

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: P926023

Luminaire Tested: DFN2DIP-SQ4F0-140D080US950-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P926023
REPORT IS A COMBINATION OF REPORTS P901630 AND P898471
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ4F0-140D080US950-RLLONL
Description: 4 foot, Square Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

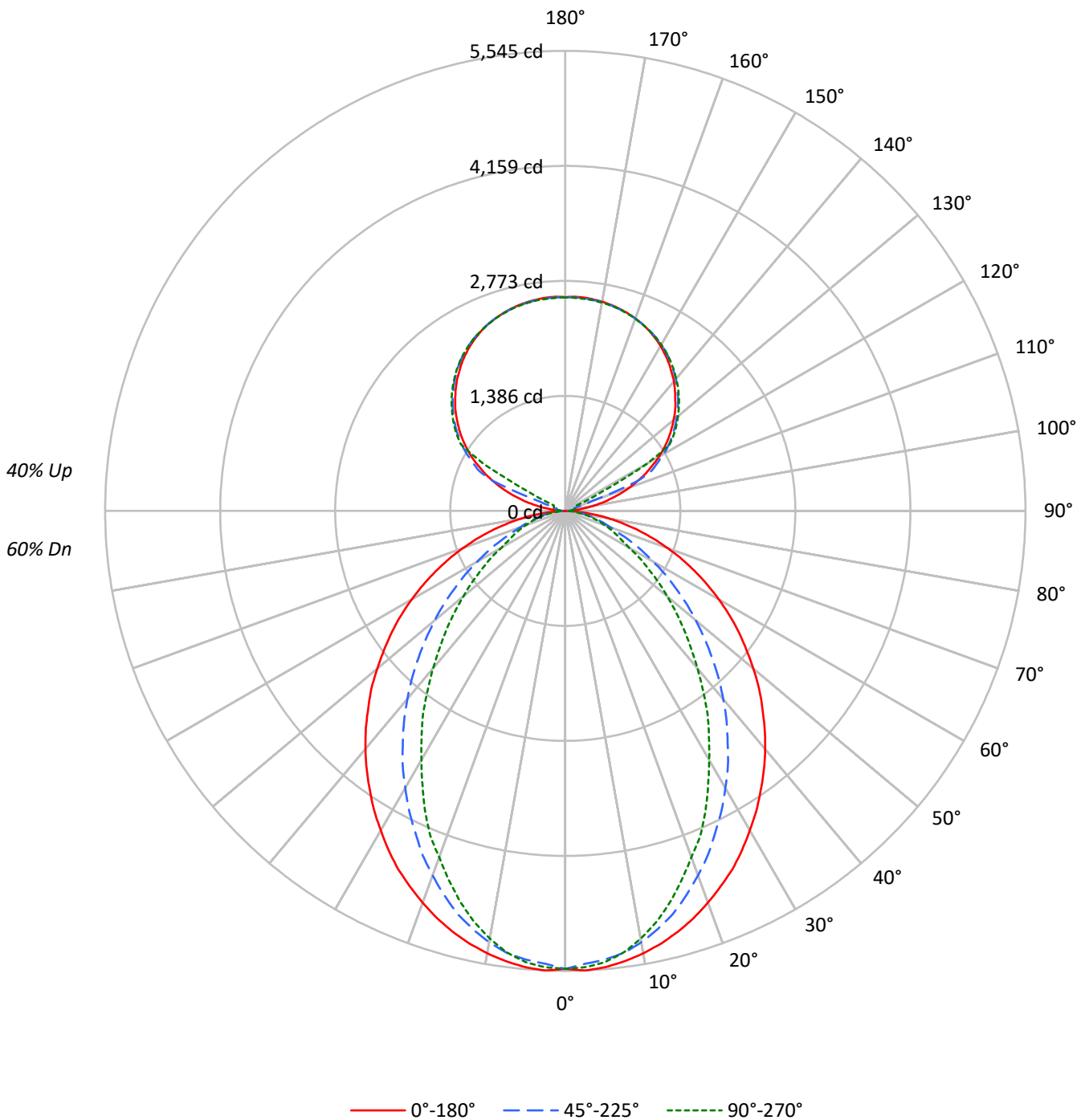
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 18908.3 lumens
Efficiency: N/A
Efficacy: 93.0 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-Direct

Input Watts (W): 203.3
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9789
Total Harmonic Distortion (THDi): 0.074
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				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	110	110	110	110	102	102	102	102	89	89	89	77	77	77	65	65	65	60			
1	101	96	93	89	94	90	87	84	79	77	74	68	67	65	59	57	56	52			
2	92	85	79	74	86	80	74	70	70	66	62	61	58	55	52	50	48	44			
3	84	75	68	62	79	71	64	59	62	57	53	54	51	47	47	44	42	38			
4	78	67	59	53	72	63	56	51	56	50	46	49	45	41	42	39	37	33			
5	71	60	52	46	67	57	49	44	50	44	40	44	40	36	38	35	32	29			
6	66	54	46	40	62	51	44	39	45	40	35	40	35	32	35	32	29	26			
7	61	49	41	36	57	46	39	34	41	36	31	37	32	29	32	29	26	23			
8	57	45	37	32	53	42	35	31	38	32	28	34	29	26	30	26	23	21			
9	53	41	34	29	50	39	32	28	35	29	25	31	27	23	28	24	21	19			
10	50	38	31	26	47	36	29	25	32	27	23	29	24	21	26	22	19	17			

