

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: P708908

Luminaire Tested: **24APR-X-X-UNV-RL830**

Issue Date: 09/12/2023



**Test Information**

Test Method: LM-79-08  
Report Number: P708908  
Test Lab: INNOVATION CENTER(G2)  
Issue Date: 09/12/2023  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: FAIL-SAFE  
Catalog Number: 24APR-X-X-UNV-RL830  
Description: ArcMed Patient Recessed 2x4 Fixture READING Light  
Light Source: 3000K CCT, 80 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

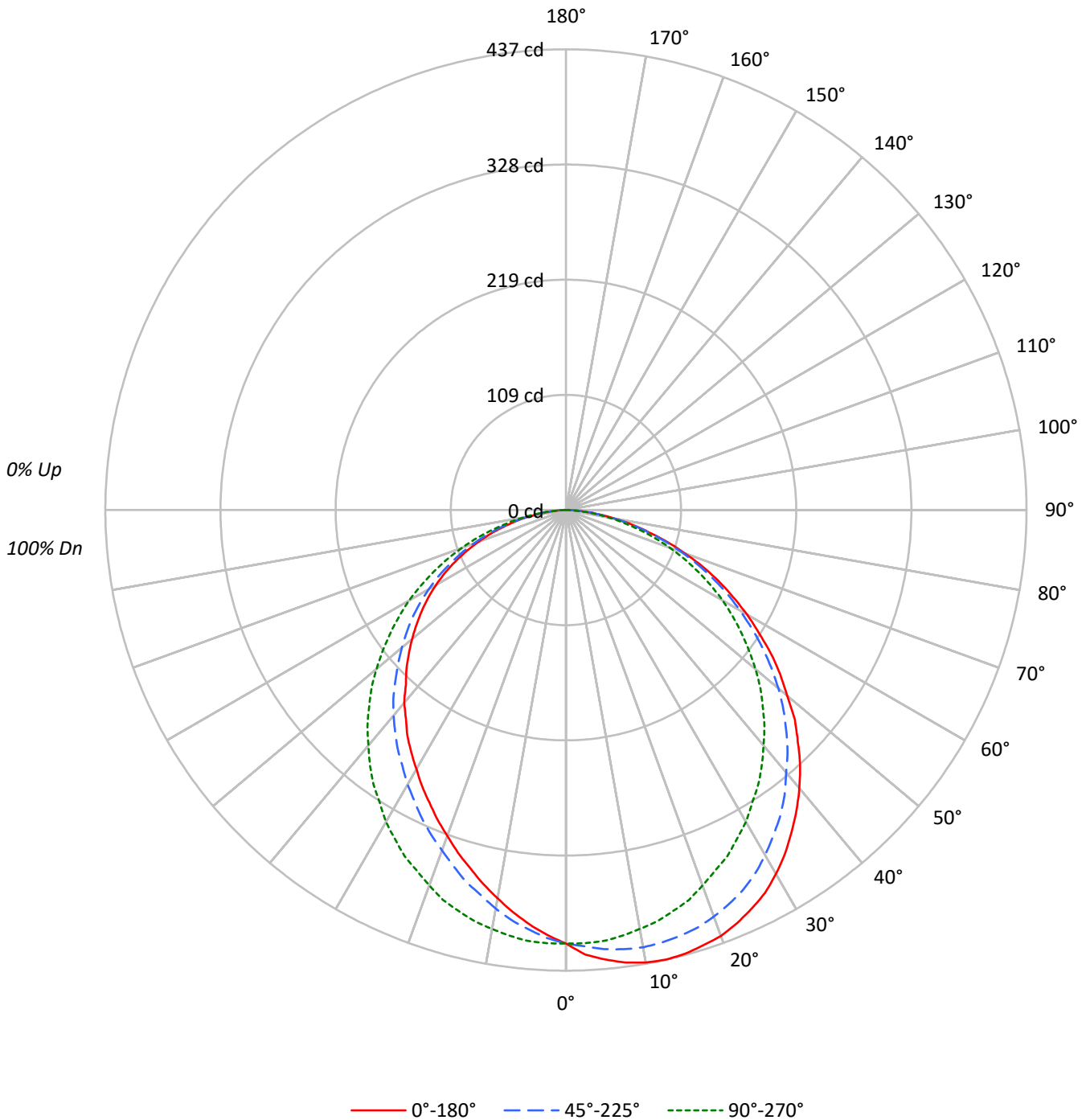
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 1131.5 lumens  
Efficiency: N/A  
Efficacy: 80.8 lumens/watt  
Spacing Criteria (0/90/45): 1.23 / 1.23 / 1.35  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 14  
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				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	100				100
1	109	104	100	96	106	102	98	94	98	94	91	94	91	89	90	88	86	84				84
2	99	91	84	78	96	89	83	77	85	80	75	82	78	74	79	75	72	70				70
3	90	80	72	65	88	78	71	65	75	69	63	72	67	62	70	65	61	59				59
4	83	71	62	55	80	69	61	55	67	60	54	64	58	53	62	57	53	50				50
5	76	63	54	48	74	62	54	47	60	52	47	58	51	46	56	50	46	44				44
6	70	57	48	42	68	56	47	41	54	47	41	52	46	41	51	45	40	38				38
7	65	52	43	37	63	51	42	37	49	42	36	48	41	36	46	40	36	34				34
8	61	47	39	33	59	46	38	33	45	38	32	44	37	32	43	37	32	30				30
9	57	43	35	29	55	43	35	29	41	34	29	40	34	29	39	33	29	27				27
10	53	40	32	27	52	39	32	27	38	31	27	37	31	26	37	31	26	25				25

