

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-20L935-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-20L935-X-UNV-ASY
Description: ArcMed Patient Recessed 4 FT x6 IN Fixture Ambient Light w/
ASYMMETRIC Lens
Light Source: 3500K CCT, 90 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

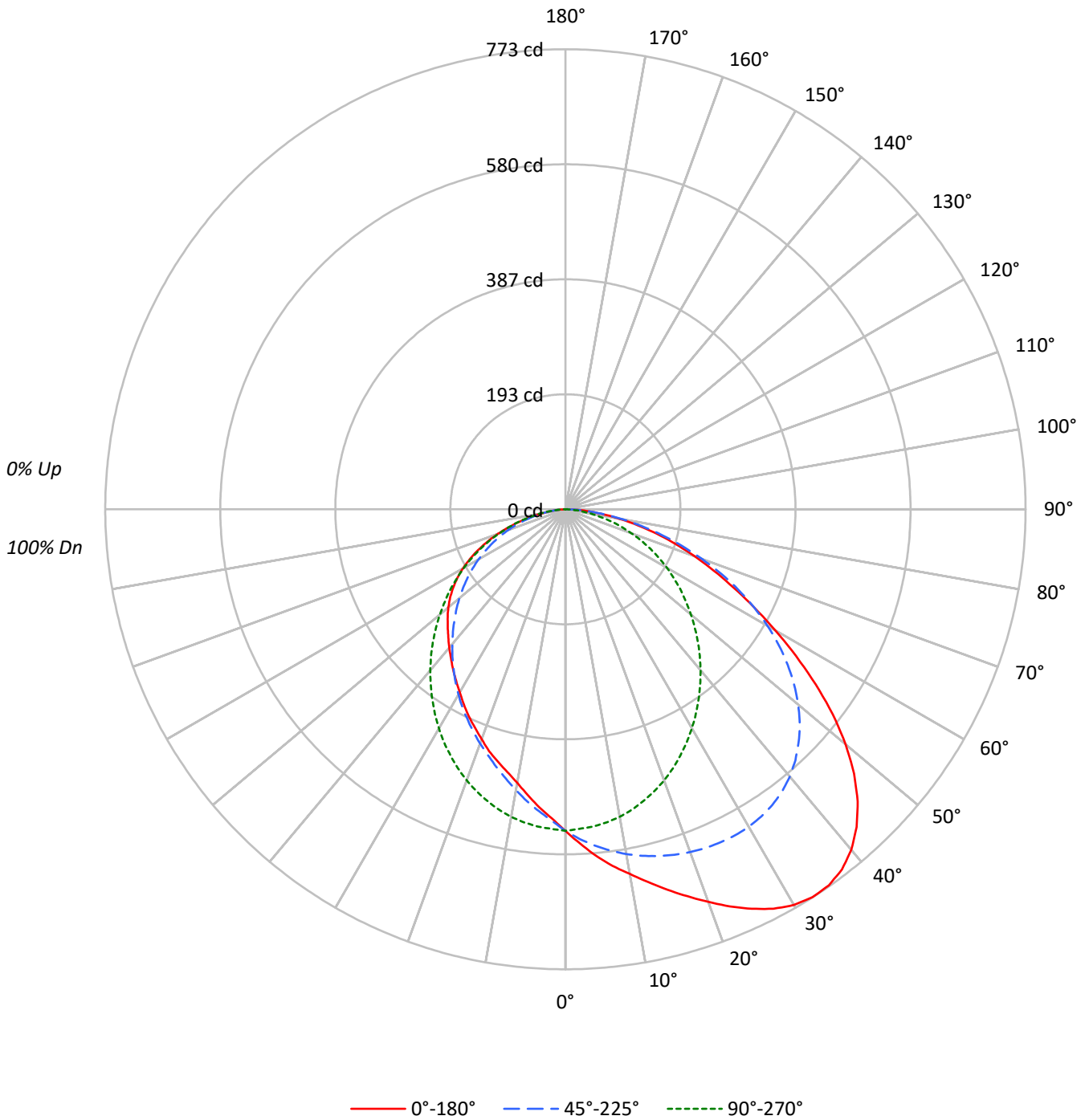
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1673.7 lumens
Efficiency: N/A
Efficacy: 70.3 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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CATALOG NUMBER: 4APN-20L935-X-UNV-ASY

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°	5202	5202	5202
5°	5645	5170	4859
10°	6082	5130	4559
15°	6596	5056	4372
20°	7192	4967	4210
25°	7868	4850	4079
30°	8535	4723	3948
35°	9065	4584	3863
40°	9387	4438	3813
45°	9453	4285	3804
50°	9204	4122	3845
55°	8619	3973	3869
60°	7835	3793	3832
65°	7103	3588	3684
70°	6502	3327	3383
75°	5899	2991	2909
80°	5162	2500	2240
85°	4341	1812	1668



