

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: P903887

Luminaire Tested: DFN2DIP-SQ3F0-110D090US830-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P903887
REPORT IS A COMBINATION OF REPORTS P901486 AND P898289
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ3F0-110D090US830-RLLONL
Description: 3 foot, Square Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

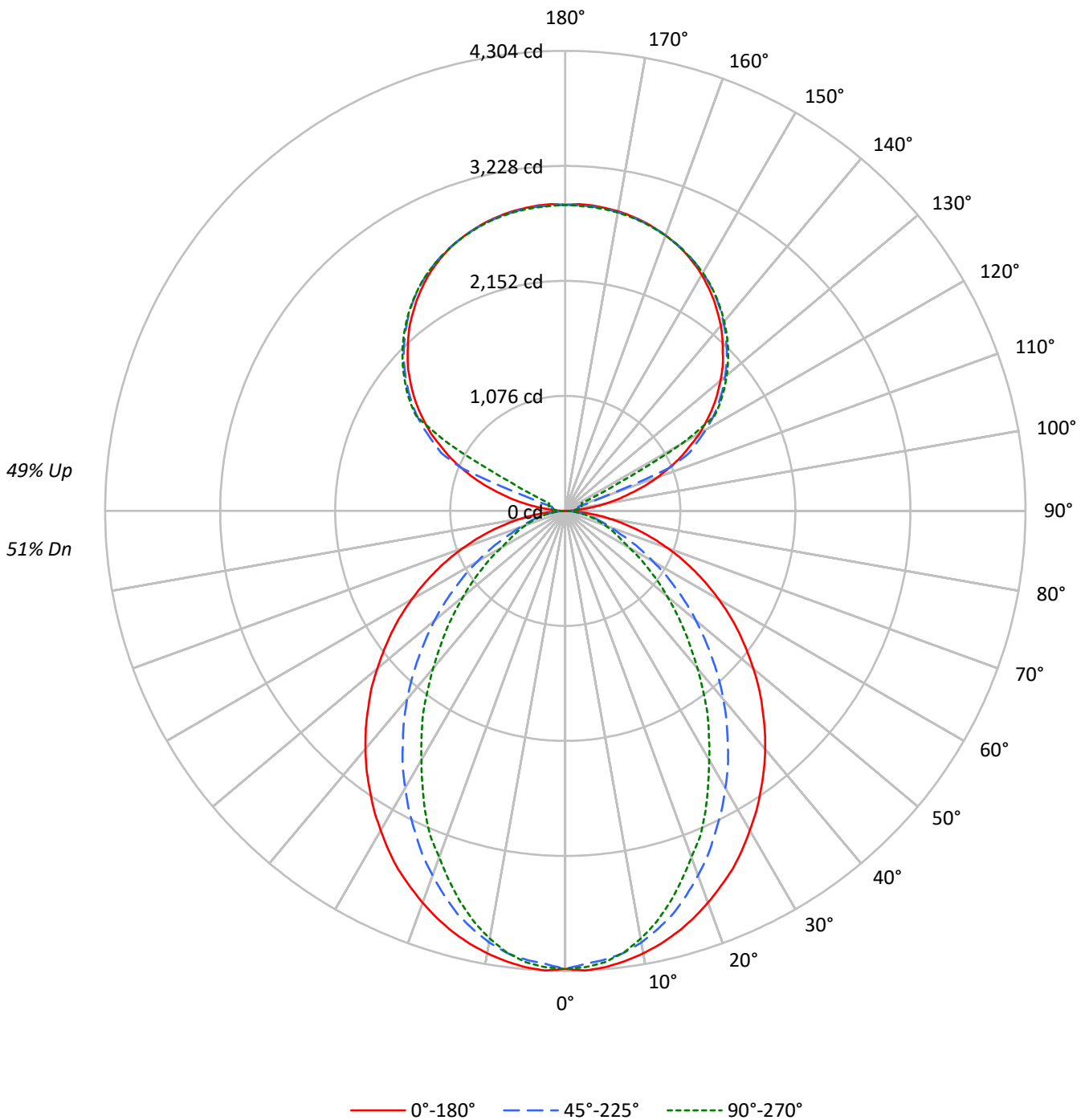
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 17210.8 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: 3.06' x L: 3.06' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 180.4
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9977
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	107	107	107	107	99	99	99	99	84	84	84	70	70	70	57	57	57	57	57	57	51
1	99	94	91	87	91	87	84	81	74	72	70	62	61	59	51	50	49	51	50	49	44
2	90	83	77	72	83	77	72	68	66	62	59	55	53	50	46	44	42	46	44	42	38
3	83	73	66	61	76	68	62	57	58	54	50	49	46	43	41	39	37	41	39	37	33
4	76	65	58	52	70	61	54	49	52	47	43	44	41	37	37	34	32	37	34	32	28
5	70	58	51	45	64	54	48	42	47	42	37	40	36	33	34	31	28	34	31	28	25
6	64	53	45	39	59	49	42	37	43	37	33	36	32	29	31	27	25	31	27	25	22
7	60	48	40	34	55	45	38	33	39	33	29	33	29	26	28	25	22	28	25	22	20
8	55	43	36	31	51	41	34	29	35	30	26	31	26	23	26	23	20	26	23	20	18
9	52	40	32	27	48	37	31	26	33	27	24	28	24	21	24	21	18	24	21	18	16
10	48	37	29	25	45	34	28	24	30	25	21	26	22	19	22	19	17	22	19	17	15

