

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: P921027

Luminaire Tested: DFN2DIP-TR4F0-070D060US935-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P921027
REPORT IS A COMBINATION OF REPORTS P901931 AND P898849
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-TR4F0-070D060US935-FLLONL
Description: 4 foot, Triangle Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

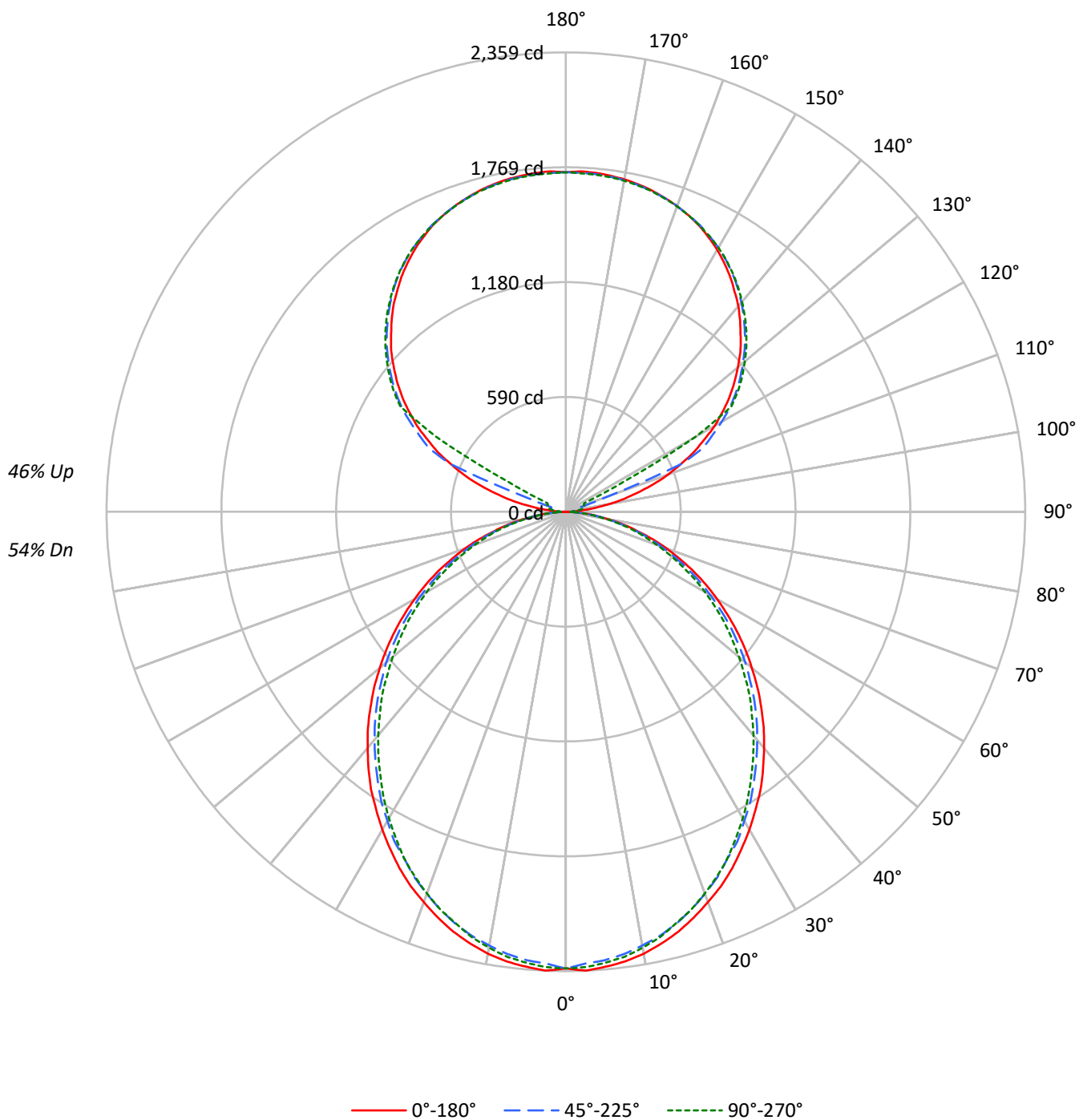
Lumens per Lamp: N/A
Luminaire Lumens: 11081.1 lumens
Efficiency: N/A
Efficacy: 100.5 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 3.43' x L: 3.96' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 110.3
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
RCR																	
0	108	108	108	108	100	100	100	100	85	85	85		72	72	72		60
1	99	94	90	87	91	88	84	81	75	73	70		63	62	60		53
2	90	82	76	71	83	77	71	67	66	62	58		56	53	50		46
3	82	72	65	59	76	67	61	56	58	53	49		49	46	42		41
4	75	64	56	50	69	60	53	47	52	46	42		44	40	36		37
5	69	57	49	43	64	53	46	41	46	40	36		39	35	32		33
6	63	51	43	37	59	48	41	35	42	36	31		36	31	28		30
7	59	46	38	33	54	43	36	31	38	32	28		32	28	24		27
8	54	42	34	29	50	39	32	28	34	29	25		30	25	22		25
9	51	38	31	26	47	36	29	25	32	26	22		27	23	20		23
10	47	35	28	23	44	33	27	22	29	24	20		25	21	18		22

