

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: P917483

Luminaire Tested: DFN2DIP-SQ3F0-100D070US930-RLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P917483
REPORT IS A COMBINATION OF REPORTS P901448 AND P898289
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ3F0-100D070US930-RLLONL
Description: 3 foot, Square Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

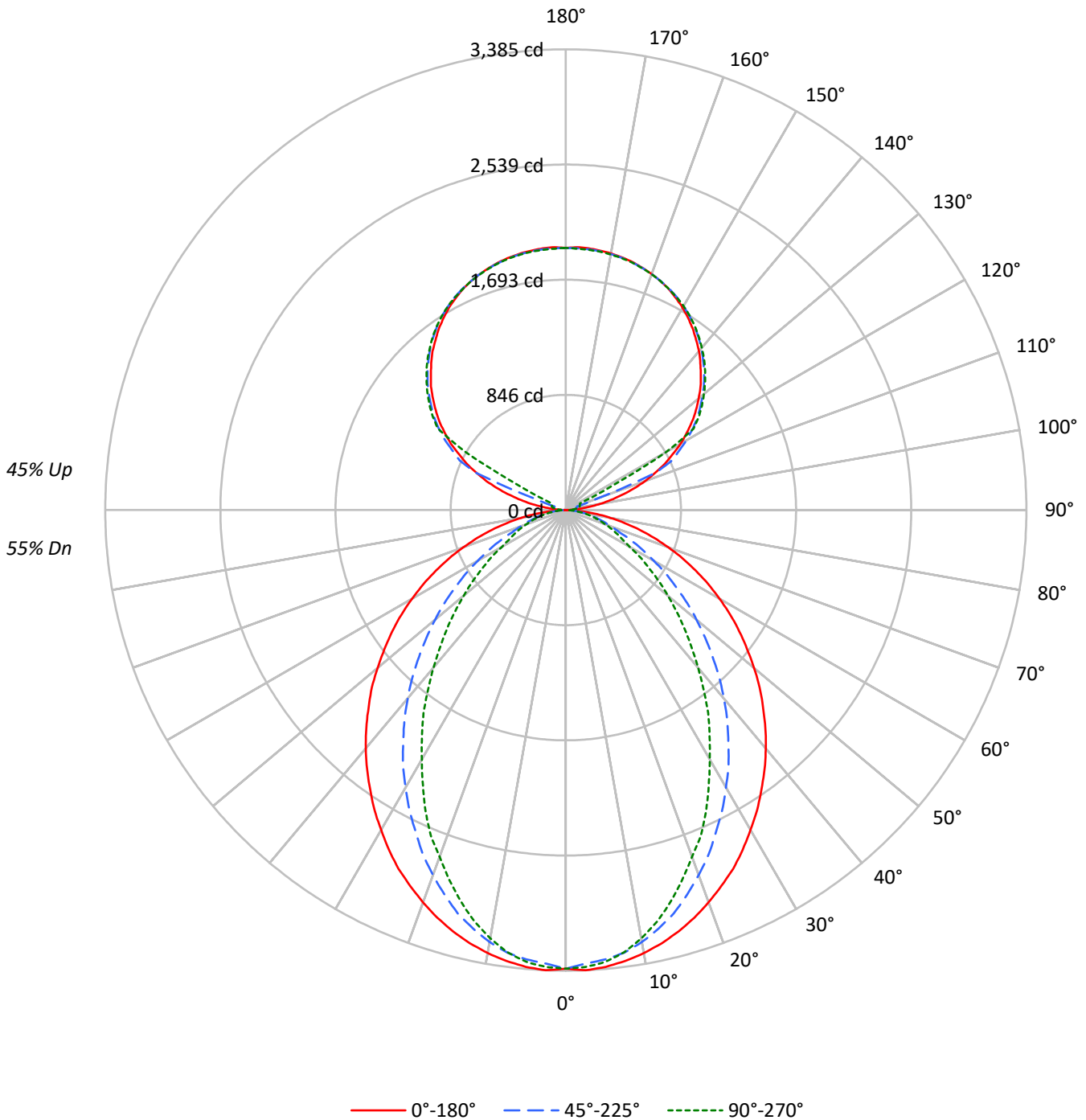
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 12580.1 lumens
Efficiency: N/A
Efficacy: 83.3 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: General Diffuse

Input Watts (W): 151
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9781
Total Harmonic Distortion (THDi): 0.075
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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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	0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	0
RCR																		
0	108	108	108	108	101	101	101	101	86	86	86	73	73	73	61	61	61	55
1	99	95	92	88	92	89	86	83	76	74	72	65	63	62	55	53	52	47
2	91	84	78	73	84	78	73	69	68	64	60	58	55	52	49	47	45	41
3	83	74	67	61	77	69	63	58	60	55	51	52	48	45	44	41	39	35
4	77	66	58	52	71	62	55	50	54	48	44	46	42	39	39	36	34	31
5	70	59	51	45	65	55	48	43	48	43	39	42	38	34	36	33	30	27
6	65	53	45	40	60	50	43	38	44	38	34	38	34	30	33	29	27	24
7	60	48	41	35	56	45	38	33	40	34	30	35	30	27	30	27	24	21
8	56	44	36	31	52	41	35	30	37	31	27	32	28	24	28	24	22	19
9	52	40	33	28	49	38	31	27	34	28	24	29	25	22	26	22	20	18
10	49	37	30	25	46	35	29	24	31	26	22	27	23	20	24	20	18	16

