

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: P911669

Luminaire Tested: DFN2DIP-SQ2F0-030D070US850-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P911669
REPORT IS A COMBINATION OF REPORTS P901339 AND P898215
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ2F0-030D070US850-FLLONL
Description: 2 foot, Square Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

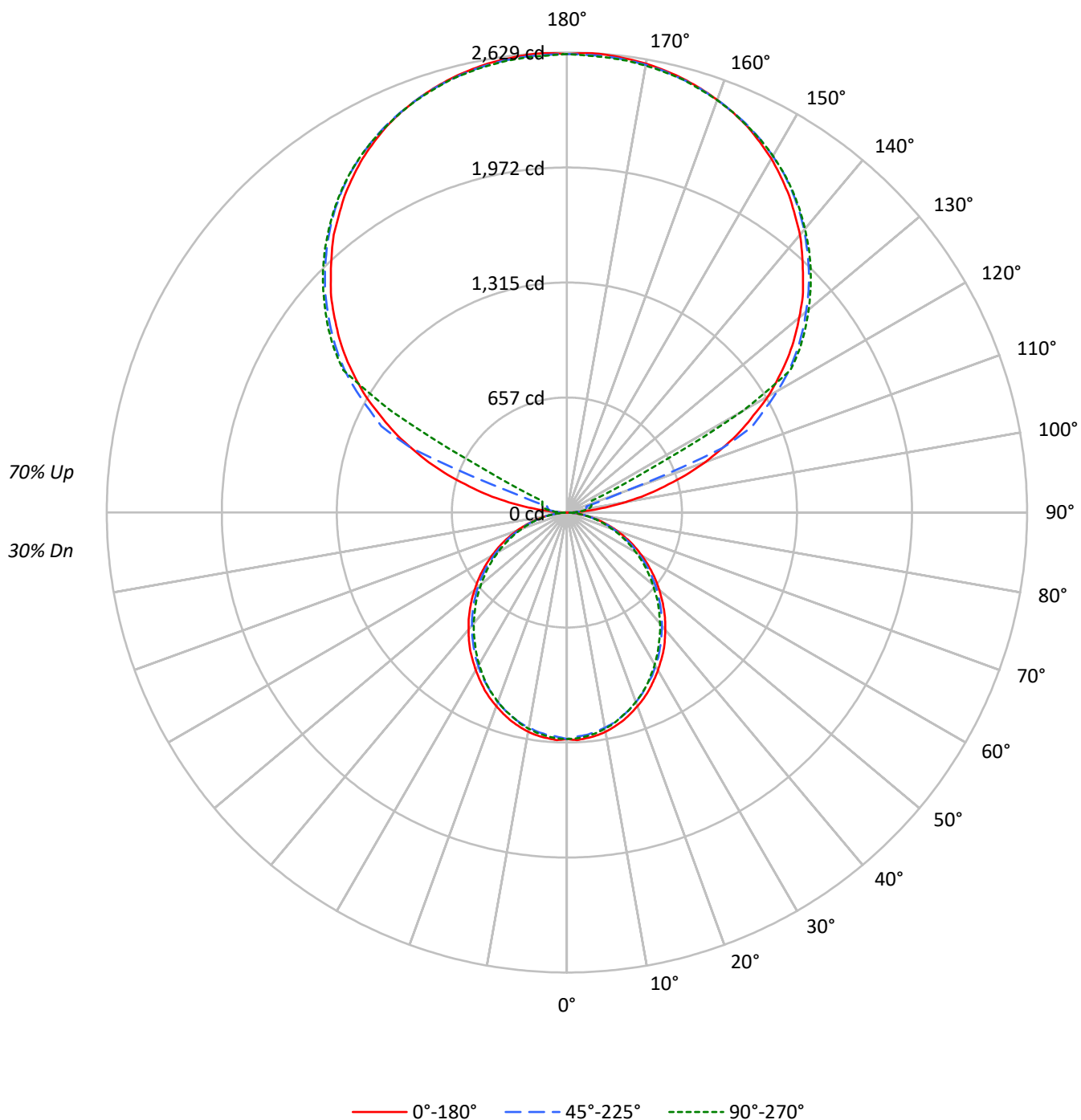
Lumens per Lamp: N/A
Luminaire Lumens: 10979.1 lumens
Efficiency: N/A
Efficacy: 141.7 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 2.21' x L: 2.21' x H: 0.1')
CIE Type: Semi-Indirect

