

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-28L935-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-28L935-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

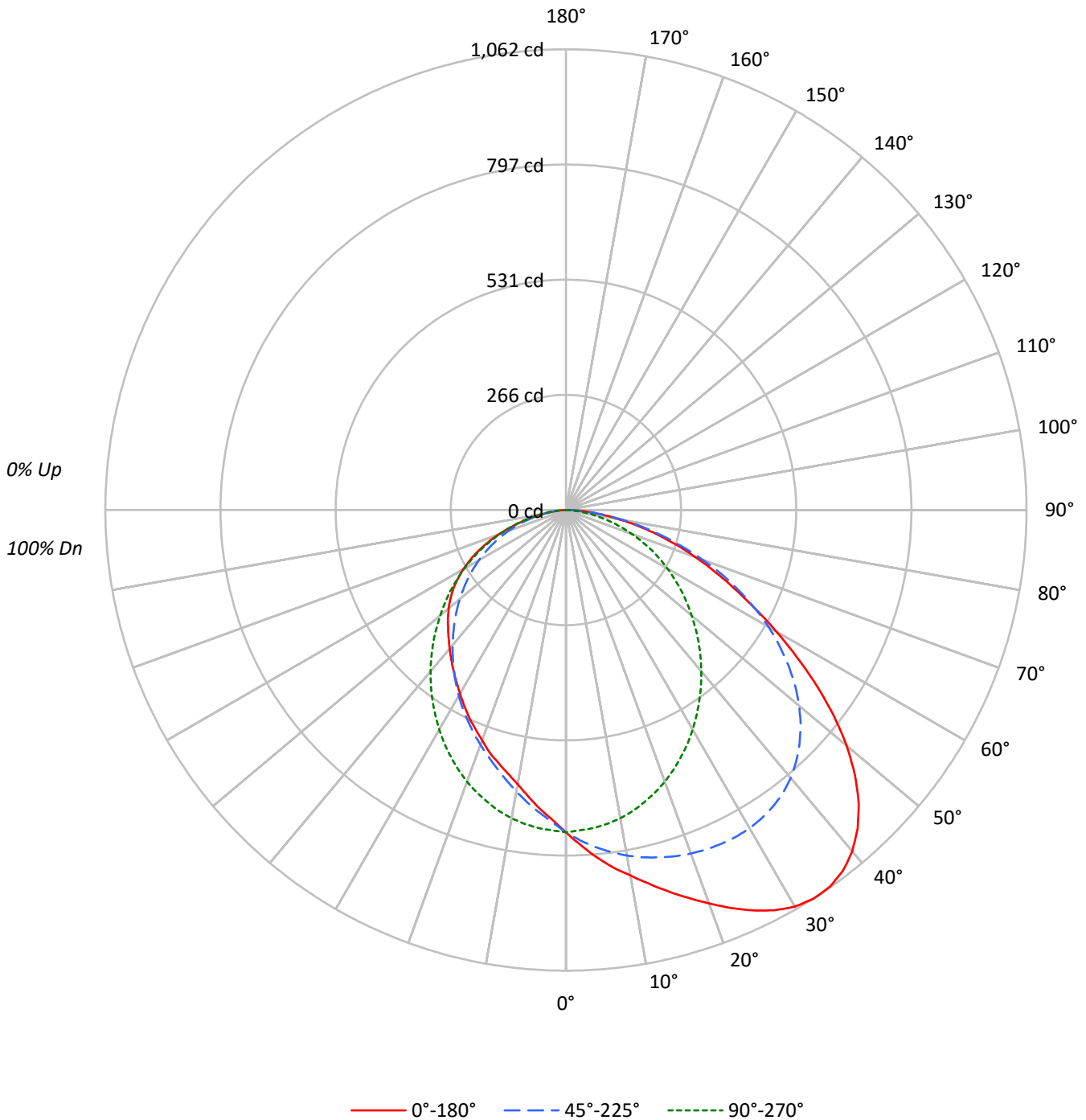
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2301.2 lumens
Efficiency: N/A
Efficacy: 71.5 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): 32.2
Input Voltage (V): 120
Input Current (Ain): 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°	7152	7152	7152
5°	7761	7109	6681
10°	8361	7054	6269
15°	9070	6951	6011
20°	9889	6829	5788
25°	10818	6669	5609
30°	11735	6493	5428
35°	12464	6302	5311
40°	12906	6102	5242
45°	12996	5891	5230
50°	12654	5666	5287
55°	11850	5463	5321
60°	10771	5216	5268
65°	9766	4932	5064
70°	8940	4574	4650
75°	8109	4110	3999
80°	7091	3437	3083
85°	5965	2496	2298



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	70.6	3.1
10°-20°	205.2	8.9
20°-30°	321.5	14.0
30°-40°	403.0	17.5
40°-50°	429.1	18.6
50°-60°	387.3	16.8
60°-70°	286.7	12.5
70°-80°	157.3	6.8
80°-90°	40.4	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°	597.3	26.0
0°-40°	1000.3	43.5
0°-60°	1816.7	78.9
0°-90°	2301.2	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2301.2	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	743	743	743	743	743	
5°	803	780	736	700	691	78
15°	910	829	697	616	603	260
25°	1018	849	628	535	528	471
35°	1060	834	536	450	452	661
45°	954	762	433	362	384	732
55°	706	627	326	276	317	630
65°	429	442	216	187	222	428
75°	218	231	110	96	108	232
85°	54	53	23	21	21	64
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°	742.9	742.9	742.9	742.9	742.9	742.9	742.9	742.9	742.9	742.9	742.9
2.5°	772.9	771.3	769.5	768.9	766.1	762.5	759.1	759.1	755.2	745.7	739.0
5°	803.1	800.6	796.1	792.4	786.6	779.6	772.6	768.3	758.8	744.5	735.6
7.5°	830.9	827.8	822.0	815.0	805.5	795.2	783.5	774.4	760.0	740.8	729.5
10°	855.3	852.6	845.5	837.0	823.6	808.9	791.8	778.1	758.5	734.7	721.6
12.5°	882.2	879.4	869.7	858.1	839.7	820.2	797.6	778.7	754.5	725.8	710.9
15°	910.0	906.3	895.3	879.7	855.3	829.0	801.3	776.8	748.1	715.1	697.4
17.5°	937.4	933.8	920.0	900.2	869.7	837.0	802.8	772.6	739.0	702.0	682.8
