

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: P916943

Luminaire Tested: DFN2DIP-PN4F0-080D070US930-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P916943
REPORT IS A COMBINATION OF REPORTS P901192 AND P898053
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN4F0-080D070US930-RLLONL
Description: 4 foot, Pentagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

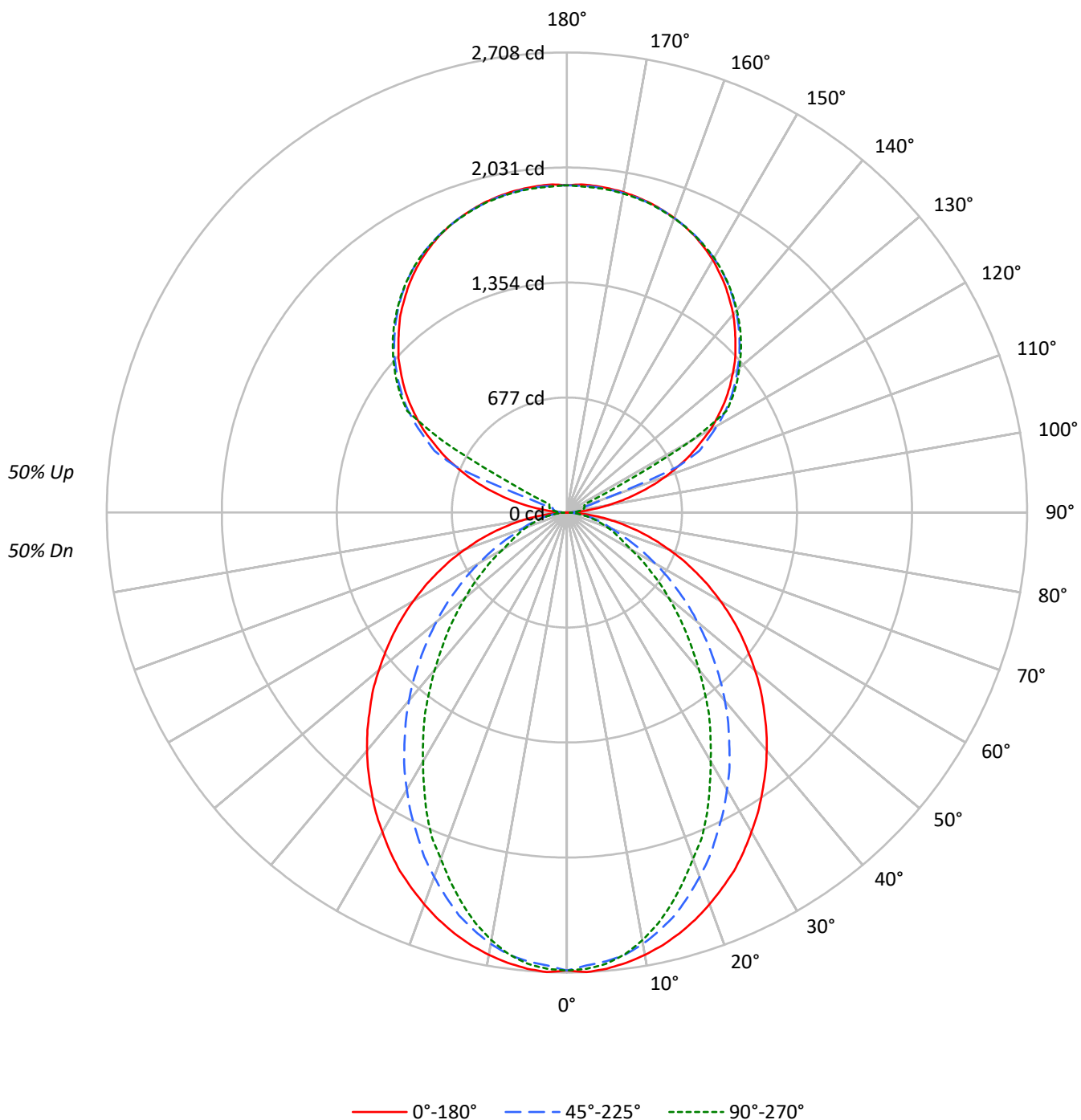
Lumens per Lamp: N/A
Luminaire Lumens: 11194.0 lumens
Efficiency: N/A
Efficacy: 86.3 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.74' x L: 3.94' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 129.7
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9971
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	94	90	87	90	87	84	81	74	71	69	61	60	58	50	49	48
2	90	83	77	72	83	77	71	67	65	61	58	54	52	49	45	43	41
3	82	73	66	60	76	68	62	57	58	53	49	49	45	42	40	38	36
4	75	65	57	52	69	60	54	48	52	47	42	44	40	37	36	33	31
5	69	58	50	44	64	54	47	42	46	41	37	39	35	32	33	30	27
6	64	52	44	39	59	49	42	37	42	37	32	36	32	28	30	27	24
7	59	47	40	34	55	44	37	32	38	33	29	33	28	25	27	24	22
8	55	43	36	30	51	40	34	29	35	30	26	30	26	23	25	22	20
9	51	39	32	27	48	37	30	26	32	27	23	28	23	21	23	20	18
10	48	36	29	25	45	34	28	23	30	25	21	26	22	19	22	19	16

