

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: P906399

Luminaire Tested: DFN2DIP-SQ3F0-050D090US835-RLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P906399
REPORT IS A COMBINATION OF REPORTS P901474 AND P898289
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ3F0-050D090US835-RLLONL
Description: 3 foot, Square Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

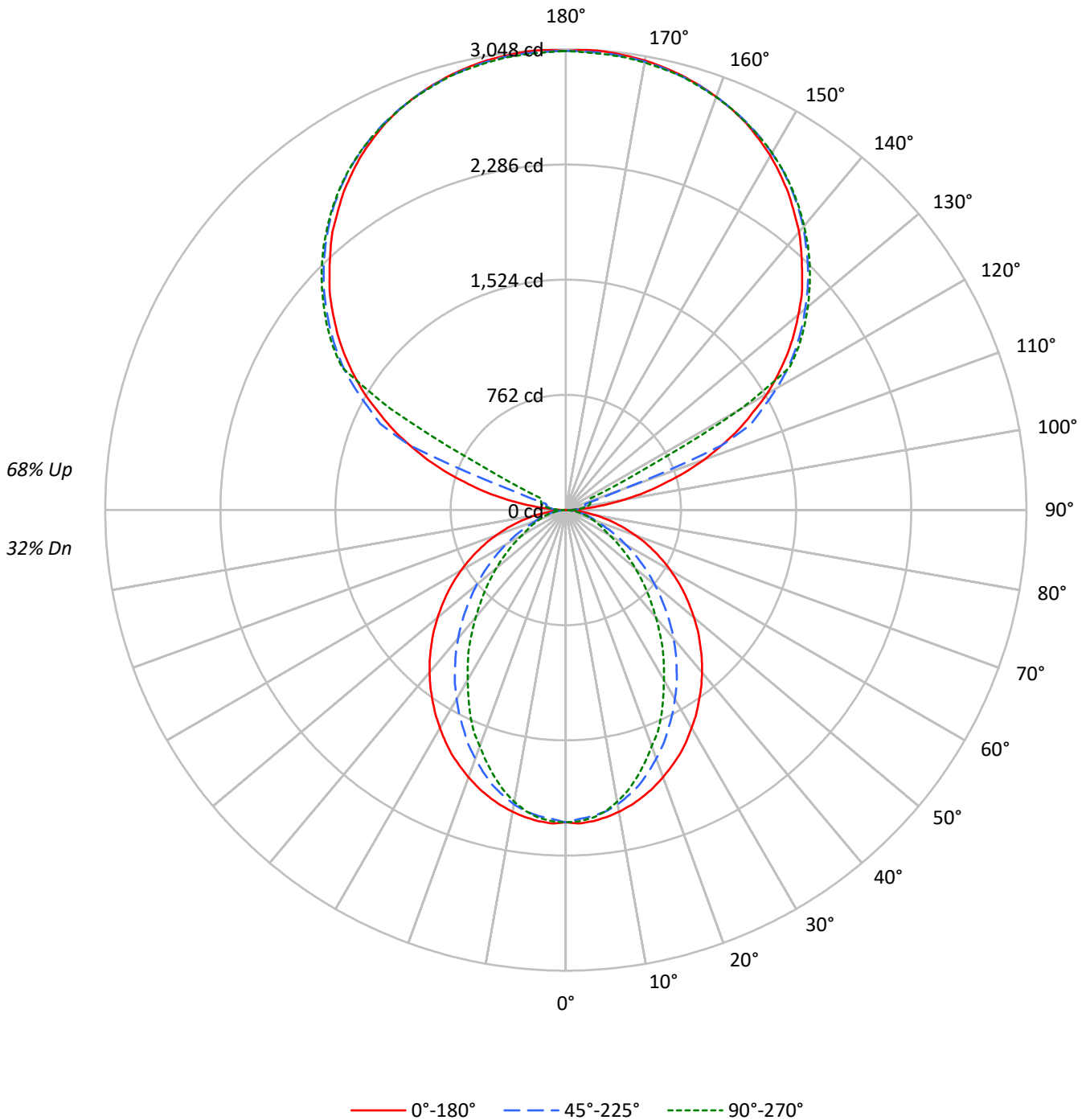
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 13160.0 lumens
Efficiency: N/A
Efficacy: 118.9 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): 110.7
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

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Luminous Intensity Polar Plot





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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	103	103	103	103	93	93	93	93	74	74	74	56	56	56	40	40	40	40	40	40	32
1	94	90	86	83	85	81	78	75	65	63	61	50	48	47	36	35	34	36	35	34	28
2	86	79	73	68	77	71	66	62	57	54	51	44	42	40	32	30	29	32	30	29	24
3	79	70	63	57	71	63	57	52	51	46	43	39	36	34	28	27	25	28	27	25	21
4	72	62	54	49	65	56	50	45	45	40	37	35	32	29	26	24	22	26	24	22	18
5	66	55	47	42	59	50	43	38	40	36	32	32	28	26	23	21	19	23	21	19	16
6	61	49	42	36	55	45	38	33	36	32	28	29	25	22	21	19	17	21	19	17	14
7	56	45	37	32	51	41	34	29	33	28	25	26	23	20	19	17	15	19	17	15	13
8	52	40	33	28	47	37	30	26	30	25	22	24	20	18	18	16	14	18	16	14	11
9	49	37	30	25	44	34	27	23	28	23	20	22	18	16	16	14	13	16	14	13	10
10	45	34	27	22	41	31	25	21	25	21	18	20	17	14	15	13	11	15	13	11	9

