

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: P914213

Luminaire Tested: DFN2DIP-PN4F0-080D070US927-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P914213
REPORT IS A COMBINATION OF REPORTS P901191 AND P898053
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN4F0-080D070US927-FLLONL
Description: 4 foot, Pentagon Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

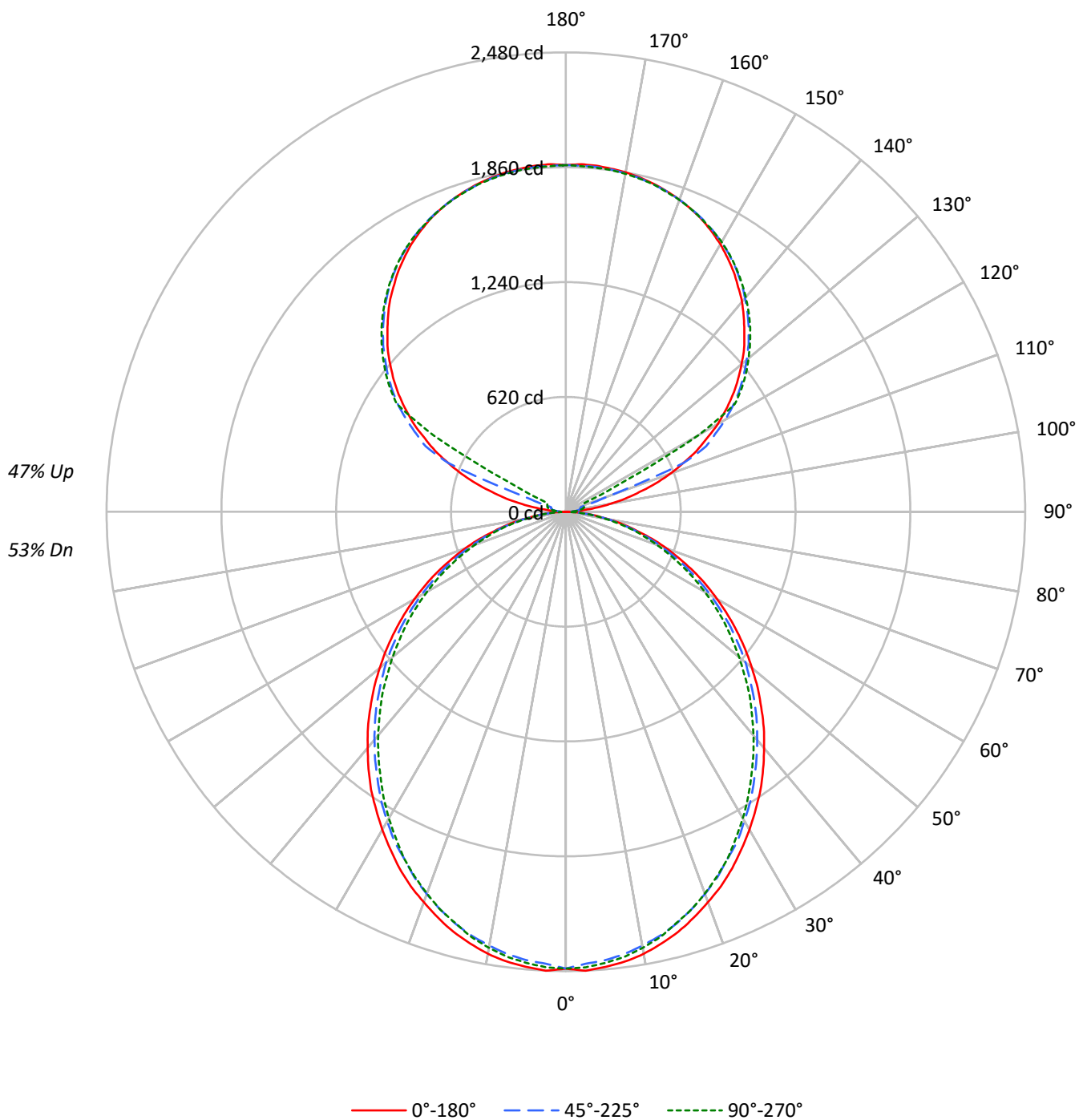
Lumens per Lamp: N/A
Luminaire Lumens: 11763.9 lumens
Efficiency: N/A
Efficacy: 90.7 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 3.74' x L: 3.94' x H: 0.1')
CIE Type: General Diffuse

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
RCR																	
0	108	108	108	108	100	100	100	100	85	85	85		72	72	72		59
1	99	94	90	87	91	87	84	81	75	72	70		63	61	60		52
2	90	82	76	71	83	76	71	66	65	61	58		55	52	50		46
3	82	72	65	59	76	67	61	56	58	53	49		49	45	42		41
4	75	64	56	50	69	60	53	47	51	46	42		44	40	36		37
5	69	57	49	43	63	53	46	41	46	40	36		39	35	31		33
6	63	51	43	37	59	48	41	35	41	36	31		35	31	28		30
7	59	46	38	33	54	43	36	31	38	32	28		32	28	24		27
8	54	42	34	29	50	39	32	27	34	29	25		30	25	22		25
9	51	38	31	26	47	36	29	25	31	26	22		27	23	20		23
10	47	35	28	23	44	33	26	22	29	24	20		25	21	18		21

