

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: P921142

Luminaire Tested: DFN2DIP-TR4F0-100D080US935-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P921142
REPORT IS A COMBINATION OF REPORTS P900453 AND P897293
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-TR4F0-100D080US935-FLLFLL
Description: 4 foot, Triangle Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

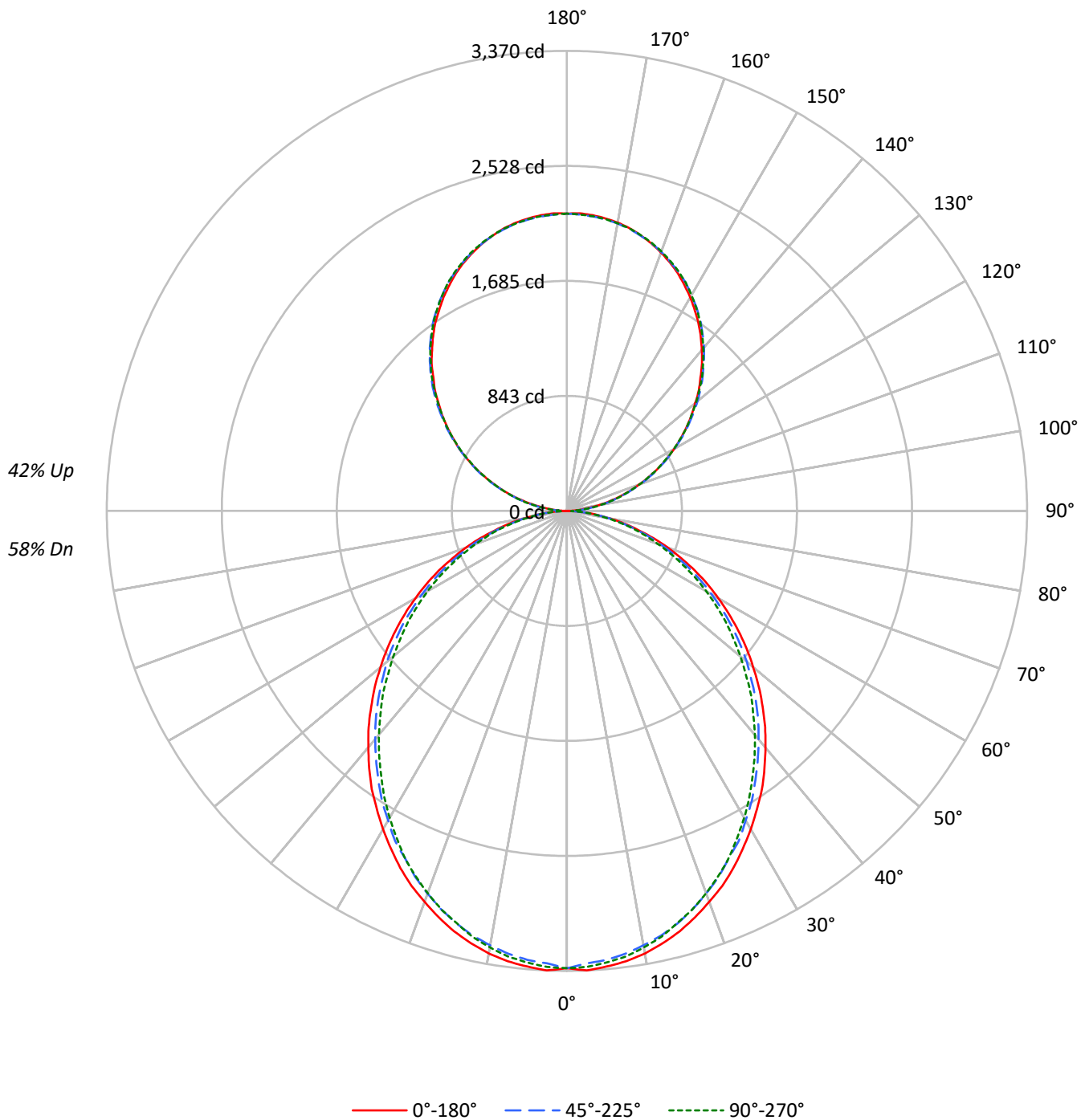
Lumens per Lamp: N/A
Luminaire Lumens: 14619.8 lumens
Efficiency: N/A
Efficacy: 91.3 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 3.43' x L: 3.96' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 160.2
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9972
Total Harmonic Distortion (THDi): 0.128
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	109	109	109	109	102	102	102	102	88	88	88	75	75	75	64	64	64
1	100	95	91	88	93	89	86	82	77	75	72	66	65	63	56	55	54
2	91	83	77	72	84	78	72	68	68	64	60	58	55	52	50	47	45
3	83	73	66	60	77	69	62	57	60	55	50	52	48	44	44	41	39
4	76	65	57	51	70	61	54	48	53	47	43	46	42	38	39	36	33
5	70	58	50	43	65	54	47	41	48	42	37	41	37	33	35	32	29
6	64	52	44	38	60	49	41	36	43	37	32	37	33	29	32	29	26
7	59	47	39	33	55	44	37	32	39	33	29	34	29	26	29	26	23
8	55	43	35	29	51	40	33	28	36	30	26	31	26	23	27	23	20
9	51	39	31	26	48	37	30	25	33	27	23	29	24	21	25	21	18
10	48	36	28	24	45	34	27	23	30	25	21	27	22	19	23	19	17