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2368	2368	2368
5°	2370	2329	2344
10°	2345	2281	2267
15°	2311	2205	2149
20°	2267	2099	2003
25°	2222	1981	1863
30°	2162	1861	1685
35°	2102	1731	1529
40°	2042	1597	1350
45°	1972	1448	1188
50°	1900	1299	1030
55°	1824	1139	878
60°	1736	972	722
65°	1635	803	649
70°	1512	645	586
75°	1358	565	532
80°	1135	469	458
85°	770	306	340

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°
 Vertical Angle: 90°
 Luminance: 2079 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	193.7	1.5
10°-20°	531.7	4.0
20°-30°	746.5	5.7
30°-40°	813.7	6.2
40°-50°	747.9	5.7
50°-60°	587.3	4.5
60°-70°	382.3	2.9
70°-80°	196.8	1.5
80°-90°	55.6	0.4
90°-100°	100.2	0.8
100°-110°	373.4	2.8
110°-120°	990.2	7.5
120°-130°	1642.4	12.5
130°-140°	1744.6	13.3
140°-150°	1621.4	12.3
150°-160°	1303.5	9.9
160°-170°	840.0	6.4
170°-180°	289.1	2.2
0°-30°	1471.8	11.2
0°-40°	2285.5	17.4
0°-60°	3620.7	27.5
0°-90°	4255.4	32.3
90°-120°	1463.7	11.1
90°-150°	6472.0	49.2
90°-180°	8905.0	67.7
0°-180°	13160.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2066	2066	2066	2066	2066	
5°	2066	2057	2033	2050	2044	196
15°	1966	1945	1881	1846	1827	554
25°	1784	1724	1601	1524	1496	821
35°	1537	1442	1277	1160	1118	962
45°	1257	1131	935	802	757	971
55°	956	810	608	496	460	854
65°	645	494	325	262	256	640
75°	344	213	150	136	135	364
85°	80	41	36	36	36	92
90°	2	26	44	55	59	12
95°	143	70	86	97	94	169
105°	668	734	134	158	167	714
115°	1264	1301	1356	338	180	1244
125°	1787	1815	1857	1873	1879	1594
135°	2211	2246	2266	2288	2284	1708
145°	2565	2563	2600	2615	2604	1604
155°	2824	2805	2831	2844	2826	1301
165°	2976	2963	2969	2985	2969	841
175°	3044	3028	3033	3048	3026	290
180°	3037	3037	3037	3037	3037	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2066.5	2066.5	2066.5	2066.5	2066.5
2.5°	2075.8	2066.5	2045.9	2064.7	2060.9
5°	2066.5	2057.2	2032.8	2049.6	2044.1
7.5°	2049.6	2038.5	2012.3	2019.7	2010.3
10°	2027.2	2014.1	1976.8	1971.1	1959.9
12.5°	1999.2	1982.4	1931.8	1920.7	1900.0
15°	1965.5	1944.9	1881.4	1845.9	1827.2
17.5°	1926.2	1896.3	1817.7	1776.6	1746.6
20°	1881.4	1843.9	1750.4	1703.8	1662.5
22.5°	1832.8	1789.7	1681.2	1617.7	1589.7
25°	1784.1	1724.2	1600.8	1524.2	1496.0
27.5°	1726.2	1662.5	1526.0	1438.1	1395.1
30°	1664.5	1593.3	1443.7	1348.4	1297.8
32.5°	1604.6	1518.5	1365.3	1253.0	1206.2
35°	1537.3	1441.9	1277.4	1159.5	1118.3
37.5°	1471.8	1368.9	1195.1	1065.9	1019.3
40°	1402.6	1290.5	1108.9	976.2	927.6
42.5°	1331.6	1211.9	1023.0	884.5	837.9
45°	1256.8	1131.4	935.1	802.2	757.3
47.5°	1185.7	1053.0	851.0	718.1	677.0
50°	1107.2	974.4	768.7	639.5	600.4
52.5°	1030.4	890.1	690.1	566.7	531.2
55°	955.6	809.7	607.7	495.6	460.1
57.5°	879.0	729.4	534.9	430.2	400.2
60°	800.4	650.8	458.1	362.9	332.9
62.5°	723.8	574.2	392.7	303.0	288.1
65°	645.2	493.7	325.4	261.9	256.2
67.5°	570.4	418.9	261.9	230.0	224.4
70°	491.9	346.0	216.9	198.2	190.7
72.5°	417.1	278.6	181.4	166.5	162.7
75°	344.1	213.1	149.6	136.5	134.7
77.5°	271.2	151.4	117.9	110.3	106.5
80°	203.8	108.5	89.7	82.3	82.3
82.5°	142.1	73.0	61.7	57.9	57.9
85°	80.4	41.1	35.5	35.5	35.5
87.5°	30.0	14.9	14.9	13.1	13.1
90°	2.1	26.4	43.8	55.1	59.2
92.5°	55.1	46.2	52.7	57.2	59.2
95°	142.8	70.2	85.6	96.8	94.5
97.5°	257.1	77.0	112.0	118.7	120.8
100°	389.1	88.0	125.3	142.8	147.2
102.5°	534.0	529.8	129.7	153.7	160.5
105°	668.1	734.2	134.1	158.2	167.0
107.5°	824.2	879.0	138.6	162.6	171.5
110°	973.7	1019.7	384.7	164.9	173.6



