

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: P917336

Luminaire Tested: DFN2DIP-SQ3F0-060D070US930-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P917336
REPORT IS A COMBINATION OF REPORTS P899919 AND P896733
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ3F0-060D070US930-FLLFLL
Description: 3 foot, Square Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

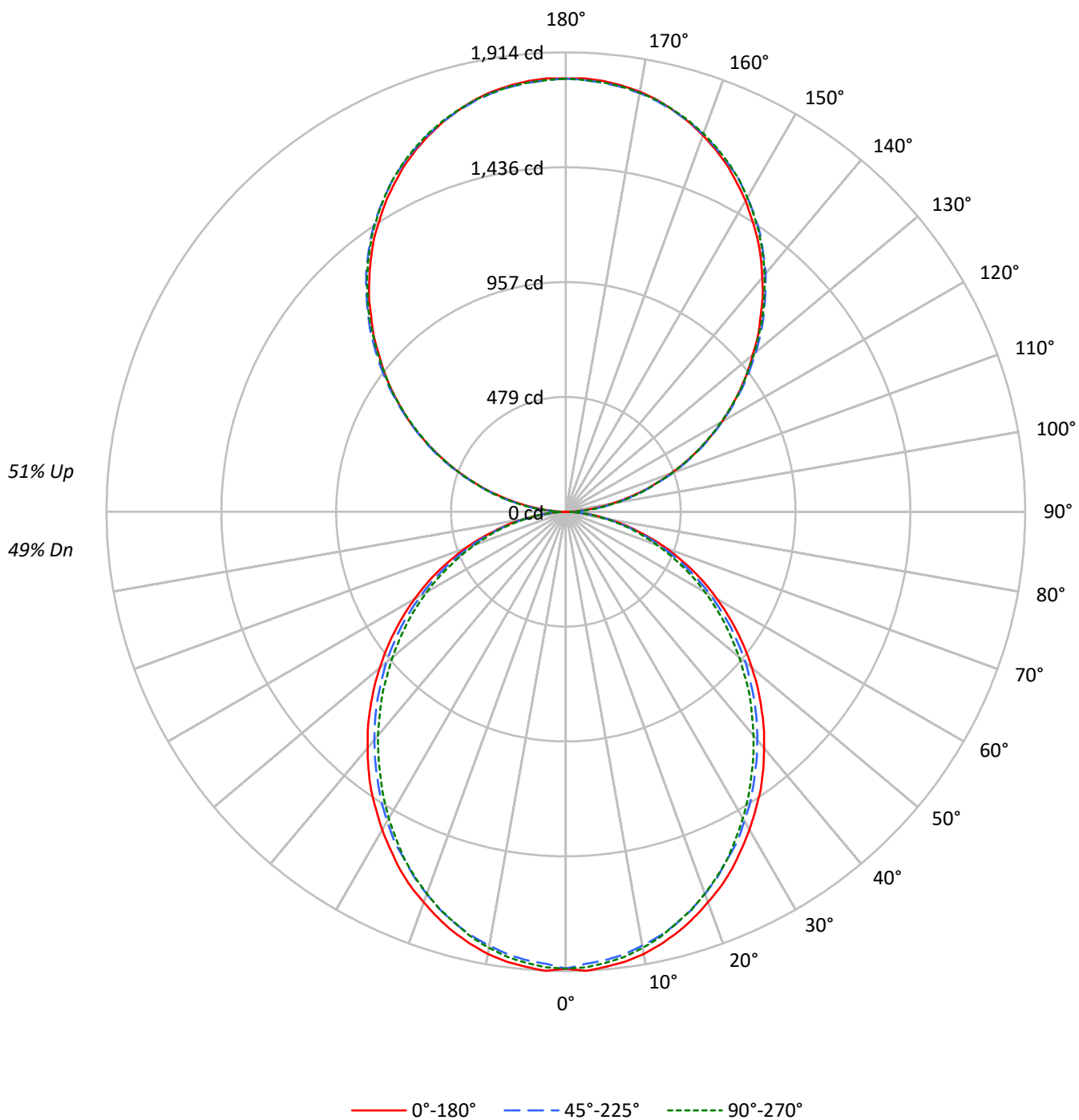
Lumens per Lamp: N/A
Luminaire Lumens: 9893.7 lumens
Efficiency: N/A
Efficacy: 93.4 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 3.06' x L: 3.06' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 105.9
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

