

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: P914399

Luminaire Tested: DFN2DIP-SQ2F0-030D070US927-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P914399
REPORT IS A COMBINATION OF REPORTS P901340 AND P898215
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ2F0-030D070US927-RLLONL
Description: 2 foot, Square Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

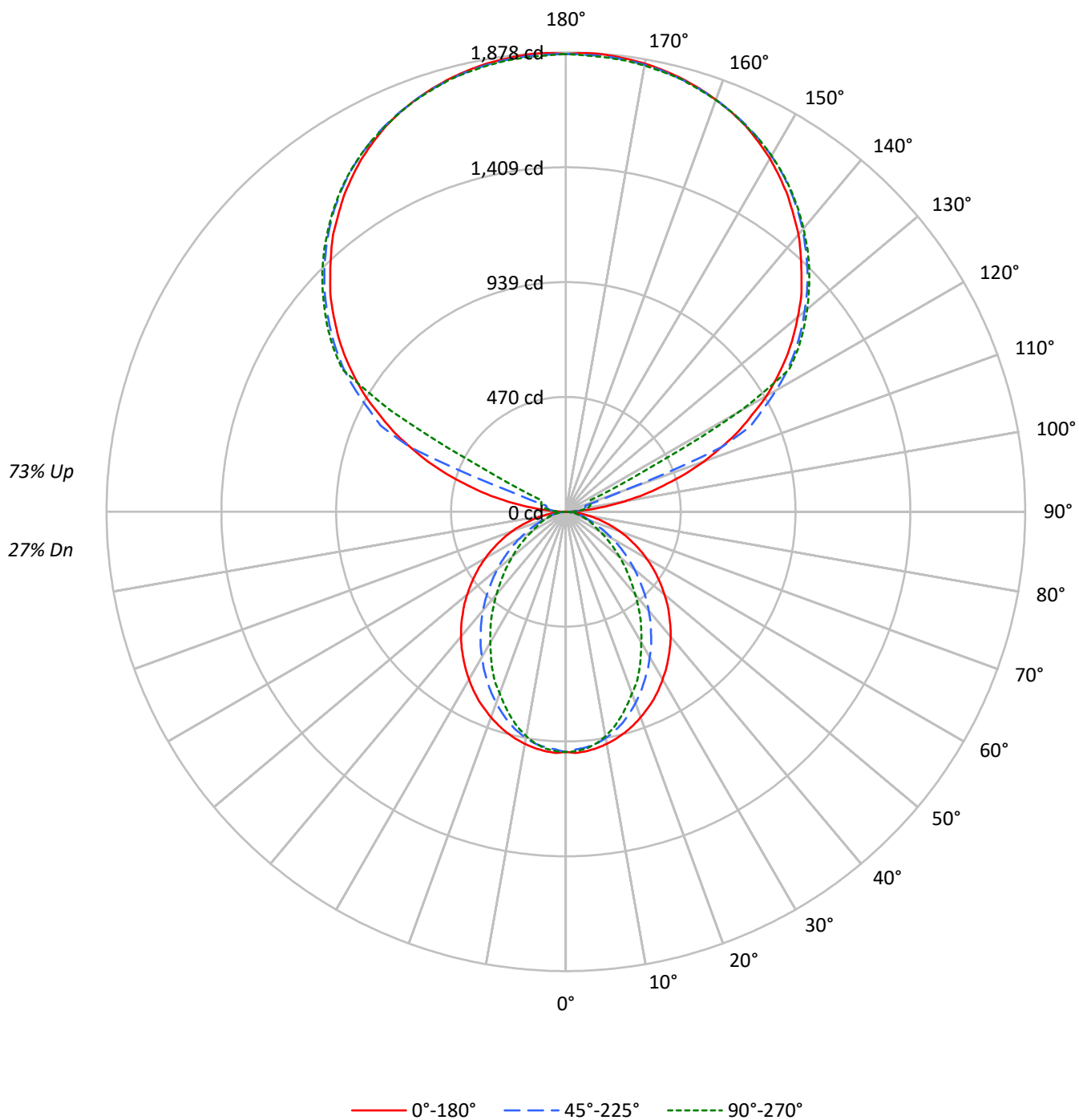
Lumens per Lamp: N/A
Luminaire Lumens: 7509.9 lumens
Efficiency: N/A
Efficacy: 96.9 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 2.21' x L: 2.21' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 77.5
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: P914399

CATALOG NUMBER: DFN2DIP-SQ2F0-030D070US927-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	102	102	102	102		91	91	91	91		71	71	71		52	52	52		35	35	35
1	93	89	85	82		83	79	76	74		62	60	58		46	45	44		31	31	30
2	85	78	72	67		75	70	65	61		55	51	49		41	39	37		28	27	26
3	77	69	62	56		69	62	56	51		48	44	41		36	34	31		25	23	22
4	71	61	53	48		63	55	48	43		43	39	35		32	29	27		22	21	19
5	65	54	46	41		58	49	42	37		39	34	30		29	26	23		20	18	17
6	60	48	41	35		53	44	37	32		35	30	26		26	23	21		18	16	15
7	55	44	36	31		49	39	33	28		31	27	23		24	21	18		17	15	13
8	51	40	32	27		46	36	29	25		29	24	21		22	19	16		16	13	12
9	48	36	29	24		43	33	26	22		26	22	18		20	17	15		14	12	11
10	44	33	26	22		40	30	24	20		24	20	16		19	15	13		13	11	10

