

DOCKETED

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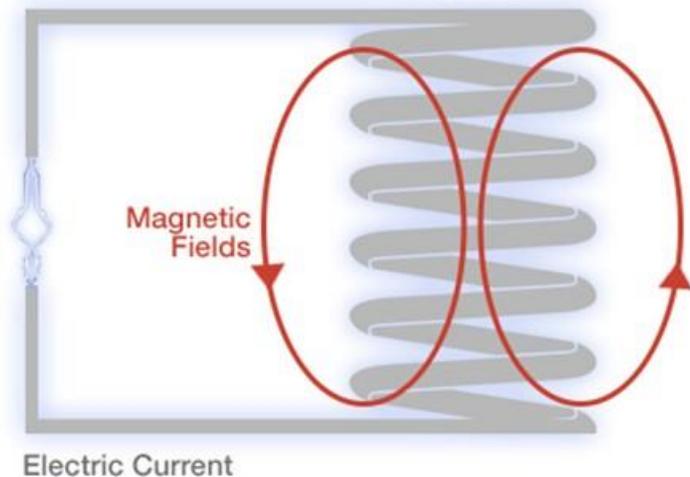
Cooking with Electric- Reducing your Carbon Footprint

Andre Saldivar

Foodservice Technology Center (FTC)

SCE

Exploring Induction Cooking Technology



How it works...

Induction cookers produce an alternating magnetic field using a copper coil that is fed current at a specified frequency and power level.

When a steel vessel is placed in close proximity, an electric current is 'induced' in the steel.

Heat is produced due to the resistive quality of the metal against the induced current. When properly controlled, this method is capable of generating precise amounts of localized heat.

Only the food gets hot



WHY INDUCTION

Benefits of Induction:

Fast

Flexible

Modular

Efficient

Controllable

Safer

Easier to Clean

Lower Ambient Heat Gain

Induction Warming Considerations

Benefits of specifying induction serving systems include:

- Allows food to be held at precise temperatures
- Available in a square or round drop-in design
- No water lines or drains required**
- Reheat and hold functions
- Pan Compensation
- Automatic stir notification and timer
- Dry pan detection
- Less heat to space
- Less labor associated with cleaning wells and crusted pans
- Safer than traditional warmers



Holding Well Replacement

- Standard Steam Holding Wells
 - Water based
 - Inconsistent Holding Temps
 - Food Quality issues
 - Safety Hazard (Hot to Touch)

Design & Engineering Services

INDUCTION WELL FOR FOODSERVICE APPLICATIONS

ET10SCE1430 Report



Prepared by:

*Design & Engineering Services
Customer Service Business Unit
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September 2011

What's Inside...

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- INDUCTION “Dry” Holding Wells
 - Only ON when activated
 - Very Precise Holding Temp
 - Dry Well vs Wet Well

	DEMAND (KW)	TOTAL ENERGY CONSUMPTION (KWH/YR)
Baseline – Steam Wells	2.09	10,599
Induction Wells	1.11	5,102
Reduction/Savings	0.98	5,497

WHY INDUCTION

- What about Back of the House cooking?

HEAVY DUTY



Ranges



Stock Pot Range



Plancha



Induction Griddle



Induction Braising Pan



Induction Quad Cooktops with Convection Oven Base



Induction Quad Cooktops with Storage Base



Induction Dual Cooktops with Storage Base



Induction vs. Gas Comparison: Annual Energy Cost



\$1,123 per year

6 burner range
25,000 BTU burner

Assumptions

360 days/yr.
15 hrs/day
\$1/therm
\$.17/kwh



\$1,114 per year

represents 6 hob unit

Source: Frontier Energy - Electrification in the Foodservice Industry

Energy for What's AheadSM

WHY INDUCTION

- What about Back of the House cooking?

COOK MODERN

-  Near instantaneous recovery for consistent temperatures cook-to-cook
-  Rapidly change surface temperature for a wide variety of products
-  No flames means a safer, cooler, and more productive kitchen
-  Perfect for modern-display cooking
-  36-inch model available in 14,000W
16-inch model available in 7,000W
-  Available in chrome or polished steel finish



36-inch Plancha

VS



Gas Teppanyaki Griddle

WHY INDUCTION

- What about Back of the House cooking?