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	4910	4910	4910
5°	4915	4829	4861
10°	4863	4731	4701
15°	4793	4571	4455
20°	4701	4353	4154
25°	4607	4108	3863
30°	4482	3858	3495
35°	4359	3589	3171
40°	4234	3311	2800
45°	4089	3004	2464
50°	3939	2693	2136
55°	3782	2362	1821
60°	3600	2016	1497
65°	3390	1665	1346
70°	3136	1337	1216
75°	2815	1172	1103
80°	2353	973	951
85°	1595	633	705

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 4089 cd/sqm



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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°	109.2	0.6
90°-100°	94.4	0.5
100°-110°	351.9	2.0
110°-120°	933.3	5.4
120°-130°	1548.0	9.0
130°-140°	1644.3	9.6
140°-150°	1528.2	8.9
150°-160°	1228.6	7.1
160°-170°	791.7	4.6
170°-180°	272.5	1.6
0°-30°	3051.9	17.7
0°-40°	4739.1	27.5
0°-60°	7507.8	43.6
0°-90°	8817.8	51.2
90°-120°	1379.6	8.0
90°-150°	6100.2	35.4
90°-180°	8393.0	48.8
0°-180°	17210.8	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°	2	25	41	52	56	16
95°	135	66	81	91	89	159
105°	630	692	126	149	157	673
115°	1191	1226	1278	319	170	1173
125°	1684	1711	1750	1765	1771	1502
135°	2084	2117	2136	2157	2152	1610
145°	2418	2415	2451	2465	2455	1512
155°	2662	2644	2668	2681	2664	1227
165°	2805	2792	2799	2813	2799	792
175°	2869	2854	2859	2873	2852	273
180°	2863	2863	2863	2863	2863	



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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°	2.0	24.9	41.3	51.9	55.8
92.5°	51.9	43.5	49.7	53.9	55.8
95°	134.6	66.2	80.7	91.2	89.1
97.5°	242.3	72.6	105.6	111.9	113.9
100°	366.7	82.9	118.1	134.6	138.7
102.5°	503.3	499.4	122.2	144.9	151.3
105°	629.7	692.0	126.4	149.1	157.4
107.5°	776.8	828.5	130.6	153.3	161.6
110°	917.8	961.1	362.6	155.4	163.6



