

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: P916744

Luminaire Tested: DFN2DIP-PN3F0-080D070US930-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P916744
REPORT IS A COMBINATION OF REPORTS P899577 AND P896399
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN3F0-080D070US930-FLLFLL
Description: 3 foot, Pentagon Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

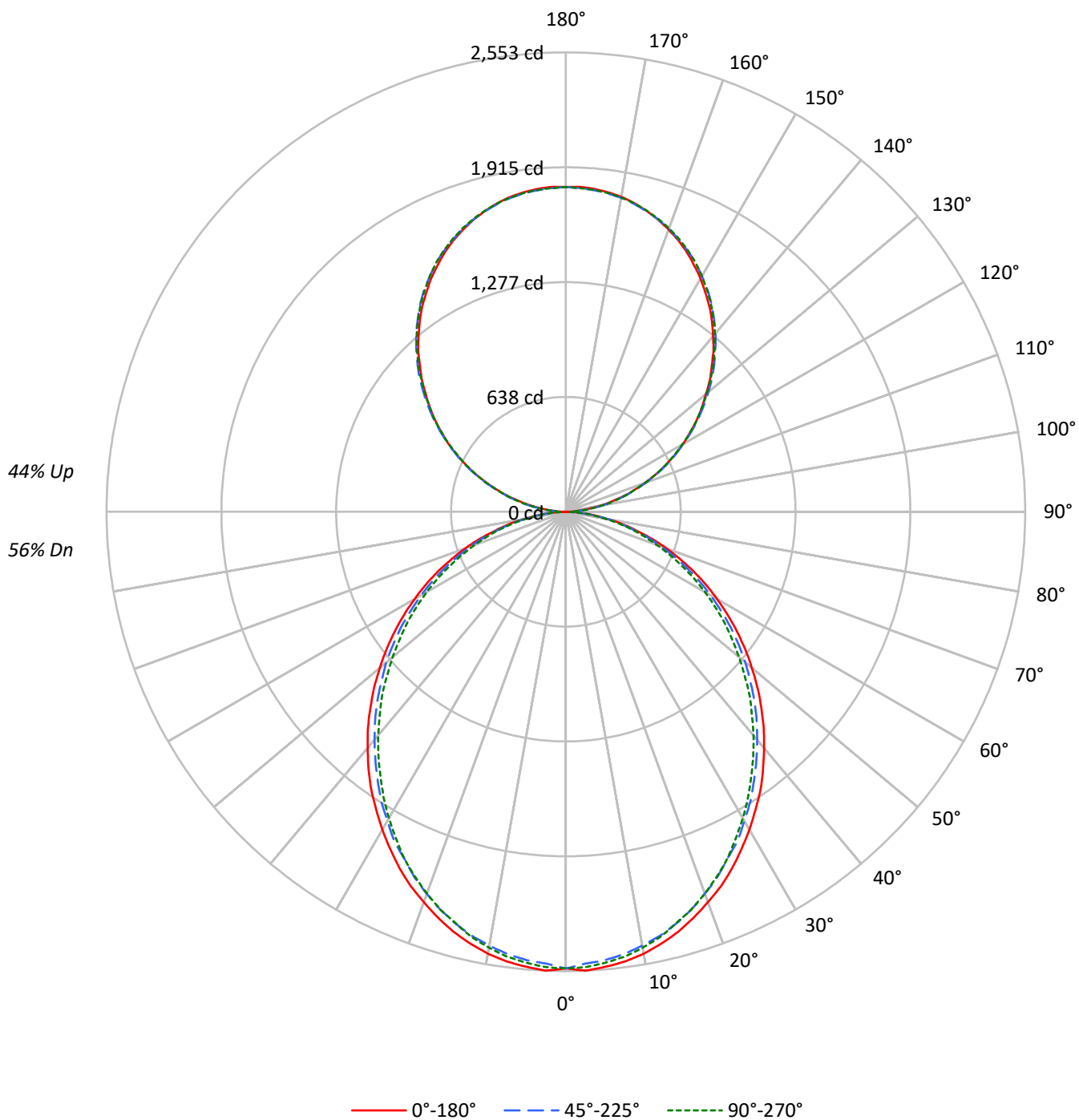
Lumens per Lamp: N/A
Luminaire Lumens: 11508.0 lumens
Efficiency: N/A
Efficacy: 85.8 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 2.96' x L: 3.11' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 134.2
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9967
Total Harmonic Distortion (THDi): 0.063
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	101	101	101	101	87	87	87	74	74	74	62	62	62
1	99	95	91	87	92	88	85	82	76	74	71	65	63	61	55	53	52
2	90	83	77	71	84	77	72	67	67	63	59	57	54	51	48	46	44
3	82	73	65	59	76	68	61	56	59	54	50	50	47	43	43	40	37
4	75	64	56	50	70	60	53	48	52	47	42	45	41	37	38	35	32
5	69	57	49	43	64	54	46	41	47	41	37	40	36	32	34	31	28
6	64	52	43	38	59	48	41	36	42	36	32	37	32	28	31	28	25
7	59	47	39	33	55	44	37	31	38	32	28	33	29	25	28	25	22
8	55	42	35	29	51	40	33	28	35	29	25	30	26	22	26	23	20
9	51	39	31	26	47	36	30	25	32	26	23	28	23	20	24	21	18
10	48	36	28	23	44	34	27	22	30	24	20	26	21	18	22	19	16

