



Tankless Gas-Fired and Heat Pump Water Heater System Integration

Transforming the Commercial Water Heating Space

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Intellihot

Challenges with Tank Style Heating Methods



Operational Inefficiency

Standby loss, recirculation loss, high set temperature, purging loss, and low turndown.



Single Point of Failure

Downtime and lost revenue when one storage tank supplies all the hot water, and it fails



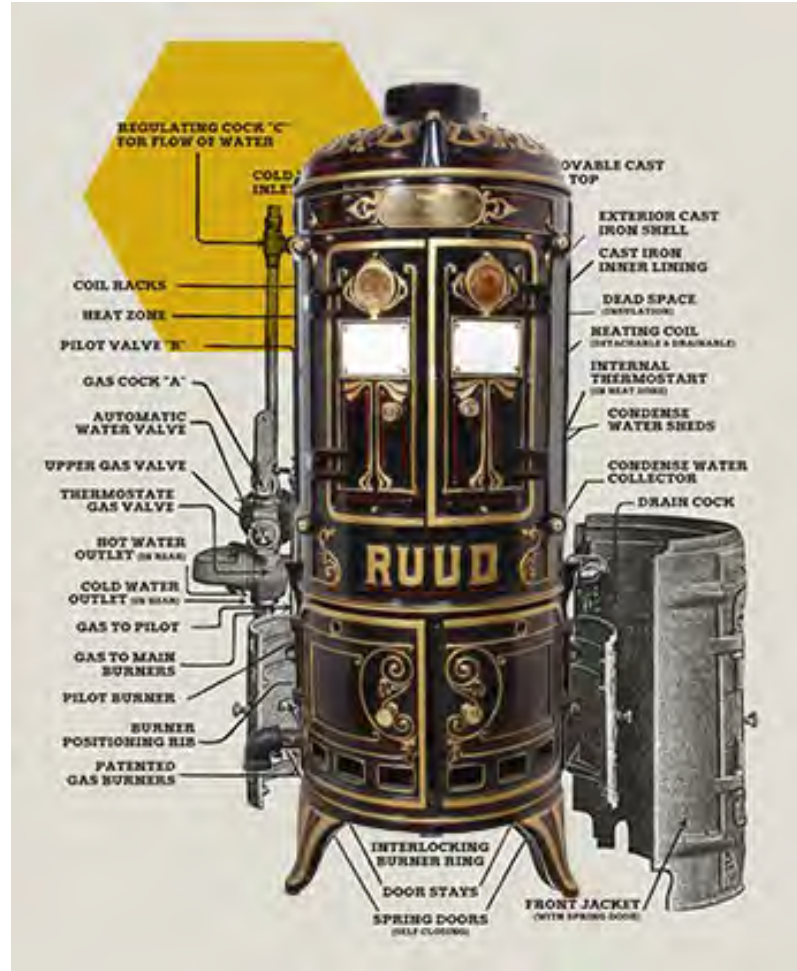
Improper Sizing

Systems are often sized using conservative estimates which drive up Capex and footprint

On-Demand Water Heating

Edwin Ruud's Typer F Instantaneous Automatic Water Heater

- Patented 1898



Intellihot - Efficient, Healthy, and Sustainable Water Heating Solutions



**Wall Hung
(199 MBH - 250 MBH)**

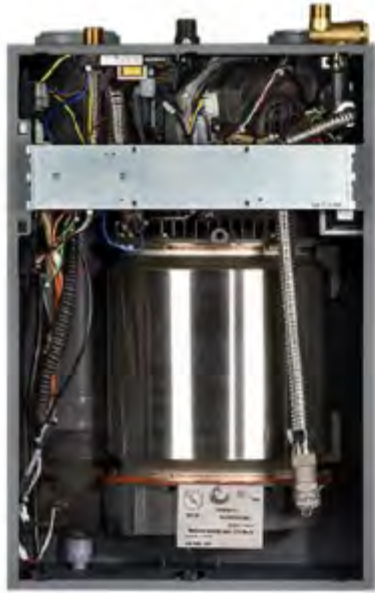


**Neuron
Drop In Replacement
(199 MBH - 500 MBH)**



**Floor Mount
(750 MBH - 3,000 MBH)**

Intellihot - Efficient, Healthy, and Sustainable Water Heating Solutions



Wall Mounts
(200 MBH to 250 MBH)



Neurons
(200 MBH to 500 MBH)



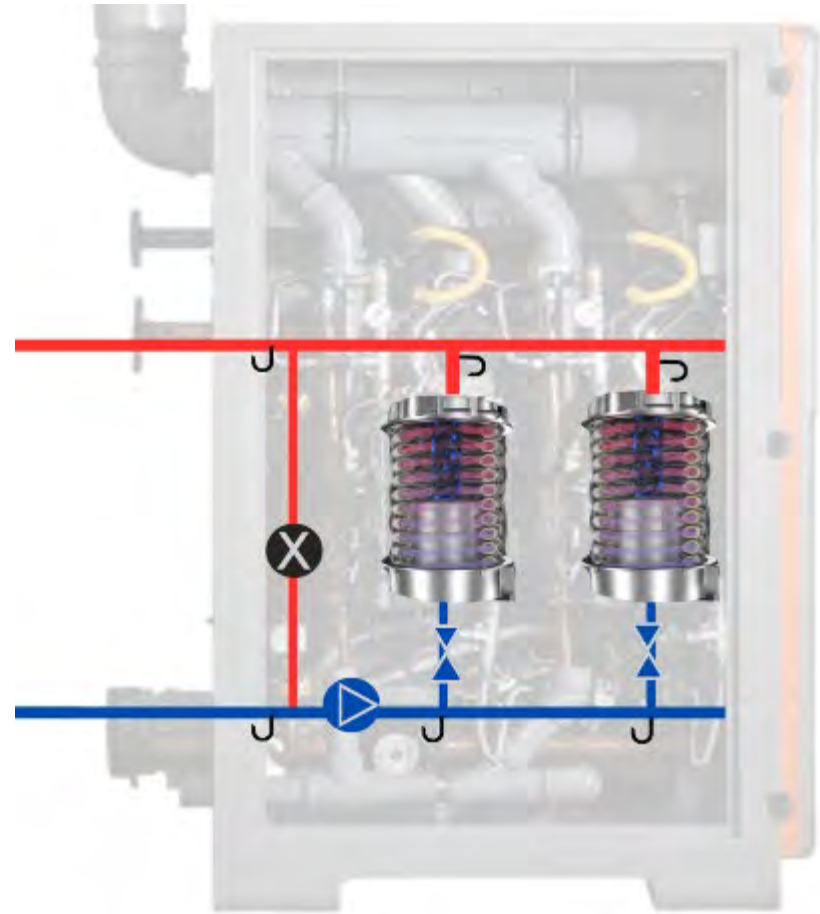
iQ Floor Mounts
(751 MBH to 1,501 MBH)



Big iQ Floor Mounts
(2,001 MBH to 3,001 MBH)

