

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: P922759

Luminaire Tested: DFN2DIP-SQ3F0-050D070US940-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P922759
REPORT IS A COMBINATION OF REPORTS P901438 AND P898289
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ3F0-050D070US940-RLLONL
Description: 3 foot, Square Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

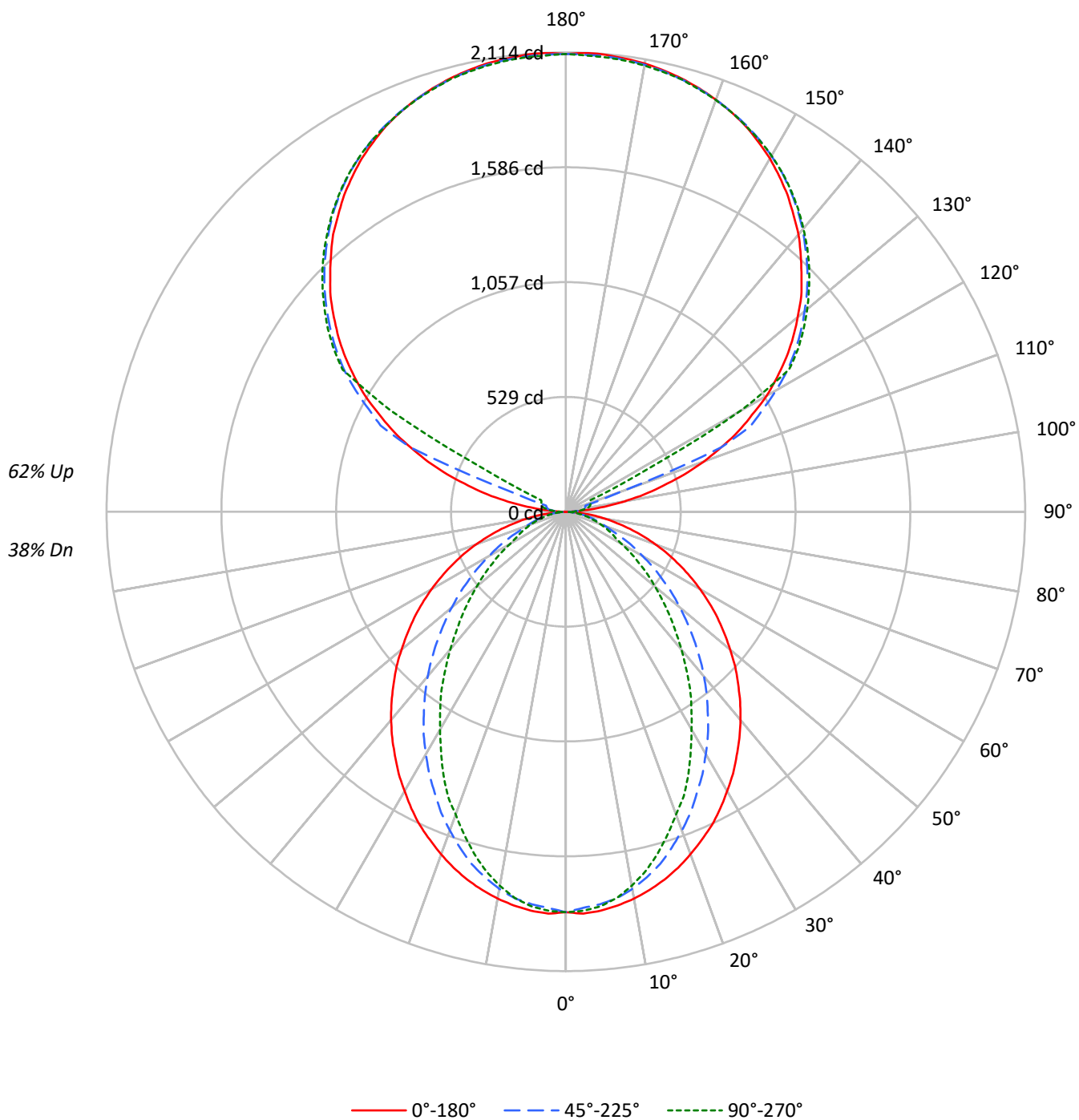
Lumens per Lamp: N/A
Luminaire Lumens: 9969.4 lumens
Efficiency: N/A
Efficacy: 105.3 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.06' x L: 3.06' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 94.7
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9789
Total Harmonic Distortion (THDi): 0.074
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P922759

