

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: P903049

Luminaire Tested: DFN2DIP-PN3F0-060D070US830-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P903049
REPORT IS A COMBINATION OF REPORTS P901093 AND P897955
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN3F0-060D070US830-FLLONL
Description: 3 foot, Pentagon Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

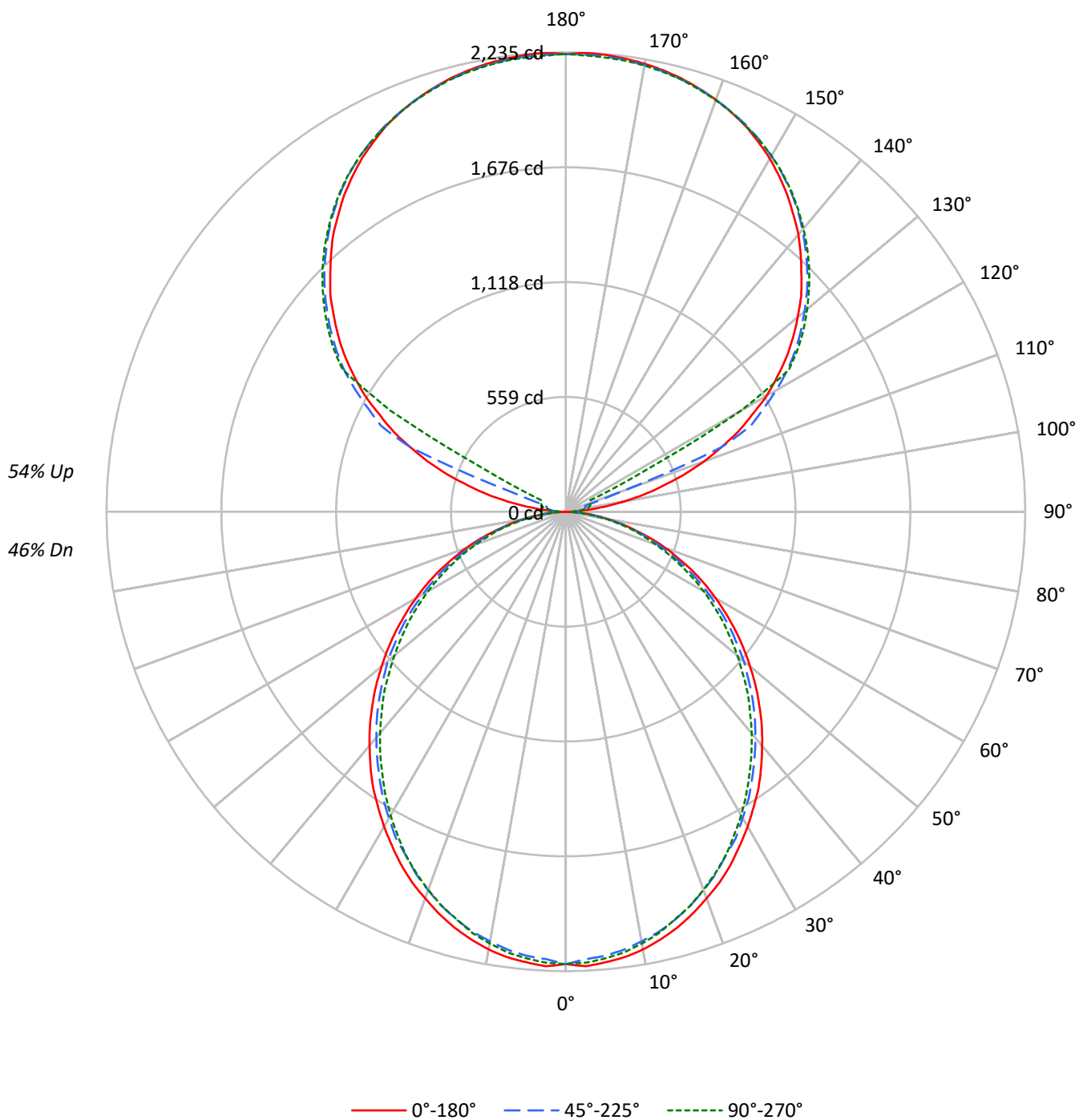
Lumens per Lamp: N/A
Luminaire Lumens: 12130.5 lumens
Efficiency: N/A
Efficacy: 109.0 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 2.96' x L: 3.11' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 111.3
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9821
Total Harmonic Distortion (THDi): 0.08
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P903049

