

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: P921034

Luminaire Tested: DFN2DIP-TR4F0-070D080US935-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P921034
REPORT IS A COMBINATION OF REPORTS P900447 AND P897293
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-TR4F0-070D080US935-FLLFLL
Description: 4 foot, Triangle Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

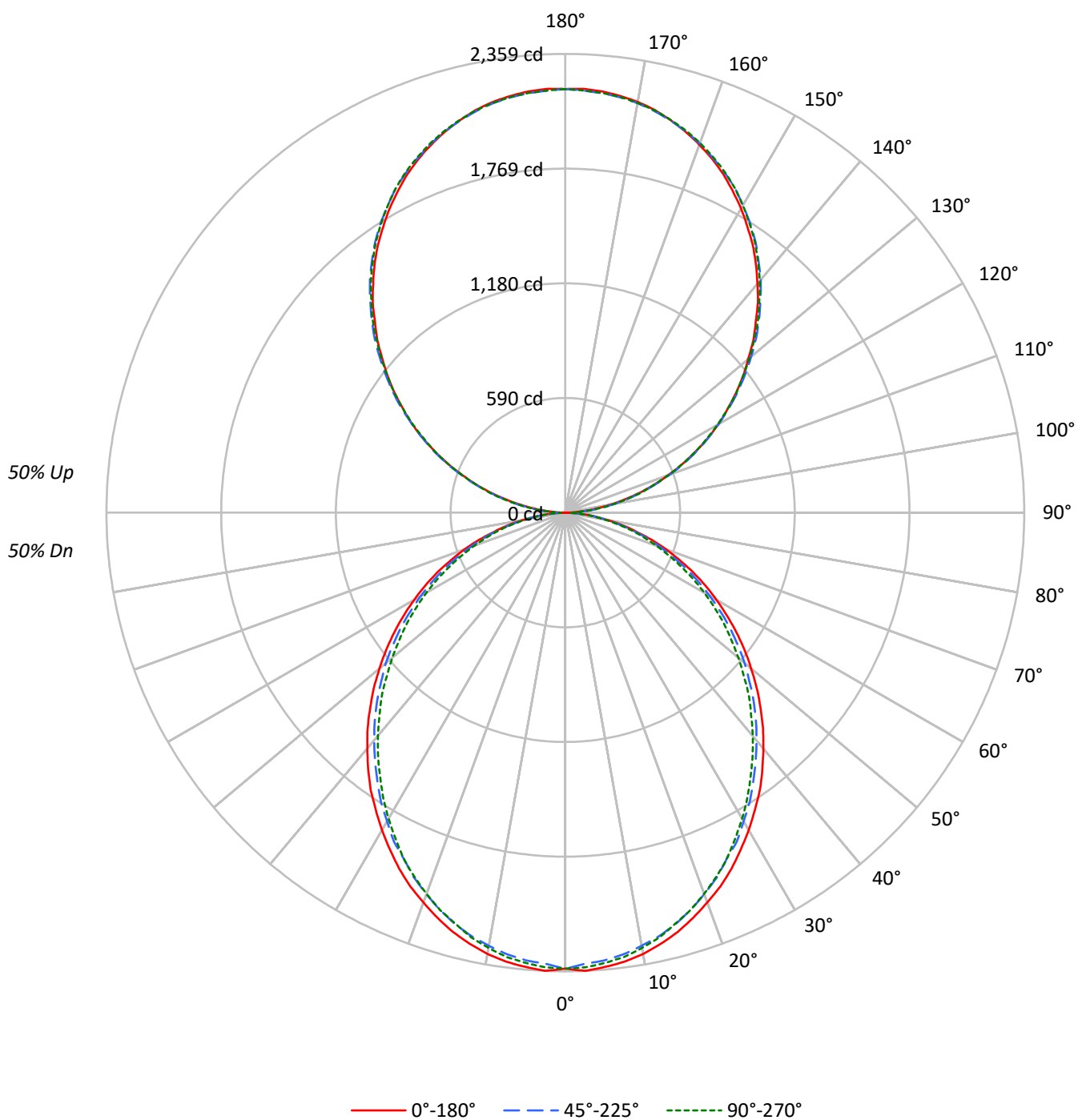
Lumens per Lamp: N/A
Luminaire Lumens: 12062.6 lumens
Efficiency: N/A
Efficacy: 96.7 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 3.43' x L: 3.96' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 124.7
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	107	107	107	107	99	99	99	99	83	83	83	69	69	69	56	56	56
1	98	93	89	86	90	86	83	80	73	70	68	61	59	57	49	48	47
2	89	82	75	70	82	75	70	66	64	60	56	53	50	48	43	41	40
3	81	72	64	58	74	66	60	55	56	51	47	47	43	40	38	36	34
4	74	63	56	49	68	59	52	46	50	45	40	42	38	35	34	31	29
5	68	57	48	42	63	52	45	40	45	39	35	38	33	30	31	28	25
6	63	51	43	37	58	47	40	35	40	35	30	34	30	26	28	25	22
7	58	46	38	32	53	43	35	30	37	31	27	31	27	23	26	22	20
8	54	42	34	28	50	39	32	27	33	28	24	28	24	21	24	20	18
9	50	38	30	25	46	35	29	24	31	25	21	26	22	19	22	18	16
10	47	35	28	23	43	33	26	22	28	23	19	24	20	17	20	17	15

