

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: P922697

Luminaire Tested: DFN2DIP-SQ2F0-080D060US940-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P922697
REPORT IS A COMBINATION OF REPORTS P901337 AND P898215
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ2F0-080D060US940-FLLONL
Description: 2 foot, Square Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

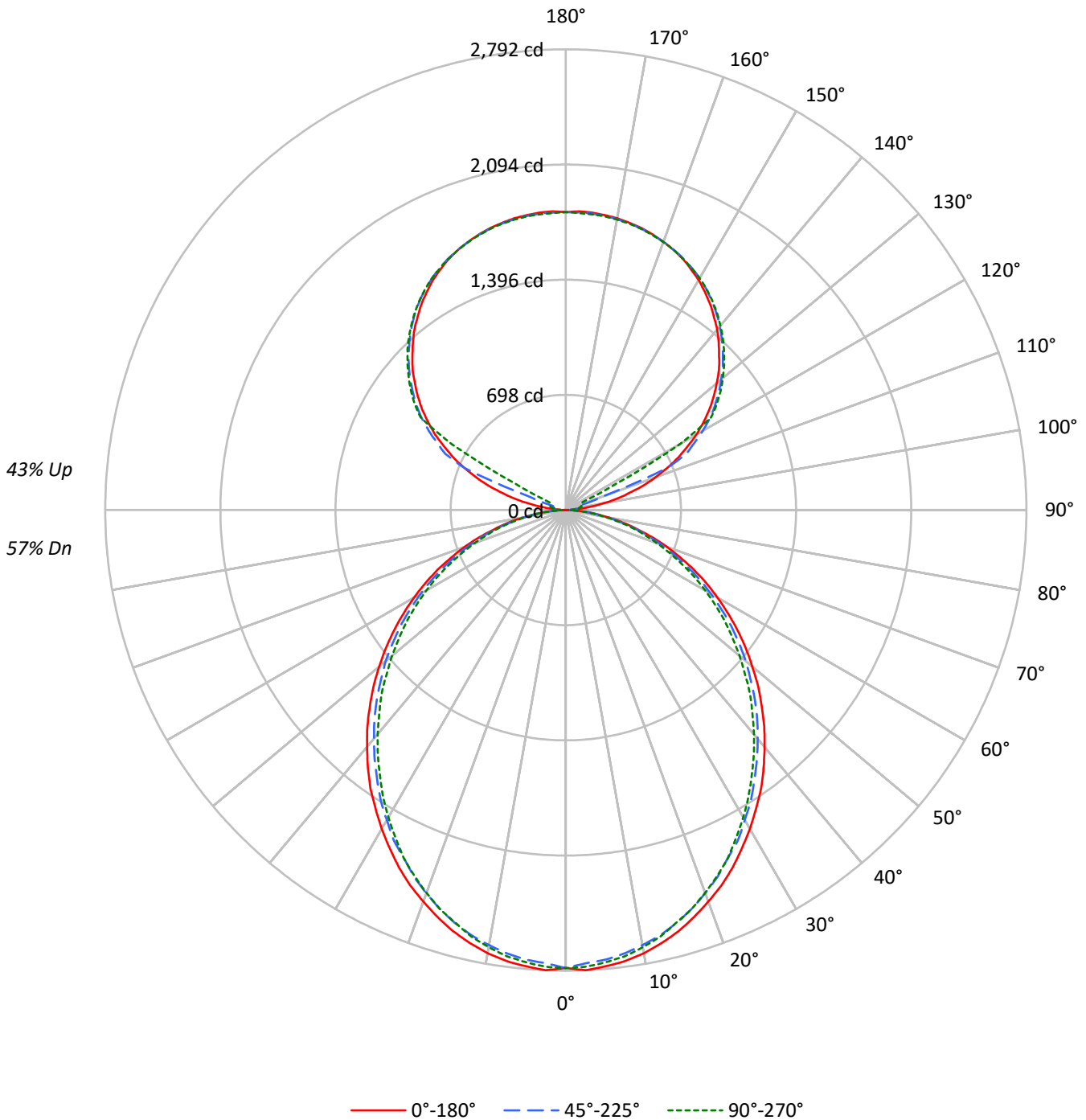
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 12359.1 lumens
Efficiency: N/A
Efficacy: 99.0 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 2.21' x L: 2.21' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 124.8
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9957
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	109	109	109	109	101	101	101	101	87	87	87	74	74	74	63	63	63	57	57	57	57
1	99	95	91	88	92	89	85	82	77	74	72	66	64	62	55	54	53	48	48	48	48
2	91	83	77	72	84	77	72	67	67	63	59	58	55	52	49	47	45	40	40	40	40
3	83	73	66	60	77	68	62	56	59	54	50	51	47	44	43	40	38	34	34	34	34
4	76	65	57	50	70	61	53	48	53	47	43	45	41	38	39	35	33	29	29	29	29
5	69	58	49	43	64	54	47	41	47	41	37	41	36	33	35	31	29	26	26	26	26
6	64	52	44	38	59	49	41	36	43	37	32	37	32	29	32	28	25	22	22	22	22
7	59	47	39	33	55	44	37	32	39	33	28	34	29	25	29	25	22	20	20	20	20
8	55	43	35	29	51	40	33	28	35	29	25	31	26	23	27	23	20	18	18	18	18
9	51	39	31	26	48	37	30	25	32	27	23	28	24	20	25	21	18	16	16	16	16
10	48	36	28	24	45	34	27	22	30	24	20	26	22	18	23	19	17	15	15	15	15