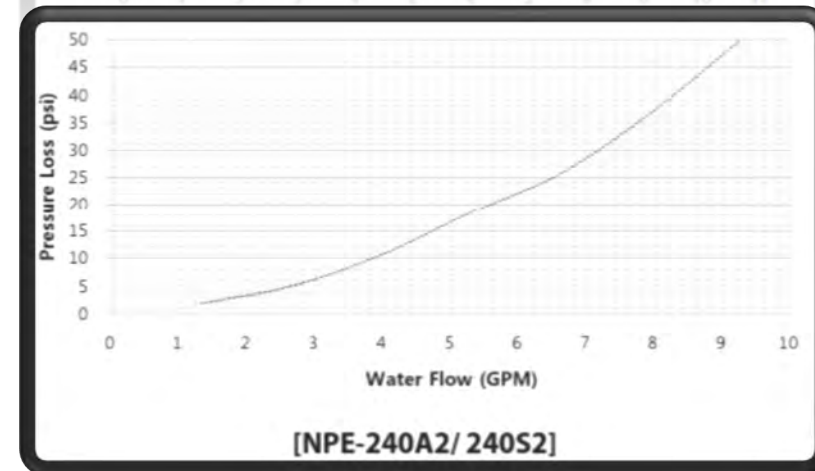
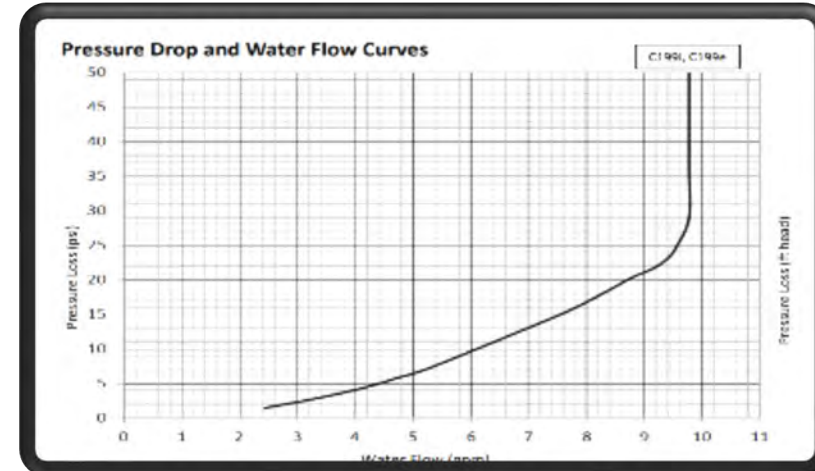
The Intellihot Advantage

- **Low Pressure Loss**
 - Intellihot units are built for multi-story, high pressure applications



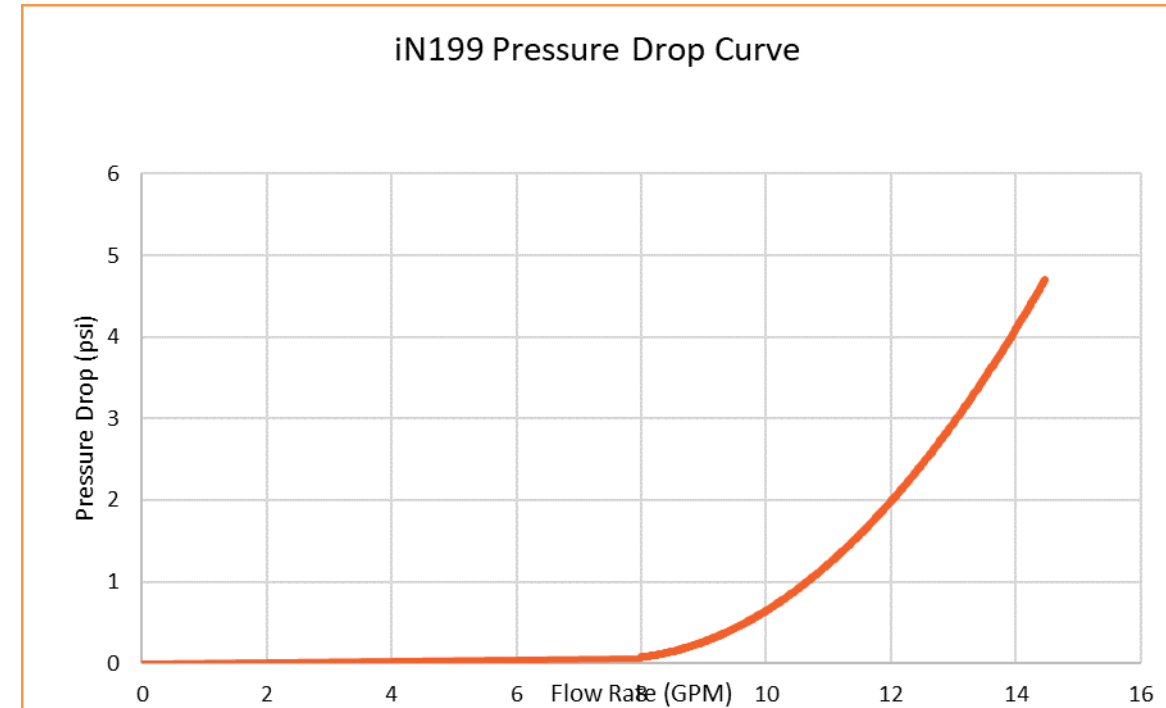
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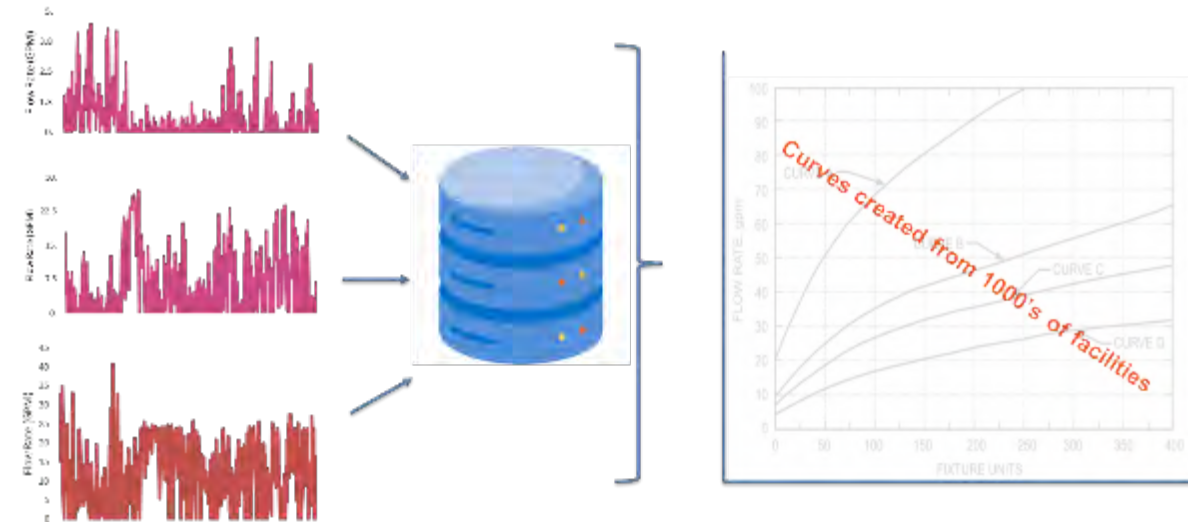
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- **Flow Priority means “Tank-Like” Delivery**
 - Prioritize flow rate just like a tank
- **Mitigation of Scale Deposit**
 - Patented heat exchanger design reduces scale build-up