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2967	2967	2967
5°	2970	2923	2944
10°	2944	2882	2903
15°	2899	2832	2839
20°	2839	2764	2774
25°	2779	2683	2699
30°	2704	2608	2604
35°	2633	2519	2504
40°	2546	2430	2408
45°	2459	2340	2310
50°	2364	2245	2197
55°	2264	2136	2093
60°	2151	2006	1973
65°	2027	1872	1832
70°	1870	1708	1679
75°	1653	1511	1537
80°	1390	1260	1268
85°	981	834	826

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
Vertical Angle: 45°
Luminance: 2459 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	238.9	2.1
10°-20°	672.1	5.8
20°-30°	987.7	8.6
30°-40°	1147.1	10.0
40°-50°	1145.7	10.0
50°-60°	999.0	8.7
60°-70°	738.5	6.4
70°-80°	417.8	3.6
80°-90°	115.4	1.0
90°-100°	111.7	1.0
100°-110°	354.9	3.1
110°-120°	607.3	5.3
120°-130°	798.7	6.9
130°-140°	896.5	7.8
140°-150°	879.1	7.6
150°-160°	737.5	6.4
160°-170°	489.1	4.2
170°-180°	170.9	1.5
0°-30°	1898.6	16.5
0°-40°	3045.8	26.5
0°-60°	5190.5	45.1
0°-90°	6462.3	56.2
90°-120°	1073.9	9.3
90°-150°	3648.2	31.7
90°-180°	5046.0	43.8
0°-180°	11508.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2538	2538	2538	2538	2538	
5°	2538	2528	2501	2521	2516	241
15°	2416	2402	2370	2379	2367	680
25°	2186	2167	2126	2130	2126	1006
35°	1886	1862	1823	1808	1796	1178
45°	1535	1518	1481	1455	1445	1185
55°	1162	1147	1118	1088	1076	1039
65°	784	769	744	722	710	775
75°	410	405	393	378	383	438
85°	100	98	95	88	85	112
90°	2	20	53	50	52	11
95°	79	95	97	97	95	88
105°	328	332	335	338	338	346
115°	609	618	616	614	609	603
125°	886	900	896	891	889	792
135°	1147	1163	1167	1165	1161	886
145°	1392	1403	1412	1413	1407	870
155°	1592	1596	1601	1608	1604	733
165°	1731	1730	1730	1741	1733	488
175°	1802	1797	1794	1805	1796	171
180°	1805	1805	1805	1805	1805	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2537.9	2537.9	2537.9	2537.9	2537.9
2.5°	2552.6	2540.5	2513.6	2537.9	2533.2
5°	2537.9	2528.3	2501.4	2520.8	2516.2
7.5°	2520.8	2506.3	2479.4	2499.1	2494.2
10°	2494.2	2477.0	2447.8	2467.2	2460.0
12.5°	2457.4	2442.9	2413.6	2425.8	2420.9
15°	2416.0	2401.5	2369.6	2379.4	2367.3
17.5°	2364.7	2350.2	2318.3	2330.5	2318.3
20°	2308.5	2294.0	2259.8	2267.1	2257.5
22.5°	2252.6	2230.6	2198.7	2198.7	2193.8
25°	2186.5	2167.1	2125.7	2130.4	2125.7
27.5°	2113.3	2096.2	2064.6	2057.3	2045.2
30°	2040.3	2020.6	1984.1	1976.9	1967.0
32.5°	1962.1	1947.6	1908.5	1893.7	1883.9
35°	1886.4	1862.1	1823.0	1808.2	1796.1
37.5°	1801.0	1779.0	1739.9	1722.8	1710.7
40°	1713.3	1693.5	1654.5	1632.7	1622.9
42.5°	1627.8	1608.1	1569.3	1544.7	1530.2
45°	1535.1	1518.0	1481.2	1454.6	1444.8
47.5°	1444.8	1427.7	1388.5	1361.6	1347.1
50°	1349.5	1337.3	1303.1	1268.9	1256.8
52.5°	1256.8	1239.7	1208.1	1181.2	1164.1
55°	1161.7	1147.0	1117.8	1088.5	1076.3
57.5°	1066.5	1054.3	1022.5	993.2	983.3
60°	971.2	961.6	927.4	900.5	893.2
62.5°	878.5	861.4	837.1	812.8	802.9
65°	783.5	768.7	744.4	722.4	710.2
67.5°	685.8	673.4	651.7	634.6	624.8
70°	595.5	585.6	563.7	546.6	537.0
72.5°	502.8	493.0	480.8	463.7	456.5
75°	409.9	405.2	392.8	378.3	383.2
77.5°	327.0	317.2	312.3	305.0	297.7
80°	244.2	241.6	236.7	229.4	224.5
82.5°	166.0	166.0	163.6	153.8	153.8
85°	100.0	97.6	95.3	87.8	85.4
87.5°	44.0	39.1	34.2	26.9	24.4
90°	1.6	19.6	53.3	50.1	51.7
92.5°	33.8	45.7	47.4	49.0	49.0
95°	79.4	94.7	97.4	97.4	94.7
97.5°	132.2	146.3	152.4	152.4	152.4
100°	193.1	205.7	210.0	210.0	208.4
102.5°	257.4	266.6	272.6	274.3	272.6
105°	327.6	331.9	335.2	337.9	337.9
107.5°	397.2	403.7	403.7	404.9	397.2
110°	464.7	473.4	473.4	473.4	469.0