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	6103	6103	6103
5°	6103	6005	6051
10°	6043	5911	5960
15°	5943	5801	5824
20°	5813	5652	5684
25°	5683	5478	5524
30°	5522	5314	5323
35°	5368	5123	5111
40°	5182	4930	4909
45°	4995	4735	4701
50°	4791	4530	4462
55°	4576	4295	4239
60°	4332	4016	3985
65°	4065	3725	3685
70°	3725	3371	3359
75°	3259	2947	3047
80°	2692	2406	2474
85°	1818	1519	1555

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 4995 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	261.3	2.1
10°-20°	735.1	5.9
20°-30°	1080.3	8.7
30°-40°	1254.7	10.2
40°-50°	1253.1	10.1
50°-60°	1092.7	8.8
60°-70°	807.7	6.5
70°-80°	457.0	3.7
80°-90°	123.8	1.0
90°-100°	59.5	0.5
100°-110°	222.0	1.8
110°-120°	588.7	4.8
120°-130°	976.3	7.9
130°-140°	1037.1	8.4
140°-150°	963.9	7.8
150°-160°	774.9	6.3
160°-170°	499.3	4.0
170°-180°	171.9	1.4
0°-30°	2076.6	16.8
0°-40°	3331.3	27.0
0°-60°	5677.0	45.9
0°-90°	7065.5	57.2
90°-120°	870.2	7.0
90°-150°	3847.4	31.1
90°-180°	5294.0	42.8
0°-180°	12359.1	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2776	2776	2776	2776	2776	
5°	2776	2765	2736	2757	2752	263
15°	2642	2626	2592	2602	2589	744
25°	2392	2370	2325	2330	2325	1100
35°	2063	2037	1994	1978	1964	1288
45°	1679	1660	1620	1591	1580	1296
55°	1271	1254	1222	1190	1177	1136
65°	857	841	814	790	777	847
75°	448	443	430	414	419	479
85°	109	107	104	96	94	122
90°	1	16	26	33	35	11
95°	85	42	51	58	56	101
105°	397	436	80	94	99	424
115°	751	774	806	201	107	740
125°	1062	1079	1104	1113	1117	947
135°	1314	1335	1347	1360	1358	1015
145°	1525	1523	1546	1555	1548	954
155°	1679	1667	1683	1691	1680	774
165°	1769	1761	1765	1774	1765	500
175°	1810	1800	1803	1812	1799	172
180°	1806	1806	1806	1806	1806	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2775.7	2775.7	2775.7	2775.7	2775.7
2.5°	2791.9	2778.6	2749.1	2775.7	2770.6
5°	2775.7	2765.3	2735.9	2757.1	2752.0
7.5°	2757.1	2741.2	2711.8	2733.3	2727.9
10°	2727.9	2709.2	2677.2	2698.4	2690.6
12.5°	2687.7	2671.8	2639.8	2653.1	2647.8
15°	2642.4	2626.5	2591.7	2602.5	2589.2
17.5°	2586.3	2570.4	2535.6	2549.0	2535.6
20°	2524.9	2509.0	2471.6	2479.6	2469.1
22.5°	2463.7	2439.6	2404.8	2404.8	2399.4
25°	2391.5	2370.3	2325.0	2330.0	2325.0
27.5°	2311.3	2292.7	2258.1	2250.1	2236.9
30°	2231.5	2209.9	2170.1	2162.1	2151.3
32.5°	2146.0	2130.1	2087.3	2071.2	2060.5
35°	2063.2	2036.7	1993.9	1977.7	1964.4
37.5°	1969.8	1945.7	1903.0	1884.3	1871.0
40°	1873.8	1852.3	1809.5	1785.7	1774.9
42.5°	1780.4	1758.8	1716.4	1689.4	1673.7
45°	1679.0	1660.3	1620.1	1590.9	1580.2
47.5°	1580.2	1561.5	1518.7	1489.2	1473.4
50°	1476.0	1462.7	1425.2	1387.9	1374.6
52.5°	1374.6	1355.8	1321.3	1291.9	1273.2
55°	1270.6	1254.5	1222.5	1190.5	1177.1
57.5°	1166.4	1153.2	1118.3	1086.3	1075.5
60°	1062.2	1051.8	1014.3	984.9	977.0
62.5°	960.8	942.2	915.5	888.9	878.2
65°	856.9	840.8	814.1	790.1	776.8
67.5°	750.1	736.6	712.7	694.1	683.3
70°	651.3	640.5	616.5	597.8	587.3
72.5°	549.9	539.2	525.8	507.2	499.3
75°	448.3	443.2	429.6	413.8	419.1
77.5°	357.7	346.9	341.5	333.6	325.7
80°	267.1	264.2	258.9	250.9	245.5
82.5°	181.6	181.6	179.0	168.2	168.2
85°	109.3	106.7	104.2	96.0	93.5
87.5°	48.2	42.8	37.4	29.4	26.7
90°	1.2	15.7	26.0	32.7	35.2
92.5°	32.7	27.5	31.3	34.0	35.2
95°	84.9	41.7	50.9	57.6	56.2
97.5°	152.8	45.7	66.5	70.6	71.9
100°	231.3	52.3	74.5	84.9	87.5
102.5°	317.4	315.0	77.1	91.4	95.4
105°	397.2	436.4	79.7	94.0	99.3
107.5°	490.0	522.5	82.4	96.7	101.9
110°	578.9	606.2	228.7	98.1	103.2



