

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: P904134

Luminaire Tested: DFN2DIP-SQ4F0-110D100US830-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P904134
REPORT IS A COMBINATION OF REPORTS P900142 AND P896915
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ4F0-110D100US830-RLLFLL
Description: 4 foot, Square Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

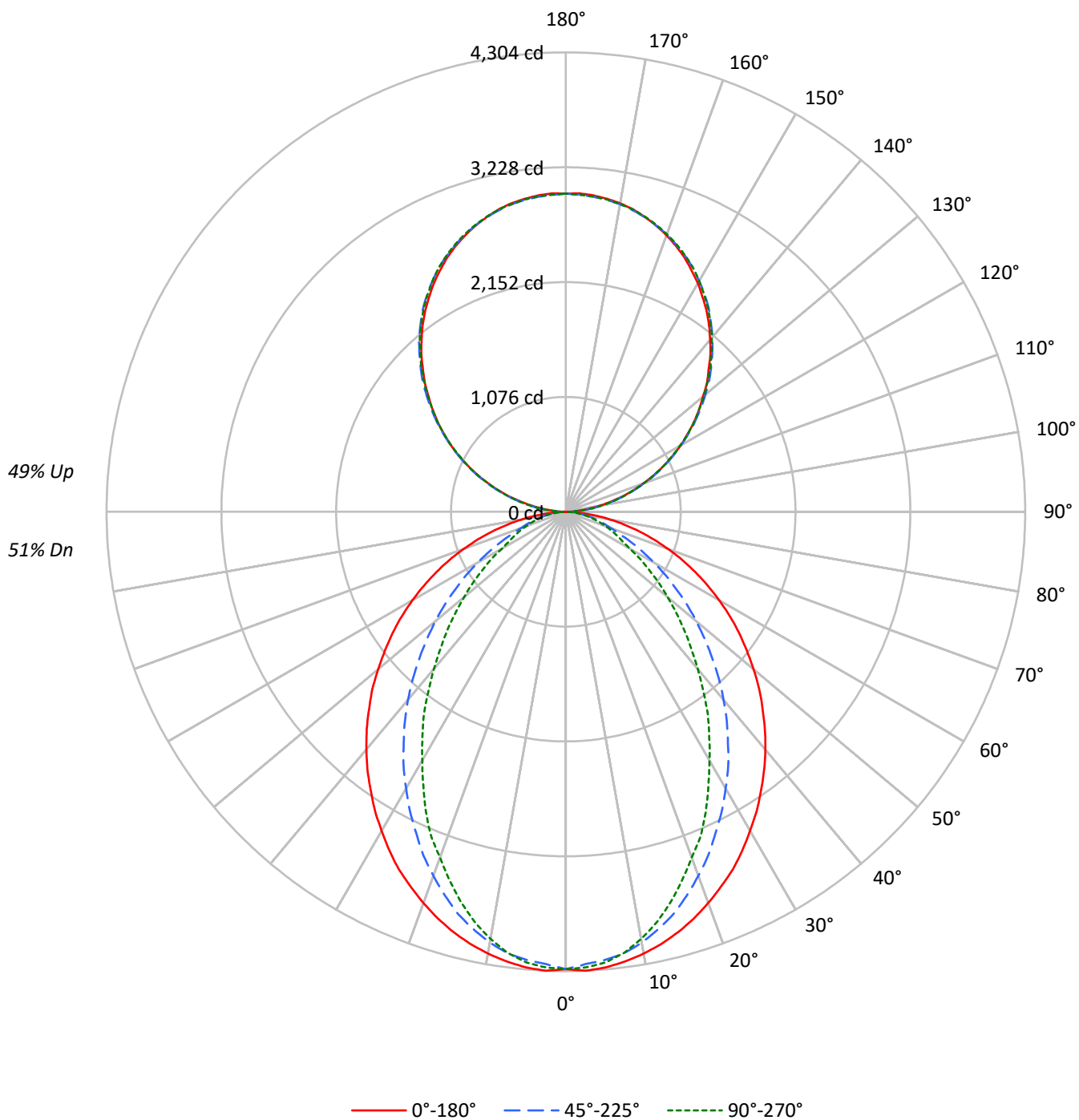
Lumens per Lamp: N/A
Luminaire Lumens: 17154.3 lumens
Efficiency: N/A
Efficacy: 95.4 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.92' x L: 3.92' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 179.8
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9951
Total Harmonic Distortion (THDi): 0.07
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P904134