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1863	1863	1863
5°	1866	1837	1849
10°	1851	1812	1824
15°	1824	1782	1785
20°	1787	1741	1745
25°	1750	1691	1699
30°	1705	1645	1640
35°	1661	1591	1577
40°	1608	1536	1518
45°	1554	1481	1457
50°	1496	1423	1387
55°	1435	1356	1322
60°	1366	1276	1248
65°	1291	1194	1161
70°	1195	1094	1067
75°	1062	974	980
80°	903	821	814
85°	653	558	540

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
Vertical Angle: 45°
Luminance: 1554 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	220.7	2.0
10°-20°	621.0	5.6
20°-30°	912.7	8.2
30°-40°	1060.0	9.6
40°-50°	1058.7	9.6
50°-60°	923.2	8.3
60°-70°	682.4	6.2
70°-80°	386.1	3.5
80°-90°	105.0	0.9
90°-100°	57.5	0.5
100°-110°	214.3	1.9
110°-120°	568.4	5.1
120°-130°	942.7	8.5
130°-140°	1001.4	9.0
140°-150°	930.7	8.4
150°-160°	748.2	6.8
160°-170°	482.1	4.4
170°-180°	165.9	1.5
0°-30°	1754.4	15.8
0°-40°	2814.4	25.4
0°-60°	4796.3	43.3
0°-90°	5969.8	53.9
90°-120°	840.2	7.6
90°-150°	3714.9	33.5
90°-180°	5111.0	46.1
0°-180°	11081.1	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2345	2345	2345	2345	2345	
5°	2345	2336	2311	2329	2325	223
15°	2232	2219	2190	2199	2188	629
25°	2020	2002	1964	1969	1964	930
35°	1743	1721	1684	1671	1660	1089
45°	1418	1403	1369	1344	1335	1095
55°	1074	1060	1033	1006	994	960
65°	724	710	688	668	656	716
75°	379	374	363	350	354	404
85°	92	90	88	81	79	103
90°	1	15	25	32	34	10
95°	82	40	49	56	54	97
105°	384	421	77	91	96	410
115°	725	747	778	194	104	714
125°	1026	1042	1066	1075	1079	915
135°	1269	1289	1301	1313	1311	980
145°	1472	1471	1492	1501	1495	921
155°	1621	1610	1625	1632	1622	747
165°	1708	1701	1704	1713	1704	483
175°	1747	1738	1741	1750	1737	166
180°	1743	1743	1743	1743	1743	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2345.1	2345.1	2345.1	2345.1	2345.1
2.5°	2358.8	2347.5	2322.6	2345.1	2340.8
5°	2345.1	2336.3	2311.4	2329.3	2325.0
7.5°	2329.3	2315.9	2291.0	2309.3	2304.7
10°	2304.7	2288.9	2261.8	2279.8	2273.1
12.5°	2270.7	2257.4	2230.3	2241.5	2237.0
15°	2232.5	2219.0	2189.6	2198.7	2187.5
17.5°	2185.0	2171.7	2142.2	2153.5	2142.2
20°	2133.1	2119.8	2088.2	2094.9	2086.0
22.5°	2081.5	2061.1	2031.7	2031.7	2027.1
25°	2020.5	2002.5	1964.3	1968.6	1964.3
27.5°	1952.7	1937.0	1907.8	1901.1	1889.8
30°	1885.3	1867.1	1833.4	1826.7	1817.6
32.5°	1813.0	1799.7	1763.5	1749.9	1740.8
35°	1743.2	1720.7	1684.5	1670.9	1659.7
37.5°	1664.2	1643.9	1607.7	1592.0	1580.7
40°	1583.1	1564.9	1528.8	1508.7	1499.6
42.5°	1504.2	1486.0	1450.1	1427.4	1413.9
45°	1418.5	1402.7	1368.7	1344.1	1335.0
47.5°	1335.0	1319.2	1283.1	1258.2	1244.8
50°	1247.0	1235.7	1204.1	1172.6	1161.3
52.5°	1161.3	1145.6	1116.4	1091.5	1075.6
55°	1073.5	1059.9	1032.9	1005.8	994.5
57.5°	985.5	974.2	944.8	917.7	908.7
60°	897.4	888.5	857.0	832.2	825.4
62.5°	811.7	796.0	773.5	751.0	741.9
65°	724.0	710.3	687.9	667.5	656.3
67.5°	633.8	622.3	602.2	586.4	577.3
70°	550.3	541.2	520.8	505.1	496.2
72.5°	464.6	455.6	444.3	428.5	421.8
75°	378.8	374.4	362.9	349.6	354.1
77.5°	302.2	293.1	288.5	281.8	275.2
80°	225.6	223.3	218.7	212.0	207.4
82.5°	153.3	153.3	151.2	142.2	142.2
85°	92.4	90.2	88.1	81.1	79.0
87.5°	40.6	36.2	31.6	24.9	22.5
90°	1.2	15.2	25.1	31.6	34.0
92.5°	31.6	26.5	30.2	32.8	34.0
95°	82.0	40.3	49.2	55.6	54.2
97.5°	147.6	44.2	64.2	68.2	69.4
100°	223.3	50.5	71.9	82.0	84.5
102.5°	306.5	304.1	74.5	88.3	92.1
105°	383.5	421.4	77.0	90.7	95.9
107.5°	473.1	504.5	79.6	93.3	98.4
110°	559.0	585.3	220.8	94.7	99.6