20°	965.2	961.6	944.2	919.1	882.2	842.8	802.5	766.1	728.0	687.1	666.6
22.5°	993.0	988.7	967.7	937.1	892.6	846.8	799.1	757.3	714.2	670.0	648.0
25°	1018.4	1014.1	990.9	954.9	903.6	848.6	793.3	745.1	699.0	651.0	627.8
27.5°	1040.4	1035.2	1011.0	971.3	913.0	849.2	785.7	731.3	681.3	630.6	607.1
30°	1055.6	1051.0	1025.4	982.9	918.5	847.1	775.9	715.1	660.8	608.6	584.1
32.5°	1062.3	1058.4	1033.0	988.4	919.4	841.6	764.0	697.1	639.4	585.4	560.6
35°	1060.5	1056.5	1032.4	987.5	916.7	833.6	749.0	676.7	616.5	561.2	536.2
37.5°	1048.9	1044.3	1022.3	979.3	908.7	822.0	731.9	654.4	591.8	536.5	511.2
40°	1026.9	1022.3	1003.4	963.7	895.3	806.5	712.4	630.6	566.4	510.6	485.5
42.5°	995.5	990.6	975.6	939.3	876.1	786.0	690.1	605.2	539.6	485.5	459.3
45°	954.5	949.7	939.6	908.7	851.0	761.9	664.8	577.7	511.5	457.1	432.7
47.5°	903.9	899.6	894.7	870.9	820.2	734.1	636.4	548.4	482.2	430.6	405.5
50°	844.9	840.7	842.2	826.0	784.5	702.0	605.2	517.6	451.9	400.9	378.3
52.5°	778.1	774.7	782.0	775.0	742.9	666.3	571.9	485.8	421.1	372.8	351.2
55°	706.0	702.3	716.4	718.5	696.5	626.9	534.1	452.8	389.9	345.4	325.5
57.5°	631.8	628.7	646.7	656.8	645.8	584.5	495.9	419.0	357.9	316.7	296.8
60°	559.4	557.0	575.9	592.4	591.2	539.6	456.2	382.3	325.8	287.6	270.9
62.5°	491.3	488.6	507.5	527.0	534.1	491.6	416.8	346.3	293.8	258.6	243.7
65°	428.7	426.0	442.2	462.3	475.1	441.5	374.4	309.0	261.4	229.3	216.5
67.5°	371.3	371.3	381.4	400.0	415.6	390.2	331.0	273.6	228.1	202.1	189.3
70°	317.6	317.3	324.6	337.7	355.7	335.3	287.0	236.3	196.7	173.7	162.5
72.5°	266.6	268.7	271.5	281.5	300.5	282.8	243.4	199.7	165.8	145.7	136.2
75°	218.0	217.7	221.7	230.5	244.3	231.2	199.7	164.0	135.3	118.8	110.5
77.5°	171.6	171.3	174.7	179.9	191.5	181.1	157.6	131.0	105.3	91.6	85.8
80°	127.9	127.9	131.0	133.7	142.3	134.1	117.6	98.0	77.3	66.6	62.0
82.5°	88.9	90.7	89.5	93.1	98.0	91.0	80.6	67.2	51.3	44.0	40.9
85°	54.0	55.6	54.0	57.1	59.2	53.1	47.9	40.0	29.6	24.7	22.6
87.5°	27.8	27.5	27.2	28.7	29.3	25.7	22.6	19.2	13.1	10.1	8.6
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°	742.9	742.9	742.9	742.9	742.9	742.9	742.9	742.9	742.9	742.9
2.5°	735.0	736.8	734.1	724.0	720.0	715.8	713.9	712.1	715.5	714.5
5°	728.9	726.8	719.7	706.9	700.2	693.2	689.8	687.7	692.2	691.3