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2662	2662	2662
5°	2666	2624	2642
10°	2644	2589	2606
15°	2605	2546	2550
20°	2553	2487	2493
25°	2501	2416	2427
30°	2435	2350	2342
35°	2373	2273	2253
40°	2297	2194	2169
45°	2221	2115	2082
50°	2137	2033	1982
55°	2050	1937	1889
60°	1951	1824	1783
65°	1844	1706	1658
70°	1707	1563	1524
75°	1518	1391	1400
80°	1290	1173	1163
85°	933	796	771

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2221 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	315.3	2.2
10°-20°	887.2	6.1
20°-30°	1303.8	8.9
30°-40°	1514.3	10.4
40°-50°	1512.4	10.3
50°-60°	1318.8	9.0
60°-70°	974.9	6.7
70°-80°	551.6	3.8
80°-90°	151.8	1.0
90°-100°	134.8	0.9
100°-110°	428.3	2.9
110°-120°	733.0	5.0
120°-130°	964.0	6.6
130°-140°	1082.0	7.4
140°-150°	1061.0	7.3
150°-160°	890.1	6.1
160°-170°	590.3	4.0
170°-180°	206.3	1.4
0°-30°	2506.3	17.1
0°-40°	4020.6	27.5
0°-60°	6851.8	46.9
0°-90°	8530.1	58.3
90°-120°	1296.1	8.9
90°-150°	4403.1	30.1
90°-180°	6090.0	41.7
0°-180°	14619.8	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3350	3350	3350	3350	3350	
5°	3350	3338	3302	3328	3322	318
15°	3189	3170	3128	3141	3125	898
25°	2886	2861	2806	2812	2806	1328
35°	2490	2458	2406	2387	2371	1555
45°	2026	2004	1955	1920	1907	1564
55°	1534	1514	1476	1437	1421	1371
65°	1034	1015	983	954	938	1023
75°	541	535	518	499	506	578
85°	132	129	126	116	113	147
90°	2	24	64	60	62	14
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°	3350.2	3350.2	3350.2	3350.2	3350.2
2.5°	3369.7	3353.6	3318.0	3350.2	3344.0
5°	3350.2	3337.6	3302.0	3327.7	3321.5
7.5°	3327.7	3308.5	3272.9	3298.9	3292.5
10°	3292.5	3269.9	3231.2	3256.9	3247.3
12.5°	3243.9	3224.8	3186.1	3202.2	3195.7
15°	3189.2	3170.1	3128.0	3141.0	3125.0
17.5°	3121.5	3102.4	3060.3	3076.4	3060.3
20°	3047.3	3028.2	2983.1	2992.7	2980.0
22.5°	2973.5	2944.5	2902.4	2902.4	2896.0
25°	2886.4	2860.8	2806.1	2812.2	2806.1
27.5°	2789.6	2767.1	2725.4	2715.8	2699.7
30°	2693.3	2667.3	2619.1	2609.5	2596.5
32.5°	2590.1	2570.9	2519.3	2499.8	2486.8
35°	2490.3	2458.1	2406.5	2387.0	2370.9
37.5°	2377.5	2348.4	2296.8	2274.2	2258.1
