

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: P903531

Luminaire Tested: DFN2DIP-SQ2F0-050D060US830-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P903531
REPORT IS A COMBINATION OF REPORTS P901332 AND P898215
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ2F0-050D060US830-RLLONL
Description: 2 foot, Square Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

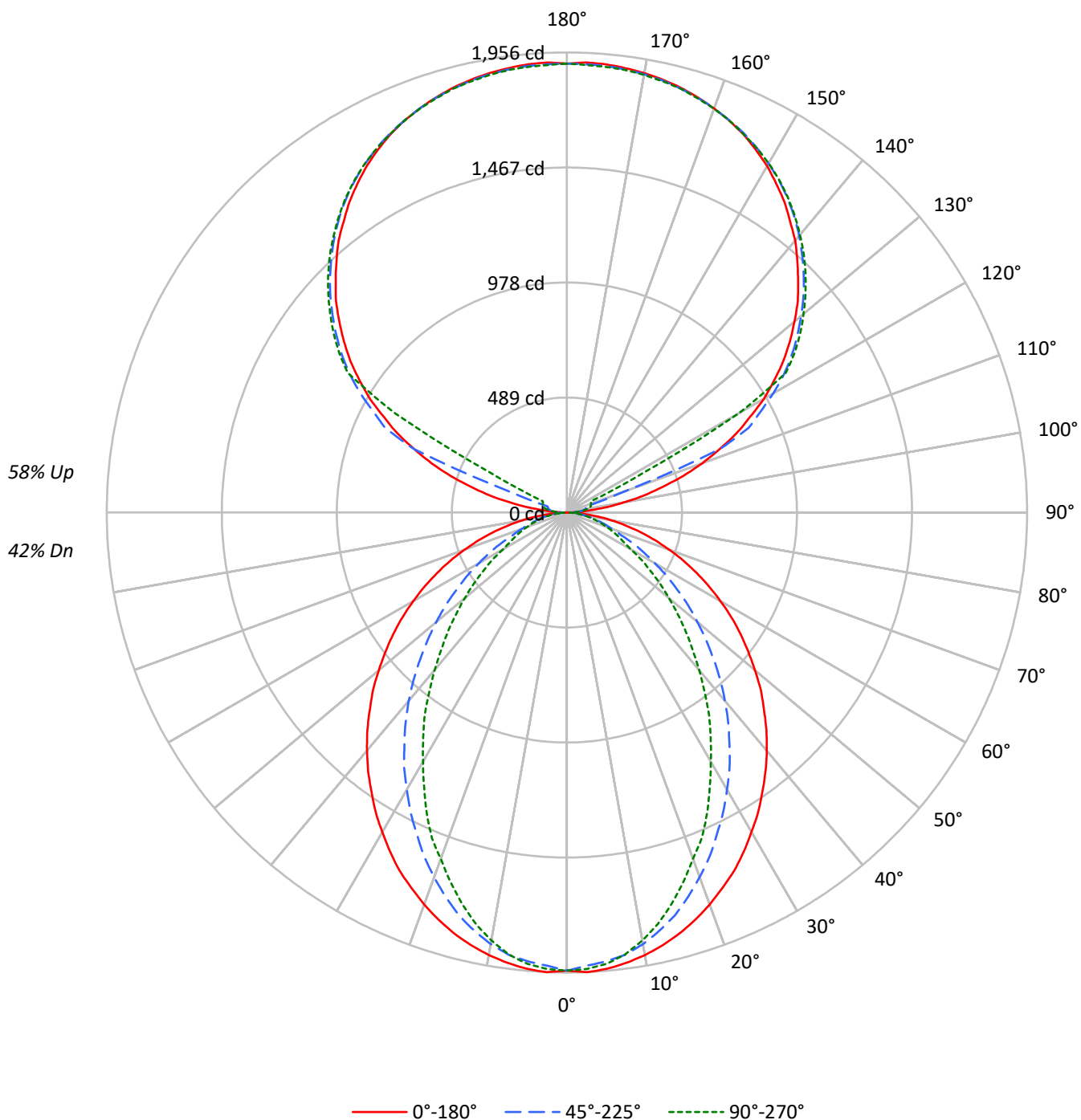
Lumens per Lamp: N/A
Luminaire Lumens: 9604.5 lumens
Efficiency: N/A
Efficacy: 106.6 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 2.21' x L: 2.21' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 90.1
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.996
Total Harmonic Distortion (THDi): 0.064
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P903531

CATALOG NUMBER: DFN2DIP-SQ2F0-050D060US830-RLLONL

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	105	105	105	105	96	96	96	96	79	79	79	63	63	63	49	49	49
1	96	92	89	85	88	84	81	78	70	67	65	56	55	53	43	43	42
2	88	81	75	70	80	74	69	65	61	58	55	50	47	45	39	37	36
3	81	72	65	59	73	66	60	55	55	50	46	44	41	39	35	33	31
4	74	64	56	50	67	58	52	47	49	44	40	40	36	33	31	29	27
5	68	57	49	43	62	52	45	40	44	39	35	36	32	29	28	26	24
6	63	51	43	38	57	47	40	35	39	34	30	32	29	26	26	23	21
7	58	46	38	33	53	43	36	31	36	31	27	30	26	23	24	21	19
8	54	42	34	29	49	39	32	27	33	28	24	27	23	20	22	19	17
9	50	38	31	26	46	35	29	25	30	25	22	25	21	18	20	17	15
10	47	35	28	23	43	33	26	22	28	23	19	23	19	17	19	16	14