TEST NUMBER: P917336

CATALOG NUMBER: DFN2DIP-SQ3F0-060D070US930-FLLFLL

Luminous Intensity Polar Plot



TEST NUMBER: P917336

CATALOG NUMBER: DFN2DIP-SQ3F0-060D070US930-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	50	30	10
RCR																				
0	107	107	107	107	98	98	98	98	83	83	83	68	68	68	55	55	55			49
1	98	93	89	86	90	86	83	80	73	70	68	60	59	57	49	48	47			41
2	89	81	75	70	82	75	70	65	64	60	56	53	50	48	43	41	39			35
3	81	72	64	58	74	66	60	55	56	51	47	47	43	40	38	36	33			29
4	74	63	55	49	68	59	52	46	50	45	40	42	38	34	34	31	29			25
5	68	56	48	42	62	52	45	40	45	39	35	37	33	30	31	28	25			22
6	63	51	43	37	58	47	40	35	40	35	30	34	29	26	28	25	22			19
7	58	46	38	32	53	42	35	30	36	31	27	31	26	23	25	22	20			17
8	54	41	34	28	49	39	32	27	33	28	24	28	24	21	23	20	18			15
9	50	38	30	25	46	35	29	24	30	25	21	26	22	19	22	18	16			14
10	47	35	28	23	43	32	26	22	28	23	19	24	20	17	20	17	14			12

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2181	2181	2181
5°	2183	2149	2164
10°	2164	2119	2134
15°	2131	2082	2088
20°	2086	2032	2040
25°	2042	1973	1985
30°	1987	1918	1916
35°	1935	1853	1842
40°	1871	1787	1772
45°	1807	1721	1700
50°	1737	1651	1617
55°	1663	1571	1541
60°	1580	1476	1453
65°	1489	1377	1350
70°	1373	1257	1238
75°	1213	1113	1134
80°	1020	928	938
85°	717	615	614

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 1816 cd/sqm

TEST NUMBER: P917336

CATALOG NUMBER: DFN2DIP-SQ3F0-060D070US930-FLLFLL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	179.1	1.8
10°-20°	504.1	5.1
20°-30°	740.8	7.5
30°-40°	860.4	8.7
40°-50°	859.3	8.7
50°-60°	749.3	7.6
60°-70°	553.9	5.6
70°-80°	313.4	3.2
80°-90°	87.8	0.9
90°-100°	111.7	1.1
100°-110°	354.9	3.6
110°-120°	607.3	6.1
120°-130°	798.7	8.1
130°-140°	896.5	9.1
140°-150°	879.1	8.9
150°-160°	737.5	7.5
160°-170°	489.1	4.9
170°-180°	170.9	1.7
0°-30°	1424.0	14.4
0°-40°	2284.3	23.1
0°-60°	3892.9	39.3
0°-90°	4848.0	49.0
90°-120°	1073.9	10.9
90°-150°	3648.2	36.9
90°-180°	5046.0	51.0
0°-180°	9893.7	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1903	1903	1903	1903	1903	
5°	1903	1896	1876	1891	1887	181
15°	1812	1801	1777	1785	1776	510
25°	1640	1625	1594	1598	1594	755
35°	1415	1397	1367	1356	1347	884
45°	1151	1138	1111	1091	1084	889
55°	871	860	838	816	807	779
65°	588	577	558	542	533	581
75°	307	304	295	284	287	328
85°	75	73	71	66	64	84
90°	2	20	53	50	52	10
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	

