

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: P906759

Luminaire Tested: DFN2DIP-SQ4F0-080D110US835-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P906759
REPORT IS A COMBINATION OF REPORTS P901674 AND P898471
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ4F0-080D110US835-RLLONL
Description: 4 foot, Square Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

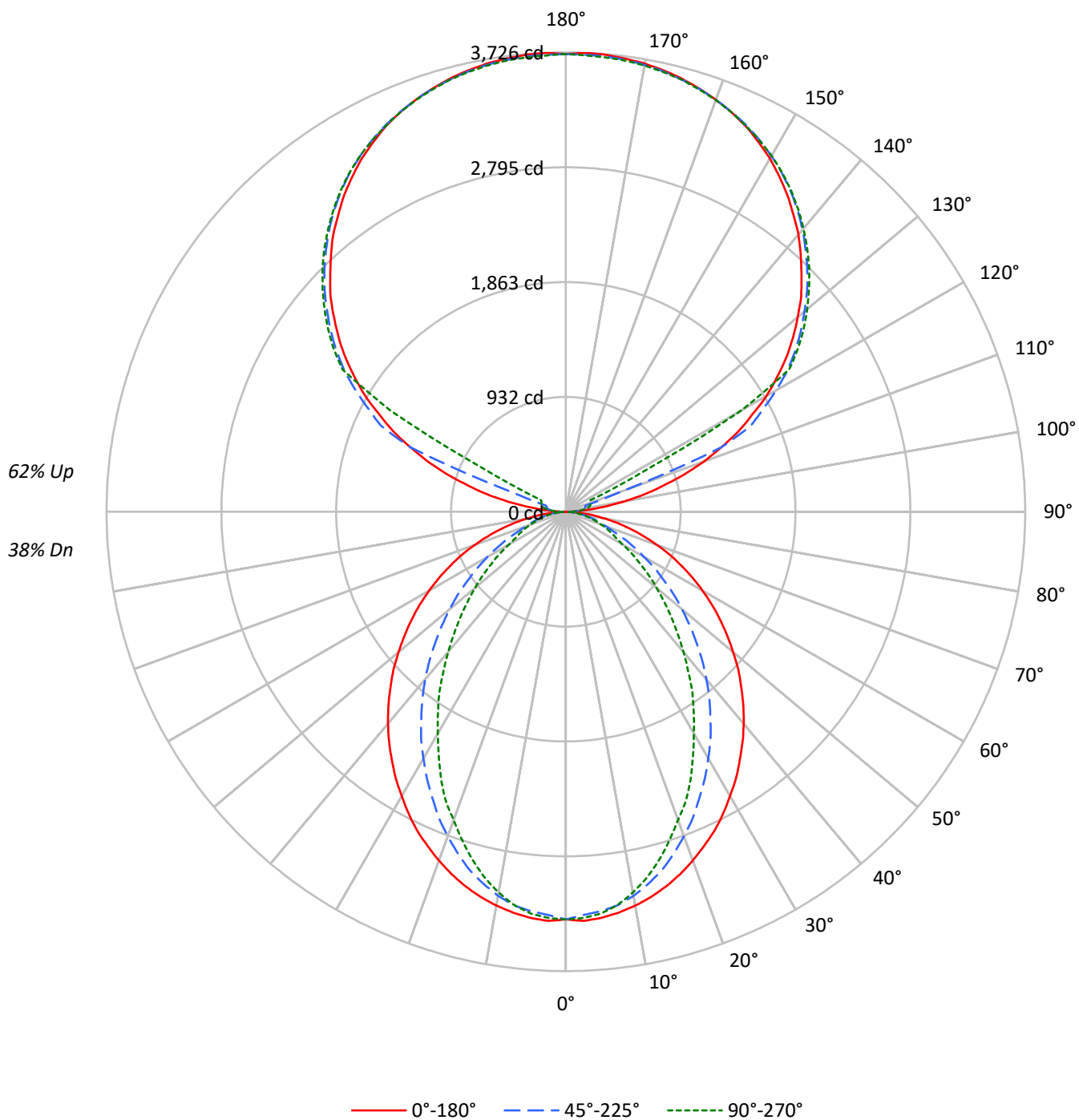
Lumens per Lamp: N/A
Luminaire Lumens: 17690.0 lumens
Efficiency: N/A
Efficacy: 114.7 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.92' x L: 3.92' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 154.2
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9954
Total Harmonic Distortion (THDi): 0.076
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	50	30	10
RCR																				
0	104	104	104	104	95	95	95	95	77	77	77	61	61	61	46	46	46	38		
1	96	91	88	84	87	83	80	77	68	66	64	54	52	51	41	40	39	33		
2	87	80	74	70	79	73	68	64	60	56	53	48	45	43	36	35	34	28		
3	80	71	64	58	72	65	59	54	53	49	45	42	39	37	33	31	29	24		
4	73	63	55	50	66	58	51	46	47	43	39	38	35	32	29	27	25	21		
5	67	56	48	43	61	51	45	40	43	38	34	34	31	28	27	24	22	19		
6	62	50	43	37	56	46	39	35	38	33	30	31	27	25	24	22	20	17		
7	57	46	38	33	52	42	35	30	35	30	26	28	25	22	22	20	18	15		
8	53	41	34	29	48	38	32	27	32	27	23	26	22	20	20	18	16	13		
9	50	38	31	26	45	35	28	24	29	24	21	24	20	18	19	16	14	12		
10	46	35	28	23	42	32	26	22	27	22	19	22	19	16	18	15	13	11		

