

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-20L835-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-20L835-X-UNV-ASY
Description: ArcMed Patient Recessed 4 FT x6 IN Fixture Ambient Light w/
ASYMMETRIC Lens
Light Source: 3500K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

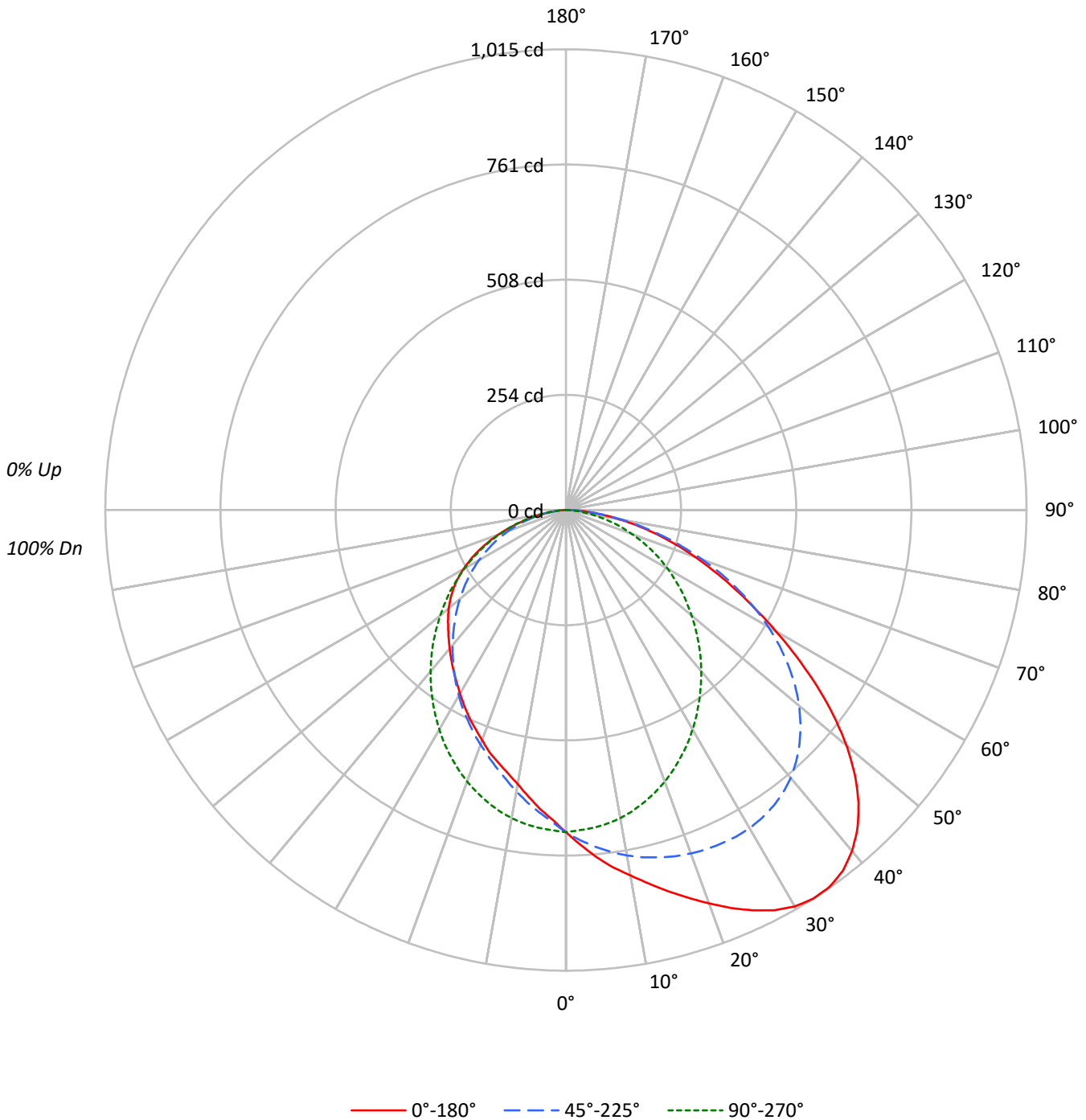
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2198.6 lumens
Efficiency: N/A
Efficacy: 92.4 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°	6833	6833	6833
5°	7415	6792	6383
10°	7989	6739	5990
15°	8665	6642	5743
20°	9448	6525	5529
25°	10336	6371	5358
30°	11212	6204	5186
35°	11908	6021	5075
40°	12330	5830	5008
45°	12417	5628	4997
50°	12091	5414	5052
55°	11321	5220	5082
60°	10292	4983	5033
65°	9331	4711	4839
70°	8540	4369	4442
75°	7748	3928	3820
80°	6775	3282	2944
85°	5700	2386	2187



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	67.4	3.1
10°-20°	196.1	8.9
20°-30°	307.2	14.0
30°-40°	385.1	17.5
40°-50°	409.9	18.6
50°-60°	370.1	16.8
60°-70°	274.0	12.5
70°-80°	150.3	6.8
80°-90°	38.6	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°	570.6	26.0
0°-40°	955.7	43.5
0°-60°	1735.7	78.9
0°-90°	2198.6	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2198.6	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	710	710	710	710	710	
5°	767	745	703	669	660	75
15°	869	792	666	588	576	248
25°	973	811	600	511	504	450
35°	1013	796	512	430	432	632
45°	912	728	413	346	367	699
55°	674	599	311	263	303	602
65°	410	422	207	178	212	409
75°	208	221	106	91	103	221
85°	52	51	22	20	20	61
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°	709.8	709.8	709.8	709.8	709.8	709.8	709.8	709.8	709.8	709.8	709.8
2.5°	738.4	737.0	735.2	734.6	732.0	728.5	725.3	725.3	721.5	712.4	706.0
5°	767.3	765.0	760.6	757.1	751.5	744.8	738.1	734.0	725.0	711.3	702.8
7.5°	793.8	790.9	785.4	778.7	769.6	759.7	748.6	739.9	726.2	707.8	697.0
10°	817.2	814.6	807.9	799.7	786.8	772.8	756.5	743.4	724.7	701.9	689.4
12.5°	842.9	840.2	830.9	819.8	802.3	783.6	762.0	744.0	720.9	693.5	679.2
15°	869.4	865.9	855.4	840.5	817.2	792.1	765.5	742.2	714.8	683.3	666.4
17.5°	895.7	892.2	879.0	860.1	830.9	799.7	767.0	738.1	706.0	670.7	652.3
