

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: P922937

Luminaire Tested: DFN2DIP-SQ3F0-100D070US940-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P922937
REPORT IS A COMBINATION OF REPORTS P901447 AND P898289
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ3F0-100D070US940-FLLONL
Description: 3 foot, Square Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

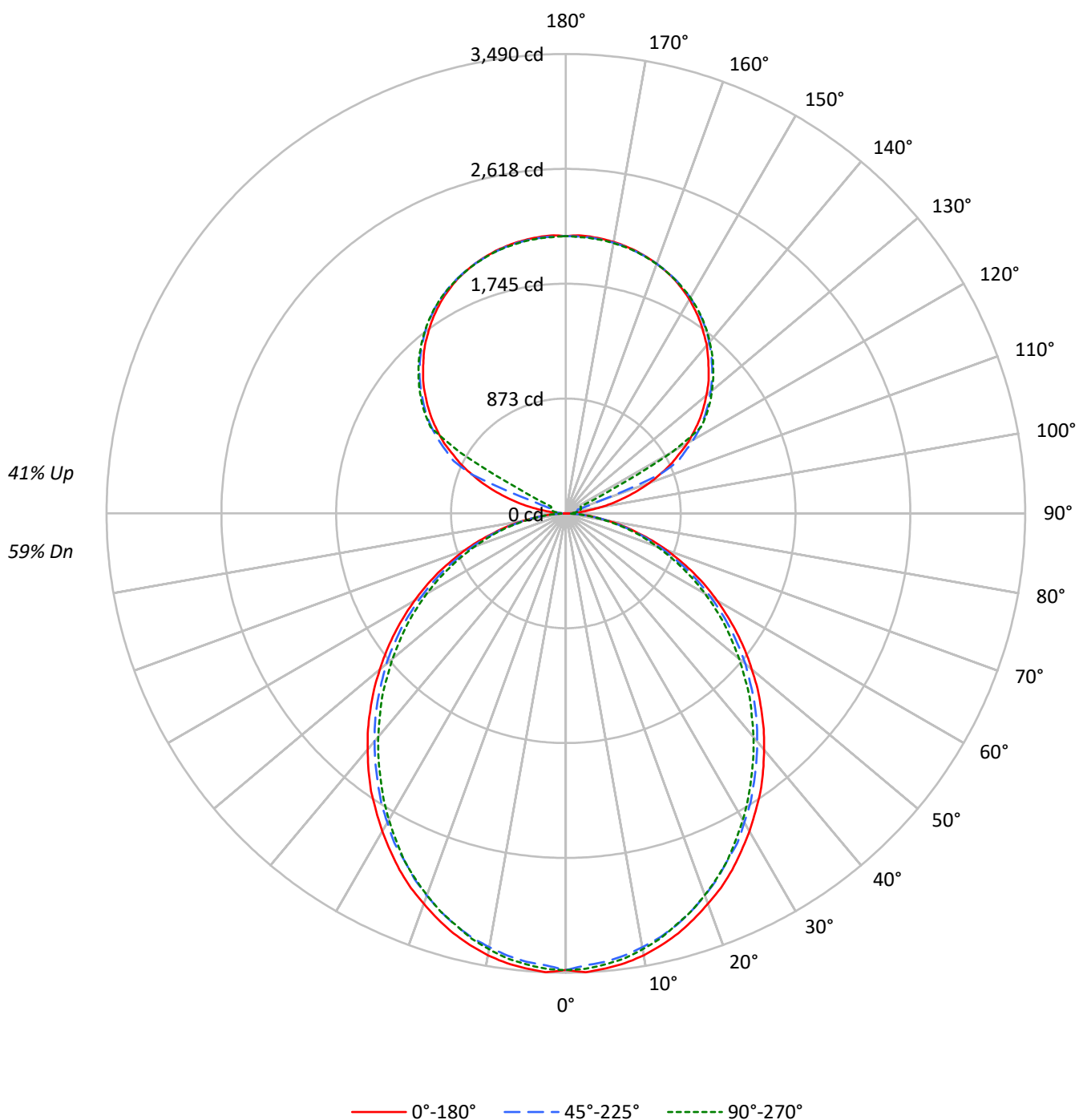
Lumens per Lamp: N/A
Luminaire Lumens: 15007.5 lumens
Efficiency: N/A
Efficacy: 99.4 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 3.06' x L: 3.06' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 151
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9781
Total Harmonic Distortion (THDi): 0.075
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	109	109	109	109	102	102	102	102	88	88	88	76	76	76	64	64	64
1	100	95	91	88	93	89	86	83	77	75	73	67	65	63	57	56	54
2	91	83	77	72	85	78	72	68	68	64	60	59	55	53	50	48	46
3	83	73	66	60	77	69	62	57	60	55	51	52	48	45	44	41	39
4	76	65	57	51	71	61	54	48	53	48	43	46	42	38	40	36	34
5	70	58	50	44	65	54	47	41	48	42	37	42	37	33	36	32	29
6	64	52	44	38	60	49	41	36	43	37	33	38	33	29	32	29	26
7	59	47	39	33	55	44	37	32	39	33	29	34	29	26	30	26	23
8	55	43	35	29	51	40	33	28	36	30	26	31	27	23	27	23	21
9	51	39	31	26	48	37	30	25	33	27	23	29	24	21	25	21	19
10	48	36	29	24	45	34	27	23	30	25	21	27	22	19	23	20	17