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2320	2320	2320
5°	2324	2284	2298
10°	2301	2239	2224
15°	2269	2166	2109
20°	2227	2064	1968
25°	2184	1950	1831
30°	2126	1833	1658
35°	2070	1708	1506
40°	2013	1577	1331
45°	1946	1433	1173
50°	1877	1287	1018
55°	1805	1131	869
60°	1721	968	716
65°	1625	802	645
70°	1509	648	585
75°	1363	572	534
80°	1151	481	465
85°	801	324	354

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 1990 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	309.9	1.8
10°-20°	850.7	4.8
20°-30°	1194.3	6.8
30°-40°	1301.9	7.4
40°-50°	1196.6	6.8
50°-60°	939.7	5.3
60°-70°	611.7	3.5
70°-80°	314.9	1.8
80°-90°	86.9	0.5
90°-100°	122.4	0.7
100°-110°	456.3	2.6
110°-120°	1210.3	6.8
120°-130°	2007.3	11.3
130°-140°	2132.2	12.1
140°-150°	1981.7	11.2
150°-160°	1593.2	9.0
160°-170°	1026.6	5.8
170°-180°	353.3	2.0
0°-30°	2354.9	13.3
0°-40°	3656.8	20.7
0°-60°	5793.1	32.7
0°-90°	6806.5	38.5
90°-120°	1789.0	10.1
90°-150°	7910.3	44.7
90°-180°	10883.0	61.5
0°-180°	17690.0	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	32	54	67	72	16
95°	174	86	105	118	116	207
105°	817	897	164	193	204	873
115°	1544	1590	1658	414	220	1521
125°	2184	2219	2270	2289	2297	1948
135°	2702	2746	2769	2797	2791	2088
145°	3135	3132	3178	3197	3183	1961
155°	3452	3428	3460	3476	3455	1591
165°	3637	3621	3629	3648	3629	1028
175°	3720	3702	3707	3726	3699	354
180°	3712	3712	3712	3712	3712	

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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°	2.6	32.2	53.6	67.3	72.4
92.5°	67.3	56.5	64.4	69.9	72.4
95°	174.5	85.8	104.6	118.3	115.5
97.5°	314.2	94.1	136.8	145.1	147.7
100°	475.6	107.5	153.1	174.5	179.9
102.5°	652.6	647.5	158.5	187.9	196.2
105°	816.6	897.3	164.0	193.3	204.2
107.5°	1007.4	1074.3	169.4	198.7	209.6
110°	1190.1	1246.3	470.2	201.6	212.1

