

# Specification Data Sheet - Mini-Boiler™ Series

## STANDARD EQUIPMENT

### Staging - EMB-R\*-\*

- Supply water sensing
- Regulates to front panel selected temperature
- Temperature range 90° F to 160° F
- Staging indicator lights
- DC power relays
- Hi-limits: 1<sup>st</sup> - automatic reset at 190° F  
2<sup>nd</sup> - manual reset at 205° F
- Circulator switching relay - 10-amp maximum
- Thermostat or end switch connection (R and W)

- Utility load control provisions
- 1 gl. steel vessel ASME "H" Stamp (20-year warranty)
- Supply temperature/pressure gauge
- Safety relief valve (30 PSI)
- Made in the USA

### Modulating - EMB-M\*-\*

- Same as EMB-R\*-\* *PLUS*
- Modulates for tighter temperature control
- Temperature range 90° F to 180° F
- Hi-limits: 1<sup>st</sup> - automatic reset at 200° F  
2<sup>nd</sup> - manual reset at 205° F

## WATER FLOW REQUIREMENTS (MINIMUM 0.3 GPM PER KW WATER FLOW THROUGH BOILER)

Model	Water Temperature Rise											
	Flow - 10° F/6° C		Head Loss		Flow - 20° F/11° C		Head Loss		Flow - 30° F/16° C		Head Loss	
	gpm	lpm	ft	m	gpm	lpm	ft	m	gpm	lpm	ft	m
EMB-**-01	.75	2.83	.008	.002	.37	1.39	.002	.001	.25	1.89	.001	.000
EMB-**-03	1.7	6.43	.043	.013	.85	3.21	.010	.003	.56	2.11	.005	.001
EMB-**-05	3.07	11.60	.139	.042	1.53	5.78	.035	.011	1.02	3.85	.015	.005
EMB-**-07	4.78	18.06	.336	.102	2.39	9.03	.084	.026	1.59	6.01	.038	.011
EMB-**-09	6.14	23.20	.554	.169	3.07	11.60	.139	.042	2.04	7.71	.062	.019
EMB-M*-12	7.8	29.53	.987	.301	3.92	14.84	.246	.075	2.6	9.84	.109	.033
EMB-M*-15	10.23	38.73	1.543	.470	5.11	19.43	.386	.118	3.41	12.91	.171	.052
EMB-M*-18	12.28	46.49	2.217	.676	6.14	23.24	.554	.169	4.09	15.48	.246	.075

\* = R1, R2, M1 or M2

Note: Head Loss based on 120° F supply temperature.

## ELECTRIC SUPPLY

Model	Volts	Phase	kW	Watts	Btu/h	Amps	CB
EMB-**-01	120	1-60	1.1	1,100	3,753	9.2	N/A
EMB-**-03	120	1-60	2.5	2,500	8,530	20.8	N/A
EMB-**-05	240/208	1-60	5/3.7	5,000/3,750	17,065/12,798	18.8/16.3	30A
EMB-**-07	240/208	1-60	7/5.3	7,000/5,300	23,884/18,088	29.2/25.3	45A
EMB-**-09	240/208	1-60	9/7.0	9,000/7,000	30,708/23,891	37.5/32.5	60A
EMB-M*-12	240/208	1-60	12/8.6	12,000/8,600	40,944/30,759	50.0/43.3	45A,45A
EMB-M*-15	240/208	1-60	15/11.3	15,000/11,300	51,180/38,441	62.5/54.2	60A,45A
EMB-M*-18	240/208	1-60	18/14.0	18,000/14,000	61,416/47,782	75.0/65.0	60A, 60A

\* = R1, R2, M1 or M2

## CLEARANCES

	MINIMUM CLEARANCE		SUGGESTED MINIMUM SERVICE CLEARANCE	
	1 INCH	26 MM	12 INCHES	305 MM
LEFT	1 INCH	26 MM	12 INCHES	305 MM
RIGHT	1 INCH	26 MM	12 INCHES	305 MM
BACK	0 INCHES	0 MM	0 INCHES	0 MM
FRONT	1 INCH	26 MM	21 INCHES	534 MM
TOP	1 INCH	26 MM	14 INCHES	356 MM
BOTTOM	1 INCH	26 MM	14 INCHES	356 MM

SURROUNDING AMBIENT TEMPERATURE MUST NOT EXCEED 90°F/32°C

## UNIT WEIGHT

Model	Weight (lbs)	Model	Weight (lbs)
EMB-**-01	50	EMB-**-09	50
EMB-**-03	50	EMB-M*-12	50
EMB-**-05	50	EMB-M*-15	50
EMB-**-07	50	EMB-M*-18	50