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	639.6	662.3	640.8	97.0	101.0
115°	725.4	746.8	778.4	194.3	103.5
117.5°	799.8	825.0	846.5	666.1	335.5
120°	883.1	902.0	924.8	939.9	769.6
122.5°	953.6	973.9	999.2	1006.7	1008.1
125°	1025.6	1042.1	1066.0	1074.9	1078.6
127.5°	1091.2	1108.9	1127.9	1140.5	1141.7
130°	1153.0	1173.3	1187.1	1201.0	1199.8
132.5°	1216.2	1232.6	1246.4	1257.7	1256.5
135°	1269.2	1289.4	1300.6	1313.4	1310.8
137.5°	1324.6	1339.7	1352.5	1365.0	1361.3
140°	1378.8	1389.0	1402.8	1414.2	1407.9
142.5°	1424.3	1433.2	1449.6	1459.6	1453.3
145°	1472.3	1470.9	1492.4	1501.2	1495.0
147.5°	1513.8	1510.0	1531.5	1537.7	1532.8
150°	1554.3	1545.4	1565.6	1573.1	1566.8
152.5°	1588.3	1578.2	1597.1	1604.7	1595.9
155°	1621.1	1609.8	1625.0	1632.5	1622.4
157.5°	1647.6	1637.5	1648.9	1657.8	1647.6
160°	1670.3	1662.7	1670.3	1677.8	1669.0
162.5°	1690.4	1682.9	1689.2	1698.1	1686.7
165°	1708.1	1700.6	1704.3	1713.2	1704.3
167.5°	1722.0	1714.4	1718.3	1727.2	1715.7
170°	1733.4	1725.8	1728.4	1737.1	1725.8
172.5°	1740.9	1733.4	1735.9	1744.8	1733.4
175°	1747.2	1738.4	1740.9	1749.7	1737.1
177.5°	1749.7	1740.9	1742.2	1751.1	1739.7
180°	1743.4	1743.4	1743.4	1743.4	1743.4



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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	9.78	10.68	10.70	11.62	12.83	9.35	10.24	10.27	11.19	12.40
	3H	11.44	12.25	12.38	13.20	14.44	10.97	11.77	11.90	12.72	13.96
	4H	12.03	12.79	12.98	13.75	15.00	11.56	12.32	12.51	13.28	14.52
	6H	12.43	13.13	13.39	14.10	15.36	11.96	12.66	12.92	13.62	14.88
	8H	12.54	13.21	13.51	14.19	15.44	12.06	12.73	13.03	13.71	14.97
	12H	12.59	13.22	13.56	14.20	15.48	12.11	12.74	13.08	13.72	15.00
4H	2H	10.25	11.01	11.20	11.96	13.21	9.90	10.66	10.86	11.62	12.87
	3H	12.11	12.75	13.08	13.74	15.00	11.72	12.36	12.69	13.34	14.60
	4H	12.83	13.41	13.80	14.39	15.68	12.43	13.01	13.40	13.98	15.27
	6H	13.35	13.85	14.33	14.85	16.14	12.94	13.44	13.92	14.44	15.73
	8H	13.50	13.97	14.49	14.96	16.26	13.09	13.55	14.07	14.55	15.85
	12H	13.57	13.99	14.58	15.01	16.31	13.15	13.57	14.16	14.59	15.89
8H	4H	13.03	13.50	14.02	14.49	15.79	12.67	13.14	13.66	14.13	15.43
	6H	13.66	14.05	14.68	15.09	16.38	13.30	13.69	14.31	14.72	16.02
	8H	13.88	14.23	14.91	15.25	16.57	13.52	13.86	14.54	14.88	16.20
	12H	14.02	14.32	15.04	15.34	16.70	13.63	13.93	14.66	14.95	16.31
12H	4H	13.02	13.44	14.02	14.45	15.76	12.67	13.09	13.67	14.10	15.40
	6H	13.69	14.03	14.71	15.06	16.38	13.34	13.68	14.36	14.71	16.02
	8H	13.94	14.24	14.96	15.26	16.62	13.58	13.88	14.61	14.90	16.26