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					0
RW	70	50	30	10		70	50	30	10		50	30	10		50	30	10		50	30	10
RCR																					
0	102	102	102	102		92	92	92	92		72	72	72		54	54	54		38	38	38
1	93	89	85	82		84	80	77	74		63	61	59		48	46	45		33	33	32
2	85	78	72	67		76	70	65	61		55	52	49		42	40	38		29	28	27
3	77	68	61	56		69	62	56	51		49	45	41		37	34	32		26	24	23
4	71	60	53	47		63	54	48	43		43	39	35		33	30	27		23	21	20
5	65	54	46	40		58	48	42	37		39	34	30		29	26	23		21	19	17
6	60	48	40	35		53	43	37	32		35	30	26		27	23	20		19	17	15
7	55	43	35	30		49	39	32	28		31	26	23		24	21	18		17	15	13
8	51	39	32	26		46	35	29	24		28	24	20		22	19	16		16	14	12
9	47	36	28	23		42	32	26	22		26	21	18		20	17	14		15	12	11
10	44	32	26	21		40	30	23	19		24	19	16		19	15	13		14	11	10

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: 2486 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	121.8	1.1
10°-20°	342.8	3.1
20°-30°	503.8	4.6
30°-40°	585.2	5.3
40°-50°	584.4	5.3
50°-60°	509.6	4.6
60°-70°	376.7	3.4
70°-80°	213.1	1.9
80°-90°	60.9	0.6
90°-100°	86.4	0.8
100°-110°	322.1	2.9
110°-120°	854.1	7.8
120°-130°	1416.6	12.9
130°-140°	1504.8	13.7
140°-150°	1398.5	12.7
150°-160°	1124.4	10.2
160°-170°	724.5	6.6
170°-180°	249.4	2.3
0°-30°	968.5	8.8
0°-40°	1553.6	14.2
0°-60°	2647.7	24.1
0°-90°	3298.4	30.0
90°-120°	1262.6	11.5
90°-150°	5582.5	50.8
90°-180°	7681.0	70.0
0°-180°	10979.1	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	23	38	48	51	10
95°	123	61	74	84	82	146
105°	576	633	116	136	144	616
115°	1090	1122	1170	292	156	1073
125°	1541	1566	1602	1615	1621	1375
135°	1907	1938	1954	1974	1970	1473
145°	2212	2210	2243	2256	2246	1384
155°	2436	2419	2442	2453	2438	1123
165°	2567	2556	2561	2574	2561	725
175°	2626	2612	2616	2629	2610	250
180°	2620	2620	2620	2620	2620	

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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°	1.8	22.7	37.8	47.5	51.1
92.5°	47.5	39.8	45.5	49.4	51.1
95°	123.1	60.6	73.9	83.5	81.5
97.5°	221.7	66.4	96.6	102.5	104.2
100°	335.7	75.9	108.0	123.1	127.0
102.5°	460.6	457.0	111.9	132.6	138.4
105°	576.3	633.2	115.7	136.4	144.1
107.5°	710.9	758.2	119.6	140.3	147.9
110°	840.0	879.5	331.8	142.3	149.7

