

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: P925633

Luminaire Tested: DFN2DIP-SQ3F0-090D080US950-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P925633
REPORT IS A COMBINATION OF REPORTS P901463 AND P898289
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ3F0-090D080US950-FLLONL
Description: 3 foot, Square Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

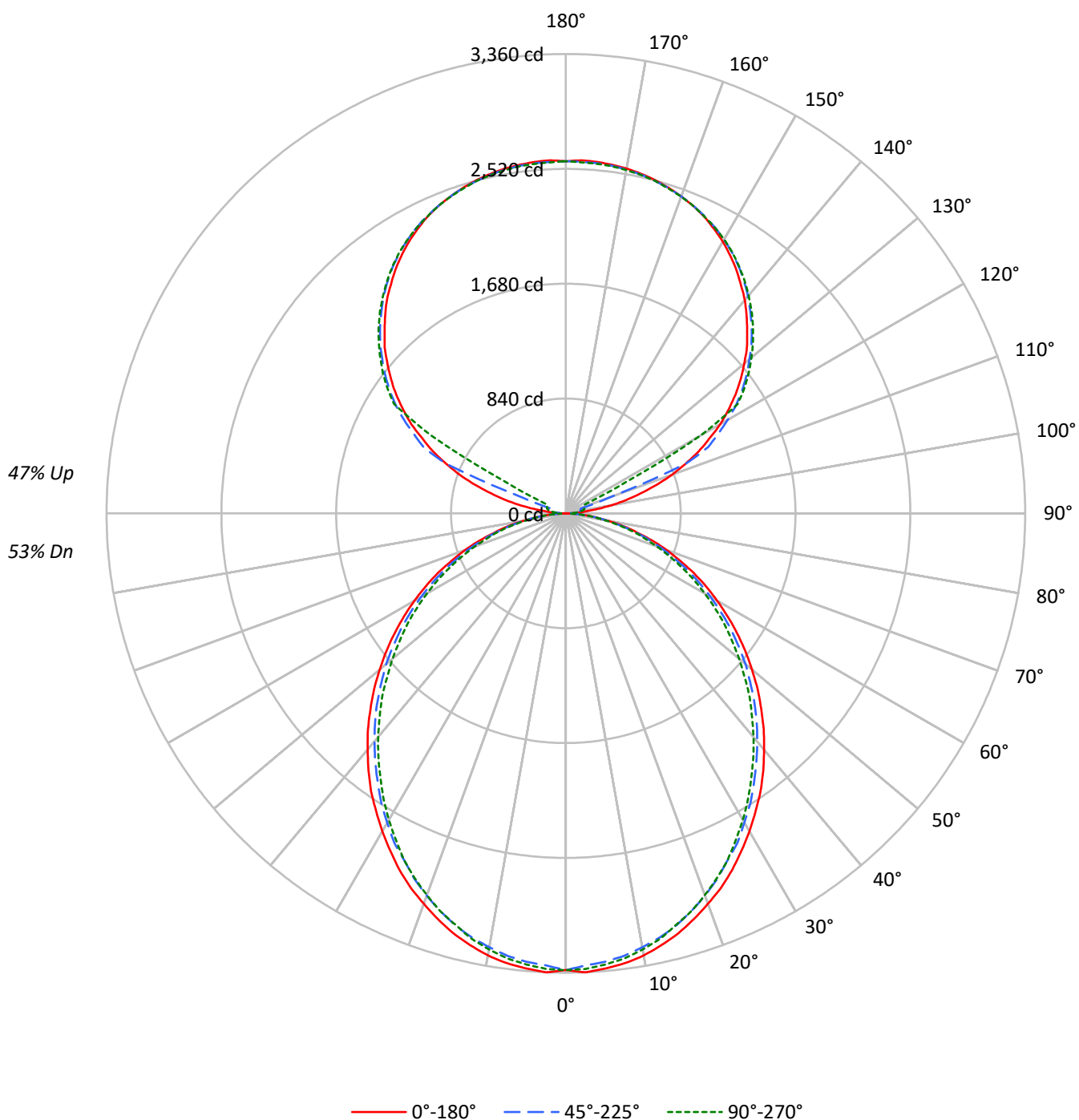
Lumens per Lamp: N/A
Luminaire Lumens: 16055.9 lumens
Efficiency: N/A
Efficacy: 108.3 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 3.06' x L: 3.06' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 148.2
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.996
Total Harmonic Distortion (THDi): 0.064
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	108	108	108	108	100	100	100	100	85	85	85	71	71	71	59	59	59
1	98	94	90	87	91	87	84	81	75	72	70	63	61	59	52	51	50
2	90	82	76	71	83	76	71	66	65	61	58	55	52	50	46	44	42
3	82	72	65	59	75	67	61	55	58	53	49	49	45	42	41	38	36
4	75	64	56	50	69	60	53	47	51	46	41	43	39	36	36	33	31
5	69	57	49	43	63	53	46	40	46	40	36	39	35	31	33	29	27
6	63	51	43	37	58	48	40	35	41	36	31	35	31	27	30	26	24
7	59	46	38	33	54	43	36	31	37	32	28	32	28	24	27	24	21
8	54	42	34	29	50	39	32	27	34	29	24	29	25	22	25	21	19
9	51	38	31	26	47	36	29	24	31	26	22	27	23	19	23	20	17
10	47	35	28	23	44	33	26	22	29	24	20	25	21	18	21	18	15