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3976	3976	3976
5°	3979	3918	3945
10°	3945	3862	3891
15°	3884	3796	3806
20°	3803	3705	3719
25°	3723	3597	3619
30°	3622	3496	3492
35°	3527	3377	3358
40°	3410	3257	3230
45°	3293	3137	3100
50°	3166	3010	2948
55°	3032	2864	2809
60°	2880	2691	2649
65°	2714	2511	2460
70°	2503	2291	2257
75°	2212	2028	2068
80°	1859	1692	1709
85°	1308	1122	1118

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 3293 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	326.6	2.2
10°-20°	918.8	6.1
20°-30°	1350.3	9.0
30°-40°	1568.3	10.5
40°-50°	1566.4	10.4
50°-60°	1365.8	9.1
60°-70°	1009.7	6.7
70°-80°	571.3	3.8
80°-90°	154.5	1.0
90°-100°	69.5	0.5
100°-110°	259.0	1.7
110°-120°	686.8	4.6
120°-130°	1139.1	7.6
130°-140°	1209.9	8.1
140°-150°	1124.5	7.5
150°-160°	904.1	6.0
160°-170°	582.6	3.9
170°-180°	200.5	1.3
0°-30°	2595.7	17.3
0°-40°	4164.0	27.7
0°-60°	7096.2	47.3
0°-90°	8831.6	58.8
90°-120°	1015.2	6.8
90°-150°	4488.7	29.9
90°-180°	6176.0	41.2
0°-180°	15007.5	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3470	3470	3470	3470	3470	
5°	3470	3457	3420	3446	3440	329
15°	3303	3283	3240	3253	3236	930
25°	2989	2963	2906	2912	2906	1376
35°	2579	2546	2492	2472	2456	1611
45°	2099	2075	2025	1989	1975	1620
55°	1588	1568	1528	1488	1472	1420
65°	1071	1051	1018	988	971	1059
75°	560	554	537	517	524	598
85°	137	134	130	120	117	152
90°	1	18	30	38	41	14
95°	99	49	59	67	66	117
105°	463	509	93	110	116	495
115°	876	902	940	235	125	863
125°	1239	1259	1288	1299	1303	1105
135°	1534	1558	1572	1587	1584	1185
145°	1779	1777	1803	1814	1806	1113
155°	1959	1945	1963	1972	1960	903
165°	2064	2055	2059	2070	2059	583
175°	2111	2100	2104	2114	2099	201
180°	2107	2107	2107	2107	2107	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	3469.7	3469.7	3469.7	3469.7	3469.7
2.5°	3489.9	3473.2	3436.4	3469.7	3463.3
5°	3469.7	3456.6	3419.8	3446.4	3440.0
7.5°	3446.4	3426.5	3389.7	3416.6	3409.9
10°	3409.9	3386.5	3346.5	3373.1	3363.2
12.5°	3359.6	3339.8	3299.8	3316.4	3309.7
15°	3303.0	3283.2	3239.6	3253.0	3236.5
17.5°	3232.9	3213.1	3169.5	3186.2	3169.5
20°	3156.0	3136.2	3089.5	3099.4	3086.3
22.5°	3079.6	3049.6	3006.0	3006.0	2999.3
25°	2989.4	2962.8	2906.2	2912.5	2906.2
27.5°	2889.1	2865.8	2822.6	2812.7	2796.0
30°	2789.4	2762.4	2712.5	2702.6	2689.1
32.5°	2682.4	2662.6	2609.1	2589.0	2575.5
35°	2579.1	2545.8	2492.3	2472.2	2455.5
37.5°	2462.3	2432.1	2378.7	2355.4	2338.7
40°	2342.3	2315.3	2261.9	2232.2	2218.8
42.5°	2225.4	2198.5	2145.5	2111.8	2092.0
45°	2098.7	2075.4	2025.1	1988.6	1975.2
47.5°	1975.2	1951.9	1898.4	1861.5	1841.7
50°	1844.9	1828.3	1781.5	1734.8	1718.2
52.5°	1718.2	1694.9	1651.6	1614.9	1591.5
55°	1588.3	1568.2	1528.1	1488.1	1471.5
57.5°	1458.0	1441.4	1397.8	1357.9	1344.4
60°	1327.8	1314.6	1267.9	1231.1	1221.2
62.5°	1201.0	1177.7	1144.4	1111.2	1097.7
65°	1071.1	1051.0	1017.7	987.6	971.0
67.5°	937.7	920.7	891.0	867.6	854.2
70°	814.1	800.7	770.6	747.3	734.1
72.5°	687.4	674.0	657.4	634.0	624.0
75°	560.4	554.0	537.0	517.2	523.9
77.5°	447.1	433.6	426.9	417.0	407.1
80°	333.8	330.3	323.5	313.6	306.9
82.5°	226.9	226.9	223.7	210.3	210.3
85°	136.6	133.5	130.3	120.0	116.8
87.5°	60.2	53.4	46.7	36.8	33.3
90°	1.4	18.3	30.4	38.2	41.1
92.5°	38.2	32.0	36.6	39.7	41.1
95°	99.0	48.7	59.4	67.1	65.5
97.5°	178.3	53.4	77.7	82.4	83.8
100°	269.9	61.0	86.9	99.0	102.1
102.5°	370.3	367.5	90.0	106.6	111.3
105°	463.4	509.2	93.0	109.7	115.8
107.5°	571.6	609.7	96.1	112.8	119.0
110°	675.4	707.2	266.8	114.4	120.4

