

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: P925356

Luminaire Tested: DFN2DIP-SQ2F0-050D070US950-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P925356
REPORT IS A COMBINATION OF REPORTS P899823 AND P896659
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ2F0-050D070US950-FLLFLL
Description: 2 foot, Square Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

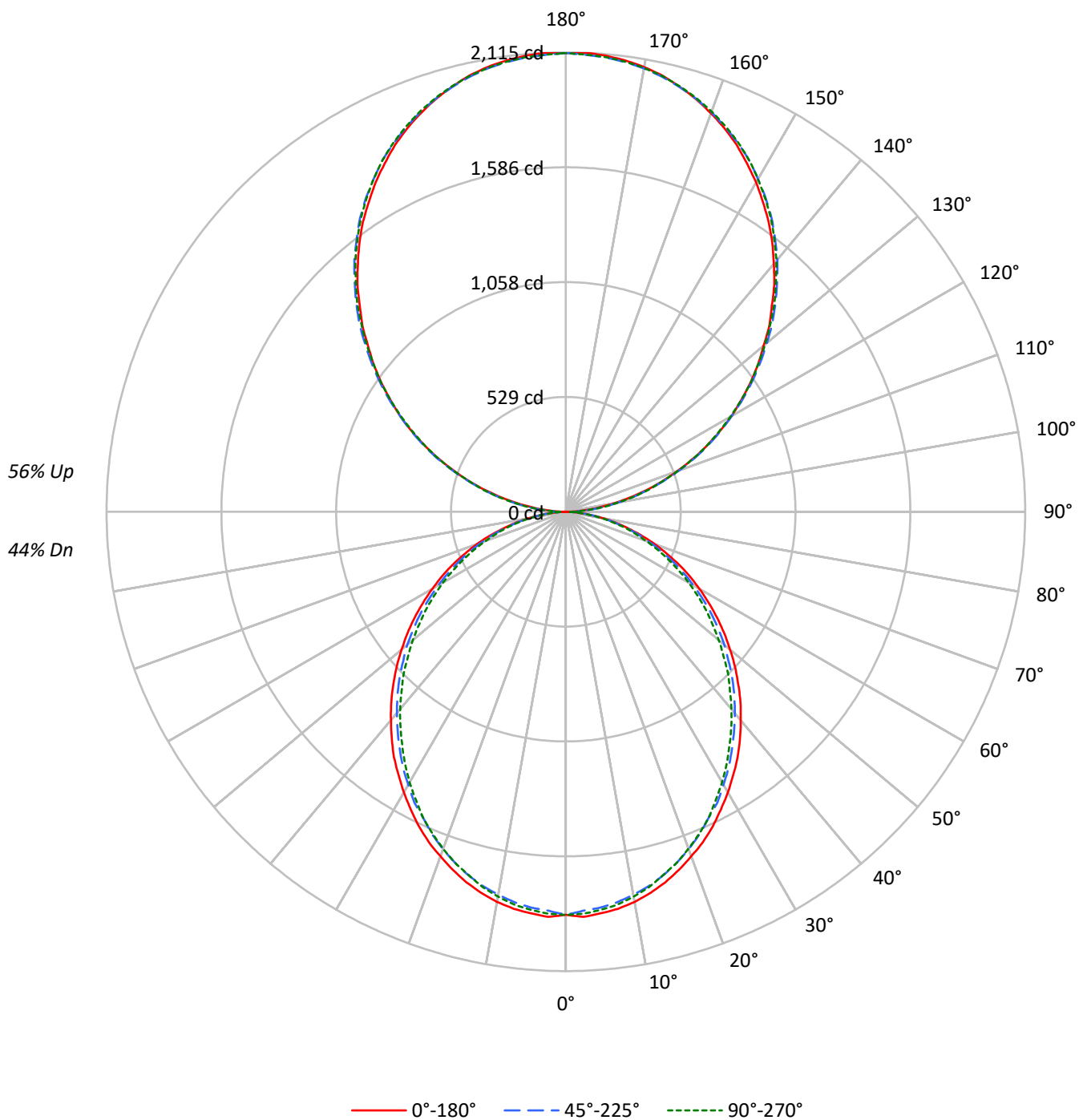
Lumens per Lamp: N/A
Luminaire Lumens: 10632.4 lumens
Efficiency: N/A
Efficacy: 107.7 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 2.21' x L: 2.21' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 98.7
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: P925356