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3861	3861	3861
5°	3865	3797	3823
10°	3824	3720	3697
15°	3769	3595	3504
20°	3697	3423	3267
25°	3623	3231	3038
30°	3525	3034	2748
35°	3428	2822	2494
40°	3330	2604	2202
45°	3216	2362	1938
50°	3098	2118	1680
55°	2974	1857	1432
60°	2831	1585	1178
65°	2666	1309	1058
70°	2466	1051	956
75°	2214	921	867
80°	1850	765	748
85°	1254	498	554

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 3216 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	315.8	2.5
10°-20°	866.9	6.9
20°-30°	1217.2	9.7
30°-40°	1326.8	10.5
40°-50°	1219.5	9.7
50°-60°	957.7	7.6
60°-70°	623.4	5.0
70°-80°	320.9	2.6
80°-90°	85.3	0.7
90°-100°	63.5	0.5
100°-110°	236.8	1.9
110°-120°	627.9	5.0
120°-130°	1041.5	8.3
130°-140°	1106.3	8.8
140°-150°	1028.1	8.2
150°-160°	826.6	6.6
160°-170°	532.6	4.2
170°-180°	183.3	1.5
0°-30°	2399.9	19.1
0°-40°	3726.7	29.6
0°-60°	5903.9	46.9
0°-90°	6933.4	55.1
90°-120°	928.2	7.4
90°-150°	4104.1	32.6
90°-180°	5647.0	44.9
0°-180°	12580.1	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3370	3370	3370	3370	3370	
5°	3370	3354	3315	3342	3333	320
15°	3205	3171	3068	3010	2979	903
25°	2909	2812	2610	2485	2440	1338
35°	2507	2351	2083	1891	1823	1569
45°	2049	1845	1525	1308	1235	1583
55°	1558	1320	991	808	750	1392
65°	1052	805	531	427	418	1043
75°	561	348	244	223	220	593
85°	131	67	58	58	58	150
90°	1	17	28	35	38	12
95°	90	44	54	61	60	107
105°	424	466	85	100	106	453
115°	801	825	860	215	114	789
125°	1133	1151	1178	1188	1192	1010
135°	1402	1424	1437	1451	1448	1083
145°	1626	1625	1649	1658	1652	1017
155°	1791	1778	1795	1803	1792	825
165°	1887	1879	1883	1893	1883	533
175°	1930	1920	1923	1933	1919	184
180°	1926	1926	1926	1926	1926	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	3369.6	3369.6	3369.6	3369.6	3369.6
2.5°	3384.8	3369.6	3336.0	3366.7	3360.6
5°	3369.6	3354.4	3314.6	3342.2	3333.0
7.5°	3342.2	3324.0	3281.2	3293.2	3278.1
10°	3305.5	3284.2	3223.4	3214.0	3195.9
12.5°	3260.0	3232.4	3149.9	3131.8	3098.1
15°	3204.9	3171.3	3067.7	3009.8	2979.4
17.5°	3140.9	3092.0	2963.9	2896.9	2848.1
20°	3067.7	3006.6	2854.2	2778.2	2710.9
22.5°	2988.5	2918.3	2741.3	2637.8	2592.2
25°	2909.2	2811.6	2610.3	2485.4	2439.5
27.5°	2814.7	2710.9	2488.3	2345.0	2274.8
30°	2714.1	2597.9	2354.0	2198.8	2116.3
32.5°	2616.5	2476.0	2226.3	2043.1	1966.7
35°	2506.7	2351.2	2082.9	1890.8	1823.4
37.5°	2400.0	2232.0	1948.6	1738.1	1662.0
40°	2287.1	2104.3	1808.2	1591.8	1512.5
42.5°	2171.2	1976.1	1668.2	1442.3	1366.3
45°	2049.3	1844.8	1524.9	1308.1	1234.9
47.5°	1933.5	1717.0	1387.6	1170.8	1103.9
50°	1805.3	1588.9	1253.4	1042.8	979.0
52.5°	1680.1	1451.4	1125.3	924.0	866.1
55°	1558.1	1320.4	991.0	808.2	750.2
57.5°	1433.3	1189.3	872.3	701.4	652.6
60°	1305.1	1061.2	747.1	591.7	542.9
62.5°	1180.2	936.3	640.3	494.1	469.8
65°	1052.1	804.9	530.6	427.1	417.7
67.5°	930.2	683.0	427.1	375.0	365.9
70°	802.0	564.3	353.6	323.2	311.0
72.5°	680.0	454.2	295.7	271.4	265.3
75°	561.0	347.5	243.9	222.6	219.6
77.5°	442.3	246.9	192.2	179.9	173.7
80°	332.2	177.0	146.3	134.3	134.3
82.5°	231.6	119.0	100.6	94.5	94.5
85°	131.0	66.9	57.9	57.9	57.9
87.5°	48.8	24.3	24.3	21.4	21.4
90°	1.3	16.7	27.8	34.9	37.6
92.5°	34.9	29.3	33.4	36.3	37.6
95°	90.5	44.5	54.3	61.4	59.9
97.5°	163.0	48.8	71.0	75.3	76.6
100°	246.8	55.8	79.4	90.5	93.4
102.5°	338.6	336.0	82.3	97.5	101.7
105°	423.7	465.5	85.0	100.3	105.9
107.5°	522.6	557.4	87.9	103.1	108.8
110°	617.5	646.6	243.9	104.6	110.1



