

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: P911668

Luminaire Tested: DFN2DIP-SQ2F0-030D070US850-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P911668
REPORT IS A COMBINATION OF REPORTS P899819 AND P896659
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ2F0-030D070US850-FLLFL
Description: 2 foot, Square Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

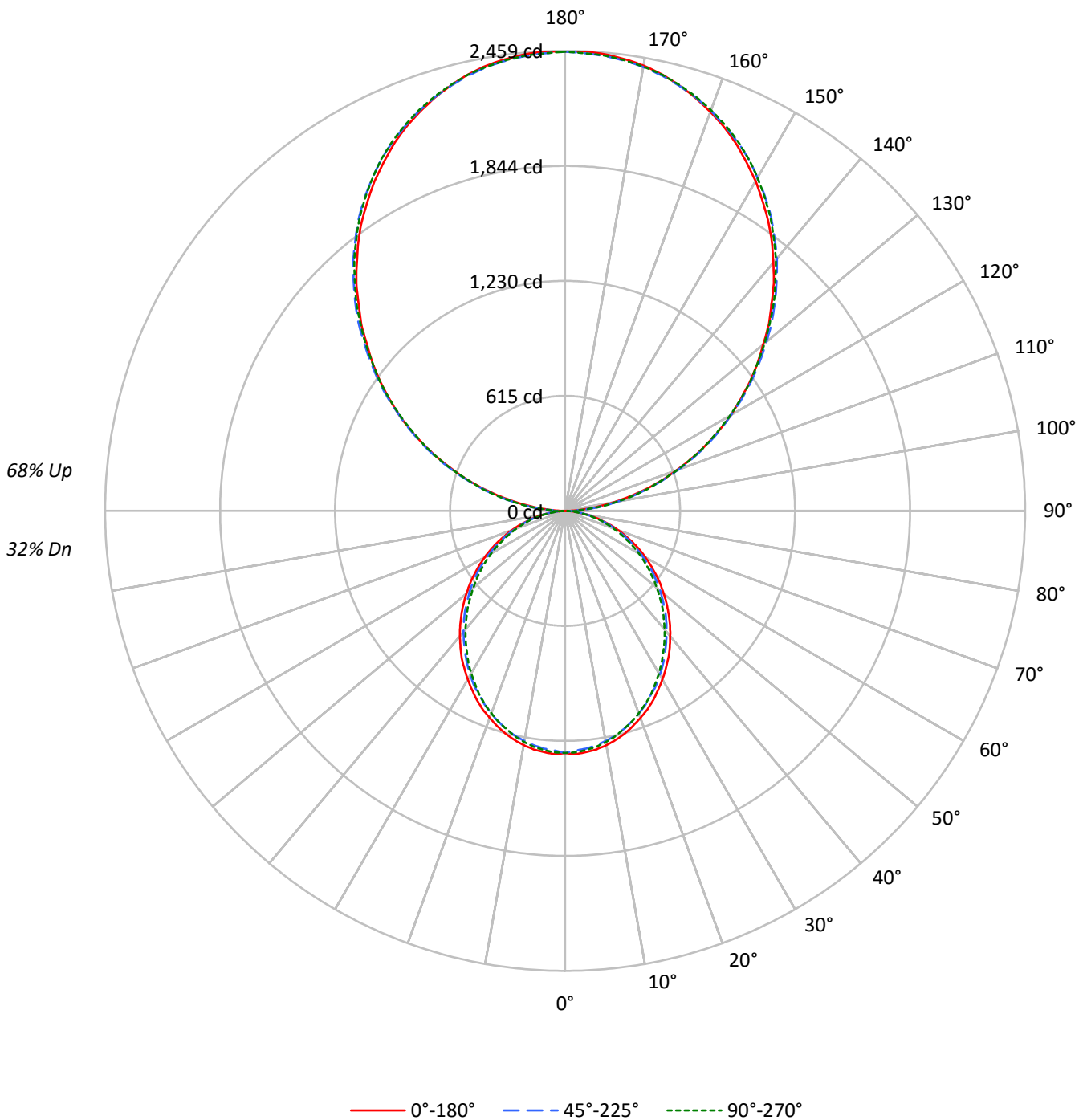
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 10164.0 lumens
Efficiency: N/A
Efficacy: 131.1 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): 77.5
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9963
Total Harmonic Distortion (THDi): 0.065
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	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	82	84	81	78	75	64	62	60	49	48	47	35	34	34	35	34	34	27
2	85	78	72	67	77	71	66	61	56	53	50	43	41	39	31	30	28	31	30	28	23
3	78	69	62	56	70	62	56	51	50	45	42	38	35	33	28	26	24	28	26	24	19
4	71	61	53	47	64	55	48	43	44	39	36	34	31	28	25	23	21	34	31	28	17
5	65	54	46	40	59	49	42	37	39	34	31	30	27	24	22	20	18	34	31	28	14
6	60	48	40	35	54	44	37	32	35	30	27	27	24	21	20	18	16	34	31	28	13
7	55	43	36	30	50	40	33	28	32	27	23	25	21	19	18	16	14	34	31	28	11
8	51	39	32	27	46	36	29	25	29	24	21	23	19	17	17	14	13	34	31	28	10
9	48	36	29	24	43	33	26	22	27	22	18	21	17	15	15	13	11	34	31	28	9
10	44	33	26	21	40	30	24	20	24	20	16	19	16	13	14	12	10	34	31	28	8