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	4283	4283	4283
5°	4282	4206	4236
10°	4233	4114	4092
15°	4167	3969	3874
20°	4082	3773	3607
25°	3996	3555	3350
30°	3882	3332	3027
35°	3770	3094	2743
40°	3656	2847	2418
45°	3524	2576	2124
50°	3388	2303	1837
55°	3244	2012	1562
60°	3077	1710	1280
65°	2884	1403	1145
70°	2651	1118	1028
75°	2358	967	923
80°	1936	785	782
85°	1261	488	557

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 3524 cd/sqm

TEST NUMBER: P903531

CATALOG NUMBER: DFN2DIP-SQ2F0-050D060US830-RLONL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	182.5	1.9
10°-20°	501.1	5.2
20°-30°	703.6	7.3
30°-40°	766.9	8.0
40°-50°	704.9	7.3
50°-60°	553.6	5.8
60°-70°	360.3	3.8
70°-80°	185.5	1.9
80°-90°	50.7	0.5
90°-100°	62.9	0.7
100°-110°	234.6	2.4
110°-120°	622.2	6.5
120°-130°	1032.0	10.7
130°-140°	1096.2	11.4
140°-150°	1018.8	10.6
150°-160°	819.1	8.5
160°-170°	527.8	5.5
170°-180°	181.7	1.9
0°-30°	1387.2	14.4
0°-40°	2154.2	22.4
0°-60°	3412.7	35.5
0°-90°	4009.2	41.7
90°-120°	919.8	9.6
90°-150°	4066.8	42.3
90°-180°	5595.0	58.3
0°-180°	9604.5	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1948	1948	1948	1948	1948	
5°	1948	1939	1916	1932	1927	185
15°	1853	1833	1773	1740	1722	522
25°	1682	1625	1509	1437	1410	773
35°	1449	1359	1204	1093	1054	907
45°	1185	1066	881	756	714	915
55°	901	763	573	467	434	805
65°	608	465	307	247	242	603
75°	324	201	141	129	127	343
85°	76	39	34	34	34	87
90°	1	17	28	35	37	9
95°	90	44	54	61	59	106
105°	420	461	84	99	105	449
115°	794	818	852	213	113	782
125°	1123	1141	1167	1177	1181	1001
135°	1389	1412	1424	1438	1435	1073
145°	1612	1610	1634	1643	1636	1008
155°	1775	1762	1779	1787	1776	818
165°	1870	1862	1866	1876	1866	528
175°	1913	1903	1906	1915	1902	182
180°	1909	1909	1909	1909	1909	

TEST NUMBER: P903531

CATALOG NUMBER: DFN2DIP-SQ2F0-050D060US830-RLLONL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1947.8	1947.8	1947.8	1947.8	1947.8
2.5°	1956.5	1947.8	1928.3	1946.1	1942.5
5°	1947.8	1939.0	1916.0	1931.8	1926.7
7.5°	1931.8	1921.4	1896.7	1903.7	1894.8
10°	1910.7	1898.4	1863.2	1857.8	1847.3
12.5°	1884.3	1868.5	1820.8	1810.3	1790.8
15°	1852.6	1833.2	1773.3	1739.8	1722.2
17.5°	1815.5	1787.3	1713.3	1674.5	1646.2
20°	1773.3	1738.0	1649.8	1605.9	1567.0
22.5°	1727.5	1686.9	1584.6	1524.8	1498.4
25°	1681.6	1625.1	1508.8	1436.6	1410.0
27.5°	1627.0	1567.0	1438.3	1355.5	1314.9
30°	1568.9	1501.8	1360.7	1270.9	1223.2
32.5°	1512.4	1431.3	1286.9	1181.0	1136.9
35°	1449.0	1359.1	1204.0	1092.9	1054.0
37.5°	1387.2	1290.2	1126.4	1004.7	960.7
40°	1322.0	1216.4	1045.2	920.1	874.3
42.5°	1255.1	1142.3	964.2	833.7	789.8
45°	1184.6	1066.4	881.4	756.1	713.8
47.5°	1117.6	992.5	802.1	676.8	638.1
50°	1043.6	918.4	724.5	602.8	565.9
52.5°	971.2	839.0	650.4	534.1	500.7
55°	900.7	763.2	572.8	467.1	433.7
57.5°	828.5	687.5	504.2	405.5	377.2
60°	754.4	613.4	431.8	342.0	313.8
62.5°	682.2	541.2	370.1	285.6	271.5
65°	608.1	465.3	306.7	246.9	241.5
67.5°	537.6	394.8	246.9	216.8	211.5
70°	463.6	326.1	204.4	186.8	179.7
72.5°	393.1	262.6	171.0	156.9	153.4
75°	324.3	200.9	141.0	128.7	127.0
77.5°	255.6	142.7	111.1	104.0	100.4
80°	192.1	102.3	84.5	77.6	77.6
82.5°	133.9	68.8	58.2	54.6	54.6
85°	75.8	38.7	33.5	33.5	33.5
87.5°	28.3	14.0	14.0	12.3	12.3
90°	1.3	16.6	27.5	34.6	37.2
92.5°	34.6	29.0	33.1	35.9	37.2
95°	89.7	44.1	53.8	60.9	59.4
97.5°	161.6	48.4	70.3	74.6	76.0
100°	244.5	55.2	78.7	89.7	92.5
102.5°	335.5	332.9	81.5	96.6	100.9
105°	419.8	461.3	84.3	99.3	105.0
107.5°	517.9	552.3	87.1	102.2	107.7
110°	611.9	640.7	241.8	103.7	109.1