CATALOG NUMBER: DFN2DIP-SQ2F0-050D070US950-FLLFLL

Luminous Intensity Polar Plot



TEST NUMBER: P925356

CATALOG NUMBER: DFN2DIP-SQ2F0-050D070US950-FLLFL

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	106	106	106	106	97	97	97	97	80	80	80	65	65	65	51	51	51
1	97	92	88	85	88	85	81	78	70	68	66	57	56	54	45	44	43
2	88	81	74	69	80	74	69	64	62	58	55	50	48	45	40	38	36
3	80	71	64	58	73	65	59	54	54	50	46	44	41	38	35	33	31
4	73	63	55	49	67	58	51	45	48	43	39	40	36	33	31	29	27
5	67	56	48	42	61	51	44	39	43	38	34	35	31	28	28	25	23
6	62	50	42	36	57	46	39	34	39	33	29	32	28	25	26	23	20
7	57	45	37	32	52	42	35	30	35	30	26	29	25	22	23	20	18
8	53	41	33	28	49	38	31	26	32	27	23	27	23	20	22	19	16
9	49	37	30	25	45	35	28	23	29	24	20	24	20	18	20	17	15
10	46	34	27	22	42	32	25	21	27	22	18	23	19	16	18	15	13

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	4081	4081	4081
5°	4081	4015	4046
10°	4040	3953	3985
15°	3974	3878	3894
20°	3887	3779	3801
25°	3800	3662	3694
30°	3692	3553	3560
35°	3590	3425	3418
40°	3465	3296	3282
45°	3340	3166	3144
50°	3203	3029	2983
55°	3060	2871	2835
60°	2897	2686	2664
65°	2718	2491	2464
70°	2491	2254	2246
75°	2179	1970	2038
80°	1800	1609	1655
85°	1216	1015	1040

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 3340 cd/sqm

TEST NUMBER: P925356

CATALOG NUMBER: DFN2DIP-SQ2F0-050D070US950-FLLFLL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	174.7	1.6
10°-20°	491.5	4.6
20°-30°	722.3	6.8
30°-40°	838.9	7.9
40°-50°	837.9	7.9
50°-60°	730.6	6.9
60°-70°	540.1	5.1
70°-80°	305.6	2.9
80°-90°	86.6	0.8
90°-100°	130.7	1.2
100°-110°	415.3	3.9
110°-120°	710.6	6.7
120°-130°	934.6	8.8
130°-140°	1049.0	9.9
140°-150°	1028.7	9.7
150°-160°	862.9	8.1
160°-170°	572.3	5.4
170°-180°	200.0	1.9
0°-30°	1388.5	13.1
0°-40°	2227.5	20.9
0°-60°	3796.0	35.7
0°-90°	4728.3	44.5
90°-120°	1256.6	11.8
90°-150°	4268.9	40.1
90°-180°	5904.0	55.5
0°-180°	10632.4	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1856	1856	1856	1856	1856	
5°	1856	1849	1829	1844	1840	176
15°	1767	1756	1733	1740	1731	498
25°	1599	1585	1554	1558	1554	736
35°	1380	1362	1333	1322	1314	862
45°	1123	1110	1083	1064	1057	866
55°	850	839	817	796	787	760
65°	573	562	544	528	519	567
75°	300	296	287	277	280	320
85°	73	71	70	64	62	82
90°	2	23	62	59	60	10
95°	93	111	114	114	111	103
105°	383	388	392	395	395	405
115°	713	723	720	718	713	705
125°	1037	1053	1048	1042	1040	927
135°	1342	1361	1365	1363	1358	1037
145°	1629	1642	1652	1654	1647	1018
155°	1862	1868	1873	1882	1876	857
165°	2026	2024	2024	2037	2028	572
175°	2108	2103	2099	2112	2101	200
180°	2112	2112	2112	2112	2112	