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1968	1968	1968
5°	1971	1937	1949
10°	1951	1899	1886
15°	1924	1837	1788
20°	1889	1750	1668
25°	1853	1653	1553
30°	1804	1554	1405
35°	1756	1448	1276
40°	1707	1337	1128
45°	1650	1214	993
50°	1592	1091	862
55°	1531	959	736
60°	1460	820	606
65°	1379	679	546
70°	1280	548	495
75°	1156	484	451
80°	977	407	392
85°	680	273	297

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 1650 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	252.6	2.3
10°-20°	693.6	6.2
20°-30°	973.7	8.7
30°-40°	1061.4	9.5
40°-50°	975.6	8.7
50°-60°	766.2	6.8
60°-70°	498.7	4.5
70°-80°	256.7	2.3
80°-90°	68.9	0.6
90°-100°	63.5	0.6
100°-110°	236.8	2.1
110°-120°	627.9	5.6
120°-130°	1041.5	9.3
130°-140°	1106.3	9.9
140°-150°	1028.1	9.2
150°-160°	826.6	7.4
160°-170°	532.6	4.8
170°-180°	183.3	1.6
0°-30°	1919.9	17.2
0°-40°	2981.4	26.6
0°-60°	4723.1	42.2
0°-90°	5547.4	49.6
90°-120°	928.2	8.3
90°-150°	4104.1	36.7
90°-180°	5647.0	50.4
0°-180°	11194.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2696	2696	2696	2696	2696	
5°	2696	2684	2652	2674	2666	256
15°	2564	2537	2454	2408	2384	722
25°	2327	2249	2088	1988	1952	1070
35°	2005	1881	1666	1513	1459	1255
45°	1639	1476	1220	1046	988	1266
55°	1246	1056	793	646	600	1114
65°	842	644	424	342	334	834
75°	449	278	195	178	176	475
85°	105	54	46	46	46	120
90°	1	17	28	35	38	10
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°	2695.7	2695.7	2695.7	2695.7	2695.7
2.5°	2707.9	2695.7	2668.8	2693.3	2688.4
5°	2695.7	2683.6	2651.7	2673.7	2666.4
7.5°	2673.7	2659.2	2625.0	2634.6	2622.4
10°	2644.4	2627.4	2578.7	2571.2	2556.7
12.5°	2608.0	2586.0	2519.9	2505.4	2478.5
15°	2563.9	2537.0	2454.2	2407.9	2383.5
17.5°	2512.7	2473.6	2371.1	2317.6	2278.4
20°	2454.2	2405.3	2283.4	2222.6	2168.7
22.5°	2390.8	2334.6	2193.1	2110.2	2073.7
25°	2327.4	2249.2	2088.2	1988.3	1951.6
27.5°	2251.8	2168.7	1990.6	1876.0	1819.8
30°	2171.3	2078.4	1883.3	1759.0	1693.0
32.5°	2093.1	1980.8	1781.0	1634.5	1573.4
