

Scaled data based on original data using
LM-79-08 Approved Method: Electrical and Photometric Measurements of Solid-State
Lighting Products

Test Report Prepared for

Cooper Lighting Solutions

(formerly Eaton)

Brand: FAIL-SAFE

Report Number: P

Luminaire Tested: **4APN-20L850-X-UNV-ASY**

Issue Date: 06/06/2024



Test Information

Test Method: LM-79-08
Report Number: P
Test Lab: INNOVATION CENTER(G2)
Issue Date: 06/06/2024
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: FAIL-SAFE
Catalog Number: 4APN-20L850-X-UNV-ASY
Description: ArcMed Patient Recessed 4 FT x6 IN Fixture Ambient Light w/
ASYMMETRIC Lens
Light Source: 5000K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

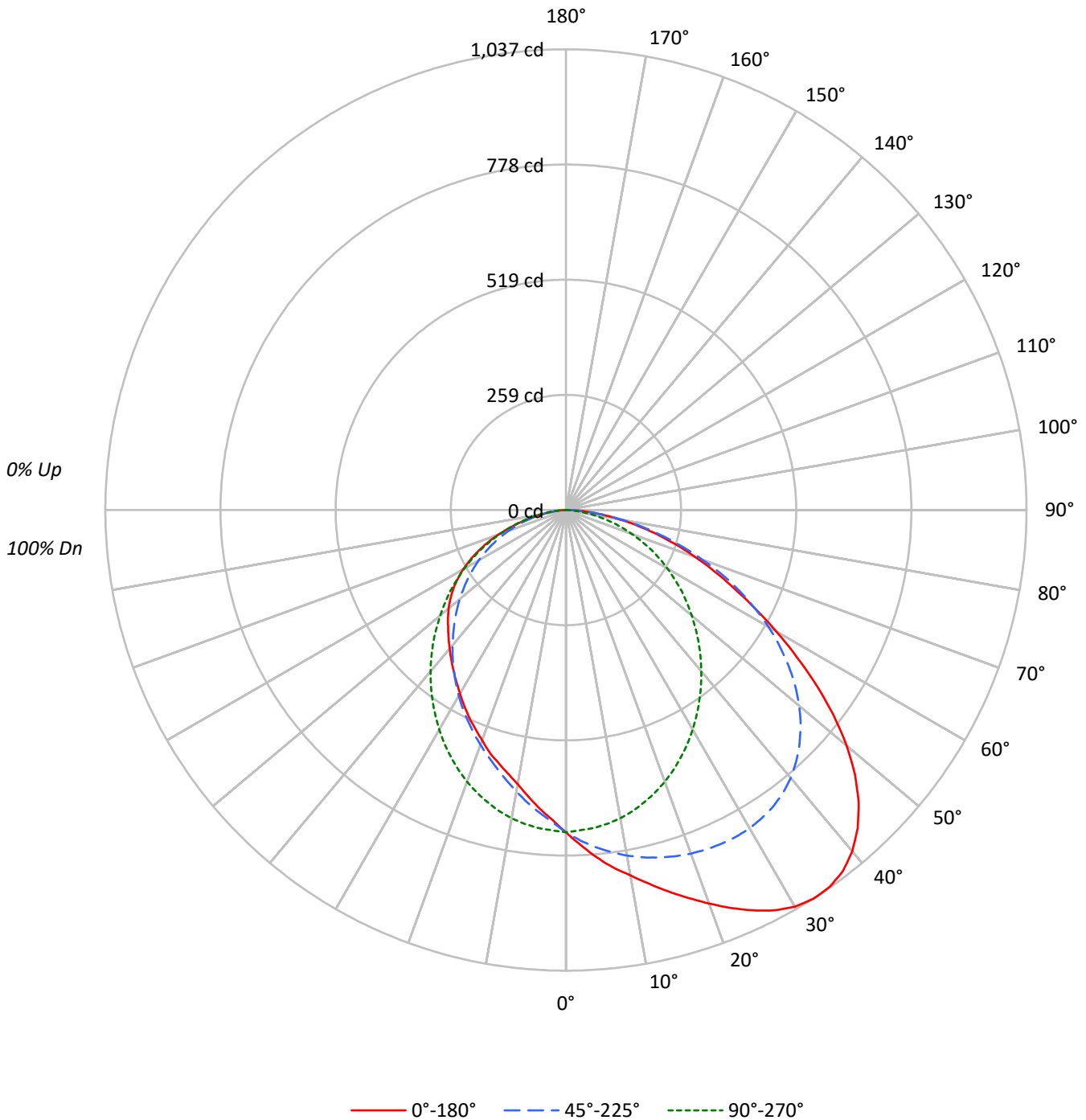
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2247.2 lumens
Efficiency: N/A
Efficacy: 94.4 lumens/watt
Spacing Criteria (0/90/45): 1.53 / 1.18 / 1.46
Luminous Opening: Rectangular (W 0.29' x L: 3.83' x H: 0')
CIE Type: Direct