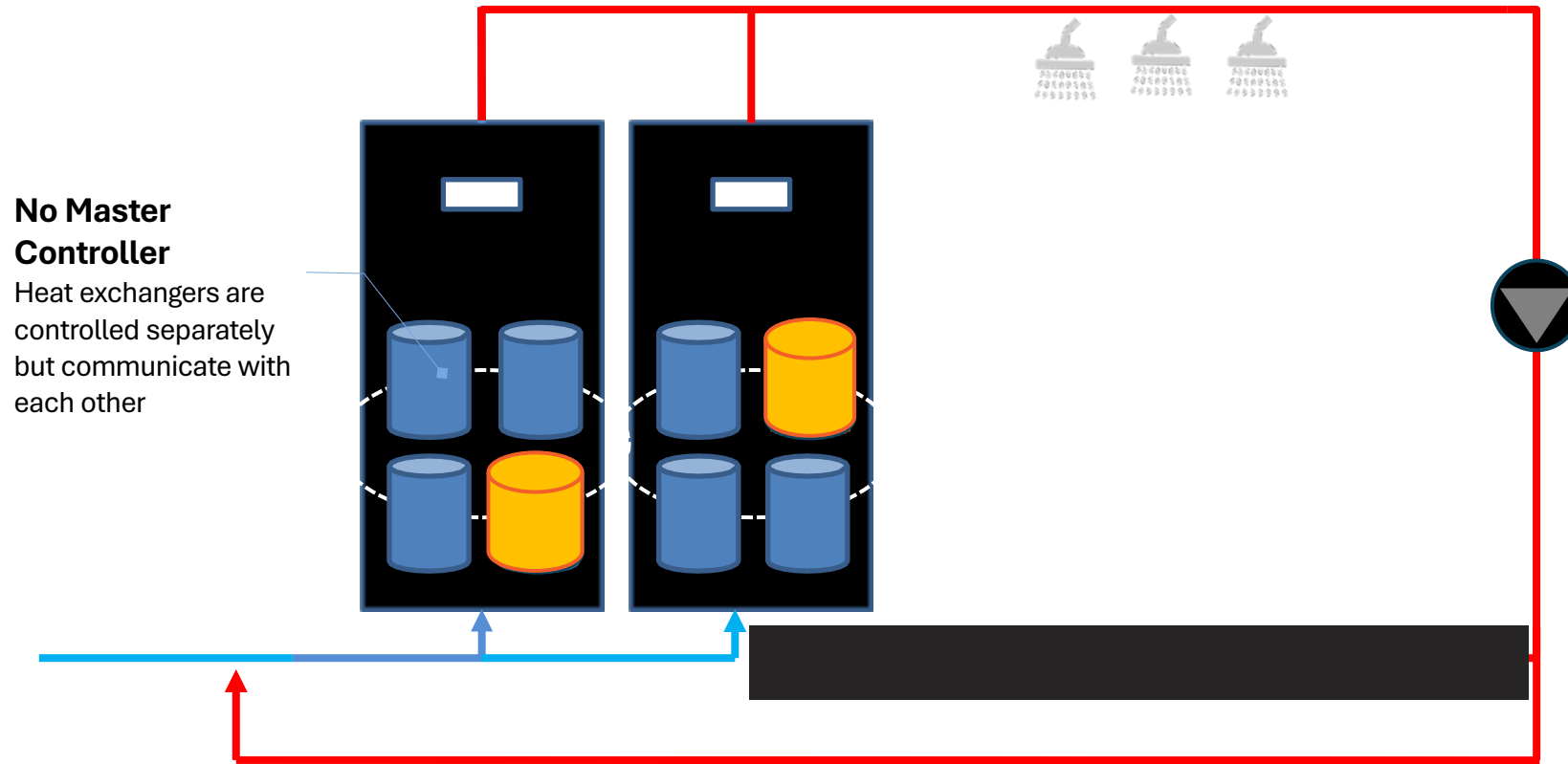


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- **Data-Driven Sizing Methodology**
 - 9+ years of guaranteed sizing
- **World-class Technical Field Support**
 - Pac West Sales + Intellihot



The Intellihot Advantage – Sequence of Operation



Can You Install Gas-Fired Equipment in the East Bay?

- **2025 California Plumbing Code (based on UPC 2024)**
 - No restrictions on gas-fired equipment
- **2025 California Energy Code (Title 24 Part 6)**
 - No state-wide ban on gas-fired equipment
 - Electric heat pump water heaters are **Prescriptive Baseline**, so projects utilizing gas-fired equipment will need to go through a performance compliance pathway.
- **Local Reach Codes**
 - Local codes banning natural gas connections for new construction: Berkeley (2019), San Jose, Mountain View, Santa Rosa, Oakland, Palo Alto, Petaluma
 - Federal Court ruling (2024) overturned the natural gas ban

Can You Install Gas-Fired Equipment in the East Bay?

- **Bay Area Air Quality Management District**

- Regulation 9, Rule 6 (Rule 9-6)
 - New hot water heaters (up to 2,000 MBH) must meet a zero-emission standard for NOx.
 - Compliance date (water heaters < 75 MBH): January 1, 2028
 - Compliance date (75 MBH – 2,000 MBH): January 1, 2031
- Regulation 9, Rule 7 (Rule 9-7)
 - New hot water heaters (above 2,000 MBH) must meet emission limits for NOx.



Equipment Category	NOx Limit
>2 to <10 MMBTU/hr natural gas-fired boiler/water heater	30 ppmvd @ 3% O ₂
10 to <75 MMBTU/hr natural gas-fired boiler/water heater	15 ppmvd @ 3% O ₂
≥75 MMBTU/hr natural gas-fired boiler/water heater	9 ppmvd @ 3% O ₂

Can You Install Gas-Fired Equipment in the East Bay?

- **Bay Area Air Quality Management District**
 - Regulation 9, Rule 6 (Rule 9-6)
 - Point of Sale / Point of Installation Regulation
 - Existing gas-fired equipment is unaffected, until it must be replaced
 - Existing compliant gas-fired equipment can be operated, maintained and repaired indefinitely.