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2846	2846	2846
5°	2846	2801	2822
10°	2818	2757	2780
15°	2772	2705	2716
20°	2711	2636	2651
25°	2650	2555	2576
30°	2575	2478	2483
35°	2504	2389	2384
40°	2417	2299	2290
45°	2330	2209	2192
50°	2235	2113	2081
55°	2134	2003	1977
60°	2020	1873	1859
65°	1896	1737	1718
70°	1737	1573	1566
75°	1519	1375	1421
80°	1255	1122	1155
85°	848	709	725

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°
 Vertical Angle: 90°
 Luminance: 3420 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	121.8	1.2
10°-20°	342.8	3.4
20°-30°	503.8	5.0
30°-40°	585.2	5.8
40°-50°	584.4	5.7
50°-60°	509.6	5.0
60°-70°	376.7	3.7
70°-80°	213.1	2.1
80°-90°	63.2	0.6
90°-100°	151.9	1.5
100°-110°	482.7	4.7
110°-120°	826.1	8.1
120°-130°	1086.4	10.7
130°-140°	1219.5	12.0
140°-150°	1195.8	11.8
150°-160°	1003.1	9.9
160°-170°	665.3	6.5
170°-180°	232.5	2.3
0°-30°	968.5	9.5
0°-40°	1553.6	15.3
0°-60°	2647.7	26.0
0°-90°	3300.7	32.5
90°-120°	1460.7	14.4
90°-150°	4962.4	48.8
90°-180°	6863.0	67.5
0°-180°	10164.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1294	1294	1294	1294	1294	
5°	1294	1290	1276	1286	1283	123
15°	1232	1225	1209	1214	1208	347
25°	1115	1106	1084	1087	1084	513
35°	962	950	930	922	916	601
45°	783	774	756	742	737	604
55°	593	585	570	555	549	530
65°	400	392	380	368	362	395
75°	209	207	200	193	196	223
85°	51	50	49	45	44	57
90°	2	27	72	68	70	10
95°	108	129	132	132	129	120
105°	446	452	456	460	460	470
115°	829	841	837	835	829	820
125°	1206	1224	1218	1212	1210	1077
135°	1560	1582	1587	1585	1579	1205
145°	1893	1908	1920	1922	1914	1183
155°	2165	2171	2178	2188	2181	997
165°	2355	2353	2353	2368	2357	664
175°	2451	2445	2440	2455	2443	233
180°	2455	2455	2455	2455	2455	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1294.5	1294.5	1294.5	1294.5	1294.5
2.5°	1302.1	1295.9	1282.1	1294.5	1292.2
5°	1294.5	1289.7	1275.9	1285.9	1283.4
7.5°	1285.9	1278.5	1264.7	1274.8	1272.2
10°	1272.2	1263.5	1248.6	1258.5	1254.8
12.5°	1253.5	1246.1	1231.2	1237.3	1234.9
15°	1232.3	1225.0	1208.7	1213.7	1207.5
17.5°	1206.1	1198.8	1182.5	1188.7	1182.5
20°	1177.5	1170.1	1152.7	1156.4	1151.5
22.5°	1149.0	1137.8	1121.5	1121.5	1119.0
25°	1115.3	1105.5	1084.3	1086.7	1084.3
27.5°	1077.9	1069.2	1053.1	1049.4	1043.2
30°	1040.7	1030.7	1012.1	1008.3	1003.3
32.5°	1000.9	993.4	973.5	965.9	960.9
35°	962.3	949.9	929.9	922.4	916.1
37.5°	918.7	907.5	887.5	878.8	872.6
40°	873.9	863.9	843.9	832.9	827.9
42.5°	830.3	820.3	800.5	787.9	780.5
45°	783.1	774.3	755.6	741.9	736.9
47.5°	736.9	728.3	708.3	694.6	687.1
50°	688.4	682.1	664.7	647.3	641.1
52.5°	641.1	632.4	616.3	602.5	593.8
55°	592.6	585.1	570.1	555.3	549.1
57.5°	544.0	537.8	521.6	506.6	501.6
60°	495.4	490.5	473.1	459.3	455.7
62.5°	448.1	439.4	427.0	414.5	409.6
65°	399.7	392.1	379.7	368.5	362.3
67.5°	349.9	343.6	332.4	323.7	318.7
70°	303.8	298.8	287.6	278.8	273.9
72.5°	256.5	251.4	245.2	236.5	232.9
75°	209.0	206.7	200.4	193.0	195.5
77.5°	166.8	161.8	159.3	155.6	151.9
80°	124.5	123.2	120.7	117.0	114.6
82.5°	84.6	84.6	83.5	78.4	78.4
85°	51.0	49.8	48.6	44.8	43.6
87.5°	22.4	20.0	17.4	13.8	12.4
90°	2.2	26.6	72.5	68.1	70.3
92.5°	45.9	62.2	64.4	66.7	66.7
95°	108.0	128.8	132.5	132.5	128.8
97.5°	179.9	199.1	207.3	207.3	207.3
100°	262.7	279.8	285.7	285.7	283.5
102.5°	350.1	362.6	370.8	373.1	370.8
105°	445.6	451.5	455.9	459.7	459.7
107.5°	540.3	549.2	549.2	550.7	540.3
110°	632.1	644.0	644.0	644.0	638.0



