

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: P902270

Luminaire Tested: DFN2DIP-4P3F0-060D060US830-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P902270
REPORT IS A COMBINATION OF REPORTS P899077 AND P895917
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-4P3F0-060D060US830-FLLFLL
Description: 3 foot, 90deg - 4way Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

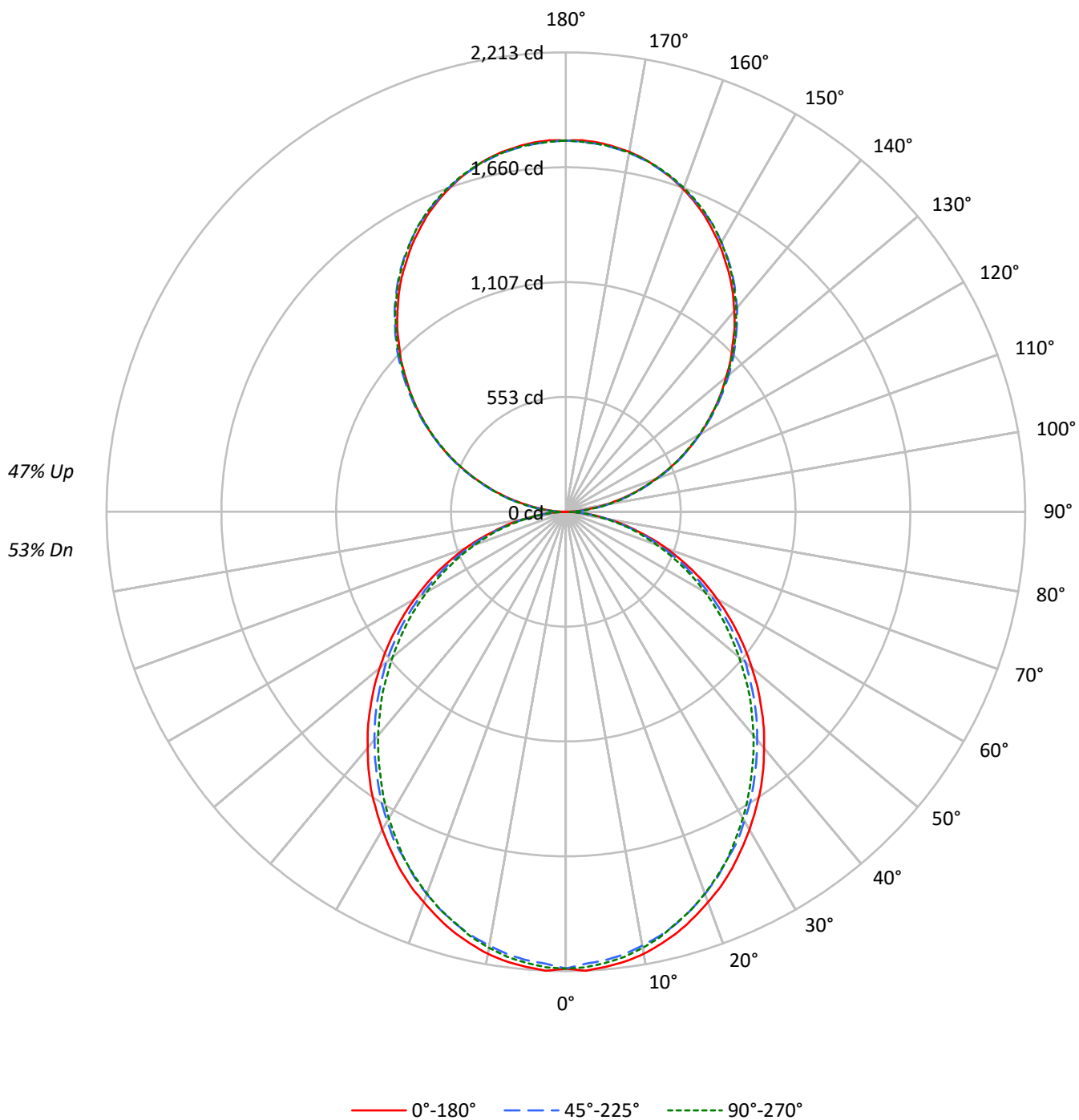
Lumens per Lamp: N/A
Luminaire Lumens: 10603.6 lumens
Efficiency: N/A
Efficacy: 97.1 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 3.07' x L: 3.07' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 109.2
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9963
Total Harmonic Distortion (THDi): 0.065
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P902270