CATALOG NUMBER: DFN2DIP-PN3F0-060D070US830-FLLONL

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	106	106	106	106	98	98	98	98	81	81	81	66	66	66	53	53	53
1	97	93	89	85	89	85	82	79	71	69	67	58	57	55	46	45	44
2	88	81	75	70	81	74	69	65	62	59	55	51	48	46	41	39	37
3	81	71	64	58	74	66	59	54	55	50	46	45	42	39	36	34	32
4	74	63	55	49	67	58	51	46	49	44	40	40	37	33	32	30	27
5	68	56	48	42	62	52	45	39	44	38	34	36	32	29	29	26	24
6	62	50	42	36	57	46	39	34	39	34	30	33	29	25	26	23	21
7	58	45	37	32	53	42	35	30	36	30	26	30	26	22	24	21	19
8	53	41	33	28	49	38	31	26	33	27	23	27	23	20	22	19	17
9	50	38	30	25	46	35	28	24	30	24	21	25	21	18	21	17	15
10	46	34	27	22	43	32	26	21	27	22	19	23	19	16	19	16	14

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2572	2572	2572
5°	2575	2535	2552
10°	2553	2499	2517
15°	2513	2456	2462
20°	2461	2397	2405
25°	2409	2327	2340
30°	2344	2261	2258
35°	2283	2184	2171
40°	2207	2107	2088
45°	2132	2029	2003
50°	2049	1947	1905
55°	1963	1852	1814
60°	1865	1740	1711
65°	1758	1623	1588
70°	1621	1481	1456
75°	1433	1310	1332
80°	1205	1093	1099
85°	849	723	717

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2132 cd/sqm

TEST NUMBER: P903049

CATALOG NUMBER: DFN2DIP-PN3F0-060D070US830-FLLONL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	207.1	1.7
10°-20°	582.7	4.8
20°-30°	856.4	7.1
30°-40°	994.6	8.2
40°-50°	993.4	8.2
50°-60°	866.2	7.1
60°-70°	640.3	5.3
70°-80°	362.3	3.0
80°-90°	99.5	0.8
90°-100°	73.4	0.6
100°-110°	273.7	2.3
110°-120°	725.9	6.0
120°-130°	1204.0	9.9
130°-140°	1278.9	10.5
140°-150°	1188.6	9.8
150°-160°	955.6	7.9
160°-170°	615.8	5.1
170°-180°	211.9	1.7
0°-30°	1646.2	13.6
0°-40°	2640.9	21.8
0°-60°	4500.5	37.1
0°-90°	5602.6	46.2
90°-120°	1073.0	8.8
90°-150°	4744.6	39.1
90°-180°	6528.0	53.8
0°-180°	12130.5	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2200	2200	2200	2200	2200	
5°	2200	2192	2169	2186	2182	209
15°	2095	2082	2055	2063	2053	590
25°	1896	1879	1843	1847	1843	872
35°	1636	1615	1581	1568	1557	1021
45°	1331	1316	1284	1261	1253	1027
55°	1007	994	969	944	933	901
65°	679	667	646	626	616	672
75°	355	351	340	328	332	379
85°	87	85	83	76	74	97
90°	2	19	32	40	44	11
95°	105	52	63	71	69	124
105°	490	538	98	116	122	523
115°	926	954	994	248	132	912
125°	1310	1331	1362	1373	1378	1168
135°	1621	1647	1661	1677	1674	1252
145°	1880	1879	1906	1917	1909	1176
155°	2070	2056	2075	2085	2072	954
165°	2182	2172	2177	2188	2177	616
175°	2232	2220	2224	2235	2219	212
180°	2227	2227	2227	2227	2227	