7.5°	720.6	714.5	704.2	688.6	680.0	670.6	666.0	663.2	666.3	665.7
10°	710.3	700.2	687.4	668.7	658.7	648.3	643.1	639.1	641.6	641.3
12.5°	697.1	684.0	668.4	647.4	637.0	626.3	621.7	619.0	622.0	621.1
15°	682.5	666.6	648.6	627.2	615.9	606.1	602.8	600.6	603.1	603.1
17.5°	666.3	647.7	627.8	606.1	595.4	587.8	584.5	582.9	584.1	586.0
20°	648.3	627.5	606.1	585.1	575.9	568.0	564.9	563.4	566.1	564.9
22.5°	628.4	606.4	584.1	564.3	556.1	548.1	545.1	544.1	547.2	546.0
25°	607.4	583.5	561.6	543.5	535.3	528.6	525.8	524.9	526.4	528.0
27.5°	587.5	560.6	539.0	522.8	515.4	509.0	506.6	505.1	506.3	508.1
30°	563.4	537.4	516.1	501.1	494.1	488.0	486.1	484.9	486.7	488.3
32.5°	540.8	514.5	493.2	478.5	472.4	466.6	466.3	465.7	467.8	469.6
35°	516.4	490.7	469.9	456.2	450.4	445.5	446.4	447.3	449.8	451.9
37.5°	491.6	466.6	446.7	434.2	428.7	424.8	427.5	428.7	432.1	434.2
40°	466.6	441.5	423.2	411.9	406.4	404.6	408.6	411.3	415.3	417.1
42.5°	440.9	417.7	399.4	389.0	384.4	384.4	389.6	393.9	398.5	400.3
45°	415.3	392.7	375.3	365.8	362.5	364.9	371.0	376.5	382.3	384.1
47.5°	389.3	367.3	351.5	342.9	341.1	344.7	352.4	359.7	366.4	368.9
50°	363.4	343.5	327.6	319.7	319.7	324.3	334.1	343.2	350.6	353.0
52.5°	337.4	318.5	302.3	296.5	297.7	304.1	315.4	324.9	333.1	335.6
55°	311.2	292.5	278.5	273.6	275.7	283.7	295.3	306.3	314.2	317.0
57.5°	285.2	267.5	254.7	250.7	253.8	262.6	276.0	285.5	293.8	296.2
60°	258.9	240.9	230.9	227.8	231.8	240.9	254.7	263.5	271.2	273.6
62.5°	233.0	216.2	207.3	204.6	209.2	218.9	232.4	240.3	246.1	248.6
65°	206.7	191.8	183.5	181.7	186.6	196.0	208.9	215.6	219.9	222.3
67.5°	180.8	167.9	160.3	158.8	164.0	172.5	184.4	188.1	192.1	194.5
70°	155.1	143.5	137.1	136.2	140.8	149.0	159.1	160.9	163.1	165.2
72.5°	129.8	120.6	114.2	113.9	118.2	124.9	133.1	133.4	134.1	136.2
75°	105.3	97.1	92.2	93.1	95.6	101.1	107.5	105.7	106.0	107.5
77.5°	81.8	75.1	71.8	72.4	74.2	78.2	82.4	80.3	79.1	80.6
80°	58.9	53.1	51.9	52.2	53.4	56.2	58.6	56.8	54.4	55.6
82.5°	38.8	35.1	34.5	34.8	35.7	37.3	37.9	35.1	34.5	35.4
85°	21.4	19.8	19.8	20.8	21.1	21.4	21.4	19.8	20.2	20.8
87.5°	8.6	8.6	9.5	10.4	9.8	8.6	7.3	4.9	4.9	5.8
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)