40°	2261.6	2235.6	2184.0	2155.3	2142.3
42.5°	2148.8	2122.8	2071.6	2039.1	2020.0
45°	2026.4	2003.9	1955.3	1920.1	1907.2
47.5°	1907.2	1884.6	1833.0	1797.4	1778.3
50°	1781.4	1765.3	1720.2	1675.1	1659.1
52.5°	1659.1	1636.5	1594.7	1559.3	1536.7
55°	1533.6	1514.2	1475.5	1436.8	1420.8
57.5°	1407.8	1391.7	1349.7	1311.1	1298.1
60°	1282.0	1269.4	1224.3	1188.7	1179.1
62.5°	1159.7	1137.1	1105.0	1072.9	1059.9
65°	1034.2	1014.8	982.7	953.6	937.5
67.5°	905.4	889.0	860.3	837.8	824.7
70°	786.1	773.1	744.1	721.5	708.9
72.5°	663.7	650.7	634.7	612.2	602.5
75°	541.1	534.9	518.5	499.4	505.8
77.5°	431.7	418.7	412.2	402.6	393.0
80°	322.3	318.9	312.4	302.8	296.4
82.5°	219.1	219.1	216.0	203.0	203.0
85°	131.9	128.9	125.8	115.9	112.8
87.5°	58.1	51.6	45.1	35.6	32.1
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	11.40	12.34	12.28	13.25	14.39	10.97	11.91	11.85	12.82	13.96
	3H	13.07	13.91	13.96	14.83	16.00	12.60	13.44	13.49	14.35	15.53
	4H	13.66	14.46	14.57	15.38	16.56	13.19	13.99	14.10	14.90	16.09
	6H	14.06	14.80	14.99	15.73	16.92	13.59	14.33	14.51	15.25	16.45
	8H	14.17	14.87	15.10	15.81	17.01	13.70	14.40	14.63	15.34	16.53
	12H	14.22	14.89	15.16	15.83	17.04	13.74	14.41	14.68	15.35	16.56
4H	2H	11.87	12.67	12.79	13.59	14.77	11.53	12.33	12.44	13.25	14.43
	3H	13.75	14.41	14.67	15.36	16.56	13.36	14.02	14.28	14.97	16.17
	4H	14.47	15.07	15.40	16.02	17.24	14.06	14.67	15.00	15.61	16.83
	6H	14.98	15.51	15.93	16.48	17.70	14.58	15.10	15.53	16.07	17.29
	8H	15.14	15.63	16.09	16.59	17.82	14.72	15.22	15.68	16.18	17.41
	12H	15.21	15.66	16.18	16.63	17.88	14.79	15.23	15.76	16.21	17.45
8H	4H	14.67	15.16	15.62	16.12	17.36	14.31	14.80	15.26	15.76	17.00
	6H	15.30	15.71	16.28	16.71	17.95	14.94	15.35	15.92	16.35	17.58
	8H	15.52	15.88	16.51	16.88	18.13	15.16	15.51	16.14	16.51	17.76
	12H	15.66	15.98	16.65	16.96	18.26	15.28	15.59	16.27	16.58	17.88
12H	4H	14.66	15.10	15.63	16.08	17.32	14.31	14.75	15.28	15.73	16.97
	6H	15.33	15.69	16.32	16.69	17.94	14.98	15.34	15.97	16.33	17.59
	8H	15.58	15.90	16.57	16.88	18.18	15.22	15.54	16.21	16.52	17.82

END OF REPORT