TEST NUMBER: P925356

CATALOG NUMBER: DFN2DIP-SQ2F0-050D070US950-FLLFLL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1856.0	1856.0	1856.0	1856.0	1856.0
2.5°	1866.8	1857.9	1838.3	1856.0	1852.7
5°	1856.0	1849.0	1829.3	1843.5	1840.2
7.5°	1843.5	1832.9	1813.3	1827.7	1824.0
10°	1824.0	1811.6	1790.2	1804.3	1799.1
12.5°	1797.1	1786.6	1765.2	1774.1	1770.4
15°	1766.8	1756.2	1732.9	1740.2	1731.2
17.5°	1729.3	1718.7	1695.4	1704.3	1695.4
20°	1688.3	1677.7	1652.7	1658.0	1651.0
22.5°	1647.4	1631.2	1608.0	1608.0	1604.3
25°	1599.1	1584.9	1554.5	1558.0	1554.5
27.5°	1545.5	1533.0	1509.9	1504.6	1495.7
30°	1492.1	1477.7	1451.0	1445.7	1438.5
32.5°	1434.9	1424.3	1395.7	1384.9	1377.8
35°	1379.6	1361.8	1333.2	1322.4	1313.6
37.5°	1317.1	1301.1	1272.4	1259.9	1251.1
40°	1253.0	1238.6	1210.0	1194.0	1186.9
42.5°	1190.5	1176.1	1147.7	1129.6	1119.0
45°	1122.7	1110.2	1083.3	1063.8	1056.6
47.5°	1056.6	1044.1	1015.5	995.8	985.2
50°	986.9	978.0	953.0	928.1	919.1
52.5°	919.1	906.6	883.5	863.8	851.3
55°	849.6	838.9	817.4	796.0	787.1
57.5°	779.9	771.0	747.7	726.4	719.1
60°	710.3	703.3	678.3	658.5	653.3
62.5°	642.5	630.0	612.2	594.3	587.2
65°	573.0	562.2	544.4	528.3	519.4
67.5°	501.6	492.6	476.6	464.1	456.9
70°	435.5	428.3	412.2	399.7	392.8
72.5°	367.8	360.5	351.6	339.1	333.8
75°	299.7	296.3	287.2	276.7	280.3
77.5°	239.2	231.9	228.4	223.0	217.8
80°	178.6	176.7	173.1	167.8	164.2
82.5°	121.3	121.3	119.6	112.5	112.5
85°	73.1	71.4	69.6	64.2	62.5
87.5°	32.1	28.6	25.0	19.7	17.8
90°	1.9	22.9	62.4	58.6	60.5
92.5°	39.5	53.5	55.4	57.3	57.3
95°	92.9	110.8	114.0	114.0	110.8
97.5°	154.7	171.2	178.3	178.3	178.3
100°	226.0	240.7	245.8	245.8	243.8
102.5°	301.2	312.0	319.0	320.9	319.0
105°	383.3	388.4	392.2	395.4	395.4
107.5°	464.8	472.4	472.4	473.8	464.8
110°	543.8	554.0	554.0	554.0	548.8