CATALOG NUMBER: DFN2DIP-SQ4F0-110D100US830-RLLFLL

Luminous Intensity Polar Plot



TEST NUMBER: P904134

CATALOG NUMBER: DFN2DIP-SQ4F0-110D100US830-RLFL

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	84	84	84	70	70	70	57	57	57
1	99	94	91	87	91	87	84	81	74	72	70	63	61	59	52	50	49
2	90	83	77	72	83	77	72	68	66	62	59	56	53	50	46	44	42
3	83	73	66	61	76	68	62	57	59	54	50	50	46	43	41	39	37
4	76	65	58	52	70	61	54	49	52	47	43	44	41	37	37	34	32
5	70	58	51	45	64	55	48	42	47	42	38	40	36	33	34	31	28
6	64	53	45	39	59	49	42	37	43	37	33	36	32	29	31	28	25
7	60	48	40	34	55	45	38	33	39	33	29	33	29	26	28	25	23
8	55	43	36	31	51	41	34	29	36	30	26	31	26	23	26	23	20
9	52	40	32	27	48	37	31	26	33	27	24	28	24	21	24	21	18
10	48	37	29	25	45	34	28	24	30	25	21	26	22	19	22	19	17

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3007	3007	3007
5°	3012	2960	2979
10°	2982	2902	2883
15°	2941	2807	2734
20°	2886	2675	2550
25°	2831	2527	2374
30°	2756	2376	2149
35°	2683	2213	1951
40°	2608	2044	1725
45°	2522	1857	1520
50°	2432	1668	1319
55°	2339	1466	1126
60°	2231	1255	928
65°	2106	1040	836
70°	1955	839	758
75°	1766	741	692
80°	1491	624	603
85°	1038	419	459

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2522 cd/sqm

TEST NUMBER: P904134

CATALOG NUMBER: DFN2DIP-SQ4F0-110D100US830-RLFL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	401.6	2.3
10°-20°	1102.5	6.4
20°-30°	1547.8	9.0
30°-40°	1687.2	9.8
40°-50°	1550.8	9.0
50°-60°	1217.9	7.1
60°-70°	792.7	4.6
70°-80°	408.1	2.4
80°-90°	112.6	0.7
90°-100°	184.5	1.1
100°-110°	586.1	3.4
110°-120°	1003.0	5.8
120°-130°	1319.1	7.7
130°-140°	1480.6	8.6
140°-150°	1451.9	8.5
150°-160°	1217.9	7.1
160°-170°	807.7	4.7
170°-180°	282.3	1.6
0°-30°	3051.9	17.8
0°-40°	4739.1	27.6
0°-60°	7507.8	43.8
0°-90°	8821.2	51.4
90°-120°	1773.5	10.3
90°-150°	6025.1	35.1
90°-180°	8333.0	48.6
0°-180°	17154.3	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	4285	4285	4285	4285	4285	
5°	4285	4266	4215	4250	4239	406
15°	4076	4033	3901	3828	3789	1148
25°	3700	3575	3319	3161	3102	1701
35°	3188	2990	2649	2404	2319	1995
45°	2606	2346	1939	1663	1570	2013
55°	1981	1679	1260	1028	954	1771
65°	1338	1024	675	543	531	1326
75°	713	442	310	283	279	755
85°	167	85	74	74	74	191
90°	3	32	88	83	85	17
95°	131	156	161	161	156	146
105°	541	548	554	558	558	571
115°	1006	1021	1016	1014	1006	996
125°	1464	1486	1479	1471	1468	1308
135°	1894	1921	1927	1924	1917	1464
145°	2299	2317	2331	2334	2324	1436
155°	2629	2636	2644	2656	2648	1210
165°	2860	2857	2857	2875	2862	807
175°	2976	2968	2963	2981	2966	283
180°	2981	2981	2981	2981	2981	

