306.4	3273.4	3303.5	3297.5
5°	3306.4	3291.5	3252.4	3279.4	3270.5
7.5°	3279.4	3261.6	3219.7	3231.5	3216.5
10°	3243.5	3222.6	3162.9	3153.7	3135.9
12.5°	3198.8	3171.8	3090.8	3073.0	3040.0
15°	3144.8	3111.8	3010.2	2953.4	2923.5
17.5°	3081.9	3034.0	2908.3	2842.6	2794.6
20°	3010.2	2950.2	2800.7	2726.1	2660.0
22.5°	2932.4	2863.5	2689.9	2588.3	2543.5
25°	2854.6	2758.8	2561.3	2438.8	2393.7
27.5°	2761.9	2660.0	2441.6	2301.0	2232.1
30°	2663.2	2549.2	2309.9	2157.5	2076.5
32.5°	2567.3	2429.6	2184.5	2004.8	1929.9
35°	2459.7	2307.0	2043.8	1855.3	1789.2
37.5°	2354.9	2190.2	1912.1	1705.4	1630.8
40°	2244.2	2064.8	1774.3	1561.9	1484.1
42.5°	2130.5	1939.1	1636.8	1415.3	1340.6
45°	2010.8	1810.2	1496.2	1283.5	1211.8
47.5°	1897.2	1684.8	1361.6	1148.9	1083.2
50°	1771.4	1559.1	1229.9	1023.2	960.6
52.5°	1648.6	1424.1	1104.1	906.7	849.9
55°	1528.9	1295.6	972.4	793.0	736.2
57.5°	1406.4	1167.0	855.9	688.3	640.3
60°	1280.6	1041.3	733.0	580.6	532.7
62.5°	1158.1	918.7	628.3	484.8	461.0
65°	1032.4	789.8	520.6	419.1	409.8
67.5°	912.7	670.2	419.1	367.9	359.1
70°	787.0	553.7	347.0	317.1	305.1
72.5°	667.3	445.7	290.2	266.4	260.3
75°	550.5	341.0	239.4	218.4	215.6
77.5°	434.0	242.2	188.6	176.5	170.5
80°	326.0	173.7	143.5	131.7	131.7
82.5°	227.3	116.8	98.7	92.7	92.7
85°	128.6	65.7	56.8	56.8	56.8
87.5°	47.9	23.8	23.8	21.0	21.0
90°	3.4	41.2	112.1	105.3	108.7
92.5°	70.9	96.1	99.5	103.0	103.0
95°	167.0	199.1	204.8	204.8	199.1
97.5°	278.0	307.8	320.4	320.4	320.4
100°	406.2	432.5	441.6	441.6	438.2
102.5°	541.2	560.6	573.2	576.7	573.2
105°	688.8	697.9	704.8	710.5	710.5
107.5°	835.2	849.0	849.0	851.2	835.2
110°	977.1	995.4	995.4	995.4	986.3

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1130.4	1149.9	1146.4	1137.3	1130.4
115°	1281.4	1299.8	1294.0	1290.6	1281.4
117.5°	1431.3	1456.5	1440.5	1431.3	1422.2
120°	1582.4	1607.5	1582.4	1582.4	1572.1
122.5°	1719.7	1751.7	1735.7	1726.5	1719.7
125°	1863.8	1892.4	1883.3	1873.0	1869.5
127.5°	2004.6	2040.0	2027.4	2013.7	2004.6
130°	2136.1	2177.3	2171.6	2164.7	2152.1
132.5°	2283.7	2315.8	2318.0	2302.0	2292.9
135°	2410.7	2446.2	2453.1	2449.6	2440.5
137.5°	2552.6	2581.2	2586.9	2584.6	2570.9
140°	2677.3	2705.9	2721.9	2721.9	2709.3
142.5°	2805.5	2834.1	2843.2	2846.6	2834.1
145°	2926.7	2949.6	2967.9	2971.4	2958.8
147.5°	3035.4	3064.0	3077.8	3083.5	3070.9
150°	3147.6	3167.0	3179.6	3189.9	3179.6
152.5°	3247.1	3266.5	3282.6	3295.2	3282.6
155°	3346.6	3355.8	3366.1	3382.1	3371.8
157.5°	3432.5	3439.3	3445.0	3467.9	3451.9
160°	3509.1	3516.0	3519.4	3538.9	3525.1
162.5°	3580.0	3580.0	3583.5	3605.2	3589.2
165°	3640.7	3637.3	3637.3	3660.1	3644.1
167.5°	3695.6	3685.3	3685.3	3708.2	3692.2
170°	3736.8	3727.6	3724.2	3747.1	3727.6
172.5°	3765.4	3756.2	3752.8	3775.7	3756.2
175°	3788.3	3779.1	3772.3	3795.1	3775.7
177.5°	3800.9	3791.7	3784.8	3804.3	3784.8
180°	3795.1	3795.1	3795.1	3795.1	3795.1

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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	9.38	10.13	10.44	11.18	12.61	5.36	6.11	6.41	7.16	8.58
	3H	11.06	11.72	12.12	12.79	14.23	6.54	7.21	7.60	8.27	9.71
	4H	11.66	12.29	12.73	13.36	14.80	6.99	7.62	8.06	8.68	10.13
	6H	12.08	12.66	13.16	13.73	15.18	7.31	7.89	8.39	8.96	10.41
	8H	12.20	12.76	13.29	13.84	15.29	7.39	7.95	8.48	9.03	10.48
	12H	12.26	12.79	13.35	13.86	15.34	7.44	7.96	8.53	9.04	10.51
4H	2H	9.39	10.03	10.47	11.09	12.54	5.94	6.58	7.02	7.64	9.09
	3H	11.21	11.74	12.30	12.83	14.29	7.29	7.81	8.37	8.90	10.36
	4H	11.90	12.39	12.99	13.47	14.95	7.83	8.32	8.92	9.40	10.88
	6H	12.41	12.83	13.51	13.93	15.41	8.25	8.66	9.35	9.77	11.24
	8H	12.59	12.97	13.69	14.07	15.56	8.38	8.76	9.47	9.86	11.35
	12H	12.68	13.03	13.79	14.14	15.63	8.44	8.79	9.55	9.90	11.39
8H	4H	11.86	12.25	12.96	13.35	14.84	8.11	8.49	9.21	9.59	11.08
	6H	12.43	12.75	13.55	13.88	15.37	8.62	8.94	9.74	10.08	11.57
	8H	12.64	12.92	13.77	14.04	15.55	8.81	9.09	9.94	10.21	11.72
	12H	12.78	13.02	13.91	14.14	15.68	8.93	9.18	10.06	10.29	11.84
12H	4H	11.81	12.16	12.93	13.27	14.77	8.11	8.46	9.22	9.57	11.06
	6H	12.40	12.68	13.53	13.80	15.31	8.67	8.95	9.80	10.07	11.58
	8H	12.62	12.87	13.75	13.98	15.52	8.88	9.12	10.01	10.24	11.78

END OF REPORT