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2160	2160	2160
5°	2159	2121	2136
10°	2134	2075	2064
15°	2101	2001	1953
20°	2059	1902	1819
25°	2015	1793	1690
30°	1958	1680	1527
35°	1901	1560	1383
40°	1844	1436	1219
45°	1777	1299	1071
50°	1708	1162	926
55°	1636	1015	788
60°	1551	862	646
65°	1455	707	578
70°	1337	564	518
75°	1189	488	465
80°	977	396	394
85°	635	246	281

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 1777 cd/sqm

TEST NUMBER: P914399

CATALOG NUMBER: DFN2DIP-SQ2F0-030D070US927-RLLONL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	92.1	1.2
10°-20°	252.7	3.4
20°-30°	354.8	4.7
30°-40°	386.8	5.1
40°-50°	355.5	4.7
50°-60°	279.2	3.7
60°-70°	181.7	2.4
70°-80°	93.5	1.2
80°-90°	27.2	0.4
90°-100°	61.7	0.8
100°-110°	230.0	3.1
110°-120°	610.1	8.1
120°-130°	1011.9	13.5
130°-140°	1074.9	14.3
140°-150°	999.0	13.3
150°-160°	803.2	10.7
160°-170°	517.5	6.9
170°-180°	178.1	2.4
0°-30°	699.6	9.3
0°-40°	1086.3	14.5
0°-60°	1720.9	22.9
0°-90°	2023.3	26.9
90°-120°	901.9	12.0
90°-150°	3987.7	53.1
90°-180°	5487.0	73.1
0°-180°	7509.9	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	982	982	982	982	982	
5°	982	978	966	974	972	93
15°	934	924	894	877	868	263
25°	848	820	761	724	711	390
35°	731	685	607	551	532	457
45°	597	538	444	381	360	461
55°	454	385	289	236	219	406
65°	307	235	155	124	122	304
75°	164	101	71	65	64	173
85°	38	20	17	17	17	44
90°	1	16	27	34	36	7
95°	88	43	53	60	58	104
105°	412	452	83	97	103	440
115°	779	802	836	209	111	767
125°	1101	1119	1144	1154	1158	982
135°	1362	1384	1396	1410	1407	1052
145°	1580	1579	1602	1612	1605	988
155°	1740	1728	1744	1752	1742	802
165°	1834	1826	1830	1839	1830	518
175°	1876	1866	1869	1878	1865	178
180°	1871	1871	1871	1871	1871	

TEST NUMBER: P914399

CATALOG NUMBER: DFN2DIP-SQ2F0-030D070US927-RLLONL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	982.2	982.2	982.2	982.2	982.2
2.5°	986.7	982.2	972.4	981.4	979.6
5°	982.2	977.8	966.2	974.2	971.5
7.5°	974.2	968.9	956.5	960.0	955.5
10°	963.5	957.4	939.6	936.8	931.6
12.5°	950.2	942.2	918.2	912.9	903.1
15°	934.2	924.4	894.2	877.3	868.5
17.5°	915.5	901.3	864.0	844.5	830.2
20°	894.2	876.4	831.9	809.8	790.2
22.5°	871.2	850.6	799.1	768.9	755.6
25°	848.0	819.5	760.9	724.4	711.1
27.5°	820.5	790.2	725.3	683.6	663.1
30°	791.2	757.3	686.2	641.0	616.9
32.5°	762.6	721.8	649.0	595.6	573.3
35°	730.7	685.3	607.1	551.1	531.6
37.5°	699.6	650.6	568.0	506.6	484.5
40°	666.7	613.4	527.1	464.0	440.9
42.5°	632.9	576.1	486.2	420.4	398.2
45°	597.4	537.7	444.5	381.3	360.0
47.5°	563.6	500.5	404.5	341.3	321.8
50°	526.2	463.1	365.4	304.0	285.3
52.5°	489.7	423.1	328.0	269.3	252.5
55°	454.2	384.8	288.8	235.6	218.7
57.5°	417.8	346.7	254.3	204.5	190.2
60°	380.4	309.3	217.8	172.5	158.3
62.5°	344.0	272.9	186.6	144.0	137.0
65°	306.7	234.6	154.6	124.5	121.8
67.5°	271.2	199.1	124.5	109.3	106.6
70°	233.8	164.5	103.1	94.2	90.6
72.5°	198.2	132.4	86.2	79.1	77.3
75°	163.5	101.3	71.1	64.9	64.0
77.5°	128.9	71.9	56.0	52.4	50.6
80°	96.9	51.6	42.6	39.1	39.1
82.5°	67.5	34.7	29.3	27.6	27.6
85°	38.2	19.5	16.9	16.9	16.9
87.5°	14.3	7.1	7.1	6.3	6.3
90°	1.3	16.2	27.0	33.9	36.5
92.5°	33.9	28.4	32.5	35.3	36.5
95°	87.9	43.3	52.8	59.7	58.2
97.5°	158.4	47.5	69.0	73.2	74.5
100°	239.8	54.2	77.2	87.9	90.7
102.5°	329.0	326.5	79.9	94.7	98.9
105°	411.7	452.3	82.6	97.4	102.9
107.5°	507.8	541.6	85.4	100.2	105.7
110°	600.0	628.3	237.0	101.6	106.9

