

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: P918411

Luminaire Tested: DFN2DIP-TR4F0-100D070US930-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P918411
REPORT IS A COMBINATION OF REPORTS P901955 AND P898849
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-TR4F0-100D070US930-FLLONL
Description: 4 foot, Triangle Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

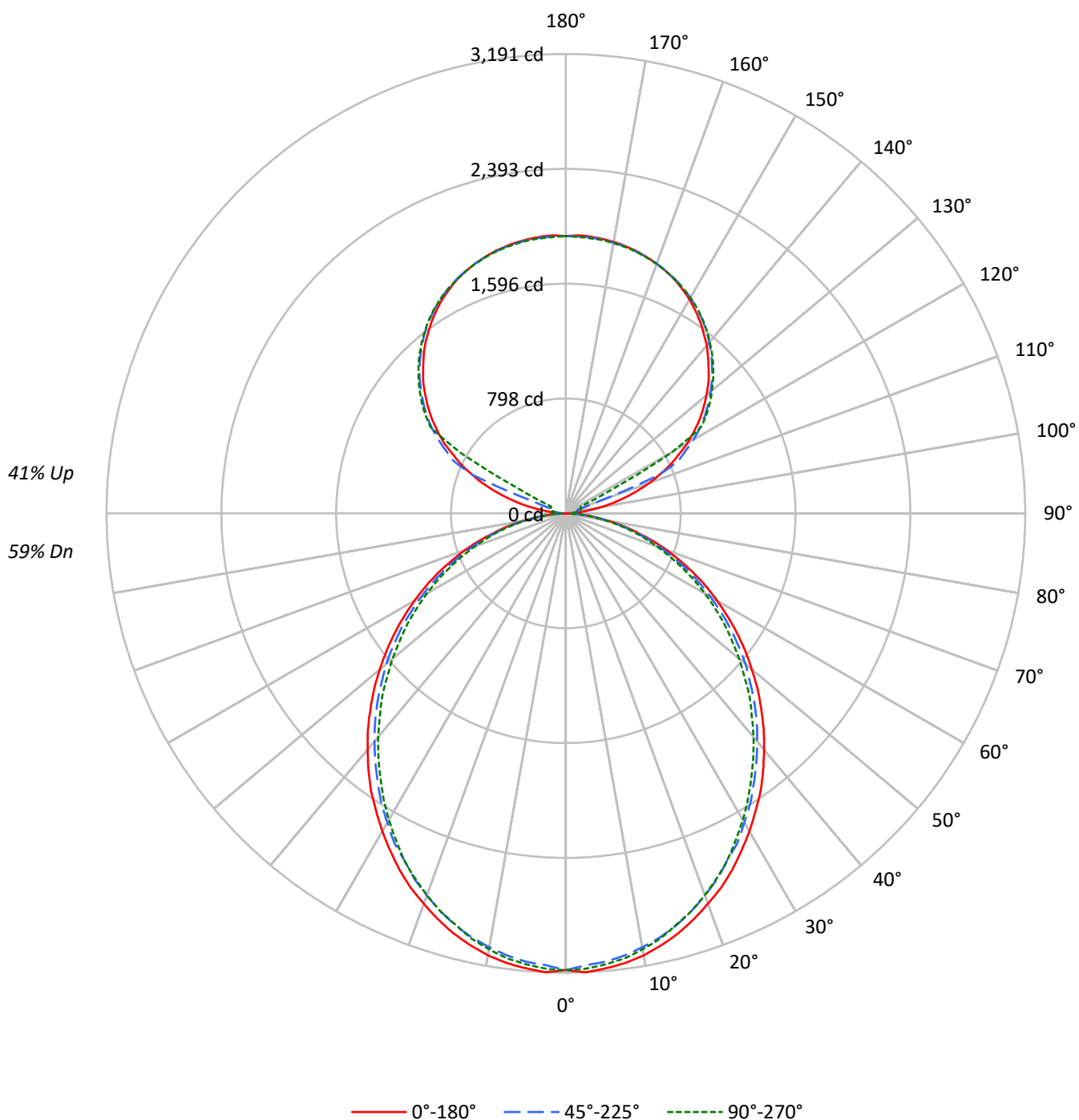
Lumens per Lamp: N/A
Luminaire Lumens: 13721.5 lumens
Efficiency: N/A
Efficacy: 89.6 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 3.43' x L: 3.96' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 153.2
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		76	76	76		64	64	64
1	100	95	91	88		93	89	86	83		77	75	73		67	65	63		57	56	54
2	91	83	77	72		85	78	72	68		68	64	60		59	55	53		50	48	46
3	83	73	66	60		77	69	62	57		60	55	51		52	48	45		44	41	39
4	76	65	57	51		71	61	54	48		53	48	43		46	42	38		40	36	34
5	70	58	50	44		65	54	47	41		48	42	37		42	37	33		36	32	29
6	64	52	44	38		60	49	41	36		43	37	33		38	33	29		32	29	26
7	59	47	39	33		55	44	37	32		39	33	29		34	29	26		30	26	23
8	55	43	35	29		51	40	33	28		36	30	26		31	27	23		27	23	21
9	51	39	31	26		48	37	30	25		33	27	23		29	24	21		25	21	19
10	48	36	29	24		45	34	27	23		30	25	21		27	22	19		23	20	17

