

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: P917444

Luminaire Tested: DFN2DIP-SQ3F0-090D070US930-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P917444
REPORT IS A COMBINATION OF REPORTS P899925 AND P896733
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ3F0-090D070US930-FLLFLL
Description: 3 foot, Square Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

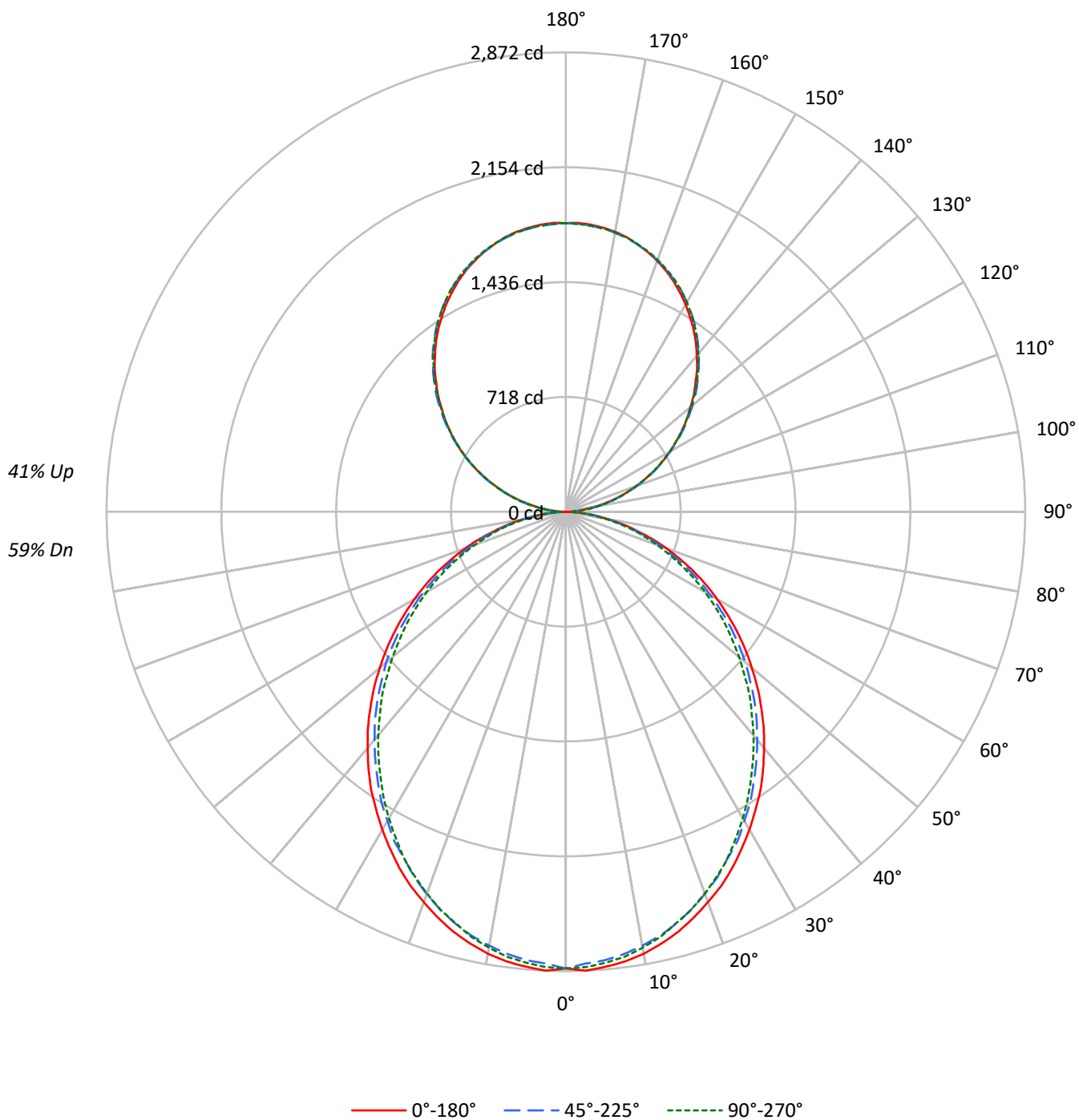
Lumens per Lamp: N/A
Luminaire Lumens: 12315.1 lumens
Efficiency: N/A
Efficacy: 87.8 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 3.06' x L: 3.06' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 140.3
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	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	78	75	73	67	65	63	57	56	54
2	91	83	77	72	85	78	73	68	68	64	60	59	56	53	50	48	46
3	83	73	66	60	77	69	62	57	60	55	51	52	48	45	44	42	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	33	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°	3271	3271	3271
5°	3275	3224	3246
10°	3246	3178	3201
15°	3196	3124	3132
20°	3130	3049	3060
25°	3063	2960	2978
30°	2981	2876	2874
35°	2902	2779	2763
40°	2806	2680	2658
45°	2710	2581	2551
50°	2605	2477	2426
55°	2495	2357	2311
60°	2370	2214	2180
65°	2233	2066	2025
70°	2060	1885	1857
75°	1820	1669	1701
80°	1530	1392	1407
85°	1076	923	920