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1800	1800	1800
5°	1803	1775	1787
10°	1788	1752	1763
15°	1762	1723	1726
20°	1726	1683	1688
25°	1691	1635	1643
30°	1647	1591	1586
35°	1605	1539	1527
40°	1553	1486	1470
45°	1502	1433	1411
50°	1445	1377	1344
55°	1386	1313	1282
60°	1320	1237	1211
65°	1247	1158	1127
70°	1154	1061	1037
75°	1026	946	955
80°	872	800	796
85°	630	546	533

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
Vertical Angle: 45°
Luminance: 1502 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	232.1	2.0
10°-20°	653.0	5.6
20°-30°	959.7	8.2
30°-40°	1114.6	9.5
40°-50°	1113.2	9.5
50°-60°	970.7	8.3
60°-70°	717.6	6.1
70°-80°	406.0	3.5
80°-90°	110.4	0.9
90°-100°	61.7	0.5
100°-110°	230.0	2.0
110°-120°	610.1	5.2
120°-130°	1011.9	8.6
130°-140°	1074.9	9.1
140°-150°	999.0	8.5
150°-160°	803.2	6.8
160°-170°	517.5	4.4
170°-180°	178.1	1.5
0°-30°	1844.8	15.7
0°-40°	2959.4	25.2
0°-60°	5043.4	42.9
0°-90°	6277.4	53.4
90°-120°	901.9	7.7
90°-150°	3987.7	33.9
90°-180°	5487.0	46.6
0°-180°	11763.9	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2466	2466	2466	2466	2466	
5°	2466	2457	2430	2449	2445	234
15°	2348	2333	2302	2312	2300	661
25°	2125	2106	2066	2070	2066	978
35°	1833	1809	1771	1757	1745	1145
45°	1492	1475	1439	1413	1404	1151
55°	1129	1114	1086	1058	1046	1009
65°	761	747	723	702	690	753
75°	398	394	382	368	372	425
85°	97	95	93	85	83	108
90°	1	16	27	34	36	11
95°	88	43	53	60	58	104
105°	412	452	83	97	103	440
115°	779	802	836	209	111	767
125°	1101	1119	1144	1154	1158	982
135°	1362	1384	1396	1410	1407	1052
145°	1580	1579	1602	1612	1605	988
155°	1740	1728	1744	1752	1742	802
165°	1834	1826	1830	1839	1830	518
175°	1876	1866	1869	1878	1865	178
180°	1871	1871	1871	1871	1871	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2465.9	2465.9	2465.9	2465.9	2465.9
2.5°	2480.2	2468.4	2442.3	2465.9	2461.4
5°	2465.9	2456.6	2430.5	2449.3	2444.8
7.5°	2449.3	2435.2	2409.1	2428.2	2423.4
10°	2423.4	2406.8	2378.4	2397.2	2390.2
12.5°	2387.7	2373.6	2345.2	2357.0	2352.2
15°	2347.5	2333.4	2302.4	2312.0	2300.2
17.5°	2297.6	2283.5	2252.6	2264.4	2252.6
20°	2243.1	2229.0	2195.8	2202.8	2193.5
22.5°	2188.7	2167.3	2136.4	2136.4	2131.6
25°	2124.6	2105.7	2065.5	2070.0	2065.5
27.5°	2053.3	2036.8	2006.0	1999.0	1987.2
30°	1982.4	1963.3	1927.9	1920.8	1911.2
32.5°	1906.5	1892.4	1854.3	1840.0	1830.5
35°	1832.9	1809.3	1771.3	1757.0	1745.2
37.5°	1749.9	1728.5	1690.6	1674.0	1662.2
40°	1664.7	1645.5	1607.6	1586.4	1576.8
42.5°	1581.7	1562.5	1524.8	1500.9	1486.8
45°	1491.6	1475.0	1439.2	1413.3	1403.8
47.5°	1403.8	1387.2	1349.2	1323.0	1308.9
50°	1311.2	1299.4	1266.1	1233.0	1221.1
52.5°	1221.1	1204.5	1173.9	1147.7	1131.1
55°	1128.8	1114.4	1086.1	1057.6	1045.8
57.5°	1036.3	1024.4	993.5	965.0	955.4
60°	943.6	934.4	901.1	875.0	867.9
62.5°	853.6	837.0	813.3	789.7	780.1
65°	761.3	746.9	723.3	701.9	690.1
67.5°	666.4	654.3	633.2	616.6	607.0
70°	578.6	569.0	547.7	531.1	521.7
72.5°	488.5	479.0	467.1	450.6	443.5
75°	398.2	393.7	381.7	367.6	372.3
77.5°	317.7	308.2	303.4	296.4	289.3
80°	237.3	234.7	230.0	222.9	218.1
82.5°	161.3	161.3	159.0	149.4	149.4
85°	97.1	94.8	92.6	85.3	83.0
87.5°	42.8	38.0	33.2	26.1	23.7
90°	1.3	16.2	27.0	33.9	36.5
92.5°	33.9	28.4	32.5	35.3	36.5
95°	87.9	43.3	52.8	59.7	58.2
97.5°	158.4	47.5	69.0	73.2	74.5
100°	239.8	54.2	77.2	87.9	90.7
102.5°	329.0	326.5	79.9	94.7	98.9
105°	411.7	452.3	82.6	97.4	102.9
107.5°	507.8	541.6	85.4	100.2	105.7
110°	600.0	628.3	237.0	101.6	106.9