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	731.3	743.9	741.7	735.7	731.3
115°	829.0	840.8	837.2	835.0	829.0
117.5°	925.9	942.2	931.9	925.9	920.0
120°	1023.6	1039.9	1023.6	1023.6	1017.0
122.5°	1112.4	1133.2	1122.9	1116.9	1112.4
125°	1205.7	1224.2	1218.3	1211.7	1209.5
127.5°	1296.8	1319.7	1311.6	1302.7	1296.8
130°	1381.9	1408.5	1404.9	1400.4	1392.2
132.5°	1477.4	1498.1	1499.6	1489.3	1483.3
135°	1559.6	1582.4	1587.0	1584.7	1578.8
137.5°	1651.3	1669.8	1673.5	1672.0	1663.2
140°	1732.0	1750.6	1760.9	1760.9	1752.8
142.5°	1814.9	1833.4	1839.3	1841.5	1833.4
145°	1893.4	1908.1	1920.0	1922.2	1914.1
147.5°	1963.7	1982.2	1991.1	1994.8	1986.7
150°	2036.2	2048.8	2057.0	2063.6	2057.0
152.5°	2100.6	2113.2	2123.5	2131.7	2123.5
155°	2165.0	2170.9	2177.6	2187.9	2181.3
157.5°	2220.6	2225.0	2228.6	2243.5	2233.1
160°	2270.1	2274.6	2276.8	2289.3	2280.4
162.5°	2316.0	2316.0	2318.3	2332.2	2321.9
165°	2355.2	2353.0	2353.0	2367.8	2357.4
167.5°	2390.8	2384.1	2384.1	2398.9	2388.6
170°	2417.4	2411.5	2409.3	2424.1	2411.5
172.5°	2435.9	2429.9	2427.7	2442.6	2429.9
175°	2450.7	2444.8	2440.4	2455.1	2442.6
177.5°	2458.9	2452.9	2448.5	2461.1	2448.5
180°	2455.1	2455.1	2455.1	2455.1	2455.1



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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	8.90	9.62	10.00	10.72	12.22	8.46	9.18	9.55	10.27	11.77
	3H	10.53	11.18	11.64	12.28	13.80	10.04	10.69	11.14	11.79	13.31
	4H	11.10	11.72	12.21	12.82	14.34	10.61	11.22	11.72	12.32	13.85
	6H	11.48	12.04	12.60	13.15	14.68	10.98	11.54	12.10	12.65	14.19
	8H	11.57	12.11	12.70	13.23	14.76	11.07	11.61	12.20	12.73	14.26
	12H	11.61	12.12	12.74	13.23	14.79	11.10	11.61	12.23	12.72	14.28
4H	2H	9.34	9.95	10.46	11.05	12.58	8.98	9.59	10.10	10.70	12.22
	3H	11.17	11.68	12.29	12.81	14.34	10.76	11.27	11.88	12.40	13.93
	4H	11.86	12.33	12.99	13.45	15.00	11.43	11.91	12.56	13.02	14.58
	6H	12.35	12.75	13.48	13.89	15.44	11.91	12.32	13.05	13.46	15.01
	8H	12.48	12.86	13.62	13.99	15.56	12.05	12.42	13.18	13.56	15.12
	12H	12.54	12.88	13.69	14.03	15.60	12.09	12.44	13.25	13.58	15.15
8H	4H	12.03	12.41	13.17	13.54	15.11	11.65	12.03	12.79	13.16	14.73
	6H	12.63	12.95	13.79	14.12	15.68	12.25	12.56	13.41	13.74	15.30
	8H	12.84	13.11	14.00	14.27	15.85	12.45	12.72	13.61	13.87	15.45
	12H	12.95	13.19	14.12	14.34	15.96	12.54	12.78	13.71	13.93	15.55
12H	4H	12.01	12.35	13.16	13.49	15.06	11.64	11.98	12.79	13.13	14.69
	6H	12.66	12.93	13.82	14.08	15.67	12.28	12.56	13.45	13.71	15.29
	8H	12.88	13.12	14.04	14.27	15.88	12.50	12.74	13.66	13.89	15.50