Today's Challenge- The Engineering Landscape of 2026

- Emphasis on **Decarbonization**

- Electrification
- Operational Carbon
- Embodied Carbon

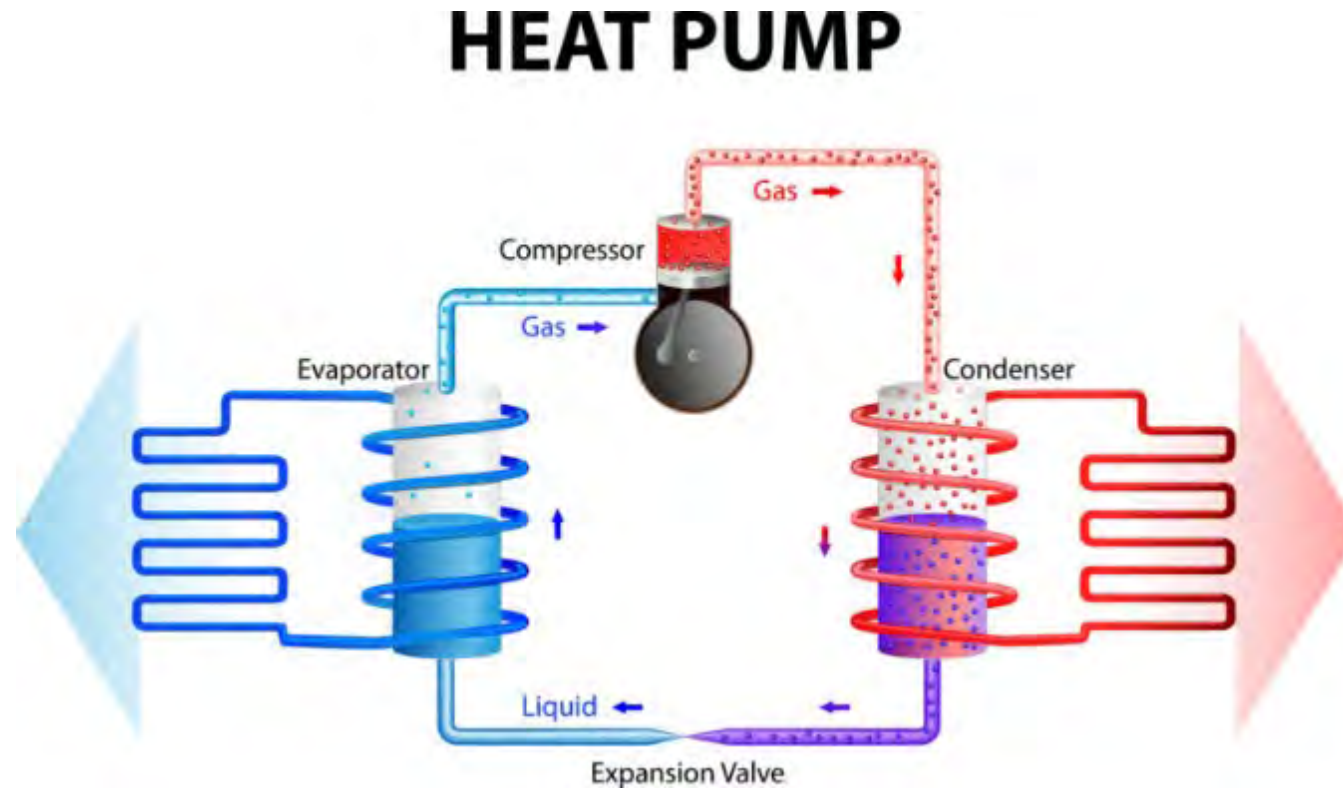


- Focus on **Responsible Refrigerant Use**

- New regulations to help combat climate change by reducing the use of high-GWP refrigerants
- Switch to more eco-friendly low-GWP, low flammability refrigerants

The Challenges with Commercial Heat Pump Water Heaters

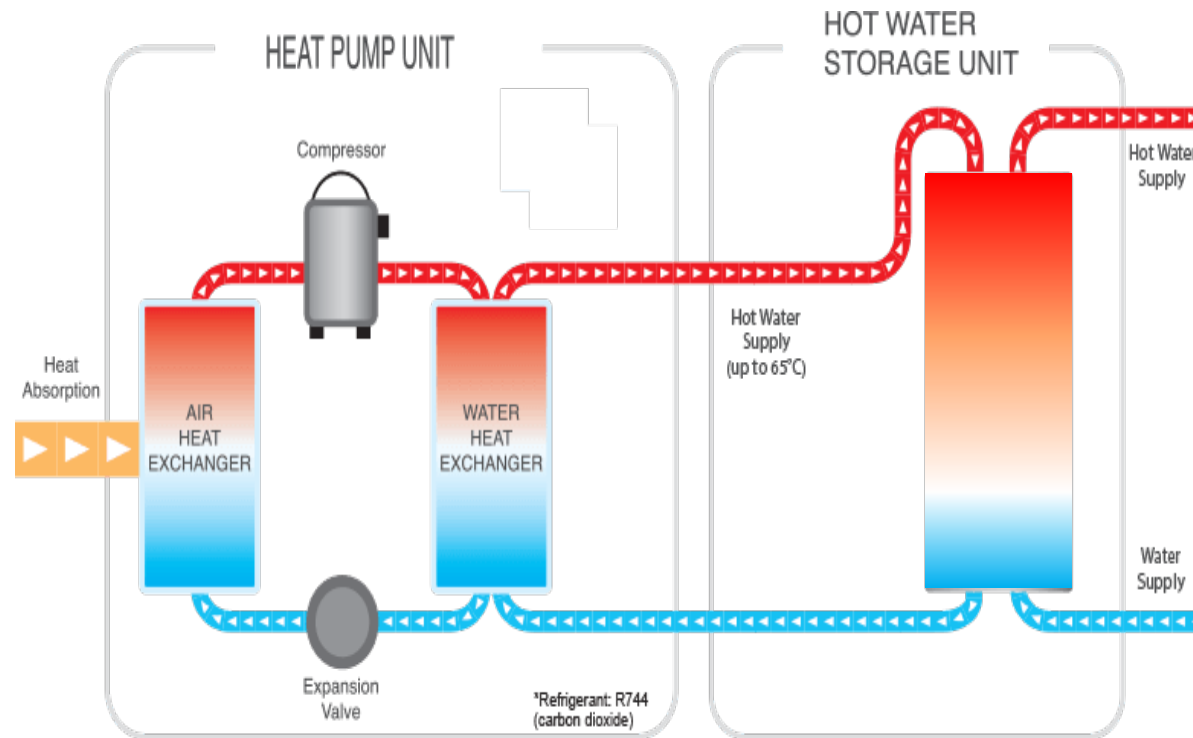
Heat pumps represent a fundamentally different type of technology



The Challenges with Commercial Heat Pump Water Heaters

Challenges:

- Performance of a heat pump is impacted by different factors
 - Ambient temperature / Airflow
 - Space around unit
- Other trades are involved
 - Mechanical
 - Electrical
- Cold Weather Limitations
- Sizing is difficult
- Upfront cost
- Space requirements