20°	922.2	918.7	902.1	878.2	842.9	805.2	766.7	732.0	695.5	656.4	636.9
22.5°	948.8	944.7	924.6	895.4	852.8	809.0	763.5	723.5	682.4	640.1	619.1
25°	973.0	968.9	946.7	912.3	863.3	810.8	758.0	711.9	667.8	622.0	599.8
27.5°	994.0	989.0	966.0	928.1	872.3	811.4	750.7	698.7	650.9	602.5	580.0
30°	1008.6	1004.2	979.7	939.1	877.6	809.3	741.3	683.3	631.3	581.5	558.1
32.5°	1015.0	1011.2	987.0	944.4	878.5	804.1	730.0	666.1	610.9	559.3	535.7
35°	1013.2	1009.4	986.4	943.5	875.8	796.5	715.7	646.5	589.0	536.2	512.3
37.5°	1002.2	997.8	976.8	935.6	868.2	785.4	699.3	625.2	565.4	512.6	488.4
40°	981.1	976.8	958.7	920.8	855.4	770.5	680.6	602.5	541.2	487.8	463.9
42.5°	951.1	946.4	932.1	897.4	837.0	751.0	659.4	578.2	515.5	463.9	438.8
45°	912.0	907.3	897.7	868.2	813.1	727.9	635.1	552.0	488.7	436.7	413.4
47.5°	863.6	859.5	854.8	832.1	783.6	701.4	608.0	524.0	460.7	411.4	387.4
50°	807.3	803.2	804.6	789.2	749.5	670.7	578.2	494.5	431.8	383.1	361.5
52.5°	743.4	740.2	747.2	740.5	709.8	636.6	546.4	464.2	402.3	356.2	335.5
55°	674.5	671.0	684.4	686.5	665.5	599.0	510.3	432.7	372.6	330.0	311.0
57.5°	603.6	600.7	617.9	627.6	617.0	558.4	473.8	400.3	341.9	302.5	283.6
60°	534.5	532.1	550.2	566.0	564.8	515.5	435.9	365.3	311.3	274.8	258.8
62.5°	469.4	466.8	484.9	503.6	510.3	469.7	398.2	330.8	280.7	247.1	232.8
65°	409.6	407.0	422.5	441.7	454.0	421.9	357.7	295.2	249.7	219.1	206.8
67.5°	354.8	354.8	364.4	382.2	397.1	372.9	316.3	261.4	217.9	193.1	180.9
70°	303.4	303.1	310.1	322.7	339.9	320.3	274.2	225.8	187.9	166.0	155.2
72.5°	254.7	256.7	259.4	269.0	287.1	270.2	232.5	190.8	158.4	139.2	130.1
75°	208.3	208.0	211.8	220.3	233.4	220.9	190.8	156.7	129.2	113.5	105.6
77.5°	164.0	163.7	166.9	171.8	182.9	173.0	150.5	125.2	100.7	87.5	82.0
80°	122.2	122.2	125.2	127.8	136.0	128.1	112.3	93.7	73.8	63.6	59.2
82.5°	84.9	86.6	85.5	89.0	93.7	86.9	77.0	64.2	49.0	42.0	39.1
85°	51.6	53.1	51.6	54.6	56.6	50.8	45.8	38.2	28.3	23.6	21.6
87.5°	26.5	26.3	26.0	27.4	28.0	24.5	21.6	18.4	12.5	9.6	8.2
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°	709.8	709.8	709.8	709.8	709.8	709.8	709.8	709.8	709.8	709.8
2.5°	702.2	704.0	701.4	691.7	687.9	683.9	682.1	680.4	683.6	682.7
5°	696.4	694.4	687.7	675.4	669.0	662.3	659.1	657.0	661.4	660.5