TEST NUMBER: P903049

CATALOG NUMBER: DFN2DIP-PN3F0-060D070US830-FLLONL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2200.5	2200.5	2200.5	2200.5	2200.5
2.5°	2213.3	2202.7	2179.3	2200.5	2196.4
5°	2200.5	2192.2	2168.8	2185.7	2181.6
7.5°	2185.7	2173.1	2149.8	2166.8	2162.6
10°	2162.6	2147.8	2122.3	2139.2	2132.9
12.5°	2130.7	2118.1	2092.7	2103.3	2099.0
15°	2094.7	2082.2	2054.6	2063.1	2052.6
17.5°	2050.3	2037.8	2010.2	2020.6	2010.2
20°	2001.6	1989.0	1959.4	1965.7	1957.4
22.5°	1953.1	1934.0	1906.4	1906.4	1902.1
25°	1895.8	1879.1	1843.0	1847.1	1843.0
27.5°	1832.3	1817.5	1790.1	1783.9	1773.3
30°	1769.1	1751.9	1720.3	1714.0	1705.4
32.5°	1701.2	1688.7	1654.7	1641.9	1633.4
35°	1635.7	1614.6	1580.6	1567.8	1557.3
37.5°	1561.6	1542.5	1508.6	1493.7	1483.2
40°	1485.4	1468.4	1434.5	1415.7	1407.1
42.5°	1411.4	1394.3	1360.7	1339.4	1326.7
45°	1331.1	1316.2	1284.3	1261.2	1252.6
47.5°	1252.6	1237.8	1204.0	1180.6	1168.0
50°	1170.1	1159.5	1129.9	1100.2	1089.7
52.5°	1089.7	1074.9	1047.4	1024.2	1009.4
55°	1007.3	994.5	969.1	943.8	933.2
57.5°	924.7	914.2	886.6	861.2	852.6
60°	842.1	833.8	804.2	780.8	774.5
62.5°	761.7	746.9	725.8	704.6	696.2
65°	679.3	666.6	645.5	626.3	615.8
67.5°	594.6	583.9	565.1	550.3	541.7
70°	516.3	507.8	488.7	473.9	465.6
72.5°	435.9	427.4	416.9	402.1	395.8
75°	355.3	351.4	340.5	328.0	332.2
77.5°	283.5	275.0	270.7	264.5	258.2
80°	211.7	209.4	205.2	198.9	194.6
82.5°	143.9	143.9	141.9	133.4	133.4
85°	86.6	84.6	82.6	76.1	74.1
87.5°	38.2	33.9	29.6	23.4	21.1
90°	1.5	19.3	32.1	40.3	43.5
92.5°	40.3	33.8	38.6	41.9	43.5
95°	104.6	51.5	62.8	71.0	69.3
97.5°	188.4	56.5	82.1	87.1	88.6
100°	285.3	64.5	91.8	104.6	107.9
102.5°	391.4	388.4	95.1	112.7	117.6
105°	489.8	538.2	98.3	115.9	122.4
107.5°	604.2	644.4	101.6	119.2	125.7
110°	713.9	747.5	282.0	120.9	127.2

