

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: P903583

Luminaire Tested: DFN2DIP-SQ2F0-070D070US830-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P903583
REPORT IS A COMBINATION OF REPORTS P901348 AND P898215
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ2F0-070D070US830-RLONL
Description: 2 foot, Square Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

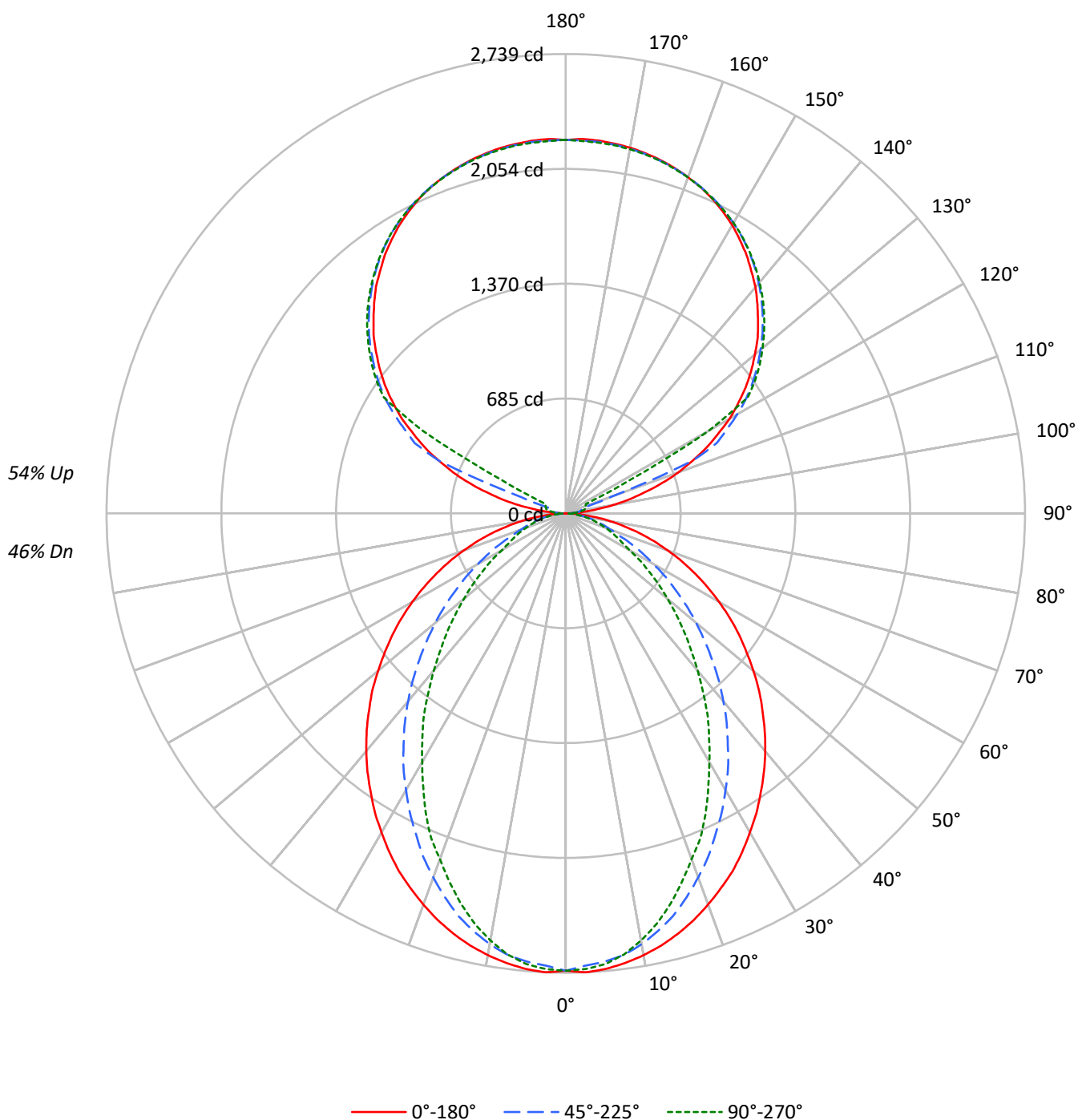
Lumens per Lamp: N/A
Luminaire Lumens: 12139.9 lumens
Efficiency: N/A
Efficacy: 99.3 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 2.21' x L: 2.21' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 122.2
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9977
Total Harmonic Distortion (THDi): 0.049
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
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10
RCR																	
0	106	106	106	106	98	98	98	98	81	81	81	66	66	66	53	53	53
1	97	93	90	86	89	86	83	80	72	70	68	59	58	56	47	46	45
2	89	82	76	71	82	76	70	66	63	60	57	52	50	48	42	40	39
3	81	72	65	60	75	67	61	56	56	52	48	47	43	41	38	35	34
4	75	64	57	51	68	60	53	48	50	45	41	42	38	35	34	31	29
5	69	58	50	44	63	53	46	41	45	40	36	38	34	31	31	28	26
6	63	52	44	38	58	48	41	36	41	36	32	34	30	27	28	25	23
7	59	47	39	34	54	44	37	32	37	32	28	31	27	24	26	23	21
8	55	43	35	30	50	40	33	28	34	29	25	29	25	22	24	21	19
9	51	39	32	27	47	36	30	25	31	26	22	27	23	20	22	19	17
10	48	36	29	24	44	33	27	23	29	24	20	25	21	18	20	18	15