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2520	2520	2520
5°	2524	2485	2502
10°	2504	2452	2468
15°	2467	2411	2415
20°	2417	2355	2361
25°	2368	2288	2298
30°	2306	2226	2218
35°	2247	2152	2134
40°	2175	2078	2053
45°	2103	2003	1971
50°	2024	1925	1876
55°	1941	1834	1789
60°	1848	1727	1689
65°	1746	1616	1571
70°	1617	1480	1443
75°	1437	1318	1326
80°	1221	1111	1101
85°	883	754	730

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2103 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	298.6	2.2
10°-20°	840.1	6.1
20°-30°	1234.6	9.0
30°-40°	1433.9	10.5
40°-50°	1432.1	10.4
50°-60°	1248.8	9.1
60°-70°	923.1	6.7
70°-80°	522.3	3.8
80°-90°	141.2	1.0
90°-100°	63.5	0.5
100°-110°	236.8	1.7
110°-120°	627.9	4.6
120°-130°	1041.5	7.6
130°-140°	1106.3	8.1
140°-150°	1028.1	7.5
150°-160°	826.6	6.0
160°-170°	532.6	3.9
170°-180°	183.3	1.3
0°-30°	2373.3	17.3
0°-40°	3807.2	27.7
0°-60°	6488.2	47.3
0°-90°	8074.8	58.8
90°-120°	928.2	6.8
90°-150°	4104.1	29.9
90°-180°	5647.0	41.2
0°-180°	13721.5	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3172	3172	3172	3172	3172	
5°	3172	3160	3127	3151	3145	301
15°	3020	3002	2962	2974	2959	851
25°	2733	2709	2657	2663	2657	1258
35°	2358	2328	2279	2260	2245	1473
45°	1919	1898	1852	1818	1806	1481
55°	1452	1434	1397	1361	1345	1298
65°	979	961	930	903	888	968
75°	512	506	491	473	479	547
85°	125	122	119	110	107	139
90°	1	17	28	35	38	13
95°	90	44	54	61	60	107
105°	424	466	85	100	106	453
115°	801	825	860	215	114	789
125°	1133	1151	1178	1188	1192	1010
135°	1402	1424	1437	1451	1448	1083
145°	1626	1625	1649	1658	1652	1017
155°	1791	1778	1795	1803	1792	825
165°	1887	1879	1883	1893	1883	533
175°	1930	1920	1923	1933	1919	184
180°	1926	1926	1926	1926	1926	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	3172.4	3172.4	3172.4	3172.4	3172.4
2.5°	3190.8	3175.6	3141.9	3172.4	3166.5
5°	3172.4	3160.4	3126.8	3151.0	3145.2
7.5°	3151.0	3132.9	3099.2	3123.8	3117.7
10°	3117.7	3096.3	3059.7	3084.0	3075.0
12.5°	3071.7	3053.6	3017.0	3032.3	3026.1
15°	3019.9	3001.8	2962.0	2974.3	2959.1
17.5°	2955.9	2937.8	2897.9	2913.1	2897.9
20°	2885.6	2867.5	2824.8	2833.8	2821.8
22.5°	2815.7	2788.2	2748.4	2748.4	2742.3
25°	2733.2	2708.9	2657.1	2662.9	2657.1
27.5°	2641.6	2620.2	2580.7	2571.7	2556.4
30°	2550.3	2525.7	2480.1	2471.0	2458.7
32.5°	2452.6	2434.5	2385.6	2367.1	2354.8
35°	2358.1	2327.7	2278.8	2260.3	2245.1
37.5°	2251.3	2223.7	2174.9	2153.5	2138.3
40°	2141.5	2116.9	2068.1	2040.9	2028.6
42.5°	2034.7	2010.1	1961.6	1930.9	1912.8
45°	1918.9	1897.5	1851.5	1818.2	1806.0
47.5°	1806.0	1784.6	1735.7	1702.0	1683.9
50°	1686.9	1671.6	1628.9	1586.2	1571.0
52.5°	1571.0	1549.6	1510.1	1476.5	1455.1
55°	1452.2	1433.8	1397.2	1360.6	1345.4
57.5°	1333.1	1317.8	1278.1	1241.5	1229.2
60°	1214.0	1202.0	1159.3	1125.6	1116.6
62.5°	1098.1	1076.8	1046.4	1015.9	1003.6
65°	979.3	960.9	930.5	902.9	887.8
67.5°	857.4	841.8	814.6	793.3	781.0
70°	744.4	732.1	704.6	683.2	671.2
72.5°	628.5	616.2	601.0	579.7	570.5
75°	512.3	506.5	491.0	472.9	479.0
77.5°	408.8	396.5	390.3	381.2	372.2
80°	305.2	302.0	295.8	286.7	280.6
82.5°	207.5	207.5	204.6	192.2	192.2
85°	124.9	122.1	119.1	109.7	106.8
87.5°	55.0	48.8	42.7	33.7	30.4
90°	1.3	16.7	27.8	34.9	37.6
92.5°	34.9	29.3	33.4	36.3	37.6
95°	90.5	44.5	54.3	61.4	59.9
97.5°	163.0	48.8	71.0	75.3	76.6
100°	246.8	55.8	79.4	90.5	93.4
102.5°	338.6	336.0	82.3	97.5	101.7
105°	423.7	465.5	85.0	100.3	105.9
107.5°	522.6	557.4	87.9	103.1	108.8
110°	617.5	646.6	243.9	104.6	110.1