CATALOG NUMBER: DFN2DIP-4P3F0-060D060US830-FLLFLL

Luminous Intensity Polar Plot



TEST NUMBER: P902270

CATALOG NUMBER: DFN2DIP-4P3F0-060D060US830-FLLFLL

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°	2508	2508	2508
5°	2510	2471	2489
10°	2488	2436	2454
15°	2450	2394	2401
20°	2399	2337	2346
25°	2348	2269	2283
30°	2285	2205	2203
35°	2225	2130	2118
40°	2151	2055	2038
45°	2078	1979	1955
50°	1997	1899	1860
55°	1912	1807	1772
60°	1817	1698	1671
65°	1712	1584	1552
70°	1579	1446	1424
75°	1395	1280	1304
80°	1173	1068	1078
85°	825	708	706

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
Vertical Angle: 45°
Luminance: 2078 cd/sqm

TEST NUMBER: P902270

CATALOG NUMBER: DFN2DIP-4P3F0-060D060US830-FLLFL

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	

TEST NUMBER: P902270

CATALOG NUMBER: DFN2DIP-4P3F0-060D060US830-FLLFL

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

TEST NUMBER: P902270

CATALOG NUMBER: DFN2DIP-4P3F0-060D060US830-FLLFLL

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

TEST NUMBER: P902270

CATALOG NUMBER: DFN2DIP-4P3F0-060D060US830-FLLFLL

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	10.69	11.58	11.62	12.53	13.76	10.25	11.13	11.18	12.08	13.31
	3H	12.35	13.15	13.29	14.10	15.36	11.86	12.66	12.80	13.61	14.87
	4H	12.93	13.69	13.89	14.65	15.91	12.44	13.19	13.40	14.16	15.42
	6H	13.33	14.03	14.30	15.00	16.27	12.83	13.53	13.80	14.50	15.77
	8H	13.44	14.10	14.41	15.08	16.36	12.93	13.60	13.91	14.58	15.85
	12H	13.48	14.11	14.46	15.09	16.39	12.97	13.60	13.96	14.58	15.88
4H	2H	11.15	11.91	12.12	12.87	14.13	10.80	11.55	11.76	12.51	13.78
	3H	13.01	13.64	13.99	14.64	15.91	12.61	13.24	13.58	14.23	15.51
	4H	13.73	14.30	14.71	15.29	16.59	13.30	13.88	14.28	14.86	16.16
	6H	14.24	14.73	15.23	15.74	17.04	13.81	14.30	14.80	15.31	16.61
	8H	14.39	14.85	15.38	15.85	17.17	13.95	14.41	14.95	15.42	16.73
	12H	14.46	14.88	15.47	15.90	17.21	14.01	14.43	15.02	15.45	16.77
8H	4H	13.92	14.38	14.92	15.39	16.70	13.54	14.01	14.54	15.01	16.32
	6H	14.55	14.93	15.57	15.98	17.29	14.16	14.55	15.18	15.59	16.90
	8H	14.76	15.10	15.79	16.13	17.46	14.37	14.71	15.40	15.74	17.07
	12H	14.89	15.19	15.93	16.22	17.59	14.48	14.78	15.52	15.81	17.18
12H	4H	13.91	14.32	14.92	15.34	16.66	13.54	13.96	14.55	14.98	16.29
	6H	14.58	14.91	15.60	15.95	17.27	14.20	14.54	15.23	15.57	16.90
	8H	14.81	15.11	15.85	16.14	17.51	14.43	14.73	15.47	15.76	17.13

END OF REPORT