

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: P914469

Luminaire Tested: DFN2DIP-SQ2F0-060D070US927-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P914469
REPORT IS A COMBINATION OF REPORTS P901345 AND P898215
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ2F0-060D070US927-FLLONL
Description: 2 foot, Square Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

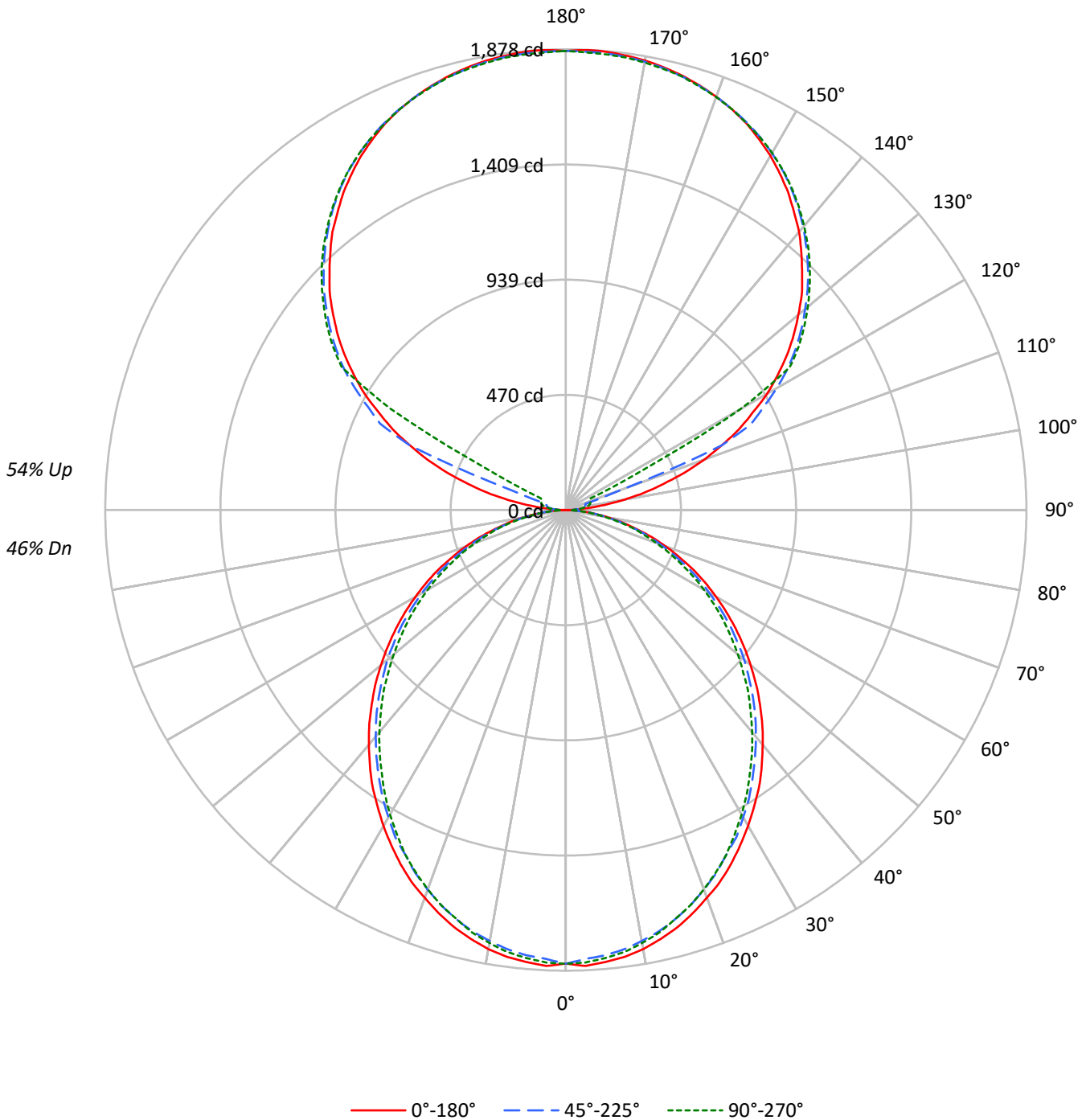
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 10195.4 lumens
Efficiency: N/A
Efficacy: 93.1 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): 109.5
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			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	106	106	106	106	98	98	98	98	81	81	81	66	66	66	53	53	53	46			46
1	97	93	89	85	89	85	82	79	71	69	67	58	57	55	46	45	44	39			39
2	88	81	75	70	81	74	69	65	62	59	55	51	48	46	41	39	37	33			33
3	81	71	64	58	74	66	59	54	55	50	46	45	42	39	36	34	32	28			28
4	74	63	55	49	67	58	51	46	49	44	40	40	37	33	32	30	27	24			24
5	68	56	48	42	62	52	45	39	44	38	34	36	32	29	29	26	24	21			21
6	62	50	42	36	57	46	39	34	39	34	30	33	29	25	26	23	21	18			18
7	58	45	37	32	53	42	35	30	36	30	26	30	26	22	24	21	19	16			16
8	53	41	33	28	49	38	31	26	33	27	23	27	23	20	22	19	17	14			14
9	50	38	30	25	46	35	28	24	30	24	21	25	21	18	21	17	15	13			13
10	46	34	27	22	43	32	26	21	27	22	19	23	19	16	19	16	14	12			12

