

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: P917177

Luminaire Tested: DFN2DIP-SQ2F0-050D080US930-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P917177
REPORT IS A COMBINATION OF REPORTS P901355 AND P898215
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ2F0-050D080US930-FLONL
Description: 2 foot, Square Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

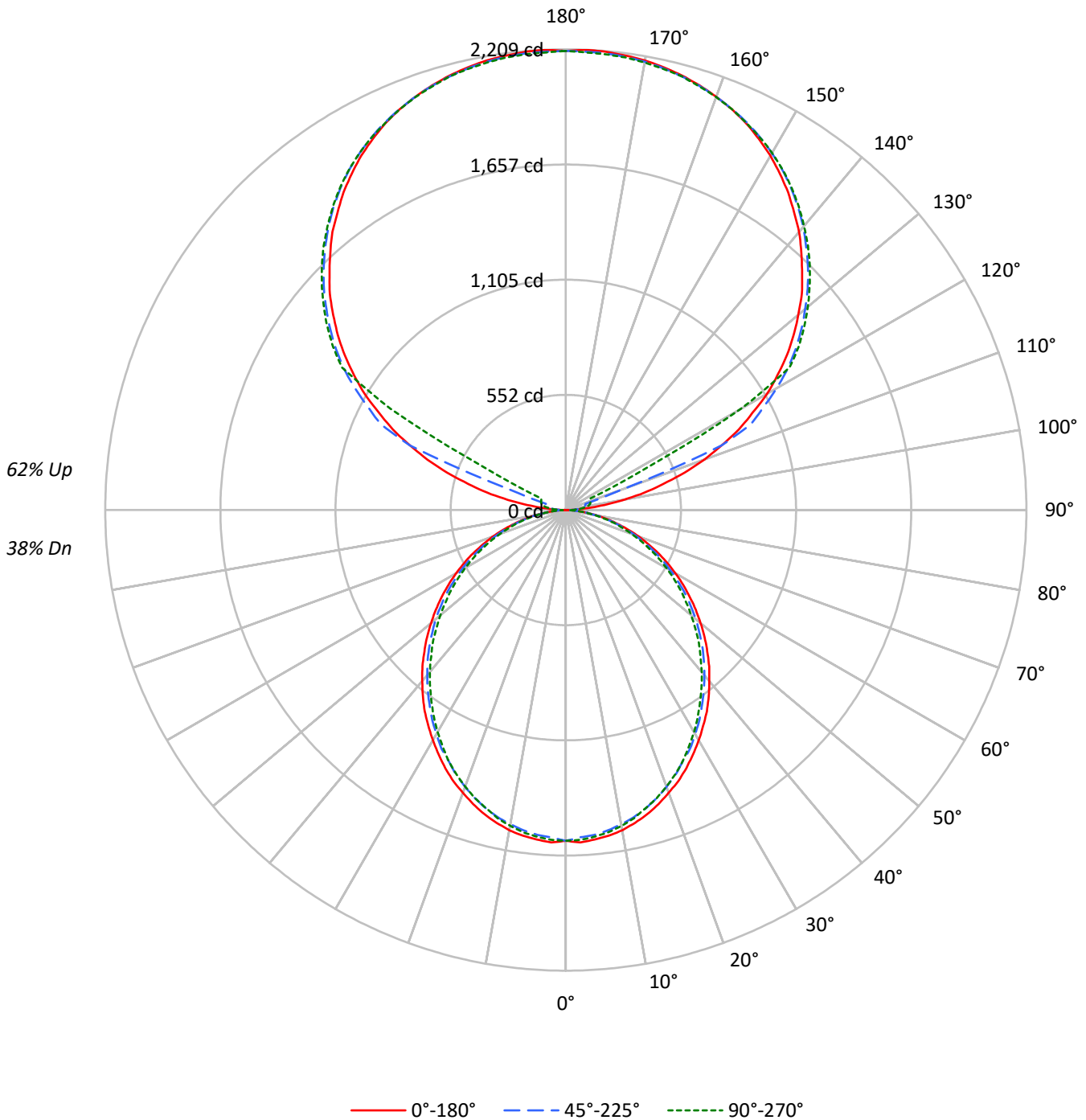
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 10492.9 lumens
Efficiency: N/A
Efficacy: 96.1 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: Semi-Indirect