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
Vertical Angle: 45°
Luminance: 2710 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	268.7	2.2
10°-20°	756.1	6.1
20°-30°	1111.2	9.0
30°-40°	1290.5	10.5
40°-50°	1288.9	10.5
50°-60°	1123.9	9.1
60°-70°	830.8	6.7
70°-80°	470.1	3.8
80°-90°	129.2	1.0
90°-100°	111.7	0.9
100°-110°	354.9	2.9
110°-120°	607.3	4.9
120°-130°	798.7	6.5
130°-140°	896.5	7.3
140°-150°	879.1	7.1
150°-160°	737.5	6.0
160°-170°	489.1	4.0
170°-180°	170.9	1.4
0°-30°	2136.0	17.3
0°-40°	3426.5	27.8
0°-60°	5839.4	47.4
0°-90°	7269.4	59.0
90°-120°	1073.9	8.7
90°-150°	3648.2	29.6
90°-180°	5046.0	41.0
0°-180°	12315.1	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2855	2855	2855	2855	2855	
5°	2855	2844	2814	2836	2831	271
15°	2718	2702	2666	2677	2663	765
25°	2460	2438	2391	2397	2391	1132
35°	2122	2095	2051	2034	2021	1325
45°	1727	1708	1666	1636	1625	1333
55°	1307	1290	1257	1225	1211	1169
65°	881	865	837	813	799	871
75°	461	456	442	426	431	492
85°	112	110	107	99	96	125
90°	2	20	53	50	52	12
95°	79	95	97	97	95	88
105°	328	332	335	338	338	346
115°	609	618	616	614	609	603
125°	886	900	896	891	889	792
135°	1147	1163	1167	1165	1161	886
145°	1392	1403	1412	1413	1407	870
155°	1592	1596	1601	1608	1604	733
165°	1731	1730	1730	1741	1733	488
175°	1802	1797	1794	1805	1796	171
180°	1805	1805	1805	1805	1805	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2855.1	2855.1	2855.1	2855.1	2855.1
2.5°	2871.7	2858.0	2827.8	2855.1	2849.9
5°	2855.1	2844.3	2814.1	2835.9	2830.6
7.5°	2835.9	2819.6	2789.3	2811.5	2805.9
10°	2805.9	2786.7	2753.8	2775.6	2767.4
12.5°	2764.5	2748.2	2715.4	2729.0	2723.5
15°	2718.0	2701.7	2665.8	2676.9	2663.2
17.5°	2660.2	2643.9	2608.1	2621.8	2608.1
20°	2597.1	2580.7	2542.3	2550.4	2539.7
22.5°	2534.1	2509.4	2473.5	2473.5	2468.0
25°	2459.8	2438.0	2391.4	2396.7	2391.4
27.5°	2377.4	2358.2	2322.7	2314.6	2300.9
30°	2295.3	2273.1	2232.0	2223.9	2212.9
32.5°	2207.3	2191.0	2147.0	2130.5	2119.4
35°	2122.3	2094.9	2050.9	2034.3	2020.6
37.5°	2026.2	2001.4	1957.4	1938.2	1924.5
40°	1927.4	1905.3	1861.2	1836.8	1825.8
42.5°	1831.2	1809.1	1765.4	1737.8	1721.5
45°	1727.0	1707.8	1666.4	1636.4	1625.4
47.5°	1625.4	1606.1	1562.1	1531.9	1515.6
50°	1518.2	1504.5	1466.0	1427.6	1413.9
52.5°	1413.9	1394.6	1359.1	1328.9	1309.6
55°	1307.0	1290.4	1257.4	1224.6	1210.9
57.5°	1199.8	1186.1	1150.3	1117.4	1106.3
60°	1092.6	1081.8	1043.3	1013.1	1004.9
62.5°	988.3	969.1	941.7	914.4	903.3
65°	881.4	864.8	837.4	812.7	799.0
67.5°	771.6	757.7	733.1	714.0	702.9
70°	669.9	658.8	634.1	614.9	604.1
72.5°	565.7	554.6	540.9	521.7	513.6
75°	461.1	455.8	441.9	425.6	431.1
77.5°	367.9	356.9	351.3	343.2	335.0
80°	274.7	271.7	266.2	258.0	252.6
82.5°	186.7	186.7	184.1	173.0	173.0
85°	112.4	109.8	107.2	98.7	96.1
87.5°	49.5	43.9	38.5	30.3	27.4
90°	1.6	19.6	53.3	50.1	51.7
92.5°	33.8	45.7	47.4	49.0	49.0
95°	79.4	94.7	97.4	97.4	94.7
97.5°	132.2	146.3	152.4	152.4	152.4
100°	193.1	205.7	210.0	210.0	208.4
102.5°	257.4	266.6	272.6	274.3	272.6
105°	327.6	331.9	335.2	337.9	337.9
107.5°	397.2	403.7	403.7	404.9	397.2
110°	464.7	473.4	473.4	473.4	469.0