HIGH-VOLUME RAPID BOIL AND PRECISION SIMMER

-  170% more efficient and 3x more powerful than a similar-sized gas burner
-  Boil five gallons (19 liters) in 17 minutes
-  Digital controls to precisely simmer
-  No flames or hot surfaces provides for a safer, cooler, and more productive kitchen
-  7,000W or 8,000W models available – accommodates up to a 22" (558 mm) diameter pot



VS



Gas Wok Efficiency (or Not so Efficient)



Burner Type	Rating (Btu/h)	Number of nozzles	Efficiency (%)
Jet Burner	130,000	23	18
Duck Burner	100,000	18	22

INDUCTION WOK Efficiency

Pantin X400 Induction Wok



INDUCTION is 3-4 x
more Efficient than Gas
Wok

Input Energy Rate

Test Voltage / Phase	208V / 3 Phase
Rated Energy Input Rate (kW)	12.00
Measured Energy Input Rate (kW)	11.36
Difference (%)	5.3

Heat up Energy Efficiency

Initial Water Temperature (°F)	70.5
Final Water Temperature (°F)	202.7
Water Amount (lb)	10.0
Heat up Time (min)	2.61
Cooking Energy Rate (kW)	10.79
Energy to Water (Btu/lb)	132.2
Energy to Pan (Btu/lb)	9.9
Energy to Appliance (Btu/lb)	165
Cooking-Energy Efficiency (%)	88.6 ± 1.8
Production Capacity (lb/h)	229.8 ± 21.9

^a based on a minimum of three test replicates.

Frontier Energy Report #501320045.01-R0
12949 Alcosta Blvd Ste 101, San Ramon, CA, 94583 P: 925.866.2844 www.fishnick.com

TRY induction cooking out Free: List of table-top induction lending program

- [Berkeley Public Library](#)
- [San Diego Green Building Council](#)
- [City of San Jose](#)
- [City of Palo Alto](#)
- [Sonoma Clean Power Sacramento Public Library](#)
- [Black Gold Cooperative Library System](#)
- [Southern California Edison](#)
- [East Bay Community Energy](#)
- [Acterra](#)

<https://www.buildingdecarb.org/kitchen-electrification-group-resource-directory.html>



EDISON
Energy for What's Ahead®

FOODSERVICE TECHNOLOGY CENTER

Table Top Induction Range
Lending Program



Did you know that you can borrow a table top induction unit from Southern California Edison's (SCE) Foodservice Technology Center for free? Whether you are a California business or residential customer of SCE, you can borrow units from us for free. [Learn more at sce.com/ftc](https://www.sce.com/ftc).

Electric Deck Ovens

- Can get up to 840F+
 - Precise Temperature
- Well Insulated
- Can set each Deck at different Temps
- Can be Turned OFF at night 
- Fast Preheat & Recovery!
- 2-3X More Efficient than Gas
- Rebate\$ Available!



3kW– 15kW

VS



85,000-350,00 BTU

Electric Deck Ovens

- Pizzerias represent 10% of all full-service and quick-service restaurants, with about 73,000 pizzerias in the U.S. and 21,000 Italian pizza and pasta restaurants (think Olive Garden, Carrabba's Italian Grill and California Pizza Kitchen), according to data insights from CHD Expert released in January 2021. **A whopping 94% of all Americans eat pizza regularly.**
- Electric pizza ovens have gained favor over the past five years, says Gemignani. **“Electric ovens offer more precise control over the results; they are versatile, stackable, can handle more volume and recover faster,”** he adds.
- Andolini's switched from a gas to an electric oven in its smallest location five years ago due to the temperature variability and added versatility. Bausch eventually replaced the ovens at his other four stores with electric units. **“What's special about electric is we can heat the bottom and top to separate heat levels, and it provides multiple decks that can be set at different temperatures,”** he explains.



https://fesmag.com/topics/trends/19377-can-pizza-continue-to-hold-court?oly_enc_id=7576A8112245J3Q

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