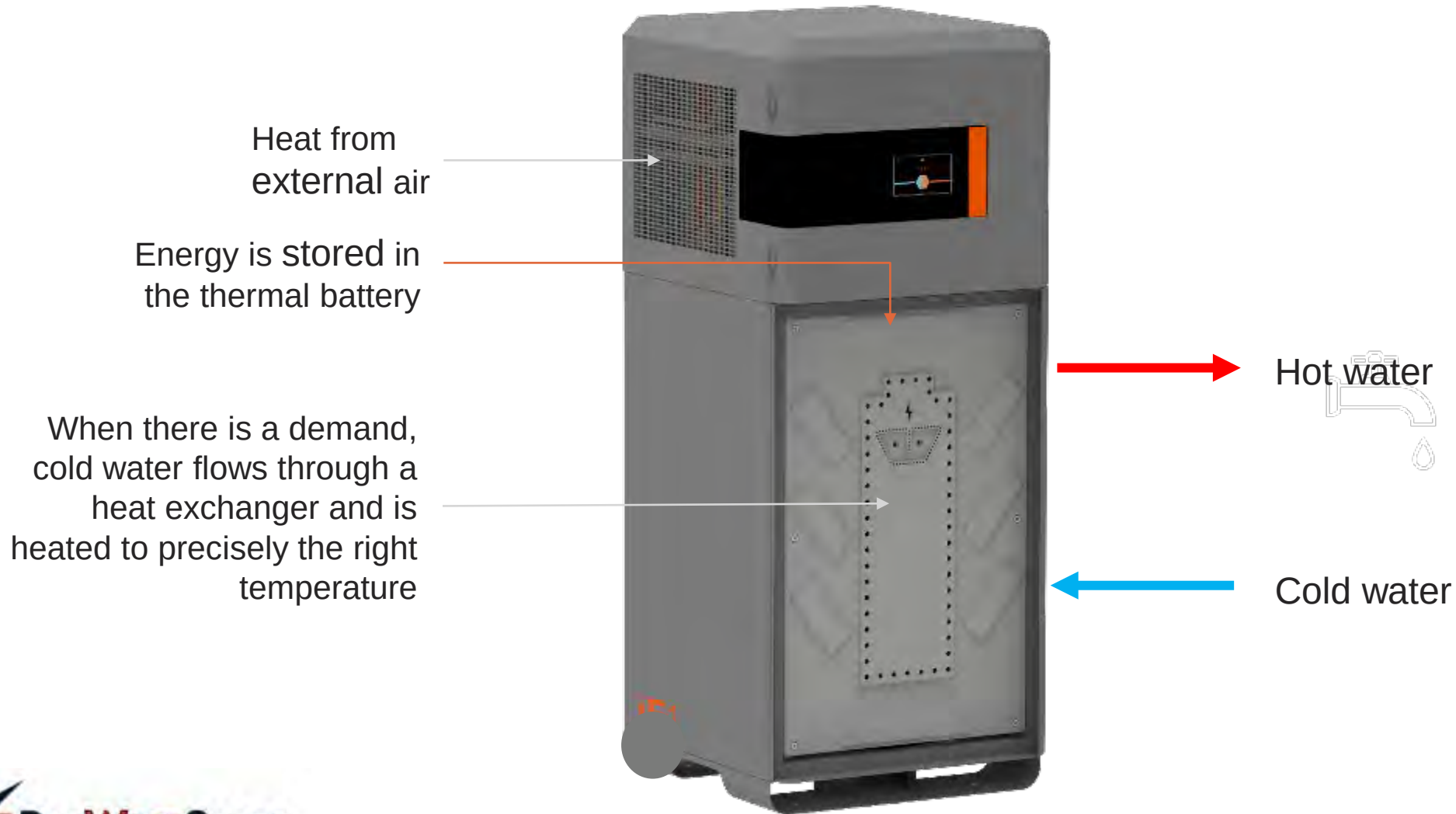
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