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: 90°

Vertical Angle: 90°

Luminance: 1698 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	220.7	1.8
10°-20°	621.0	5.1
20°-30°	912.7	7.6
30°-40°	1060.0	8.8
40°-50°	1058.7	8.8
50°-60°	923.2	7.7
60°-70°	682.4	5.7
70°-80°	386.1	3.2
80°-90°	108.1	0.9
90°-100°	134.8	1.1
100°-110°	428.3	3.6
110°-120°	733.0	6.1
120°-130°	964.0	8.0
130°-140°	1082.0	9.0
140°-150°	1061.0	8.8
150°-160°	890.1	7.4
160°-170°	590.3	4.9
170°-180°	206.3	1.7
0°-30°	1754.4	14.5
0°-40°	2814.4	23.3
0°-60°	4796.3	39.8
0°-90°	5972.9	49.5
90°-120°	1296.1	10.7
90°-150°	4403.1	36.5
90°-180°	6090.0	50.5
0°-180°	12062.6	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°	2	24	64	60	62	12
95°	96	114	118	118	114	107
105°	395	401	405	408	408	417
115°	736	746	743	741	736	728
125°	1070	1086	1081	1075	1073	956
135°	1384	1404	1408	1406	1401	1070
145°	1680	1693	1704	1706	1698	1050
155°	1921	1926	1932	1941	1935	884
165°	2090	2088	2088	2101	2092	590
175°	2174	2169	2165	2178	2167	207
180°	2178	2178	2178	2178	2178	

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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°	2.0	23.7	64.4	60.4	62.4
92.5°	40.7	55.2	57.2	59.1	59.1
95°	95.9	114.3	117.5	117.5	114.3
97.5°	159.6	176.7	183.9	183.9	183.9
100°	233.2	248.2	253.5	253.5	251.5
102.5°	310.6	321.8	329.0	331.0	329.0
105°	395.4	400.6	404.6	407.9	407.9
107.5°	479.4	487.3	487.3	488.6	479.4
110°	560.9	571.4	571.4	571.4	566.1

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	648.8	660.0	658.1	652.8	648.8
115°	735.6	746.1	742.8	740.8	735.6
117.5°	821.6	836.0	826.8	821.6	816.3
120°	908.3	922.7	908.3	908.3	902.3
122.5°	987.0	1005.5	996.3	991.0	987.0
125°	1069.8	1086.2	1081.0	1075.0	1073.1
127.5°	1150.6	1171.0	1163.7	1155.9	1150.6
130°	1226.1	1249.7	1246.5	1242.6	1235.4
132.5°	1310.9	1329.2	1330.6	1321.4	1316.1
135°	1383.7	1404.1	1408.1	1406.1	1400.8
137.5°	1465.2	1481.6	1484.9	1483.6	1475.7
140°	1536.8	1553.2	1562.4	1562.4	1555.1
142.5°	1610.3	1626.8	1632.0	1634.0	1626.8
145°	1680.0	1693.1	1703.6	1705.6	1698.3
147.5°	1742.3	1758.8	1766.6	1770.0	1762.7
150°	1806.7	1817.8	1825.1	1831.0	1825.1
152.5°	1863.8	1875.0	1884.2	1891.4	1884.2
155°	1921.0	1926.2	1932.2	1941.3	1935.4
157.5°	1970.2	1974.2	1977.5	1990.5	1981.4
160°	2014.2	2018.2	2020.2	2031.3	2023.4
162.5°	2054.9	2054.9	2056.9	2069.4	2060.2
165°	2089.7	2087.7	2087.7	2100.9	2091.7
167.5°	2121.2	2115.4	2115.4	2128.5	2119.3
170°	2144.9	2139.7	2137.7	2150.9	2139.7
172.5°	2161.4	2156.1	2154.1	2167.2	2156.1
175°	2174.5	2169.2	2165.2	2178.4	2167.2
177.5°	2181.7	2176.4	2172.5	2183.7	2172.5
180°	2178.4	2178.4	2178.4	2178.4	2178.4

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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	9.38	10.24	10.34	11.22	12.49	8.95	9.81	9.91	10.78	12.06
	3H	11.04	11.81	12.01	12.80	14.10	10.57	11.34	11.54	12.32	13.62
	4H	11.63	12.36	12.61	13.35	14.65	11.16	11.88	12.14	12.87	14.18
	6H	12.03	12.70	13.03	13.69	15.01	11.55	12.22	12.55	13.22	14.54
	8H	12.13	12.77	13.14	13.78	15.10	11.66	12.30	12.66	13.31	14.63
	12H	12.18	12.79	13.19	13.79	15.14	11.70	12.31	12.71	13.31	14.66
4H	2H	9.84	10.57	10.84	11.56	12.87	9.50	10.23	10.49	11.22	12.52
	3H	11.71	12.32	12.71	13.33	14.66	11.32	11.92	12.32	12.94	14.26
	4H	12.42	12.98	13.43	13.99	15.34	12.02	12.57	13.03	13.58	14.93
	6H	12.94	13.42	13.96	14.45	15.79	12.53	13.01	13.55	14.04	15.38
	8H	13.09	13.53	14.11	14.56	15.92	12.68	13.12	13.70	14.15	15.51
	12H	13.16	13.56	14.20	14.61	15.97	12.74	13.14	13.78	14.18	15.55
8H	4H	12.62	13.07	13.64	14.09	15.45	12.26	12.71	13.28	13.73	15.09
	6H	13.25	13.62	14.30	14.69	16.04	12.89	13.26	13.93	14.33	15.68
	8H	13.47	13.80	14.52	14.85	16.22	13.10	13.43	14.16	14.48	15.86
	12H	13.60	13.89	14.66	14.94	16.35	13.22	13.50	14.28	14.55	15.97
12H	4H	12.60	13.01	13.64	14.05	15.41	12.25	12.66	13.29	13.70	15.06
	6H	13.28	13.61	14.33	14.66	16.03	12.93	13.25	13.98	14.31	15.68
	8H	13.52	13.81	14.58	14.86	16.27	13.16	13.45	14.22	14.50	15.92

END OF REPORT