TEST NUMBER: P925356

CATALOG NUMBER: DFN2DIP-SQ2F0-050D070US950-FLLFLL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	629.1	639.9	638.0	632.9	629.1
115°	713.1	723.3	720.2	718.3	713.1
117.5°	796.5	810.5	801.6	796.5	791.4
120°	880.5	894.6	880.5	880.5	874.8
122.5°	957.0	974.8	965.9	960.8	957.0
125°	1037.2	1053.1	1048.1	1042.3	1040.4
127.5°	1115.5	1135.3	1128.3	1120.7	1115.5
130°	1188.8	1211.7	1208.5	1204.7	1197.7
132.5°	1270.9	1288.8	1290.0	1281.1	1276.0
135°	1341.6	1361.3	1365.2	1363.2	1358.1
137.5°	1420.5	1436.4	1439.6	1438.3	1430.7
140°	1490.0	1505.9	1514.8	1514.8	1507.8
142.5°	1561.2	1577.2	1582.2	1584.1	1577.2
145°	1628.8	1641.5	1651.7	1653.6	1646.6
147.5°	1689.2	1705.2	1712.8	1716.0	1709.0
150°	1751.6	1762.4	1769.5	1775.2	1769.5
152.5°	1807.0	1817.8	1826.7	1833.8	1826.7
155°	1862.4	1867.5	1873.3	1882.1	1876.4
157.5°	1910.2	1914.0	1917.2	1929.9	1921.0
160°	1952.8	1956.7	1958.6	1969.3	1961.7
162.5°	1992.3	1992.3	1994.2	2006.3	1997.4
165°	2026.0	2024.1	2024.1	2036.9	2027.9
167.5°	2056.6	2050.9	2050.9	2063.6	2054.7
170°	2079.5	2074.5	2072.6	2085.3	2074.5
172.5°	2095.5	2090.3	2088.4	2101.2	2090.3
175°	2108.1	2103.1	2099.3	2112.0	2101.2
177.5°	2115.2	2110.1	2106.2	2117.1	2106.2
180°	2112.0	2112.0	2112.0	2112.0	2112.0

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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	11.51	12.32	12.51	13.33	14.68	11.06	11.88	12.07	12.89	14.24
	3H	13.14	13.87	14.16	14.90	16.27	12.66	13.38	13.67	14.41	15.78
	4H	13.72	14.41	14.74	15.43	16.81	13.22	13.92	14.25	14.94	16.32
	6H	14.10	14.74	15.14	15.77	17.16	13.60	14.24	14.64	15.27	16.66
	8H	14.20	14.80	15.24	15.85	17.23	13.69	14.30	14.74	15.35	16.73
	12H	14.24	14.81	15.28	15.85	17.26	13.73	14.30	14.77	15.34	16.75
4H	2H	11.95	12.64	12.98	13.67	15.04	11.60	12.29	12.63	13.31	14.69
	3H	13.79	14.37	14.83	15.42	16.81	13.38	13.96	14.42	15.01	16.40
	4H	14.49	15.02	15.53	16.06	17.47	14.06	14.59	15.11	15.64	17.05
	6H	14.98	15.44	16.04	16.50	17.91	14.55	15.00	15.61	16.07	17.48
	8H	15.12	15.54	16.18	16.61	18.03	14.68	15.11	15.74	16.17	17.59
	12H	15.18	15.57	16.26	16.64	18.07	14.73	15.12	15.81	16.19	17.62
8H	4H	14.67	15.09	15.73	16.15	17.58	14.29	14.72	15.35	15.78	17.20
	6H	15.27	15.62	16.36	16.73	18.15	14.89	15.24	15.97	16.34	17.76
	8H	15.48	15.79	16.57	16.88	18.31	15.09	15.40	16.18	16.48	17.92
	12H	15.60	15.87	16.69	16.95	18.43	15.19	15.46	16.28	16.54	18.02
12H	4H	14.65	15.03	15.73	16.11	17.54	14.28	14.66	15.36	15.74	17.17
	6H	15.30	15.61	16.39	16.69	18.13	14.92	15.23	16.01	16.32	17.76
	8H	15.52	15.79	16.62	16.88	18.35	15.14	15.41	16.23	16.49	17.97