

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: P917621

Luminaire Tested: DFN2DIP-SQ4F0-070D080US930-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P917621
REPORT IS A COMBINATION OF REPORTS P901617 AND P898471
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ4F0-070D080US930-FLONL
Description: 4 foot, Square Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

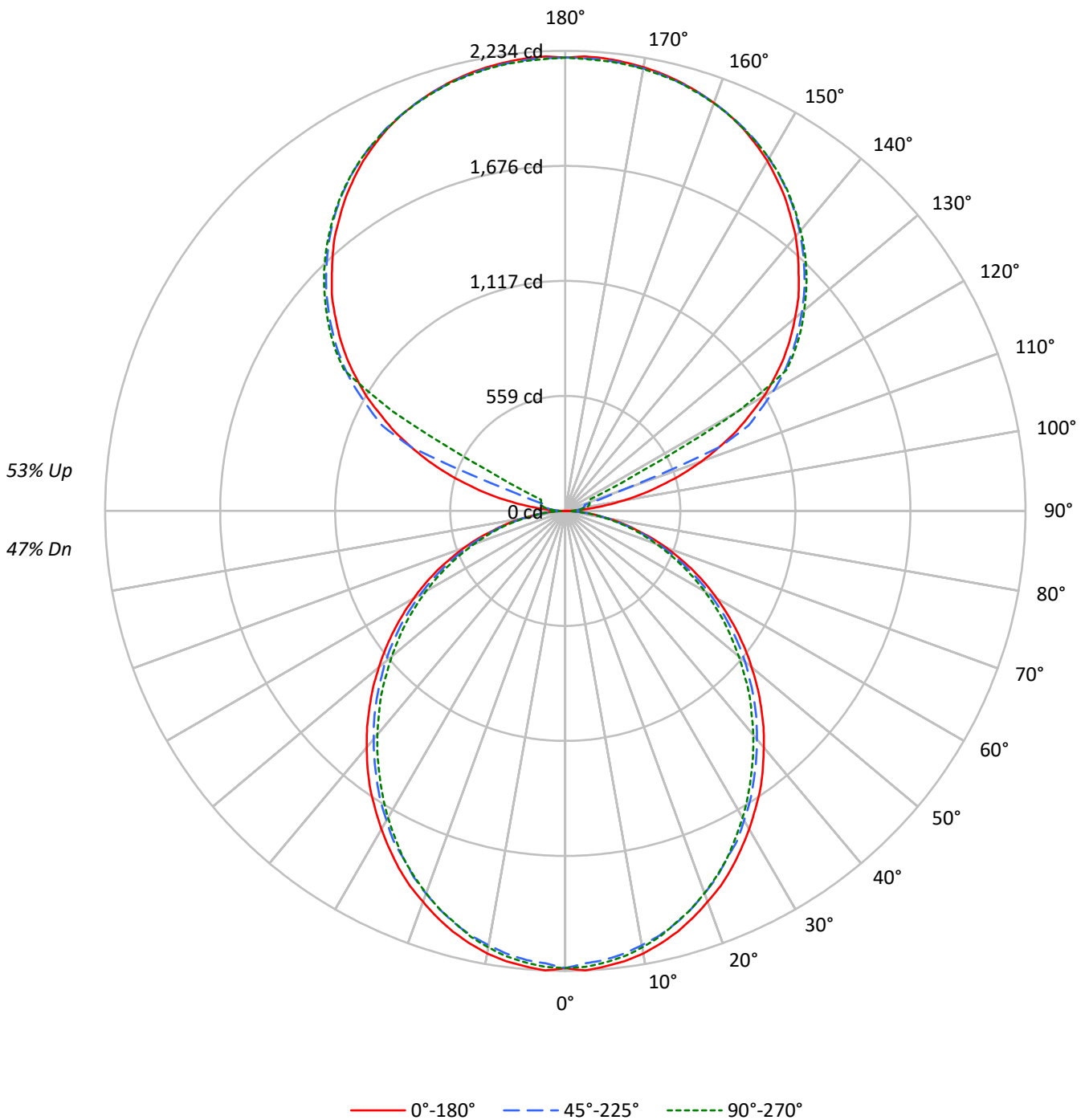
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 12107.2 lumens
Efficiency: N/A
Efficacy: 100.2 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 3.92' x L: 3.92' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 120.8
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9967
Total Harmonic Distortion (THDi): 0.063
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P917621
CATALOG NUMBER: DFN2DIP-SQ4F0-070D080US930-FLLONL