TEST NUMBER: P903531

CATALOG NUMBER: DFN2DIP-SQ2F0-050D060US830-RLLONL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	700.2	725.0	701.5	106.2	110.6
115°	794.1	817.6	852.2	212.7	113.3
117.5°	875.5	903.1	926.7	729.2	367.3
120°	966.8	987.4	1012.4	1028.9	842.4
122.5°	1044.0	1066.1	1093.8	1102.0	1103.5
125°	1122.8	1140.8	1167.0	1176.7	1180.7
127.5°	1194.6	1213.9	1234.7	1248.5	1249.8
130°	1262.3	1284.4	1299.5	1314.8	1313.4
132.5°	1331.3	1349.3	1364.4	1376.9	1375.5
135°	1389.4	1411.6	1423.8	1437.8	1434.9
137.5°	1450.0	1466.6	1480.5	1494.3	1490.3
140°	1509.4	1520.6	1535.7	1548.1	1541.2
142.5°	1559.2	1569.0	1586.9	1597.8	1590.9
145°	1611.7	1610.2	1633.7	1643.4	1636.5
147.5°	1657.2	1653.0	1676.5	1683.4	1678.0
150°	1701.5	1691.8	1713.9	1722.1	1715.2
152.5°	1738.7	1727.7	1748.3	1756.7	1747.0
155°	1774.6	1762.3	1778.9	1787.1	1776.0
157.5°	1803.6	1792.6	1805.1	1814.8	1803.6
160°	1828.5	1820.1	1828.5	1836.7	1827.1
162.5°	1850.5	1842.3	1849.2	1858.9	1846.4
165°	1869.9	1861.7	1865.8	1875.5	1865.8
167.5°	1885.1	1876.8	1881.0	1890.7	1878.2
170°	1897.6	1889.2	1892.1	1901.7	1889.2
172.5°	1905.8	1897.6	1900.4	1910.1	1897.6
175°	1912.7	1903.0	1905.8	1915.4	1901.7
177.5°	1915.4	1905.8	1907.2	1916.9	1904.5
180°	1908.6	1908.6	1908.6	1908.6	1908.6

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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	11.26	12.03	12.29	13.06	14.45	7.22	7.99	8.26	9.03	10.41
	3H	12.92	13.60	13.96	14.65	16.05	8.39	9.08	9.43	10.12	11.53
	4H	13.51	14.16	14.56	15.20	16.62	8.82	9.47	9.88	10.52	11.93
	6H	13.91	14.51	14.97	15.56	16.98	9.13	9.72	10.19	10.77	12.20
	8H	14.03	14.60	15.10	15.66	17.08	9.21	9.77	10.27	10.84	12.26
	12H	14.08	14.62	15.15	15.68	17.12	9.24	9.78	10.31	10.84	12.28
4H	2H	11.27	11.92	12.33	12.96	14.38	7.80	8.45	8.86	9.50	10.91
	3H	13.07	13.61	14.14	14.68	16.11	9.12	9.66	10.19	10.74	12.16
	4H	13.74	14.24	14.82	15.30	16.75	9.65	10.15	10.73	11.21	12.66
	6H	14.24	14.66	15.32	15.75	17.19	10.05	10.47	11.13	11.56	13.01
	8H	14.40	14.80	15.48	15.88	17.33	10.17	10.56	11.25	11.64	13.10
	12H	14.48	14.84	15.58	15.93	17.40	10.22	10.58	11.32	11.67	13.13
8H	4H	13.70	14.10	14.78	15.18	16.64	9.92	10.31	11.00	11.39	12.85
	6H	14.25	14.57	15.35	15.69	17.15	10.41	10.74	11.51	11.86	13.31
	8H	14.45	14.73	15.56	15.84	17.31	10.59	10.87	11.70	11.98	13.45
	12H	14.57	14.82	15.68	15.92	17.44	10.69	10.94	11.80	12.04	13.55
12H	4H	13.65	14.01	14.75	15.10	16.57	9.92	10.27	11.02	11.37	12.83
	6H	14.22	14.50	15.33	15.61	17.08	10.45	10.74	11.56	11.84	13.32
	8H	14.42	14.67	15.54	15.77	17.29	10.65	10.90	11.76	12.00	13.51

END OF REPORT