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 CATALOG NUMBER: 4APN-20L935-X-UNV-ASY

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	51.3	3.1
10°-20°	149.3	8.9
20°-30°	233.8	14.0
30°-40°	293.1	17.5
40°-50°	312.1	18.6
50°-60°	281.7	16.8
60°-70°	208.5	12.5
70°-80°	114.4	6.8
80°-90°	29.4	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°	434.4	26.0
0°-40°	727.5	43.5
0°-60°	1321.3	78.9
0°-90°	1673.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1673.7	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	540	540	540	540	540	
5°	584	567	535	509	503	57
15°	662	603	507	448	439	189
25°	741	617	457	389	384	343
35°	771	606	390	328	329	481
45°	694	554	315	264	279	532
55°	514	456	237	200	230	458
65°	312	321	158	136	162	311
75°	159	168	80	70	78	169
85°	39	39	16	15	15	46
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°	540.3	540.3	540.3	540.3	540.3	540.3	540.3	540.3	540.3	540.3	540.3
2.5°	562.1	561.0	559.7	559.2	557.2	554.6	552.1	552.1	549.2	542.3	537.5
5°	584.1	582.3	579.0	576.3	572.1	567.0	561.9	558.8	551.9	541.5	535.0
7.5°	604.3	602.1	597.9	592.8	585.9	578.3	569.9	563.2	552.8	538.8	530.6
10°	622.1	620.1	615.0	608.7	599.0	588.3	575.9	565.9	551.7	534.3	524.8
12.5°	641.6	639.6	632.5	624.1	610.7	596.5	580.1	566.3	548.8	527.9	517.0
15°	661.8	659.2	651.2	639.8	622.1	603.0	582.8	565.0	544.1	520.1	507.3
17.5°	681.8	679.1	669.2	654.7	632.5	608.7	583.9	561.9	537.5	510.6	496.6
20°	702.0	699.4	686.7	668.5	641.6	613.0	583.7	557.2	529.5	499.7	484.8
22.5°	722.2	719.1	703.8	681.6	649.2	615.9	581.2	550.8	519.5	487.3	471.3
25°	740.7	737.6	720.7	694.5	657.2	617.2	577.0	541.9	508.4	473.5	456.6
27.5°	756.7	752.9	735.3	706.5	664.0	617.6	571.4	531.9	495.5	458.6	441.5
30°	767.8	764.4	745.8	714.9	668.0	616.1	564.3	520.1	480.6	442.6	424.9
32.5°	772.6	769.8	751.3	718.9	668.7	612.1	555.7	507.0	465.1	425.7	407.8
35°	771.3	768.4	750.9	718.2	666.7	606.3	544.8	492.1	448.4	408.2	390.0
37.5°	762.9	759.5	743.6	712.2	660.9	597.9	532.3	475.9	430.4	390.2	371.8
40°	746.9	743.6	729.8	700.9	651.2	586.5	518.1	458.6	412.0	371.3	353.1
42.5°	724.0	720.5	709.6	683.1	637.2	571.7	501.9	440.2	392.4	353.1	334.0
45°	694.3	690.7	683.4	660.9	619.0	554.1	483.5	420.2	372.0	332.5	314.7
47.5°	657.4	654.3	650.7	633.4	596.5	533.9	462.8	398.9	350.7	313.1	294.9
50°	614.5	611.4	612.5	600.8	570.5	510.6	440.2	376.4	328.7	291.6	275.2
52.5°	565.9	563.4	568.8	563.7	540.3	484.6	416.0	353.3	306.3	271.2	255.4
55°	513.5	510.8	521.0	522.6	506.6	455.9	388.4	329.4	283.6	251.2	236.7
57.5°	459.5	457.3	470.4	477.7	469.7	425.1	360.7	304.7	260.3	230.3	215.9
60°	406.9	405.1	418.9	430.9	430.0	392.4	331.8	278.1	237.0	209.2	197.0
62.5°	357.3	355.3	369.1	383.3	388.4	357.6	303.2	251.8	213.6	188.1	177.2
65°	311.8	309.8	321.6	336.2	345.6	321.1	272.3	224.8	190.1	166.8	157.5
67.5°	270.1	270.1	277.4	290.9	302.3	283.8	240.7	199.0	165.9	147.0	137.7