Input Watts (W): 109.2
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

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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	104	104	104	104	95	95	95	95	77	77	77	61	61	61	46	46	46	38				38
1	95	91	87	84	86	83	80	77	67	65	63	53	52	50	40	39	38	32				32
2	87	79	73	68	78	72	67	63	59	55	52	47	44	42	35	34	32	27				27
3	79	70	63	57	71	64	57	52	52	48	44	41	38	36	31	29	28	23				23
4	72	62	54	48	65	56	50	44	46	41	37	37	33	30	28	26	24	20				20
5	66	55	47	41	60	50	43	38	41	36	32	33	29	26	25	23	21	17				17
6	61	49	41	36	55	45	38	33	37	32	28	30	26	23	23	20	18	15				15
7	56	44	36	31	51	41	34	29	34	28	25	27	23	20	21	18	16	13				13
8	52	40	33	27	47	37	30	25	31	25	22	25	21	18	19	16	14	12				12
9	49	37	29	24	44	34	27	23	28	23	19	23	19	16	18	15	13	11				11
10	45	33	26	22	41	31	25	20	26	21	17	21	17	15	16	14	12	10				10

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3488	3488	3488
5°	3487	3431	3458
10°	3453	3378	3406
15°	3396	3315	3328
20°	3322	3230	3248
25°	3247	3130	3157
30°	3155	3037	3042
35°	3068	2928	2921
40°	2961	2817	2805
45°	2854	2706	2686
50°	2738	2589	2550
55°	2615	2454	2423
60°	2476	2295	2277
65°	2323	2129	2105
70°	2129	1927	1920
75°	1862	1684	1741
80°	1538	1375	1414
85°	1040	867	888

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 2854 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	149.3	1.4
10°-20°	420.0	4.0
20°-30°	617.3	5.9
30°-40°	717.0	6.8
40°-50°	716.1	6.8
50°-60°	624.4	6.0
60°-70°	461.6	4.4
70°-80°	261.1	2.5
80°-90°	72.8	0.7
90°-100°	72.6	0.7
100°-110°	270.6	2.6
110°-120°	717.6	6.8
120°-130°	1190.2	11.3
130°-140°	1264.3	12.0
140°-150°	1175.0	11.2
150°-160°	944.7	9.0
160°-170°	608.7	5.8
170°-180°	209.5	2.0
0°-30°	1186.6	11.3
0°-40°	1903.6	18.1
0°-60°	3244.1	30.9
0°-90°	4039.6	38.5
90°-120°	1060.8	10.1
90°-150°	4690.4	44.7
90°-180°	6453.0	61.5
0°-180°	10492.9	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1586	1586	1586	1586	1586	
5°	1586	1580	1563	1576	1573	151
15°	1510	1501	1481	1487	1480	425
25°	1367	1354	1328	1332	1328	629
35°	1179	1164	1139	1130	1123	736
45°	959	949	926	909	903	740
55°	726	717	698	680	673	649
65°	490	480	465	452	444	484
75°	256	253	246	236	240	273
85°	62	61	60	55	53	70
90°	2	19	32	40	43	10
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	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1586.2	1586.2	1586.2	1586.2	1586.2
2.5°	1595.4	1587.8	1571.0	1586.2	1583.3
5°	1586.2	1580.2	1563.3	1575.5	1572.6
7.5°	1575.5	1566.4	1549.6	1561.9	1558.9
10°	1558.9	1548.2	1529.9	1542.0	1537.5
12.5°	1535.9	1526.8	1508.5	1516.1	1513.0
15°	1509.9	1500.9	1481.0	1487.2	1479.5
17.5°	1477.9	1468.8	1448.9	1456.5	1448.9
20°	1442.8	1433.8	1412.4	1416.9	1411.0
22.5°	1407.9	1394.1	1374.2	1374.2	1371.1
25°	1366.6	1354.5	1328.5	1331.5	1328.5
27.5°	1320.8	1310.1	1290.4	1285.8	1278.2
30°	1275.1	1262.9	1240.1	1235.5	1229.4
32.5°	1226.3	1217.2	1192.8	1183.6	1177.5
35°	1179.0	1163.8	1139.4	1130.2	1122.6
37.5°	1125.6	1111.9	1087.4	1076.8	1069.2
40°	1070.8	1058.5	1034.0	1020.4	1014.3
42.5°	1017.4	1005.1	980.8	965.4	956.3
45°	959.4	948.8	925.8	909.1	902.9
47.5°	902.9	892.3	867.9	851.0	842.0
50°	843.4	835.8	814.5	793.1	785.5
52.5°	785.5	774.8	755.0	738.3	727.6
55°	726.1	716.9	698.5	680.3	672.7
57.5°	666.5	658.9	639.0	620.8	614.6
60°	607.0	601.0	579.7	562.8	558.3
62.5°	549.1	538.4	523.2	507.9	501.8
65°	489.7	480.5	465.2	451.5	443.8
67.5°	428.7	420.9	407.3	396.6	390.4
70°	372.2	366.1	352.3	341.6	335.7
72.5°	314.3	308.1	300.5	289.8	285.3
75°	256.2	253.2	245.5	236.4	239.5
77.5°	204.4	198.2	195.2	190.6	186.1
80°	152.6	151.0	147.9	143.4	140.3
82.5°	103.7	103.7	102.2	96.1	96.1
85°	62.5	61.0	59.5	54.9	53.4
87.5°	27.5	24.5	21.4	16.8	15.2
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



