

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: P903578

Luminaire Tested: DFN2DIP-SQ2F0-070D060US830-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P903578
REPORT IS A COMBINATION OF REPORTS P899816 AND P896659
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ2F0-070D060US830-RLLFLL
Description: 2 foot, Square Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

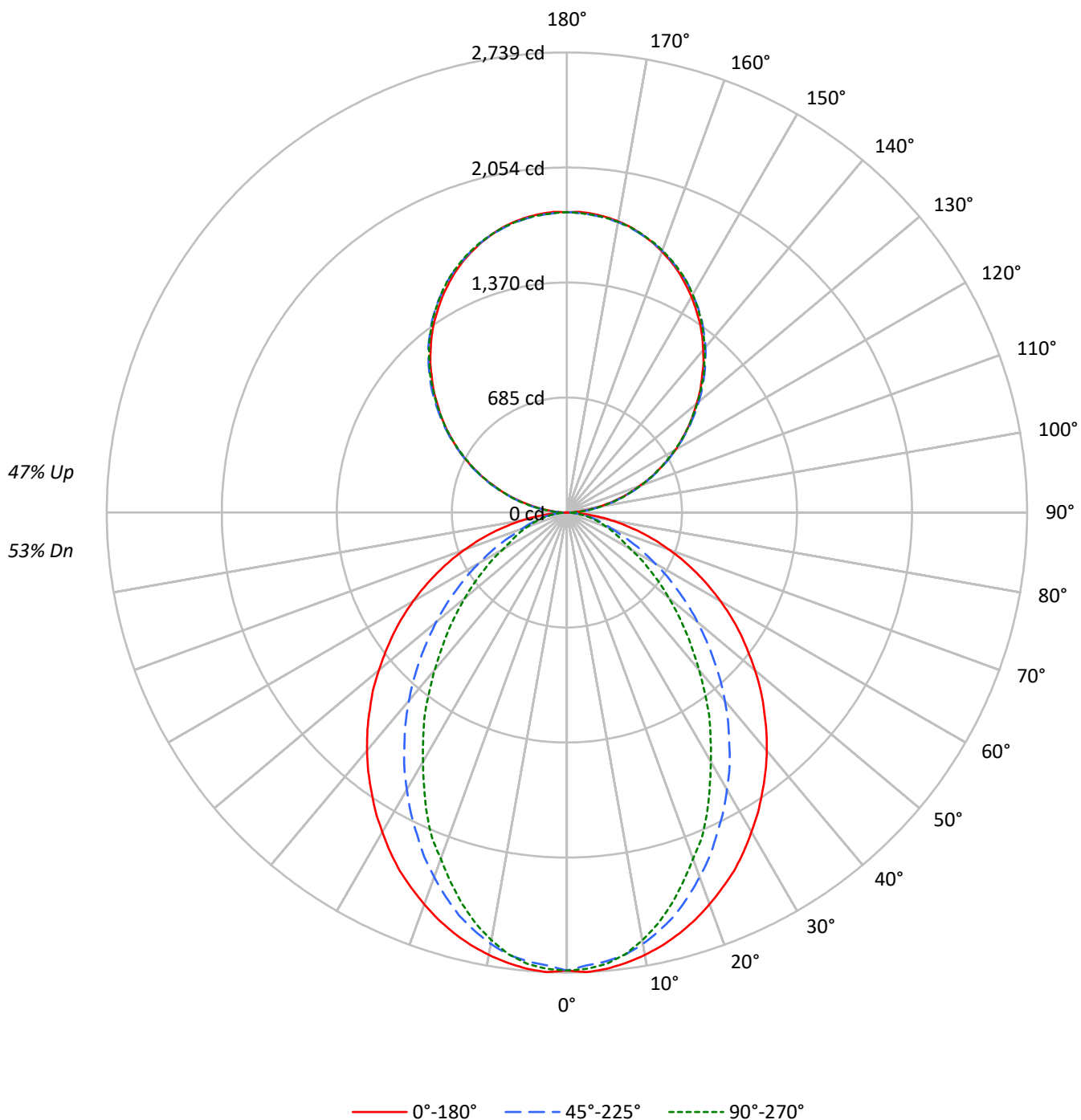
Lumens per Lamp: N/A
Luminaire Lumens: 10613.0 lumens
Efficiency: N/A
Efficacy: 93.4 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 2.21' x L: 2.21' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 113.6
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9977
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: P903578