7.5°	688.5	682.7	672.8	657.9	649.7	640.7	636.3	633.7	636.6	636.0
10°	678.6	669.0	656.7	638.9	629.3	619.4	614.4	610.6	613.0	612.7
12.5°	666.1	653.5	638.6	618.5	608.6	598.4	594.0	591.4	594.3	593.4
15°	652.1	636.9	619.7	599.3	588.5	579.1	575.9	573.9	576.2	576.2
17.5°	636.6	618.8	599.8	579.1	568.9	561.6	558.4	556.9	558.1	559.9
20°	619.4	599.5	579.1	559.0	550.2	542.7	539.7	538.3	540.9	539.7
22.5°	600.4	579.4	558.1	539.2	531.3	523.7	520.8	519.9	522.8	521.6
25°	580.3	557.5	536.5	519.3	511.4	505.0	502.4	501.5	503.0	504.4
27.5°	561.3	535.7	514.9	499.5	492.5	486.3	484.0	482.6	483.7	485.5
30°	538.3	513.5	493.1	478.8	472.0	466.2	464.5	463.3	465.0	466.5
32.5°	516.7	491.6	471.2	457.2	451.3	445.8	445.5	444.9	447.0	448.7
35°	493.3	468.8	449.0	435.9	430.3	425.7	426.5	427.4	429.7	431.8
37.5°	469.7	445.8	426.8	414.9	409.6	405.8	408.4	409.6	412.8	414.9
40°	445.8	421.9	404.4	393.6	388.3	386.6	390.4	393.0	396.8	398.5
42.5°	421.3	399.1	381.6	371.7	367.3	367.3	372.3	376.4	380.7	382.5
45°	396.8	375.2	358.6	349.5	346.3	348.6	354.5	359.7	365.3	367.0
47.5°	372.0	351.0	335.8	327.6	325.9	329.4	336.7	343.7	350.1	352.4
50°	347.2	328.2	313.0	305.5	305.5	309.8	319.2	327.9	334.9	337.3
52.5°	322.4	304.3	288.8	283.3	284.5	290.6	301.4	310.4	318.3	320.6
55°	297.3	279.5	266.1	261.4	263.4	271.0	282.1	292.6	300.2	302.8
57.5°	272.5	255.6	243.3	239.5	242.4	250.9	263.7	272.8	280.7	283.0
60°	247.4	230.2	220.6	217.6	221.4	230.2	243.3	251.8	259.1	261.4
62.5°	222.6	206.6	198.1	195.5	199.8	209.2	222.0	229.6	235.1	237.5
65°	197.5	183.2	175.3	173.6	178.3	187.3	199.6	206.0	210.1	212.4
67.5°	172.7	160.5	153.2	151.7	156.7	164.8	176.2	179.7	183.5	185.8
70°	148.2	137.1	131.0	130.1	134.5	142.4	152.0	153.8	155.8	157.8
72.5°	124.0	115.2	109.1	108.8	112.9	119.3	127.2	127.5	128.1	130.1
75°	100.7	92.8	88.1	89.0	91.3	96.6	102.7	100.9	101.2	102.7
77.5°	78.2	71.8	68.6	69.1	70.9	74.7	78.8	76.7	75.6	77.0
80°	56.3	50.8	49.6	49.9	51.1	53.7	56.0	54.3	51.9	53.1
82.5°	37.1	33.6	33.0	33.3	34.1	35.6	36.2	33.6	33.0	33.8
85°	20.4	19.0	19.0	19.8	20.1	20.4	20.4	19.0	19.3	19.8
87.5°	8.2	8.2	9.0	9.9	9.3	8.2	7.0	4.7	4.7	5.5
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)