

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: P922673

Luminaire Tested: DFN2DIP-SQ2F0-070D060US940-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P922673
REPORT IS A COMBINATION OF REPORTS P901335 AND P898215
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ2F0-070D060US940-FLLONL
Description: 2 foot, Square Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

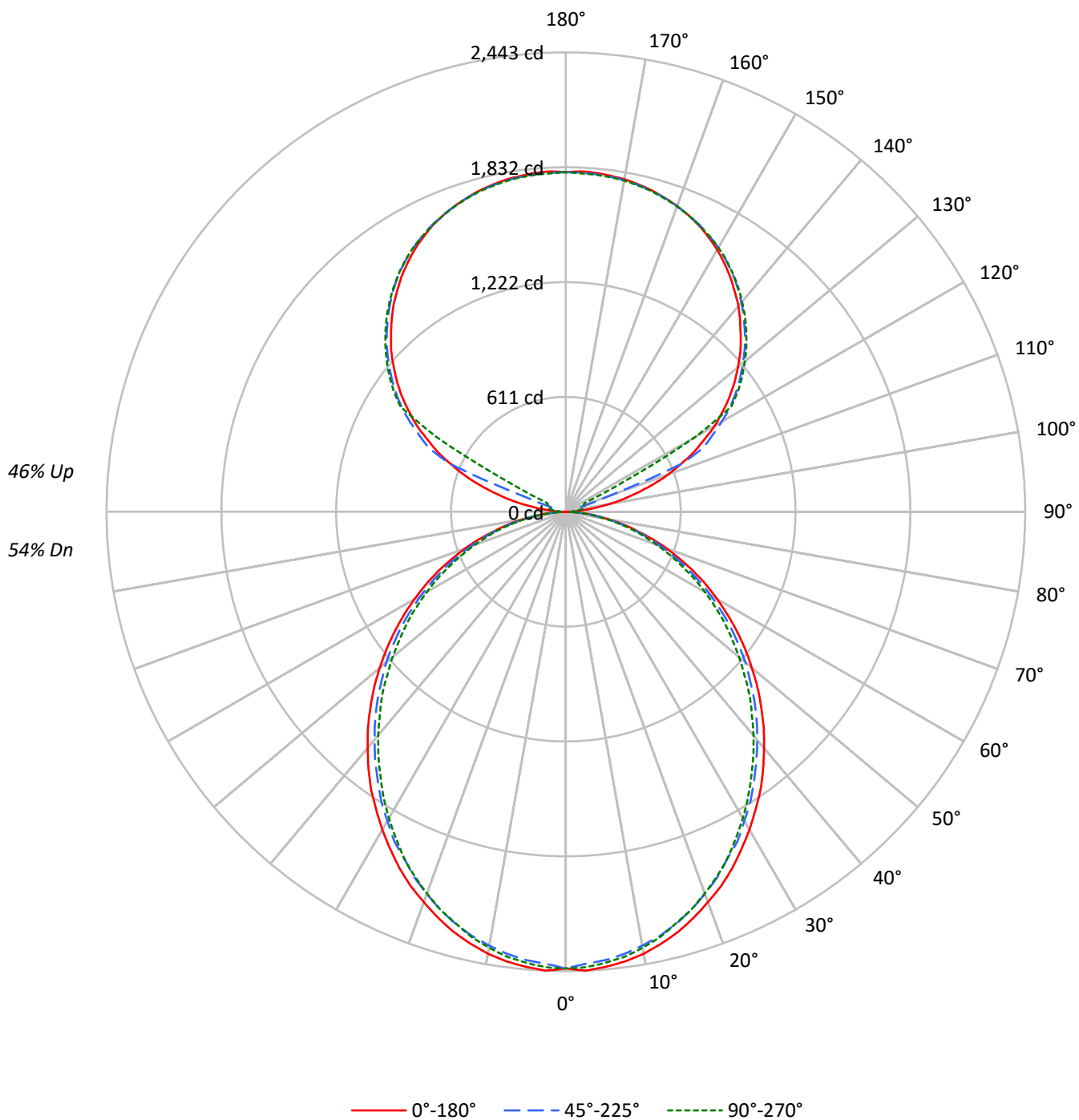
Lumens per Lamp: N/A
Luminaire Lumens: 11476.3 lumens
Efficiency: N/A
Efficacy: 101.0 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 2.21' x L: 2.21' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 113.6
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9977
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
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	72	72	72	60	60	60
1	99	94	90	87	91	88	84	81	75	73	70	63	62	60	53	52	50
2	90	82	76	71	83	77	71	67	66	62	58	56	53	50	46	44	42
3	82	72	65	59	76	67	61	56	58	53	49	49	46	42	41	38	36
4	75	64	56	50	69	60	53	47	52	46	42	44	40	36	37	34	31
5	69	57	49	43	64	53	46	41	46	40	36	39	35	32	33	30	27
6	63	51	43	37	59	48	41	35	42	36	31	36	31	28	30	27	24
7	59	46	38	33	54	43	36	31	38	32	28	32	28	24	27	24	21
8	54	42	34	29	50	39	32	28	34	29	25	30	25	22	25	22	19
9	51	38	31	26	47	36	29	25	32	26	22	27	23	20	23	20	17
10	47	35	28	23	44	33	27	22	29	24	20	25	21	18	22	18	16