CATALOG NUMBER: DFN2DIP-SQ2F0-070D060US830-RLLFLL

Luminous Intensity Polar Plot



TEST NUMBER: P903578

CATALOG NUMBER: DFN2DIP-SQ2F0-070D060US830-RLFL

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	99	95	91	88	92	88	85	82	75	73	71	64	62	60	53	52	51
2	91	83	77	72	84	78	72	68	67	63	59	56	54	51	47	45	43
3	83	74	67	61	77	69	62	57	59	54	51	50	47	44	42	40	38
4	76	66	58	52	70	61	54	49	53	48	44	45	41	38	38	35	33
5	70	59	51	45	65	55	48	43	48	42	38	41	37	33	34	31	29
6	65	53	45	39	60	50	42	37	43	38	33	37	33	30	31	28	26
7	60	48	40	35	56	45	38	33	39	34	30	34	30	26	29	26	23
8	56	44	36	31	52	41	34	29	36	30	27	31	27	24	27	23	21
9	52	40	33	28	48	38	31	26	33	28	24	29	24	21	25	21	19
10	49	37	30	25	45	35	28	24	31	25	22	27	22	19	23	20	17

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	5996	5996	5996
5°	5995	5888	5930
10°	5926	5759	5729
15°	5834	5556	5423
20°	5715	5282	5050
25°	5594	4977	4691
30°	5435	4665	4238
35°	5278	4331	3840
40°	5119	3987	3385
45°	4934	3607	2973
50°	4742	3224	2572
55°	4541	2817	2187
60°	4308	2393	1792
65°	4038	1965	1603
70°	3712	1565	1439
75°	3300	1354	1293
80°	2710	1100	1096
85°	1763	682	779

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 4934 cd/sqm

TEST NUMBER: P903578

CATALOG NUMBER: DFN2DIP-SQ2F0-070D060US830-RLFL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	255.6	2.4
10°-20°	701.6	6.6
20°-30°	985.0	9.3
30°-40°	1073.7	10.1
40°-50°	986.9	9.3
50°-60°	775.0	7.3
60°-70°	504.5	4.8
70°-80°	259.7	2.4
80°-90°	71.3	0.7
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°	1942.1	18.3
0°-40°	3015.8	28.4
0°-60°	4777.7	45.0
0°-90°	5613.2	52.9
90°-120°	1064.1	10.0
90°-150°	3615.0	34.1
90°-180°	5000.0	47.1
0°-180°	10613.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2727	2727	2727	2727	2727	
5°	2727	2714	2682	2705	2697	259
15°	2594	2566	2483	2436	2411	731
25°	2354	2275	2112	2011	1974	1083
35°	2028	1903	1686	1530	1476	1270
45°	1658	1493	1234	1059	999	1281
55°	1261	1068	802	654	607	1127
65°	851	651	429	346	338	844
75°	454	281	197	180	178	480
85°	106	54	47	47	47	122
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: P903578