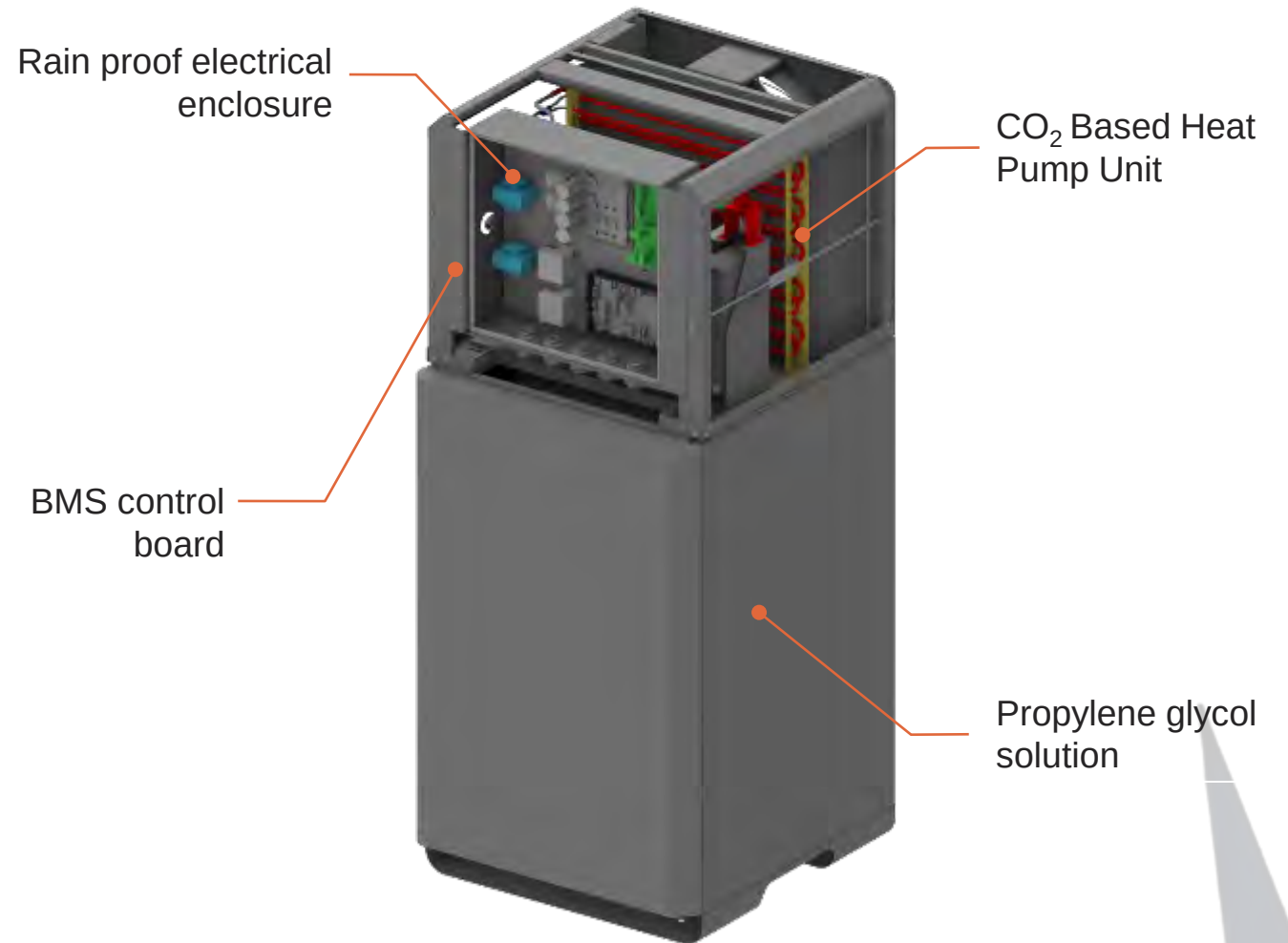
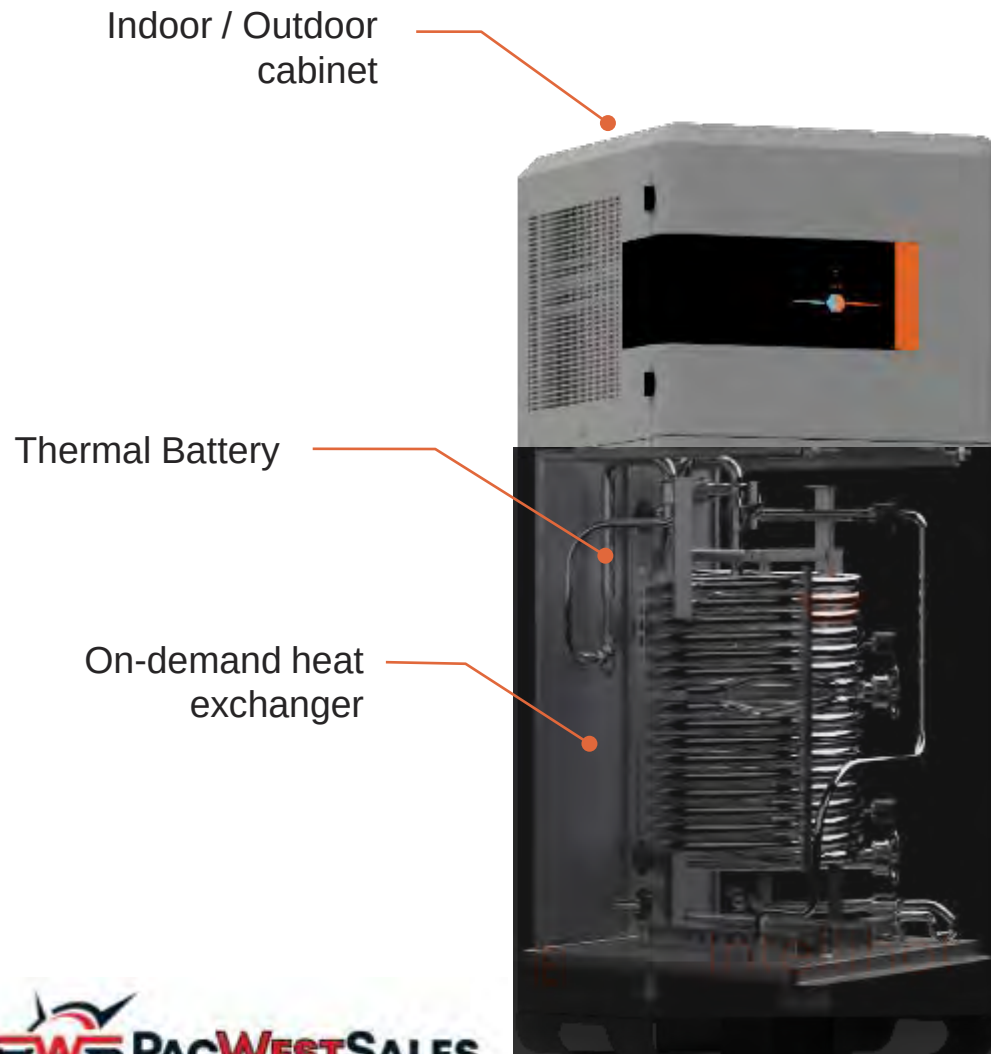