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	706.7	731.6	708.0	107.2	111.5
115°	801.4	825.0	859.9	214.7	114.4
117.5°	883.6	911.4	935.2	735.8	370.7
120°	975.6	996.5	1021.7	1038.4	850.2
122.5°	1053.5	1075.9	1103.9	1112.1	1113.6
125°	1133.0	1151.2	1177.7	1187.5	1191.6
127.5°	1205.5	1225.0	1246.0	1260.0	1261.3
130°	1273.8	1296.2	1311.4	1326.8	1325.5
132.5°	1343.5	1361.7	1377.0	1389.5	1388.2
135°	1402.1	1424.4	1436.9	1450.9	1448.1
137.5°	1463.3	1480.1	1494.1	1508.1	1503.9
140°	1523.2	1534.5	1549.7	1562.3	1555.3
142.5°	1573.5	1583.3	1601.3	1612.4	1605.5
145°	1626.5	1625.1	1648.7	1658.5	1651.5
147.5°	1672.3	1668.3	1691.9	1698.8	1693.4
150°	1717.0	1707.3	1729.7	1737.9	1731.0
152.5°	1754.6	1743.5	1764.4	1772.8	1763.1
155°	1790.9	1778.4	1795.1	1803.4	1792.4
157.5°	1820.2	1809.1	1821.6	1831.4	1820.2
160°	1845.3	1836.9	1845.3	1853.6	1843.8
162.5°	1867.5	1859.2	1866.1	1875.9	1863.4
165°	1887.0	1878.8	1882.8	1892.6	1882.8
167.5°	1902.4	1893.9	1898.3	1908.0	1895.5
170°	1915.0	1906.6	1909.3	1919.1	1906.6
172.5°	1923.3	1915.0	1917.8	1927.5	1915.0
175°	1930.2	1920.4	1923.3	1933.0	1919.1
177.5°	1933.0	1923.3	1924.8	1934.5	1921.9
180°	1926.1	1926.1	1926.1	1926.1	1926.1

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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	11.26	12.20	12.13	13.10	14.24	10.83	11.77	11.70	12.67	13.81
	3H	12.92	13.77	13.81	14.68	15.85	12.45	13.30	13.34	14.21	15.37
	4H	13.51	14.32	14.42	15.23	16.41	13.04	13.85	13.95	14.76	15.93
	6H	13.92	14.66	14.84	15.58	16.77	13.44	14.18	14.36	15.10	16.29
	8H	14.03	14.73	14.95	15.67	16.86	13.55	14.26	14.48	15.19	16.38
	12H	14.08	14.75	15.01	15.68	16.89	13.60	14.27	14.53	15.20	16.41
4H	2H	11.73	12.53	12.64	13.45	14.62	11.38	12.19	12.29	13.10	14.28
	3H	13.60	14.27	14.52	15.22	16.41	13.21	13.88	14.13	14.83	16.01
	4H	14.32	14.93	15.25	15.87	17.09	13.92	14.53	14.85	15.47	16.68
	6H	14.84	15.37	15.79	16.33	17.55	14.43	14.96	15.38	15.92	17.14
	8H	14.99	15.49	15.94	16.44	17.67	14.58	15.07	15.53	16.03	17.26
	12H	15.07	15.51	16.04	16.49	17.72	14.65	15.09	15.61	16.07	17.30
8H	4H	14.52	15.02	15.47	15.97	17.20	14.16	14.66	15.11	15.61	16.84
	6H	15.16	15.57	16.13	16.57	17.79	14.80	15.20	15.77	16.20	17.43
	8H	15.38	15.74	16.36	16.73	17.98	15.01	15.37	15.99	16.36	17.61
	12H	15.52	15.83	16.50	16.82	18.11	15.13	15.45	16.12	16.43	17.72
12H	4H	14.51	14.96	15.48	15.93	17.17	14.16	14.61	15.13	15.58	16.82
	6H	15.19	15.55	16.17	16.54	17.78	14.84	15.20	15.82	16.19	17.43
	8H	15.44	15.75	16.42	16.74	18.03	15.08	15.40	16.06	16.38	17.67

END OF REPORT