Luminous Intensity Polar Plot





TEST NUMBER: P917621

CATALOG NUMBER: DFN2DIP-SQ4F0-070D080US930-FLLONL

COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20				20				20				20				20				20
RC	80				70				50				30				10				0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0
RCR																					
0	106	106	106	106	98	98	98	98	81	81	81	67	67	67	53	53	53	47	47	47	47
1	97	93	89	85	89	85	82	79	71	69	67	59	57	56	47	46	45	39	39	39	39
2	88	81	75	70	81	75	69	65	63	59	55	52	49	46	41	39	38	33	33	33	33
3	81	71	64	58	74	66	59	54	55	50	47	46	42	39	37	34	32	28	28	28	28
4	74	63	55	49	67	58	51	46	49	44	40	41	37	34	33	30	28	24	24	24	24
5	68	56	48	42	62	52	45	39	44	38	34	36	32	29	29	27	24	21	21	21	21
6	62	50	42	36	57	47	39	34	40	34	30	33	29	25	27	24	21	18	18	18	18
7	58	45	37	32	53	42	35	30	36	30	26	30	26	23	24	21	19	16	16	16	16
8	53	41	33	28	49	38	31	27	33	27	23	27	23	20	22	19	17	15	15	15	15
9	50	38	30	25	46	35	28	24	30	25	21	25	21	18	21	18	15	13	13	13	13
10	46	34	27	22	43	32	26	21	28	22	19	23	19	16	19	16	14	12	12	12	12

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1558	1558	1558
5°	1561	1537	1547
10°	1548	1516	1527
15°	1525	1492	1494
20°	1494	1457	1461
25°	1464	1416	1423
30°	1425	1378	1374
35°	1389	1333	1323
40°	1344	1287	1273
45°	1300	1241	1223
50°	1251	1193	1165
55°	1200	1138	1112
60°	1142	1072	1050
65°	1079	1004	978
70°	999	921	901
75°	888	821	830
80°	754	695	693
85°	545	475	466

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 1300 cd/sqm



TEST NUMBER: P917621

CATALOG NUMBER: DFN2DIP-SQ4F0-070D080US930-FLONL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	209.0	1.7
10°-20°	588.1	4.9
20°-30°	864.2	7.1
30°-40°	1003.7	8.3
40°-50°	1002.5	8.3
50°-60°	874.2	7.2
60°-70°	646.2	5.3
70°-80°	365.6	3.0
80°-90°	100.4	0.8
90°-100°	72.6	0.6
100°-110°	270.6	2.2
110°-120°	717.6	5.9
120°-130°	1190.2	9.8
130°-140°	1264.3	10.4
140°-150°	1175.0	9.7
150°-160°	944.7	7.8
160°-170°	608.7	5.0
170°-180°	209.5	1.7
0°-30°	1661.3	13.7
0°-40°	2665.1	22.0
0°-60°	4541.7	37.5
0°-90°	5653.9	46.7
90°-120°	1060.8	8.8
90°-150°	4690.4	38.7
90°-180°	6453.0	53.3
0°-180°	12107.2	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2221	2221	2221	2221	2221	
5°	2221	2212	2189	2206	2202	211
15°	2114	2101	2073	2082	2071	595
25°	1913	1896	1860	1864	1860	880
35°	1651	1629	1595	1582	1572	1031
45°	1343	1328	1296	1273	1264	1037
55°	1016	1004	978	952	942	909
65°	686	673	651	632	621	678
75°	359	355	344	331	335	383
85°	88	85	83	77	75	98
90°	2	19	32	40	43	11
95°	104	51	62	70	68	123
105°	484	532	97	115	121	517
115°	916	943	983	245	131	902
125°	1295	1316	1346	1357	1362	1155
135°	1602	1628	1642	1658	1655	1238
145°	1859	1857	1884	1895	1887	1163
155°	2047	2032	2052	2061	2048	943
165°	2157	2147	2152	2163	2152	609
175°	2206	2195	2198	2209	2193	210
180°	2201	2201	2201	2201	2201	