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	5996	5996	5996
5°	5995	5888	5930
10°	5926	5759	5729
15°	5834	5556	5423
20°	5715	5282	5050
25°	5594	4977	4691
30°	5435	4665	4238
35°	5278	4331	3840
40°	5119	3987	3385
45°	4934	3607	2973
50°	4742	3224	2572
55°	4541	2817	2187
60°	4308	2393	1792
65°	4038	1965	1603
70°	3712	1565	1439
75°	3300	1354	1293
80°	2710	1100	1096
85°	1763	682	779

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 4934 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	255.6	2.1
10°-20°	701.6	5.8
20°-30°	985.0	8.1
30°-40°	1073.7	8.8
40°-50°	986.9	8.1
50°-60°	775.0	6.4
60°-70°	504.5	4.2
70°-80°	259.7	2.1
80°-90°	70.2	0.6
90°-100°	73.4	0.6
100°-110°	273.7	2.3
110°-120°	725.9	6.0
120°-130°	1204.0	9.9
130°-140°	1278.9	10.5
140°-150°	1188.6	9.8
150°-160°	955.6	7.9
160°-170°	615.8	5.1
170°-180°	211.9	1.7
0°-30°	1942.1	16.0
0°-40°	3015.8	24.8
0°-60°	4777.7	39.4
0°-90°	5612.0	46.2
90°-120°	1073.0	8.8
90°-150°	4744.6	39.1
90°-180°	6528.0	53.8
0°-180°	12139.9	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2727	2727	2727	2727	2727	
5°	2727	2714	2682	2705	2697	259
15°	2594	2566	2483	2436	2411	731
25°	2354	2275	2112	2011	1974	1083
35°	2028	1903	1686	1530	1476	1270
45°	1658	1493	1234	1059	999	1281
55°	1261	1068	802	654	607	1127
65°	851	651	429	346	338	844
75°	454	281	197	180	178	480
85°	106	54	47	47	47	122
90°	2	19	32	40	44	11
95°	105	52	63	71	69	124
105°	490	538	98	116	122	523
115°	926	954	994	248	132	912
125°	1310	1331	1362	1373	1378	1168
135°	1621	1647	1661	1677	1674	1252
145°	1880	1879	1906	1917	1909	1176
155°	2070	2056	2075	2085	2072	954
165°	2182	2172	2177	2188	2177	616
175°	2232	2220	2224	2235	2219	212
180°	2227	2227	2227	2227	2227	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2726.9	2726.9	2726.9	2726.9	2726.9
2.5°	2739.1	2726.9	2699.6	2724.5	2719.5
5°	2726.9	2714.5	2682.4	2704.6	2697.3
7.5°	2704.6	2689.9	2655.4	2665.0	2652.8
10°	2675.0	2657.8	2608.5	2600.9	2586.2
12.5°	2638.1	2615.8	2549.1	2534.4	2507.2
15°	2593.6	2566.4	2482.6	2435.7	2411.1
17.5°	2541.8	2502.3	2398.6	2344.3	2304.8
20°	2482.6	2433.1	2309.8	2248.2	2193.8
22.5°	2418.5	2361.6	2218.4	2134.6	2097.7
25°	2354.3	2275.2	2112.3	2011.3	1974.2
27.5°	2277.8	2193.8	2013.6	1897.7	1840.9
30°	2196.4	2102.4	1905.0	1779.3	1712.6
32.5°	2117.3	2003.8	1801.6	1653.4	1591.6
35°	2028.5	1902.6	1685.6	1530.1	1475.6
37.5°	1942.2	1806.3	1577.0	1406.5	1345.0
40°	1850.8	1702.9	1463.3	1288.2	1224.0
42.5°	1757.1	1599.2	1349.9	1167.2	1105.7
45°	1658.4	1492.9	1234.0	1058.6	999.4
47.5°	1564.6	1389.5	1122.9	947.5	893.3
50°	1460.9	1285.8	1014.3	843.9	792.3
52.5°	1359.6	1174.5	910.6	747.7	700.9
55°	1260.9	1068.5	801.9	654.0	607.2
57.5°	1159.9	962.4	705.9	567.6	528.1
60°	1056.2	858.8	604.5	478.9	439.3
62.5°	955.1	757.7	518.1	399.8	380.1
65°	851.4	651.4	429.4	345.6	338.0
67.5°	752.7	552.7	345.6	303.4	296.1
70°	649.0	456.6	286.2	261.6	251.6
72.5°	550.4	367.6	239.3	219.7	214.7
75°	454.0	281.2	197.4	180.1	177.8
77.5°	357.9	199.7	155.5	145.5	140.6
80°	268.9	143.2	118.4	108.7	108.7
82.5°	187.5	96.3	81.4	76.4	76.4
85°	106.0	54.2	46.8	46.8	46.8
87.5°	39.5	19.6	19.6	17.2	17.2
90°	1.5	19.3	32.1	40.3	43.5
92.5°	40.3	33.8	38.6	41.9	43.5
95°	104.6	51.5	62.8	71.0	69.3
97.5°	188.4	56.5	82.1	87.1	88.6
100°	285.3	64.5	91.8	104.6	107.9
102.5°	391.4	388.4	95.1	112.7	117.6
105°	489.8	538.2	98.3	115.9	122.4
107.5°	604.2	644.4	101.6	119.2	125.7
110°	713.9	747.5	282.0	120.9	127.2