CATALOG NUMBER: DFN2DIP-SQ3F0-050D070US940-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					0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10
RCR																				
0	104	104	104	104	95	95	95	95	77	77	77	60	60	60	45	45	45	38		
1	95	91	88	84	87	83	80	77	68	66	64	54	52	51	40	40	39	33		
2	87	80	74	69	79	73	68	64	60	56	53	47	45	43	36	35	33	28		
3	80	71	64	58	72	65	59	54	53	49	45	42	39	37	32	30	29	24		
4	73	63	55	50	66	57	51	46	47	42	39	38	34	32	29	27	25	21		
5	67	56	48	43	61	51	45	40	42	37	34	34	31	28	26	24	22	19		
6	62	50	43	37	56	46	39	34	38	33	29	31	27	24	24	22	20	16		
7	57	45	38	32	52	42	35	30	35	30	26	28	24	22	22	19	18	15		
8	53	41	34	29	48	38	31	27	32	27	23	26	22	19	20	18	16	13		
9	50	38	31	26	45	35	28	24	29	24	21	24	20	18	19	16	14	12		
10	46	35	28	23	42	32	26	22	27	22	19	22	18	16	17	15	13	11		

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2111	2111	2111
5°	2113	2077	2090
10°	2091	2034	2022
15°	2061	1966	1916
20°	2022	1872	1786
25°	1981	1767	1661
30°	1928	1659	1503
35°	1875	1543	1364
40°	1821	1424	1204
45°	1759	1292	1060
50°	1694	1158	919
55°	1626	1016	783
60°	1548	867	644
65°	1458	716	579
70°	1348	575	523
75°	1211	504	474
80°	1012	418	409
85°	687	273	304

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 1759 cd/sqm

TEST NUMBER: P922759

CATALOG NUMBER: DFN2DIP-SQ3F0-050D070US940-RLLONL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	172.7	1.7
10°-20°	474.1	4.8
20°-30°	665.6	6.7
30°-40°	725.6	7.3
40°-50°	666.9	6.7
50°-60°	523.7	5.3
60°-70°	340.9	3.4
70°-80°	175.5	1.8
80°-90°	48.5	0.5
90°-100°	69.5	0.7
100°-110°	259.0	2.6
110°-120°	686.8	6.9
120°-130°	1139.1	11.4
130°-140°	1209.9	12.1
140°-150°	1124.5	11.3
150°-160°	904.1	9.1
160°-170°	582.6	5.8
170°-180°	200.5	2.0
0°-30°	1312.4	13.2
0°-40°	2038.0	20.4
0°-60°	3228.6	32.4
0°-90°	3793.5	38.1
90°-120°	1015.2	10.2
90°-150°	4488.7	45.0
90°-180°	6176.0	61.9
0°-180°	9969.4	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1843	1843	1843	1843	1843	
5°	1843	1834	1813	1828	1823	175
15°	1753	1734	1678	1646	1629	494
25°	1591	1538	1427	1359	1334	732
35°	1371	1286	1139	1034	997	858
45°	1121	1009	834	715	675	865
55°	852	722	542	442	410	761
65°	575	440	290	234	228	570
75°	307	190	133	122	120	324
85°	72	37	32	32	32	82
90°	1	18	30	38	41	9
95°	99	49	59	67	66	117
105°	463	509	93	110	116	495
115°	876	902	940	235	125	863
125°	1239	1259	1288	1299	1303	1105
135°	1534	1558	1572	1587	1584	1185
145°	1779	1777	1803	1814	1806	1113
155°	1959	1945	1963	1972	1960	903
165°	2064	2055	2059	2070	2059	583
175°	2111	2100	2104	2114	2099	201
180°	2107	2107	2107	2107	2107	