Intellihot Electron Series: iE1

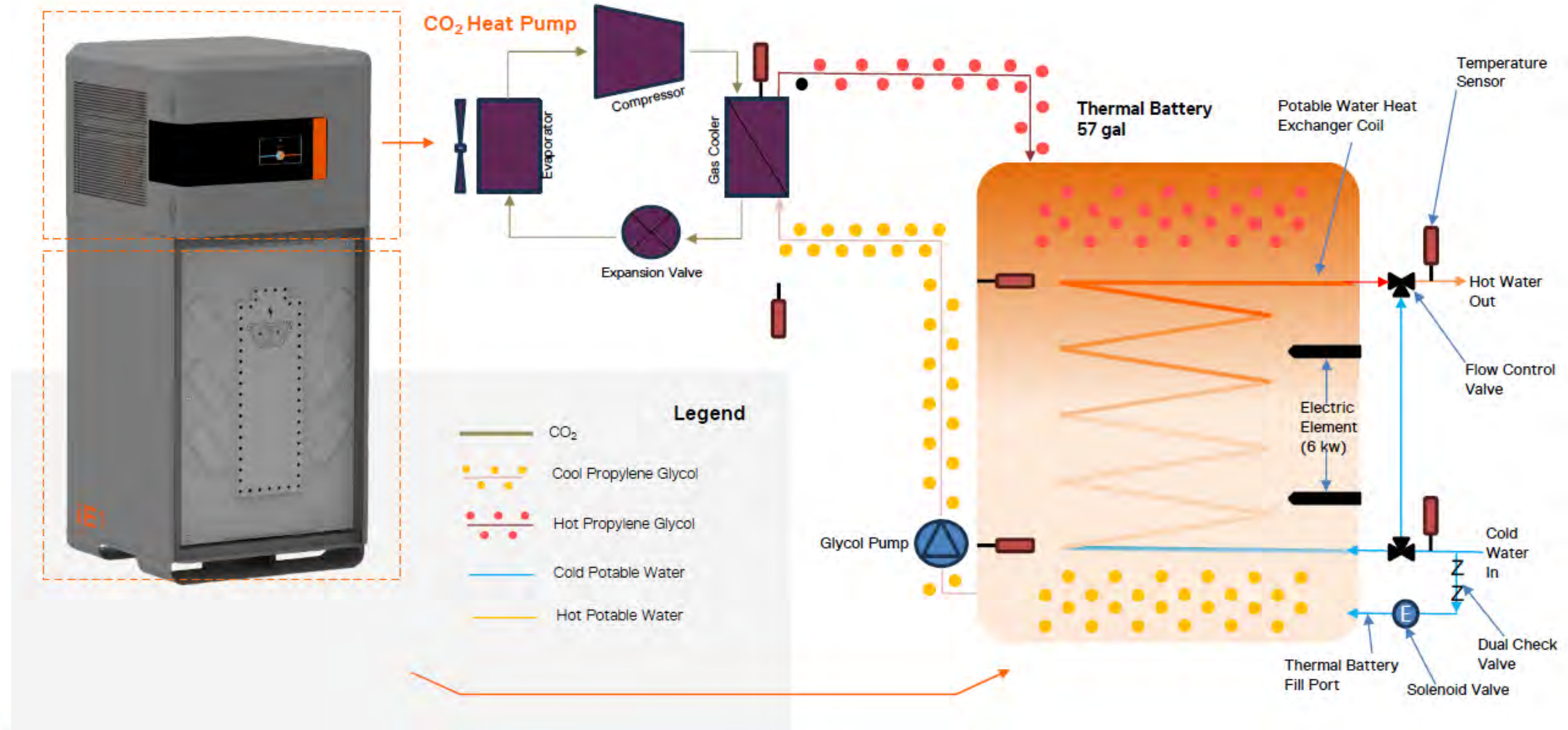


Dimensions Approx: 30" W x 32" D x 70" H

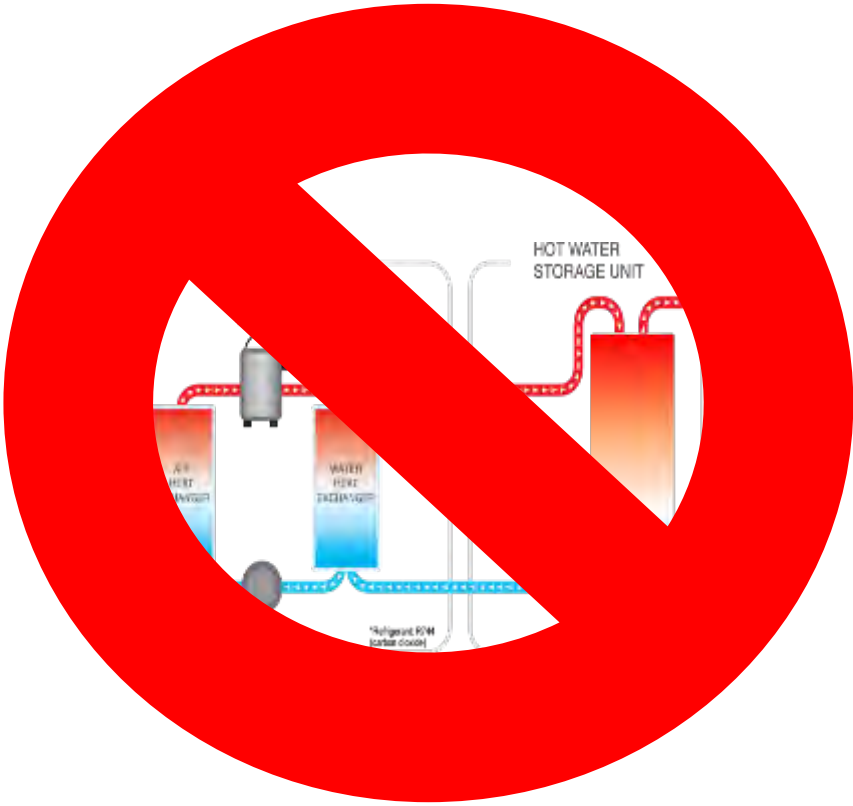
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Why Use a Thermal Battery instead of a Storage Tank?



- Allows higher temperatures, reducing required storage
- Decouples building demand from hot water generation
- Reduces Legionella risk – provide safe potable water with no storage
- No need for swing tanks – staging controls maintain efficiency of system during recirculation
- Requires less space



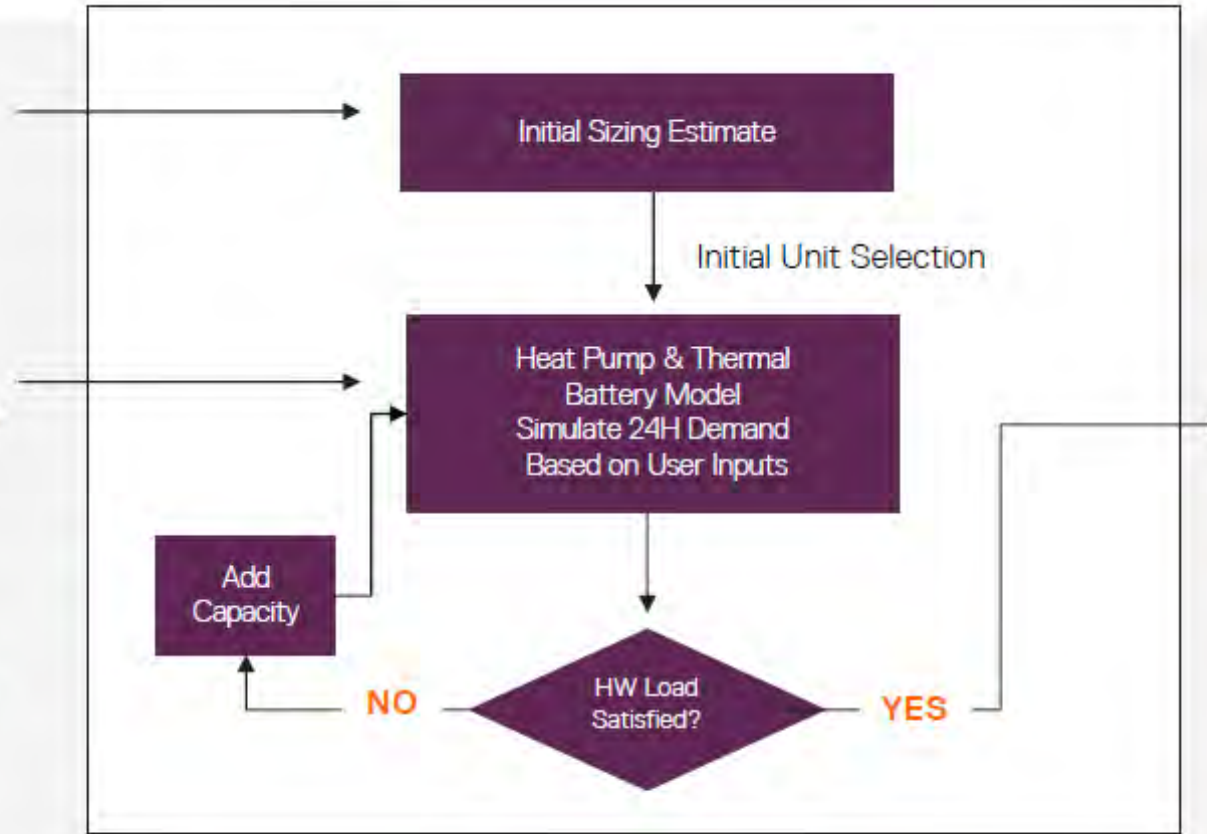
Leveraging Intellihot's Dynamic Simulation Model

USER INPUTS

1. Zip Code
2. Fixture Count
3. Ground Water Temperature
4. Outlet Temperature

TIME VARIANT PARAMETERS

1. Application specific demand profile (24-hour, 365-day)
 - Hot water demand Inlet temperature
2. 24-hour ambient air profile
3. 365-day ground water profile
4. 365-day weather profile
5. 24-hour electric grid pricing