TEST NUMBER: P917336

CATALOG NUMBER: DFN2DIP-SQ3F0-060D070US930-FLLFLL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1903.4	1903.4	1903.4	1903.4	1903.4
2.5°	1914.5	1905.4	1885.1	1903.4	1899.9
5°	1903.4	1896.2	1876.0	1890.6	1887.1
7.5°	1890.6	1879.8	1859.5	1874.3	1870.6
10°	1870.6	1857.8	1835.8	1850.4	1844.9
12.5°	1843.1	1832.1	1810.2	1819.3	1815.7
15°	1811.9	1801.1	1777.2	1784.6	1775.5
17.5°	1773.5	1762.7	1738.8	1747.8	1738.8
20°	1731.4	1720.5	1694.8	1700.3	1693.1
22.5°	1689.5	1672.9	1649.0	1649.0	1645.4
25°	1639.9	1625.4	1594.2	1597.7	1594.2
27.5°	1584.9	1572.1	1548.4	1543.0	1533.9
30°	1530.2	1515.4	1488.1	1482.6	1475.2
32.5°	1471.5	1460.7	1431.3	1420.2	1412.9
35°	1414.9	1396.6	1367.3	1356.2	1347.0
37.5°	1350.8	1334.2	1305.0	1292.1	1283.0
40°	1284.9	1270.2	1240.9	1224.6	1217.2
42.5°	1220.8	1206.1	1177.0	1158.5	1147.6
45°	1151.4	1138.5	1110.9	1091.0	1083.5
47.5°	1083.5	1070.7	1041.5	1021.2	1010.3
50°	1012.1	1003.0	977.4	951.7	942.6
52.5°	942.6	929.8	906.0	885.9	873.1
55°	871.3	860.2	838.3	816.4	807.2
57.5°	799.9	790.8	766.9	744.9	737.5
60°	728.4	721.2	695.6	675.4	669.9
62.5°	658.8	646.0	627.8	609.5	602.2
65°	587.6	576.6	558.3	541.8	532.6
67.5°	514.4	505.1	488.8	476.0	468.6
70°	446.6	439.3	422.7	409.9	402.8
72.5°	377.1	369.7	360.6	347.8	342.3
75°	307.4	303.9	294.6	283.7	287.4
77.5°	245.2	237.9	234.2	228.8	223.3
80°	183.1	181.2	177.5	172.0	168.4
82.5°	124.5	124.5	122.7	115.4	115.4
85°	74.9	73.2	71.4	65.8	64.1
87.5°	33.0	29.4	25.6	20.2	18.3
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



TEST NUMBER: P917336

CATALOG NUMBER: DFN2DIP-SQ3F0-060D070US930-FLLFLL

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	9.85	10.71	10.82	11.69	12.97	9.41	10.26	10.37	11.24	12.53
	3H	11.51	12.27	12.48	13.26	14.57	11.02	11.78	11.99	12.77	14.08
	4H	12.09	12.82	13.08	13.81	15.12	11.60	12.32	12.59	13.31	14.63
	6H	12.49	13.15	13.49	14.15	15.48	11.99	12.65	12.99	13.65	14.98
	8H	12.59	13.23	13.60	14.24	15.56	12.09	12.72	13.10	13.74	15.06
	12H	12.64	13.24	13.65	14.25	15.60	12.13	12.73	13.14	13.74	15.09
4H	2H	10.31	11.03	11.31	12.03	13.34	9.95	10.68	10.95	11.67	12.99
	3H	12.17	12.77	13.17	13.79	15.12	11.76	12.36	12.77	13.39	14.72
	4H	12.88	13.43	13.89	14.45	15.80	12.45	13.01	13.47	14.02	15.37
	6H	13.39	13.86	14.41	14.90	16.25	12.96	13.43	13.98	14.47	15.82
	8H	13.54	13.98	14.56	15.01	16.38	13.10	13.54	14.12	14.57	15.94
	12H	13.61	14.01	14.65	15.05	16.42	13.16	13.56	14.20	14.60	15.97
8H	4H	13.07	13.51	14.10	14.55	15.91	12.69	13.14	13.72	14.17	15.53
	6H	13.69	14.06	14.74	15.14	16.50	13.31	13.68	14.36	14.75	16.11
	8H	13.91	14.24	14.97	15.29	16.67	13.52	13.84	14.58	14.90	16.28
	12H	14.04	14.32	15.10	15.38	16.80	13.63	13.91	14.69	14.97	16.39
12H	4H	13.05	13.46	14.10	14.50	15.87	12.69	13.09	13.73	14.13	15.50
	6H	13.72	14.05	14.78	15.10	16.49	13.35	13.67	14.41	14.73	16.11
	8H	13.96	14.25	15.02	15.30	16.72	13.58	13.86	14.64	14.92	16.34