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	706.7	731.6	708.0	107.2	111.5
115°	801.4	825.0	859.9	214.7	114.4
117.5°	883.6	911.4	935.2	735.8	370.7
120°	975.6	996.5	1021.7	1038.4	850.2
122.5°	1053.5	1075.9	1103.9	1112.1	1113.6
125°	1133.0	1151.2	1177.7	1187.5	1191.6
127.5°	1205.5	1225.0	1246.0	1260.0	1261.3
130°	1273.8	1296.2	1311.4	1326.8	1325.5
132.5°	1343.5	1361.7	1377.0	1389.5	1388.2
135°	1402.1	1424.4	1436.9	1450.9	1448.1
137.5°	1463.3	1480.1	1494.1	1508.1	1503.9
140°	1523.2	1534.5	1549.7	1562.3	1555.3
142.5°	1573.5	1583.3	1601.3	1612.4	1605.5
145°	1626.5	1625.1	1648.7	1658.5	1651.5
147.5°	1672.3	1668.3	1691.9	1698.8	1693.4
150°	1717.0	1707.3	1729.7	1737.9	1731.0
152.5°	1754.6	1743.5	1764.4	1772.8	1763.1
155°	1790.9	1778.4	1795.1	1803.4	1792.4
157.5°	1820.2	1809.1	1821.6	1831.4	1820.2
160°	1845.3	1836.9	1845.3	1853.6	1843.8
162.5°	1867.5	1859.2	1866.1	1875.9	1863.4
165°	1887.0	1878.8	1882.8	1892.6	1882.8
167.5°	1902.4	1893.9	1898.3	1908.0	1895.5
170°	1915.0	1906.6	1909.3	1919.1	1906.6
172.5°	1923.3	1915.0	1917.8	1927.5	1915.0
175°	1930.2	1920.4	1923.3	1933.0	1919.1
177.5°	1933.0	1923.3	1924.8	1934.5	1921.9
180°	1926.1	1926.1	1926.1	1926.1	1926.1



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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	12.27	13.15	13.19	14.08	15.28	8.23	9.11	9.15	10.04	11.24
	3H	13.95	14.73	14.88	15.67	16.89	9.42	10.20	10.35	11.14	12.36
	4H	14.56	15.29	15.50	16.24	17.47	9.87	10.60	10.81	11.55	12.78
	6H	14.98	15.66	15.93	16.61	17.85	10.18	10.86	11.14	11.81	13.06
	8H	15.10	15.75	16.07	16.72	17.96	10.27	10.92	11.24	11.89	13.13
	12H	15.16	15.78	16.13	16.74	18.01	10.31	10.93	11.28	11.89	13.16
4H	2H	12.29	13.03	13.24	13.98	15.21	8.83	9.57	9.78	10.52	11.75
	3H	14.12	14.73	15.08	15.71	16.96	10.18	10.79	11.14	11.77	13.01
	4H	14.81	15.37	15.78	16.34	17.61	10.72	11.28	11.69	12.25	13.52
	6H	15.32	15.81	16.31	16.80	18.07	11.14	11.62	12.12	12.61	13.88
	8H	15.50	15.95	16.48	16.93	18.22	11.26	11.71	12.25	12.70	13.98
	12H	15.59	16.00	16.59	17.00	18.29	11.33	11.73	12.33	12.73	14.02
8H	4H	14.78	15.23	15.77	16.22	17.50	11.00	11.45	11.99	12.44	13.72
	6H	15.34	15.71	16.35	16.74	18.03	11.51	11.88	12.52	12.91	14.20
	8H	15.56	15.88	16.57	16.90	18.20	11.70	12.03	12.72	13.04	14.35
	12H	15.69	15.98	16.71	16.99	18.34	11.82	12.10	12.84	13.11	14.46
12H	4H	14.73	15.14	15.74	16.14	17.43	11.01	11.41	12.01	12.42	13.71
	6H	15.32	15.65	16.34	16.66	17.96	11.56	11.89	12.58	12.91	14.21
	8H	15.54	15.82	16.56	16.84	18.18	11.77	12.06	12.79	13.07	14.41