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3828	3828	3828
5°	3832	3772	3799
10°	3798	3719	3746
15°	3740	3655	3664
20°	3662	3567	3581
25°	3584	3463	3485
30°	3488	3366	3362
35°	3396	3252	3233
40°	3283	3136	3110
45°	3171	3020	2984
50°	3048	2898	2839
55°	2919	2758	2704
60°	2773	2591	2551
65°	2613	2417	2369
70°	2410	2206	2173
75°	2130	1953	1991
80°	1790	1629	1645
85°	1260	1080	1077

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
Vertical Angle: 45°
Luminance: 3171 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	314.4	2.0
10°-20°	884.7	5.5
20°-30°	1300.2	8.1
30°-40°	1510.1	9.4
40°-50°	1508.2	9.4
50°-60°	1315.1	8.2
60°-70°	972.2	6.1
70°-80°	550.0	3.4
80°-90°	149.7	0.9
90°-100°	84.9	0.5
100°-110°	316.6	2.0
110°-120°	839.7	5.2
120°-130°	1392.7	8.7
130°-140°	1479.4	9.2
140°-150°	1374.9	8.6
150°-160°	1105.4	6.9
160°-170°	712.3	4.4
170°-180°	245.2	1.5
0°-30°	2499.3	15.6
0°-40°	4009.4	25.0
0°-60°	6832.8	42.6
0°-90°	8504.7	53.0
90°-120°	1241.3	7.7
90°-150°	5488.3	34.2
90°-180°	7551.0	47.0
0°-180°	16055.9	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3341	3341	3341	3341	3341	
5°	3341	3328	3293	3318	3312	317
15°	3180	3161	3119	3132	3116	896
25°	2878	2853	2798	2804	2798	1324
35°	2483	2451	2400	2380	2364	1551
45°	2021	1998	1950	1915	1902	1560
55°	1529	1510	1471	1433	1417	1367
65°	1031	1012	980	951	935	1020
75°	540	533	517	498	504	576
85°	132	128	126	116	112	147
90°	2	22	37	47	50	15
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°	3340.8	3340.8	3340.8	3340.8	3340.8
2.5°	3360.3	3344.2	3308.9	3340.8	3334.7
5°	3340.8	3328.2	3292.8	3318.4	3312.2
7.5°	3318.4	3299.3	3263.8	3289.8	3283.3
10°	3283.3	3260.8	3222.2	3247.8	3238.3
12.5°	3234.8	3215.7	3177.3	3193.2	3186.8
15°	3180.3	3161.3	3119.3	3132.3	3116.2
17.5°	3112.8	3093.7	3051.8	3067.9	3051.8
20°	3038.9	3019.8	2974.8	2984.3	2971.7
22.5°	2965.2	2936.3	2894.3	2894.3	2887.9
25°	2878.3	2852.7	2798.3	2804.4	2798.3
27.5°	2781.9	2759.3	2717.9	2708.3	2692.3
30°	2685.8	2659.8	2611.8	2602.2	2589.3
32.5°	2582.9	2563.8	2512.3	2492.9	2479.9
35°	2483.4	2451.3	2399.8	2380.4	2364.4