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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



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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	10.33	11.10	11.38	12.15	13.58	9.89	10.65	10.94	11.71	13.13
	3H	11.96	12.65	13.02	13.71	15.16	11.47	12.16	12.53	13.22	14.67
	4H	12.53	13.19	13.61	14.25	15.70	12.04	12.69	13.11	13.76	15.21
	6H	12.91	13.51	14.00	14.58	16.05	12.41	13.01	13.50	14.08	15.55
	8H	13.01	13.58	14.09	14.66	16.12	12.51	13.08	13.59	14.16	15.62
	12H	13.05	13.59	14.14	14.67	16.15	12.54	13.08	13.63	14.16	15.64
4H	2H	10.77	11.42	11.85	12.49	13.94	10.41	11.07	11.49	12.13	13.58
	3H	12.60	13.15	13.69	14.24	15.70	12.20	12.74	13.28	13.83	15.30
	4H	13.30	13.80	14.39	14.88	16.37	12.87	13.37	13.96	14.46	15.94
	6H	13.79	14.22	14.89	15.32	16.80	13.36	13.79	14.46	14.89	16.37
	8H	13.93	14.33	15.03	15.43	16.92	13.49	13.89	14.59	14.99	16.48
	12H	13.99	14.35	15.10	15.46	16.96	13.54	13.90	14.65	15.01	16.51
8H	4H	13.48	13.88	14.57	14.97	16.47	13.10	13.50	14.20	14.60	16.09
	6H	14.08	14.41	15.20	15.55	17.04	13.69	14.02	14.82	15.16	16.66
	8H	14.29	14.57	15.41	15.70	17.21	13.89	14.18	15.02	15.30	16.82
	12H	14.40	14.65	15.53	15.77	17.32	13.99	14.24	15.12	15.36	16.91
12H	4H	13.45	13.82	14.57	14.93	16.43	13.08	13.45	14.20	14.56	16.06
	6H	14.10	14.39	15.23	15.51	17.03	13.73	14.02	14.86	15.14	16.65
	8H	14.33	14.58	15.46	15.70	17.25	13.94	14.20	15.07	15.32	16.87