TEST NUMBER: P917621

CATALOG NUMBER: DFN2DIP-SQ4F0-070D080US930-FLLONL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2220.6	2220.6	2220.6	2220.6	2220.6
2.5°	2233.6	2222.9	2199.3	2220.6	2216.6
5°	2220.6	2212.3	2188.7	2205.7	2201.6
7.5°	2205.7	2193.0	2169.4	2186.7	2182.4
10°	2182.4	2167.4	2141.8	2158.8	2152.5
12.5°	2150.2	2137.5	2111.9	2122.5	2118.2
15°	2114.0	2101.3	2073.4	2082.0	2071.3
17.5°	2069.1	2056.4	2028.5	2039.2	2028.5
20°	2019.9	2007.3	1977.3	1983.7	1975.3
22.5°	1971.0	1951.7	1923.9	1923.9	1919.5
25°	1913.3	1896.2	1860.0	1864.1	1860.0
27.5°	1849.1	1834.2	1806.5	1800.2	1789.5
30°	1785.3	1768.0	1736.1	1729.7	1721.1
32.5°	1716.8	1704.1	1669.9	1657.0	1648.4
35°	1650.7	1629.4	1595.1	1582.2	1571.6
37.5°	1575.9	1556.6	1522.4	1507.5	1496.8
40°	1499.1	1481.9	1447.6	1428.6	1420.0
42.5°	1424.3	1407.1	1373.1	1351.6	1338.9
45°	1343.2	1328.3	1296.1	1272.8	1264.1
47.5°	1264.1	1249.2	1215.0	1191.4	1178.8
50°	1180.8	1170.1	1140.2	1110.4	1099.7
52.5°	1099.7	1084.8	1057.1	1033.6	1018.6
55°	1016.5	1003.6	978.0	952.4	941.8
57.5°	933.2	922.5	894.6	869.0	860.5
60°	849.8	841.4	811.5	788.0	781.6
62.5°	768.7	753.7	732.5	711.2	702.5
65°	685.6	672.6	651.3	632.1	621.4
67.5°	600.1	589.3	570.2	555.3	546.7
70°	521.1	512.5	493.2	478.3	469.9
72.5°	439.9	431.4	420.7	405.8	399.4
75°	358.6	354.6	343.6	331.0	335.3
77.5°	286.2	277.5	273.2	266.8	260.6
80°	213.6	211.4	207.1	200.7	196.4
82.5°	145.2	145.2	143.2	134.6	134.6
85°	87.5	85.4	83.4	76.8	74.8
87.5°	38.5	34.2	29.9	23.6	21.3
90°	1.5	19.1	31.8	39.9	43.0
92.5°	39.9	33.5	38.2	41.4	43.0
95°	103.5	50.9	62.0	70.2	68.5
97.5°	186.3	55.8	81.1	86.1	87.6
100°	282.0	63.8	90.8	103.5	106.6
102.5°	387.0	383.9	94.0	111.4	116.3
105°	484.2	532.1	97.2	114.6	121.1
107.5°	597.3	637.0	100.4	117.8	124.3
110°	705.7	739.0	278.8	119.5	125.8