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	537.6	546.9	545.3	540.9	537.6
115°	609.4	618.2	615.5	613.8	609.4
117.5°	680.7	692.7	685.1	680.7	676.4
120°	752.5	764.5	752.5	752.5	747.6
122.5°	817.8	833.1	825.5	821.1	817.8
125°	886.4	900.0	895.7	890.8	889.2
127.5°	953.3	970.2	964.3	957.7	953.3
130°	1015.9	1035.5	1032.8	1029.6	1023.5
132.5°	1086.1	1101.4	1102.4	1094.9	1090.5
135°	1146.6	1163.3	1166.7	1165.0	1160.7
137.5°	1214.0	1227.6	1230.3	1229.2	1222.7
140°	1273.3	1286.9	1294.5	1294.5	1288.6
142.5°	1334.2	1347.9	1352.2	1353.8	1347.9
145°	1392.0	1402.8	1411.5	1413.2	1407.2
147.5°	1443.6	1457.3	1463.8	1466.5	1460.5
150°	1497.0	1506.2	1512.2	1517.1	1512.2
152.5°	1544.3	1553.6	1561.1	1567.2	1561.1
155°	1591.6	1595.9	1600.9	1608.5	1603.6
157.5°	1632.5	1635.7	1638.4	1649.3	1641.7
160°	1668.9	1672.2	1673.8	1683.0	1676.5
162.5°	1702.7	1702.7	1704.3	1714.6	1707.0
165°	1731.4	1729.8	1729.8	1740.7	1733.1
167.5°	1757.6	1752.7	1752.7	1763.6	1756.0
170°	1777.2	1772.9	1771.2	1782.1	1772.9
172.5°	1790.8	1786.4	1784.8	1795.7	1786.4
175°	1801.6	1797.3	1794.1	1804.9	1795.7
177.5°	1807.7	1803.3	1800.0	1809.3	1800.0
180°	1804.9	1804.9	1804.9	1804.9	1804.9

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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	11.56	12.48	12.46	13.40	14.58	11.12	12.04	12.02	12.96	14.14
	3H	13.22	14.04	14.13	14.97	16.18	12.74	13.56	13.65	14.49	15.70
	4H	13.80	14.59	14.73	15.52	16.74	13.32	14.10	14.25	15.04	16.25
	6H	14.20	14.92	15.14	15.87	17.09	13.71	14.43	14.65	15.38	16.60
	8H	14.31	14.99	15.26	15.95	17.18	13.82	14.50	14.76	15.46	16.69
	12H	14.36	15.01	15.31	15.96	17.21	13.86	14.51	14.81	15.46	16.71
4H	2H	12.02	12.81	12.96	13.74	14.96	11.67	12.45	12.61	13.39	14.61
	3H	13.89	14.54	14.83	15.51	16.74	13.49	14.14	14.43	15.11	16.33
	4H	14.60	15.20	15.56	16.16	17.41	14.18	14.78	15.14	15.74	16.99
	6H	15.11	15.63	16.08	16.61	17.86	14.69	15.20	15.66	16.19	17.44
	8H	15.26	15.74	16.23	16.72	17.99	14.83	15.31	15.80	16.29	17.56
	12H	15.33	15.77	16.32	16.76	18.04	14.90	15.33	15.89	16.32	17.60
8H	4H	14.80	15.28	15.77	16.26	17.52	14.43	14.91	15.40	15.89	17.15
	6H	15.42	15.82	16.42	16.84	18.11	15.05	15.45	16.04	16.47	17.73
	8H	15.64	15.99	16.65	17.00	18.28	15.26	15.61	16.26	16.62	17.90
	12H	15.77	16.08	16.78	17.08	18.41	15.37	15.68	16.38	16.68	18.01
12H	4H	14.79	15.22	15.77	16.21	17.49	14.42	14.86	15.41	15.85	17.12
	6H	15.45	15.80	16.46	16.81	18.10	15.09	15.44	16.09	16.45	17.73
	8H	15.69	16.00	16.70	17.00	18.33	15.32	15.63	16.33	16.63	17.96