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	5341	5341	5341
5°	5340	5255	5294
10°	5287	5172	5215
15°	5200	5075	5096
20°	5086	4946	4974
25°	4972	4793	4834
30°	4832	4650	4658
35°	4698	4482	4473
40°	4534	4313	4295
45°	4371	4143	4114
50°	4192	3964	3904
55°	4004	3758	3709
60°	3791	3514	3487
65°	3557	3260	3224
70°	3259	2950	2939
75°	2852	2578	2666
80°	2355	2105	2165
85°	1592	1330	1361

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 4371 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	228.6	2.0
10°-20°	643.2	5.6
20°-30°	945.2	8.2
30°-40°	1097.8	9.6
40°-50°	1096.5	9.6
50°-60°	956.1	8.3
60°-70°	706.8	6.2
70°-80°	399.9	3.5
80°-90°	108.7	0.9
90°-100°	59.5	0.5
100°-110°	222.0	1.9
110°-120°	588.7	5.1
120°-130°	976.3	8.5
130°-140°	1037.1	9.0
140°-150°	963.9	8.4
150°-160°	774.9	6.8
160°-170°	499.3	4.4
170°-180°	171.9	1.5
0°-30°	1817.0	15.8
0°-40°	2914.9	25.4
0°-60°	4967.4	43.3
0°-90°	6182.8	53.9
90°-120°	870.2	7.6
90°-150°	3847.4	33.5
90°-180°	5294.0	46.1
0°-180°	11476.3	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2429	2429	2429	2429	2429	
5°	2429	2420	2394	2412	2408	231
15°	2312	2298	2268	2277	2266	651
25°	2093	2074	2034	2039	2034	963
35°	1805	1782	1745	1730	1719	1127
45°	1469	1453	1418	1392	1383	1134
55°	1112	1098	1070	1042	1030	994
65°	750	736	712	691	680	741
75°	392	388	376	362	367	419
85°	96	94	91	84	82	107
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°	2428.8	2428.8	2428.8	2428.8	2428.8
2.5°	2442.9	2431.2	2405.5	2428.8	2424.3
5°	2428.8	2419.7	2393.9	2412.4	2408.0
7.5°	2412.4	2398.5	2372.8	2391.7	2386.9
10°	2386.9	2370.5	2342.5	2361.2	2354.2
12.5°	2351.7	2337.9	2309.9	2321.5	2316.8
15°	2312.1	2298.2	2267.7	2277.2	2265.5
17.5°	2263.0	2249.2	2218.7	2230.3	2218.7
20°	2209.2	2195.4	2162.7	2169.6	2160.4
22.5°	2155.7	2134.7	2104.2	2104.2	2099.4
25°	2092.6	2073.9	2034.3	2038.8	2034.3
27.5°	2022.4	2006.1	1975.9	1968.9	1957.2
30°	1952.6	1933.7	1898.8	1891.9	1882.4
32.5°	1877.7	1863.9	1826.4	1812.3	1802.9
35°	1805.4	1782.1	1744.6	1730.5	1718.9
37.5°	1723.6	1702.5	1665.1	1648.8	1637.1