TEST NUMBER: P903049

CATALOG NUMBER: DFN2DIP-PN3F0-060D070US830-FLLONL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	817.0	845.8	818.5	123.9	128.9
115°	926.4	953.8	994.1	248.2	132.2
117.5°	1021.5	1053.7	1081.2	850.6	428.6
120°	1127.8	1152.0	1181.1	1200.4	982.9
122.5°	1218.0	1243.8	1276.2	1285.7	1287.4
125°	1309.9	1330.9	1361.5	1372.8	1377.5
127.5°	1393.6	1416.2	1440.5	1456.6	1458.1
130°	1472.6	1498.5	1516.1	1533.9	1532.4
132.5°	1553.2	1574.2	1591.9	1606.4	1604.9
135°	1620.9	1646.7	1661.1	1677.3	1674.1
137.5°	1691.7	1711.1	1727.3	1743.4	1738.6
140°	1761.0	1774.0	1791.6	1806.1	1798.1
142.5°	1819.1	1830.4	1851.2	1864.1	1856.1
145°	1880.4	1878.7	1906.0	1917.3	1909.3
147.5°	1933.3	1928.6	1956.0	1964.0	1957.7
150°	1985.0	1973.8	1999.6	2009.1	2001.1
152.5°	2028.4	2015.6	2039.8	2049.5	2038.2
155°	2070.4	2056.0	2075.3	2084.9	2072.1
157.5°	2104.2	2091.4	2105.9	2117.2	2104.2
160°	2133.4	2123.5	2133.4	2142.9	2131.6
162.5°	2159.0	2149.4	2157.4	2168.7	2154.2
165°	2181.5	2172.0	2176.7	2188.0	2176.7
167.5°	2199.3	2189.5	2194.5	2205.8	2191.3
170°	2213.8	2204.1	2207.3	2218.7	2204.1
172.5°	2223.5	2213.8	2217.1	2228.4	2213.8
175°	2231.5	2220.2	2223.5	2234.7	2218.7
177.5°	2234.7	2223.5	2225.2	2236.5	2221.9
180°	2226.7	2226.7	2226.7	2226.7	2226.7

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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	10.15	10.98	11.14	11.98	13.31	9.71	10.54	10.70	11.54	12.87
	3H	11.80	12.55	12.80	13.56	14.90	11.32	12.06	12.32	13.07	14.42
	4H	12.39	13.09	13.40	14.10	15.46	11.90	12.60	12.91	13.62	14.97
	6H	12.78	13.43	13.80	14.45	15.81	12.29	12.94	13.31	13.96	15.32
	8H	12.88	13.50	13.91	14.53	15.89	12.39	13.01	13.42	14.04	15.40
	12H	12.93	13.51	13.96	14.54	15.93	12.43	13.02	13.46	14.04	15.43
4H	2H	10.61	11.31	11.63	12.32	13.68	10.26	10.96	11.27	11.97	13.33
	3H	12.46	13.05	13.49	14.09	15.46	12.06	12.65	13.09	13.69	15.06
	4H	13.17	13.71	14.20	14.74	16.13	12.75	13.29	13.79	14.33	15.71
	6H	13.68	14.14	14.72	15.20	16.58	13.25	13.72	14.30	14.77	16.16
	8H	13.82	14.25	14.87	15.30	16.71	13.40	13.83	14.44	14.88	16.28
	12H	13.89	14.28	14.96	15.35	16.75	13.45	13.84	14.52	14.91	16.32
8H	4H	13.36	13.79	14.41	14.84	16.24	12.99	13.42	14.04	14.47	15.87
	6H	13.98	14.34	15.05	15.43	16.83	13.61	13.96	14.68	15.06	16.45
	8H	14.20	14.51	15.28	15.59	17.01	13.82	14.13	14.89	15.21	16.62
	12H	14.32	14.60	15.40	15.67	17.13	13.92	14.20	15.01	15.27	16.73
12H	4H	13.34	13.73	14.41	14.80	16.20	12.98	13.37	14.05	14.44	15.84
	6H	14.01	14.32	15.09	15.40	16.82	13.65	13.96	14.72	15.04	16.45
	8H	14.25	14.52	15.33	15.59	17.05	13.87	14.15	14.96	15.22	16.68