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	961.3	995.2	963.1	145.8	151.7
115°	1090.0	1122.2	1169.7	292.0	155.6
117.5°	1201.9	1239.8	1272.1	1000.9	504.3
120°	1327.0	1355.4	1389.7	1412.4	1156.5
122.5°	1433.0	1463.4	1501.6	1512.8	1514.8
125°	1541.2	1565.9	1602.0	1615.3	1620.8
127.5°	1639.8	1666.3	1694.9	1713.8	1715.6
130°	1732.7	1763.1	1783.8	1804.8	1803.0
132.5°	1827.5	1852.3	1873.0	1890.1	1888.3
135°	1907.1	1937.5	1954.5	1973.6	1969.8
137.5°	1990.4	2013.3	2032.4	2051.3	2045.7
140°	2071.9	2087.2	2108.0	2125.1	2115.6
142.5°	2140.4	2153.7	2178.2	2193.3	2183.8
145°	2212.5	2210.5	2242.6	2255.9	2246.5
147.5°	2274.8	2269.2	2301.4	2310.8	2303.4
150°	2335.6	2322.4	2352.7	2363.9	2354.5
152.5°	2386.7	2371.6	2400.0	2411.4	2398.2
155°	2436.0	2419.1	2441.8	2453.1	2438.0
157.5°	2475.8	2460.8	2477.8	2491.1	2475.8
160°	2510.1	2498.6	2510.1	2521.3	2508.0
162.5°	2540.3	2529.0	2538.4	2551.7	2534.6
165°	2566.8	2555.6	2561.1	2574.4	2561.1
167.5°	2587.7	2576.2	2582.1	2595.4	2578.3
170°	2604.8	2593.4	2597.2	2610.5	2593.4
172.5°	2616.1	2604.8	2608.7	2621.9	2604.8
175°	2625.6	2612.2	2616.1	2629.3	2610.5
177.5°	2629.3	2616.1	2618.1	2631.4	2614.2
180°	2619.9	2619.9	2619.9	2619.9	2619.9

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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	8.58	9.29	9.70	10.40	11.93	8.14	8.85	9.25	9.95	11.48
	3H	10.21	10.85	11.33	11.96	13.51	9.72	10.36	10.84	11.47	13.02
	4H	10.78	11.38	11.91	12.50	14.05	10.29	10.89	11.42	12.00	13.56
	6H	11.16	11.71	12.30	12.83	14.39	10.66	11.21	11.80	12.33	13.89
	8H	11.25	11.78	12.39	12.91	14.47	10.75	11.27	11.89	12.41	13.97
	12H	11.29	11.79	12.43	12.91	14.49	10.78	11.28	11.92	12.40	13.98
4H	2H	9.01	9.62	10.15	10.73	12.28	8.66	9.26	9.80	10.38	11.93
	3H	10.84	11.35	11.99	12.49	14.05	10.44	10.94	11.58	12.08	13.64
	4H	11.54	12.00	12.68	13.13	14.71	11.11	11.57	12.26	12.70	14.29
	6H	12.02	12.42	13.18	13.57	15.15	11.59	11.99	12.74	13.14	14.72
	8H	12.16	12.53	13.31	13.67	15.27	11.72	12.09	12.87	13.24	14.83
	12H	12.22	12.55	13.38	13.71	15.30	11.77	12.10	12.94	13.26	14.86
8H	4H	11.71	12.08	12.86	13.22	14.81	11.33	11.70	12.48	12.84	14.44
	6H	12.31	12.61	13.48	13.80	15.39	11.92	12.23	13.10	13.42	15.00
	8H	12.51	12.78	13.69	13.95	15.56	12.12	12.39	13.30	13.55	15.16
	12H	12.63	12.86	13.81	14.02	15.66	12.22	12.45	13.40	13.61	15.26
12H	4H	11.68	12.02	12.85	13.18	14.77	11.31	11.65	12.48	12.81	14.40
	6H	12.33	12.60	13.51	13.76	15.37	11.96	12.23	13.14	13.39	15.00
	8H	12.55	12.79	13.73	13.95	15.59	12.17	12.40	13.35	13.57	15.21

END OF REPORT