TEST NUMBER: P922759

CATALOG NUMBER: DFN2DIP-SQ3F0-050D070US940-RLLONL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1842.7	1842.7	1842.7	1842.7	1842.7
2.5°	1851.0	1842.7	1824.4	1841.1	1837.7
5°	1842.7	1834.4	1812.7	1827.6	1822.7
7.5°	1827.6	1817.8	1794.4	1801.0	1792.6
10°	1807.7	1796.0	1762.7	1757.7	1747.7
12.5°	1782.7	1767.7	1722.6	1712.7	1694.2
15°	1752.7	1734.3	1677.7	1646.0	1629.3
17.5°	1717.6	1691.0	1620.9	1584.2	1557.5
20°	1677.7	1644.2	1560.8	1519.3	1482.5
22.5°	1634.3	1595.9	1499.1	1442.5	1417.6
25°	1590.9	1537.5	1427.4	1359.1	1334.0
27.5°	1539.3	1482.5	1360.8	1282.4	1244.0
30°	1484.3	1420.8	1287.4	1202.4	1157.3
32.5°	1430.8	1354.1	1217.5	1117.3	1075.6
35°	1370.8	1285.8	1139.1	1033.9	997.2
37.5°	1312.4	1220.7	1065.7	950.5	908.9
40°	1250.7	1150.8	988.8	870.5	827.2
42.5°	1187.4	1080.7	912.2	788.7	747.2
45°	1120.7	1008.9	833.8	715.3	675.3
47.5°	1057.3	939.0	758.8	640.3	603.7
50°	987.3	868.9	685.5	570.2	535.4
52.5°	918.8	793.7	615.4	505.3	473.7
55°	852.1	722.0	541.9	441.9	410.3
57.5°	783.8	650.4	477.0	383.6	356.9
60°	713.7	580.3	408.5	323.6	296.9
62.5°	645.4	512.0	350.2	270.2	256.9
65°	575.3	440.2	290.2	233.5	228.5
67.5°	508.6	373.5	233.5	205.1	200.1
70°	438.6	308.5	193.4	176.7	170.0
72.5°	371.9	248.4	161.8	148.5	145.1
75°	306.8	190.0	133.4	121.7	120.1
77.5°	241.8	135.0	105.1	98.4	95.0
80°	181.7	96.8	80.0	73.4	73.4
82.5°	126.7	65.1	55.0	51.6	51.6
85°	71.7	36.6	31.7	31.7	31.7
87.5°	26.8	13.3	13.3	11.7	11.7
90°	1.4	18.3	30.4	38.2	41.1
92.5°	38.2	32.0	36.6	39.7	41.1
95°	99.0	48.7	59.4	67.1	65.5
97.5°	178.3	53.4	77.7	82.4	83.8
100°	269.9	61.0	86.9	99.0	102.1
102.5°	370.3	367.5	90.0	106.6	111.3
105°	463.4	509.2	93.0	109.7	115.8
107.5°	571.6	609.7	96.1	112.8	119.0
110°	675.4	707.2	266.8	114.4	120.4