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	686.7	710.9	687.9	104.2	108.4
115°	778.6	801.6	835.5	208.6	111.1
117.5°	858.6	885.6	908.7	714.9	360.2
120°	947.9	968.2	992.7	1008.9	826.1
122.5°	1023.7	1045.4	1072.6	1080.6	1082.0
125°	1100.9	1118.6	1144.3	1153.8	1157.8
127.5°	1171.3	1190.3	1210.7	1224.2	1225.5
130°	1237.7	1259.4	1274.2	1289.2	1287.9
132.5°	1305.4	1323.1	1337.9	1350.1	1348.8
135°	1362.3	1384.0	1396.1	1409.8	1407.1
137.5°	1421.8	1438.1	1451.8	1465.3	1461.3
140°	1480.0	1491.0	1505.8	1518.0	1511.2
142.5°	1528.9	1538.4	1555.9	1566.7	1560.0
145°	1580.4	1579.0	1601.9	1611.5	1604.7
147.5°	1624.9	1621.0	1643.9	1650.7	1645.4
150°	1668.3	1658.9	1680.6	1688.6	1681.9
152.5°	1704.9	1694.1	1714.4	1722.5	1713.1
155°	1740.1	1728.0	1744.2	1752.3	1741.5
157.5°	1768.5	1757.8	1770.0	1779.5	1768.5
160°	1793.0	1784.8	1793.0	1801.0	1791.5
162.5°	1814.6	1806.5	1813.2	1822.7	1810.5
165°	1833.5	1825.5	1829.5	1839.0	1829.5
167.5°	1848.5	1840.2	1844.4	1853.9	1841.7
170°	1860.7	1852.5	1855.2	1864.7	1852.5
172.5°	1868.8	1860.7	1863.4	1872.9	1860.7
175°	1875.5	1866.0	1868.8	1878.2	1864.7
177.5°	1878.2	1868.8	1870.2	1879.7	1867.4
180°	1871.4	1871.4	1871.4	1871.4	1871.4

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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	9.63	10.52	10.55	11.46	12.69	9.19	10.08	10.11	11.02	12.25
	3H	11.29	12.09	12.23	13.05	14.29	10.81	11.61	11.75	12.56	13.81
	4H	11.88	12.64	12.84	13.60	14.85	11.40	12.15	12.35	13.11	14.37
	6H	12.29	12.98	13.25	13.95	15.22	11.79	12.49	12.76	13.46	14.73
	8H	12.39	13.06	13.37	14.04	15.31	11.90	12.57	12.87	13.55	14.81
	12H	12.44	13.08	13.42	14.05	15.34	11.94	12.58	12.92	13.55	14.84
4H	2H	10.09	10.85	11.05	11.81	13.06	9.74	10.50	10.70	11.46	12.71
	3H	11.96	12.60	12.93	13.59	14.85	11.56	12.19	12.53	13.18	14.45
	4H	12.68	13.26	13.66	14.24	15.54	12.26	12.84	13.24	13.82	15.12
	6H	13.20	13.70	14.19	14.71	16.00	12.78	13.27	13.77	14.28	15.57
	8H	13.35	13.82	14.35	14.82	16.12	12.92	13.39	13.92	14.39	15.70
	12H	13.43	13.85	14.44	14.87	16.18	12.99	13.41	14.00	14.43	15.74
8H	4H	12.88	13.35	13.87	14.35	15.65	12.51	12.98	13.50	13.97	15.28
	6H	13.52	13.90	14.53	14.94	16.25	13.14	13.53	14.16	14.57	15.87
	8H	13.74	14.08	14.77	15.11	16.43	13.36	13.69	14.38	14.72	16.05
	12H	13.88	14.17	14.90	15.20	16.56	13.47	13.77	14.50	14.79	16.16
12H	4H	12.87	13.29	13.88	14.30	15.62	12.51	12.93	13.52	13.94	15.25
	6H	13.55	13.89	14.57	14.92	16.24	13.18	13.52	14.21	14.55	15.87
	8H	13.79	14.09	14.82	15.11	16.48	13.42	13.72	14.45	14.74	16.11