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	817.0	845.8	818.5	123.9	128.9
115°	926.4	953.8	994.1	248.2	132.2
117.5°	1021.5	1053.7	1081.2	850.6	428.6
120°	1127.8	1152.0	1181.1	1200.4	982.9
122.5°	1218.0	1243.8	1276.2	1285.7	1287.4
125°	1309.9	1330.9	1361.5	1372.8	1377.5
127.5°	1393.6	1416.2	1440.5	1456.6	1458.1
130°	1472.6	1498.5	1516.1	1533.9	1532.4
132.5°	1553.2	1574.2	1591.9	1606.4	1604.9
135°	1620.9	1646.7	1661.1	1677.3	1674.1
137.5°	1691.7	1711.1	1727.3	1743.4	1738.6
140°	1761.0	1774.0	1791.6	1806.1	1798.1
142.5°	1819.1	1830.4	1851.2	1864.1	1856.1
145°	1880.4	1878.7	1906.0	1917.3	1909.3
147.5°	1933.3	1928.6	1956.0	1964.0	1957.7
150°	1985.0	1973.8	1999.6	2009.1	2001.1
152.5°	2028.4	2015.6	2039.8	2049.5	2038.2
155°	2070.4	2056.0	2075.3	2084.9	2072.1
157.5°	2104.2	2091.4	2105.9	2117.2	2104.2
160°	2133.4	2123.5	2133.4	2142.9	2131.6
162.5°	2159.0	2149.4	2157.4	2168.7	2154.2
165°	2181.5	2172.0	2176.7	2188.0	2176.7
167.5°	2199.3	2189.5	2194.5	2205.8	2191.3
170°	2213.8	2204.1	2207.3	2218.7	2204.1
172.5°	2223.5	2213.8	2217.1	2228.4	2213.8
175°	2231.5	2220.2	2223.5	2234.7	2218.7
177.5°	2234.7	2223.5	2225.2	2236.5	2221.9
180°	2226.7	2226.7	2226.7	2226.7	2226.7

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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	12.89	13.69	13.89	14.69	16.02	8.85	9.65	9.85	10.65	11.98
	3H	14.55	15.26	15.55	16.27	17.62	10.02	10.74	11.03	11.75	13.10
	4H	15.14	15.82	16.16	16.83	18.19	10.46	11.13	11.48	12.15	13.50
	6H	15.55	16.17	16.57	17.19	18.56	10.76	11.38	11.79	12.40	13.77
	8H	15.66	16.26	16.70	17.29	18.65	10.84	11.43	11.88	12.47	13.83
	12H	15.72	16.28	16.75	17.31	18.69	10.88	11.44	11.91	12.47	13.85
4H	2H	12.90	13.58	13.93	14.59	15.95	9.43	10.11	10.46	11.13	12.48
	3H	14.71	15.27	15.74	16.31	17.68	10.76	11.32	11.79	12.37	13.73
	4H	15.38	15.90	16.42	16.93	18.32	11.29	11.81	12.33	12.84	14.23
	6H	15.88	16.32	16.93	17.38	18.76	11.69	12.13	12.74	13.19	14.58
	8H	16.04	16.45	17.09	17.50	18.91	11.81	12.22	12.86	13.27	14.67
	12H	16.12	16.49	17.19	17.56	18.97	11.86	12.23	12.93	13.30	14.70
8H	4H	15.34	15.75	16.39	16.81	18.21	11.56	11.97	12.61	13.02	14.42
	6H	15.89	16.23	16.96	17.32	18.72	12.05	12.39	13.12	13.48	14.88
	8H	16.09	16.39	17.17	17.46	18.88	12.23	12.53	13.31	13.60	15.02
	12H	16.21	16.48	17.30	17.55	19.01	12.33	12.59	13.41	13.66	15.12
12H	4H	15.29	15.66	16.36	16.73	18.14	11.56	11.93	12.63	13.00	14.40
	6H	15.86	16.16	16.94	17.24	18.65	12.09	12.39	13.18	13.47	14.89
	8H	16.06	16.33	17.15	17.40	18.86	12.29	12.55	13.37	13.62	15.08