**AVERAGE LUMINANCE (cd/sqm):**

	0°	90°	180°
0°	553	553	553
5°	578	554	533
10°	596	551	511
15°	607	548	490
20°	616	543	471
25°	619	538	455
30°	619	531	441
35°	613	522	431
40°	605	512	419
45°	592	503	407
50°	573	491	399
55°	557	477	392
60°	534	462	383
65°	509	441	369
70°	471	413	348
75°	424	373	317
80°	365	319	274
85°	289	242	198



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	38.9	3.4
10°-20°	110.8	9.8
20°-30°	166.4	14.7
30°-40°	198.2	17.5
40°-50°	203.0	17.9
50°-60°	181.2	16.0
60°-70°	136.8	12.1
70°-80°	76.6	6.8
80°-90°	19.6	1.7
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°	316.1	27.9
0°-40°	514.3	45.5
0°-60°	898.5	79.4
0°-90°	1131.5	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1131.5	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	411	411	411	411	411	
5°	428	418	410	400	395	41
15°	436	418	394	365	352	123
25°	417	398	362	323	306	192
35°	373	354	318	278	262	233
45°	311	296	264	229	214	240
55°	238	228	203	178	167	212
65°	160	154	138	122	116	158
75°	82	80	72	65	61	87
85°	19	19	16	15	13	22
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°
0°	411.3	411.3	411.3	411.3	411.3	411.3	411.3	411.3	411.3
2.5°	422.1	417.2	414.3	413.3	411.3	410.4	406.4	404.5	403.5
5°	428.0	423.1	418.2	414.3	410.4	406.4	399.6	395.6	394.7
7.5°	432.9	427.1	420.2	415.3	407.4	401.5	392.7	386.8	384.8
10°	435.9	430.0	421.2	413.3	403.5	394.7	383.9	376.0	374.0
12.5°	436.9	431.0	420.2	411.3	399.6	387.8	374.0	366.2	363.2
15°	435.9	429.0	418.2	408.4	393.7	379.9	365.2	355.4	351.5
17.5°	432.9	427.1	415.3	403.5	387.8	371.1	354.4	344.6	340.7
20°	430.0	423.1	410.4	397.6	379.0	361.3	343.6	332.8	328.9
22.5°	424.1	418.2	404.5	389.8	370.1	352.4	333.8	322.0	318.1
25°	417.2	411.3	397.6	381.9	362.3	341.6	323.0	311.2	306.3
27.5°	409.4	402.5	388.8	373.1	351.5	330.8	311.2	299.4	295.5
30°	398.6	392.7	378.0	362.3	341.6	320.0	300.4	288.6	283.7
32.5°	386.8	381.9	366.2	350.5	328.9	308.3	288.6	276.9	272.9
35°	373.1	367.2	354.4	338.7	318.1	296.5	277.8	265.1	262.1
37.5°	359.3	353.4	340.7	325.9	305.3	283.7	266.1	253.3	249.4
40°	344.6	338.7	325.0	313.2	291.6	271.9	254.3	242.5	238.6
42.5°	328.9	323.0	311.2	298.4	278.8	259.2	242.5	228.7	224.8
45°	311.2	306.3	295.5	283.7	264.1	246.4	228.7	217.0	214.0
47.5°	294.5	289.6	279.8	268.0	250.3	232.7	216.0	205.2	202.2
50°	273.9	271.9	263.1	252.3	234.6	217.9	203.2	193.4	190.5
52.5°	256.2	254.3	245.4	235.6	218.9	204.2	190.5	181.6	178.7
55°	237.6	234.6	227.8	217.9	203.2	189.5	177.7	168.9	166.9
57.5°	217.0	215.0	209.1	201.3	187.5	175.7	164.0	157.1	155.1
60°	198.3	196.3	190.5	184.6	171.8	160.0	150.2	143.3	142.4
62.5°	178.7	177.7	172.8	166.9	155.1	145.3	136.5	130.6	129.6
65°	160.0	158.1	154.1	149.2	138.4	130.6	121.7	116.8	115.8
67.5°	140.4	138.4	135.5	131.6	121.7	114.9	108.0	103.1	102.1
70°	119.8	119.8	116.8	113.9	105.0	100.1	93.3	89.3	88.4
72.5°	101.1	100.1	98.2	95.2	88.4	84.4	78.5	75.6	74.6
75°	81.5	80.5	80.5	77.6	71.7	67.7	64.8	61.8	60.9
77.5°	64.8	63.8	62.8	60.9	56.0	53.0	50.1	48.1	48.1
80°	47.1	47.1	47.1	45.2	41.2	39.3	37.3	35.3	35.3
82.5°	31.4	32.4	31.4	30.4	27.5	26.5	25.5	23.6	23.6
85°	18.7	18.7	18.7	19.6	15.7	14.7	14.7	13.7	12.8
87.5°	7.9	8.8	7.9	7.9	5.9	5.9	4.9	4.9	3.9
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)