

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: P903044

Luminaire Tested: DFN2DIP-PN3F0-060D060US830-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P903044
REPORT IS A COMBINATION OF REPORTS P899559 AND P896399
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN3F0-060D060US830-FLLFLL
Description: 3 foot, Pentagon Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

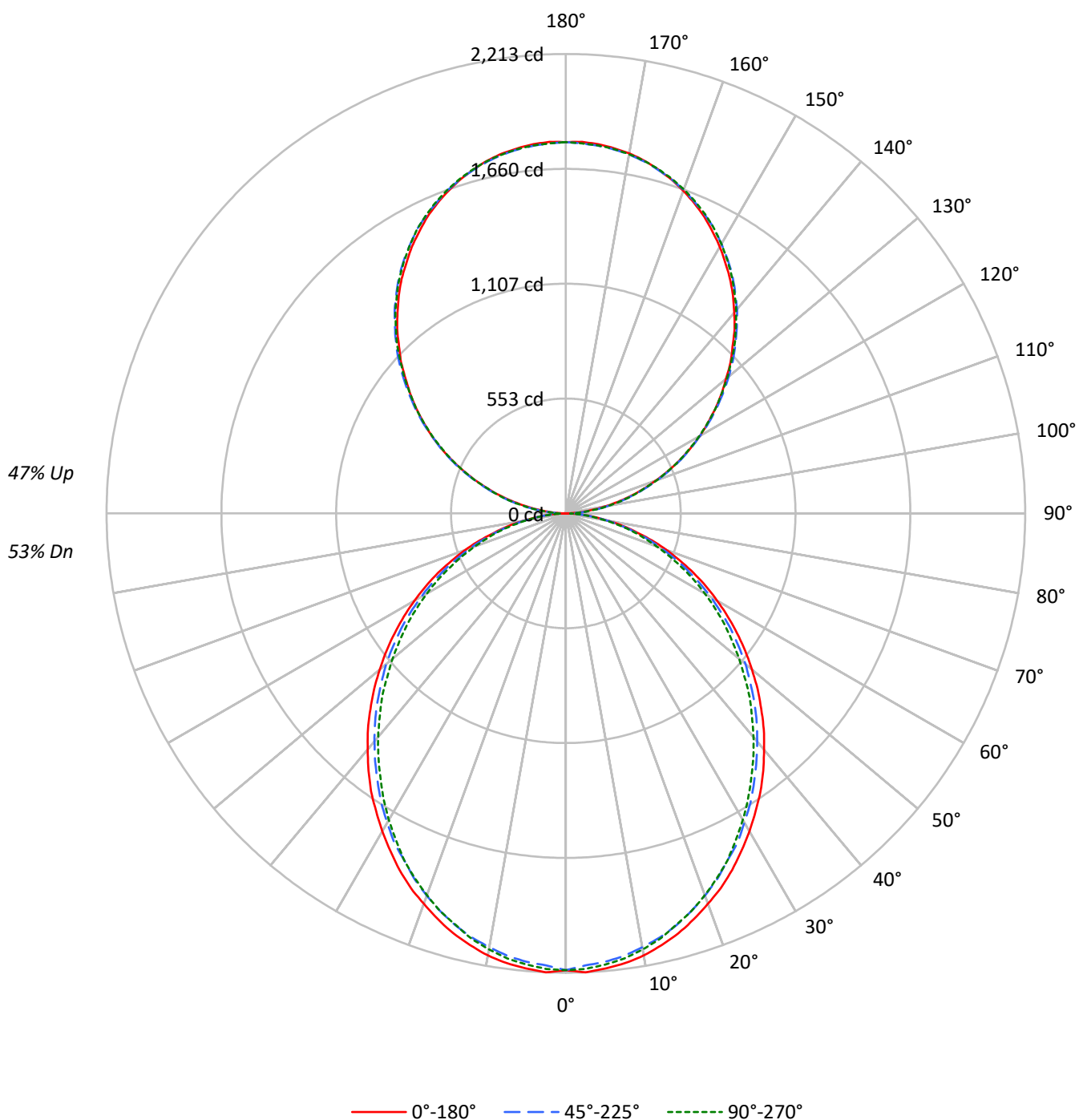
Lumens per Lamp: N/A
Luminaire Lumens: 10603.6 lumens
Efficiency: N/A
Efficacy: 102.9 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 2.96' x L: 3.11' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 103
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

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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	108	108	108	108	100	100	100	100	85	85	85	71	71	71	59	59	59
1	98	94	90	87	91	87	84	81	74	72	70	63	61	59	52	51	50
2	90	82	76	71	83	76	71	66	65	61	58	55	52	50	46	44	42
3	82	72	65	59	75	67	61	55	58	53	49	49	45	42	41	38	36
4	75	64	56	50	69	60	52	47	51	46	41	43	39	36	36	33	31
5	69	57	49	43	63	53	46	40	46	40	36	39	35	31	33	29	27
6	63	51	43	37	58	48	40	35	41	36	31	35	31	27	30	26	24
7	59	46	38	33	54	43	36	31	37	32	28	32	28	24	27	24	21
8	54	42	34	29	50	39	32	27	34	29	24	29	25	22	25	21	19
9	51	38	31	26	47	36	29	24	31	26	22	27	23	19	23	20	17
10	47	35	28	23	44	33	26	22	29	23	20	25	21	18	21	18	15