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	772.9	800.2	774.4	117.3	122.0
115°	876.5	902.3	940.5	234.8	125.1
117.5°	966.4	996.8	1022.9	804.8	405.5
120°	1067.0	1089.8	1117.4	1135.7	929.9
122.5°	1152.3	1176.7	1207.4	1216.4	1218.0
125°	1239.2	1259.1	1288.1	1298.8	1303.2
127.5°	1318.5	1339.8	1362.8	1378.0	1379.5
130°	1393.2	1417.6	1434.3	1451.2	1449.7
132.5°	1469.4	1489.3	1506.0	1519.7	1518.3
135°	1533.5	1557.9	1571.6	1586.9	1583.9
137.5°	1600.4	1618.8	1634.1	1649.4	1644.8
140°	1666.0	1678.3	1695.0	1708.7	1701.1
142.5°	1721.0	1731.7	1751.4	1763.5	1756.0
145°	1779.0	1777.4	1803.2	1813.9	1806.3
147.5°	1829.1	1824.6	1850.5	1858.1	1852.1
150°	1877.9	1867.3	1891.8	1900.8	1893.2
152.5°	1919.0	1906.9	1929.8	1938.9	1928.3
155°	1958.7	1945.1	1963.4	1972.5	1960.3
157.5°	1990.7	1978.6	1992.3	2003.0	1990.7
160°	2018.3	2009.0	2018.3	2027.3	2016.6
162.5°	2042.6	2033.5	2041.0	2051.7	2038.0
165°	2063.9	2054.9	2059.3	2070.0	2059.3
167.5°	2080.7	2071.4	2076.2	2086.9	2073.1
170°	2094.4	2085.3	2088.3	2099.0	2085.3
172.5°	2103.5	2094.4	2097.6	2108.2	2094.4
175°	2111.1	2100.4	2103.5	2114.2	2099.0
177.5°	2114.2	2103.5	2105.1	2115.9	2102.0
180°	2106.6	2106.6	2106.6	2106.6	2106.6

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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	12.81	13.76	13.69	14.66	15.80	12.37	13.31	13.24	14.21	15.35
	3H	14.47	15.32	15.36	16.23	17.40	13.98	14.83	14.87	15.74	16.91
	4H	15.06	15.87	15.97	16.78	17.95	14.57	15.37	15.47	16.29	17.46
	6H	15.46	16.20	16.38	17.12	18.31	14.96	15.70	15.88	16.62	17.81
	8H	15.57	16.27	16.49	17.21	18.40	15.07	15.77	15.99	16.71	17.90
	12H	15.62	16.29	16.55	17.22	18.43	15.11	15.78	16.04	16.71	17.92
4H	2H	13.28	14.08	14.19	15.00	16.17	12.92	13.73	13.83	14.64	15.82
	3H	15.15	15.82	16.07	16.76	17.95	14.74	15.41	15.66	16.36	17.54
	4H	15.86	16.47	16.79	17.41	18.63	15.44	16.05	16.37	16.99	18.20
	6H	16.38	16.91	17.32	17.87	19.08	15.95	16.47	16.89	17.44	18.65
	8H	16.53	17.02	17.47	17.98	19.21	16.09	16.58	17.04	17.54	18.77
	12H	16.60	17.05	17.57	18.02	19.26	16.15	16.60	17.12	17.57	18.81
8H	4H	16.06	16.55	17.01	17.51	18.74	15.68	16.18	16.63	17.13	18.36
	6H	16.69	17.10	17.66	18.10	19.32	16.31	16.71	17.28	17.71	18.94
	8H	16.91	17.27	17.89	18.26	19.50	16.52	16.88	17.50	17.86	19.11
	12H	17.04	17.36	18.03	18.34	19.63	16.63	16.95	17.62	17.93	19.22
12H	4H	16.05	16.50	17.02	17.47	18.70	15.68	16.13	16.65	17.10	18.34
	6H	16.72	17.08	17.70	18.07	19.31	16.35	16.71	17.33	17.70	18.94
	8H	16.96	17.28	17.95	18.26	19.55	16.58	16.90	17.57	17.88	19.17