Input Watts (W): 23.8
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 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	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	102	102	102	100
1	109	104	100	96	106	102	98	94	97	94	91	93	91	88	90	88	86	86	86	86	84
2	99	90	83	78	96	88	82	77	85	80	75	82	77	73	79	75	72	72	72	72	69
3	90	79	71	64	87	78	70	64	75	68	63	72	66	61	69	64	60	60	60	60	58
4	82	70	61	54	80	69	60	54	66	59	53	64	57	52	62	56	52	52	52	52	49
5	75	62	53	46	73	61	53	46	59	51	46	57	50	45	55	49	45	45	45	45	43
6	69	56	47	40	68	55	46	40	53	46	40	51	45	39	50	44	39	39	39	39	37
7	64	51	42	36	63	50	41	35	48	41	35	47	40	35	45	39	35	35	35	35	33
8	60	46	37	32	58	45	37	31	44	37	31	43	36	31	42	35	31	31	31	31	29
9	56	42	34	28	54	42	34	28	40	33	28	39	33	28	38	32	28	28	28	28	26
10	52	39	31	26	51	38	31	26	37	30	25	36	30	25	36	30	25	25	25	25	23

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	6985	6985	6985
5°	7580	6942	6524
10°	8165	6888	6122
15°	8857	6788	5870
20°	9657	6670	5652
25°	10564	6513	5477
30°	11460	6341	5300
35°	12171	6154	5187
40°	12603	5958	5119
45°	12692	5752	5107
50°	12358	5534	5163
55°	11571	5336	5195
60°	10519	5093	5145
65°	9538	4816	4946
70°	8729	4464	4540
75°	7919	4014	3906
80°	6925	3354	3010
85°	5832	2441	2242