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1114.4	1153.8	1116.5	169.1	175.9
115°	1263.7	1301.0	1356.1	338.5	180.3
117.5°	1393.4	1437.3	1474.8	1160.4	584.6
120°	1538.5	1571.4	1611.1	1637.4	1340.7
122.5°	1661.5	1696.7	1740.8	1753.8	1756.2
125°	1786.7	1815.4	1857.2	1872.6	1879.1
127.5°	1901.0	1931.8	1965.0	1986.9	1989.0
130°	2008.8	2044.1	2068.1	2092.3	2090.3
132.5°	2118.7	2147.4	2171.4	2191.3	2189.2
135°	2211.1	2246.3	2265.9	2288.1	2283.7
137.5°	2307.7	2334.0	2356.2	2378.1	2371.6
140°	2402.1	2419.9	2443.9	2463.7	2452.8
142.5°	2481.5	2496.9	2525.3	2542.8	2531.9
145°	2565.0	2562.6	2600.0	2615.4	2604.4
147.5°	2637.3	2630.8	2668.1	2679.1	2670.4
150°	2707.8	2692.4	2727.6	2740.6	2729.7
152.5°	2767.0	2749.5	2782.4	2795.7	2780.3
155°	2824.2	2804.6	2830.9	2844.0	2826.5
157.5°	2870.4	2852.9	2872.7	2888.1	2870.4
160°	2910.0	2896.7	2910.0	2923.1	2907.7
162.5°	2945.0	2931.9	2942.9	2958.3	2938.5
165°	2975.8	2962.7	2969.3	2984.7	2969.3
167.5°	3000.1	2986.8	2993.5	3008.9	2989.1
170°	3019.9	3006.6	3011.0	3026.4	3006.6
172.5°	3033.0	3019.9	3024.3	3039.7	3019.9
175°	3043.9	3028.5	3033.0	3048.3	3026.4
177.5°	3048.3	3033.0	3035.3	3050.7	3030.9
180°	3037.4	3037.4	3037.4	3037.4	3037.4



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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	8.19	8.89	9.29	9.99	11.49	4.15	4.85	5.25	5.95	7.45
	3H	9.85	10.48	10.96	11.58	13.10	5.32	5.95	6.43	7.05	8.57
	4H	10.45	11.05	11.57	12.15	13.68	5.76	6.36	6.88	7.46	8.99
	6H	10.86	11.41	11.99	12.52	14.06	6.07	6.62	7.20	7.72	9.26
	8H	10.98	11.50	12.11	12.63	14.16	6.15	6.67	7.28	7.80	9.33
	12H	11.04	11.53	12.17	12.65	14.20	6.19	6.68	7.32	7.80	9.35
4H	2H	8.19	8.79	9.31	9.89	11.42	4.73	5.32	5.85	6.43	7.95
	3H	10.00	10.50	11.13	11.63	13.17	6.06	6.55	7.19	7.68	9.22
	4H	10.68	11.14	11.82	12.26	13.82	6.59	7.05	7.73	8.17	9.73
	6H	11.19	11.58	12.33	12.72	14.27	7.00	7.39	8.14	8.53	10.08
	8H	11.36	11.72	12.50	12.86	14.42	7.12	7.49	8.26	8.62	10.19
	12H	11.44	11.77	12.60	12.92	14.49	7.18	7.51	8.33	8.65	10.23
8H	4H	10.64	11.01	11.78	12.14	13.71	6.86	7.23	8.00	8.36	9.93
	6H	11.20	11.50	12.36	12.67	14.24	7.37	7.67	8.53	8.84	10.41
	8H	11.41	11.67	12.58	12.83	14.41	7.55	7.81	8.72	8.97	10.55
	12H	11.54	11.77	12.71	12.92	14.54	7.66	7.89	8.83	9.04	10.66
12H	4H	10.59	10.92	11.74	12.06	13.63	6.86	7.19	8.02	8.34	9.91
	6H	11.17	11.43	12.34	12.59	14.17	7.41	7.68	8.58	8.83	10.42
	8H	11.38	11.61	12.55	12.77	14.38	7.61	7.84	8.78	9.00	10.62