TEST NUMBER: P922759

CATALOG NUMBER: DFN2DIP-SQ3F0-050D070US940-RLLONL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	772.9	800.2	774.4	117.3	122.0
115°	876.5	902.3	940.5	234.8	125.1
117.5°	966.4	996.8	1022.9	804.8	405.5
120°	1067.0	1089.8	1117.4	1135.7	929.9
122.5°	1152.3	1176.7	1207.4	1216.4	1218.0
125°	1239.2	1259.1	1288.1	1298.8	1303.2
127.5°	1318.5	1339.8	1362.8	1378.0	1379.5
130°	1393.2	1417.6	1434.3	1451.2	1449.7
132.5°	1469.4	1489.3	1506.0	1519.7	1518.3
135°	1533.5	1557.9	1571.6	1586.9	1583.9
137.5°	1600.4	1618.8	1634.1	1649.4	1644.8
140°	1666.0	1678.3	1695.0	1708.7	1701.1
142.5°	1721.0	1731.7	1751.4	1763.5	1756.0
145°	1779.0	1777.4	1803.2	1813.9	1806.3
147.5°	1829.1	1824.6	1850.5	1858.1	1852.1
150°	1877.9	1867.3	1891.8	1900.8	1893.2
152.5°	1919.0	1906.9	1929.8	1938.9	1928.3
155°	1958.7	1945.1	1963.4	1972.5	1960.3
157.5°	1990.7	1978.6	1992.3	2003.0	1990.7
160°	2018.3	2009.0	2018.3	2027.3	2016.6
162.5°	2042.6	2033.5	2041.0	2051.7	2038.0
165°	2063.9	2054.9	2059.3	2070.0	2059.3
167.5°	2080.7	2071.4	2076.2	2086.9	2073.1
170°	2094.4	2085.3	2088.3	2099.0	2085.3
172.5°	2103.5	2094.4	2097.6	2108.2	2094.4
175°	2111.1	2100.4	2103.5	2114.2	2099.0
177.5°	2114.2	2103.5	2105.1	2115.9	2102.0
180°	2106.6	2106.6	2106.6	2106.6	2106.6

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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	8.48	9.22	9.54	10.28	11.72	4.44	5.18	5.50	6.24	7.68
	3H	10.15	10.81	11.22	11.88	13.33	5.62	6.28	6.69	7.35	8.80
	4H	10.75	11.38	11.83	12.45	13.91	6.06	6.69	7.14	7.76	9.22
	6H	11.16	11.74	12.25	12.81	14.28	6.37	6.95	7.46	8.02	9.49
	8H	11.28	11.83	12.38	12.92	14.39	6.45	7.00	7.55	8.09	9.56
	12H	11.34	11.86	12.44	12.94	14.43	6.49	7.01	7.59	8.10	9.58
4H	2H	8.49	9.11	9.57	10.18	11.64	5.02	5.65	6.11	6.72	8.18
	3H	10.30	10.82	11.40	11.92	13.39	6.36	6.88	7.45	7.98	9.45
	4H	10.99	11.47	12.09	12.55	14.05	6.90	7.38	8.00	8.46	9.96
	6H	11.49	11.90	12.60	13.01	14.50	7.31	7.72	8.41	8.83	10.31
	8H	11.66	12.05	12.77	13.15	14.65	7.43	7.81	8.53	8.91	10.42
	12H	11.75	12.10	12.87	13.21	14.72	7.49	7.83	8.61	8.95	10.45
8H	4H	10.95	11.33	12.05	12.43	13.93	7.17	7.55	8.27	8.65	10.16
	6H	11.50	11.82	12.63	12.96	14.46	7.67	7.99	8.80	9.13	10.63
	8H	11.72	11.99	12.85	13.12	14.64	7.86	8.14	8.99	9.26	10.78
	12H	11.85	12.09	12.99	13.21	14.77	7.97	8.21	9.11	9.33	10.89
12H	4H	10.89	11.24	12.02	12.36	13.86	7.17	7.51	8.29	8.63	10.14
	6H	11.48	11.76	12.61	12.88	14.40	7.72	8.00	8.86	9.12	10.64
	8H	11.69	11.93	12.83	13.06	14.61	7.92	8.17	9.06	9.29	10.84

END OF REPORT

FIELD PERFORMANCE MAY DIFFER FROM LABORATORY PERFORMANCE

8 of 8