\* = R1, R2, M1 or M2



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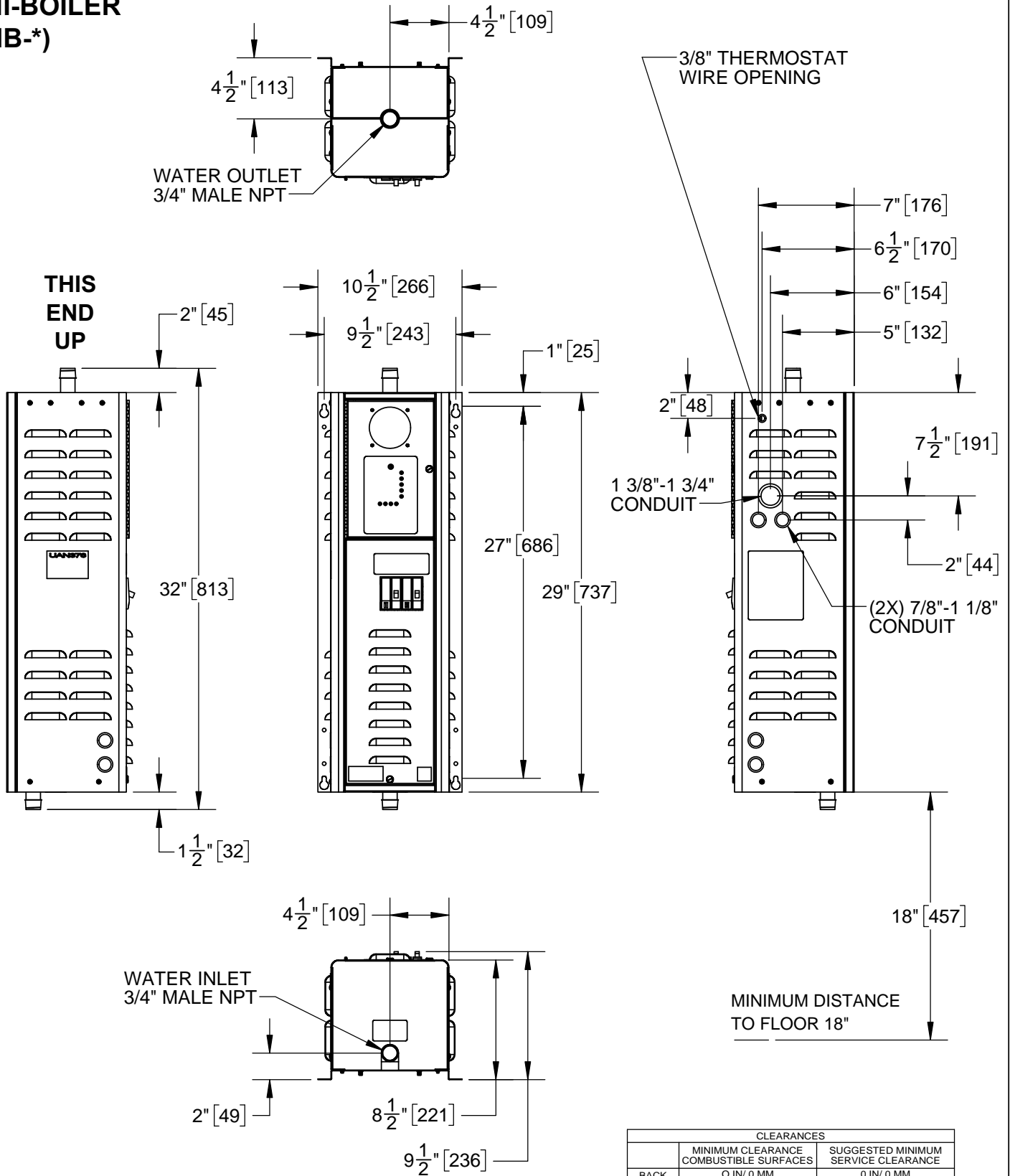
09/20/2023

**ELECTRO**  
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BL309

**ELECTRO INDUSTRIES, INC**  
**MINI-BOILER**  
**(EMB-\*)**



CLEARANCES		
	MINIMUM CLEARANCE COMBUSTIBLE SURFACES	SUGGESTED MINIMUM SERVICE CLEARANCE
BACK	0 IN/ 0 MM	0 IN/ 0 MM
LEFT	1 IN/ 25 MM	6 IN/ 152 MM
RIGHT	1 IN/ 25 MM	6 IN/ 152 MM
FRONT	1 IN/ 25 MM	24 IN/ 610 MM
TOP	1 IN/ 25 MM	24 IN/ 610 MM
BOTTOM	REQUIRED CLEARANCE - 18 IN/ 457 MM	

**NOTES:**  
 1. DIMENSIONS SHOWN IN INCHES & [MM]

NAME	DATE	ALL DIMENSIONS ARE IN INCHES TOLERANCES AS SHOWN OR: TWO-PLACE DECIMAL: ±.020 THREE-PLACE DECIMAL: ±.010  <b>PROPRIETARY AND CONFIDENTIAL</b> NOTE: THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF ELECTRO INDUSTRIES INC. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF ELECTRO INDUSTRIES INC. IS PROHIBITED.	SCALE	DESCRIPTION	 <b>Electro Industries, Inc.</b> Monticello, MN 55362 (763)295-4138	MATERIAL	FINISH		
DRAWN	NP		07/19/22	1:10		MINI-BOILER (EMB-*) 1.4kW-18kW 120V-240V ARCAT CAD DETAILS	PROJECT	PART NUMBER	
CHECKED						STATUS	REV	DOCUMENT NUMBER	
APPROVED						DO NOT SCALE DRAWING	Production	A	BL309