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	662.5	685.9	663.7	100.5	104.6
115°	751.3	773.5	806.2	201.3	107.2
117.5°	828.3	854.4	876.7	689.8	347.5
120°	914.6	934.2	957.8	973.4	797.0
122.5°	987.7	1008.6	1034.8	1042.6	1044.0
125°	1062.2	1079.2	1104.0	1113.2	1117.0
127.5°	1130.2	1148.4	1168.1	1181.2	1182.4
130°	1194.2	1215.1	1229.4	1243.8	1242.6
132.5°	1259.5	1276.6	1290.8	1302.6	1301.4
135°	1314.5	1335.4	1347.0	1360.2	1357.5
137.5°	1371.8	1387.5	1400.7	1413.7	1409.9
140°	1428.0	1438.6	1452.9	1464.6	1458.1
142.5°	1475.2	1484.3	1501.3	1511.6	1505.1
145°	1524.8	1523.4	1545.6	1554.8	1548.3
147.5°	1567.8	1563.9	1586.1	1592.6	1587.5
150°	1609.7	1600.5	1621.5	1629.2	1622.7
152.5°	1644.9	1634.5	1654.0	1662.0	1652.8
155°	1678.9	1667.2	1682.9	1690.7	1680.2
157.5°	1706.4	1695.9	1707.7	1716.9	1706.4
160°	1729.9	1722.0	1729.9	1737.7	1728.6
162.5°	1750.7	1742.9	1749.4	1758.6	1746.9
165°	1769.1	1761.3	1765.1	1774.3	1765.1
167.5°	1783.4	1775.6	1779.6	1788.8	1776.9
170°	1795.3	1787.3	1790.0	1799.1	1787.3
172.5°	1803.0	1795.3	1797.9	1807.1	1795.3
175°	1809.5	1800.4	1803.0	1812.1	1799.1
177.5°	1812.1	1803.0	1804.4	1813.6	1801.8
180°	1805.6	1805.6	1805.6	1805.6	1805.6



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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	14.08	15.01	14.97	15.92	17.09	13.63	14.56	14.53	15.48	16.64
	3H	15.72	16.56	16.63	17.48	18.67	15.23	16.07	16.14	16.99	18.18
	4H	16.30	17.09	17.22	18.02	19.22	15.81	16.60	16.73	17.53	18.72
	6H	16.69	17.42	17.62	18.35	19.56	16.19	16.92	17.12	17.85	19.06
	8H	16.79	17.48	17.73	18.43	19.65	16.29	16.98	17.23	17.93	19.14
	12H	16.83	17.49	17.78	18.44	19.67	16.33	16.98	17.27	17.93	19.17
4H	2H	14.54	15.33	15.46	16.25	17.45	14.18	14.97	15.11	15.90	17.10
	3H	16.39	17.04	17.32	18.00	19.22	15.98	16.64	16.91	17.59	18.81
	4H	17.09	17.69	18.03	18.64	19.88	16.66	17.26	17.61	18.22	19.46
	6H	17.59	18.11	18.55	19.08	20.32	17.16	17.67	18.12	18.65	19.89
	8H	17.73	18.21	18.69	19.19	20.44	17.29	17.78	18.25	18.75	20.00
	12H	17.80	18.23	18.78	19.22	20.48	17.35	17.79	18.33	18.77	20.03
8H	4H	17.28	17.76	18.24	18.73	19.99	16.90	17.38	17.86	18.36	19.61
	6H	17.89	18.29	18.88	19.30	20.55	17.50	17.90	18.49	18.92	20.17
	8H	18.10	18.45	19.09	19.45	20.72	17.70	18.06	18.70	19.06	20.33
	12H	18.22	18.53	19.22	19.52	20.84	17.81	18.12	18.81	19.11	20.43
12H	4H	17.26	17.70	18.25	18.69	19.95	16.89	17.33	17.88	18.32	19.58
	6H	17.91	18.27	18.91	19.27	20.54	17.54	17.90	18.54	18.90	20.17
	8H	18.14	18.46	19.14	19.45	20.77	17.76	18.07	18.76	19.07	20.38