37.5°	2370.9	2341.9	2290.4	2267.9	2251.9
40°	2255.3	2229.4	2177.9	2149.3	2136.4
42.5°	2142.8	2116.9	2065.8	2033.5	2014.4
45°	2020.8	1998.3	1949.9	1914.8	1901.9
47.5°	1901.9	1879.4	1827.9	1792.5	1773.4
50°	1776.4	1760.4	1715.4	1670.5	1654.4
52.5°	1654.4	1631.9	1590.3	1554.9	1532.4
55°	1529.4	1509.9	1471.4	1432.9	1416.9
57.5°	1403.9	1387.9	1346.0	1307.5	1294.5
60°	1278.5	1265.9	1220.8	1185.4	1175.9
62.5°	1156.4	1133.9	1101.9	1069.9	1056.9
65°	1031.4	1011.9	979.9	950.9	934.9
67.5°	902.9	886.6	857.8	835.4	822.4
70°	783.9	770.9	742.0	719.5	706.9
72.5°	661.9	648.9	632.9	610.5	600.9
75°	539.6	533.4	517.1	498.0	504.5
77.5°	430.4	417.6	411.1	401.5	392.0
80°	321.4	318.0	311.5	301.9	295.5
82.5°	218.5	218.5	215.4	202.4	202.4
85°	131.6	128.5	125.5	115.5	112.5
87.5°	57.9	51.4	45.0	35.5	32.1
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	12.17	13.06	13.10	14.01	15.24	11.73	12.62	12.66	13.57	14.79
	3H	13.83	14.63	14.77	15.59	16.84	13.34	14.14	14.28	15.10	16.35
	4H	14.42	15.17	15.37	16.13	17.39	13.92	14.68	14.88	15.64	16.90
	6H	14.81	15.51	15.78	16.48	17.75	14.31	15.01	15.28	15.98	17.25
	8H	14.92	15.58	15.89	16.56	17.84	14.42	15.08	15.39	16.06	17.33
	12H	14.97	15.60	15.95	16.57	17.87	14.46	15.09	15.44	16.06	17.36
4H	2H	12.63	13.39	13.60	14.35	15.61	12.28	13.03	13.24	13.99	15.26
	3H	14.50	15.13	15.47	16.12	17.39	14.09	14.72	15.06	15.71	16.98
	4H	15.21	15.78	16.19	16.77	18.07	14.78	15.36	15.77	16.34	17.64
	6H	15.72	16.22	16.71	17.22	18.52	15.29	15.78	16.28	16.79	18.09
	8H	15.87	16.33	16.86	17.33	18.64	15.43	15.89	16.43	16.90	18.21
	12H	15.94	16.36	16.95	17.38	18.69	15.49	15.91	16.51	16.93	18.24
8H	4H	15.40	15.87	16.40	16.87	18.18	15.03	15.49	16.02	16.49	17.80
	6H	16.03	16.41	17.05	17.46	18.77	15.64	16.03	16.66	17.07	18.38
	8H	16.25	16.58	17.27	17.61	18.94	15.85	16.19	16.88	17.22	18.55
	12H	16.38	16.67	17.41	17.70	19.07	15.96	16.26	17.00	17.29	18.66
12H	4H	15.39	15.81	16.40	16.82	18.14	15.02	15.44	16.03	16.46	17.77
	6H	16.06	16.39	17.09	17.43	18.75	15.68	16.02	16.71	17.05	18.38
	8H	16.30	16.59	17.33	17.62	18.99	15.92	16.21	16.95	17.24	18.61