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	68.9	3.1
10°-20°	200.4	8.9
20°-30°	313.9	14.0
30°-40°	393.6	17.5
40°-50°	419.0	18.6
50°-60°	378.3	16.8
60°-70°	280.0	12.5
70°-80°	153.6	6.8
80°-90°	39.4	1.8
90°-100°	0.0	0.0
100°-110°	0.0	0.0
110°-120°	0.0	0.0
120°-130°	0.0	0.0
130°-140°	0.0	0.0
140°-150°	0.0	0.0
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	583.3	26.0
0°-40°	976.8	43.5
0°-60°	1774.1	78.9
0°-90°	2247.2	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2247.2	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	726	726	726	726	726	
5°	784	761	718	684	675	76
15°	889	810	681	602	589	253
25°	994	829	613	523	516	460
35°	1036	814	524	440	441	646
45°	932	744	422	354	375	715
55°	689	612	318	269	310	615
65°	419	431	211	182	217	418
75°	213	226	108	93	105	226
85°	53	52	22	21	20	62
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
0°	725.5	725.5	725.5	725.5	725.5	725.5	725.5	725.5	725.5	725.5	725.5
2.5°	754.7	753.2	751.4	750.9	748.2	744.6	741.3	741.3	737.4	728.2	721.6
5°	784.3	781.9	777.4	773.8	768.1	761.3	754.4	750.3	741.0	727.0	718.3
7.5°	811.4	808.4	802.7	795.9	786.6	776.5	765.2	756.2	742.2	723.4	712.4
10°	835.2	832.6	825.7	817.4	804.2	789.9	773.2	759.8	740.7	717.5	704.6
12.5°	861.5	858.8	849.3	837.9	820.0	800.9	778.9	760.4	736.8	708.8	694.2
15°	888.6	885.0	874.3	859.1	835.2	809.6	782.5	758.6	730.6	698.4	681.1
17.5°	915.5	911.9	898.5	879.1	849.3	817.4	784.0	754.4	721.6	685.5	666.8
20°	942.6	939.0	922.0	897.6	861.5	823.0	783.7	748.2	710.9	670.9	651.0
22.5°	969.7	965.6	945.0	915.2	871.6	826.9	780.4	739.5	697.5	654.2	632.8
25°	994.5	990.3	967.6	932.5	882.4	828.7	774.7	727.6	682.6	635.8	613.1
27.5°	1015.9	1010.9	987.3	948.6	891.6	829.3	767.3	714.2	665.3	615.8	592.8
30°	1030.9	1026.4	1001.3	959.9	897.0	827.2	757.7	698.4	645.3	594.3	570.4
32.5°	1037.4	1033.5	1008.8	965.3	897.9	821.8	746.1	680.8	624.4	571.6	547.5
35°	1035.6	1031.8	1008.2	964.4	895.2	814.1	731.5	660.8	602.1	548.1	523.6
37.5°	1024.3	1019.8	998.4	956.3	887.4	802.7	714.8	639.0	577.9	523.9	499.2
40°	1002.8	998.4	979.9	941.1	874.3	787.5	695.7	615.8	553.2	498.6	474.1
42.5°	972.1	967.3	952.7	917.2	855.5	767.6	673.9	591.0	526.9	474.1	448.5
45°	932.2	927.4	917.5	887.4	831.1	744.0	649.2	564.2	499.5	446.4	422.5
47.5°	882.7	878.5	873.7	850.5	800.9	716.9	621.4	535.6	470.8	420.5	396.0
50°	825.1	820.9	822.4	806.6	766.1	685.5	591.0	505.4	441.3	391.5	369.5
52.5°	759.8	756.5	763.7	756.8	725.5	650.7	558.5	474.4	411.2	364.1	342.9
55°	689.4	685.8	699.6	701.7	680.2	612.2	521.5	442.2	380.8	337.3	317.9
57.5°	617.0	614.0	631.6	641.4	630.7	570.7	484.3	409.1	349.5	309.2	289.8
60°	546.3	543.9	562.4	578.5	577.3	526.9	445.5	373.3	318.2	280.9	264.5
62.5°	479.8	477.1	495.6	514.7	521.5	480.1	407.0	338.2	286.9	252.6	238.0
65°	418.7	416.0	431.8	451.5	464.0	431.2	365.6	301.8	255.3	223.9	211.4
67.5°	362.6	362.6	372.4	390.6	405.8	381.1	323.2	267.2	222.8	197.4	184.9
70°	310.1	309.8	317.0	329.8	347.4	327.4	280.3	230.8	192.0	169.7	158.6
72.5°	260.3	262.4	265.1	274.9	293.4	276.1	237.7	195.0	161.9	142.2	133.0
75°	212.9	212.6	216.5	225.1	238.6	225.7	195.0	160.1	132.1	116.0	107.9
77.5°	167.6	167.3	170.6	175.6	187.0	176.8	153.9	127.9	102.9	89.5	83.8
80°	124.9	124.9	127.9	130.6	139.0	130.9	114.8	95.7	75.4	65.0	60.5
82.5°	86.8	88.6	87.4	90.9	95.7	88.9	78.7	65.6	50.1	42.9	40.0
85°	52.8	54.3	52.8	55.8	57.8	51.9	46.8	39.1	28.9	24.2	22.1
87.5°	27.1	26.8	26.5	28.0	28.6	25.0	22.1	18.8	12.8	9.8	8.3
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