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

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	207.1	2.0
10°-20°	582.7	5.5
20°-30°	856.4	8.1
30°-40°	994.6	9.4
40°-50°	993.4	9.4
50°-60°	866.2	8.2
60°-70°	640.3	6.0
70°-80°	362.3	3.4
80°-90°	100.7	0.9
90°-100°	110.7	1.0
100°-110°	351.6	3.3
110°-120°	601.8	5.7
120°-130°	791.4	7.5
130°-140°	888.4	8.4
140°-150°	871.1	8.2
150°-160°	730.8	6.9
160°-170°	484.6	4.6
170°-180°	169.4	1.6
0°-30°	1646.2	15.5
0°-40°	2640.9	24.9
0°-60°	4500.5	42.4
0°-90°	5603.8	52.8
90°-120°	1064.1	10.0
90°-150°	3615.0	34.1
90°-180°	5000.0	47.2
0°-180°	10603.6	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	53	50	51	10
95°	79	94	96	96	94	88
105°	325	329	332	335	335	343
115°	604	613	610	608	604	597
125°	878	892	888	883	881	785
135°	1136	1153	1156	1154	1150	878
145°	1379	1390	1399	1400	1394	862
155°	1577	1582	1586	1594	1589	726
165°	1716	1714	1714	1725	1717	484
175°	1785	1781	1778	1789	1779	170
180°	1789	1789	1789	1789	1789	

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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°	1.6	19.4	52.9	49.6	51.2
92.5°	33.5	45.3	46.9	48.5	48.5
95°	78.7	93.8	96.5	96.5	93.8
97.5°	131.0	145.1	151.0	151.0	151.0
100°	191.4	203.8	208.1	208.1	206.5
102.5°	255.1	264.2	270.1	271.7	270.1
105°	324.6	328.9	332.2	334.9	334.9
107.5°	393.6	400.1	400.1	401.1	393.6
110°	460.5	469.1	469.1	469.1	464.8

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	532.7	541.9	540.3	535.9	532.7
115°	603.9	612.6	609.8	608.2	603.9
117.5°	674.6	686.5	678.8	674.6	670.2
120°	745.7	757.6	745.7	745.7	740.8
122.5°	810.4	825.5	817.9	813.7	810.4
125°	878.4	891.8	887.5	882.7	881.1
127.5°	944.7	961.4	955.5	949.0	944.7
130°	1006.7	1026.1	1023.4	1020.2	1014.3
132.5°	1076.3	1091.4	1092.4	1084.9	1080.5
135°	1136.1	1152.8	1156.0	1154.4	1150.1
137.5°	1203.0	1216.4	1219.2	1218.0	1211.6
140°	1261.8	1275.3	1282.8	1282.8	1276.9
142.5°	1322.1	1335.6	1339.9	1341.5	1335.6
145°	1379.3	1390.1	1398.7	1400.3	1394.4
147.5°	1430.5	1444.0	1450.5	1453.1	1447.2
150°	1483.4	1492.5	1498.5	1503.3	1498.5
152.5°	1530.2	1539.5	1547.0	1552.9	1547.0
155°	1577.2	1581.5	1586.3	1593.9	1589.0
157.5°	1617.6	1620.9	1623.5	1634.4	1626.8
160°	1653.8	1657.0	1658.6	1667.7	1661.3
162.5°	1687.2	1687.2	1688.8	1699.0	1691.5
165°	1715.7	1714.1	1714.1	1724.9	1717.4
167.5°	1741.6	1736.8	1736.8	1747.6	1740.0
170°	1761.0	1756.7	1755.1	1765.9	1756.7
172.5°	1774.5	1770.2	1768.6	1779.3	1770.2
175°	1785.3	1781.0	1777.7	1788.6	1779.3
177.5°	1791.2	1787.0	1783.7	1792.8	1783.7
180°	1788.6	1788.6	1788.6	1788.6	1788.6

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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	10.77	11.66	11.71	12.61	13.84	10.34	11.22	11.27	12.17	13.40
	3H	12.43	13.23	13.37	14.19	15.44	11.95	12.74	12.89	13.70	14.96
	4H	13.01	13.77	13.97	14.73	15.99	12.53	13.28	13.49	14.25	15.51
	6H	13.41	14.11	14.38	15.07	16.35	12.92	13.62	13.89	14.59	15.86
	8H	13.51	14.18	14.49	15.16	16.43	13.02	13.69	14.00	14.67	15.94
	12H	13.56	14.19	14.54	15.17	16.47	13.06	13.69	14.05	14.67	15.97
4H	2H	11.24	11.99	12.20	12.95	14.21	10.88	11.64	11.85	12.60	13.86
	3H	13.10	13.72	14.07	14.72	15.99	12.69	13.32	13.67	14.32	15.59
	4H	13.81	14.38	14.79	15.37	16.67	13.39	13.97	14.37	14.95	16.25
	6H	14.32	14.81	15.31	15.82	17.12	13.89	14.39	14.89	15.40	16.70
	8H	14.46	14.93	15.46	15.93	17.24	14.04	14.50	15.03	15.50	16.82
	12H	14.54	14.95	15.55	15.97	17.29	14.10	14.52	15.11	15.54	16.85
8H	4H	14.00	14.46	15.00	15.47	16.78	13.63	14.09	14.63	15.10	16.41
	6H	14.63	15.01	15.65	16.05	17.36	14.25	14.63	15.27	15.68	16.99
	8H	14.84	15.18	15.87	16.21	17.54	14.46	14.80	15.49	15.83	17.16
	12H	14.97	15.27	16.00	16.29	17.67	14.57	14.87	15.61	15.90	17.27
12H	4H	13.99	14.41	15.00	15.42	16.74	13.63	14.04	14.64	15.06	16.38
	6H	14.65	14.99	15.68	16.02	17.35	14.29	14.63	15.32	15.66	16.99
	8H	14.89	15.19	15.93	16.22	17.59	14.52	14.82	15.55	15.85	17.22

END OF REPORT