40°	1639.6	1620.8	1583.3	1562.5	1553.1
42.5°	1557.8	1539.0	1501.8	1478.3	1464.4
45°	1469.1	1452.8	1417.6	1392.0	1382.6
47.5°	1382.6	1366.3	1328.8	1303.1	1289.2
50°	1291.5	1279.8	1247.1	1214.4	1202.7
52.5°	1202.7	1186.4	1156.2	1130.4	1114.0
55°	1111.8	1097.7	1069.7	1041.7	1030.0
57.5°	1020.7	1009.0	978.5	950.5	941.1
60°	929.4	920.2	887.6	861.8	854.9
62.5°	840.7	824.4	801.1	777.8	768.4
65°	749.8	735.7	712.4	691.3	679.7
67.5°	656.4	644.5	623.7	607.3	597.9
70°	569.9	560.5	539.4	523.1	513.9
72.5°	481.2	471.8	460.1	443.8	436.8
75°	392.3	387.8	375.9	362.0	366.8
77.5°	313.0	303.5	298.8	291.9	285.0
80°	233.6	231.2	226.5	219.5	214.8
82.5°	158.8	158.8	156.6	147.2	147.2
85°	95.7	93.5	91.2	84.0	81.8
87.5°	42.1	37.5	32.7	25.8	23.3
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	13.33	14.23	14.25	15.17	16.38	12.88	13.78	13.81	14.72	15.94
	3H	14.97	15.78	15.91	16.73	17.97	14.48	15.29	15.42	16.24	17.48
	4H	15.55	16.31	16.50	17.27	18.51	15.05	15.82	16.00	16.77	18.02
	6H	15.94	16.64	16.90	17.60	18.86	15.44	16.14	16.40	17.10	18.36
	8H	16.03	16.70	17.00	17.68	18.94	15.53	16.20	16.50	17.18	18.44
	12H	16.08	16.71	17.05	17.68	18.97	15.57	16.20	16.54	17.18	18.46
4H	2H	13.78	14.55	14.74	15.50	16.75	13.43	14.19	14.38	15.14	16.39
	3H	15.63	16.27	16.59	17.25	18.51	15.22	15.86	16.19	16.84	18.10
	4H	16.33	16.91	17.30	17.89	19.18	15.91	16.49	16.88	17.47	18.75
	6H	16.83	17.33	17.81	18.33	19.62	16.40	16.90	17.38	17.90	19.18
	8H	16.97	17.44	17.96	18.43	19.73	16.53	17.00	17.52	18.00	19.29
	12H	17.04	17.46	18.04	18.47	19.77	16.59	17.01	17.59	18.02	19.33
8H	4H	16.52	16.99	17.51	17.98	19.28	16.14	16.61	17.13	17.60	18.90
	6H	17.13	17.51	18.14	18.55	19.85	16.74	17.13	17.76	18.17	19.46
	8H	17.33	17.68	18.36	18.70	20.02	16.94	17.28	17.96	18.31	19.62
	12H	17.45	17.75	18.48	18.77	20.13	17.04	17.34	18.07	18.36	19.72
12H	4H	16.50	16.92	17.51	17.94	19.24	16.13	16.55	17.14	17.57	18.87
	6H	17.15	17.49	18.17	18.52	19.83	16.78	17.12	17.80	18.14	19.46
	8H	17.38	17.68	18.41	18.70	20.06	17.00	17.30	18.02	18.32	19.68