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CANDELA DISTRIBUTION (continued):

	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	725.5	725.5	725.5	725.5	725.5	725.5	725.5	725.5	725.5	725.5
2.5°	717.8	719.5	716.9	707.0	703.1	699.0	697.2	695.4	698.7	697.8
5°	711.8	709.7	702.8	690.3	683.8	676.9	673.6	671.5	676.0	675.1
7.5°	703.7	697.8	687.6	672.4	664.1	654.8	650.4	647.7	650.7	650.1
10°	693.6	683.8	671.2	653.0	643.2	633.1	628.0	624.1	626.5	626.2
12.5°	680.8	668.0	652.7	632.2	622.0	611.6	607.1	604.4	607.4	606.5
15°	666.5	651.0	633.4	612.5	601.5	591.9	588.6	586.5	588.9	588.9
17.5°	650.7	632.5	613.1	591.9	581.5	574.0	570.7	569.3	570.4	572.2
20°	633.1	612.8	591.9	571.3	562.4	554.6	551.7	550.2	552.9	551.7
22.5°	613.7	592.2	570.4	551.1	543.0	535.3	532.3	531.4	534.4	533.2
25°	593.1	569.8	548.4	530.8	522.7	516.2	513.5	512.6	514.1	515.6
27.5°	573.7	547.5	526.3	510.5	503.4	497.1	494.7	493.2	494.4	496.2
30°	550.2	524.8	503.9	489.3	482.5	476.5	474.7	473.5	475.3	476.8
32.5°	528.1	502.5	481.6	467.3	461.3	455.6	455.3	454.7	456.8	458.6
35°	504.2	479.2	458.9	445.5	439.8	435.1	436.0	436.9	439.2	441.3
37.5°	480.1	455.6	436.3	424.0	418.7	414.8	417.5	418.7	421.9	424.0
40°	455.6	431.2	413.3	402.3	396.9	395.1	399.0	401.7	405.5	407.3
42.5°	430.6	407.9	390.0	379.9	375.4	375.4	380.5	384.7	389.1	390.9
45°	405.5	383.5	366.5	357.2	354.0	356.3	362.3	367.7	373.3	375.1
47.5°	380.2	358.7	343.2	334.9	333.1	336.7	344.1	351.3	357.8	360.2
50°	354.9	335.5	320.0	312.2	312.2	316.7	326.2	335.2	342.3	344.7
52.5°	329.5	311.0	295.2	289.5	290.7	297.0	308.0	317.3	325.3	327.7
55°	303.9	285.7	272.0	267.2	269.3	277.0	288.4	299.1	306.8	309.5
57.5°	278.5	261.2	248.7	244.8	247.8	256.4	269.6	278.8	286.9	289.2
60°	252.9	235.3	225.4	222.5	226.3	235.3	248.7	257.3	264.8	267.2
62.5°	227.5	211.1	202.5	199.8	204.3	213.8	226.9	234.7	240.3	242.7
65°	201.9	187.3	179.2	177.4	182.2	191.4	204.0	210.5	214.7	217.1
67.5°	176.5	164.0	156.6	155.1	160.1	168.5	180.1	183.7	187.6	189.9
70°	151.5	140.2	133.9	133.0	137.5	145.5	155.4	157.1	159.2	161.3
72.5°	126.7	117.8	111.5	111.2	115.4	122.0	130.0	130.3	130.9	133.0
75°	102.9	94.8	90.1	90.9	93.3	98.7	105.0	103.2	103.5	105.0
77.5°	79.9	73.4	70.1	70.7	72.5	76.3	80.5	78.4	77.2	78.7
80°	57.6	51.9	50.7	51.0	52.2	54.9	57.3	55.5	53.1	54.3
82.5°	37.9	34.3	33.7	34.0	34.9	36.4	37.0	34.3	33.7	34.6
85°	20.9	19.4	19.4	20.3	20.6	20.9	20.9	19.4	19.7	20.3
87.5°	8.3	8.3	9.2	10.1	9.5	8.3	7.2	4.8	4.8	5.7
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)