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	4067	4067	4067
5°	4066	4001	4031
10°	4026	3939	3971
15°	3960	3865	3880
20°	3873	3766	3787
25°	3786	3649	3681
30°	3679	3541	3547
35°	3577	3413	3406
40°	3453	3285	3271
45°	3328	3155	3132
50°	3192	3019	2973
55°	3049	2861	2824
60°	2886	2676	2655
65°	2708	2482	2455
70°	2482	2246	2238
75°	2171	1963	2030
80°	1793	1603	1649
85°	1211	1012	1036

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 3328 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	174.1	1.7
10°-20°	489.8	4.8
20°-30°	719.8	7.1
30°-40°	836.0	8.2
40°-50°	834.9	8.2
50°-60°	728.0	7.1
60°-70°	538.2	5.3
70°-80°	304.5	3.0
80°-90°	83.7	0.8
90°-100°	61.7	0.6
100°-110°	230.0	2.3
110°-120°	610.1	6.0
120°-130°	1011.9	9.9
130°-140°	1074.9	10.5
140°-150°	999.0	9.8
150°-160°	803.2	7.9
160°-170°	517.5	5.1
170°-180°	178.1	1.7
0°-30°	1383.6	13.6
0°-40°	2219.6	21.8
0°-60°	3782.5	37.1
0°-90°	4708.8	46.2
90°-120°	901.9	8.8
90°-150°	3987.7	39.1
90°-180°	5487.0	53.8
0°-180°	10195.4	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1849	1849	1849	1849	1849	
5°	1849	1842	1823	1837	1834	176
15°	1760	1750	1727	1734	1725	496
25°	1593	1579	1549	1552	1549	733
35°	1375	1357	1328	1318	1309	858
45°	1119	1106	1079	1060	1053	863
55°	847	836	814	793	784	757
65°	571	560	542	526	518	564
75°	299	295	286	276	279	319
85°	73	71	69	64	62	81
90°	1	16	27	34	36	9
95°	88	43	53	60	58	104
105°	412	452	83	97	103	440
115°	779	802	836	209	111	767
125°	1101	1119	1144	1154	1158	982
135°	1362	1384	1396	1410	1407	1052
145°	1580	1579	1602	1612	1605	988
155°	1740	1728	1744	1752	1742	802
165°	1834	1826	1830	1839	1830	518
175°	1876	1866	1869	1878	1865	178
180°	1871	1871	1871	1871	1871	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1849.4	1849.4	1849.4	1849.4	1849.4
2.5°	1860.2	1851.3	1831.7	1849.4	1846.0
5°	1849.4	1842.5	1822.8	1837.0	1833.6
7.5°	1837.0	1826.5	1806.8	1821.1	1817.6
10°	1817.6	1805.1	1783.8	1797.9	1792.6
12.5°	1790.8	1780.2	1758.9	1767.8	1764.2
15°	1760.5	1750.0	1726.8	1734.0	1725.1
17.5°	1723.2	1712.7	1689.5	1698.3	1689.5
20°	1682.3	1671.7	1646.8	1652.1	1645.1
22.5°	1641.6	1625.5	1602.3	1602.3	1598.7
25°	1593.4	1579.3	1549.0	1552.4	1549.0
27.5°	1540.0	1527.6	1504.5	1499.3	1490.4
30°	1486.8	1472.4	1445.9	1440.6	1433.4
32.5°	1429.8	1419.3	1390.8	1380.0	1372.8
35°	1374.8	1357.0	1328.5	1317.7	1308.8
37.5°	1312.5	1296.4	1268.0	1255.4	1246.6
40°	1248.5	1234.1	1205.7	1189.9	1182.6
42.5°	1186.2	1171.9	1143.6	1125.7	1115.1
45°	1118.7	1106.2	1079.4	1060.0	1052.8
47.5°	1052.8	1040.4	1011.9	992.3	981.7
50°	983.4	974.5	949.7	924.7	915.8
52.5°	915.8	903.4	880.4	860.8	848.3
55°	846.6	835.8	814.5	793.2	784.3
57.5°	777.2	768.3	745.1	723.8	716.6
60°	707.7	700.8	675.9	656.2	650.9
62.5°	640.2	627.7	610.0	592.2	585.1
65°	570.9	560.2	542.5	526.4	517.5
67.5°	499.8	490.8	474.9	462.5	455.3
70°	434.0	426.8	410.7	398.3	391.3
72.5°	366.4	359.3	350.4	337.9	332.6
75°	298.7	295.3	286.2	275.7	279.2
77.5°	238.3	231.2	227.5	222.3	217.0
80°	177.9	176.0	172.5	167.2	163.6
82.5°	121.0	121.0	119.2	112.1	112.1
85°	72.8	71.1	69.4	63.9	62.3
87.5°	32.1	28.5	24.9	19.6	17.7
90°	1.3	16.2	27.0	33.9	36.5
92.5°	33.9	28.4	32.5	35.3	36.5
95°	87.9	43.3	52.8	59.7	58.2
97.5°	158.4	47.5	69.0	73.2	74.5
100°	239.8	54.2	77.2	87.9	90.7
102.5°	329.0	326.5	79.9	94.7	98.9
105°	411.7	452.3	82.6	97.4	102.9
107.5°	507.8	541.6	85.4	100.2	105.7
110°	600.0	628.3	237.0	101.6	106.9