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3873	3873	3873
5°	3879	3813	3837
10°	3841	3739	3714
15°	3788	3616	3522
20°	3718	3446	3286
25°	3646	3256	3058
30°	3550	3061	2768
35°	3456	2851	2514
40°	3360	2634	2222
45°	3248	2392	1958
50°	3133	2149	1699
55°	3013	1889	1451
60°	2873	1616	1195
65°	2713	1339	1077
70°	2519	1081	976
75°	2275	955	891
80°	1922	803	777
85°	1337	540	591

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 3248 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	517.3	2.7
10°-20°	1420.2	7.5
20°-30°	1993.9	10.5
30°-40°	2173.5	11.5
40°-50°	1997.7	10.6
50°-60°	1568.9	8.3
60°-70°	1021.2	5.4
70°-80°	525.7	2.8
80°-90°	138.7	0.7
90°-100°	84.9	0.4
100°-110°	316.6	1.7
110°-120°	839.7	4.4
120°-130°	1392.7	7.4
130°-140°	1479.4	7.8
140°-150°	1374.9	7.3
150°-160°	1105.4	5.8
160°-170°	712.3	3.8
170°-180°	245.2	1.3
0°-30°	3931.5	20.8
0°-40°	6105.0	32.3
0°-60°	9671.6	51.1
0°-90°	11357.1	60.1
90°-120°	1241.3	6.6
90°-150°	5488.3	29.0
90°-180°	7551.0	39.9
0°-180°	18908.3	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	5520	5520	5520	5520	5520	
5°	5520	5495	5430	5475	5460	523
15°	5250	5195	5026	4931	4881	1479
25°	4766	4606	4276	4072	3996	2192
35°	4106	3852	3412	3097	2987	2570
45°	3357	3022	2498	2143	2023	2593
55°	2552	2163	1623	1324	1229	2281
65°	1724	1319	869	700	684	1709
75°	919	569	400	365	360	972
85°	215	110	95	95	95	246
90°	2	22	37	47	50	18
95°	121	60	73	82	80	143
105°	567	623	114	134	142	605
115°	1072	1103	1150	287	153	1055
125°	1515	1540	1575	1588	1594	1351
135°	1875	1905	1922	1940	1936	1448
145°	2175	2173	2205	2218	2208	1360
155°	2395	2378	2401	2412	2397	1104
165°	2524	2512	2518	2531	2518	713
175°	2581	2568	2572	2585	2566	246
180°	2576	2576	2576	2576	2576	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	5520.0	5520.0	5520.0	5520.0	5520.0
2.5°	5544.9	5520.0	5464.9	5515.3	5505.2
5°	5520.0	5495.1	5429.9	5475.0	5460.1
7.5°	5475.0	5445.2	5375.3	5395.0	5370.1
10°	5415.1	5380.1	5280.5	5265.0	5235.4
12.5°	5340.3	5295.3	5160.1	5130.4	5075.4
15°	5250.2	5195.1	5025.5	4930.7	4880.9
17.5°	5145.3	5065.3	4855.4	4745.7	4665.6
20°	5025.5	4925.3	4675.7	4551.2	4441.0
22.5°	4895.6	4780.7	4490.8	4321.1	4246.4
25°	4765.8	4605.7	4276.1	4071.5	3996.2
27.5°	4611.1	4441.0	4076.3	3841.5	3726.5
30°	4446.2	4256.0	3856.4	3601.9	3466.7
32.5°	4286.1	4056.1	3647.0	3347.0	3221.9
35°	4106.5	3851.6	3412.2	3097.4	2987.1
37.5°	3931.6	3656.5	3192.2	2847.2	2722.6
40°	3746.6	3447.2	2962.2	2607.7	2477.8
42.5°	3556.9	3237.3	2732.7	2362.8	2238.2
45°	3357.0	3022.1	2498.0	2142.8	2023.1
47.5°	3167.3	2812.8	2273.2	1918.1	1808.4
50°	2957.4	2602.9	2053.2	1708.2	1603.8
52.5°	2752.3	2377.6	1843.3	1513.7	1418.8
55°	2552.5	2162.9	1623.4	1324.0	1229.0
57.5°	2347.9	1948.3	1428.9	1149.1	1069.1
60°	2138.0	1738.4	1223.8	969.4	889.3
62.5°	1933.5	1533.8	1048.9	809.3	769.6
65°	1723.6	1318.6	869.2	699.6	684.2
67.5°	1523.7	1118.9	699.6	614.3	599.4
70°	1313.8	924.3	579.3	529.5	509.3
72.5°	1114.1	744.1	484.4	444.7	434.6
75°	919.0	569.3	399.6	364.6	359.8
77.5°	724.6	404.4	314.8	294.7	284.6
80°	544.4	289.9	239.5	220.0	220.0
82.5°	379.5	195.0	164.9	154.7	154.7
85°	214.6	109.7	94.8	94.8	94.8
87.5°	80.0	39.8	39.8	35.0	35.0
90°	1.8	22.3	37.2	46.7	50.3
92.5°	46.7	39.2	44.7	48.5	50.3
95°	121.1	59.5	72.6	82.1	80.1
97.5°	218.0	65.3	94.9	100.7	102.5
100°	330.0	74.6	106.3	121.1	124.8
102.5°	452.9	449.2	110.0	130.3	136.1
105°	566.6	622.6	113.7	134.1	141.7
107.5°	698.9	745.4	117.5	137.9	145.4
110°	825.8	864.7	326.3	139.9	147.2