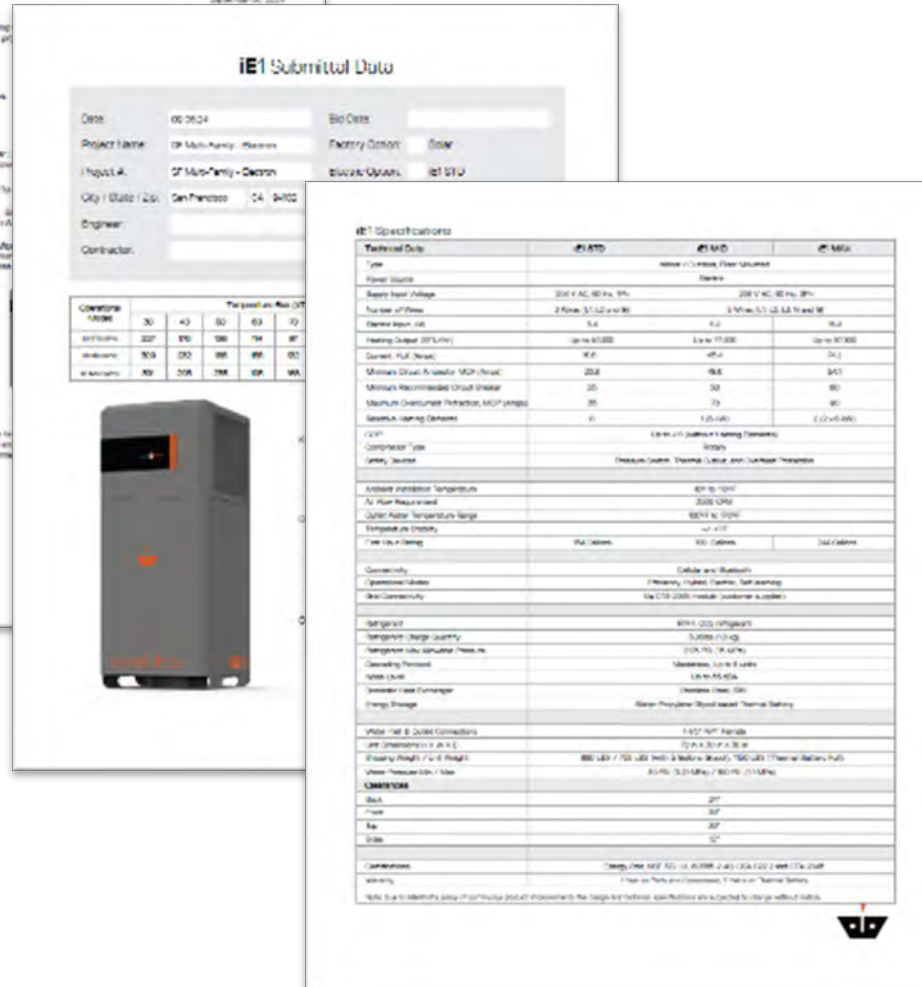
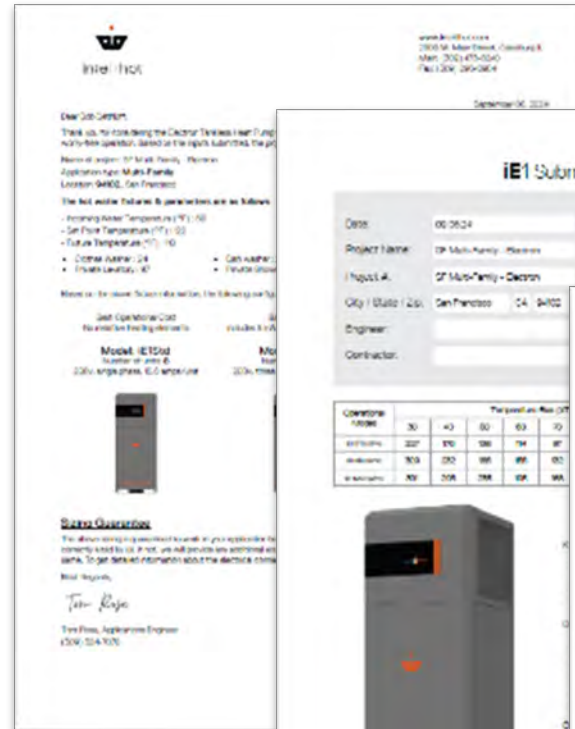
Best Upfront Cost
More Resistive Heating

Balanced Cost
Some Resistive Heating

Best Opex Cost
No Resistive Heating



Intellihot Custom Sizing Report



Intellihot Custom Sizing Report

Based on the above fixture information, the following configurations will meet your hot water needs.

Best Operational Cost
No resistive heating elements

Model: iE1Std

Number of units: **8**
208v, single phase, 16.6 amps/unit



Balanced Cost
Includes 6 kW of resistive heating/unit

Model: iE1Mid

Number of units: **5**
208v, three phase, 45.4 amps/unit



Best Upfront Cost
Includes 12 kW of resistive heating/unit

Model: iE1Max

Number of units: **4**
208v, three phase, 74.2 amps/unit



Case Study: Ventura Multi-Family



Application type: **Multi-Family**

Location: **93003**, Ventura

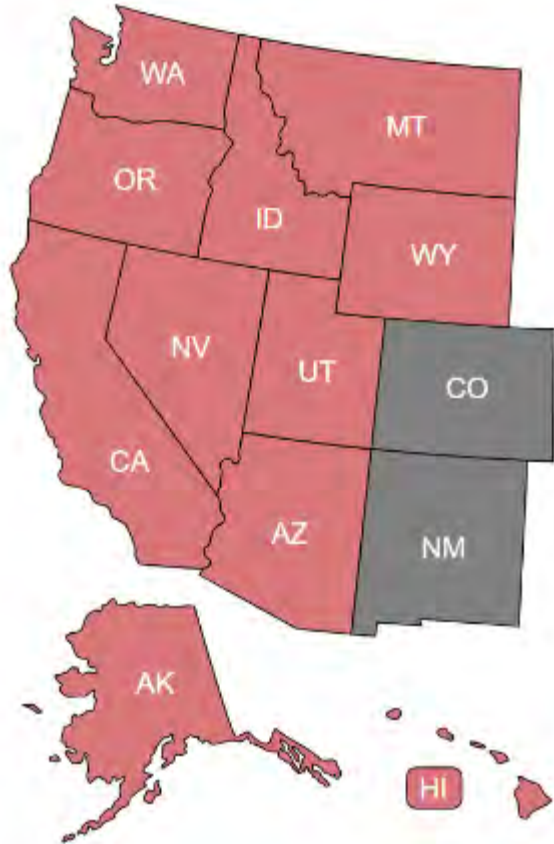
The hot water fixtures & parameters are as follows

- Incoming Water Temperature (°F) : 60
- Set Point Temperature (°F) : 120
- Fixture Temperature (°F) : 105

- Private Lavatory : 139
- Clothes Washer : 13

- Shower and Tub : 136

- Domestic Kitchen Sink : 139



Questions?



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