35°	2005.4	1880.9	1666.3	1512.6	1458.7
37.5°	1919.9	1785.7	1558.9	1390.4	1329.6
40°	1829.7	1683.4	1446.6	1273.4	1210.0
42.5°	1737.0	1580.9	1334.5	1153.9	1093.0
45°	1639.4	1475.9	1219.8	1046.4	988.0
47.5°	1546.8	1373.6	1110.1	936.7	883.1
50°	1444.2	1271.1	1002.7	834.2	783.2
52.5°	1344.1	1161.1	900.2	739.2	692.9
55°	1246.5	1056.3	792.8	646.5	600.2
57.5°	1146.6	951.5	697.8	561.2	522.0
60°	1044.1	849.0	597.6	473.4	434.3
62.5°	944.2	749.0	512.3	395.3	375.9
65°	841.7	643.9	424.4	341.7	334.1
67.5°	744.1	546.4	341.7	299.9	292.8
70°	641.6	451.4	282.9	258.5	248.7
72.5°	544.0	363.4	236.6	217.2	212.2
75°	448.8	278.0	195.2	178.1	175.8
77.5°	353.8	197.5	153.8	143.9	139.0
80°	265.8	141.6	117.0	107.4	107.4
82.5°	185.3	95.2	80.5	75.6	75.6
85°	104.8	53.6	46.3	46.3	46.3
87.5°	39.1	19.4	19.4	17.1	17.1
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	9.46	10.29	10.43	11.27	12.55	5.43	6.26	6.40	7.23	8.51
	3H	11.14	11.88	12.12	12.87	14.17	6.62	7.36	7.60	8.34	9.65
	4H	11.75	12.45	12.75	13.44	14.75	7.07	7.77	8.06	8.76	10.07
	6H	12.18	12.82	13.18	13.82	15.14	7.39	8.03	8.39	9.03	10.35
	8H	12.31	12.92	13.32	13.93	15.25	7.48	8.09	8.49	9.10	10.42
	12H	12.37	12.95	13.38	13.96	15.30	7.53	8.11	8.54	9.11	10.46
4H	2H	9.48	10.18	10.48	11.17	12.48	6.03	6.72	7.02	7.71	9.03
	3H	11.31	11.89	12.32	12.91	14.24	7.38	7.96	8.38	8.98	10.30
	4H	12.01	12.54	13.02	13.55	14.90	7.93	8.46	8.94	9.47	10.82
	6H	12.53	12.98	13.55	14.02	15.36	8.35	8.80	9.37	9.84	11.18
	8H	12.70	13.13	13.73	14.16	15.52	8.47	8.90	9.50	9.93	11.29
	12H	12.80	13.18	13.84	14.23	15.59	8.54	8.92	9.58	9.97	11.33
8H	4H	11.98	12.40	13.00	13.43	14.79	8.21	8.63	9.23	9.66	11.02
	6H	12.55	12.90	13.60	13.97	15.32	8.73	9.08	9.78	10.15	11.50
	8H	12.76	13.07	13.82	14.13	15.50	8.92	9.23	9.98	10.28	11.66
	12H	12.90	13.18	13.97	14.23	15.64	9.04	9.31	10.10	10.36	11.78
12H	4H	11.93	12.31	12.97	13.36	14.72	8.21	8.60	9.26	9.64	11.00
	6H	12.52	12.83	13.58	13.89	15.26	8.78	9.09	9.83	10.14	11.52
	8H	12.74	13.02	13.80	14.06	15.48	8.99	9.26	10.05	10.31	11.73