CATALOG NUMBER: DFN2DIP-SQ2F0-070D060US830-RLFL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2726.9	2726.9	2726.9	2726.9	2726.9
2.5°	2739.1	2726.9	2699.6	2724.5	2719.5
5°	2726.9	2714.5	2682.4	2704.6	2697.3
7.5°	2704.6	2689.9	2655.4	2665.0	2652.8
10°	2675.0	2657.8	2608.5	2600.9	2586.2
12.5°	2638.1	2615.8	2549.1	2534.4	2507.2
15°	2593.6	2566.4	2482.6	2435.7	2411.1
17.5°	2541.8	2502.3	2398.6	2344.3	2304.8
20°	2482.6	2433.1	2309.8	2248.2	2193.8
22.5°	2418.5	2361.6	2218.4	2134.6	2097.7
25°	2354.3	2275.2	2112.3	2011.3	1974.2
27.5°	2277.8	2193.8	2013.6	1897.7	1840.9
30°	2196.4	2102.4	1905.0	1779.3	1712.6
32.5°	2117.3	2003.8	1801.6	1653.4	1591.6
35°	2028.5	1902.6	1685.6	1530.1	1475.6
37.5°	1942.2	1806.3	1577.0	1406.5	1345.0
40°	1850.8	1702.9	1463.3	1288.2	1224.0
42.5°	1757.1	1599.2	1349.9	1167.2	1105.7
45°	1658.4	1492.9	1234.0	1058.6	999.4
47.5°	1564.6	1389.5	1122.9	947.5	893.3
50°	1460.9	1285.8	1014.3	843.9	792.3
52.5°	1359.6	1174.5	910.6	747.7	700.9
55°	1260.9	1068.5	801.9	654.0	607.2
57.5°	1159.9	962.4	705.9	567.6	528.1
60°	1056.2	858.8	604.5	478.9	439.3
62.5°	955.1	757.7	518.1	399.8	380.1
65°	851.4	651.4	429.4	345.6	338.0
67.5°	752.7	552.7	345.6	303.4	296.1
70°	649.0	456.6	286.2	261.6	251.6
72.5°	550.4	367.6	239.3	219.7	214.7
75°	454.0	281.2	197.4	180.1	177.8
77.5°	357.9	199.7	155.5	145.5	140.6
80°	268.9	143.2	118.4	108.7	108.7
82.5°	187.5	96.3	81.4	76.4	76.4
85°	106.0	54.2	46.8	46.8	46.8
87.5°	39.5	19.6	19.6	17.2	17.2
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: P903578

CATALOG NUMBER: DFN2DIP-SQ2F0-070D060US830-RLFL

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: P903578

CATALOG NUMBER: DFN2DIP-SQ2F0-070D060US830-RLLFLL

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	13.52	14.37	14.46	15.33	16.56	9.48	10.33	10.42	11.29	12.52
	3H	15.18	15.94	16.13	16.90	18.16	10.65	11.42	11.60	12.38	13.63
	4H	15.78	16.50	16.74	17.46	18.73	11.09	11.81	12.06	12.78	14.04
	6H	16.18	16.85	17.16	17.82	19.09	11.40	12.06	12.37	13.03	14.31
	8H	16.30	16.93	17.28	17.92	19.19	11.48	12.11	12.46	13.10	14.37
	12H	16.36	16.96	17.34	17.94	19.24	11.52	12.12	12.50	13.10	14.40
4H	2H	13.54	14.26	14.51	15.22	16.49	10.07	10.79	11.04	11.75	13.02
	3H	15.34	15.94	16.32	16.94	18.22	11.40	12.00	12.38	12.99	14.27
	4H	16.02	16.57	17.01	17.56	18.86	11.93	12.48	12.92	13.47	14.77
	6H	16.52	16.99	17.52	18.00	19.30	12.33	12.80	13.33	13.82	15.12
	8H	16.69	17.12	17.69	18.13	19.44	12.45	12.89	13.45	13.90	15.21
	12H	16.77	17.17	17.79	18.19	19.51	12.51	12.90	13.53	13.92	15.24
8H	4H	15.99	16.43	16.99	17.43	18.75	12.20	12.64	13.20	13.65	14.96
	6H	16.53	16.90	17.56	17.94	19.26	12.70	13.06	13.72	14.11	15.42
	8H	16.74	17.06	17.77	18.09	19.42	12.87	13.19	13.91	14.23	15.56
	12H	16.86	17.14	17.90	18.17	19.55	12.98	13.26	14.02	14.29	15.66
12H	4H	15.94	16.34	16.96	17.36	18.68	12.21	12.60	13.23	13.62	14.94
	6H	16.51	16.83	17.54	17.86	19.19	12.74	13.06	13.78	14.09	15.43
	8H	16.71	17.00	17.75	18.02	19.40	12.94	13.22	13.97	14.25	15.62

END OF REPORT