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	686.7	710.9	687.9	104.2	108.4
115°	778.6	801.6	835.5	208.6	111.1
117.5°	858.6	885.6	908.7	714.9	360.2
120°	947.9	968.2	992.7	1008.9	826.1
122.5°	1023.7	1045.4	1072.6	1080.6	1082.0
125°	1100.9	1118.6	1144.3	1153.8	1157.8
127.5°	1171.3	1190.3	1210.7	1224.2	1225.5
130°	1237.7	1259.4	1274.2	1289.2	1287.9
132.5°	1305.4	1323.1	1337.9	1350.1	1348.8
135°	1362.3	1384.0	1396.1	1409.8	1407.1
137.5°	1421.8	1438.1	1451.8	1465.3	1461.3
140°	1480.0	1491.0	1505.8	1518.0	1511.2
142.5°	1528.9	1538.4	1555.9	1566.7	1560.0
145°	1580.4	1579.0	1601.9	1611.5	1604.7
147.5°	1624.9	1621.0	1643.9	1650.7	1645.4
150°	1668.3	1658.9	1680.6	1688.6	1681.9
152.5°	1704.9	1694.1	1714.4	1722.5	1713.1
155°	1740.1	1728.0	1744.2	1752.3	1741.5
157.5°	1768.5	1757.8	1770.0	1779.5	1768.5
160°	1793.0	1784.8	1793.0	1801.0	1791.5
162.5°	1814.6	1806.5	1813.2	1822.7	1810.5
165°	1833.5	1825.5	1829.5	1839.0	1829.5
167.5°	1848.5	1840.2	1844.4	1853.9	1841.7
170°	1860.7	1852.5	1855.2	1864.7	1852.5
172.5°	1868.8	1860.7	1863.4	1872.9	1860.7
175°	1875.5	1866.0	1868.8	1878.2	1864.7
177.5°	1878.2	1868.8	1870.2	1879.7	1867.4
180°	1871.4	1871.4	1871.4	1871.4	1871.4



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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	11.67	12.50	12.66	13.50	14.82	11.22	12.05	12.21	13.05	14.38
	3H	13.31	14.05	14.31	15.06	16.40	12.82	13.56	13.82	14.57	15.91
	4H	13.88	14.58	14.89	15.60	16.95	13.39	14.09	14.40	15.10	16.46
	6H	14.26	14.91	15.29	15.93	17.29	13.76	14.41	14.79	15.43	16.79
	8H	14.36	14.98	15.39	16.01	17.37	13.86	14.47	14.89	15.51	16.87
	12H	14.40	14.99	15.43	16.01	17.40	13.89	14.48	14.92	15.51	16.89
4H	2H	12.11	12.82	13.13	13.83	15.18	11.76	12.46	12.78	13.47	14.83
	3H	13.95	14.54	14.98	15.58	16.95	13.55	14.13	14.57	15.17	16.54
	4H	14.65	15.19	15.69	16.22	17.61	14.23	14.76	15.26	15.80	17.19
	6H	15.15	15.61	16.19	16.67	18.05	14.71	15.18	15.76	16.23	17.62
	8H	15.29	15.72	16.33	16.77	18.17	14.85	15.28	15.89	16.33	17.73
	12H	15.35	15.74	16.41	16.80	18.21	14.90	15.29	15.96	16.35	17.76
8H	4H	14.83	15.27	15.88	16.32	17.72	14.46	14.89	15.50	15.94	17.34
	6H	15.44	15.80	16.51	16.89	18.29	15.05	15.41	16.12	16.50	17.90
	8H	15.65	15.96	16.72	17.04	18.45	15.25	15.57	16.33	16.64	18.06
	12H	15.76	16.04	16.84	17.11	18.57	15.35	15.63	16.43	16.70	18.16
12H	4H	14.81	15.21	15.88	16.27	17.68	14.45	14.84	15.51	15.90	17.31
	6H	15.46	15.78	16.54	16.85	18.27	15.09	15.40	16.17	16.48	17.90
	8H	15.69	15.97	16.77	17.04	18.49	15.31	15.58	16.39	16.65	18.11