TEST NUMBER: P914399

CATALOG NUMBER: DFN2DIP-SQ2F0-030D070US927-RLLONL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	686.7	710.9	687.9	104.2	108.4
115°	778.6	801.6	835.5	208.6	111.1
117.5°	858.6	885.6	908.7	714.9	360.2
120°	947.9	968.2	992.7	1008.9	826.1
122.5°	1023.7	1045.4	1072.6	1080.6	1082.0
125°	1100.9	1118.6	1144.3	1153.8	1157.8
127.5°	1171.3	1190.3	1210.7	1224.2	1225.5
130°	1237.7	1259.4	1274.2	1289.2	1287.9
132.5°	1305.4	1323.1	1337.9	1350.1	1348.8
135°	1362.3	1384.0	1396.1	1409.8	1407.1
137.5°	1421.8	1438.1	1451.8	1465.3	1461.3
140°	1480.0	1491.0	1505.8	1518.0	1511.2
142.5°	1528.9	1538.4	1555.9	1566.7	1560.0
145°	1580.4	1579.0	1601.9	1611.5	1604.7
147.5°	1624.9	1621.0	1643.9	1650.7	1645.4
150°	1668.3	1658.9	1680.6	1688.6	1681.9
152.5°	1704.9	1694.1	1714.4	1722.5	1713.1
155°	1740.1	1728.0	1744.2	1752.3	1741.5
157.5°	1768.5	1757.8	1770.0	1779.5	1768.5
160°	1793.0	1784.8	1793.0	1801.0	1791.5
162.5°	1814.6	1806.5	1813.2	1822.7	1810.5
165°	1833.5	1825.5	1829.5	1839.0	1829.5
167.5°	1848.5	1840.2	1844.4	1853.9	1841.7
170°	1860.7	1852.5	1855.2	1864.7	1852.5
172.5°	1868.8	1860.7	1863.4	1872.9	1860.7
175°	1875.5	1866.0	1868.8	1878.2	1864.7
177.5°	1878.2	1868.8	1870.2	1879.7	1867.4
180°	1871.4	1871.4	1871.4	1871.4	1871.4

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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	7.04	7.71	8.17	8.83	10.40	3.00	3.67	4.14	4.79	6.36
	3H	8.68	9.28	9.83	10.42	12.00	4.16	4.76	5.30	5.89	7.47
	4H	9.27	9.84	10.42	10.97	12.56	4.59	5.16	5.74	6.29	7.88
	6H	9.67	10.19	10.83	11.33	12.93	4.88	5.41	6.04	6.54	8.14
	8H	9.78	10.28	10.95	11.43	13.02	4.96	5.46	6.12	6.61	8.20
	12H	9.83	10.30	11.00	11.45	13.06	4.99	5.46	6.16	6.61	8.22
4H	2H	7.03	7.60	8.19	8.73	10.32	3.56	4.13	4.72	5.27	6.86
	3H	8.82	9.30	9.99	10.46	12.06	4.88	5.35	6.04	6.51	8.11
	4H	9.49	9.93	10.66	11.08	12.70	5.40	5.84	6.57	6.99	8.61
	6H	9.98	10.35	11.15	11.52	13.13	5.79	6.17	6.97	7.34	8.95
	8H	10.14	10.49	11.31	11.65	13.28	5.91	6.26	7.08	7.42	9.05
	12H	10.22	10.53	11.41	11.71	13.34	5.96	6.27	7.14	7.45	9.08
8H	4H	9.44	9.79	10.62	10.96	12.58	5.66	6.01	6.83	7.17	8.80
	6H	9.98	10.27	11.18	11.47	13.10	6.15	6.43	7.34	7.64	9.26
	8H	10.19	10.44	11.38	11.62	13.26	6.32	6.57	7.52	7.76	9.40
	12H	10.30	10.52	11.50	11.70	13.38	6.42	6.64	7.62	7.82	9.50
12H	4H	9.39	9.70	10.58	10.88	12.51	5.65	5.97	6.84	7.14	8.77
	6H	9.96	10.21	11.15	11.39	13.03	6.19	6.44	7.39	7.62	9.27
	8H	10.16	10.38	11.36	11.55	13.23	6.38	6.60	7.58	7.78	9.45