TEST NUMBER: P917621

CATALOG NUMBER: DFN2DIP-SQ4F0-070D080US930-FLLONL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	807.6	836.2	809.2	122.5	127.5
115°	915.8	942.9	982.8	245.3	130.7
117.5°	1009.8	1041.6	1068.9	840.9	423.7
120°	1115.0	1138.8	1167.6	1186.7	971.6
122.5°	1204.0	1229.6	1261.6	1271.0	1272.8
125°	1294.9	1315.6	1345.9	1357.1	1361.8
127.5°	1377.7	1400.0	1424.1	1439.9	1441.4
130°	1455.8	1481.3	1498.8	1516.4	1514.8
132.5°	1535.5	1556.2	1573.7	1588.0	1586.5
135°	1602.4	1627.9	1642.1	1658.2	1655.0
137.5°	1672.4	1691.5	1707.6	1723.5	1718.7
140°	1740.8	1753.7	1771.2	1785.5	1777.5
142.5°	1798.4	1809.5	1830.1	1842.8	1834.8
145°	1858.9	1857.2	1884.2	1895.4	1887.4
147.5°	1911.3	1906.6	1933.6	1941.6	1935.3
150°	1962.3	1951.2	1976.7	1986.1	1978.2
152.5°	2005.3	1992.6	2016.4	2026.1	2014.9
155°	2046.7	2032.5	2051.6	2061.1	2048.4
157.5°	2080.2	2067.5	2081.9	2093.0	2080.2
160°	2108.9	2099.3	2108.9	2118.4	2107.2
162.5°	2134.3	2124.8	2132.7	2143.9	2129.6
165°	2156.6	2147.2	2151.9	2163.0	2151.9
167.5°	2174.2	2164.5	2169.4	2180.6	2166.2
170°	2188.6	2178.9	2182.1	2193.3	2178.9
172.5°	2198.0	2188.6	2191.8	2202.9	2188.6
175°	2206.0	2194.8	2198.0	2209.1	2193.3
177.5°	2209.1	2198.0	2199.7	2210.8	2196.5
180°	2201.2	2201.2	2201.2	2201.2	2201.2



TEST NUMBER: P917621
 CATALOG NUMBER: DFN2DIP-SQ4F0-070D080US930-FLLONL

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	8.51	9.34	9.50	10.34	11.66	8.07	8.90	9.05	9.90	11.22
	3H	10.17	10.92	11.17	11.93	13.27	9.68	10.43	10.68	11.44	12.78
	4H	10.76	11.47	11.77	12.48	13.83	10.27	10.98	11.28	11.99	13.33
	6H	11.17	11.82	12.19	12.83	14.19	10.67	11.32	11.68	12.33	13.69
	8H	11.27	11.89	12.30	12.92	14.28	10.77	11.39	11.79	12.42	13.78
	12H	11.32	11.91	12.35	12.93	14.31	10.81	11.40	11.84	12.43	13.81
4H	2H	8.97	9.68	9.98	10.69	12.03	8.62	9.32	9.63	10.33	11.68
	3H	10.84	11.43	11.86	12.47	13.83	10.43	11.02	11.45	12.06	13.42
	4H	11.55	12.09	12.59	13.13	14.51	11.13	11.67	12.16	12.70	14.08
	6H	12.07	12.54	13.11	13.59	14.97	11.64	12.10	12.68	13.16	14.54
	8H	12.22	12.66	13.27	13.70	15.10	11.79	12.22	12.83	13.27	14.66
	12H	12.30	12.69	13.36	13.75	15.15	11.85	12.24	12.91	13.30	14.70
8H	4H	11.75	12.18	12.79	13.23	14.62	11.37	11.81	12.42	12.85	14.25
	6H	12.38	12.74	13.45	13.83	15.22	12.00	12.36	13.07	13.45	14.84
	8H	12.61	12.92	13.68	14.00	15.41	12.21	12.53	13.29	13.60	15.01
	12H	12.74	13.02	13.82	14.09	15.54	12.33	12.61	13.41	13.68	15.13
12H	4H	11.73	12.13	12.79	13.19	14.59	11.37	11.76	12.43	12.82	14.22
	6H	12.41	12.73	13.49	13.80	15.21	12.04	12.36	13.12	13.43	14.84
	8H	12.66	12.94	13.74	14.00	15.46	12.28	12.56	13.36	13.62	15.08