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	945.0	978.4	946.8	143.4	149.2
115°	1071.6	1103.3	1150.0	287.1	152.9
117.5°	1181.6	1218.8	1250.7	984.0	495.8
120°	1304.7	1332.5	1366.2	1388.5	1136.9
122.5°	1408.9	1438.8	1476.2	1487.3	1489.3
125°	1515.1	1539.5	1574.9	1587.9	1593.5
127.5°	1612.1	1638.2	1666.4	1684.9	1686.7
130°	1703.5	1733.3	1753.7	1774.3	1772.5
132.5°	1796.7	1821.0	1841.4	1858.2	1856.4
135°	1875.0	1904.9	1921.5	1940.3	1936.5
137.5°	1956.9	1979.3	1998.1	2016.7	2011.1
140°	2037.0	2052.1	2072.5	2089.3	2079.9
142.5°	2104.3	2117.3	2141.4	2156.3	2147.0
145°	2175.1	2173.1	2204.8	2217.9	2208.5
147.5°	2236.5	2230.9	2262.5	2271.9	2264.5
150°	2296.2	2283.1	2313.0	2324.0	2314.8
152.5°	2346.5	2331.6	2359.4	2370.8	2357.7
155°	2394.9	2378.3	2400.6	2411.7	2396.9
157.5°	2434.0	2419.2	2436.0	2449.1	2434.0
160°	2467.7	2456.5	2467.7	2478.8	2465.7
162.5°	2497.4	2486.3	2495.6	2508.6	2491.8
165°	2523.5	2512.5	2518.0	2531.0	2518.0
167.5°	2544.0	2532.8	2538.5	2551.6	2534.8
170°	2560.9	2549.6	2553.4	2566.5	2549.6
172.5°	2572.0	2560.9	2564.6	2577.7	2560.9
175°	2581.2	2568.2	2572.0	2585.0	2566.5
177.5°	2585.0	2572.0	2573.9	2587.0	2570.2
180°	2575.7	2575.7	2575.7	2575.7	2575.7



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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	13.67	13.63	14.56	15.69	8.72	9.64	9.59	10.52	11.65
	3H	14.44	15.27	15.33	16.16	17.31	9.91	10.73	10.80	11.63	12.78
	4H	15.06	15.84	15.96	16.74	17.90	10.37	11.14	11.27	12.05	13.21
	6H	15.49	16.20	16.40	17.12	18.29	10.69	11.41	11.61	12.32	13.49
	8H	15.62	16.30	16.54	17.23	18.40	10.79	11.47	11.71	12.39	13.57
	12H	15.69	16.33	16.61	17.26	18.45	10.83	11.48	11.76	12.40	13.60
4H	2H	12.78	13.56	13.69	14.46	15.62	9.32	10.10	10.23	11.01	12.16
	3H	14.63	15.27	15.54	16.21	17.38	10.68	11.33	11.60	12.26	13.44
	4H	15.33	15.91	16.25	16.84	18.04	11.24	11.82	12.16	12.75	13.95
	6H	15.85	16.36	16.79	17.31	18.51	11.66	12.17	12.60	13.12	14.32
	8H	16.03	16.50	16.97	17.45	18.66	11.79	12.26	12.74	13.21	14.43
	12H	16.13	16.56	17.09	17.52	18.74	11.86	12.29	12.82	13.25	14.47
8H	4H	15.30	15.77	16.24	16.72	17.93	11.53	12.00	12.47	12.95	14.16
	6H	15.87	16.26	16.84	17.25	18.47	12.05	12.44	13.02	13.43	14.64
	8H	16.09	16.44	17.07	17.42	18.65	12.24	12.59	13.22	13.57	14.80
	12H	16.24	16.54	17.22	17.52	18.79	12.36	12.67	13.34	13.64	14.92
12H	4H	15.26	15.68	16.22	16.65	17.87	11.54	11.96	12.50	12.93	14.14
	6H	15.85	16.19	16.83	17.18	18.41	12.10	12.44	13.08	13.42	14.65
	8H	16.08	16.38	17.06	17.35	18.63	12.31	12.62	13.30	13.59	14.87