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	537.6	546.9	545.3	540.9	537.6
115°	609.4	618.2	615.5	613.8	609.4
117.5°	680.7	692.7	685.1	680.7	676.4
120°	752.5	764.5	752.5	752.5	747.6
122.5°	817.8	833.1	825.5	821.1	817.8
125°	886.4	900.0	895.7	890.8	889.2
127.5°	953.3	970.2	964.3	957.7	953.3
130°	1015.9	1035.5	1032.8	1029.6	1023.5
132.5°	1086.1	1101.4	1102.4	1094.9	1090.5
135°	1146.6	1163.3	1166.7	1165.0	1160.7
137.5°	1214.0	1227.6	1230.3	1229.2	1222.7
140°	1273.3	1286.9	1294.5	1294.5	1288.6
142.5°	1334.2	1347.9	1352.2	1353.8	1347.9
145°	1392.0	1402.8	1411.5	1413.2	1407.2
147.5°	1443.6	1457.3	1463.8	1466.5	1460.5
150°	1497.0	1506.2	1512.2	1517.1	1512.2
152.5°	1544.3	1553.6	1561.1	1567.2	1561.1
155°	1591.6	1595.9	1600.9	1608.5	1603.6
157.5°	1632.5	1635.7	1638.4	1649.3	1641.7
160°	1668.9	1672.2	1673.8	1683.0	1676.5
162.5°	1702.7	1702.7	1704.3	1714.6	1707.0
165°	1731.4	1729.8	1729.8	1740.7	1733.1
167.5°	1757.6	1752.7	1752.7	1763.6	1756.0
170°	1777.2	1772.9	1771.2	1782.1	1772.9
172.5°	1790.8	1786.4	1784.8	1795.7	1786.4
175°	1801.6	1797.3	1794.1	1804.9	1795.7
177.5°	1807.7	1803.3	1800.0	1809.3	1800.0
180°	1804.9	1804.9	1804.9	1804.9	1804.9

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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	12.15	13.10	13.02	13.99	15.13	11.70	12.65	12.58	13.55	14.69
	3H	13.81	14.66	14.70	15.57	16.73	13.32	14.17	14.21	15.08	16.24
	4H	14.40	15.20	15.30	16.12	17.29	13.91	14.71	14.81	15.62	16.79
	6H	14.80	15.54	15.72	16.46	17.65	14.30	15.04	15.22	15.96	17.15
	8H	14.91	15.61	15.83	16.55	17.73	14.40	15.11	15.33	16.05	17.23
	12H	14.96	15.63	15.88	16.56	17.77	14.45	15.12	15.37	16.05	17.26
4H	2H	12.62	13.42	13.52	14.33	15.50	12.26	13.07	13.17	13.98	15.15
	3H	14.48	15.16	15.40	16.10	17.29	14.08	14.75	15.00	15.69	16.88
	4H	15.20	15.81	16.13	16.75	17.96	14.78	15.39	15.70	16.33	17.54
	6H	15.71	16.24	16.66	17.21	18.42	15.28	15.81	16.23	16.77	17.99
	8H	15.86	16.36	16.81	17.31	18.54	15.43	15.92	16.37	16.88	18.10
	12H	15.94	16.39	16.90	17.36	18.59	15.49	15.94	16.46	16.91	18.14
8H	4H	15.40	15.89	16.34	16.85	18.07	15.02	15.52	15.97	16.47	17.70
	6H	16.03	16.44	17.00	17.43	18.66	15.64	16.05	16.62	17.05	18.27
	8H	16.25	16.61	17.23	17.59	18.84	15.85	16.21	16.83	17.20	18.44
	12H	16.38	16.70	17.36	17.68	18.97	15.97	16.29	16.95	17.27	18.56
12H	4H	15.39	15.83	16.35	16.81	18.04	15.02	15.47	15.98	16.44	17.67
	6H	16.06	16.42	17.04	17.40	18.65	15.68	16.05	16.66	17.03	18.28
	8H	16.30	16.62	17.28	17.60	18.89	15.92	16.24	16.90	17.22	18.51