70°	231.0	230.8	236.1	245.6	258.7	243.9	208.8	171.9	143.0	126.4	118.2
72.5°	193.9	195.4	197.4	204.8	218.5	205.7	177.0	145.2	120.6	105.9	99.1
75°	158.6	158.3	161.2	167.7	177.7	168.1	145.2	119.3	98.4	86.4	80.4
77.5°	124.8	124.6	127.0	130.8	139.2	131.7	114.6	95.3	76.6	66.6	62.4
80°	93.1	93.1	95.3	97.3	103.5	97.5	85.5	71.3	56.2	48.4	45.1
82.5°	64.6	66.0	65.1	67.7	71.3	66.2	58.6	48.9	37.3	32.0	29.8
85°	39.3	40.4	39.3	41.5	43.1	38.6	34.9	29.1	21.5	18.0	16.4
87.5°	20.2	20.0	19.8	20.9	21.3	18.7	16.4	14.0	9.5	7.3	6.2
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°	540.3	540.3	540.3	540.3	540.3	540.3	540.3	540.3	540.3	540.3
2.5°	534.6	535.9	533.9	526.6	523.7	520.6	519.2	517.9	520.4	519.7
5°	530.1	528.6	523.5	514.1	509.3	504.1	501.7	500.1	503.5	502.8
7.5°	524.1	519.7	512.1	500.8	494.6	487.7	484.4	482.4	484.6	484.2
10°	516.6	509.3	499.9	486.4	479.0	471.5	467.7	464.8	466.6	466.4
12.5°	507.0	497.5	486.2	470.8	463.3	455.5	452.2	450.2	452.4	451.7
15°	496.4	484.8	471.7	456.2	448.0	440.8	438.4	436.8	438.6	438.6
17.5°	484.6	471.1	456.6	440.8	433.1	427.5	425.1	424.0	424.9	426.2
20°	471.5	456.4	440.8	425.5	418.9	413.1	410.9	409.8	411.8	410.9
22.5°	457.1	441.1	424.9	410.4	404.4	398.7	396.4	395.8	398.0	397.1
25°	441.7	424.4	408.4	395.3	389.3	384.4	382.4	381.8	382.9	384.0
27.5°	427.3	407.8	392.0	380.2	374.9	370.2	368.4	367.3	368.2	369.6
30°	409.8	390.9	375.3	364.4	359.3	354.9	353.6	352.7	354.0	355.1
32.5°	393.3	374.2	358.7	348.0	343.6	339.4	339.1	338.7	340.2	341.6
35°	375.6	356.9	341.8	331.8	327.6	324.0	324.7	325.4	327.1	328.7
37.5°	357.6	339.4	324.9	315.8	311.8	308.9	310.9	311.8	314.3	315.8
40°	339.4	321.1	307.8	299.6	295.6	294.3	297.2	299.2	302.0	303.4
42.5°	320.7	303.8	290.5	282.9	279.6	279.6	283.4	286.5	289.8	291.2
45°	302.0	285.6	272.9	266.1	263.6	265.4	269.8	273.8	278.1	279.4
47.5°	283.2	267.2	255.6	249.4	248.1	250.7	256.3	261.6	266.5	268.3
50°	264.3	249.9	238.3	232.5	232.5	235.9	243.0	249.6	255.0	256.7
52.5°	245.4	231.6	219.9	215.6	216.5	221.2	229.4	236.3	242.3	244.1
55°	226.3	212.8	202.5	199.0	200.5	206.3	214.8	222.8	228.5	230.5
57.5°	207.4	194.6	185.2	182.3	184.6	191.0	200.8	207.7	213.6	215.4
60°	188.3	175.2	167.9	165.7	168.6	175.2	185.2	191.7	197.2	199.0
62.5°	169.5	157.2	150.8	148.8	152.1	159.2	169.0	174.8	179.0	180.8
65°	150.4	139.5	133.5	132.1	135.7	142.6	151.9	156.8	159.9	161.7
67.5°	131.5	122.1	116.6	115.5	119.3	125.5	134.1	136.8	139.7	141.5
70°	112.8	104.4	99.7	99.1	102.4	108.4	115.7	117.0	118.6	120.2
72.5°	94.4	87.7	83.1	82.8	85.9	90.8	96.8	97.1	97.5	99.1
75°	76.6	70.6	67.1	67.7	69.5	73.5	78.2	76.8	77.1	78.2
77.5°	59.5	54.6	52.2	52.6	54.0	56.9	60.0	58.4	57.5	58.6
80°	42.9	38.6	37.8	38.0	38.9	40.9	42.6	41.3	39.5	40.4
82.5°	28.2	25.5	25.1	25.3	26.0	27.1	27.5	25.5	25.1	25.8
85°	15.5	14.4	14.4	15.1	15.3	15.5	15.5	14.4	14.7	15.1
87.5°	6.2	6.2	6.9	7.6	7.1	6.2	5.3	3.6	3.6	4.2
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)