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1362.1	1410.2	1364.6	206.7	215.0
115°	1544.5	1590.1	1657.5	413.7	220.4
117.5°	1703.1	1756.7	1802.6	1418.2	714.5
120°	1880.4	1920.6	1969.1	2001.3	1638.6
122.5°	2030.7	2073.7	2127.6	2143.6	2146.5
125°	2183.8	2218.9	2269.9	2288.7	2296.7
127.5°	2323.5	2361.1	2401.6	2428.4	2431.0
130°	2455.2	2498.3	2527.6	2557.3	2554.8
132.5°	2589.5	2624.6	2654.0	2678.2	2675.7
135°	2702.5	2745.5	2769.4	2796.6	2791.1
137.5°	2820.5	2852.7	2879.8	2906.6	2898.6
140°	2936.0	2957.6	2987.0	3011.2	2997.8
142.5°	3032.9	3051.7	3086.5	3107.9	3094.5
145°	3135.0	3132.1	3177.7	3196.6	3183.2
147.5°	3223.4	3215.4	3261.0	3274.4	3263.9
150°	3309.5	3290.7	3333.7	3349.7	3336.3
152.5°	3381.9	3360.5	3400.7	3417.0	3398.2
155°	3451.8	3427.8	3460.0	3476.0	3454.6
157.5°	3508.2	3486.8	3511.1	3529.9	3508.2
160°	3556.7	3540.4	3556.7	3572.6	3553.8
162.5°	3599.4	3583.5	3596.9	3615.7	3591.5
165°	3637.1	3621.1	3629.1	3647.9	3629.1
167.5°	3666.7	3650.5	3658.8	3677.6	3653.4
170°	3691.0	3674.7	3680.1	3699.0	3674.7
172.5°	3706.9	3691.0	3696.4	3715.2	3691.0
175°	3720.3	3701.5	3706.9	3725.8	3699.0
177.5°	3725.8	3706.9	3709.8	3728.6	3704.4
180°	3712.4	3712.4	3712.4	3712.4	3712.4

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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	8.90	9.65	9.96	10.70	12.13	4.86	5.61	5.92	6.66	8.09
	3H	10.58	11.24	11.64	12.31	13.76	6.05	6.71	7.11	7.78	9.22
	4H	11.19	11.82	12.26	12.88	14.34	6.49	7.12	7.57	8.19	9.64
	6H	11.61	12.19	12.69	13.26	14.72	6.81	7.39	7.90	8.46	9.93
	8H	11.73	12.28	12.82	13.37	14.83	6.90	7.45	7.99	8.54	10.00
	12H	11.79	12.32	12.89	13.40	14.88	6.94	7.46	8.03	8.54	10.03
4H	2H	8.91	9.54	9.99	10.61	12.06	5.45	6.08	6.53	7.15	8.60
	3H	10.74	11.26	11.83	12.36	13.82	6.79	7.32	7.88	8.41	9.88
	4H	11.43	11.91	12.52	12.99	14.48	7.34	7.82	8.44	8.90	10.39
	6H	11.94	12.36	13.05	13.46	14.94	7.76	8.17	8.86	9.27	10.76
	8H	12.12	12.50	13.22	13.60	15.10	7.88	8.27	8.99	9.37	10.86
	12H	12.21	12.56	13.33	13.67	15.18	7.94	8.29	9.06	9.40	10.91
8H	4H	11.39	11.78	12.49	12.87	14.37	7.62	8.00	8.72	9.10	10.60
	6H	11.96	12.28	13.08	13.42	14.91	8.13	8.45	9.26	9.59	11.09
	8H	12.18	12.46	13.31	13.58	15.09	8.32	8.60	9.46	9.72	11.24
	12H	12.32	12.56	13.45	13.68	15.23	8.44	8.68	9.57	9.80	11.35
12H	4H	11.34	11.69	12.46	12.80	14.30	7.62	7.97	8.74	9.08	10.58
	6H	11.93	12.21	13.07	13.33	14.85	8.18	8.46	9.31	9.58	11.10
	8H	12.15	12.40	13.29	13.52	15.07	8.39	8.63	9.52	9.75	11.30

END OF REPORT