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1050.4	1087.5	1052.3	159.4	165.8
115°	1191.1	1226.2	1278.2	319.1	169.9
117.5°	1313.3	1354.7	1390.1	1093.7	551.0
120°	1450.1	1481.1	1518.5	1543.3	1263.7
122.5°	1566.0	1599.2	1640.8	1653.0	1655.3
125°	1684.0	1711.1	1750.5	1765.0	1771.1
127.5°	1791.8	1820.8	1852.1	1872.7	1874.7
130°	1893.4	1926.7	1949.3	1972.1	1970.2
132.5°	1997.0	2024.0	2046.6	2065.4	2063.4
135°	2084.1	2117.2	2135.7	2156.6	2152.5
137.5°	2175.1	2199.9	2220.8	2241.5	2235.3
140°	2264.1	2280.9	2303.5	2322.1	2311.9
142.5°	2338.9	2353.4	2380.2	2396.7	2386.4
145°	2417.6	2415.4	2450.6	2465.1	2454.8
147.5°	2485.8	2479.6	2514.8	2525.2	2517.0
150°	2552.2	2537.7	2570.9	2583.1	2572.9
152.5°	2608.0	2591.5	2622.5	2635.1	2620.6
155°	2661.9	2643.5	2668.2	2680.6	2664.1
157.5°	2705.5	2689.0	2707.6	2722.2	2705.5
160°	2742.8	2730.3	2742.8	2755.1	2740.6
162.5°	2775.8	2763.4	2773.8	2788.3	2769.7
165°	2804.8	2792.5	2798.7	2813.2	2798.7
167.5°	2827.7	2815.2	2821.5	2836.0	2817.4
170°	2846.4	2833.8	2838.0	2852.5	2833.8
172.5°	2858.7	2846.4	2850.5	2865.0	2846.4
175°	2869.0	2854.5	2858.7	2873.2	2852.5
177.5°	2873.2	2858.7	2860.9	2875.4	2856.8
180°	2862.9	2862.9	2862.9	2862.9	2862.9



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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	12.76	13.60	13.71	14.56	15.82	8.72	9.56	9.67	10.52	11.78
	3H	14.43	15.18	15.40	16.16	17.43	9.90	10.65	10.86	11.62	12.90
	4H	15.04	15.75	16.02	16.72	18.01	10.35	11.06	11.33	12.03	13.32
	6H	15.45	16.11	16.44	17.09	18.39	10.66	11.32	11.65	12.30	13.60
	8H	15.58	16.20	16.58	17.20	18.50	10.75	11.37	11.75	12.37	13.67
	12H	15.64	16.23	16.64	17.22	18.54	10.79	11.38	11.79	12.37	13.70
4H	2H	12.77	13.48	13.76	14.46	15.75	9.31	10.02	10.30	11.00	12.29
	3H	14.60	15.19	15.59	16.20	17.50	10.66	11.25	11.65	12.25	13.55
	4H	15.29	15.83	16.29	16.83	18.15	11.20	11.74	12.20	12.74	14.06
	6H	15.80	16.26	16.81	17.29	18.61	11.61	12.07	12.62	13.10	14.42
	8H	15.97	16.40	16.99	17.42	18.76	11.74	12.17	12.75	13.19	14.52
	12H	16.06	16.45	17.10	17.49	18.83	11.80	12.19	12.83	13.22	14.56
8H	4H	15.26	15.69	16.27	16.70	18.04	11.48	11.91	12.49	12.93	14.26
	6H	15.82	16.17	16.85	17.23	18.57	11.99	12.34	13.02	13.40	14.74
	8H	16.03	16.34	17.08	17.39	18.74	12.17	12.49	13.22	13.53	14.89
	12H	16.16	16.44	17.21	17.48	18.88	12.29	12.56	13.34	13.60	15.00
12H	4H	15.21	15.60	16.24	16.63	17.97	11.48	11.87	12.51	12.90	14.24
	6H	15.79	16.11	16.84	17.15	18.50	12.03	12.35	13.08	13.39	14.75
	8H	16.01	16.28	17.06	17.32	18.72	12.24	12.52	13.29	13.56	14.95