TEST NUMBER: P904134

CATALOG NUMBER: DFN2DIP-SQ4F0-110D100US830-RLFL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	4285.1	4285.1	4285.1	4285.1	4285.1
2.5°	4304.4	4285.1	4242.3	4281.4	4273.6
5°	4285.1	4265.8	4215.1	4250.1	4238.6
7.5°	4250.1	4227.0	4172.7	4188.0	4168.6
10°	4203.6	4176.4	4099.1	4087.1	4064.1
12.5°	4145.6	4110.6	4005.7	3982.6	3939.8
15°	4075.6	4032.9	3901.2	3827.6	3788.8
17.5°	3994.2	3932.1	3769.1	3683.9	3621.8
20°	3901.2	3823.4	3629.6	3532.9	3447.3
22.5°	3800.4	3711.1	3486.1	3354.4	3296.4
25°	3699.6	3575.3	3319.4	3160.6	3102.2
27.5°	3579.5	3447.3	3164.3	2982.0	2892.8
30°	3451.5	3303.8	2993.6	2796.1	2691.1
32.5°	3327.3	3148.7	2831.0	2598.2	2501.1
35°	3187.8	2989.8	2648.8	2404.4	2318.8
37.5°	3052.0	2838.5	2478.0	2210.2	2113.6
40°	2908.4	2676.0	2299.5	2024.2	1923.4
42.5°	2761.1	2513.0	2121.4	1834.2	1737.5
45°	2606.0	2346.0	1939.1	1663.4	1570.5
47.5°	2458.7	2183.5	1764.6	1488.9	1403.8
50°	2295.8	2020.5	1593.9	1326.1	1245.0
52.5°	2136.6	1845.7	1431.0	1175.1	1101.4
55°	1981.4	1679.0	1260.2	1027.7	954.1
57.5°	1822.7	1512.4	1109.2	892.0	829.8
60°	1659.7	1349.5	950.0	752.5	690.4
62.5°	1500.9	1190.7	814.3	628.3	597.4
65°	1337.9	1023.6	674.8	543.1	531.1
67.5°	1182.9	868.6	543.1	476.8	465.3
70°	1019.9	717.6	449.7	411.0	395.4
72.5°	864.8	577.7	376.1	345.2	337.3
75°	713.4	441.9	310.2	283.0	279.4
77.5°	562.4	314.0	244.4	228.8	220.9
80°	422.5	225.1	186.0	170.8	170.8
82.5°	294.5	151.4	128.0	120.2	120.2
85°	166.6	85.2	73.6	73.6	73.6
87.5°	62.1	30.8	30.8	27.1	27.1
90°	2.7	32.3	88.0	82.7	85.4
92.5°	55.7	75.5	78.2	80.9	80.9
95°	131.2	156.4	160.9	160.9	156.4
97.5°	218.4	241.8	251.7	251.7	251.7
100°	319.1	339.7	346.9	346.9	344.2
102.5°	425.1	440.4	450.3	452.9	450.3
105°	541.0	548.2	553.6	558.1	558.1
107.5°	656.0	666.8	666.8	668.6	656.0
110°	767.5	781.8	781.8	781.8	774.7

TEST NUMBER: P904134

CATALOG NUMBER: DFN2DIP-SQ4F0-110D100US830-RLFL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	887.9	903.1	900.5	893.2	887.9
115°	1006.5	1020.9	1016.4	1013.7	1006.5
117.5°	1124.3	1144.1	1131.4	1124.3	1117.0
120°	1242.8	1262.6	1242.8	1242.8	1234.8
122.5°	1350.7	1375.8	1363.3	1356.1	1350.7
125°	1464.0	1486.4	1479.2	1471.1	1468.5
127.5°	1574.5	1602.3	1592.4	1581.7	1574.5
130°	1677.8	1710.1	1705.7	1700.3	1690.4
132.5°	1793.8	1818.9	1820.7	1808.2	1800.9
135°	1893.5	1921.4	1926.7	1924.1	1916.8
137.5°	2005.0	2027.4	2031.9	2030.1	2019.3
140°	2102.9	2125.3	2138.0	2138.0	2128.1
142.5°	2203.6	2226.0	2233.2	2235.9	2226.0
145°	2298.8	2316.8	2331.2	2333.8	2323.9
147.5°	2384.2	2406.7	2417.4	2422.0	2412.1
150°	2472.3	2487.6	2497.5	2505.5	2497.5
152.5°	2550.4	2565.7	2578.3	2588.2	2578.3
155°	2628.7	2635.8	2643.9	2656.5	2648.4
157.5°	2696.0	2701.4	2705.9	2723.9	2711.3
160°	2756.3	2761.6	2764.3	2779.6	2768.8
162.5°	2812.0	2812.0	2814.6	2831.7	2819.1
165°	2859.6	2856.8	2856.8	2874.8	2862.3
167.5°	2902.7	2894.6	2894.6	2912.6	2900.0
170°	2935.1	2927.9	2925.2	2943.2	2927.9
172.5°	2957.5	2950.3	2947.6	2965.6	2950.3
175°	2975.5	2968.3	2963.0	2980.9	2965.6
177.5°	2985.4	2978.2	2972.8	2988.0	2972.8
180°	2980.9	2980.9	2980.9	2980.9	2980.9

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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	11.12	11.96	12.07	12.92	14.17	7.08	7.92	8.03	8.88	10.13
	3H	12.80	13.55	13.76	14.52	15.80	8.27	9.02	9.23	9.99	11.27
	4H	13.41	14.12	14.39	15.10	16.38	8.72	9.43	9.69	10.40	11.69
	6H	13.84	14.49	14.82	15.47	16.77	9.04	9.69	10.03	10.68	11.97
	8H	13.96	14.59	14.96	15.59	16.88	9.13	9.75	10.12	10.75	12.05
	12H	14.03	14.62	15.03	15.61	16.93	9.18	9.77	10.17	10.76	12.08
4H	2H	11.13	11.85	12.12	12.82	14.11	7.68	8.39	8.66	9.36	10.65
	3H	12.97	13.56	13.96	14.57	15.87	9.03	9.62	10.02	10.62	11.92
	4H	13.67	14.21	14.67	15.20	16.53	9.58	10.12	10.58	11.12	12.44
	6H	14.19	14.65	15.20	15.67	16.99	10.00	10.46	11.01	11.48	12.80
	8H	14.36	14.80	15.38	15.81	17.15	10.13	10.56	11.14	11.58	12.91
	12H	14.46	14.85	15.49	15.88	17.22	10.19	10.58	11.22	11.61	12.95
8H	4H	13.63	14.07	14.65	15.08	16.42	9.86	10.29	10.87	11.31	12.64
	6H	14.21	14.56	15.24	15.62	16.95	10.38	10.74	11.42	11.80	13.13
	8H	14.43	14.74	15.47	15.78	17.13	10.57	10.89	11.62	11.93	13.28
	12H	14.57	14.85	15.62	15.88	17.28	10.69	10.97	11.74	12.01	13.40
12H	4H	13.59	13.98	14.62	15.01	16.35	9.87	10.26	10.90	11.29	12.63
	6H	14.18	14.50	15.23	15.54	16.89	10.43	10.75	11.48	11.79	13.14
	8H	14.41	14.68	15.45	15.72	17.12	10.64	10.92	11.69	11.96	13.35